AGENCY APPROVAL DRAFT

Data Quality Management Plan

Portland Harbor Pre-Remedial Design Investigation and Baseline Studies

Portland Harbor Superfund Site

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Prepared for:

United States Environmental Protection Agency, Region 10
1200 Sixth Avenue, Suite 900
Seattle, Washington 98101

On behalf of:

Portland Harbor Pre-RD AOC Group
Portland, Oregon

Prepared by:

AECOM
111 SW Columbia, Suite 1500
Portland, OR 97201
USA

Geosyntec consultants
520 Pike Street, Suite 1375
Seattle, WA 98101
USA

CERTIFICATION

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February 20, 2018

Kenneth M. Tyrrell
PDI Project Coordinator
AECOM Technical Services

Date

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ACRONYMS AND ABBREVIATIONS

2-D	two-dimensional (e.g., map view, not elevation vertex)
3-D	three-dimensional (includes elevation vertex)
AECOM	AECOM Technical Services
DEA	David Evans and Associates
DQMP	Data Quality Management Plan
ECW	Enhanced Compression Wavelet
EDD	electronic data deliverable(s)
EDP	electronic data processor
EPA	United States Environmental Protection Agency
FGDB	file geodatabase
FGDC	Federal Geographic Data Committee
GCS	geographic coordinate system
Geosyntec	Geosyntec Consultants, Inc.
GIS	geographic information systems
GPS	global positioning system
Gravity	Gravity Marine
HTTPS	Hypertext Transfer Protocol Secure
MS	Microsoft
NAD83	North American Datum of 1983 (Horizontal Datum)
NAVD88	North American Vertical Datum of 1988
NGVD29	National Geodetic Vertical Datum of 1929
NSRS	National Spatial Reference System
ODEQ	Oregon Department of Environmental Quality
Pre-RD AOC Group	Pre-Remedial Design Agreement and Order on Consent Group
PDI	Pre-Remedial Design Investigation
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RGB	red, green, blue
RI/FS	Remedial Investigation/Feasibility Study
RM	river mile
SDE	ESRI ArcGIS Spatial Database Engine
Site	Portland Harbor Superfund Site
SMB	smallmouth bass

SWAC	surface weighted average sediment concentration
USACE	U.S. Army Corps of Engineers
VPN	virtual private network

1. INTRODUCTION

1.1 Project Background

The Portland Harbor Superfund Site (Site) is located in Portland, Oregon, on the lower Willamette River immediately downstream of the urban downtown. The Willamette River is a dynamic waterbody that originates within Oregon in the Cascade Mountain Range and flows approximately 187 miles north to its confluence with the Columbia River. The Site extends from river mile (RM) 1.9 near the mouth of the Willamette River upstream to RM 11.8 (Figure 1). The Downtown Reach, which includes the urbanized area of downtown Portland, is defined by the United States Environmental Protection Agency (EPA) as extending from RM 11.8 to RM 16.6. EPA defines the Upriver Reach as extending from RM 16.6 to RM 28.4.

The Site includes a water-dependent, highly industrialized area, which contains a multitude of facilities and both private and municipal outfalls. Land use along the lower Willamette River in the Portland Harbor includes marine terminals, manufacturing and other commercial and municipal operations, and public facilities, parks, and open spaces (EPA 2016). A federally maintained Navigation Channel, extending nearly bank-to-bank in some areas, doubles the natural depth of the river and allows transit of large ships into the active harbor; the Site serves as a major shipping route for containerized and bulk cargo. Common shoreline features within the harbor include constructed bulkheads, piers, wharves, buildings extending over the water, and steeply sloped banks armored with riprap or other fill materials (EPA 2016). The State of Oregon owns certain submerged and submersible lands underlying navigable and tidally influenced waters.

1.2 Purpose and Scope

The purpose of this Data Quality Management Plan (DQMP) is to provide a central and complete reference to address all the key requirements associated with creating, securely collecting, managing, distributing, and submitting to EPA high-quality tabular and geospatial data for all aspects of the Portland Harbor project. The DQMP defines the system architecture and security, tabular and geospatial data standards, and workflows for field data collection, data loading, creation of data work products, quality assurance/quality control (QA/QC), and internal/external data transfer operations.

1.2.1 Goals and Objectives

The goals and objectives of this DQMP are defined in this section as follows:

1. Ensure that environmental data and supporting information are collected and managed in a manner that preserves, protects, and makes the information available to all stakeholders, performing parties, and other affected groups.

2. Provide standardization of processes to manage and transmit environmental and regulatory data.
3. Ensure efficient use of data among all project members and stakeholders to minimize errors and rework due to misunderstandings about the data's content, geodetic parameters, version, or format.
4. Provide a clear origin, date, and correlation of historical and new data to derivative work products developed during data interpretation and analysis.
5. Implement and operate a robust geospatial and tabular data repository that is secure and capable of supporting the needs of the project.

2. INFORMATION REPOSITORY CONFIGURATION

This section summarizes the software platform/version, system architecture, security, and accessibility specifications of the project information repository and the roles and responsibilities of data management personnel supporting the project.

2.1 System Software

The key software platforms and versions that will be used to support the project are listed in Table 1. Other add-ons, extensions, and specialty software products that may be used on the project are not included but will be referenced in project deliverables as appropriate.

2.2 System Architecture

The basic configuration and location of file server(s), database servers, SharePoint server/portal, and other internal network and web-based project resources are summarized in Table 2 and Figures 2 through 5. AECOM Technical Services (AECOM), Geosyntec Consultants, Inc. (Geosyntec), and project subcontractors are expected to maintain their own secure network and server infrastructure to support the project. Collaboration and file sharing between AECOM, Geosyntec, and support subcontractors will primarily be achieved through AECOM Online resources, including these web-based collaboration tools: Microsoft (MS) SharePoint (project files, field data, laboratory deliverables), ESRI ArcGIS for Server (including a web-based map viewer GUI), and Earthsoft EQuIS Enterprise Edition v6 (data viewer).

2.3 System Security, User Access, Back-Up

AECOM, Geosyntec, and support contractors are expected to maintain network and system security through a Windows Active Directory User ID and password implementation, along with respective company personal identity and network appliance protective measures. All are also expected to follow the privileged and confidential communication protocols defined for the project. AECOM and Geosyntec users working from remote locations will use their company

virtual private network (VPN) login utilities and policies, and company intranet/network requirements when in the office.

Collaboration between AECOM, Geosyntec, and support subcontractors will be primarily through the project SharePoint portal, which will provide secure (i.e., using the Hypertext Transfer Protocol Secure [HTTPS protocol]) access to project team members regardless of office location or firm affiliation to appropriate SharePoint libraries and lists. Access to specific content areas of SharePoint will be controlled based on project roles, and the standardized access request and provisioning process addressed in detail in Appendix A (SharePoint Portal Access Instructions) will be followed. Pre-Remedial Design Agreement and Order on Consent Group (Pre-RD AOC Group) users and stakeholder users can also be provided access to the SharePoint site through this same process.

AECOM, Geosyntec, and support subcontractors are expected to follow network and enterprise resource backup, archiving, and retainage procedures relevant to their respective companies and the terms and conditions of contracts/subcontracts relevant to the project and the Pre-RD AOC Group.

3. DATA MANAGER ROLES AND RESPONSIBILITIES

The key roles and responsibilities of team members working on tabular and geospatial management activities are summarized in Table 3. All team members working with tabular or geospatial data will have a minimum of 5 years of experience with the tools and platforms relevant to their data management tasks, or will work under the supervision of persons with this level of experience. In addition, data managers involved with preparation and transmittal of electronic data deliverables (EDD) to EPA Region 10 and the Oregon Department of Environmental Quality (ODEQ) will be trained in the EPA Scribe.NET platform through available web-based training sessions and by the EPA data coordinator, as appropriate. Table 3 also summarizes the primary QC responsibilities of the listed team members and references checklists and related activities discussed in more detail in Section 8 (Project QA/QC Program).

4. TABULAR DATA STANDARDS

This section of the DQMP summarizes the tabular data standards to be used on the project, including the EQuIS project database specifications, internal AECOM EDD specifications, naming conventions for locations, minimum data field collection requirements, EPA Region 10 Scribe.NET requirements, and treatment of historical datasets.

4.1 Project Database

AECOM will use EQuIS Professional V6.6.0 to host the project database and central repository for all new and historical tabular data for the project. The project database will reside on the

AECOM intranet, implemented on an MS SQL Server 2012 platform. The project database will be the single master data repository for all locations, samples, analytical chemistry results, biological data, field measurements, and other content in a tabular format. While location/positional data will be captured via global positioning system (GPS), the master repository of final, post-processed point data will be the EQuIS project database Location table. File geodatabases (or other geospatial vector or raster data formats) and/or MS SQL Server Spatial Database Engine (SDE) feature classes will be used as master repositories for geospatial data captured in polygon, line or point geometry format (see Section 5 for more detail). Additional details are provided below regarding the overall project data model, EDD format, location nomenclature and minimum data field requirements, and EPA Scribe.NET data transmittal standards.

4.1.1 Data Model

The EQuIS data model is customizable, and not all the table constructs are necessary or will be used on the Portland Harbor project. The primary table constructs/aliases intended to be used are as follows:

- [Project]
- [Facility]
- [Location]
- [Sample]
- [Analytical Results]
- [Lithology]
- [Biological]
- [Field Measurements]

The EQuIS data model is proprietary, and the overall entity-relationship diagram (ERD) and detailed database structures cannot be published in a final version of this document. However, EDD specifications are included in Appendix B (Project Database: EQuIS Specifications). It is anticipated that some customization may be needed to the project database to address specialized field data requirements. For example, instrument calibration data and YSI Meter measurements may require tables other than those in the EQuIS data model or the addition or use of EQuIS custom fields in the project database. These will all be documented and highlighted in revised versions of Appendix B.

AECOM has reviewed the Scribe.NET specifications referenced in the *DRAFT Program Data Management Plan Portland Harbor Pre-Remedial Design Investigation – Portland Harbor Superfund Site* (EPA 2017) and is confident that all the required data can be exported from the EQuIS project database and provided to EPA in the Scribe.NET submittal schema. EQuIS has a

Scribe.NET export utility and, to the extent possible, Scribe.NET valid values (e.g., location types, matrix types) will be seeded into the EQuIS project database to facilitate translation/export of the project data when transmitted to EPA Region 10 for final project deliverables. The data manager will confirm that any elements that are not compliant with the Scribe.NET schema will be identified and communicated to EPA prior to the start of any sampling program.

4.1.2 Electronic Data Deliverables

The AECOM V2.5.3 EDD format will be used to facilitate loading of new field and historical data to the project database. The EDD consists of Location, Sample, and Analytical Results portions. Support laboratories will be directed to provide the Analytical Results portion, and AECOM data managers will load Location and Sample data either through corresponding EDDs or insert scripts. For some higher-level project information (e.g., Facility ID), either import scripts or the EQuIS forms interface may be used to enter seed data. Potentially, biological data may also have to be loaded with import scripts or code authored and executed within SQL Server Management Studio software, as the standard AECOM format may not meet the project needs and because customizations are common for this type of data. The specifications of the EDDs to be used by AECOM are included in Appendix B.

4.1.3 Location Nomenclature

The naming convention and nomenclature to be applied to sample locations are summarized below and in Table 4. The naming conventions and nomenclature for sample identifier data are described in detail in the QAPP (AECOM and Geosyntec 2018). A unique naming and numbering scheme will be critical to maintaining data integrity and will allow the reliable relating of tabular data to spatial representations of that data on maps. This will also maximize consistency in data management procedures between field crews, scientific disciplines, and the different types of field studies.

It is proposed that the unique Location ID will consist of the “PDI” (Pre-Remedial Design Investigation and Baseline Sampling) prefix related to this study, followed by the alphanumeric designations included in Table 4. The alphanumeric designations are generally predicated on the river area grid cells developed for this study (i.e., for the stratified random samples) and the sequential sample station numbers defined in the QAPP (AECOM and Geosyntec 2018). This nomenclature will be applied to electronic and paper navigational maps that depict grid cells and target sampling locations to facilitate tracking of data collection activities and when performing spatial analysis of data.

4.1.4 Minimum Field Form Data Fields

It is anticipated that all field data will either be collected on paper forms or in an electronic format (Excel, PDF forms) via an MS Surface Pro application, mobile device application, or custom user interface that may be different than the standard EDD format or the scripts that will be used to load data to the project database. This section summarizes the minimum data fields

(see Table 5) that must be included on the field forms to ensure data integrity and the ability to create and load complete EDDs to the project database. Example field forms will be included in respective field sampling plan documents.

4.1.5 EPA Data Submittal Standards

AECOM and Geosyntec will follow the specifications and requirements of the *DRAFT Program Data Management Plan Portland Harbor Pre-Remedial Design Investigation – Portland Harbor Superfund Site* (EPA 2017) in the preparation and submittal of project data to EPA Region 10. The EPA 2017 document specifies the Scribe.NET data standard, related templates, valid values, training, and other requirements for transmittal and upload to the Scribe.NET platform. The Scribe entity-relationship diagram and other EDD specifications are included in Appendix C (EPA Region 10 Deliverables: Scribe.NET Specifications), and version information is provided in Table 1. As described earlier, to the extent possible the project team will incorporate EPA Region 10 matrix, sampling method, and other lookup and valid values into the domain tables and database set-up parameters in AECOM EDDs and the project database implementation to facilitate translation to appropriate Scribe.NET EDDs in final deliverables. Also, as stipulated in Section 4.1.1, AECOM's comparison of EQuIS to Scribe.NET specifications indicates all necessary data fields are available for export; however, the data manager will confirm that any elements that are not compliant with the Scribe.NET schema will be identified and communicated to EPA prior to the start of any sampling program.

4.2 Tabular to Geospatial Operations

As described at the beginning of this section, the project database will be the master data repository for all locations, samples, analytical chemistry results, biological data, field measurements, and other content to be stored in a tabular format. While location and positional data will initially be captured via GPS, the master repository of final, post-processed location point data will be the EQuIS project database Location table. Here unique Location IDs and location coordinates will be stored for all point data or point data representations (e.g., centroids) of other spatial geometries (line or polygon). When tabular data are "attached" to spatial features or used in maps, user and project-specific tabular data exports will be prepared that can be imported to GIS to create maps and perform geospatial analyses. The tabular exports are expected to consist of Excel workbooks, comma-separated values, or other delimited text file formats generated from SQL queries to the project database. The export will always include a unique Location ID/index that can be joined to the geospatial point or object in a feature class. See Section 6.2 for additional details on this process.

4.3 Historical Data

It is anticipated that certain historical tabular datasets (primarily related to analytical chemistry) will be loaded into the EQuIS project database to facilitate grouping, analysis, and interpretation of data as reported in project deliverables. The primary historical data identified for use on this

project are listed in Appendix D (List of Historical Tabular Datasets) and will be loaded into the project database. This list will be updated as data and loaded to EQuIS to document any assumptions, rules, or backfilling of missing data that was needed to enter the data into the master database. The datasets will be clearly flagged to distinguish them from new data collected for the project. The historical data will be organized by vintage/age and data quality in terms of detection limits, RM, or other designations to facilitate analysis. Historical datasets will likely be loaded into the project database via the EQuIS EQEDD or EZEDD interchange format to facilitate database field mapping and completeness checks. It should be noted that these datasets were developed by others, and the PDI project team is not the owner of the data. Accordingly, the historical dataset will be used "as is" apart from some data "cleanup" actions necessary to normalize and synthesize the disparate historical datasets into a consistent database.

5. GEOSPATIAL DATA STANDARDS

This section of the DQMP summarizes the geospatial data standards to be used on the project, including the following: geodetic standards, the project data model, the data format, naming conventions for themes and attributes, data quality and precision, metadata, and topology.

5.1 Geodetic Standards

The project geodetic standards discussed in this section include required project datums and coordinate system parameters.

5.1.1 Vertical Datum

The data managed for this project will primarily be two-dimensional (2-D) in nature, and therefore will not include a vertical component. However, sediment depth information will be three-dimensional (3-D). It is recommended for these datasets that the vertical datum standard will be North American Vertical Datum of 1988 (NAVD88) relative to the mudline elevation, if accurately measurable. Any vector datasets that use National Geodetic Vertical Datum of 1929 (NGVD29) will be converted via the VERTCON (version 2.0) program, accessible via the National Geodetic Survey Toolkit website. Vertical measurements and coordinates will be stored in units of international feet.

5.1.2 Horizontal Datum

The horizontal datum standard that will be used is North American Datum of 1983 (NAD83), National Spatial Reference System (NSRS) 2007. Horizontal measurements will be stored in units of international feet.

5.1.3 Coordinate System and Projection Parameters

The native format of geospatial data will be Geographic Coordinate System (GCS), NAD83 (NSRS 2007) as defined below.

Geographic Coordinate System
Horizontal Datum: D_NAD_1983_NSRS2007
Spheroid: GRS_1980
Semimajor Axis: 6378137.000000000000000000
Semiminor Axis: 6356752.314140356100000000
Inverse Flattening: 298.257222101000020000

If a map projection is required for map or data deliverables, the projection parameters are as follows:

NAD_1983_2011_StatePlane_Oregon_North_FIPS_3601_Ft_Intl
WKID: 6559 Authority: EPSG

Projection: Lambert_Conformal_Conic
False_Easting: 8202099.737532808
False_Northing: 0.0
Central_Meridian: -120.5
Standard_Parallel_1: 44.33333333333334
Standard_Parallel_2: 46.0
Latitude_Of_Origin: 43.66666666666666
Linear Unit: Foot (0.3048)

Geographic Coordinate System: GCS_NAD_1983_2011
Angular Unit: Degree (0.0174532925199433)
Prime Meridian: Greenwich (0.0)
Datum: D_NAD_1983_2011
Spheroid: GRS_1980
Semimajor Axis: 6378137.0
Semiminor Axis: 6356752.314140356
Inverse Flattening: 298.257222101

5.2 Geospatial Data Model/Content Standards

The geospatial data model will be an extension of the tabular data model described in Section 4 and Appendix B. The project database will be the master data repository for all locations, samples, analytical chemistry results, biological data, field measurements, and other content in a tabular format. Although the location/positional point data are inherently geospatial, the master repository of final, post-processed point data will be the EQuIS project database Location table. File geodatabases (or MS SQL Server SDE) will be used as master repositories for geospatial data captured in line or point geometry format.

The data model for the geospatial portion of the project dataset is expected to consist of three broad groupings: 1) historical data, 2) new re-baseline data, and 3) derivative work products. It is

expected that these geospatial datasets will have varying degrees of quality and completeness with regard to attributes, standardized data codes, and precision. The standardization and data model of geospatial datasets are described in more detail below.

5.2.1 Historical Data

An initial listing of the known and previously used historical geospatial data is included in Appendix E (Geodatabase Specifications). It is proposed that these data be reviewed, consolidated, and standardized prior to use in any analyses or work products. Point data that are redundant to historical tabular datasets will be removed, and any surviving point, line, or polygon data will be reviewed in further detail for consistency of attributes, domain values, naming conventions, geodetic parameters, and presence of sufficient metadata. These data will then be consolidated into one or more master geodatabases or feature datasets for use on the project following the agreed-upon geospatial standards developed during the review. Thus, a complete and updated geodatabase specification is not currently available. However, one will be developed on approval of this DQMP. It should be noted that historical geospatial datasets were developed by others, and the PDI project team is not the owner of the data. Accordingly, the historical geospatial datasets will be used “as is” apart from the “cleanup” activities proposed above.

5.2.2 New Re-Baseline Data

The new data to be collected during the re-baseline effort include the studies referenced in Table 5, including the Bathymetric Survey (subcontractor David Evans and Associates [DEA]) and the Fish Tracking Survey (HTI-Vemco). Three general feature classes are anticipated to be generated from this work to support the primary studies, and their preliminary specifications are included in Appendix E. One feature class will support GPS data collection and location verification. The final post-processed point data from this geospatial dataset will be loaded to the EQuIS Location table. The second feature class is a template for the core attributes to be included when tabular data are exported from EQuIS and joined to geospatial data. The third feature class is to support georeferencing of photographs. The geospatial specifications of deliverables from DEA, HTI-Vemco, and Gravity Marine (Gravity; primary vessel contractor providing boat position data) are under development and will be added to Appendix E when available. It is anticipated that some additional data field matching and/or update of the current specification will be needed to align GPS-related data fields in the Scribe.NET Location EDD with those stored either in the tabular project database or the project feature classes described above and in Appendix E.

5.2.3 Derivative Work Products

Derivative work products may include concentration isopleths, volumetric calculations, mass loading calculations, and other content developed from geospatial analysis. The naming conventions, attribution, domain values, topology, and other specifications for this content have yet to be fully determined. In general, it is anticipated that ESRI Map Packages or documented sets of vector or raster data files will be prepared to support any work products of this nature;

these packages will provide full metadata, supporting feature classes, .MXD files, layer files, and other content for a self-contained deliverable. The geospatial specifications for these deliverables will be added to Appendix E when available.

5.3 Precision and Data Quality

5.3.1 Vector Datasets

General vector dataset precision and quality requirements are as follows:

- Only vector data will only be permissible in ESRI ArcGIS geodatabase feature class and feature datasets format. Shapefiles are allowed only if authorized by the lead data manager.
- Vector data will be managed and edited using ArcGIS or other GIS editing tools or software.
- Attributes for shapefiles will be in a tabular dBASE format.
- Vector datasets will be natively stored in geographic coordinates and expressed either in decimal degrees, and will include a horizontal datum definition (such that conversion to the project coordinate system can be facilitated) or in Oregon State Plan North (feet) coordinate system (as defined in Section 5.1.3) when used for calculating length and area, as long as properly documented.
- Numerical Data will be stored as Double Precision, with a minimum precision of eight decimal digits (unless otherwise indicated).
- Vector datasets will contain proper negative values for Longitude.

Point dataset precision and quality requirements are as follows:

- Datasets will be represented by a pair of double-precision coordinates in the order of Northing/Easting or Latitude/Longitude.
- All point datasets will adhere to applicable point topology and complete attribution.

Polyline dataset precision and quality requirements are as follows:

- Polyline datasets will start, finish, and only connect to one another at nodes, edges, or vertices.
- All polyline datasets will contain arc topology and complete attribution.
- It is not acceptable for polyline datasets to contain self-intersections or to extend through nodes (i.e., it is unacceptable to have the right and left polygons equal the same polygon).

- In the creation process, datasets should be created in the native GCS and re-projected to the Oregon State Plane North Coordinate System for presentation purposes or length calculations, if appropriate.

Polygon dataset precision and quality requirements are as follows:

- Polygon datasets will be represented by closed polygons with only one label point.
- The interior edge will be defined in a counter-clockwise direction, and each polygon dataset will be edge-matched across projection zones. In the creation process, datasets will be created in their native PCS or GCS and re-projected to the Oregon State Plane North Coordinate System for presentation or area calculations.

5.3.2 Raster Datasets

Raster dataset precision and quality requirements are as follows:

- Imagery derived from sub-sampling techniques or from lossy compressed sources will be noted in metadata when known.
- Raster image files created through satellite imagery, aerial photography, or scanning will be delivered as uncompressed tagged image file format (TIFF) or geoTIFF files, and will include a TIFF world file (.tfw).
- The TIFF file datasets must have row-major orientation and non-planar configuration, and must be non-tiled.
- Other bi-level images that are acceptable are Enhanced Compression Wavelet (ECW) and multi-resolution (MrSID) images with compression ratios equal to or greater than 1:10.
- Any other lossy or lossless compression formats will be noted.
- Bi-level images (1-bit, composed of black and white colors only) should be stored using lossless image compression, as outlined in the TIFF Revision 6.0 document.
- Full-color images (i.e., pixels made up of red/green/blue [RGB] components) should contain a color map or palette.
- Palette color images should have their component value referenced to a full red/green/blue look-up table.

Scanned maps precision and quality requirements are as follows.

- The method of creating raster imagery through scanning hard-copy maps will be done using a minimum scanning resolution of 100 microns or 254 dots per inch.
- The raster image accuracy must exceed the original map scale and meet the minimum standard as follows:

- Scale 1:10,000 – Required accuracy is 6 feet/2 meters
- Scale 1:50,000 – Required accuracy is 15 feet/5 meters
- Scale 1:250,000 – Required accuracy is 75 feet/25 meters

5.4 Metadata Standards

The required project metadata standards, including any minimum requirements, are described in this section. All geospatial data, including native and derived work products, will adhere to these standards.

5.4.1 Format

All geodatabase feature classes shall have metadata included in their native geodatabase. For files outside of a geodatabase, metadata will have a base name identical to its corresponding spatial export file and will be delivered in an .xml format that is compatible with the Federal Geographic Data Committee (FGDC) output standards, found at https://www.fs.fed.us/gac/metadata/index.html.

Metadata will be considered compliant with the FGDC standard when all required information is provided. This includes information for all mandatory elements—plus information for all mandatory if applicable elements when relevant to the dataset. In addition to meeting these minimum requirements, additional elements deemed optional by the FGDC may be considered mandatory if applicable. For derivative geospatial work products, many of these FGDC requirements may be redundant or unnecessary and may be waived by mutual agreement.

The project-specific mandatory (if applicable) elements are as follows:

- FGDC Section 1: Identification Information
  - Point of Contact
  - Data Set Credit
  - Security Information
- FGDC Section 2: Data Quality Information
  - Quantitative Attribute Accuracy Assessment
  - Quantitative Horizontal Positional Accuracy Assessment
  - Quantitative Vertical Positional Accuracy Assessment
  - Process Contact
- FGDC Section 3: Spatial Data Organization Information
  - Point and Vector Object Information

    - Spatial Data Transfer Standard Terms Description
    - Point and Vector Object Count
    - Raster Object Information
- FGDC Section 4: Spatial Reference
    - No additional information required
- FGDC Section 5: Entity and Attribute Information
    - Attribute Value Accuracy Information
- FGDC Section 6: Distribution Information
    - Technical Prerequisites
- FGDC Section 7: Metadata Reference Information
    - Metadata Review Date
    - Metadata Access Constraints
    - Metadata Use Constraints
    - Metadata Security information
- FGDC Section 8: Citation Information
    - No additional information required
- FGDC Section 9: Time Period Information
    - No additional information required
- FGDC Section 10: Contact Information
    - No additional information required

6. FIELD OPERATIONS/DATA WORKFLOW

This section summarizes the data workflow and operations at the Field Office and Main Office while active field data collection operations are occurring, as depicted in Figure 6. The section includes a summary of data-related field preparation activities, a summary of samples/data to be collected, the data processing activities to be conducted in the Field Office, as well as data support activities to be conducted at the Main Office, including loading data to the project database.

6.1 Field Preparation/GPS Support

The data-related activities expected in preparation of field deployment include securing and procuring Trimble R1 (or equivalent) GPS units that will be tethered to MS Surface Pro Tablets

(or their equivalent), developing and finalizing paper or electronic field forms for ArcPAD or other mobile device interfaces, developing procedures to establish and maintain GPS ground control for all surveys, and finalizing plans for accurate cross-referencing of location coordinate data between Gravity's positional recording and those collected by AECOM and Geosyntec. It is also anticipated that field staff and field technicians operating GPS equipment and the tablet interface will be trained in equipment use, including the proper entry of data into field forms with unique Location IDs, Sample IDs, and other minimum data fields as defined in Section 4 of this document. The process for packaging field data, labeling samples, and transmitting/delivering data to the Field Office will also be included in the training.

6.2 Sample and Data Collection Summary

The complete requirements for sample data collection are included in the QAPP (AECOM and Geosyntec 2018), and are only summarized here. It is anticipated that samples will be numbered according to the nomenclature defined in the QAPP. Other data to be collected, including biological counts, photos, field measurements, and other types of observations, are expected to follow the same naming conventions. The names of the electronic files and scanned field forms are also expected to follow these naming conventions, and as described in Section 6.5, additional file metadata will be applied when the field data are uploaded to the New Field Data and Sample Tracking libraries of the project SharePoint site. The contracted laboratories for this project are already familiar with the AECOM v2.5.3 EDD and the related EQuIS Electronic Data Processor (EDP) tool, but reference values and upload instructions will be communicated to them prior to the start of field work. AECOM anticipates that contracted laboratories will use the EDP tool to check their completed analytical result EDDs prior to uploading them to the project SharePoint site.

6.3 Bathymetry Survey

AECOM subcontractor DEA will conduct a bathymetric survey, and Geosyntec will oversee their field efforts. DEA will conduct a multi-beam bathymetric survey of the Lower Willamette River from approximately RM 1.9 to RM 11.8 and down the Multnomah Channel from the Willamette River to the Sauvie Island Bridge. Coverage in Multnomah Channel will be riverward of all floating homes and marinas. All bathymetric surveying will be consistent with prior surveys for the Lower Willamette Group and exceed the standards established by the U.S. Army Corps of Engineers (USACE) Engineering and Design Manual for Hydrographic Surveying (EM 1110-2-1003), "Hydrographic Surveying," in accordance with requirements for "Navigation & Dredging Support Surveys." All work will be supervised and final deliverables approved by a DEA Oregon-registered Professional Land Surveyor and by a National Society of Professional Surveyors/The Hydrographic Society of America Certified Hydrographer.

The geodetic controls are anticipated to be consistent with the specifications of Section 5 of this document, and deliverables are expected to include the following:

- A series of map products at a scale of 1 inch = 400 feet
- Contour maps of the surveyed area at a 2-foot contour interval
- Hillshaded relief maps color coded by depth of the surveyed area
- A report outlining survey equipment, methodology, and analysis
- Electronic versions of all map products consistent with the format/requirements of this DQMP
- Georeferenced TIFF images for each difference analysis

Electronic deliverables are expected to be uploaded to the project SharePoint New Field Data library, with the possible exception of the geoTIFF files, which may be too large to efficiently transmit this way. Geospatial specifications of relevant work products will be added to Appendix E when available.

6.4 Acoustic Fish Tracking Survey

AECOM and subcontractor HTI-Vemco will conduct an acoustic fish-tracking study to capture fine-scale temporal and spatial movement of smallmouth bass (SMB) in the Portland Harbor study area. Acoustic receivers will be deployed on the bottom of the river to record data on the movement of tagged SMB in the lower Willamette River. The results will be used to: 1) inform the fish tissue sampling plan scheduled for late summer 2018; 2) refine the surface weighted average sediment concentration (SWAC) segments used to evaluate changes in surface sediment concentrations; 3) refine understanding of the Conceptual Site Model (CSM) for remedial design purposes and reduce uncertainty about remedy effectiveness for fish tissue recovery; and 4) help inform the future institutional control plan. The work will be performed in collaboration with Karl Gustavson, EPA Office of Superfund Remediation and Technology Innovation (formerly of the USACE), and experienced staff from the USACE Engineer Research and Development Center.

Electronic deliverables are expected to be uploaded to the project SharePoint New Field Data library, with the possible exception of the large raw data files, which may be too large to efficiently transmit this way. Geospatial specifications of relevant work products will be added to Appendix D when available.

6.5 Field Office Data Processing

The procedures for managing incoming data from field crews/boats are described in this section. Subsections include details on potential data transcription procedures, file organization, and the uploading of raw field data to SharePoint to make it accessible to Main Office data managers.

6.5.1 Incoming Data Management and Transcription

A dedicated technician will provide support in the Field Office to collect and download data/files from electronic devices (e.g., cameras, GPS); collect, organize, and scan any paper forms or field book entries to PDF format; assist with sample containers management and tracking; assist with field equipment troubleshooting; and perform rudimentary data file completeness checks and inform field crew members of incomplete or problematic data sets.

The dedicated technician is also expected to interact with field team leads in tracking the completion of sampling activities by marking off grid cells on large wall maps and/or electronic versions of maps deployed in AECOM ArcGIS Online. The maps will include grid cell labelling per the location-naming nomenclature described in Section 4.1.3.

It is anticipated that some of the incoming data may need to be transcribed or otherwise repurposed to an electronic format for ultimate loading to the project database. The Field Office technician is expected to perform the transcription as well as manage and organize files of photos, scanned documents, or other paper and electronic content.

To properly perform the functions summarized in this section, the technician will be trained, as necessary, in the requirements stipulated in this DQMP document, the QAPP, and other field sampling documents.

6.5.2 New Field Data Management in SharePoint

The primary project SharePoint library that will be used in the Field Office is the New Field Data library. The New Field Data file upload form depicted in Figure 7 shows the additional metadata to be tracked and entered for incoming data by the Field Office technician. When multiple files are related to an incoming dataset, the related files will be zipped together and named with the Location ID and Sample ID. The data fields are self-explanatory. A fixed list of values was employed for the Study Type, Data Type (tabular, geospatial, photos, scans, other), Vessel, and Contractor. A checkbox to confirm data completeness is also included. The Field Office technician is expected to manage SharePoint file uploading operations per the *Project SharePoint User Guide* (AECOM 2017).

6.6 Main Office Data Management Operations

This section will describe the process by which data managers in the Main Office will review and manage incoming field data uploaded to the project SharePoint site. Some overlap is expected with the Field Office technician, especially in the area of sample tracking, which is described below. In this section, the process of data loading to the project database is described, along with the EQuIS data validation tools that will be used to support project chemists.

6.6.1 Tracking Samples and Complete Field Data in SharePoint

Data management staff in the Main Office will interact with the Field Office technician by using the Sample Tracking library depicted in Figure 8, and by monitoring the New Field Data library for any uploaded data that are marked as complete. These two operations are described below.

It is anticipated that the Field Office technician will enter sample tracking information by uploading the scanned Chain of Custody form to the Sample Tracking library as sample containers come in from the vessels and field crews, and as they are packaged and shipped to support laboratories for analysis. Data management staff in the Main Office will use the SharePoint library to track and confirm when laboratories receive the packages. They will also monitor for the submittal and receipt of laboratory results in the AECOM v2.5.3 EDD format. These are expected to be uploaded by the laboratories directly to the Data Loading library depicted in Figure 9. After the EDDs are received from the labs in the Data Loading library, data management staff will marked them as complete in the Sample Tracking library.

Data management personnel in the Main Office are also expected to monitor the New Field Data library and to download and inspect files that are marked as complete. The electronic files or content that was transcribed from paper forms from this area may require additional actions or staging for conversion to AECOM EDD format. Clean-up actions may include backfilling of any missing attributes, cross-checking of appropriate data codes, and verification of proper Location IDs. In summary, the metadata and file tracking functionality of the project SharePoint New Field Data and Sample Tracking libraries will be critical and integral to the overall data loading to the project database and the management operations described in the next subsection.

6.6.2 EDD Management in SharePoint

The SharePoint Data Loading library depicted in Figure 9 will be used as the master repository of all EDDs prepared and ready for loading to the project database. It will also be used to track the status of EDDs that have been loaded and for QA/QC tracking of data already loaded to the project database. Final loaded EDD files may also be backed up to the network project folders.

6.6.3 EQuIS Project Database Operations

EQuIS database operations will consist of the project database setup, seeding of reference values, seeding of project and facility (i.e., Portland Harbor site) data, and sequential loading of location, sample, and analytical result EDDs. As described earlier, to the extent possible, Scribe.NET reference values will be seeded to appropriate EQuIS tables to facilitate the ultimate transfer of data to EPA Region 10. EQuIS Professional v6.6.0 desktop, the EDP module, and the AECOM v2.5.3 formatted EDDs will be the primary tools used to load data to the project database. Figure 10 depicts the desktop interface for location data loading as an example. Subsets of the data will also be securely exposed to Geosyntec team members via EQuIS Enterprise as appropriate to meet project requirements.

Some data entry operations may be performed through the EQuIS forms interface or via SQL insert scripts executed through SQL Server Management Studio software. Depending on the format received, the acoustic fish tracking data and possibly some field measurement data may be loaded this way. These tools will more likely be used to make adjustments to data already loaded into the project database.

After the data are loaded to EQuIS, a number of QC checks will be performed to verify the completeness and condition of data inside the master repository. Data QC will consist primarily of comparing row counts from the EDDs to the loaded number of records to the appropriate EQuIS tables. The EDP data-checking module is expected to capture any valid values issues prior to loading into the project database, so such checks are not anticipated. A content/logic cross-check to verify the correct hierarchy of locations to samples, and samples to analytical results, will also be performed to ensure the correct association of chemistry results to field locations. Completion of these tasks will be tracked in the Data Loading SharePoint library.

In addition, the EQuIS Data Validation Assistant module will be used to facilitate the proper flagging of analytical data qualifiers by project chemists. This EQuIS tool creates an Excel workbook similar to the one depicted in Figure 11, which will be provided to project chemists and/or third-party validators into which they will enter their qualifier flags and associated narrative in specific blank columns. The tool will be used to export loaded project analytical chemistry data in batches, and the chemists will apply their flags and return the workbooks for synchronization with the project database using EQuIS software. In order for the synchronization to work properly, it will be critical that the validators use the workbook “as is” and not modify columns and content other than to apply their proper validation codes in the indicated columns.

7. POST-FIELD OPERATIONS/DATA WORKFLOW

This section summarizes the data management activities and workflow primarily for tasks performed in the Main Office after the field work has been completed. There may be some chronological overlap of some tasks described below with the field data collection effort. The loading and management of historical tabular and geospatial data are discussed here; also discussed are data export operations to support analysis and general geospatial data management tasks.

7.1 Historical Data Review

The overall project work plan includes a Data Compilation task (Task 4) with a stated purpose of identifying, reviewing, compiling, and summarizing Portland Harbor and upstream data that were collected since the Remedial Investigation/Feasibility Study and that are relevant to this project. The following subsections describe the data management activities associated with this task.

7.1.1 Loading Tabular Historical Data to EQuIS

A preliminary list of the tabular historical datasets to be incorporated into the project database is provided in Appendix D. AECOM will work with Geosyntec to review these datasets to first distinguish which data are inherently tabular (e.g., chemistry results tied to data points) compared to those which are primarily geospatial (e.g., physical features tied to lines or polygons). The tabular dataset will then be secured, organized, and properly formatted (i.e., into the EQuIS EQEDD or EZEDD formats, or a format that allows for field-mapping to one of these formats) for loading to the project database. Although the datasets are anticipated to be loaded primarily by the EDD approach described in Section 6.6, some assumptions and backfilling of required domain values may be required. The data will be organized by owner, study, or project so that they are clearly distinguishable from new data collected by AECOM and Geosyntec. This will also allow easier separation of data based on such things as quality, content, and detection limits. It should be noted that these datasets were developed by others, and the PDI project team is not the owner of the data. Accordingly, the historical dataset will be used “as is” apart from the normalization and standardization performed for organization and to facilitate interpretation.

7.1.2 Managing Historical Geospatial Data

As described in Section 5.2.1, an initial listing of the known and previously used historical geospatial data is included in Appendix E. This list already contains a preliminary interpretation of the historical datasets that are deemed to be inherently geospatial rather than tabular datasets appended to geospatial point data. These data need to be reviewed in detail, consolidated, and standardized, as the naming conventions used for the filenames, feature classes, and attributes are widely variable. The content also needs to be grouped thematically and then loaded to a master geodatabase (either MS SQL Server SDE or file geodatabase [FGDB]) so that there is consistency in the attributes, domain values, naming conventions, geodetic parameters, and presence of sufficient metadata. Once this effort is complete, an updated geodatabase specification can be prepared and added to Appendix E. It should be noted that historical geospatial datasets were developed by others, and the PDI project team is not the owner of the data. Accordingly, the historical geospatial datasets will be used “as is” apart from the cleanup activities proposed above.

7.2 Data Summarization Rules, Exports, and Tracking

This section summarizes the following: quantitative data summarization rules; the process for requesting, extracting, and transmitting historical and new data from the project database or geospatial repository; methods for tracking, managing, and implementing version control of the exported datasets; and the process for submitting final project deliverables to EPA Region 10.

7.2.1 Quantitative Data Summarization and Duplicate Rules

Carbon normalization calculations and analyte summations will be calculated following the rules defined in the Portland Harbor Remedial Investigation/Feasibility Study (RI/FS), Appendix A

(EPA 2016). The calculated values will be stored as separate analyte concentrations in the project database. Deviations from this approach that may result from data review and analysis will be fully documented and reported in any project deliverables or data exports.

All field duplicates, lab replicates, and parent samples will be loaded, clearly linked, and stored in the project database. Exports will clearly discriminate parent from duplicate and replicate samples; calculations related to these samples may use maximum value, average, or include all sample values.

7.2.2 Extracting and Transmitting Data

The universal data request/transmittal form included in Appendix F (Data Request/Transmittal Form) will be used for both tabular and geospatial data requests and transmittals. This form will be paired with the SharePoint List depicted in Figure 12 to track the various data requests and exports. The List format was implemented to allow multiple files to be associated with each request and data exchange. The List will serve as a repository for both the request/transmittal form and the actual datasets themselves which will be uploaded and exchanged by project team members.

To expedite delivery of data to key Geosyntec team members required to quickly review and analyze incoming data, the content will be made available through secure web services (e.g., Enterprise EQuIS and/or ArcGIS Server Online), and/or an expedited bulk export and transmission functionality (data push) with data transmitted in regular, mutually agreed time intervals shortly after it is loaded. Under these circumstances, actual transmittals may not be necessary, but a request will still be created for the purposes of setting permissions, exposing the appropriate data sources, or tracking the regular delivery of expedited content to project team members. This SharePoint implementation will allow tracking of all requests and implement a rudimentary version control process so that the origin and original condition of exchanged data are captured in a centralized location.

The data will be transmitted ("pushed") to Geosyntec via email and a data export/report after the initial dataload, and again after validation qualifiers are applied. Standard QA/QC checks will be part of all data loading activities and will precede all push notifications. AECOM will also have a process for notifying Geosyntec (i.e., via an automated data report) to reconcile other changes/updates made to the data or metadata at times other than during the initial load and application of validation qualifiers. The intent of these procedures is that Geosyntec has an exact copy of the project database at any time they need to perform analyses and generate work products.

As described in other sections of this document, it will be critical to distinguish datasets that are inherently tabular and stored in the project database from pure geospatial datasets, and to identify hybrid tabular/geospatial datasets created by joining tabular exports to geospatial point, line, or

polygon data. For tabular exports, some basic specifications for the output and format are as follows:

- ASCII text flat files or Excel workbooks are specified.
- The first row in the file will contain the field names, which are to consist of uppercase letters, numbers, or underscores (i.e., no special characters).
- The first field/column in the file will be dedicated to the unique identifier (Location ID).
- Text qualifiers, such as single or double quotes, and other special characters will not be included in the content.
- Commas (,), pipes (|), or other suitable delimiters will be used for text file exports.
- The SQL statement used to extract the data will be included with the export.

The specifications for geospatial and hybrid geospatial/tabular dataset exports will be developed as the project progresses and added to future versions of this document. A brief summary of the requirements for derivative geospatial work products is provided in Section 6.3.3.

7.2.3 EPA Tabular Data Submittals

As specified in the EPA Region 10 Data Management Plan (EPA 2017), AECOM and Geosyntec will follow the specifications and requirements of the Scribe.NET data standard, related templates, and valid values in their submittal of final tabular datasets to EPA and ODEQ stakeholders. Unless directed otherwise, AECOM only intends to transmit final data (that has been subjected to all applicable QC checks) to EPA via the Scribe.NET format. Project data management staff will take the appropriate training and secure Scribe.NET accounts to be able to properly upload these datasets to the Scribe.NET portal. It is assumed that only the data collected as part of the new studies will be uploaded to Scribe.NET unless AECOM and Geosyntec are directed to also load any historical datasets identified during the Data Compilation Task (Task 4).

7.2.4 EPA Geospatial Data Submittals

Geospatial deliverables will be submitted to meet the requirements specified in the EPA Region 10 GIS Data Deliverable Guidance (EPA 2013), the National Geospatial Data Policy Procedure for Geospatial Metadata Management (EPA 2010), and the National Geospatial Data Policy (EPA 2008). Prior to submittal to EPA, the geospatial work products will be reviewed following the QA/QC checks and procedures defined in Section 8.2. In addition, AECOM and Geosyntec will submit geospatial deliverables in an ArcGIS v10.5 FGDB format, following the geodetic and metadata requirements specified in Section 5 of this document. This format is consistent with other requirements stipulated in the Statement of Work. In addition, the data will be submitted as a stand-alone ESRI Map Package with the .MXD file, the layer file, and nested source data and directory structures. Anticipated geospatial work products are expected to include bathymetry, acoustic fish tracking data, and any derivative work products such as volumetric calculations,

isopleth contours, and other geospatial analysis feature classes developed during the interpretation and report writing phases of the project.

7.3 Geospatial Data Management

The general process and procedures to be used by AECOM and Geosyntec in geospatial data management are described on this section. These procedures pertain to data that is inherently geospatial and not a product of tabular exports joined to the spatial features described in earlier sections of this document.

7.3.1 Geospatial Data Configuration

AECOM and Geosyntec will initially use FGDBs to manage inherently geospatial datasets for the project. Each firm will maintain separate work areas for geospatial data management while developing work products according to the standards defined in Section 5. After the review, compilation, standardization, and organization of historical datasets described in Section 5.2.1 and 7.2.1, AECOM will create a master repository of the geospatial data to be shared and used collaboratively with Geosyntec. This repository will either be transmitted as a FGDB or a web service configured in an MS SQL Server SDE implementation on the AECOM Online resource. The general organization of the proposed configuration is depicted in Figure 13. The master repository is anticipated to have standardized classifications and thematic content organization, including at a minimum the following subject matter:

- Base layers (hydrography, roads/infrastructure, shorelines)
- RM/thalweg
- Imagery (LiDAR and aerials)
- Bathymetry (new study)
- Topography
- Acoustic fish tracking (new study)

Of particular importance may be the RM designation of the geospatial data, as it is used in many historical references. In order to maintain consistency with previous reports, AECOM and Geosyntec propose to use the RMs generated for the Sediment Profile Imaging Report (Germano & Associates 2014) for RM 1 through RM 11. It appears these RM markers began with the RMs extracted from USACE RM data.

However, the previous RMs do not align with the USACE RMs after RM 11. Therefore, the RM data will be assessed in more detail to determine what should be used from RM 11 to RM 27. These two data sets will be combined, a river centerline (mutually agreed thalweg interpretation) will be generated, and then this route will be calibrated to 0.1 RM.

7.3.2 Geospatial Data Editing

Geospatial data editing operations will be at the discretion of a small group of GIS technicians and/or analysts on the AECOM and Geosyntec team, and the operations will in some part be determined based on the final master repository configuration and whether SQL Server SDE and/or FGDBs are used. Basic rules proposed for geospatial editing operations are as follows:

- Only limited data editing will be performed on third-party datasets. One-time or specialized edits will be performed on copies of FGDBs for local use, but not on the master repository.
- Attributes within the feature classes will be complete to the maximum extent possible, and free-form data fields should not repeat information captured in standard domain values.
- Any significant changes to geospatial data completed by AECOM or Geosyntec will be communicated and shared through the data transfer process described in Section 7.2.1.
- AECOM and Geosyntec will work collaboratively when updating nomenclature, attribution, and domain values. They will also work collaboratively when making other decisions regarding standardization of geospatial content.

7.3.3 Derivative Geospatial Work Products

The scope and content of derivative geospatial work products have not been completely defined and are expected to evolve as historical data are reviewed, as new data are collected, and as data are interpreted as part of the reporting phase of the project. At this time the following basic requirements will be implemented for derivative geospatial work products, which are defined as the output of GIS analysis (volumetric calculations, concentration isopleths, mass loading calculations):

- Geospatial deliverables will be in an ArcGIS v10.5 FGDB format or greater.
- Work products will comply with the geodetic and metadata requirements specified in Section 5.
- The deliverable will be a stand-alone ESRI Map Package with the .MXD file, the layer file, and nested source data and directory structures; or different formats as needed and agreed to by the project team
- New content, which may be used as a source for other analyses or may stand alone as a geospatial dataset, will be imported and added to the master geospatial repository. Such content will be called out in any data transmittal.

7.3.4 Publishing Geospatial Data via ArcGIS Web Services

It is anticipated that some aspects of geospatial data management and the map display requirements for the project will be best addressed through the deployment of a secure, web-based data and map sharing environment. Specifically, internal or draft versions of figures, spatial analysis results, tracking of complete field sampling activities, and maps related to derivative work products will be displayed using the AECOM Online ArcGIS Server platform. The user permissions, layers to display, and other publishing procedures will be documented in Standard Operating Procedures as required to support the project.

8. PROJECT QA/QC PROGRAM

This section summarizes the overall QA/QC Program for the Portland Harbor project referencing specific procedures for managing tabular data, geospatial data, and other aspects and content of project deliverables. In general, the QA/QC Program is intended to comply with ASQ/ANSI E4:2014. The overall QA Manager for the project is Amy Dahl, as referenced in the QAPP (AECOM and Geosyntec 2018) and Table 3 of this document. Data management and GIS staff will also perform specific QC functions as summarized in Table 3 and Section 3. Finally, the QAPP and individual field sampling plans summarize specific QC functions and tasks to be performed by subject matter experts in support of the overall project QA/QC Program. That information is summarized in Table 6.

8.1 Tabular Data

Tabular data and deliverables prepared for the project will undergo a QA/QC review that will be documented by the checklists included in Appendix G (Tabular Data QA/QC Forms). The tabular data QA/QC review will consist of two chronological components, first related to incoming data from field crews, followed by review of laboratory results and third-party validation results. Both of the processes and checklists are closely integrated with the SharePoint objects described earlier in this document, including the New Field Data (Figure 7), Sample Tracking (Figure 8), and Data Loading (Figure 9) libraries. These libraries, as well as the Data Exchange SharePoint list (Figure 12), are critical tools for tracking and managing the quality of project tabular data and deliverables.

8.2 Geospatial Data

Geospatial data and deliverables prepared for the project will undergo a QA/QC review that will be documented by the checklist included in Appendix H (Geospatial Data QA/QC Form). The Data Exchange SharePoint list (Figure 12) tool will be used in conjunction with the checklist for tracking and managing the quality of project geospatial data and deliverables. The checklist review will be performed by AECOM and/or Geosyntec on incoming data or outgoing geospatial work products. The review will also be part of an internal process for checking work products, data exports, and other deliverables. The geospatial deliverables will meet the EPA Region 10

Geographic Information Systems Data Deliverable Guidance (EPA 2013), the National Geospatial Data Policy Procedure for Geospatial Metadata Management (EPA 2010), and the National Geospatial Data Policy (EPA 2008). The checklist includes items related to these EPA requirements, as well as a place for independent reviewers to verify calculations. The independent reviewers will be persons with the appropriate subject matter expertise, but who were not specifically involved in the development of the work product.

8.3 Other Project Content QA/QC

In addition to the QA/QC procedures specified above for tabular and geospatial data, other key quality review procedures related to the project include document control/versioning, laboratory and validator quality control, standardized sample nomenclature, location positional accuracy, field methods, and subject matter expert review of content. These QA/QC procedures are described in the QAPP (AECOM and Geosyntec 2018), the Final Work Plan (Geosyntec 2017), and the various field sampling plans. A listing of relevant documents and sections containing QA/QC methodology and associated subject matter experts responsible for overall QC of content is included on Table 6.

9. REFERENCES

AECOM (AECOM Technical Services). 2017. Project SharePoint User Guide. Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling. Portland Harbor Superfund Site. December.

AECOM and Geosyntec (Geosyntec Consultants, Inc.). 2018. Draft Quality Assurance Project Plan. Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling. Portland Harbor Superfund Site. January.

EPA. (U.S. Environmental Protection Agency). 2008. National Geospatial Data Policy. August 24.

EPA. 2010. National Geospatial Data Policy Procedure for Geospatial Metadata Management. October.

EPA. 2013. U.S. EPA Region 10 Geographic Information Systems (GIS) Data Deliverable Guidance

EPA. 2016. Portland Harbor RI/FS, Final Feasibility Study, Portland Oregon. United States Environmental Protection Agency Region 10, Seattle, Washington. June.

EPA. 2017. DRAFT Program Data Management Plan Portland Harbor Pre-Remedial Design Investigation – Portland Harbor Superfund Site, U.S. Environmental Protection Agency Region 10, December 2017.

Geosyntec. 2017. Final Work Plan. Portland Harbor Pre-Remedial Design Investigation Studies, Portland Harbor Superfund Site, Portland, Oregon. Prepared for the Pre-RD AOC Group for submittal to EPA Region 10 (attached to the final Statement of Work). 19 December.

Germano & Associates. 2014. Sediment Profile Imaging Report, Characterization of the Lower Willamette River with Sediment Profile Imaging: Changes in Space and Time. June 2014.

TABLES

Table 1. Primary Software/Hardware

Description
Geographic Information Systems (GIS)
ESRI ArcGIS® Advanced, Standard 10.5.1
AECOM Online ArcGIS Server
Global Positioning Systems (GPS) Hardware
ESRI ArcPad10.2, Trimble TerraSync 5.4.1 (Conventional)
ESRI Collector, Trimble Terraflex (WiFi/Mobile)
Data Management/Database
EQuIS Professional V6.6.0/Enterprise 6 Edition
Microsoft SQL Server 2013/SQL Server Management Studio
AECOM EDD Format V2.5.3 (Internal Use)
Scribe v3.10 (United States EPA Submittals)
Project Collaboration
SharePoint Server 2013
Microsoft Office 2010

Table 2. Network/Portal Mappings

Primary Purpose	Pathway/URL
Primary Project Directory	(b) (6)
Geospatial Base Layer Data	
Project SharePoint	

Table 3. Data Manager Key Roles and Responsibilities

Role	Person(s)	Role Responsibilities	QC Responsibilities
Data Manager	Mike Surowiec (AECOM)	Data Manager responsible for development and implementation of standards, procedures, and processes to produce high-quality tabular and geospatial data. Responsible for coordination with the EPA, single point-of-contact with EPA's Scribe.NET coordinator, and Oregon Department of Environmental Quality regarding all data matters, meetings, etc. Coordination with AECOM Online resources/personnel.	Oversight and implementation of overall project tabular and geospatial QA/QC measures and standards.
Deputy Data Manager	Jamey Rosen (Geosyntec)	Deputy Data Manager responsible for coordination and implementation of all Geosyntec tabular and geospatial management standards, procedures, and processes to produce high-quality tabular and geospatial data.	Oversight and implementation of tabular and geospatial QA/QC measures and standards primarily for data analysis tasks.
Project QA/QC Manager	Amy Dahl	Oversee all aspects of project QA and QC, including primarily field and laboratory audits, review of field and laboratory reports, assessment of final data usability, limitations and completeness, review of field and laboratory non-conformance and corrective actions, and data validation oversight.	Overall lead for project QA/QC as defined under Role Responsibilities.
Data Analyst	Michelle McClelland Jody Lovell Ian Sahlberg Josie Smith Denise Yee	Responsible for monitoring and reviewing incoming field data on the project SharePoint site, preparing EQuIS EDDs and loading to the project database, archiving raw data files to the network, preparing and uploading EDDs to Scribe.NET, and extracting/transmitting tabular data from the project database to team members.	Complete the forms and tasks defined in the Field Data Submittal QA/QC Checklist and the Lab Data Submittal QA/QC Checklist.
GIS Staff	Cary Kindberg Mason Struna Mike Inman	GIS staff responsible for reviewing field data, spatial post-processing, and management of historical and new geospatial deliverables. Also responsible for GIS analysis, and preparation of geospatial deliverables to meet project requirements.	Complete the forms and tasks defined in the GIS Data Detail Check Form.
Field GPS Data Coordinator	Cary Kindberg	Field geospatial and GPS data coordinator responsible for supporting GPS data collection activities, troubleshooting. GPS issues, post-processing GPS data, verifying ground	Post-process field crew GPS data, verify positional accuracy of new location/station information, perform

Role	Person(s)	Role Responsibilities	QC Responsibilities
		control, reconciling positional accuracy issues.	QA/QC checks of subcontractor GPS data.
Incoming Field Data Coordinator	Field Technicians (to be determined)	Field data management staff responsible for managing incoming data from field crews, transcribing data, and uploading data from field office to project SharePoint site.	Perform the field office-based tasks defined in the Field Data Submittal QA/QC Checklist.
Project Chemist(s)	Karen Mixon Jen Garner	Review third-party data validation results for all laboratory analyses and apply validation qualifiers to project DVA workbook.	Perform QA/QC of validation results and submit DVA workbooks to Data Analysts for loading to project database.
Project SharePoint Content Manager	Denyne McDonald Sasha Allen	Staff responsible for developing/editing SharePoint Libraries/Lists, granting access and managing user accounts, troubleshooting access issues, and interfacing with AECOM Online infrastructure personnel.	Maintain integrity of SharePoint libraries and list which are integral to overall tabular and geospatial data quality.
Data Users	Project Team Members, Pre-Remedial Design Group Members, Stakeholders	Any data consumer using AECOM Online resources, responsible for requesting and using data according to its intended purpose and quality, and per project privilege and confidentiality requirements.	Review loaded and distributed data and report any anomalies and potential corrections to Data Manager

Acronyms:

DVA = Data Validation Assistant; EDD = electronic data deliverable; EPA = U.S. Environmental Protection Agency; GIS = geographic information systems; GPS = global positioning system; QA/QC = quality assurance/quality control

Table 4. Location Nomenclature Codes

Study / Sampling Initiative	Location IDs
Baseline Sediment Grabs	B001 to B429
SMA Sediment Grabs & Cores	S001 to S168
Surface Water Transects	T01 to T07
Sediment Traps (points along transects)	T06a, T06b T07a, T07b
Porewater Stations (if co-located with Sediment Grabs and Cores)	B001 to B428 S001 to S168
Porewater Stations (if separate/unique)	S190 and higher
SMB/Random Fish Locations	SMB001 to SMB120
Acoustic Receiver Location	A01 to A34
SMB Study/Radio Tag	SMBT01 to SMBT40

Note:
Refer to Quality Assurance Project Plan for complete sample nomenclature.

Acronyms:
ID = identification; SMA = sediment management area; SMB = smallmouth bass

Table 5. Field Forms Minimum Data Fields

Data Type	Minimum Data Field Requirements
Location	Unique Location ID, Location Type (River, Shoreline, etc.) Coordinate System, Datum, X-Y Location Coordinates, Date/Time, Recorded By
Sample	Sample ID (unique), Sample Type (e.g., normal, dup, etc.), Sample Method Code (e.g., continuous core), Sample Medium and/or Matrix Code (e.g., Sediment, Tissue, etc.), Depth, Date/Time, Recorded By
Biological	Unique Specimen ID, Species, Measurement Type (length, weight, etc.), Parameters Values, Unit of Measure (UOM), Date/Time, Recorded By
Field Measurements	Unique Measurement ID, Measurement Type (pH, DO, etc.), Parameters Values, UOM, Date/Time, Recorded By
Cores/Lithology	Unique Location ID, Depth Interval/UOM, Blow Counts, Sediment Description, Unified Soil Classification System (USCS) Code (or equivalent soil/sediment system code), Date/Time, Recorded By

Table 6. Other QA/QC Documentation/Resources

Document/Study Name	Relevant QC Section(s)	Subject Matter Expert
Quality Assurance Project Plan	*Section 4.2.1:* Sample Nomenclature Scheme; *Section 4.6*: Quality Control; *Section 4.7:* Instrument/Equipment Quality Control; *Section 5:* Data Quality Assessment; *Section 6.3*: Data Verification and Validation; *Table 4*: Sample Nomenclature	Jenny Pretare Anne Fitzpatrick Amy Dahl
Bathymetry Survey Field Sampling Plan	*Appendix A*: David Evans & Associates, Hydrographic Survey Work and Quality Control Plan, Portland Harbor PDI Studies	Jonathan L, Dasler, PE, PLS, CH
Surface Sediment Field Sampling Plan	*Section 2.2*: Sample Nomenclature; *Section 4.2:* Station Position and Vertical Control; *Section 4.9:* Field Quality Control; *Section 6*: Data Management and Reporting; *Tables 2 - 4*: Station Location Coordinates, Target Depth, and Identification Schemes; *Appendix A*: Field Forms and Checklists	Anne Fitzpatrick
Subsurface Sediment Coring Field Sampling Plan	*Section 2.2.3*: Sample Nomenclature; *Section 4.2:* Station Position and Vertical Control; *Section 4.9:* Field Quality Control; *Section 6*: Data Management and Reporting; *Table 3:* Station Identification Scheme, Mudline Elevations, and Location Coordinates; *Appendix A*: Field Forms and Checklists	Anne Fitzpatrick
Surface Water and Sediment Trap Field Sampling Plan	*Section 2.3*: Sample Nomenclature; *Section 4.2:* Station Position and Vertical Control; *Section 4.8:* Field Quality Control; *Section 6*: Data Management and Reporting; *Table 2*: Station Location Coordinates, Target Depth, and Identification Scheme; *Appendix A*: Field Forms and Checklists	Kristen Durocher
Fish Tissue Field Sampling Plan	*Section 4.2:* Station Position and Navigation; *Section 6*: Data Management and Reporting; *Table 1*: Sample Identification and Coordinates; *Appendix B*: Field Forms	Betsy Ruffle
Acoustic Fish Tracking Study Field Sampling Plan	*Section 2.5*: Sample Nomenclature; *Section 4.3*: Station Positioning /Navigation; *Section 5*: Data Management and Reporting; *Table 1:* Coordinates of Proposed Receiver Locations; *Appendix B*: Field Forms and Checklists	Betsy Ruffle
Porewater Field Sampling Plan	*Section 2.4.2* Sample Nomenclature; *Section 4.2:* Station Position and Vertical Control; *Section 4.8:* Field Quality Control; *Section 6*: Data Management and Reporting; *Table 1*: Station Location Coordinates and Identification Scheme; *Appendix A*: Equipment Checklist and Field Forms	Nicky Moody

FIGURES

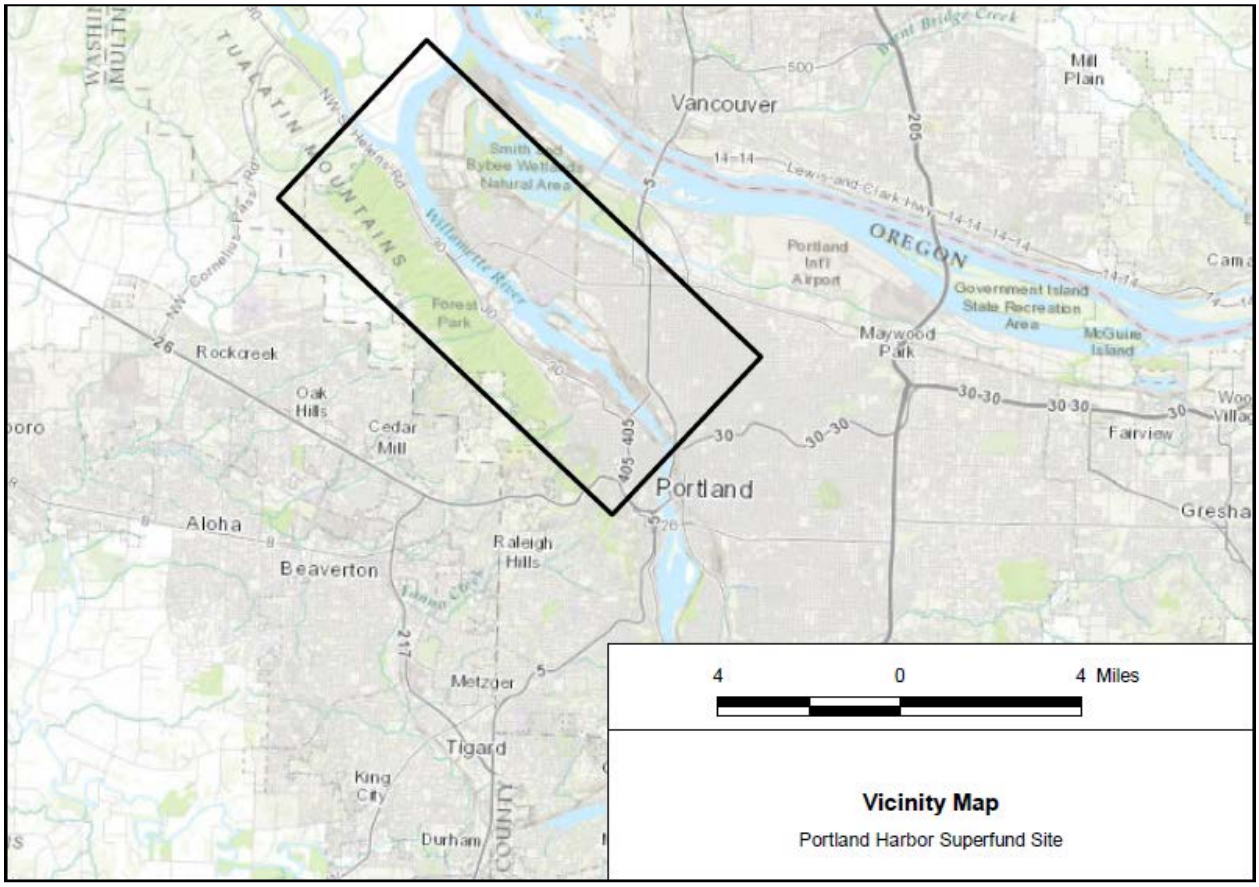


Figure 1. Project Location

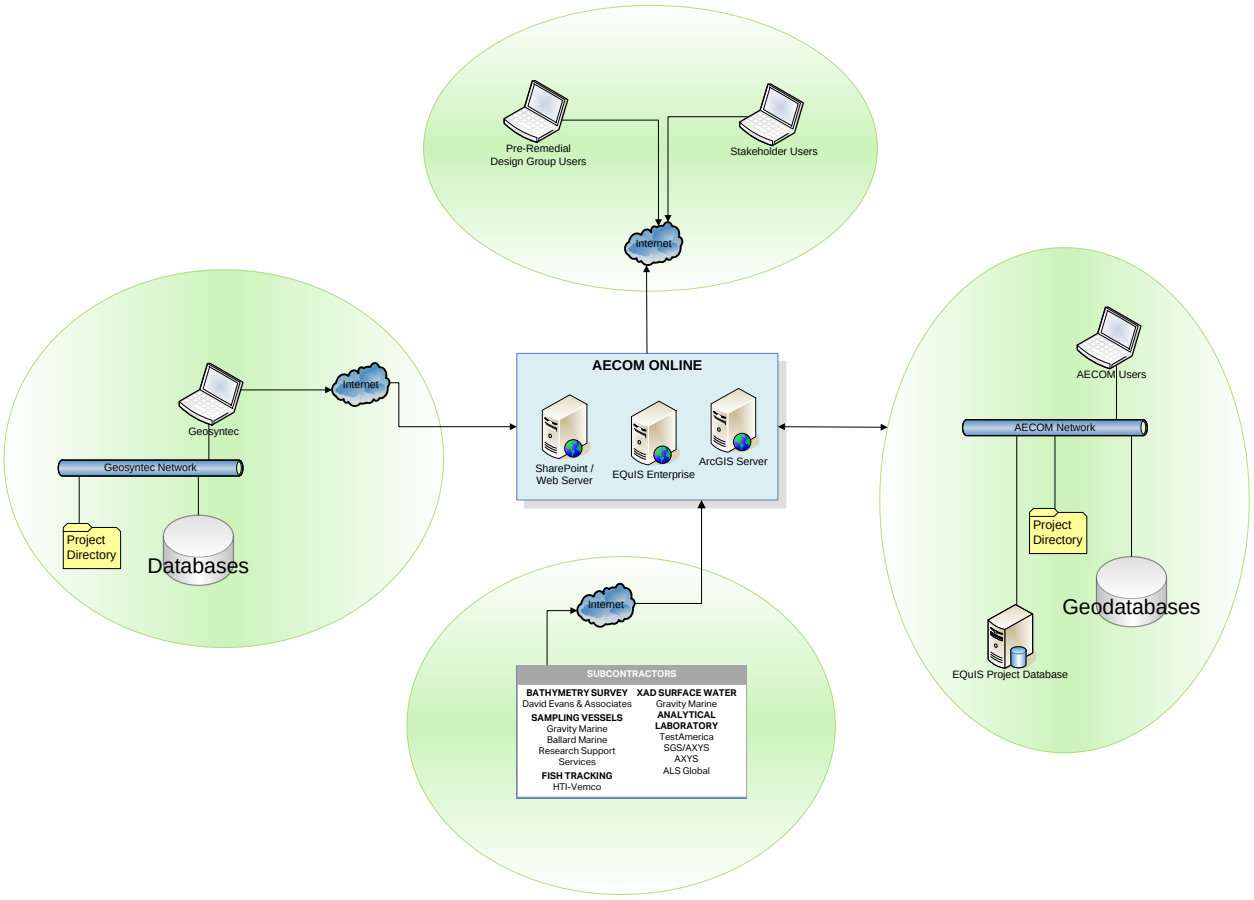


Figure 2. Network Diagram

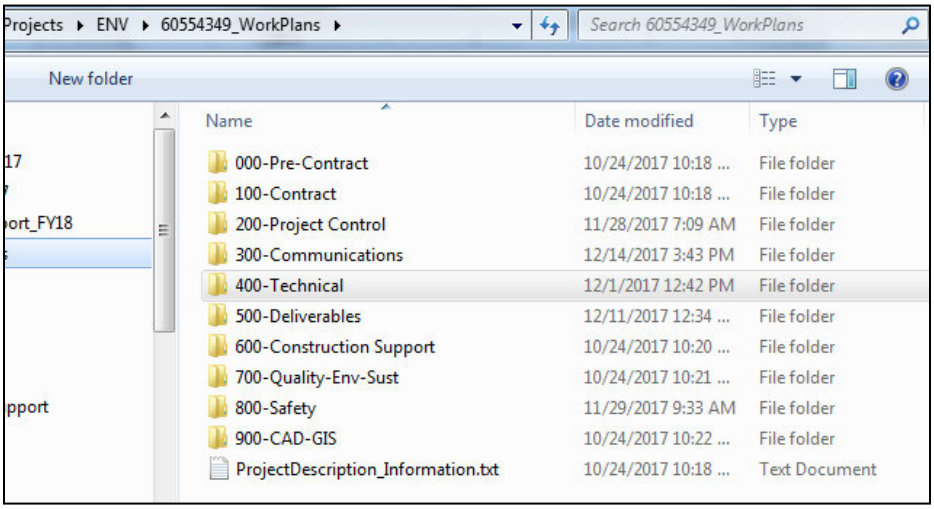


Figure 3. Project Directory Root

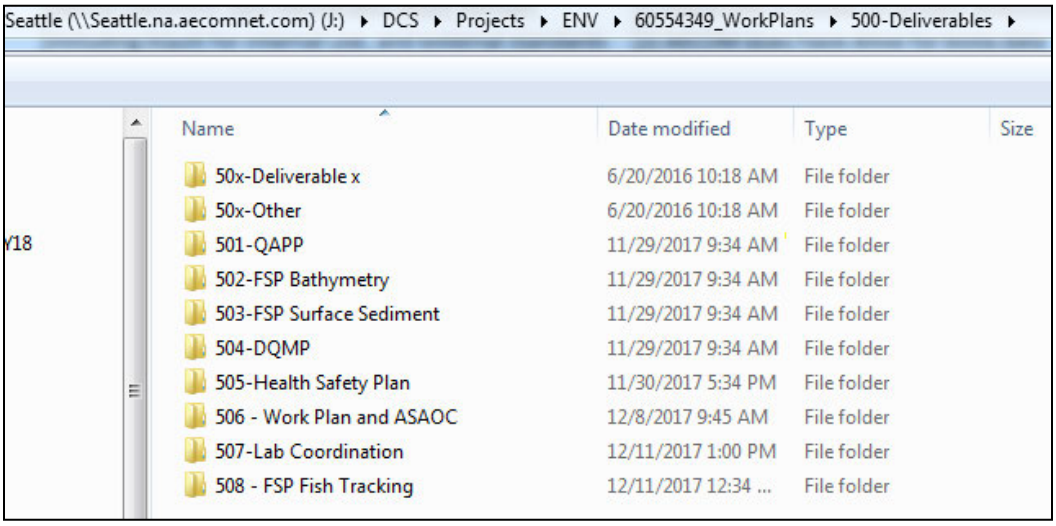


Figure 4. Work Plan Subdirectory

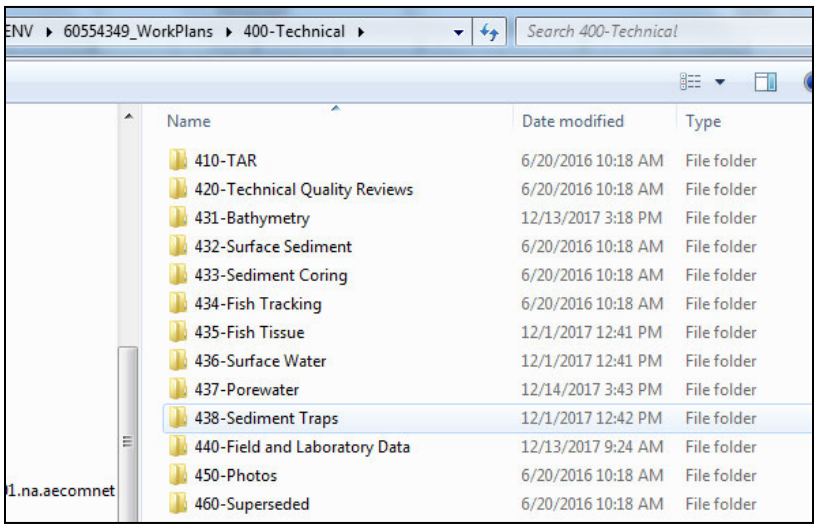


Figure 5. Primary Field Data Subdirectory

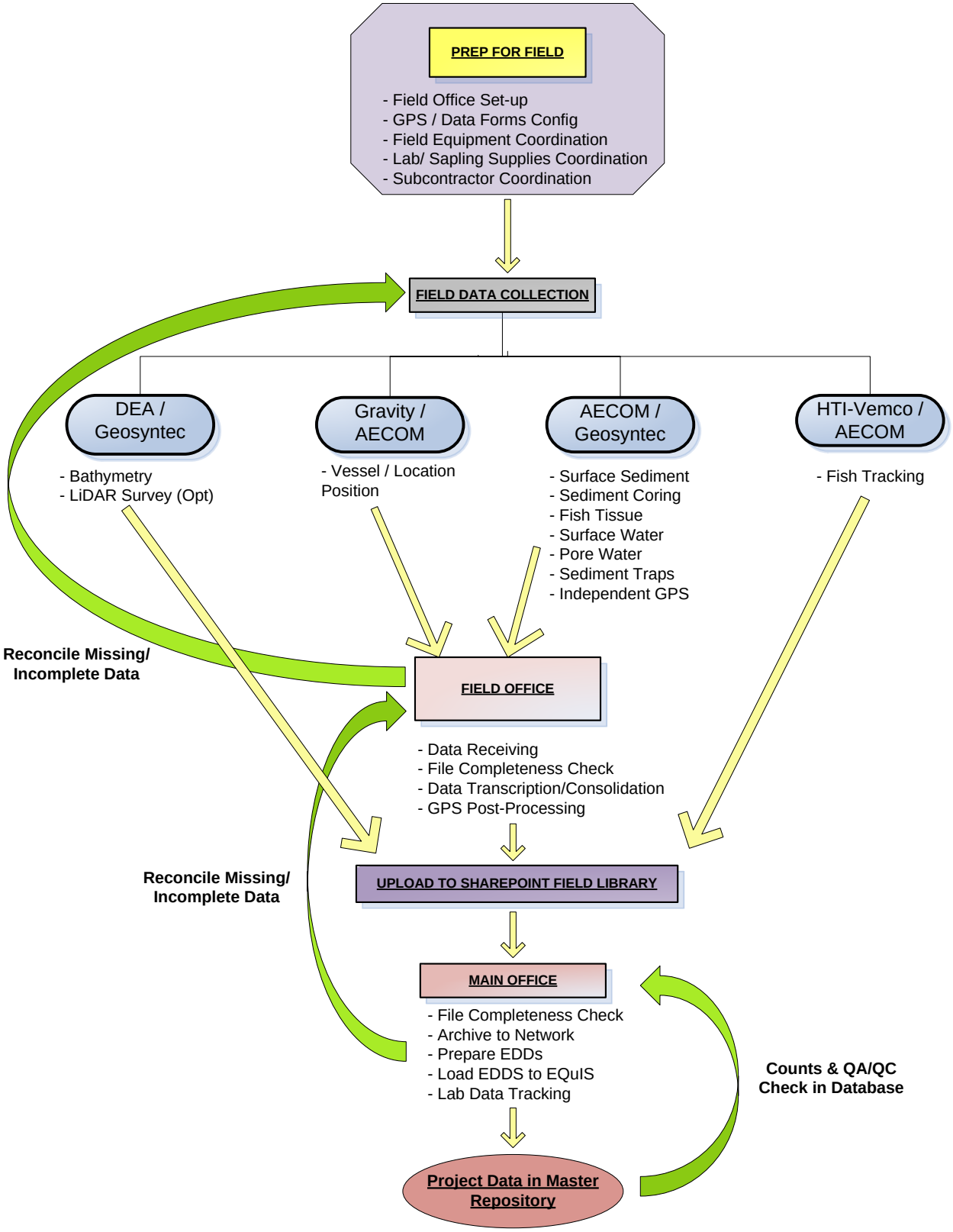


Figure 6. Active Field Data Collection Workflow Diagram

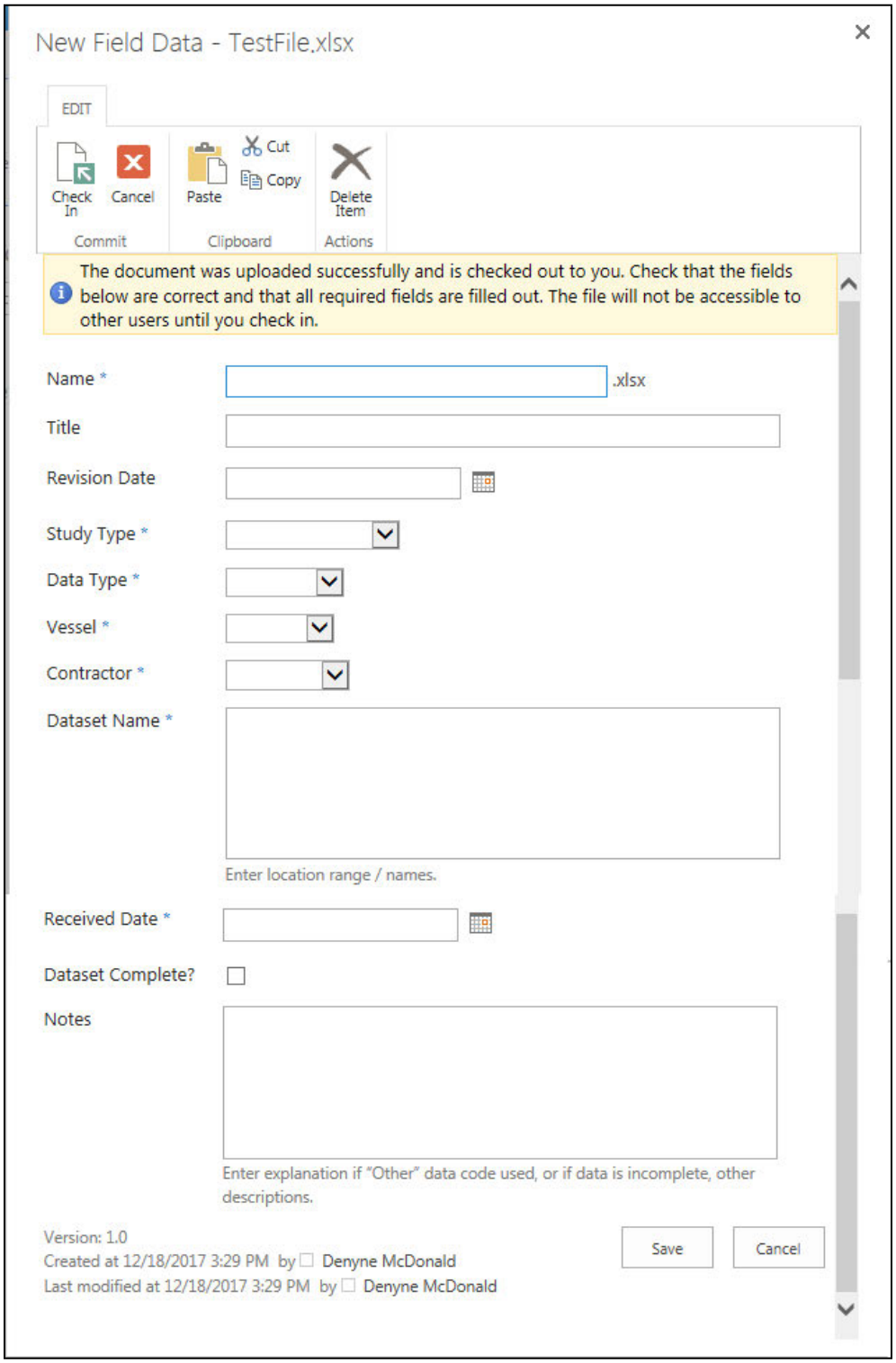


Figure 7. New Field Data Document Metadata Form

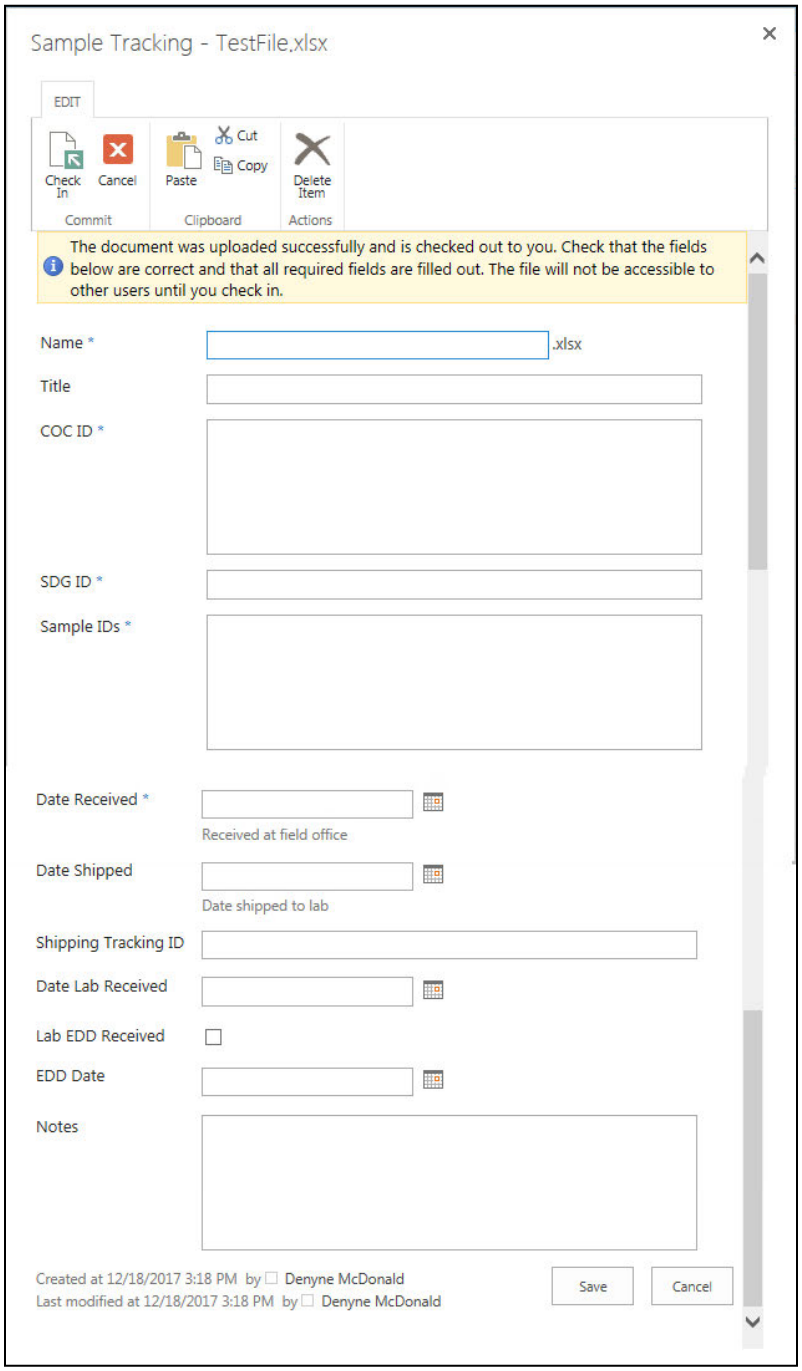


Figure 8. Sample Tracking Library

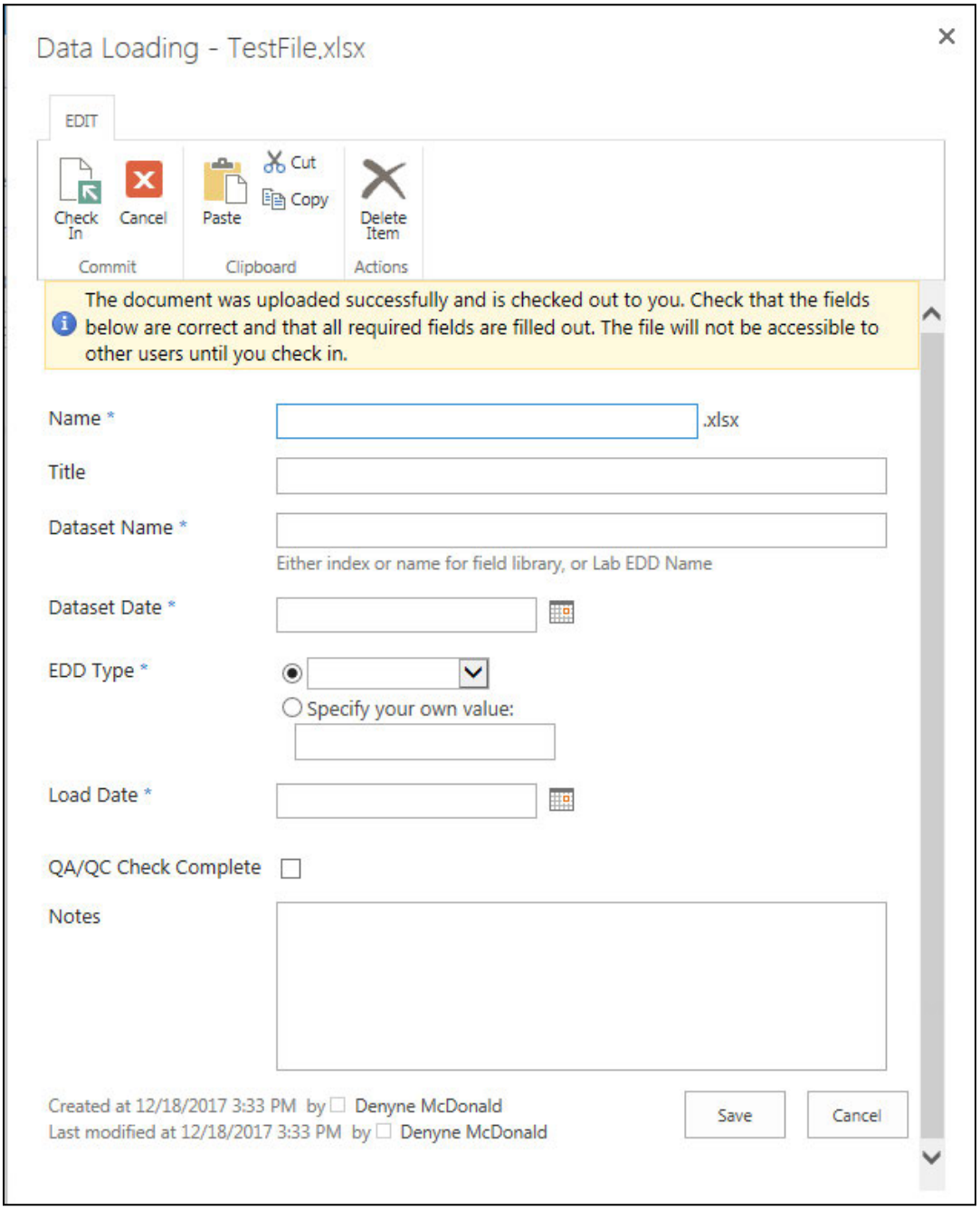


Figure 9. Data Loading Library

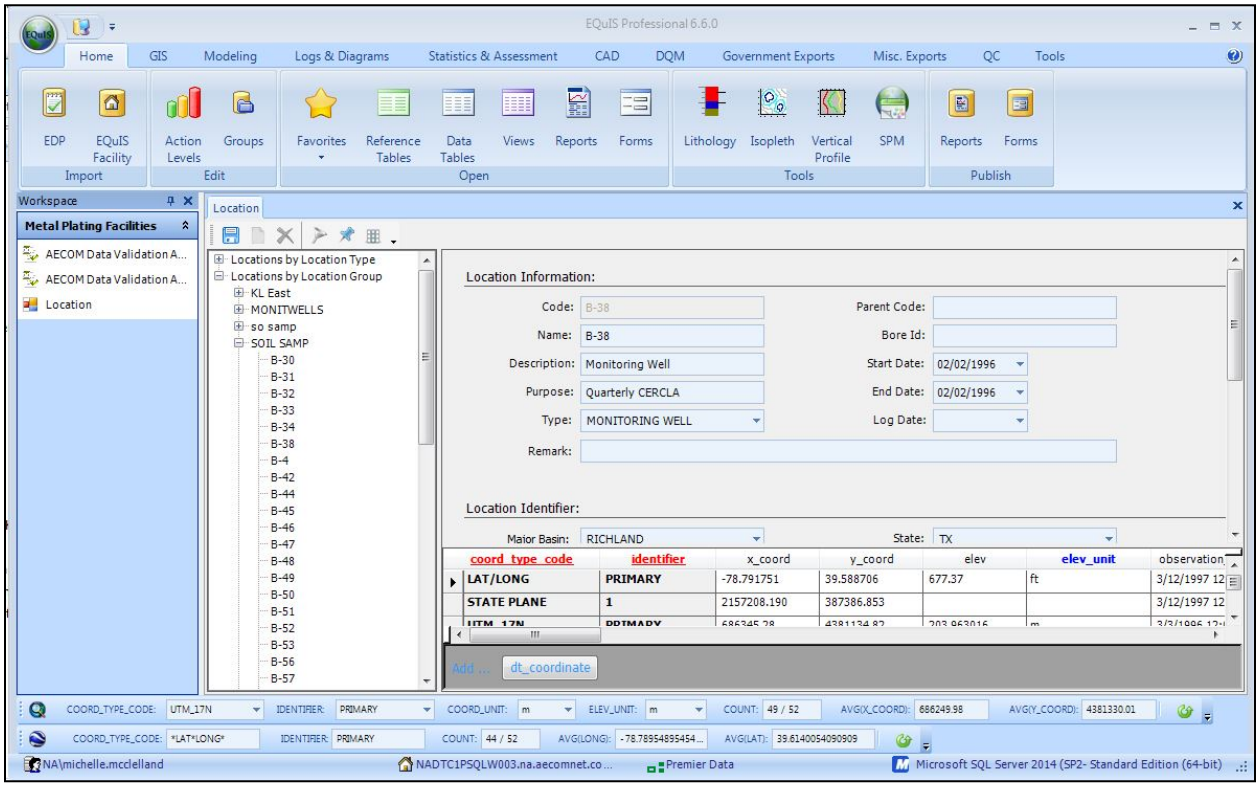


Figure 10. EQuIS Professional User Interface

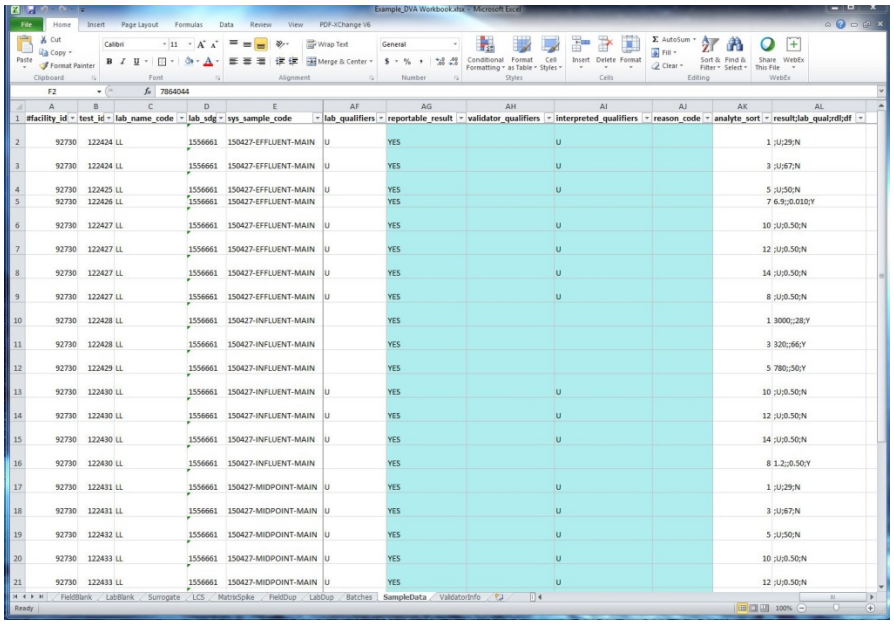


Figure 11. Validator Workbook Example

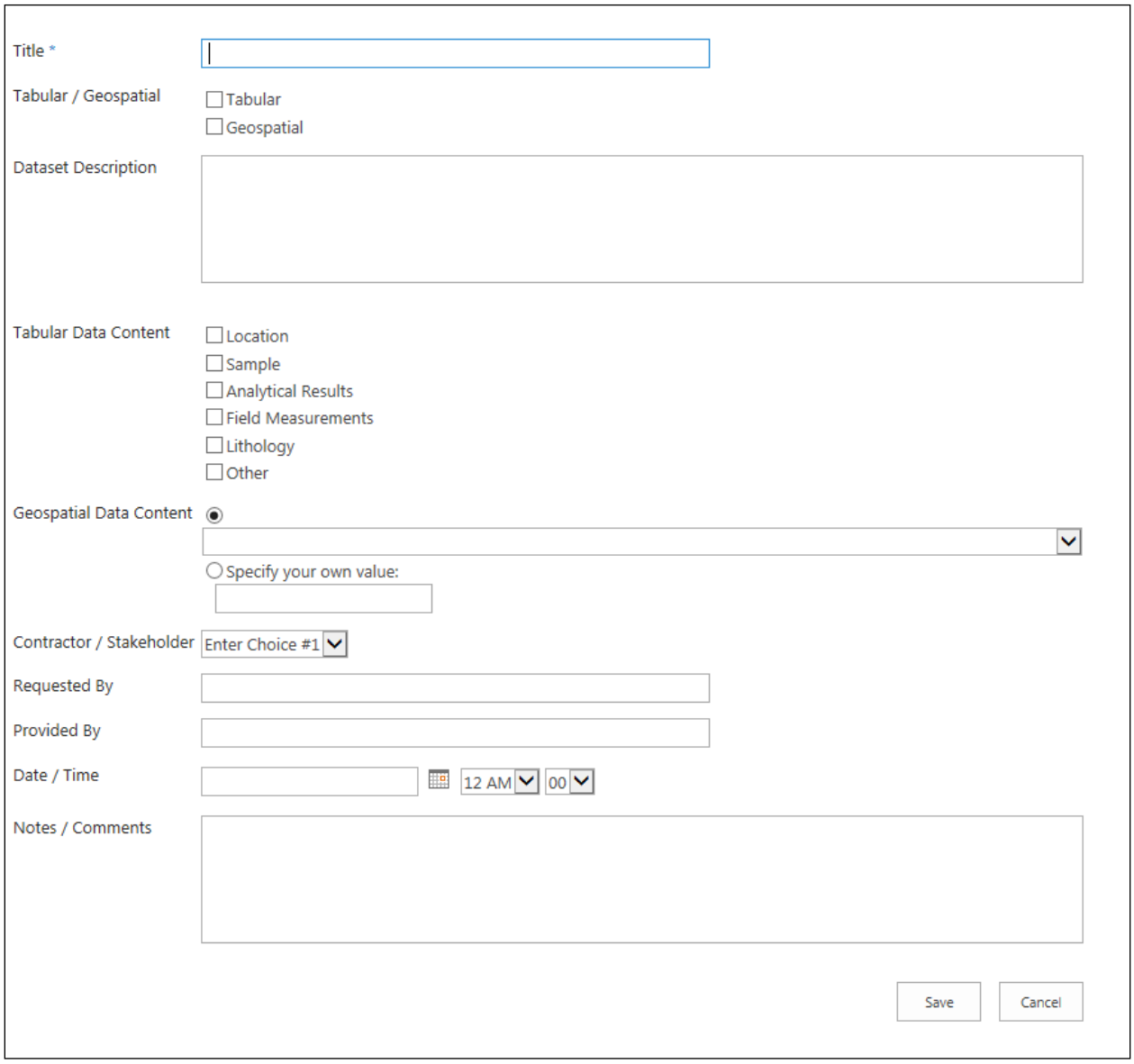


Figure 12. Data Exchange SharePoint List

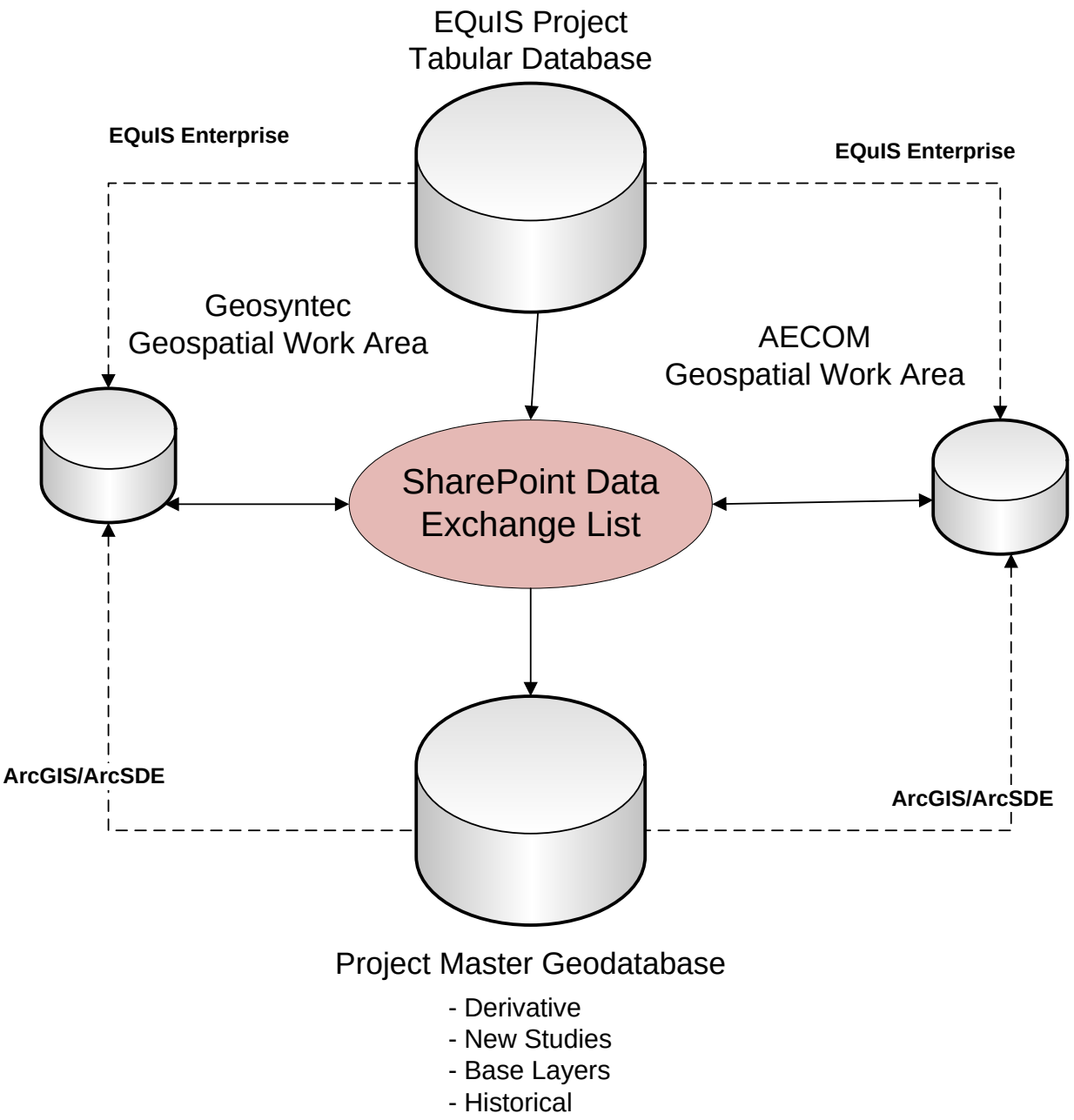


Figure 13. Data Exchange Configuration

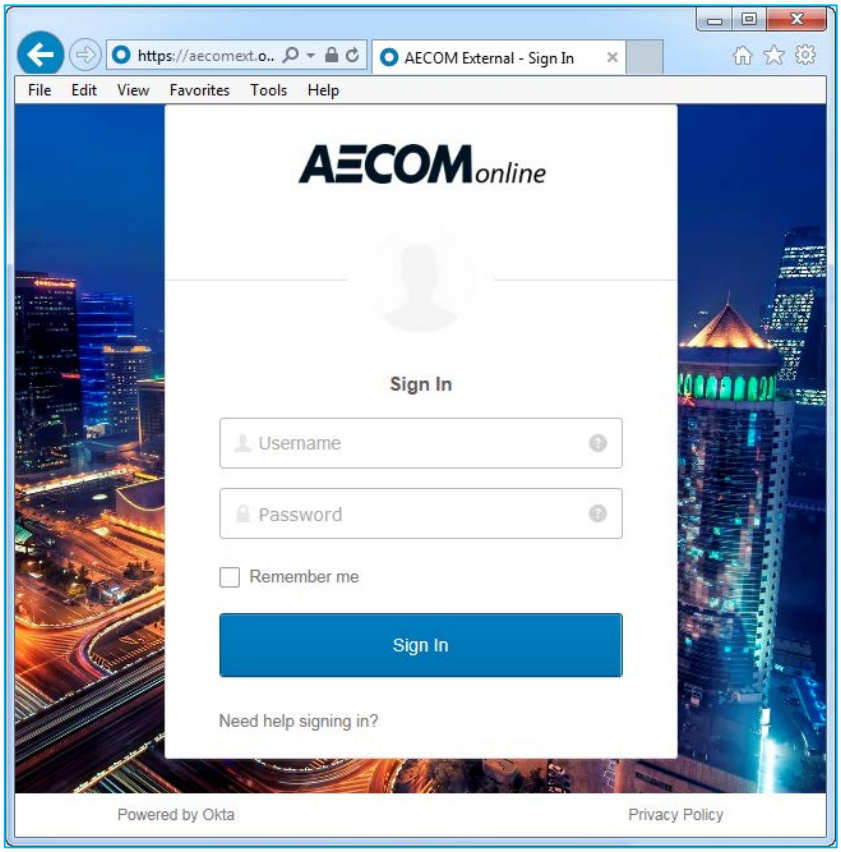
APPENDIX A

SharePoint Portal Access Instructions

Log in to Aecomext Okta

From the web browser, type in the URL provided (https://aecomext.okta.com)

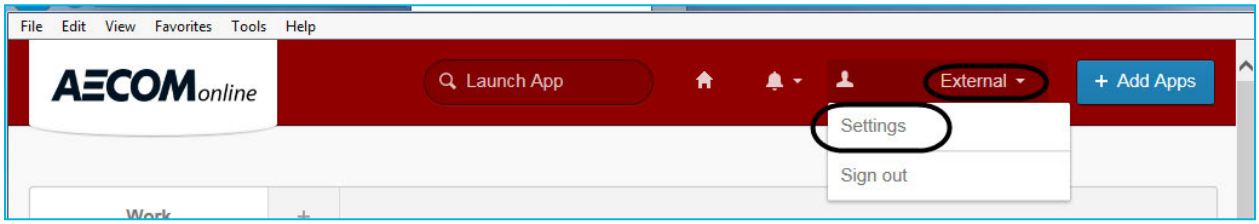
1. Type in the **Username** (this can be found on your activation welcome email)



2. Type in your **Password** (if you forgot your password click the “Need help signing in? link below the “Sign In” button and follow the instructions at the end of this document.)
3. To save the username for easy access, click on the **Remember me** checkbox (this will not save the password, only the username)
4. Click on the **Sign In** button

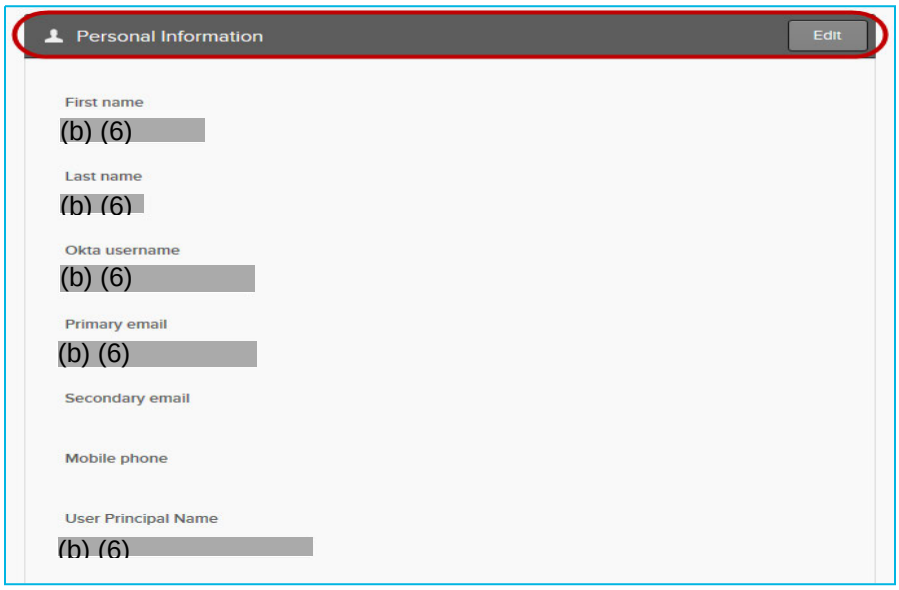
Set up Account / Edit Account

For first time users, the system will ask you to set up your account. Once this is established, it can be edited from the **Settings** on username dropdown.

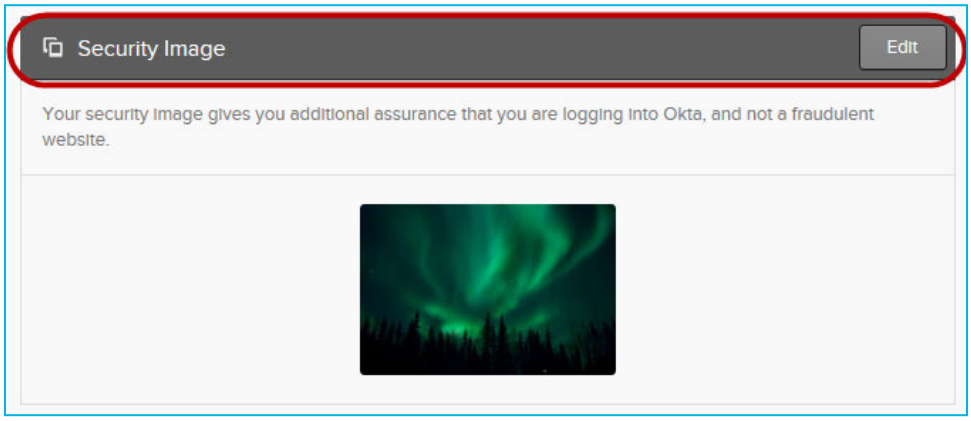


From the **Settings** page, you can set-up/change the following:

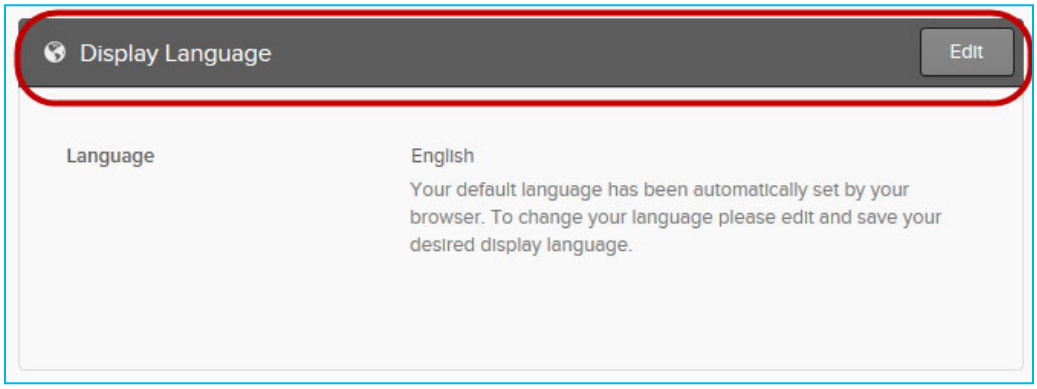
- **Personal Information** - Name and email



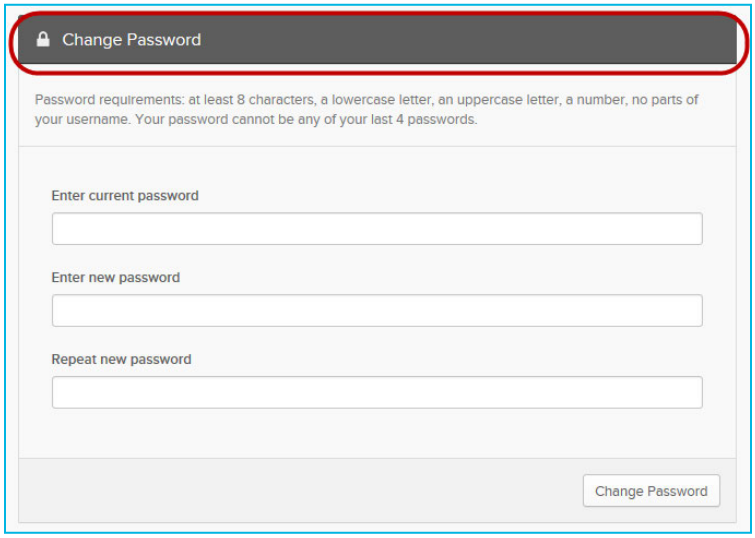
- **Security Image** - Pick an image that will show in the **Sign In** window to validate you are logging in to your Okta site.



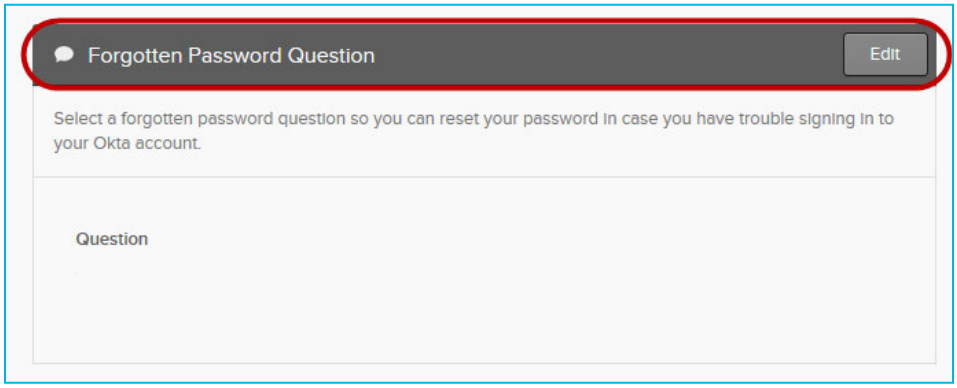
- **Display Language** – Pick the desired display language.



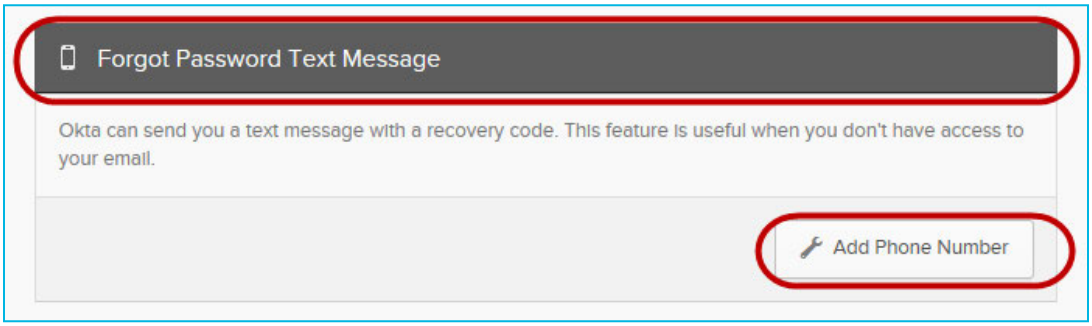
- **Change Password** – Enter the current and new password, and click on the **Change Password** button to save this information.



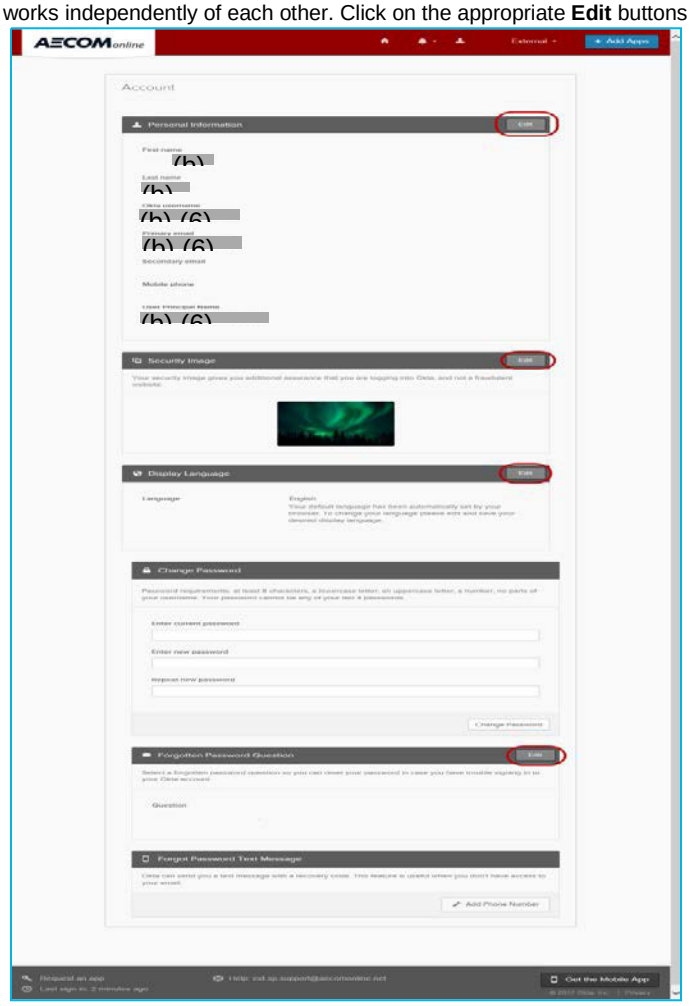
- **Forgot Password Question** – This will be used to reset a password if it is forgotten.



- **Forgot Password Text Message** – This will be used to receive a forgotten password text message.



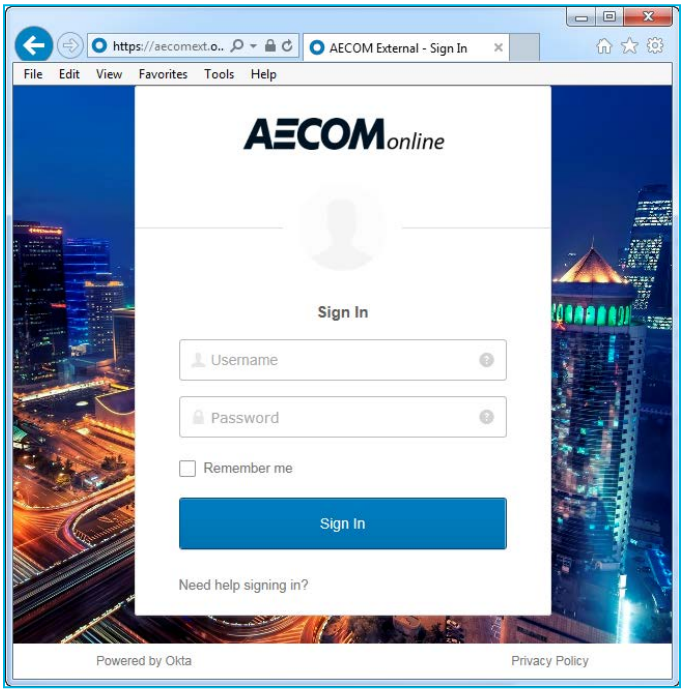
Note: Each of these sections works independently of each other. Click on the appropriate **Edit** buttons to access each area.



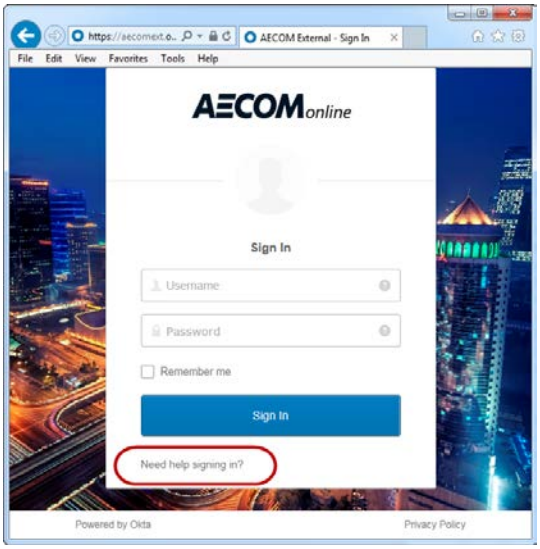
Forgotten Password Reset in Okta

For users with an existing Okta account that have forgotten their password, follow the steps below.

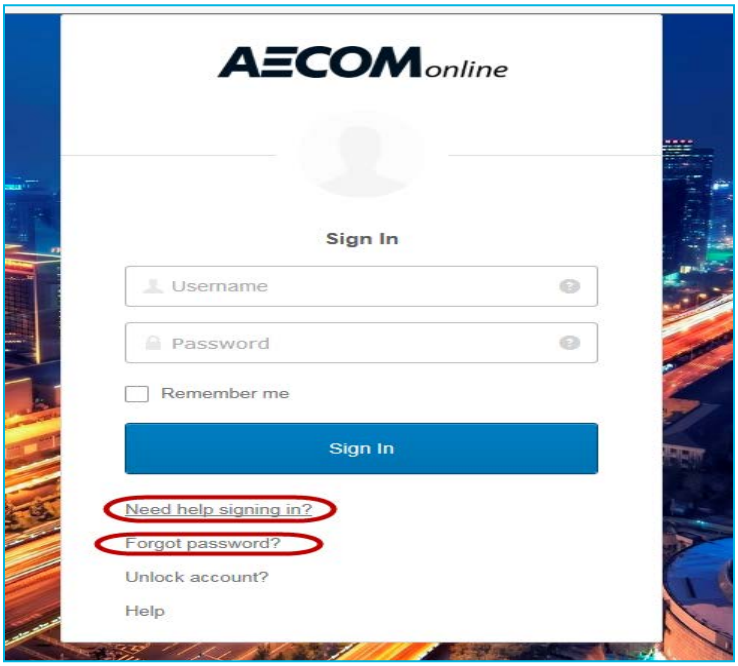
1. Navigate directly to the Okta website (https://aecomext.okta.com).



2. Enter your full email address in the Username field.
3. Click the “Need help signing in?” link just below the “Sign In” button.



4. Click the “Forgot Password?” option.



5. Follow the on-screen prompts to complete the process.
6. An email will be sent to you containing a link to allow you to reset your password via Okta.

A password reset request was made for your Okta account. If you did not make this request, please contact your system administrator immediately.

Click this link to reset the password for your username, (b) (6)

https://aecomext.okta.com/signin/reset-password/At8WxT-DzdPhxSIPwYzj

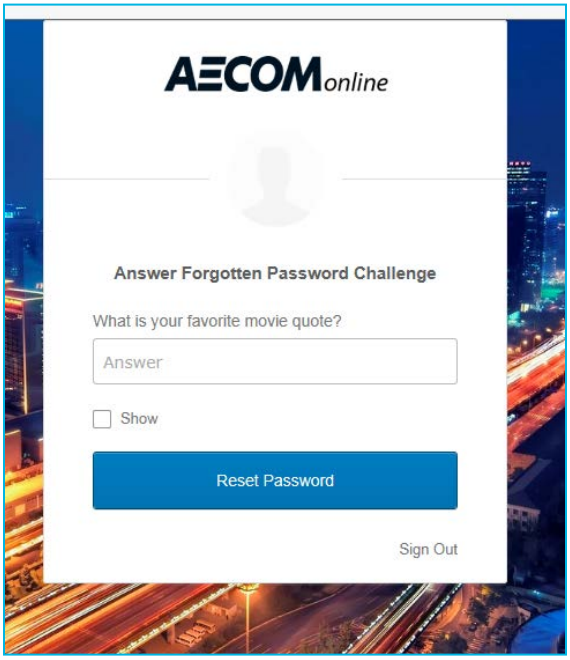
This link expires in 29 days.

If you experience difficulties accessing your account, send a help request to your administrator:

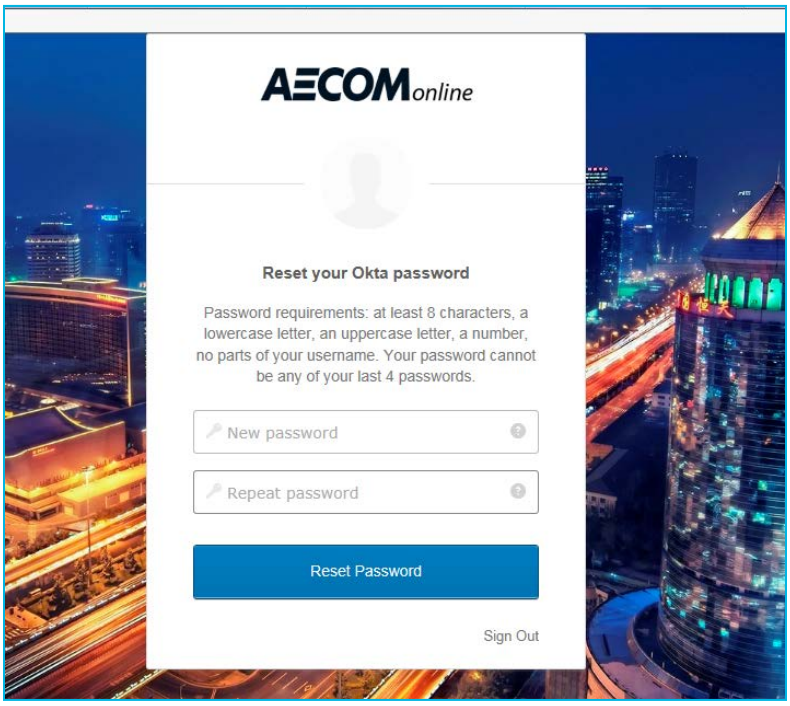
Go to your Sign-in Help page. Then click the Request help link.

This is an automatically generated message by Okta. Replies are not monitored or answered.

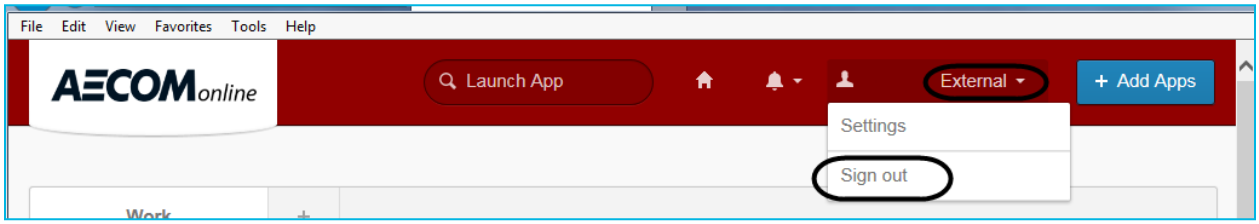
7. From the Okta website accessed via the email link, provide the requested information and click the “Reset Password” button.



8. Using the password criteria provided on the screen, create your new password and click the “Reset Password” button.



9. You will then be logged into the Okta website. At this point you can exit the Okta website and login to the SharePoint site with your new password.


File
Edit
View
Favorites
Tools
Help
AECOM online
Launch App
External
+ Add Apps
Settings
Sign out

APPENDIX B

Project Database: EQuIS Specifications

EDD Overview

EDD Name	EDD Description
Facility EDD	Facility, location and coordinate related data.
Geology EDD	Well, water level, geological sampling and lithology related data.
AECOM EDD 2.5.3	Field samples, laboratory samples and analytical results data.
LoadDVA EDD	Analytical data qualification and validation.
EQEDD EDD	For loading historical data.

Facility EDD:

Facility, location and coordinate related data.

dt_facility

Field Name	Data Type	Required	Comment
facility_code	Text(20)	Y	The user-defined code of a specific facility, for example, "Springfield".
prp_agency	Text(20)		The regulated agency which oversees the potential responsible party (PRP).
data_provider	Text(20)		The person responsible for providing data about the facility.
facility_type	Text(20)		The facility type, for example, "UST" for an Underground Storage Tank facility.
program_code	Text(20)		The state or federal regulated program which the facility falls under, for example, "RCRA" or "SUPERFUND".
facility_name	Text(60)		The common name for the facility.
address_1	Text(40)		Contains the street address of the facility.
address_2	Text(40)		Contains the second line of the street address of the facility.
city	Text(30)		The city where facility is located.
county	Text(50)		The county where the facility resides.
state	Text(10)		The state where the facility is located.
country	Text(50)		The country where the facility resides.
postal_code	Text(30)		The postal code where the facility resides.
coord_type_code	Text(20)		The facility-specific code which refers to a specific coordinate type, for example, "LATLONG" for a latitude/longitude coordinate system.
phone_number	Text(30)		The phone number pertaining to a specific facility.
alt_phone_number	Text(30)		The alternate or secondary phone number pertaining to a specific facility.
fax_number	Text(30)		The fax number pertaining to a specific facility.
email_address	Text(100)		The email address pertaining to a specific facility.
remark	Text(2000)		Any additional comments or remarks regarding the facility.
client	Text(50)		The client responsible for a specific facility.
identifier	Text(20)		The facility-specific coordinate identifier, for example, "PRIMARY".
sys_region_code	Text(20)		Regional identifier of a specific facility.
project_manager	Text(50)		The person responsible for managing a project which pertains to a specific facility.
start_date	DateTime		The date/time the faciilty was established.
coord_unit	Text(15)		The unit of measurement of the coordinate type.
elev_unit	Text(15)		The unit of measurement of the elevation of a facility.
x_min	Numeric		x_min
x_max	Numeric		x_max
y_min	Numeric		y_min
y_max	Numeric		y_max
z_min	Numeric		z_min
z_max	Numeric		z_max
custom_field_1	Text(255)		Custom field.
custom_field_2	Text(255)		Custom field.
custom_field_3	Text(255)		Custom field.
custom_field_4	Text(255)		Custom field.
custom_field_5	Text(255)		Custom field.

dt_facility_parameter

Field Name	Data Type	Required	Comment
facility_code	Text(20)	Y	The user-defined code of a specific facility, for example, "Springfield".
parameter_code	Text(40)	Y	Code used to identify parameter being measured, observed, or attribute being described
parameter_value	Text(255)		Value of parameter
parameter_unit	Text(15)		Parameter unit
measurement_date	DateTime		Date of parameter measurement or observation
measurement_method	Text(20)		Measurement method
task_code	Text(40)		Code used to identify the task under which the field sample was taken.
remark	Text(2000)		Remark

dt_location

Field Name	Data Type	Required	Comment
facility_code	Text(20)	Y	The user-defined code of a specific facility, for example, "Springfield".
sys_loc_code	Text(20)	Y	Location identifier of sample collection, soil boring, or well installation. Examples of possible sys_loc_code are MW-01, A-1, SB6, etc.
loc_name	Text(40)		The descriptive name of a specific location.
data_provider	Text(20)		The company that provides the data for a specific location, with lookup values from RT_COMPANY.
subfacility_code	Text(20)		The identifying code that describes the subfacility where a specific location is located.
loc_desc	Text(255)		A general description of the location type.
loc_type	Text(20)		The type of specific location, for example "Monitoring Well", with lookup values from RT_LOCATION_TYPE.
loc_purpose	Text(20)		The purpose or reason the location was installed, for example "Quarterly Monitoring."
loc_type_2	Text(30)		A secondary field for the type of location.
loc_major_basin	Text(20)		The major geographical basin in which a location is located, with lookup values from RT_BASIN.
within_facility_yn	Text(1)		Denotes whether the location is located within the facility (Y) or not (N).
loc_county_code	Text(30)		The identifying code that describes the county in which a location is located.
loc_district_code	Text(20)		The identifying code that describes the district in which a location is located.
loc_state_code	Text(10)		The identifying code which describes the state in which a location is located.
loc_minor_basin	Text(20)		The minor or subbasin in which the location is located.
custom_field_1	Text(255)		Custom field.
stream_code	Text(30)		The identifying code that describes the stream nearest to a specific location, with lookup values from RT_STREAM.
custom_field_2	Text(255)		Custom field.
stream_mile	Numeric		This indicates where the river or stream (stream_code) for the station exists.
custom_field_3	Text(255)		Custom field.
custom_field_4	Text(255)		Custom field.
phase_code	Text(10)		The identifying code that describes the phase of remediation when the location was installed.
custom_field_5	Text(255)		Custom field.
remark_1	Text(2000)		Any additional remarks regarding a specific location.
bore_id	Text(30)		The identifier of the drilled borehole.
remark_2	Text(2000)		Any additional remarks regarding a specific location.
start_date	DateTime		The date that location installation began.
end_date	DateTime		The date the location installation was completed.
drilling_method	Text(40)		The method used to drill a specific location, for example "Rotary."
geologist	Text(50)		The name of the geologist responsible for logging a specific location.
sampling_method	Text(30)		The method of sampling used during the installation of a specific location.
drawing_checker	Text(50)		drawing_checker
drawing_check_date	DateTime		The date that the draw at a specific location is checked for accuracy.
drawing_editor	Text(50)		drawing_editor
drawing_edit_date	DateTime		drawing_edit_date
driller	Text(50)		The name of the person that performed the drilling at a specific location.
units	Text(15)		units
depth_to_bedrock	Numeric		The measured depth to bedrock at a specific location.
log_date	DateTime		The date the location was logged.
total_depth	Numeric		The total measured depth of the location.
bearing	Text(20)		Gives the angle between a line connecting two points and a north-south line, or meridian. This field can be populated by the bearing column in the Orientation file in RockWorks import format.
approved	Text(1)		Denotes whether a location was approved for installation (Y) or not (N) by a manager.
plunge	Text(20)		Measurement of the lineation/fold axis (measured from horizontal) in degrees.
drilling_subcontractor	Text(20)		The company or subcontractor that performs the drilling at a specific location.
engineer_subcontractor	Text(20)		The engineering company or subcontractor responsible for location installation.
engineer	Text(50)		The name of the engineer responsible for the installation of a location.
estab_company_code	Text(20)		Code of the established company at a location.
excav_company_code	Text(20)		The identifier code for the name of the company that performed the excavations at a specific location.
inspector	Text(50)		The name of the person responsible for inspecting a specific location.
inspect_subcontractor	Text(20)		The company or subcontractor that is responsible for the inspection of a specific location.
map_code	Text(128)		The identifying code that describes the USGS (or other) map where a specific location is located.
parent_loc_code	Text(20)		Parent location code.

dt_coordinate

Field Name	Data Type	Required	Comment
facility_code	Text(20)	Y	The user-defined code of a specific facility, for example, "Springfield".
sys_loc_code	Text(20)	Y	Location identifier of sample collection, soil boring, or well installation. Examples of possible sys_loc_code are MW-01, A-1, SB6, etc.
coord_type_code	Text(20)	Y	The location-specific code which refers to a specific coordinate type, for example, "LATLONG" for a latitude/longitude coordinate system.
observation_date	DateTime		The date/time when the coordinates were measured.
identifier	Text(20)	Y	The identifier (e.g. 1 or PRIMARY) used to designate when a coordinate system should be used.
x_coord	Text(20)		The x-coordinate in a coordinate system.
y_coord	Text(20)		The y-coordinate in a coordinate system.
elev	Text(20)		The measured elevation of a specific location.
elev_unit	Text(15)		The unit of measurement for the elevation measurement.
horz_collect_method_code	Text(20)		The code which identifies the method used to measure the horizontal coordinates, populated from RT_COORD.HORZ_METHOD.
coord_zone	Text(15)		The zone associated with a coordinate system, such as UTM zone 17.
horz_accuracy_value	Text(20)		The accuracy to which the horizontal (x and y) coordinates are measured.
horz_accuracy_unit	Text(15)		The unit of measurement for the horizontal (x and y) coordinate accuracy.
elev_accuracy_unit	Text(15)		The unit of measurement for the elevation accuracy measurement.
horz_datum_code	Text(20)		A code that describes the datum (reference point) against which horizontal measurements are made, populated from RT_COORD.HORZ_DATUM.
elev_collect_method_code	Text(20)		The code which identifies the method used to measure the elevation, populated from RT_CODE.ELEV_METHOD.
elev_accuracy_value	Text(20)		The accuracy to which the elevation is measured.
elev_datum_code	Text(20)		The code that describes the reference point against which elevation measurements are made.
source_scale	Text(20)		The scale of a source.
company_code	Text(20)		The identifier of the company collecting the respective coordinates.
verification_code	Text(20)		The verification code of the coordinate system.
data_point_sequence	Text(20)		Number indicating the sequence in which points on a line or area are connected. MAD Code Opt#8.
reference_point	Text(50)		The point of reference from where a coordinate was collected.
geometric_type_code	Text(20)		The code that represents the geometric entity represented by one point or a sequence of latitude and longitude points.
surveyor_name	Text(255)		The name of the surveyor who took the coordinate readings.
rank	Numeric		Ranks the coordinates as 1 (a vector quantity with one direction) or 2 (a vector quantity with multiple directions).
remark	Text(2000)		Any additional remarks or comments pertaining to a location's coordinates.

rt_group

Field Name	Data Type	Required	Comment
group_code	Text(40)	Y	group_code
group_type	Text(30)	Y	The type of group used by fn_group_members to compute group members. Possible values are: * or sys_loc_code.
group_desc	Text(255)		Description of a particular group.
group_owner	Text(50)		Person that created the group.
group_date	DateTime		Group creation date.
remark	Text(2000)		Any additional remarks or comments pertaining to the group.
facility_code	Text(20)		The user-defined code of a specific facility, for example, "Springfield".

rt_group_member

Field Name	Data Type	Required	Comment
member_code	Text(60)	Y	member_code
group_code	Text(40)	Y	group_code
member_type	Text(30)	Y	Member type must reflect the type of object referenced by member_code. Valid values are strongly dependent on feature implementation, please consult the documentation for the report or module for more information.
report_order	Numeric		Sort order for hardcopy reports.
display_order	Numeric		Display order for screen forms.
remark	Text(2000)		Any additional remarks or comments pertaining to the group member.
facility_code	Text(20)		The user-defined code of a specific facility, for example, "Springfield".

Geology EDD:

Well, water level, geological sampling and lithology related data.

Locations

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier
data_provider	Text(40)		Location data provider
x_coord	Numeric		X coordinate/Easting
y_coord	Numeric		Y coordinate/Northing
surf_elev	Numeric		Surface elevation value
elev_unit	Text(15)		Surface elevation unit
total_depth	Numeric		Total depth associated with location
depth_to_bedrock	Numeric		Depth to bedrock
units	Text(15)		Depth units
bearing	Text(20)		Angle of variance from a given reference point (i.e. North)
plunge	Text(20)		Angle of variance (inclination) from horizontal
loc_name	Text(40)		Location name
loc_desc	Text(255)		Location description
loc_type	Text(20)		Location type 1
loc_type_2	Text(30)		Location type 2
loc_purpose	Text(50)		Location purpose
site_code	Text(20)		Code used to specify site for location
coord_type_code	Text(20)		Code representing coordinate system in which x_coord and y_coord are expressed
start_date	DateTime		Date started at location
end_date	DateTime		Date ended at location
log_date	DateTime		Date log entry made
survey_date	DateTime		Date survey was done.
surveyor_name	Text(255)		Name of surveyor
driller	Text(50)		Name of driller
drilling_subcontractor	Text(40)		Code of drilling subcontractor
drilling_method	Text(40)		Simple description of drilling method
geologist	Text(50)		Name of geologist
engineer	Text(50)		Name of engineer
engineer_subcontractor	Text(40)		Engineering subcontractor
inspector	Text(50)		Name of inspector
inspect_contractor	Text(40)		Code of drilling subcontractor
drawing_checker	Text(50)		Name of person checking the drawing
drawing_check_date	DateTime		Date drawing was checked
drawing_editor	Text(50)		Name of person editing the drawing
drawing_edit_date	DateTime		Date edit to drawing was made.
within_facility_yn	Text(1)		Yes/No value indicating if location is within facility.
loc_county_code	Text(30)		Location county code
loc_district_code	Text(20)		Location district code
loc_state_code	Text(10)		Location state code
loc_major_basin	Text(20)		Location major basin
loc_minor_basin	Text(20)		Location minor basin
phase_code	Text(10)		Location phase code
estab_company_code	Text(40)		Location establishing company code
excav_company_code	Text(40)		Location excavation company code
remark	Text(2000)		Remark 1

Locations

Field Name	Data Type	Required	Comment
remark_2	Text(2000)		Remark 2
approved	Text(1)		Approved
stream_code	Text(30)		Stream code
stream_mile	Numeric		Stream mile
custom_field_1	Text(255)		Custom field 1
custom_field_2	Text(255)		Custom field 2
custom_field_3	Text(255)		Custom field 3
custom_field_4	Text(255)		Custom field 4
custom_field_5	Text(255)		Custom field 5
identifier	Text(20)		Text identifier that facilitates unique representation of the coordinate system.

Subfacilities

Field Name	Data Type	Required	Comment
site_code	Text(20)	Y	Unique site identifier.
site_type	Text(20)		Site type.
site_name	Text(60)		Site name.
site_task_code	Text(40)		Site task code.
site_desc1	Text(2000)		Site description1.
site_desc2	Text(2000)		Site description2.
contact_name	Text(50)		Name of contact for site.
address1	Text(40)		Site address 1.
address2	Text(40)		Site address 2.
city	Text(30)		City.
state	Text(10)		State abbreviation.
zipcode	Text(230)		Zipcode
phone_number	Text(30)		Phone number of site.
alt_phone_number	Text(30)		Alternate Phone number.
fax_number	Text(30)		Fax number.
email_address	Text(100)		Email address of site contact.

Wells

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
well_id	Text(30)		Non-unique well identifier, name, or alias.
well_owner	Text(50)		Owner of well
well_purpose	Text(20)		Brief description of well use (i.e. 'Monitoring', 'Injection', 'Extraction', 'Water Supply', etc.)
well_status	Text(20)		Current status of well.
top_casing_elev	Numeric		Elevation of the top of well casing.
depth_of_well	Numeric		Total depth of the well as measured from a specified measuring point at construction.
depth_unit	Text(15)		Unit of measure for well depth.
depth_measure_method	Text(20)		Method used to make the well depth measurement.
stickup_height	Text(8)		Total height which well extends about ground surface.
stickup_unit	Text(15)		Unit of measure for stickup height.
sump_length	Text(20)		Length of sump at well installation.
sump_unit	Text(15)		Unit of measure for sump length.
installation_date	DateTime		Date well was installed.
construct_start_date	DateTime		Date well construction began, if different from installation date.
construct_complete_date	DateTime		Date well construction was completed, if different from installation date.
construct_contractor	Text(40)		Name of company that installed well.
pump_type	Text(20)		Type of pump installed, if applicable.
pump_capacity	Text(6)		Pump capacity.
pump_unit	Text(15)		Unit of measure for pump capacity (i.e. gal/minute).
pump_yield	Text(6)		Pump yield
pump_yield_method	Text(20)		Method of testing pump yield.
weep_hole	Text(1)		Does well have weep hole (Y/N)?
head_configuration	Text(50)		Description of well head configuration.
access_port_yn	Text(1)		Does well have access port (Y/N)?
casing_joint_type	Text(50)		Description of well casing joint type.
perforator_used	Text(50)		Description of well perforator, if applicable.
intake_depth	Numeric		Depth of well intake.
disinfected_yn	Text(1)		Has well been disinfected (Y/N)?
historical_reference_elev	Numeric		Elevation of reference measuring point.
geologic_unit_code	Text(20)		Geologic unit which well samples from.
geologist_name	Text(50)		Geologist name.
driller	Text(50)		Driller
custom_field_1	Text(255)		Custom field 1.
custom_field_2	Text(255)		Custom field 2.
custom_field_3	Text(255)		Custom field 3.
custom_field_4	Text(255)		Custom field 4.
custom_field_5	Text(255)		Custom field 5.
remark	Text(2000)		Remark.

SubfacilityLocs

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
site_code	Text(20)	Y	Unique site identifier.
site_loc_type_code	Text(10)		Code indicating whether the location is onsite, offsite or background.
gradient	Text(20)		Gradient

LocationParameter

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
param_code	Text(20)	Y	Code used to identify parameter being measured.
param_value	Text(255)		Value of parameter.
param_unit	Text(15)		Unit of parameter measurement.
measurement_method	Text(20)		Method used to measure parameter.
measurement_date	DateTime		Date of measure parameter.
remark	Text(2000)		Remarks about parameter.

AlternatePosition

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
coord_type_code	Text(20)	Y	Unique identifier describing coordinate system in which this location is referenced.
identifier	Text(20)	Y	Text identifier that facilitates unique representation of the coordinate system.
observation_date	DateTime		Date when position observation was made.
alt_x_coord	Text(20)		Alternate x coordinate.
alt_y_coord	Text(20)		Alternate y coordinate.
elev	Text(20)		Alternate elevation.
elev_unit	Text(15)		Unit of measurement for the elevation.
horz_collect_method_code	Text(20)		Code that represents the method used to determine the coordinates for a point on the earth.
horz_accuracy_value	Text(20)		Measure of the accuracy of the x, y coordinates.
horz_accuracy_unit	Text(15)		Unit of measure used to quantify the measure of horizontal accuracy.
horz_datum_code	Text(20)		Code that represents the reference datum used in determining x, y coordinates.
elev_collect_method_code	Text(20)		Code that represents the method used to collect the vertical measure or elevation of a reference point.
elev_accuracy_value	Text(20)		Measure of accuracy of the elevation.
elev_accuracy_unit	Text(15)		Unit of measure used to quantify the measure of vertical or elevation accuracy.
elev_datum_code	Text(20)		Code that represents the reference datum used to determine the vertical measure or elevation.
source_scale	Text(20)		Represents the proportional distance on the ground for one unit of measure on a map or photo.
subcontractor_name_code	Text(40)		Code used to represent the subcontractor or party responsible for providing coordinate information.
verification_code	Text(20)		Code that represents the process used to verify the coordinate information.
reference_point	Text(50)		Text that identifies the place for which geographic coordinates were established.
geometric_type_code	Text(20)		Code that defines the geometric entity represented. As sys_loc_code typically defines a location (borehole, well, etc.) this will likely be 'point'.
remark	Text(2000)		remark.
rank	Numeric		Integer that represents preference where more than one coordinate system exists for a given sys_loc_code.

DownholePoint

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
depth	Numeric	Y	Depth at which parameter was observed or measured.
param	Text(20)	Y	Parameter observed or measured at this point.
param_value	Text(255)		Value observed or measured at this point for this parameter.
param_unit	Text(15)		Unit of measurement for parameter value.

DrillActivity

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
drill_event	Text(20)	Y	Used to uniquely identify a drilling event.
start_depth	Numeric	Y	Start depth of drill activity.
end_depth	Numeric	Y	End depth of drill activity.
start_date	DateTime		Date drilling activity started.
end_date	DateTime		Date drilling activity was completed.
diameter	Text(20)		Diameter of drilled hole.
diameter_unit	Text(15)		Unit of measurement for diameter of drilled hole.
drill_method	Text(50)		Method of drilling/advancement.
casing_size	Text(50)		Size of casing installed. Note that this is a general text field and non-numeric entries such as "Schedule 40" are permitted.
rig_desc	Text(50)		Description of drilling rig.
rig_make	Text(50)		Drilling rig make.
rig_model	Text(50)		Drilling rig model.
rod_desc	Text(50)		Description of drilling rod.
bit_desc	Text(50)		Description of drilling bit.
hammer_desc	Text(50)		Description of hammer.
auger_desc	Text(50)		Description of auger.
sampler_desc	Text(50)		Description of sampler.
fluid	Text(50)		Drilling fluid used.
viscosity	Text(50)		Viscosity of drilling fluid.
drilling_pressure	Text(50)		Drilling pressure.
hammer_wt	Text(50)		Weight of hammer.
hammer_fall	Text(50)		Fall length of hammer.
lift_mechanism	Text(50)		Mechanism used to lift hammer.
new_yn	Text(1)		Is this a new borehole (Y or N)?
repair_yn	Text(1)		Is this drilling activity to repair an existing borehole (Y or N)?
deepen_yn	Text(1)		Is this drilling activity to deepen an existing borehole (Y or N)?
abandon_yn	Text(1)		Is this drilling activity to abandon an existing borehole (Y or N)?
replace_yn	Text(1)		Does this drilling activity replace another borehole (Y or N)?
public_yn	Text(1)		Is this borehole owned or used by a public agency (Y or N)?
purpose	Text(70)		Purpose of drilling activity.
remark	Text(2000)		Drilling activity remark.
custom_field_1	Text(255)		Custom field 1.
custom_field_2	Text(255)		Custom field 2.
custom_field_3	Text(255)		Custom field 3.
custom_field_4	Text(255)		Custom field 4.
custom_field_5	Text(255)		Custom field 5.

DrillParameter

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
drill_event	Text(20)	Y	Used to uniquely identify a drilling event.
start_depth	Numeric	Y	Start depth of drill activity.
param_code	Text(20)	Y	Parameter observed or measured over this interval.
end_depth	Numeric		End depth of drill activity.
run_length	Text(20)	Y	Length of drilling run.
param_value	Text(255)		Value observed or measured over this interval for this parameter.
param_unit	Text(15)		Unit of measurement for parameter value.
remark	Text(2000)		Drilling activity remark.

GeologicSample

Field Name	Data Type	Required	Comment
geo_sample_code	Text(40)	Y	Unique sample identifier.
sample_name	Text(50)		Optional, non-unique sample identifier.
sys_loc_code	Text(20)		Unique location identifier.
sample_top	Numeric		Top (depth) of geologic sample.
sample_bottom	Numeric		Bottom (depth) of geologic sample.
sampling_date	DateTime		Date (and time, if appropriate) of sampling.
matrix_code	Text(10)		Geologic matrix or sample type
sample_method	Text(40)		Method used for sample collection.
sample_desc	Text(255)		Free text description of geologic sample.
custom_field_1	Text(255)		Custom field 1.
custom_field_2	Text(255)		Custom field 2.
custom_field_3	Text(255)		Custom field 3.
custom_field_4	Text(255)		Custom field 4.
custom_field_5	Text(255)		Custom field 5.
sample_type_code	Text(20)	Y	Code which distinguishes between different types of samples. For example, normal field samples must be distinguished from laboratory method blank samples, etc.
depth_unit	Text(15)		Unit of measurement for the sample begin and end depths

Atterberg

Field Name	Data Type	Required	Comment
geo_sample_code	Text(40)	Y	Unique sample identifier.
liquid_limit	Text(10)		Soil moisture content at the point of transition from plastic to liquid state.
plastic_limit	Text(10)		Soil moisture content at the point of transition from semisolid to plastic state, the point at which soil crumbles when rolled into threads of 1/8" diameter.
shrinkage_limit	Text(10)		Soil moisture content at the point of transition from solid to semisolid state, or the point at which the volume of soil mass ceases to change with continuing loss of moisture.
flow_index	Text(10)		Slope of the flow line, where the flow line is the relationship between moisture content and log N, N being the number of blows in a Liquid Limit test.
plasticity_index	Text(10)		Difference between the liquid limit and the plastic limit (LL-PL).
liquidity_index	Text(10)		Ratio of in situ moisture content – plastic limit to plasticity index, (wn-PL) / (LL-PL).
activity	Text(10)		Slope of line correlating PI and % finer than 2 µm.
atterberg_moisture	Text(10)		Arbitrary moisture content for sample defined by sys_sample_code.

SampleParameter

Field Name	Data Type	Required	Comment
geo_sample_code	Text(40)	Y	Unique sample identifier.
param_code	Text(20)	Y	Parameter observed during acquisition of this sample (i.e. N1, N2, N3, N4, PID, FID, OVM, Length Advanced, Length Recovered, Tip Stress, etc.)
param_value	Text(255)		Value observed or measured for this parameter.
param_unit	Text(15)		Unit of measurement for parameter value, if applicable.
measurement_method	Text(20)		Method of measurement for this parameter, if applicable.
remark	Text(2000)		Remark.
measurement_date	DateTime		measurement date.

StaticProps

Field Name	Data Type	Required	Comment
geo_sample_code	Text(40)	Y	Unique sample identifier.
sample_desc	Text(255)		Sample description.
material_name	Text(40)		Material name.
geologic_unit_code	Text(20)		Geologic unit code.
e	Numeric		Void ratio.
e_max	Numeric		Maximum void ratio.
e_min	Numeric		Minimum void ratio.
n	Numeric		Porosity.
specific_gravity	Numeric		Specific gravity.
w	Numeric		Moisture content.
opt_w	Numeric		Optimum moisture content.
S	Numeric		Saturation.
K	Numeric		Hydraulic conductivity.
K_unit	Text(15)		Unit of measurement for hydraulic conductivity.
unit_wt	Numeric		Unit weight.
sat_unit_wt	Numeric		Saturated unit weight.
dry_unit_wt	Numeric		Dry unit weight.
dry_unit_wt_max	Numeric		Maximum dry unit weight.
dry_unit_wt_min	Numeric		Minimum dry unit weight.
density_unit	Text(15)		Unit of measure for density (unit weight).
rel_density	Numeric		Relative density.
rel_compaction	Numeric		Relative compaction.
consistency	Text(20)		Consistency.
organic_carbon	Numeric		Organic carbon content.
organic_carbon_unit	Text(15)		Unit of measure for organic carbon.
custom_field_1	Text(255)		Custom field 1.
custom_field_2	Text(255)		Custom field 2.
custom_field_3	Text(255)		Custom field 3.
custom_field_4	Text(255)		Custom field 4.
custom_field_5	Text(255)		Custom field 5.

Lithology

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
start_depth	Numeric	Y	Start depth of lithology layer.
bearing	Numeric		Bearing, may be used for non-verticle boreholes
plunge	Numeric		plunge, may be used for non-verticle boreholes
material_type	Text(40)		Code used to specify material type.
geo_unit_code_1	Text(20)		Code used to specify geologic unit.
geo_unit_code_2	Text(20)		Code used to specify geologic unit.
geo_unit_code_3	Text(20)		Code used to specify geologic unit.
geo_unit_code_4	Text(20)		Code used to specify geologic unit.
geo_unit_code_5	Text(20)		Code used to specify geologic unit.
remark_1	Text(2000)		Lithologic layer remark 1.
remark_2	Text(2000)		Lithologic layer remark 2.
moisture	Text(20)		Qualitative description of soil moisture.
permeable	Text(20)		Indicator of permeability
consolidated_yn	Text(1)		Is layer consolidated (Y or N)?
cementation	Text(20)		Qualitative description of cementation.
color	Text(30)		Layer color.
observation	Text(255)		General layer observation.
consistency	Text(20)		Soil consistency.
sorting	Text(20)		Descriptor of soil particle size sorting.
grainsize	Text(20)		Measure of particle size.
odor	Text(20)		Soil odor.
angularity	Text(20)		Angularity of soil particles.
custom_field_1	Text(255)		Custom field 1.
custom_field_2	Text(255)		Custom field 2.
custom_field_3	Text(255)		Custom field 3.
custom_field_4	Text(255)		Custom field 4.
custom_field_5	Text(255)		Custom field 5.

WaterLevel

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
measurement_date	DateTime	Y	Date and time of measurement.
historical_reference_elev	Numeric		Elevation of reference measuring point.
water_level_depth	Numeric		Depth of water level.
water_level_elev	Numeric		Elevation of water level.
corrected_depth	Numeric		Depth of water level, corrected, for example, for free product.
corrected_elevation	Numeric		Elevation of water level, corrected, for example, for free product.
measured_depth_of_well	Numeric		Depth of well as measured at the time of this water level measurement.
depth_unit	Text(15)		Unit of measure for water level depth, corrected depth, and measured depth of well.
technician	Text(50)		Name of technician taking measurements.
dry_indicator_yn	Text(1)		Is well dry (Y/N)?
measurement_method	Text(20)		Method used to make the well depth measurement.
dip_or_elevation	Text(10)		Enforced vocabulary (‘dip’, ‘elevation’).
batch_number	Text(10)		Batch, or grouping number, for water level measurement.
remark	Text(2000)		Remark.
lnapl_depth	Numeric		LNAPL depth
lnapl_cas_rn	Text(15)		LNAPL CAS number
dnapl_depth	Numeric		DNAPL depth
dnapl_cas_rn	Text(15)		DNAPL CAS number
task_code	Text(40)		Task code
equipment_code	Text(60)		Equipment code
reportable_yn	Text(1)	Y	reportable_yn

WaterTable

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
type	Text(20)	Y	Designation of aquifer. Can be general such as “Unconfined” or “Confined”, or a specific aquifer name such as “Ogalalla”.
sequence	Text(20)	Y	Sequence in which this measurement was taken. Intended to represent 1 of 2 mutually exclusive values, i.e. Unstabilized/Stabilized, or Initial/Final, or 1/2, etc.
depth	Numeric	Y	Depth of water table.
flowing_yn	Text(1)		Is water flowing from drill hole (Y/N)?
measurement_method	Text(50)		Method used to obtain water table measurement.
capped_pressure	Numeric		Water pressure when capped.
capped_pressure_unit	Text(15)		Unit of measure for water pressure when capped.
reference_point	Text(50)		Point of reference for water table measurement.
reference_elevation	Numeric		Elevation of reference point for water table measurement.
temperature	Numeric		Water temperature.
temperature_unit	Text(15)		Unit of measure for water temperature.

WellConstruction

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
segment_type	Text(20)	Y	Type of segment described in this record.
material_type_code	Text(20)	Y	Material used for construction of this well.
start_depth	Numeric	Y	Start depth of well segment.
end_depth	Numeric		End depth of well segment.
depth_unit	Text(15)		Unit of measure for well segment start depth and end depth.
inner_diameter	Numeric	Y	Inner diameter of well segment.
outer_diameter	Numeric		Outer diameter of well segment.
diameter_unit	Text(15)		Unit of measure for inner and outer diameters.
thickness	Numeric		Thickness of well segment.
thickness_unit	Text(15)		Unit of measure for thickness.
slot_type	Text(20)		For screen segments, indicates type of screen slot.
slot_size	Numeric		For screen segments, indicates size of screen slot.
slot_size_unit	Text(15)		Unit of measure for slot size where segment_type is Screen.
perf_length	Numeric		Total perforated length for Screen segment types.
screen_type	Text(15)		Type of screen.
material_quantity	Text(20)		Quantity of fill material where applicable (annulus or grouted annulus segment types).
material_density	Text(20)		Density of fill material where applicable (annulus or grouted annulus segment types).
remark	Text(2000)		Remark.

WellDatum

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique location identifier.
start_date	DateTime	Y	Date started.
step_or_linear	Text(6)	Y	Indicates whether the change in well datum was step or linear.
datum_value	Numeric	Y	Elevation of measuring reference point from which water level readings were taken.
datum_unit	Text(15)	Y	Unit of measure for well datum.
datum_desc	Text(255)	Y	Description of well datum.
datum_collect_method_code	Text(20)		Code representing method used to measure well daturm.

AECOM EDD 2.5.3.:

Field samples, laboratory samples and analytical results data.

AECOMFSample

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40); PK	Y	Unique sample identifier. Each sample must have a unique value, including spikes and duplicates. Laboratory QC samples must also have unique identifiers. Sample IDs for field samples must be reported exactly as found on the chain of custody form, and may not be changed for subsequent tests (dilution, re-analysis, leachate, etc.)
sample_name	Text(50)		Additional sample identification information as necessary. Is not required to be unique (i.e., duplicates are OK).
sample_matrix_code	Text(10)	Y	Code which distinguishes between different type of sample matrix. For example, soil samples must be distinguished from ground water samples, etc. The matrix of the sample as analyzed may be different from the matrix of the sample as retrieved (e.g. leachates), so this field is required at both the sample and test level. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
sample_type_code	Text(10)	Y	Code which distinguishes between different types of samples. For example, normal field samples must be distinguished from laboratory method blank samples, etc. I Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
sample_source	Text(10)	Y	"Field" for field samples or "Lab" for internally generated lab QC samples No other values are allowed.
parent_sample_code	Text(40)		The value of "sys_sample_code" that uniquely identifies the sample that was the source of this sample. For example, the value of this field for a duplicate sample would identify the normal sample of which this sample is a duplicate. Required in the laboratory EDD for all laboratory "clone" samples (e.g., spikes and duplicates). Must be blank for samples which have no parent (e.g., normal field samples, LCS samples, method blanks, etc.).
sample_delivery_group	Text(20)		Sample delivery group as defined by AECOM project manager. Required for all field samples, optional for samples originating in the laboratory.
sample_date	Date		Date sample was collected in the field or sample was originated in the lab. Date information must be identical with the date from the chain of custody form.
sample_time	Time		Time sample was collected in the field or sample was originated in the lab. Time information must be identical with the date from the chain of custody form.
sys_loc_code	Text(20)		Sample collection location.

AECOMFSample

Field Name	Data Type	Required	Comment
start_depth	Numeric		Beginning depth (top) of soil sample. This is an optional field for the laboratory EDD unless otherwise specified by the AECOM project manager.
end_depth	Numeric		Ending depth (bottom) of soil sample. This is an optional field for the laboratory EDD unless otherwise specified by the AECOM project manager.
depth_unit	Text(15)		Unit of measurement for the sample begin and end depths. This is an optional field for the laboratory EDD unless otherwise specified by the AECOM project manager. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
chain_of_custody	Text(40)		Chain of custody identifier. A single sample may be assigned to only one chain of custody. This is an optional field for laboratory EDD unless otherwise specified by the AECOM project manager.
sent_to_lab_date	Date		Date sample was sent to lab (in MM/DD/YY format for EDD).
sample_receipt_date	Date		Date that sample was received at laboratory (in MM/DD/YY format for EDD).
sampler	Text(50)		Name or initials of sampler.
sampling_company_code	Text(20)		Name or initials of sampling company (no controlled vocabulary).
sampling_reason	Text(30)		Optional reason for sampling. No controlled vocabulary is enforced.
sampling_technique	Text(40)		Sampling technique. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
task_code	Text(40)		Code used to identify the task under which the field sample was retrieved. This is an optional field for laboratory EDD unless otherwise specified by the Chem project manager.
collection_quarter	Text(6)		Quarter of the year sample was collected (e.g., "1Q96").
composite_yn	Text(1)		Used to indicate whether a sample is a composite sample. "Y" for composite, "N" for not composite.
composite_desc	Text(255)		Description of composite sample (if composite_yn is "Y").
sample_class	Text(10)		Sample class code. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
custom_field_1	Text(255)		Custom sample field.
custom_field_2	Text(255)		Custom sample field.
custom_field_3	Text(255)		Custom sample field.
comment	Text(255)		Sample comments as necessary (optional).
sample_receipt_time	Time		Time of lab receipt sample in 24-hr (military) HH:MM format

AECOMLabSMP

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40); PK	Y	Unique sample identifier. Each sample must have a unique value, including spikes and duplicates. Laboratory QC samples must also have unique identifiers. Sample IDs for field samples must be reported exactly as found on the chain of custody form, and may not be changed for subsequent tests (dilution, re-analysis, leachate, etc.)
sample_type_code	Text(20)	Y	Code which distinguishes between different types of samples. For example, normal field samples must be distinguished from laboratory method blank samples, etc. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
sample_matrix_code	Text(10)	Y	Code which distinguishes between different type of sample matrix. For example, soil samples must be distinguished from ground water samples, etc. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD. The matrix of the sample as analyzed may be different from the matrix of the sample as retrieved (e.g. leachates), so this field is required at both the sample and test level.
sample_source	Text(10)	Y	"Field" for field samples or "Lab" for internally generated lab QC samples No other values are allowed.
parent_sample_code	Text(40)		The value of "sys_sample_code" that uniquely identifies the sample that was the source of this sample. For example, the value of this field for a duplicate sample would identify the normal sample of which this sample is a duplicate. Required in the laboratory EDD for all laboratory "clone" samples (e.g., spikes and duplicates). Field duplicates may be submitted blind to the laboratory, so this field is not required in the laboratory EDD for field "clones". Must be blank for samples which have no parent (e.g., normal field samples, LCS samples, method blanks, etc.).
comment	Text(255)		Sample comments as necessary (optional).
sample_date	Date		Date sample was collected in the field or sample was originated in the lab. Date information must be identical with the date from the chain of custody form.
sample_time	Time		Time sample was collected in the field or sample was originated in the lab. Time information must be identical with the date from the chain of custody form.
sample_receipt_date	Date		Date that field sample was received at laboratory (in MM/DD/YY format for EDD).
sample_delivery_group	Text(20)		Sample delivery group as defined by AECOM project manager. Required for all field samples, optional for samples originating in the laboratory
standard_solution_source	Text(20)		Relevant only for lab-generated samples. Description of the source of standard solutions for certain laboratory samples (e.g., LCS).
sample_receipt_time	Time		Time of lab receipt sample in 24-hr (military) HH:MM format.

AECOMLabTST

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40); PK	Y	Unique sample identifier. Each sample must have a unique value, including spikes and duplicates. Laboratory QC samples must also have unique identifiers. Sample IDs for field samples must be reported exactly as found on the chain of custody form, and may not be changed for subsequent tests (dilution, re-analysis, leachate, etc.)
lab_anl_method_name	Text(20); PK	Y	Laboratory analytic method name or description. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD. The method name should be sufficient to reflect operation of the laboratory.
analysis_date	Date; PK	Y	Date of sample analysis in MM/DD/YY format. May refer to either beginning or end of the analysis as required by AECOM project manager.
analysis_time	Time; PK	Y	Time of sample analysis in 24-hr (military) HH:MM format. Time zone and daylight savings must be same as analysis_date.
total_or_dissolved	Text(10); PK	Y	Sample fraction tested. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
column_number	Text(2); PK	Y	Either "1C" for first column analyses, "2C" for second column analyses, or "NA" for analyses for which neither "1C" nor "2C" is applicable. If any "2C" tests are reported, then there must be corresponding "1C" tests present also. Also, laboratories typically can report which of the two columns is to be considered "primary". This distinction is handled by the "reportable_result" field in the result table.
test_type	Text(10); PK	Y	Type of test in the laboratory. This field is used to distinguish between initial runs, re-extractions, reanalysis and dilutions. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
lab_matrix_code	Text(10)		Code which describes the matrix as analyzed by the lab. May differ from sample_matrix_code. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
analysis_location	Text(2)	Y	Note where was sample analyzed. "FL" for mobile Field Laboratory analysis, "LB" for fixed_Based Laboratory analysis or "FI" for Field Instrument.
basis	Text(10)	Y	Must be either "Wet" for wet weight basis reporting, "Dry" for dry weight basis reporting, or "NA" for tests for which this distinction is not applicable.

AECOMLabTST

Field Name	Data Type	Required	Comment
container_id	Text(30)		Sample container identifier.
dilution_factor	Numeric	Y	Dilution factor at which the analyte was measured effectively. Enter "1" if not diluted.
lab_prep_method_name	Text(20)		Laboratory sample preparation method code. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD. If preparation is part of the analytic method, use the code "METHOD".
prep_date	Date		Date sample preparation began in MM/DD/YYYY format.
prep_time	Time		Time sample preparation began in 24-hr (military) format. Time zone and daylight savings must be same as analysis_date.
leachate_method	Text(15)		Laboratory leachate generation method name or description. The method name should be sufficient to reflect operation of the laboratory. Required for tests on leachate (TCLP, SPLP, etc.)
leachate_date	Date		Date of leachate preparation in MM/DD/YYYY format. Required for tests on leachate (TCLP, SPLP, etc.)
leachate_time	Time		Time of leachate preparation in 24-hr (military) format. Time zone and daylight savings must be same as analysis_date. Required for tests on leachate (TCLP, SPLP, etc.)
lab_name_code	Text(20)	Y	Unique identifier of the laboratory. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
qc_level	Text(10)		Quality control level of analysis. May be either "screen" or "quant" (definitive).
lab_sample_id	Text(20)	Y	Laboratory LIMS sample identifier. If necessary, a field sample may have more than one LIMS lab_sample_id (maximum one per each test event).
percent_moisture	Numeric		Percent moisture of the sample portion used in this test; this value may vary from test to test for any sample. Report 70.1% as 70.1 not as 70.1%. Required for tests on solid matrices (soil, sediment, etc.)
subsample_amount	Text(14)		Amount of sample used for test. Required for tests on field samples.
subsample_amount_unit	Text(15)		Unit of measurement for subsample amount. Required when reporting subsample_amount. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
analyst_name	Text(50)		Name or initials of laboratory analyst.
instrument_id	Text(60)		Instrument identifier.
comment	Text(255)		Comments about the test as necessary.

AECOMLabTST

Field Name	Data Type	Required	Comment
preservative	Text(20)		Sample preservative used. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
final_volume	Text(15)		The final volume of the sample after sample preparation. Include all dilution factors.
final_volume_unit	Text(15)		The unit of measure that corresponds to the final_volume. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.

AECOMLabRES

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40); PK	Y	Unique sample identifier. Each sample must have a unique value, including spikes and duplicates. Laboratory QC samples must also have unique identifiers. Sample IDs for field samples must be reported exactly as found on the chain of custody form, and may not be changed for subsequent tests (dilution, re-analysis, leachate, etc.)
lab_anl_method_name	Text(20); PK	Y	Laboratory analytic method name or description. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD. The method name should be sufficient to reflect operation of the laboratory.
analysis_date	Date; PK	Y	Date of sample analysis in MM/DD/YY format. May refer to either beginning or end of the analysis as required by AECOM project manager.
analysis_time	Time; PK	Y	Time of sample analysis in 24-hr (military) HH:MM format. Time zone and daylight savings must be same as analysis_date.
total_or_dissolved	Text(10); PK	Y	Sample fraction tested. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
column_number	Text(2); PK	Y	Either "1C" for first column analyses, "2C" for second column analyses, or "NA" for analyses for which neither "1C" nor "2C" is applicable. If any "2C" tests are reported, then there must be corresponding "1C" tests present also. Also, laboratories typically can report which of the two columns is to be considered "primary". This distinction is handled by the "reportable_result" field in the result table.
test_type	Text(10); PK	Y	Type of test in the laboratory. This field is used to distinguish between initial runs, re-extractions, reanalysis and dilutions. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
cas_rn	Text(15); PK	Y	CAS Registry Number for this analyte. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
chemical_name	Text(255)	Y	Chemical Name
result_value	Numeric		Analytic result reported at an appropriate number of significant digits. Must be identical with values presented in the hard copy. Leave blank for non-detects. Coeluting congeners must all be reported with the same value.

AECOMLabRES

Field Name	Data Type	Required	Comment
result_error_delta	Text(20)		Error range applicable to the result value; typically used only for radiochemistry results.
result_type_code	Text(10)	Y	Must be either "TRG" for a target or regular result, "TIC" for tentatively identified compounds, "SUR" for surrogates, "IS" for internal standards, or "SC" for spiked compounds.
reportable_result	Text(3)	Y	Must be "Yes" for results considered to be reportable, or "No" for other results. Used to distinguish most appropriate result when multiple results are generated due to dual-column tests or re-tests. Exactly one result (cas_rn) for each sample should have reportable_result = "Yes".
detect_flag	Text(2)	Y	Must be either "Y" for detected analytes or "N" for non_detects.
lab_qualifiers	Text(20)		Qualifier flags assigned by the laboratory. The lab is not restricted to using the qualifers in the reference values file; however, if a particular qualifier is used, the definition must be consistent with that in the reference values. The lab must provide an electronic key of laboratory-specific qualifiers used. Where a coeluting congener result is being reported, whether or not it is a detected result, this field will ALSO contain a "C", immediately followed by the lowest numbered congener of the coeluting set.
organic_yn	Text(1)	Y	Must be either "Y" for organic constituents or "N" for inorganic constituents.
method_detection_limit	Text(20)		Use the Method Detection Limit (MDL) for Organic compounds with the following exceptions; use the EDL for single component organics analyzed by isotope dilution methods; the highest EDL in the homolog for PCB homologs; the EDL of a single compent for Alkyl PAH homologs; and the instrument detection limit (IDL) for Inorganic compounds, per the contract. It must reflect such factors as dilution factors and moisture content.
reporting_detection_limit	Numeric		Use the value of the quantitation_limit except in the following cases: use the EDL for single component organics analyzed by isotope dilution methods; the highest EDL in the homolog for PCB homologs; the EDL of a single compent for Alkyl PAH homologs; and the result_value for radionuclides. Reflects conditions such as dilution factors and moisture content. Required for all results for which such a limit is appropriate. Must be identical to the non-detect value in the hard-copy report.

AECOMLabRES

Field Name	Data Type	Required	Comment
quantitation_limit	Text(20)		Concentration level above which results can be quantified with 95% confidence limit. Must reflect conditions such as dilution factors and moisture content. Required for all results for which such a limit is appropriate.
result_unit	Text(15)	Y	Units of measurement for the result unit. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
detection_limit_unit	Text(15)		Units of measurement for the detection limit(s). Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
tic_retention_time	Text(8)		TIC Retention Time in units of decimal minutes.
result_comment	Text(254)		Result specific comments.
qc_original_conc	Numeric		The concentration of the analyte in the original (unspiked) sample. Required for spikes. Not necessary for surrogate compounds or LCS samples (where the original concentration is assumed to be zero).
qc_spike_added	Numeric		The concentration of the analyte added to the original sample. Required for spikes, surrogate compounds, LCS and any spiked sample.
qc_spike_measured	Numeric		The measured concentration of the analyte. Use zero for spiked compounds that were not detected in the sample. Required for spikes, surrogate compounds, LCS and any spiked sample.
qc_spike_recovery	Numeric		The percent recovery calculated as specified by the laboratory QC program. Required for spikes, surrogate compounds, LCS and any spiked sample. Report as percentage multiplied by 100 (e.g., report "120%" as "120").
qc_dup_original_conc	Numeric		The concentration of the analyte in the original (unspiked) sample. Required for spike duplicates only. Not necessary for surrogate compounds or LCS samples (where the original concentration is assumed to be zero).
qc_dup_spike_added	Numeric		The concentration of the analyte added to the original sample. Required for spike or LCS duplicates, surrogate compounds, and any spiked and duplicated sample. Use zero for spiked compounds that were not detected in the sample. Also complete the qc-spike-added field.
qc_dup_spike_measured	Numeric		The measured concentration of the analyte in the duplicate. Use zero for spiked compounds that were not detected in the sample. Required for spike and LCS duplicates, surrogate compounds, and any other spiked and duplicated sample. Also complete the qc-spike-measured field.

AECOMLabRES

Field Name	Data Type	Required	Comment
qc_dup_spike_recovery	Numeric		The duplicate percent recovery calculated. Always required for spike or LCS duplicates, surrogate compounds, and any other spiked and duplicated sample. Also complete the qc-spike-recovery field. Report as percentage multiplied by 100 (e.g., report "120%" as "120").
qc_rpd	Numeric		The relative percent difference calculated. Required for duplicate samples as appropriate. Report as percentage multiplied by 100 (e.g., report "20%" as "20").
qc_spike_lcl	Numeric		Lower control limit for spike recovery. Required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample. Report as percentage multiplied by 100 (e.g., report "120%" as "120").
qc_spike_ucl	Numeric		Upper control limit for spike recovery. Required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample. Report as percentage multiplied by 100 (e.g., report "120%" as "120").
qc_rpd_cl	Numeric		Relative percent difference control limit. Required for any duplicated sample. Report as percentage multiplied by 100 (e.g., report "20%" as "20").
qc_spike_status	Text(10)		Used to indicate whether the spike recovery was within control limits. Use the "*" character to indicate failure, otherwise leave blank. Required for spikes, surrogate compounds, LCS and any spiked sample.
qc_dup_spike_status	Text(10)		Used to indicate whether the duplicate spike recovery was within control limits. Use the "*" character to indicate failure, otherwise leave blank. Required for any spiked and duplicated sample.
qc_rpd_status	Text(10)		Used to indicate whether the relative percent difference was within control limits. Use the "*" character to indicate failure, otherwise leave blank. Required for any duplicated sample.
uncertainty	Text(10)		Radiological analysis: uncertainty.
minimum_detectable_conc	Numeric		Radiological analysis: minimum detectable concentration.
counting_error	Numeric		Radiological analysis: counting error.
critical_value	Numeric		Radiological analysis: critical value.

AECOMLabBCH

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40); PK	Y	Unique sample identifier. Each sample must have a unique value, including spikes and duplicates. Laboratory QC samples must also have unique identifiers. Sample IDs for field samples must be reported exactly as found on the chain of custody form, and may not be changed for subsequent tests (dilution, re-analysis, leachate, etc.)
lab_anl_method_name	Text(35); PK	Y	Laboratory analytic method name or description. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD. The method name should be sufficient to reflect operation of the laboratory. For example both "SW8080-pest" and "SW8080-PCB" may be necessary to distinguish between laboratory methods, while "SW8080" may not provide sufficient detail.
analysis_date	Date; PK	Y	Date of sample analysis in MM/DD/YY format. May refer to either beginning or end of the analysis as required by AECOM project manager.
analysis_time	Time; PK	Y	Time of sample analysis in 24-hr (military) HH:MM format. Time zone and daylight savings must be same as analysis_date.
total_or_dissolved	Text(10); PK	Y	Sample fraction tested. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
column_number	Text(2); PK	Y	Either "1C" for first column analyses, "2C" for second column analyses, or "NA" for analyses for which neither "1C" nor "2C" is applicable. If any "2C" tests are reported, then there must be corresponding "1C" tests present also. Also, laboratories typically can report which of the two columns is to be considered "primary". This distinction is handled by the "reportable_result" field in the result table.
test_type	Text(10); PK	Y	Type of test in the laboratory. This field is used to distinguish between initial runs, re-extractions, reanalysis and dilutions. Limited to values as found in the Reference values file, if additions must be made, they need to be approved by AECOM before submitting an EDD.
test_batch_type	Text(10); PK	Y	Lab Batch type. Should be "Prep" or "Analysis" or "Leach"
test_batch_id	Text(20)	Y	Unique identifier for all lab batches. Each batch must contain at least one field sample, and samples can participate in more than one batch, as long as the batch type is unique.

LoadDVA EDD:

Analytical data qualification and validation.

SampleData

Field Name	Data Type	Required	Comment
facility_id	Numeric	Y	
test_id	Numeric	Y	
lab_name_code	Text(2147483647)		
lab_sdg	Text(2147483647)		
sys_sample_code	Text(2147483647)	Y	
lab_sample_id	Text(2147483647)		
matrix_code	Text(2147483647)		
sample_type_code	Text(2147483647)		
sample_date	Text(2147483647)		
chain_of_custody	Text(2147483647)		
basis	Text(2147483647)		
fraction	Text(2147483647)	Y	
column_number	Text(2147483647)	Y	
percent_moisture	Text(2147483647)		
prep_method	Text(2147483647)		
prep_date	Text(2147483647)		
analytic_method	Text(2147483647)	Y	
test_type	Text(2147483647)	Y	
analysis_date	Text(2147483647)	Y	
dilution_factor	Text(2147483647)		
batches	Text(2147483647)		
result_type_code	Text(10)	Y	
cas_rn	Text(15)	Y	
chemical_name	Text(2147483647)		
result_text	Numeric		
result_error_delta	Numeric		
detect_flag	Text(2)	Y	
reporting_detection_limit	Numeric		
method_detection_limit	Numeric		
quantitation_limit	Numeric		
result_unit	Text(2147483647)		
lab_qualifiers	Text(15)		
reportable_result	Text(3)	Y	
validator_qualifiers	Text(20)		
interpreted_qualifiers	Text(20)		
reason_code	Text(20)		

ValidatorInfo

Field Name	Data Type	Required	Comment
facility_id	Numeric	Y	
test_id	Numeric	Y	
validated_by	Text(50)	Y	
validated_date	Date	Y	
level_validated	Text(15)		

EQEDD EDD:

For loading historical data.

DataProvider_v1

Field Name	Data Type	Required	Comment
data_provider	Text(40)		Name of company or agency responsible for completion and submittal of any part of this EDD.
data_contact_person	Text(50)		Name of contact associated with data_provider.
data_contact_address1	Text(40)		Data contact street address and/or box number.
data_contact_address2	Text(40)		Data contact address, part two. Box number or other info.
data_contact_city	Text(30)		Data provider City.
data_contact_state	Text(10)		Postal abbreviation for Data provider state.
data_contact_zipcode	Text(30)		Data provider zip code.
data_contact_email	Text(100)		Contact e-mail address.
data_contact_phone	Text(30)		Contact phone number.

Task_v1

Field Name	Data Type	Required	Comment
task_code	Text(40)	Y	Code used to identify the task under which the field sample was taken
task_desc	Text(255)		Task description
start_date	DateTime		Task start date
end_date	DateTime		Task end date
delivery_order	Text(20)		Delivery order
client	Text(50)		Client

Subfacilities_v1

Field Name	Data Type	Required	Comment
subfacility_code	Text(20)	Y	Subfacility code
subfacility_type	Text(20)		Subfacility Type
subfacility_name	Text(60)		Subfacility name
task_code	Text(40)		Code used to identify the task under which the field sample was taken
remark_1	Text(2000)		Subfacility description
remark_2	Text(2000)		Remark 2
contact_name	Text(50)		Contact name
address_1	Text(40)		Address 1
address_2	Text(40)		Address 2
city	Text(30)		City
county	Text(50)		County
state	Text(10)		State
zipcode	Text(230)		Zip code
phone_number	Text(30)		Phone number
alt_phone_number	Text(30)		Alternate phone number
fax_number	Text(30)		Fax number
email_address	Text(100)		Email address

Location_v1

Field Name	Data Type	Required	Comment
data_provider	Text(40)		Data Provider
sys_loc_code	Text(20)	Y	Location identifier of sample collection, soil boring, or well installation. Examples of possible sys_loc_code are MW-01, A-1, SB6, etc.
x_coord	Numeric		Sampling location numeric X coordinate
y_coord	Numeric		Sampling location numeric Y coordinate
surf_elev	Numeric		Sampling location surface elevation
elev_unit	Text(15)		Unit of measurement for elevations
coord_type_code	Text(20)		Sampling location coordinate system description
observation_date	DateTime		Date observation or site survey was made
coord_identifier	Text(20)		This field is a coordinate identifier. Typical values include 'PRIMARY', 'SECONDARY' or '1', '2'
horz_collect_method_code	Text(20)		Use codes in horizontal collection method valid value table in appendix. Method used to determine the latitude/longitude.
horz_accuracy_value	Text(20)		Accuracy range (+/-) of the latitude and longitude. Only the least accurate measurement should be reported, regardless if it is for latitude or longitude.
horz_accuracy_unit	Text(15)		Unit of the horizontal accuracy value
horz_datum_code	Text(20)		Reference datum of the latitude and longitude
elev_collect_method_code	Text(20)		Method used to determine the ground elevation of the sampling location
elev_accuracy_value	Text(20)		Accuracy range (+/-) of the elevation measurement
elev_accuracy_unit	Text(15)		Unit of the elevation accuracy value
elev_datum_code	Text(20)		Reference datum for the elevation measurement
source_scale	Text(20)		Scale of the source used to determine the latitude and longitude
subcontractor_name_code	Text(40)		Name or code of sampling company
verification_code	Text(20)		Verification code
reference_point	Text(50)		Describes the place at which geologic coordinates were established
geometric_type_code	Text(20)		Geometric type code
rank	Numeric		Rank
loc_name	Text(40)		Sampling location name
loc_desc	Text(255)		Sampling location description
loc_type	Text(20)		Sampling location type
loc_purpose	Text(50)		Sampling location purpose
subfacility_code	Text(20)		Unique code for site or area
within_facility_yn	Text(1)		Indicates whether this sampling location is within facility boundaries, 'Y' for yes or 'N' for no.
loc_county_code	Text(30)		Location county code; controlled vocabulary using FIPS (Federal Information Processing Standard) codes. FIPS codes can be found via the internet at http://www.itl.nist.gov/fipspubs/ or http://www.oseda.missouri.edu/jgb/geos.html
loc_district_code	Text(20)		Location district code; controlled vocabulary using FIPS codes
loc_state_code	Text(10)		Location state code; controlled vocabulary using FIPS codes
loc_major_basin	Text(20)		Location major basin; controlled vocabulary using HUC (Hydrologic Unit Codes). HUC codes can be found via the internet at http://www.epa.gov/surf. The first 8 digits of the HUC code should be entered here.
loc_minor_basin	Text(20)		Location minor basin; controlled vocabulary using HUC codes. Any digits after the 8th (first 8 are reported in loc_major_basin) should be reported here.
remark	Text(2000)		Location specific comment.
total_depth	Numeric		Total depth below ground surface of boring, in feet.
depth_to_bedrock	Numeric		Depth below ground surface of bedrock in feet.
depth_to_top_of_screen	Numeric		Depth below ground surface to the top of the well screen. This information is required to obtain the vertical location from which the groundwater sample was taken. Leave null if sample is not from well.

Location_v1

Field Name	Data Type	Required	Comment
depth_to_bottom_of_screen	Numeric		Depth below ground surface to bottom of well screen. This information is required to obtain the vertical location from which the groundwater sample was taken. Leave null if sample is not from well.
depth_unit	Text(15)		Unit of measurement for depths
top_casing_elev	Numeric		Elevation of the top of casing. Leave null if sample is not from well.
datum_value	Numeric		Datum value
datum_unit	Text(15)		Datum unit
step_or_linear	Text(6)		Step or linear
datum_collection_method_code	Text(20)		Datum collection method code
datum_desc	Text(255)		Datum description
datum_start_date	DateTime		Datum start date
geologist	Text(50)		Geologist
inspector	Text(50)		Inspector
bore_id	Text(30)		The identifier of the drilled borehole.
loc_type_2	Text(30)		A secondary field for the type of location.
log_date	DateTime		The date the location was logged.
stream_code	Text(30)		The identifying code that describes the stream nearest to a specific location.
stream_mile	Numeric		This indicates where the river or stream (stream_code) for the station exists.

LocationParameter_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique Location Name
parameter_code	Text(20)	Y	Code used to identify parameter being measured, observed, or attribute being described
parameter_value	Text(255)		Value of parameter
parameter_unit	Text(15)		Parameter unit
measurement_date	DateTime		Date of parameter measurement or observation
measurement_method	Text(20)		Measurement method
remark	Text(2000)		Remark
task_code	Text(40)		Code used to identify the task under which the field sample was taken.
activity_type	Text(40)		required for EDGE

DrillActivity_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Soil boring or well installation location. Must be a valid code for the facility and reported value in the sys_loc_code field of the location file.
drill_event	Text(20)	Y	Used to identify drilling event. Examples of drilling events could be 'INITIAL' for initial drilling or 'SECOND' for a subsequent drilling at the same sys_loc_code.
start_depth	Numeric		The start depth, in feet, below ground surface of the drilling activity.
end_depth	Numeric		End depth, in feet, below ground surface of the drilling activity.
drill_start_date	DateTime		Date drilling began
drill_end_date	DateTime		Date drilling concluded
diameter	Numeric		Diameter of boring
diameter_unit	Text(15)		Use values from Unit valid value table. Unit of measure for diameter.
drill_method	Text(50)		Method used to drill boring
fluid	Text(50)		Description of fluid used during drilling
viscosity	Text(50)		Viscosity of drilling fluid
hammer_wt	Text(50)		Weight of hammer, in pounds, used for sampling
hammer_fall	Text(50)		Distance of hammer fall during sampling
lift_mechanism	Text(50)		Type of mechanism used to lift hammer
new_yn	Text(1)		Is this a new boring? 'Y' for yes or 'N' for no
repair_yn	Text(1)		Is this drilling event to repair an existing boring? 'Y' for yes or 'N' for no
deepen_yn	Text(1)		Is this drilling event to deepen an existing boring? 'Y' for yes or 'N' for no
abandon_yn	Text(1)		Has the boring been abandoned? 'Y' for yes or 'N' for no
replace_yn	Text(1)		Is this drill event to replace an existing boring? 'Y' for yes or 'N' for no
public_yn	Text(1)		Is well being install for a public use? ? 'Y' for yes or 'N' for no
purpose	Text(70)		Describe the purpose of the drill event
rig_desc	Text(50)		Description of drilling rig
drilling_subcontractor	Text(40)		Drilling subcontractor
driller	Text(50)		Driller

Lithology_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Soil boring or well installation location. Must be a valid code for the facility and reported in the sys_loc_code field of the location file (Table 3-2).
start_depth	Numeric	Y	The start depth of the lithologic layer
material_type	Text(40)		The type of material that composes the lithologic unit. Controlled vocabulary, see material list in appendix. Must be used in all cases except when a depth specific comment is being made.
geo_unit_code_1	Text(20)		The data providers interpretation of the hydrogeologic unit present at this lithologic unit, e.g., aquifer 1, aquitard 1, aquifer 2, upper clay unit
geo_unit_code_2	Text(20)		Alternate geologic unit grouping. This can be a sub-classification of geologic_unit_code_1 or a layer used for groundwater flow/transport computer modelling that contains the lithologic unit.
remark1	Text(2000)		Comment on the lithologic unit
remark2	Text(2000)		Comment on the geologic unit
moisture	Text(20)		What degree of moisture was observed within the lithologic unit?
permeable	Text(20)		Description of the permeability of the lithologic unit such as 'impervious', 'semi', 'pervious,' or 'very'.
consolidated_yn	Text(1)		Was lithologic unit consolidated? 'Y' for yes or 'N' for no.
color	Text(30)		Color of lithologic layer
observation	Text(255)		General field observations of the lithologic unit
consistency	Text(20)		Description of the consistency of the soil such as 'very soft', 'soft, 'firm', 'hard' or 'very hard'
sorting	Text(20)		Geologic description of the grain size distribution of the lithologic unit. Use 'poor' for soil with a wide range of particle sizes or 'well' for soil with a narrow range of particle sizes.
grainsize	Text(20)		Description of grain size
odor	Text(20)		Description of odor from the soil
end_depth	Numeric		The end depth of the lithologic layer.
density	Text(20)		Density

Well_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Well installation location. Must be a valid code for the facility and reported in the sys_loc_code field of the location file.
well_id	Text(30)		Well ID
well_description	Text(255)		Used for additional well description, if necessary
well_owner	Text(50)		Name of entity that owns the well
well_purpose	Text(20)		Purpose of well
well_status	Text(20)		Current status of well
top_casing_elev	Numeric		Elevation of the top of well casing
datum_value	Numeric		Value of datum used to reference water level measurements
datum_unit	Text(15)		Unit of measure for the well datum
datum_desc	Text(255)		Description of the datum, such as 'top of well casing'
step_or_linear	Text(6)		If a section of the well casing was removed or added use 'step' as the value. If nothing was added or removed from the last survey use 'linear' as the value.
datum_start_date	DateTime		Date that datum was first used in MM/DD/YYYY format
datum_collection_method_code	Text(20)		Method used to determine the datum elevation
depth_of_well	Numeric		Depth below ground surface of the well bottom
depth_unit	Text(15)		Unit of measurement for depth
depth_measure_method	Text(20)		Method of measuring depth of well
stickup_height	Text(8)		Height of casing above ground surface
stickup_unit	Text(15)		Unit of measure for the stickup height
sump_length	Text(20)		Length of sump
sump_unit	Text(15)		Unit of measure for the sump length
installation_date	DateTime		Date of well installation in MM/DD/YYYY format
construct_start_date	DateTime		Date well construction began in MM/DD/YYYY format
construct_complete_date	DateTime		Date well construction was completed in MM/DD/YYYY format
construct_contractor	Text(40)		Name of contractor that installed well
pump_type	Text(20)		Type of pump used at well such as centrifugal, propeller, jet, helical, rotary, etc.
pump_capacity	Text(6)		Capacity of pump
pump_unit	Text(15)		Unit of measure for the pump capacity and yield
pump_yield	Text(6)		The yield of the pump
pump_yield_method	Text(20)		Method used for pump yield
weep_hole	Text(1)		Is there a weep hole? 'Y' for yes or 'N' for no
head_configuration	Text(50)		Description of the well head
access_port_yn	Text(1)		Is there an access port? 'Y' for yes or 'N' for no
casing_joint_type	Text(50)		Type of casing joint such as threaded, flush, or solvent welded
perforator_used	Text(50)		Description of well perforation such as slotted, drilled, or wound
intake_depth	Numeric		Depth below ground surface of the well intake
disinfected_yn	Text(1)		Was well disinfected? 'Y' for yes or 'N' for no
historical_reference_elev	Numeric		Historical reference value. Used for the elevation of past reference points
geologic_unit_code	Text(20)		Geologic unit in which the well intake is installed
remark	Text(2000)		General remarks

WellConstruction_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Soil boring or well installation location. Must be a valid code for the facility and reported in the location file either now or during an earlier data submission
segment_type	Text(20)	Y	Type of segment within well (e.g., protective casing, well casing, screen, etc.)
material_type_code	Text(20)	Y	Material description of well segment
start_depth	Numeric	Y	Depth below ground surface of the top of the segment
end_depth	Numeric	Y	Depth below ground surface of the bottom of the segment
depth_unit	Text(15)	Y	The unit of depth measurements
inner_diameter	Numeric		The inside diameter of segment
outer_diameter	Numeric		The outside diameter of the segment
diameter_unit	Text(15)		The unit of measure for diameter measurement
thickness	Numeric		Thickness of the well segment
thickness_unit	Text(15)		The unit of measurement for thickness
slot_type	Text(20)		Type of slots such as bridge, shutter, and continuous
slot_size	Numeric		Width of slots
slot_size_unit	Text(15)		The unit of measurement for slot size
perf_length	Numeric		Length of perforated portion of screen
screen_type	Text(15)		Type of screen
material_quantity	Text(20)		Quantity of material used. Applicable to annular seal/fill material.
material_density	Text(20)		Density of the annular seal material
remark	Text(2000)		Remarks regarding the well segment

GeoSample_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Sample collection location. Must be a valid code for the facility and reported in the sys_loc_code field of the location file.
geo_sample_code	Text(40)	Y	Unique sample identifier. Considerable flexibility is given in the methods used to derive and assign unique sample identifiers, but uniqueness throughout the database is the only restriction enforced.
sample_name	Text(50)		Use to provide a name or description of sample. Does not have to be a unique.
sample_top	Numeric	Y	Depth, in feet below ground surface, to top of sample
sample_bottom	Numeric	Y	Depth, in feet below ground surface, to bottom of sample
sample_date	DateTime		Date sample was collected in MM/DD/YYYY HH:MM:SS format
sample_method	Text(40)		Method used to obtain sample
material_type	Text(40)		Material type of geologic sample
sample_desc	Text(255)		General description of the sample or sampling activities
geologic_unit_code	Text(20)		Code used to identify the geologic unit of sample
liquid_limit	Numeric		Liquid limit of sample
plastic_limit	Numeric		Plastic limit of sample
shrinkage_limit	Numeric		Shrinkage limit of sample
flow_index	Numeric		Flow index of sample
plasticity_index	Numeric		Plasticity index of sample
activity	Numeric		Activity of sample
e	Numeric		Void ratio of sample
e_max	Numeric		Maximum void ratio of sample
e_min	Numeric		Minimum void ratio of sample
n	Numeric		Porosity of sample
specific_gravity	Numeric		Specific gravity of sample
w	Numeric		Water content of sample
opt_w	Numeric		Optimum water content
s	Numeric		Degree of saturation of the sample
K	Numeric		Hydraulic conductivity of sample
K_unit	Text(15)		Unit of measure for K
unit_wt	Numeric		Unit weight of sample
sat_unit_wt	Numeric		Saturated unit weight
dry_unit_wt	Numeric		Dry unit weight
dry_unit_wt_max	Numeric		Maximum dry unit weight
dry_unit_wt_min	Numeric		Minimum dry unit weight
density_unit	Text(15)		Unit of measure for the density of the sample
rel_density	Numeric		Relative density of sample
rel_compaction	Numeric		Relative compaction of sample
consistency	Text(20)		Description of the consistency of the soil sample such as very soft, soft, firm, hard or very hard
organic_carbon	Numeric		Organic carbon content of sample
organic_carbon_unit	Text(15)		Unit of measurement of organic carbon

WaterLevel_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Soil boring or well installation location. Must be a valid code for the facility and reported in the sys_loc_code field of the location file.
measurement_date	DateTime	Y	Date and time of water level measurement in MM/DD/YYYY HH:MM:SS format
equipment_code	Text(60)		Equipment code used to define equipment used during sampling event.
historical_reference_elev	Numeric		Historical reference value. Used for the elevation of past reference points. Elevation must be in feet.
water_level_depth	Numeric		Depth of ground water below datum defined in well table
water_level_elev	Numeric		Elevation of water level. Elevation must be in feet.
corrected_depth	Numeric		Depth of water level after any necessary corrections, e.g., if corrections were necessary to water_level_depth because free product was encountered
corrected_elev	Numeric		Corrected water level elevation. Elevation must be in feet.
measured_depth_of_well	Numeric		The depth below ground surface to the bottom of the well
depth_unit	Text(15)		Use values from Unit valid value table. Unit of measure for depths.
technician	Text(50)		Name of technician
dry_indicator_yn	Text(1)		Is the well dry? 'Y' for yes or 'N' for no
measurement_method	Text(20)		Method used to make water level measurements
batch_number	Text(10)		Batch number
dip_or_elevation	Text(10)	Y	Use either 'elevation' or 'dip'. Use 'elevation' if water level measurement is above the datum (i.e., artesian well) or 'dip' if water level is below datum.
remark	Text(2000)		Remark on measurement
lnapl_cas_rn	Text(15)		LNAPL_cas_rn
lnapl_depth	Numeric		LNAPL_depth
dnapl_cas_rn	Text(15)		DNAPL_cas_rn
dnapl_depth	Numeric		DNAPL_depth
task_code	Text(40)		Code used to identify the task under which the field sample was taken
approval_code	Text(10)		Approval code.
custom_field_1	Text(255)		Custom field.
custom_field_2	Text(255)		Custom field.
custom_field_3	Text(255)		Custom field.
custom_field_4	Text(255)		Custom field.
custom_field_5	Text(255)		Custom field.
reportable_yn	Text(1)	Y	Must be either "Y" for water levels which are considered to be reportable and final, or "N" for all other water level readings. This field can be used to distinguish between multiple water level readings where only the final reading would be used for reporting.

WaterTable_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Soil boring or well installation location. Must be a valid code for the facility and reported in the sys_loc_code field of the location file.
type	Text(20)	Y	Aquifer designation such as unconfined1, confined1, or confined2
sequence	Text(20)	Y	Designation of when water level measurement was taken. For example, measurement before water stabilized would be 'unstabilized' and after stabilization would be 'stabilized'.
depth	Numeric	Y	Depth of water table below reference point
flowing_yn	Text(1)		Is the water table flowing? 'Y' for yes or 'N' for no
measurement_method	Text(50)		Method of measuring water table depth
capped_pressure	Numeric		Hydrostatic pressure of confined aquifer
capped_pressure_unit	Text(15)		Unit of measure for capped pressure
reference_point	Text(50)		Description of reference point from which depth were measured
reference_elevation	Numeric		The reference point elevation
temperature	Numeric		Temperature of water in the water table
temperature_unit	Text(15)		Unit of temperature

DownholePoint_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Soil boring or well installation location. Must be a valid code for the facility and reported in the sys_loc_code field of the location file.
depth	Numeric	Y	Depth of measurement below ground surface
param	Text(20)	Y	The parameter being measured such as tip stress, resistivity, or pore pressure
param_value	Numeric	Y	The measured value of the parameter
param_unit	Text(15)		The unit of the measured value

ExtractionInjectionWells_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Well installation code
start_measure_date	DateTime	Y	Date and time that the pumping measures began in MM/DD/YYYY HH:MM:SS format
end_measure_date	DateTime	Y	Date and time that the pumping measures concluded in MM/DD/YYYY HH:MM:SS format
ave_pump_rate	Numeric	Y	Average pumping rate. Recommended method: volume pumped divided by reported measurement date span
pump_rate_unit	Text(15)	Y	Unit of measure for the pumping rate
pct_operating_time	Numeric		Percentage of the measurement time interval that the well was operating. 0 - 100 (no %)
operating_mode	Text(20)	Y	Mode in which well was operating during the reported interval
design_rate	Numeric	Y	Pumping rate specified in the remedial design to fully capture site's contamination
design_rate_unit	Text(15)	Y	Unit of measure for the design pumping rate
rate_measurement_type	Text(20)		Type of measurement used for averaging
suction	Numeric		Vacuum in well (e.g. wellpoint vacuum) or well casing (e.g. vacuum well) in equivalent feet of water
remark	Text(2000)		Remarks regarding the pumping rate measurements

Equipment_v1

Field Name	Data Type	Required	Comment
equipment_code	Text(60)	Y	Unique equipment identifier.
equipment_type	Text(30)		Type of equipment
equipment_desc	Text(255)		Description of equipment
sys_loc_code	Text(20)		Location at which equipment is installed, used, or with which it is associated
model_number	Text(50)		Model number
catalog_number	Text(50)		Catalog number
manufacturer	Text(50)		Manufacturer of equipment
owner	Text(50)		Owner of equipment
operation_status	Text(20)		Operational status of equipment
install_date	DateTime		Date of equipment installation
last_service_date	DateTime		Date equipment was last serviced
next_service_date	DateTime		Date equipment is scheduled to be serviced
purchase_date	DateTime		Date of equipment purchase
purchase_price	Numeric		Cost of equipment
material	Text(50)		Material
size	Text(20)		Size
size_unit	Text(15)		Size unit of measure
remark	Text(2000)		Remark.

Purge_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique Location ID
start_date	DateTime	Y	Date and time the purge operation was started
end_date	DateTime		Date and time the purge operation was completed
sampling_zone	Text(20)		Description of zone that was sampled
depth_unit	Text(15)		Unit of measurement for the purge depth
depth_to_water	Text(8)		Depth to water
flowmeter_start	Text(20)		Start reading of flowmeter
purge_vol	Text(7)		Purged volume
purge_vol_unit	Text(15)		Unit of purged volume
purge_rate	Text(10)		Purge rate
purge_rate_unit	Text(15)		Purge rate unit
purge_purpose	Text(20)		Purpose of purge
purge_method	Text(50)		Purge method
remark	Text(2000)		Remark
task_code	Text(40)		Task code

BasicResults_v1

Field Name	Data Type	Required	Comment
sys_loc_code	Text(20)	Y	Unique Station ID. Required for mapping.
field_parameter	Text(15)	Y	Field parameter.
start_depth	Numeric	Y	Sample start depth
depth_unit	Text(15)	Y	Sample depth unit.
result_date	DateTime	Y	Result date/time (MM/DD/YYYY HH:MM:SS).
result_value	Text(14)		Result value.
result_unit	Text(15)		Result unit.
source	Text(255)		Source
source_method	Text(255)		Source method.
source_extent	Text(255)		Source extent.
custom_field_1	Text(255)		Custom field.
custom_field_2	Text(255)		Custom field.
custom_field_3	Text(255)		Custom field.
custom_field_4	Text(255)		Custom field.
custom_field_5	Text(255)		Custom field

FieldSample_v1

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40)	Y	Unique sample identifier. Each sample at a facility must have a unique value, including spikes and duplicates. You have considerable flexibility in the methods used to derive and assign unique sample identifiers, but uniqueness throughout the database is the only restriction enforced by EQuIS®.
sample_name	Text(50)		Additional sample identification information as necessary. Is not required to be unique (i.e., duplicates are OK).
sample_matrix_code	Text(10)	Y	Code which distinguishes between different types of sample matrix. For example, soil samples must be distinguished from ground water samples, etc.
sample_type_code	Text(20)	Y	Code which distinguishes between different types of samples. For example, normal field samples must be distinguished from laboratory method blank samples, etc.
sample_source	Text(10)	Y	This field identifies where the sample came from, either Field or Lab. In this import, this should always be Field.
parent_sample_code	Text(40)		The value of "sys_sample_code" that uniquely identifies the sample that was the source of this sample. For example, the value of this field for a duplicate sample would identify the normal sample of which this sample is a duplicate.
sample_delivery_group	Text(20)		The sampling event with which the sample is associated.
sample_date	DateTime	Y	Date and time sample was collected (in MM/DD/YYYY HH:MM:SS format)
sys_loc_code	Text(20)		Soil boring or well installation location. Must be a valid code for the facility and reported in the sys_loc_code field of the location file. Field should be null if field QC sample (e.g., field blank, trip blank, etc.)
start_depth	Numeric		Beginning depth (top) of sample in feet below ground surface. Leave null for most ground water samples from monitoring wells. Database will derive this information from the start/end depth of the well screen field located in another data table. Only use for groundwater samples if discrete samples are taken at different depth elevations from a single well, i.e. multiple well packer samples.
end_depth	Numeric		Ending depth (bottom) of sample in feet below ground surface. Leave null for most ground water samples from monitoring wells. Database will derive this information from the start/end depth of the well screen field located in another data table. Only use for groundwater samples if discrete samples are taken at different depth elevations from a single well, i.e. multiple well packer samples.
depth_unit	Text(15)		Unit of measurement for the sample begin and end depths
chain_of_custody	Text(40)		Chain of custody identifier. A single sample may be assigned to only one chain of custody.
sent_to_lab_date	DateTime		Date sample was sent to lab (in MM/DD/YYYY format)
sample_receipt_date	DateTime		Date that sample was received at laboratory (in MM/DD/YYYY format)
sampler	Text(50)		Name or initials of sampler
sampling_company_code	Text(40)	Y	Name or initials of sampling company (not controlled vocabulary)
sampling_reason	Text(30)		Report as null
sampling_method	Text(40)		Sampling method
task_code	Text(40)		Code used to identify the task under which the field sample was retrieved
collection_quarter	Text(6)		format: YYQ# where YY is year and # is 1, 2, 3, or 4 representing which quarter.
composite_yn	Text(1)	Y	Is sample a composite sample? 'Y' for yes or 'N' for no
composite_desc	Text(255)		Description of composite sample (if composite_yn is 'Yes')
sample_class	Text(10)		Report as null
custom_field_1	Text(255)		Report as null
custom_field_2	Text(255)		Report as null
custom_field_3	Text(255)		Report as null
geologic_unit_code	Text(20)		The geologic unit (e.g. stratigraphy) from which the sample was taken.
comment	Text(2000)		Comment
filter_type	Text(20)		Filter Type

SampleParameter_v1

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40)	Y	Unique sample identifier. Each sample must have a unique value, including spikes and duplicates. Laboratory QC samples must also have unique identifiers. The laboratory and the EQuIS user have considerable flexibility in the methods they use to derive and assign unique sample identifiers, but uniqueness throughout the database is the only restriction enforced by EQuIS.
measurement_date	DateTime		Measurement date and time
param_code	Text(20)	Y	Parameter code
param_value	Text(255)		Parameter value
param_unit	Text(15)		Unit of measure for parameter value
measurement_method	Text(20)		Measurement method
remark	Text(2000)		Remark

FieldResults_v1

Field Name	Data Type	Required	Comment
data_provider	Text(40)		Data Provider.
sys_loc_code	Text(20)	Y	Unique Station ID. Required for mapping.
sys_sample_code	Text(40)	Y	Sample code
cas_rn	Text(15)	Y	Field parameter by CASRN.
chemical_name	Text(255)	Y	Field parameter by chemical name.
start_depth	Numeric		Sample start depth
end_depth	Numeric		Sample end depth
depth_unit	Text(15)		Sample depth unit.
result_date	DateTime	Y	Result date/time (mm/dd/yr hh:mm:ss).
result_value	Numeric	Y	Result value.
result_unit	Text(15)	Y	Result unit.
quantitation_limit	Text(20)		Quantitation limit
task_code	Text(40)		Code used to identify the task under which the field sample was retrieved
sample_matrix_code	Text(10)	Y	Sample matrix code
qualifier	Text(2)		Qualifier
sampling_company_code	Text(40)		sampling reason
sampling_reason	Text(30)		sampling reason
sampling_method	Text(40)		Sampling method
reportable_result	Text(10)	Y	Reportable result
value_type	Text(10)	Y	How value was derived
remark	Text(2000)		Remark
detect_flag	Text(2)	Y	May be either 'Y' for detected analytes or 'N' for non_detects or 'TR' for trace. Use 'Y' for estimated values (above detection limit but below the quantitation limit).

COC_v1

Field Name	Data Type	Required	Comment
chain_of_custody	Text(40)	Y	
cooler_id	Text(10)		
cooler_temp	Numeric		
custom_field_1	Text(255)		
custom_field_2	Text(255)		
custom_field_3	Text(255)		
custom_field_4	Text(255)		
custom_field_5	Text(255)		
shipping_company	Text(40)		
shipping_tracking_number	Text(50)		
contact_name_1	Text(50)		
contact_name_2	Text(50)		
complete_yn	Text(1)		
cooler_count	Numeric		

LabSample_v1

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40)	Y	Unique sample identifier. Each sample at a facility must have a unique value, including spikes and duplicates. You have considerable flexibility in the methods used to derive and assign unique sample identifiers, but uniqueness throughout the database is the only restriction enforced by EQuIS.
sample_name	Text(50)		Additional sample identification information as necessary. Is not required to be unique (i.e., duplicates are OK).
sample_matrix_code	Text(10)	Y	Code which distinguishes between different types of sample matrix. For example, soil samples must be distinguished from ground water samples, etc.
sample_type_code	Text(20)	Y	Code which distinguishes between different types of samples. For example, normal field samples must be distinguished from laboratory method blank samples, etc.
sample_source	Text(10)	Y	This field identifies where the sample came from, either Field or Lab. In this import, this should always be Field.
parent_sample_code	Text(40)		The value of "sys_sample_code" that uniquely identifies the sample that was the source of this sample. For example, the value of this field for a duplicate sample would identify the normal sample of which this sample is a duplicate.
sample_delivery_group	Text(20)		The sampling event with which the sample is associated.
sample_date	DateTime	Y	Date and time sample was collected (in MM/DD/YYYY HH:MM:SS format for EDD)
sys_loc_code	Text(20)		Soil boring or well installation location. Must be a valid code for the facility and reported in the sys_loc_code field of the location file (Table 3-2).* Field should be null if field QC sample (e.g., field blank, trip blank, etc.)
start_depth	Numeric		Beginning depth (top) of sample in feet below ground surface. Leave null for most ground water samples from monitoring wells. Database will derive this information from the start/end depth of the well screen field located in another data table. Only use for groundwater samples if discrete samples are taken at different depth elevations from a single well, i.e. multiple well packer samples.
end_depth	Numeric		Ending depth (top) of sample in feet below ground surface. Leave null for most ground water samples from monitoring wells. Database will derive this information from the start/end depth of the well screen field located in another data table. Only use for groundwater samples if discrete samples are taken at different depth elevations from a single well, i.e. multiple well packer samples.
depth_unit	Text(15)		Unit of measurement for the sample begin and end depths
chain_of_custody	Text(40)		Chain of custody identifier. A single sample may be assigned to only one chain of custody.
sent_to_lab_date	DateTime		Date sample was sent to lab (in MM/DD/YYYY format for EDD)
sample_receipt_date	DateTime		Date that sample was received at laboratory (in MM/DD/YYYY format for EDD)
sampler	Text(50)		Name or initials of sampler
sampling_company_code	Text(40)	Y	Name or initials of sampling company (not controlled vocabulary)
sampling_reason	Text(30)		Report as null
sampling_method	Text(40)		Sampling method
task_code	Text(40)		Code used to identify the task under which the field sample was retrieved
collection_quarter	Text(6)		Format: YYQ# where YY is year and # is 1,2,3,or 4 representing what quarter
composite_yn	Text(1)	Y	Is sample a composite sample? 'Y' for yes or 'N' for no
composite_desc	Text(255)		Description of composite sample (if composite_yn is 'Yes')
sample_class	Text(10)		Report as null
custom_field_1	Text(255)		Report as null
custom_field_2	Text(255)		Report as null
custom_field_3	Text(255)		Report as null
comment	Text(2000)		Comment

TestResults_v1

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40)	Y	Unique sample identifier. Each sample at a facility must have a unique value, including spikes and duplicates. You have considerable flexibility in the methods used to derive and assign unique sample identifiers, but uniqueness throughout the database is the only restriction enforced by EQuIS.
lab_anl_method_name	Text(20)	Y	Laboratory analytical method name or description. A controlled vocabulary column, valid values can be found in the appendix in table lab_anl_method_name.
analysis_date	DateTime	Y	Date and time of sample analysis in MM/DD/YYYY HH:MM:SS format. May refer to either beginning or end of the analysis as required by EPA.
total_or_dissolved	Text(10)	Y	Must be either 'D' for dissolved or filtered [metal] concentration, 'T' for total or undissolved, or 'N' for anything else
column_number	Text(2)		Values include either '1C' for first column analyses, '2C' for second column analyses or 'NA' for tests for which this distinction is not applicable.
test_type	Text(10)	Y	Type of test. Valid values include 'INITIAL', 'REEXTRACT1', 'REEXTRACT2', 'REEXTRACT3', 'REANALYSIS', 'DILUTION1', 'DILUTIONS2', and 'DILUTIONS3'
lab_matrix_code	Text(10)		Code which distinguishes between different type of sample matrix. For example, soil samples must be distinguished from ground water samples, etc. The matrix of the sample as analyzed may be different from the matrix of the sample as retrieved (e.g. leachates), so this field is available at both the sample and test level.
analysis_location	Text(2)	Y	Must be either 'FI' for field instrument or probe, 'FL' for mobile field laboratory analysis, or 'LB' for fixed_based laboratory analysis
basis	Text(10)	Y	Must be either 'Wet' for wet_weight basis reporting, 'Dry' for dry_weight basis reporting, or 'NA' for tests for which this distinction is not applicable. The EPA prefers that results are reported on the basis of dry weight where applicable.
container_id	Text(30)		Report as null
dilution_factor	Numeric		Effective test dilution factor
prep_method	Text(20)		Laboratory sample preparation method name or description
prep_date	DateTime		Beginning date and time of sample preparation in MM/DD/YYYY HH:MM:SS format
leachate_method	Text(15)		Laboratory leachate generation method name or description. The method name should be sufficient to reflect operation of the laboratory.
leachate_date	DateTime		Beginning date and time of leachate preparation in MM/DD/YYYY HH:MM:SS format
lab_name_code	Text(40)		Unique identifier of the laboratory
qc_level	Text(10)		May be either 'screen' or 'quant'
lab_sample_id	Text(40)		Laboratory LIMS sample identifier. If necessary, a field sample may have more than one LIMS lab_sample_id (maximum one per each test event)
percent_moisture	Text(5)		Percent moisture of the sample portion used in this test; this value may vary from test to test for any sample. Numeric format is 'NN.MM', i.e., 70.1% could be reported as '70.1' but not as '70.1%'.
subsample_amount	Text(14)		Amount of sample used for test
subsample_amount_unit	Text(15)		Unit of measurement for subsample amount
analyst_name	Text(50)		Report as null
instrument_id	Text(60)		Instrument identifier
comment	Text(2000)		Comments about the test
preservative	Text(20)		Sample preservative used
final_volume	Numeric		The final volume of the sample after sample preparation. Include all dilution factors.
final_volume_unit	Text(15)		The unit of measure that corresponds to the final_amount
cas_rn	Text(15)	Y	Use values in analyte valid value table
chemical_name	Text(255)	Y	Use the name in the analyte valid value table
result_value	Numeric		Analytical result reported at an appropriate number of significant digits. May be blank for non-detects.
result_error_delta	Text(20)		Error range applicable to the result value; typically used only for radiochemistry results.
result_type_code	Text(10)	Y	Must be either 'TRG' for a target or regular result, 'TIC' for tentatively identified compounds, 'SUR' for surrogates, 'IS' for internal standards, or 'SC' for spiked compounds
reportable_result	Text(10)	Y	Must be either 'Yes' for results which are considered to be reportable, or 'No' for other results. This field has many purposes. For example, it can be used to distinguish between multiple results where a sample is retested after dilution. It can also be used to indicate which of the first or second column result should be considered primary. The proper value of this field in both of these two examples should be provided by the laboratory (only one result should be flagged as reportable).
detect_flag	Text(2)	Y	May be either 'Y' for detected analytes or 'N' for non_detects or 'TR' for trace. Use 'Y' for estimated values (above detection limit but below the quantitation limit).
lab_qualifiers	Text(20)		Qualifier flags assigned by the laboratory

TestResults_v1

Field Name	Data Type	Required	Comment
validator_qualifiers	Text(20)		Qualifier flags assigned by the validation firm.
interpreted_qualifiers	Text(20)		Qualifier flags assigned by the validation firm
organic_yn	Text(1)	Y	Must be either 'Y' for organic constituents or 'N' for inorganic constituents
method_detection_limit	Text(20)		Method detection limit
reporting_detection_limit	Numeric		Concentration level above which results can be quantified with confidence. It must reflect conditions such as dilution factors and moisture content. Required for all results for which such a limit is appropriate. The reporting_detection_limit column must be reported as the sample specific detection limit.
quantitation_limit	Text(20)		Concentration level above which results can be quantified with confidence
result_unit	Text(15)		Units of measurement for the result
detection_limit_unit	Text(15)		Units of measurement for the detection limit(s). This field is required if a reporting_detection_limit is reported.
tic_retention_time	Text(8)		Retention time in seconds for tentatively identified compounds
result_comment	Text(2000)		Result specific comments
custom_field_2	Text(255)		QC_Flag_1
custom_field_3	Text(255)		QC_Flag_2
custom_field_4	Text(255)		QC_Flag_3
lab_sdg	Text(20)		Sample Delivery Group (SDG) identifier. A single bottle may be assigned to only one Sample Delivery Group (SDG).

TestResultsQC_v1

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40)	Y	Unique sample identifier. Each sample at a facility must have a unique value, including spikes and duplicates. You have considerable flexibility in the methods used to derive and assign unique sample identifiers, but uniqueness throughout the database is the only restriction enforced by EQuIS.
lab_anl_method_name	Text(20)	Y	Laboratory analytical method name or description
analysis_date	DateTime	Y	Date and time of sample analysis in 'MM/DD/YYYY HH:MM:SS' format. May refer to either beginning or end of the analysis as required by EPA.
total_or_dissolved	Text(10)	Y	Must be either 'D' for dissolved or filtered [metal] concentration, 'T' for total or undissolved, or "N" for everything else
column_number	Text(2)		Values include either '1C' for first column analyses, '2C' for second column analyses or 'NA' for tests for which this distinction is not applicable.
test_type	Text(10)	Y	Type of test. Valid values include 'INITIAL', 'REEXTRACT1', 'REEXTRACT2', 'REEXTRACT3', 'REANALYSIS', 'DILUTION1', 'DILUTIONS2', and 'DILUTIONS3'
lab_matrix_code	Text(10)		Code which distinguishes between different type of sample matrix. For example, soil samples must be distinguished from ground water samples, etc. The matrix of the sample as analyzed may be different from the matrix of the sample as retrieved (e.g. leachates), so this field is available at both the sample and test level.
analysis_location	Text(2)	Y	Must be either 'FI' for field instrument or probe, 'FL' for mobile field laboratory analysis, or 'LB' for fixed_based laboratory analysis
basis	Text(10)	Y	Must be either 'Wet' for wet_weight basis reporting, 'Dry' for dry_weight basis reporting, or 'NA' for tests for which this distinction is not applicable. The EPA prefers that results are reported on the basis of dry weight where applicable.
container_id	Text(30)		Report as null
dilution_factor	Numeric		Effective test dilution factor
prep_method	Text(20)		Laboratory sample preparation method name or description
prep_date	DateTime		Beginning date and time of sample preparation in 'MM/DD/YYYY HH:MM:SS' format.
leachate_method	Text(15)		Laboratory leachate generation method name or description. The method name should be sufficient to reflect operation of the laboratory.
leachate_date	DateTime		Beginning date and time of leachate preparation in 'MM/DD/YYYY HH:MM:SS' format.
lab_name_code	Text(40)		Unique identifier of the laboratory as defined by the EPA
qc_level	Text(10)		May be either 'screen' or 'quant'
lab_sample_id	Text(40)		Laboratory LIMS sample identifier. If necessary, a field sample may have more than one LIMS lab_sample_id (maximum one per each test event).
percent_moisture	Text(5)		Percent moisture of the sample portion used in this test; this value may vary from test to test for any sample. Numeric format is 'NN.MM', i.e., 70.1% could be reported as '70.1' but not as '70.1%'.
subsample_amount	Text(14)		Amount of sample used for test
subsample_amount_unit	Text(15)		Unit of measurement for subsample amount
analyst_name	Text(50)		Report as null
instrument_id	Text(60)		Instrument identifier
comment	Text(2000)		Comments about the test
preservative	Text(20)		Sample preservative used
final_volume	Numeric		The final volume of the sample after sample preparation. Include all dilution factors.
final_volume_unit	Text(15)		The unit of measure that corresponds to the final_volume
cas_rn	Text(15)	Y	Use values in analyte valid value table
chemical_name	Text(255)	Y	Use the name in the analyte valid value table
result_value	Numeric		Analytical result reported at an appropriate number of significant digits. May be blank for non-detects.
result_error_delta	Text(20)		Error range applicable to the result value; typically used only for radiochemistry results.
result_type_code	Text(10)	Y	Must be either 'TRG' for a target or regular result, 'TIC' for tentatively identified compounds, 'SUR' for surrogates, 'IS' for internal standards, or 'SC' for spiked compounds.
reportable_result	Text(10)	Y	Must be either 'Yes' for results which are considered to be reportable, or 'No' for other results. This field has many purposes. For example, it can be used to distinguish between multiple results where a sample is retested after dilution. It can also be used to indicate which of the first or second column result should be considered primary. The proper value of this field in both of these two examples should be provided by the laboratory (only one result should be flagged as reportable).
detect_flag	Text(2)	Y	Maybe either 'Y' for detected analytes or 'N' for non_detects or 'TR' for trace. Use 'Y' for estimated (above detection limit but below the quantitation limit).
lab_qualifiers	Text(20)		Qualifier flags assigned by the laboratory

TestResultsQC_v1

Field Name	Data Type	Required	Comment
validator_qualifiers	Text(20)		Qualifier flags assigned by the validation firm.
interpreted_qualifiers	Text(20)		Qualifier flags assigned by the validation firm
organic_yn	Text(1)	Y	Must be either 'Y' for organic constituents or 'N' for inorganic constituents
method_detection_limit	Text(20)		Method detection limit
reporting_detection_limit	Numeric		Concentration level above which results can be quantified with confidence. It must reflect conditions such as dilution factors and moisture content. Required for all results for which such a limit is appropriate. The reporting_detection_limit column must be reported as the sample specific detection limit.
quantitation_limit	Text(20)		Concentration level above which results can be quantified with confidence
result_unit	Text(15)		Units of measurement for the result
detection_limit_unit	Text(15)		Units of measurement for the detection limit(s). This field is required if a reporting_detection_limit is reported.
tic_retention_time	Text(8)		Retention time in seconds for tentatively identified compounds
result_comment	Text(2000)		Result specific comments
lab_sdg	Text(20)		Sample Delivery Group (SDG) identifier. A single bottle may be assigned to only one Sample Delivery Group (SDG).
qc_original_conc	Numeric		The concentration of the analyte in the original (unspiked) sample. Might be required for spikes and spike duplicates (depending on user needs). Not necessary for surrogate compounds or LCS samples (where the original concentration is assumed to be zero).
qc_spike_added	Numeric		The concentration of the analyte added to the original sample. Might be required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample (depending on user needs).
qc_spike_measured	Numeric		The measured concentration of the analyte. Use zero for spiked compounds that were not detected in the sample. Might be required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample (depending on user needs).
qc_spike_recovery	Numeric		The percent recovery calculated as specified by the laboratory QC program. Always required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample. Report as percentage multiplied by 100 (e.g., report "120%" as "120").
qc_dup_original_conc	Numeric		The concentration of the analyte in the original (unspiked) sample. Might be required for spike or LCS duplicates only (depending on user needs). Not necessary for surrogate compounds or LCS samples (where the original concentration is assumed to be zero).
qc_dup_spike_added	Numeric		The concentration of the analyte added to the original sample. Might be required for spike or LCS duplicates, surrogate compounds, and any spiked and duplicated sample (depending on user needs). Use zero for spiked compounds that were not detected in the sample. Required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample. Also complete the qc-spike-added field.
qc_dup_spike_measured	Numeric		The measured concentration of the analyte in the duplicate. Use zero for spiked compounds that were not detected in the sample. Might be required for spike and LCS duplicates, surrogate compounds, and any other spiked and duplicated sample (depending on user needs). Also complete the qc-spike-measured field.
qc_dup_spike_recovery	Numeric		The duplicate percent recovery calculated as specified by the laboratory QC program. Always required for spike or LCS duplicates, surrogate compounds, and any other spiked and duplicated sample. Also complete the qc-spike-recovery field. Report as percentage multiplied by 100 (e.g., report "120%" as "120").
qc_rpd	Text(14)		The relative percent difference calculated as specified by the laboratory QC program. Required for duplicate samples as appropriate. Report as percentage multiplied by 100 (e.g., report "30%" as "30").
qc_spike_lcl	Text(14)		Lower control limit for spike recovery. Required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample. Report as percentage multiplied by 100 (e.g., report "60%" as "60").
qc_spike_ucl	Text(14)		Upper control limit for spike recovery. Required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample. Report as percentage multiplied by 100 (e.g., report "60%" as "60").
qc_rpd_cl	Text(14)		Relative percent difference control limit. Required for any duplicated sample. Report as percentage multiplied by 100 (e.g., report "25%" as "25").
qc_spike_status	Text(10)		Used to indicate whether the spike recovery was within control limits. Use the "*" character to indicate failure, otherwise leave blank. Required for spikes, spike duplicates, surrogate compounds, LCS and any spiked sample.
qc_dup_spike_status	Text(10)		Used to indicate whether the duplicate spike recovery was within control limits. Use the "*" character to indicate failure, otherwise leave blank. Required for any spiked and duplicated sample.
qc_rpd_status	Text(10)		Used to indicate whether the relative percent difference was within control limits. Use the "*" character to indicate failure, otherwise leave blank. Required for any duplicated sample.

TestBatch_v1

Field Name	Data Type	Required	Comment
sys_sample_code	Text(40)		Unique sample identifier. Each sample must have a unique value, including spikes and duplicates. Laboratory QC samples must also have unique identifiers. The laboratory and the EQuIS user have considerable flexibility in the methods they use to derive and assign unique sample identifiers, but uniqueness throughout the database is the only restriction enforced by EQuIS.
lab_anl_method_name	Text(20)		Laboratory analytical method name or description
analysis_date	DateTime		Date and time of sample analysis in 'MM/DD/YYYY HH:MM:SS' format. May refer to either beginning or end of the analysis as required by EPA.
total_or_dissolved	Text(10)		Must be either 'D' for dissolved or filtered [metal] concentration, or 'T' for total or undissolved, or "N" for everything else
column_number	Text(2)		Values include either '1C' for first column analyses, '2C' for second column analyses or 'NA' for tests for which this distinction is not applicable.
test_type	Text(10)		Type of test. Valid values include 'INITIAL', 'REEXTRACT1', 'REEXTRACT2', 'REEXTRACT3', 'REANALYSIS', 'DILUTION1', 'DILUTIONS2', and 'DILUTIONS3'
test_batch_type	Text(10)	Y	Lab batch type. Valid values include 'Prep', 'Analysis', and 'Leach'. This is a required field for all batches.
test_batch_id	Text(20)	Y	Unique identifier for all lab batches.

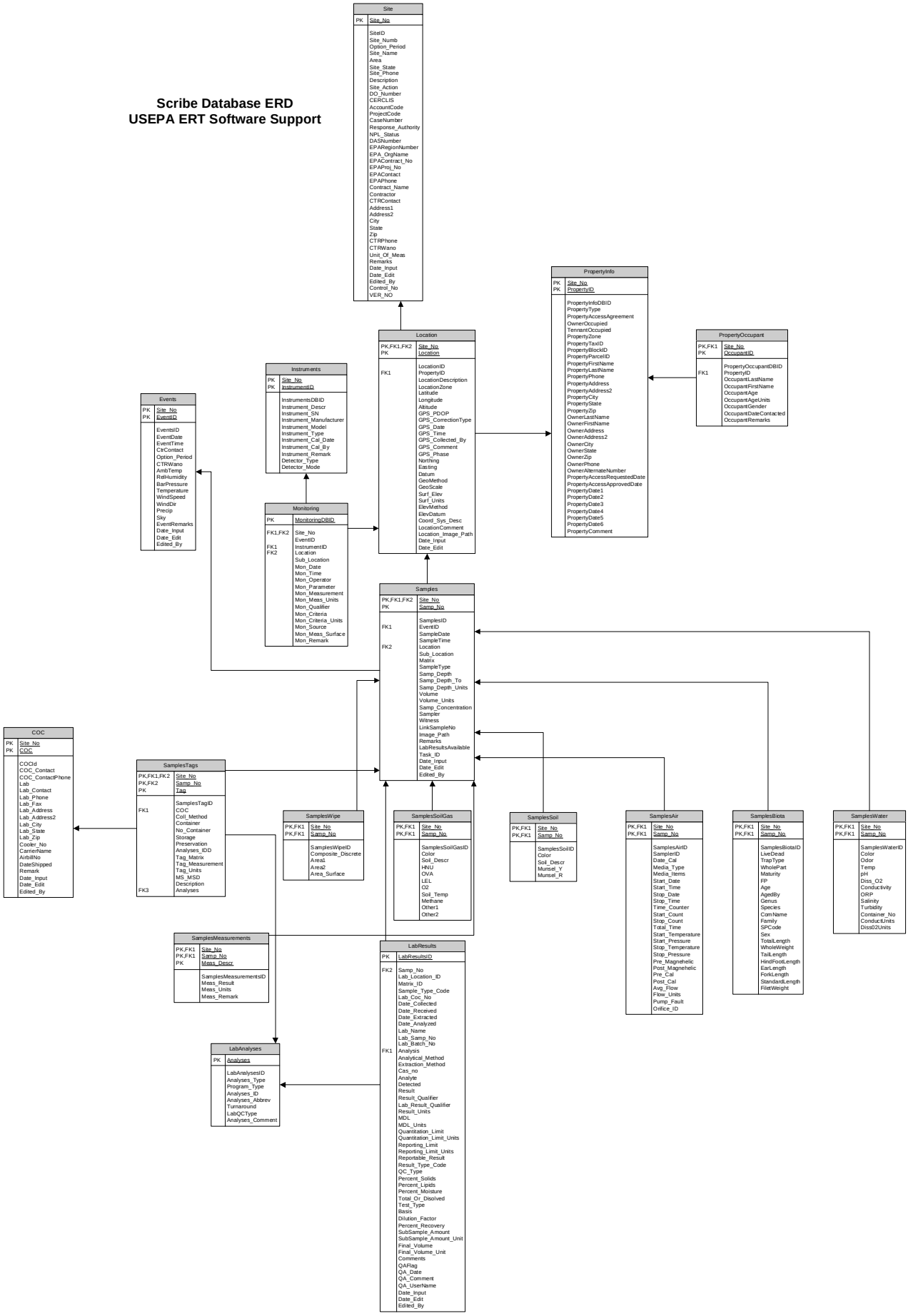
Files_v1

Field Name	Data Type	Required	Comment
file_name	Text(255)	Y	Name of the file.
file_type	Text(20)	Y	Type of the file.
file_date	DateTime		Date of the file.
title	Text(255)		Title of the file.
author	Text(255)		Author of the file.
confidential_yn	Text(1)		Whether or not the file is confidential.
remark	Text(2000)		Remark for the file.
place_type	Text(50)		Type of place this file is associated with.
place_code	Text(50)		Code/identifier of the place this file is associated with.
place_subcode	Text(50)		Subcode/identifier of the place this file is associated with.
external_url	Text(2000)		If the file resides externally, this is the full HTTP URL to the external file. For a file accessible via HTTP/S that will be delivered to the user as an HTTP/S redirect, enter the full HTTP/S URL: http://someserver.org/dir/file1.pdf For a file accessible via HTTP/S that will be delivered to the user proxied through EQuIS Enterprise, enter the full HTTP/S URL preceded by 'proxy.': proxy.http://someserver.org/dir/file2.pdf
content			Content of the file.

APPENDIX C

EPA Region 10 Deliverables: Scribe.NET Specifications

Scribe Database ERD
USEPA ERT Software Support



SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
COC	COCId	AutoNumber	4	Database Autonumber	No
COC	Site_No	Text	12	Site Number (PK, FK)	Yes
COC	COC	Text	30	Chain of Custody Number (PK)	Yes
COC	CaseNumber	Text	10	CLP Case Number	No
COC	DASNumber	Text	50	Region DAS Number	No
COC	CaseComplete	Boolean	1	CLP Case Complete?	No
COC	COC_Contact	Text	50	COC Contact	No
COC	COC_ContactPhone	Text	50	COC Contact Phone Number	No
COC	Lab	Text	50	Lab COC sent to	No
COC	Lab_Contact	Text	30	Lab Contact	No
COC	Lab_Phone	Text	20	Lab Phone Number	No
COC	Lab_Fax	Text	20	Lab Fax	No
COC	Lab_Address	Text	150	Lab Address	No
COC	Lab_Address2	Text	50	Lab Address2	No
COC	Lab_City	Text	40	Lab City	No
COC	Lab_State	Text	20	Lab State	No
COC	Lab_Zip	Text	20	Lab Zip	No
COC	Lab_Remark	Text	250	Lab Remark	No
COC	Cooler_No	Text	20	The COC Cooler Number	No
COC	CarrierName	Text	50	The Carrier used to ship the COC	No
COC	AirbillNo	Text	50	Airbill number	No
COC	DateShipped	Date/Time	8	Date COC shipped	No
COC	Remark	Memo	0	Remark	No
COC	COC_Format	Text	50	Scribe, CLP Generic, Organics, Inorganics, High Resolution No	
COC	ProjectCode	Text	50	Regional Project Code	No
COC	Date_Input	Date/Time	8	System Date	No
COC	Date_Edit	Date/Time	8	System Date	No
COC	Edited_By	Text	20	System Edited by	No
Events	EventsID	AutoNumber	4	Database AutoNumber	No
Events	Site_No	Text	12	Site Number (PK, FK)	Yes
Events	EventID	Text	50	EventID. Use to group data by sampling/monitoring events (i.e. EOC, Site Assessment) (PK)	Yes
Events	EventDate	Date/Time	8	Event Date	No
Events	EventTime	Date/Time	8	Event Time	No
Events	CtrContact	Text	30		No
Events	Option_Period	Text	5		No
Events	CTRWano	Text	25		No
Events	AmbTemp	Text	10		No
Events	RelHumidity	Text	10		No
Events	BarPressure	Text	10		No
Events	Temperature	Text	10		No
Events	WindSpeed	Text	10		No
Events	WindDir	Text	20		No
Events	Precip	Text	10		No
Events	Sky	Text	15		No
Events	EventRemarks	Text	255		No
Events	Date_Input	Date/Time	8	System Date Input	No
Events	Date_Edit	Date/Time	8	System Date Edit	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Events	Edited_By	Text	20	System Edited By	No
Instruments	InstrumentsDBID	AutoNumber	4	Database AutoNumber Integer	No
Instruments	Site_No	Text	12	Site Number (PK, FK)	Yes
Instruments	InstrumentID	Text	50	Instrument ID. Uniquely identifies instrument (PK)	Yes
Instruments	Instrument_Descr	Text	100	Instrument Description (i.e. Photo Ion Detector, HNU)	No
Instruments	Instrument_SN	Text	50	Instrument SN (i.e. A11198)	No
Instruments	Instrument_Manufacturer	Text	50	Instrument Manufacturer (i.e. HNU Systems)	No
Instruments	Instrument_Model	Text	50	Instrument Model (i.e. ISPI-101)	No
Instruments	Instrument_Type	Text	50	Instrument Type (i.e. PID/FID)	No
Instruments	Instrument_Cal_Date	Date/Time	8	Instrument Calibration Date	No
Instruments	Instrument_Cal_By	Text	50	Instrument Calibrated By	No
Instruments	Instrument_Remark	Text	255	Instrument Remark	No
Instruments	Detector_Type	Text	50	Detector Type	No
Instruments	Detector_Mode	Text	50	Detector Mode	No
Lab Analyses	LabAnalysesID	AutoNumber	4	Database AutoNumber	No
Lab Analyses	Site_No	Text	12	Site Number (PK, FK)	Yes
Lab Analyses	Analyses_Type	Text	20	Analyses Type (i.e. Organics, Inorganics Generic, High Resolution, Default, Other)	No
Lab Analyses	Program_Type	Text	10	The Program (i.e. CLP or Non-CLP)	No
Lab Analyses	Analyses_ID	Text	4	System field	No
Lab Analyses	Analyses	Text	50	Analysis Name (i.e. VOCs, PCBs, metals TAL) (PK)	Yes
Lab Analyses	Analyses_Abbrev	Text	20	Analyses Abbrev	No
Lab Analyses	Turnaround	Double	8	Turnaround time for the analysis	No
Lab Analyses	Turnaround_Units	Text	25	Turnaround time units for the analysis	No
Lab Analyses	LabQCType	Text	50	Lab QC to be done on the analysis	No
Lab Analyses	Analytical_Method	Text	100	Analytical Method	No
Lab Analyses	Analyses_Comment	Text	100	Analyses Comment	No
Lab Analyses	Analyses_Container	Text	30	Container	No
Lab Analyses	Analyses_Preservation	Text	30	Preservation	No
Lab Results	LabResultsID	AutoNumber	4	Table Autonumber. Import Wiz PK is Site_No,Samp_No, Analysis, Analyte, Result_Units	Yes
Lab Results	Site_No	Text	12	Site Number (Required PK, FK)	No
Lab Results	Samp_No	Text	50	Scribe/Field Sample Number (Required	No
Lab Results	CLP_Sample_No	Text	25	CLP Sample # for samples submitted to the CLP	No
Lab Results	Lab_Location_ID	Text	50	Sample Location ID reported by the lab	No
Lab Results	Matrix_ID	Text	20	Matrix ID reported by Lab. (i.e. Soil, Water, Air, etc.)	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Lab Results	Sample_Type_Code	Text	50	Code which distinguishes between different types of samples. For example normal samples must be distinguished from lab method blank	No
Lab Results	Lab_Coc_No	Text	50	Chain of Custody Number as reported by the Lab	No
Lab Results	Date_Collected	Date/Time	8	Date Sample Collected as reported by the Lab	No
Lab Results	Date_Received	Date/Time	8	Date Samples Received by Lab	No
Lab Results	Date_Extracted	Date/Time	8	Date Samples Extracted by Lab	No
Lab Results	Date_Analyzed	Date/Time	8	Date Analysis was performed by Lab	No
Lab Results	Lab_Name	Text	50	Laboratory that performed the analysis	No
Lab Results	Lab_Samp_No	Text	25	Lab Sample Number	No
Lab Results	Lab_Batch_No	Text	30	Lab Batch Number	No
Lab Results	Analysis	Text	100	Lab Analysis (i.e VOCs) (Required PK)	No
Lab Results	Analytical_Method	Text	100	Lab Analytical Method (i.e. 8270M)	No
Lab Results	Extraction_Method	Text	100	Lab Extraction Method (i.e. MEP, TCLP, SPLP, EP)	No
Lab Results	Cas_no	Text	50	Chemical Abstract Number (CAS)	No
Lab Results	Analyte	Text	60	Analyte/Paramater name (i.e. Lead, Arsenic, etc.) (Required PK)	No
Lab Results	Detected	Text	20	Detected or Not Detected. i.e. "Y" for detected analytes or "N" for	No
Lab Results	Result	Double	8	Result (number) returned from lab	No
Lab Results	Result_Qualifier	Text	10	Final/Validated Result qualifier/flag (i.e. J,U,ND,<,>)	No
Lab Results	Lab_Result_Qualifier	Text	10	Result Qualifier as Reported by the Lab	No
Lab Results	Result_Units	Text	20	Result Unit of measurement (Required PK)	No
Lab Results	MDL	Double	8	Method Detection Limit (MDL)	No
Lab Results	MDL_Units	Text	20	MDL Units	No
Lab Results	Quantitation_Limit	Double	8	Quantitation Limits as determined by the lab.	No
Lab Results	Quantitation_Limit_Units	Text	20	Quantitation Limit Units	No
Lab Results	Reporting_Limit	Double	8	Reporting Limits as determined by the	No
Lab Results	Reporting_Limit_Units	Text	20	Reporting Limit Units	No
Lab Results	Reportable_Result	Text	5	"Yes" for results which are considered to be reportable, or "No" for othere	No
Lab Results	Result_Type_Code	Text	50	"TRG" for a target or regular result, "TIC" for tentatively identifed compounds, "SUR" for surrogates, "IS" for internal standards, or "SC" for	No
Lab Results	QC_Type	Text	40	Laboratory_Control_Sample, Method_Blank	No
Lab Results	Percent_Solids	Double	8	Percent Solids	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Lab Results	Percent_Lipids	Double	8	Percent Lipids	No
Lab Results	Percent_Moisture	Double	8	Percent Moisture of the sample portion used in the test	No
Lab Results	Total_Or_Disolved	Text	30	"D" for dissolved or filtered (metal) concentration, or "T" for everything else	No
Lab Results	Test_Type	Text	30	Type of test (i.e. "initial", "reextract1", "reextract2", "reextract3", "reanalysis", "dilution1", "dilution2", and "dilution3")	No
Lab Results	Basis	Text	10	"Wet" for wet_weight basis reporting, "Dry" for dry_weight reporting	No
Lab Results	Dilution_Factor	Double	8	Effective test dilution factor.	No
Lab Results	Percent_Recovery	Double	8	Percent Recovery	No
Lab Results	SubSample_Amount	Double	8	Amount of sample used for test.	No
Lab Results	SubSample_Amount_Unit	Text	20	Unit of measurement for subsample amount.	No
Lab Results	Final_Volume	Double	8	The final volume of the sample after sample preparation. Include all dilution factors.	No
Lab Results	Final_Volume_Unit	Text	20	The unit of measurement that corresponds to the final amount.	No
Lab Results	Comments	Text	250	Result Comments	No
Lab Results	QAFlag	Long Integer	4	QAFlag (Values: 0 = Not QAed 1=QAed)	No
Lab Results	QA_Date	Date/Time	8	QA Date	No
Lab Results	QA_Comment	Text	250	QA Comment	No
Lab Results	QA_UserName	Text	50	QA Username	No
Lab Results	Date_Input	Date/Time	8	System Date Input	No
Lab Results	Date_Edit	Date/Time	8	System Date Edit	No
Lab Results	Edited_By	Text	20	System Edited By	No
Lab Results	EDD_File_Name	Text	100	EDD Import File Name	No
Lab Results	Va;idation_Level	Text	30	Validation Level	No
Location	LocationID	Autonumber	4	Database AutoNumber	No
Location	Site_No	Text	12	Site Number (PK, FK)	Yes
Location	Location	Text	50	Sampling Location Code/Monitoring Location Code (PK)	Yes
Location	PropertyID	Text	50	Property ID (FK)	No
Location	LocationDescription	Text	100	Location Description further describes the Location Code.	No
Location	LocationZone	Text	25	Location Zone describes the area impacted relative to the site.	No
Location	Latitude	Double	8	Latitude	No
Location	Longitude	Double	8	Longitude	No
Location	Altitude	Double	8	Altitude	No
Location	GPS_PDOP	Double	8	Position Dilution of Precision	No
Location	GPS_CorrectionType	Text	50	GPS Correction Type (i.e. uncorrected, corrected)	No
Location	GPS_Date	Date/Time	8	GPS Date Recorded	No
Location	GPS_Time	Date/Time	8	GPS Time Recorded	No
Location	GPS_Collected_By	Text	30	Collector of GPS Data	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Location	GPS_Comment	Text	50	GPS comment recorded	No
Location	GPS_Phase	Text	30	Phase that GPS coordinate was	No
Location	Northing	Double	8	Northing	No
Location	Easting	Double	8	Easting	No
Location	Datum	Text	50	Geopositioning datum associated with the Latitude and Longitude coordinates. (i.e. NAD27, NAD83)	No
Location	GeoMethod	Text	60	Geopositioning method used to establish Latitude and Longitude coordinates. (i.e. GPS, Interpolation, Survey)	No
Location	GeoScale	Text	20	Scale of the map or photo used to interpolate the Latitude and Longitude coordinates	No
Location	Surf_Elev	Double	8	Surface Elevation records the Ground elevation of a geographic point where samples or field measurements are collected.	No
Location	Surf_Units	Text	20	Surface Elevation Units (i.e. feet,	No
Location	ElevMethod	Text	60	Method used to determine the elevation measurement. (i.e. Altimetry, GPS, Interpolation, Other, Survey)	No
Location	ElevDatum	Text	50	Datum used to determine the elevation measurement. (i.e NAVD88, NGVD29, WGS84, Sea Level, Unknown) Datum used to determine the elevation measurement Datum used to determine the elevation measurement. i.e. NAVD88, NGVD29, WGS84, Sea Level, Unknown	No
Location	Coord_Sys_Desc	Text	70	Coordinate system	No
Location	LocationComment	Text	250	Location Comment	No
Location	Location_Image_Path	Text	255	File path to a related file or image	No
Location	Date_Input	Date/Time	8	System Date Input	No
Location	Date_Edit	Date/Time	8	System Date Edited	No
Monitoring	MonitoringDBID	AutoNumber	4	Database AutoNumber. The Scribe Import Wizard uses the Site_No, InstrumentID, Location, Mon_Date, Mon_Time, Mon_Parameter fields to uniquely identify monitoring records	Yes
Monitoring	Site_No	Text	12	Site Number. (FK)	No
Monitoring	EventID	Text	50	EventID. Use to group data by monitoring events. (FK)	No
Monitoring	InstrumentID	Text	50	Instrument ID (FK)	No
Monitoring	Location	Text	50	Monitoring Location Code (FK)	No
Monitoring	Sub_Location	Text	30	Sub Location (i.e. Fence Line, Perimeter. For residential: Living Room, Kitchen, etc.)	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Monitoring	Activity	Text	60	Monitoring Activity	No
Monitoring	Mon_Date	Date/Time	8	Monitoring Date	No
Monitoring	Mon_Time	Text	30	Monitoring Time (hh:mm:ss)	No
Monitoring	Mon_Operator	Text	50	Monitoring/Sampler Name	No
Monitoring	Mon_Parameter	Text	50	Monitoring Parameter (i.e. Mercury)	No
Monitoring	Mon_Measurement	Double	8	Monitoring Measurement	No
Monitoring	Mon_Meas_Units	Text	40	Monitoring Measurement Units	No
Monitoring	Mon_Qualifier	Text	10	Monitoring data qualifier/flag (i.e. J,U,ND,<,>)	No
Monitoring	Mon_Criteria	Double	8	Monitoring Criteria such as detection limit, action limit or other criteria	No
Monitoring	Mon_Criteria_Units	Text	20	Monitoring Criteria Units	No
Monitoring	Mon_Source	Text	50	Monitoring Source (i.e. Radiation Type/Energy)	No
Monitoring	Mon_Meas_Surface	Text	50	Monitoring Measurement Surface (i.e. concrete)	No
Monitoring	Mon_Remark	Text	255	Monitoring Data Remark	No
Monitoring	EDD_File_Name	Text	100	EDD Import File Name	No
Property Info	PropertyInfoDBID	AutoNumber	4	Database AutoNumber	No
Property Info	Site_No	Text	12	Site Number (PK, FK)	Yes
Property Info	PropertyID	Text	50	PropertyID (PK)	Yes
Property Info	PropertyType	Text	15	Property Type (i.e. residential)	No
Property Info	PropertyAccessAgreement	Yes/No	1	Access Agreement Y/N	No
Property Info	OwnerOccupied	Yes/No	1	Owner Occupied Y/N	No
Property Info	TennantOccupied	Yes/No	1	Tenant Occupied Y/N	No
Property Info	PropertyZone	Text	25	Property Zone	No
Property Info	PropertyTaxID	Text	50	Property Tax ID	No
Property Info	PropertyBlockID	Text	25	Property Block Number	No
Property Info	PropertyParcelID	Text	25	Parcel Identifier	No
Property Info	PropertyFirstName	Text	50	Property Contact's First Name	No
Property Info	PropertyLastName	Text	50	Property Contact's Last Name (Tenant)	No
Property Info	PropertyPhone	Text	50	Property Phone Number	No
Property Info	PropertyAddress	Text	50	Property Address	No
Property Info	PropertyAddress2	Text	50	Property Address 2	No
Property Info	PropertyCity	Text	50	Property City	No
Property Info	PropertyState	Text	20	Proiperty State	No
Property Info	PropertyZip	Text	20	Property Zip	No
Property Info	OwnerLastName	Text	50	Owner Last Name	No
Property Info	OwnerFirstName	Text	50	Owner First Name	No
Property Info	OwnerAddress	Text	50	Owner Address (may be different than property address)	No
Property Info	OwnerAddress2	Text	50	Owner Address 2	No
Property Info	OwnerCity	Text	50	Owner City	No
Property Info	OwnerState	Text	20	Owner State	No
Property Info	OwnerZip	Text	20	Owner Zip	No
Property Info	OwnerPhone	Text	50	Owner Phone	No
Property Info	OwnerAlternateNumber	Text	50	Alternate Phone #	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Property Info	PropertyAccessRequestedDate	Date/Time	8	Access Requested Date	No
Property Info	PropertyAccessApprovedDate	Date/Time	8	Access Approved Date	No
Property Info	PropertyDate1	Date/Time	8	DateExteriorAccessRequested	No
Property Info	PropertyDate2	Date/Time	8	DateInteriorAccessRequested	No
Property Info	PropertyDate3	Date/Time	8	DateInteriorAccessApproved	No
Property Info	PropertyDate4	Date/Time	8	DateInteriorAccessDenied	No
Property Info	PropertyDate5	Date/Time	8	DateExteriorAccessApproved	No
Property Info	PropertyDate6	Date/Time	8	DateExteriorAccessDenied	No
Property Info	PropertyX	Double		X Coordinate	No
Property Info	PropertyY	Double		Y Coordinate	No
Property Info	PropertyComment	Text	250	Property Comment	No
Property Occupant	PropertyOccupantDBID	AutoNumber	4	Database AutoNumber	No
Property Occupant	Site_No	Text	12	Site Number (PK, FK)	Yes
Property Occupant	PropertyID	Text	50	Property ID (FK)	No
Property Occupant	OccupantID	Text	25	Occupant ID is a Unique Identifier for the occupant (PK)	Yes
Property Occupant	OccupantLastName	Text	50	Last Name	No
Property Occupant	OccupantFirstName	Text	50	First Name	No
Property Occupant	OccupantAge	Double	8	Age	No
Property Occupant	OccupantAgeUnits	Text	30	Occupant Age Units (i.e. years)	No
Property Occupant	OccupantGender	Text	30	Gender	No
Property Occupant	OccupantDateContacted	Date/Time	8	Date Contacted	No
Property Occupant	OccupantRemarks	Text	255	Remarks	No
Samples	SamplesID	AutoNumber	4	Database AutoNumber	No
Samples	Site_No	Text	12	Site Number (PK, FK)	Yes
Samples	EventID	Text	50	EventID. Use to group data by sampling/monitoring events (FK). For example, EOC, Site Assessment	No
Samples	Samp_No	Text	50	Sample Number. Unique sample number (PK)	Yes
Samples	SampleDate	Date/Time	8	Date Sample Taken	No
Samples	SampleTime	Text	5	Time Sample Taken	No
Samples	Location	Text	50	Sample Location Cod/Station ID. Identifies where a sample was taken.	No
Samples	Sub_Location	Text	25	Sub Location further describes Location info. (i.e. For residential: Living Room, Kitchen, etc.)	No
Samples	Matrix	Text	40	Sampling Matrix (i.e. Water, Soil, Air)	No
Samples	SampleMedia	Text	30	Sampling Media	No
Samples	SampleCollection	Text	30	Sample Collection Method (i.e. Grab, Composite, Discrete Interval)	No
Samples	SampleType	Text	30	Sample Type (i.e. Field Sample, Field Duplicate, Lab QC, Spike, Trip Blank)	No
Samples	Activity	Text	50	Sampling Activity	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Samples	Samp_Depth	Double	8	Sampling Depth From	No
Samples	Samp_Depth_To	Double	8	Sampling Depth To	No
Samples	Samp_Depth_Units	Text	20	Sampling Depth Units	No
Samples	Volume	Double	8	Air Sampling Volume. Wipe Sampling Area	No
Samples	Volume_Units	Text	20	Volume Units	No
Samples	Samp_Concentration	Text	20	Sample Concentration (low, medium, high)	No
Samples	Sampler	Text	30	Sampler Name/Organization	No
Samples	Witness	Text	30	Witness Name/Organization	No
Samples	LinkSampleNo	Text	25	Linked Sample Number	No
Samples	Image_Path	Text	100	Image File Path	No
Samples	Remarks	Memo	0	Sample Remarks	No
Samples	LabResultsAvailable	Yes/No	1	System Assigned LabResults for this Sample Y/N	No
Samples	Task_ID	Text	4	System Assigned Task_ID (Values: A01=Air Sampling, B01=Biota Sampling, SO01=Soil Sampling, SG01=Soil Gas Sampling, WA01=Water Sampling, WIPE=Wipe Sampling) (FK)	No
Samples	Date_Input	Date/Time	8	System Date Input	No
Samples	Date_Edit	Date/Time	8	System Date Edit	No
Samples	Edited_By	Text	20	System Edited By	No
Samples Air	SamplesAirID	AutoNumber	4	Database AutoNumber	No
Samples Air	Site_No	Text	12	Site Number (PK, FK)	Yes
Samples Air	Samp_No	Text	50	Sample Number. Scribe requires a unique sample number. (PK, FK)	Yes
Samples Air	SamplerID	Text	50	Air Sampler Equipment ID - Pump #	No
Samples Air	Date_Cal	Date/Time	8	Date Sampler Calibrated	No
Samples Air	Media_Type	Text	30	Air High Vol Sampling	No
Samples Air	Media_Items	Text	50	Air High Vol Sampling	No
Samples Air	Start_Date	Date/Time	8	Air Sampling Start Date	No
Samples Air	Start_Time	Date/Time	8	Air Sampler Start time (hh:mm)	No
Samples Air	Stop_Date	Date/Time	8	Air Sampling Stop Date	No
Samples Air	Stop_Time	Date/Time	8	Air Sampler Stop time (hh:mm)	No
Samples Air	Time_Counter	Text	10	Use Sampling Time or Sampler Counter to calculate time. (Values: Counter,	No
Samples Air	Start_Count	Double	8	Air Sampler Start Counter	No
Samples Air	Stop_Count	Double	8	Air Sampler Stop Counter	No
Samples Air	Total_Time	Double	8	Total Sampling time	No
Samples Air	Start_Temperature	Double	8	Start_Temperature (F)	No
Samples Air	Start_Pressure	Double	8	Start_Pressure (Hg)	No
Samples Air	Stop_Temperature	Double	8	Stop Temperature	No
Samples Air	Stop_Pressure	Double	8	Stop Pressure	No
Samples Air	Pre_Magnehelic	Double	8	Starting Magnehelic reading	No
Samples Air	Post_Magnehelic	Double	8	Ending Magnehelic reading	No
Samples Air	Pre_Cal	Double	8	Start Flow Rate - Pre-Calc	No
Samples Air	Post_Cal	Double	8	Stop Flow Rate - Post-Calc	No
Samples Air	Avg_Flow	Double	8	Average Flow Rate	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Samples Air	Flow_Units	Text	20	Flow rate Units (i.e. Liters)	No
Samples Air	Pump_Fault	Text	1	Pump Fault (Y,N)	No
Samples Air	Orifice_ID	Text	50	Orifice ID	No
Samples Biota	SamplesBiotaID	AutoNumber	4	Database AutoNumber	No
Samples Biota	Site_No	Text	12	Site Number (PK, FK)	Yes
Samples Biota	Samp_No	Text	50	Sample Number. Scribe requires a unique sample number. (PK, FK)	Yes
Samples Biota	LiveDead	Text	20	Sample Taken Alive or Dead! (Values: Live, Dead)	No
Samples Biota	TrapType	Text	20	Trap Type	No
Samples Biota	WholePart	Text	20	Whole or Partial Sample Taken	No
Samples Biota	Maturity	Text	20	Relative Age Class	No
Samples Biota	FP	Text	20	Values: Fresh or Preserved	No
Samples Biota	Age	Double	8	Age	No
Samples Biota	AgedBy	Text	20	Aged By Units	No
Samples Biota	Genus	Text	50	Genus	No
Samples Biota	Species	Text	50	Species	No
Samples Biota	ComName	Text	50	Common Name	No
Samples Biota	Family	Text	50	Family	No
Samples Biota	SPCode	Text	3	SPCode	No
Samples Biota	Sex	Text	20	Male, Female	No
Samples Biota	TotalLength	Double	8	measurement	No
Samples Biota	WholeWeight	Double	8	measurement	No
Samples Biota	TailLength	Double	8	measurement	No
Samples Biota	HindFootLength	Double	8	measurement	No
Samples Biota	EarLength	Double	8	measurement	No
Samples Biota	ForkLength	Double	8	measurement	No
Samples Biota	StandardLength	Double	8	measurement	No
Samples Biota	FiletWeight	Double	8	measurement	No
Samples Measurements	SamplesMeasurementsID	AutoNumber	4	Database AutoNumber	No
Samples Measurements	Site_No	Text	12	Site Number (PK, FK)	Yes
Samples Measurements	Samp_No	Text	50	Sample Number. Scribe requires a unique sample number. (PK, FK)	Yes
Samples Measurements	Meas_Descr	Text	30	Measurement Description (PK)	Yes
Samples Measurements	Meas_Result	Double	8	Measurement Result	No
Samples Measurements	Meas_Units	Text	20	Measurement Units	No
Samples Measurements	Meas_Remark	Text	50	Measurement Remark	No
Samples Soil	SamplesSoilID	AutoNumber	4	Database AutoNumber	No
Samples Soil	Site_No	Text	12	Site Number (PK, FK)	Yes
Samples Soil	Samp_No	Text	50	Sample Number. Scribe requires a unique sample number (PK, FK)	Yes
Samples Soil	Color	Text	25	Sample Color	No
Samples Soil	Soil_Descr	Text	25	Soil Description (i.e. Sandy/Silty/Clay)	No
Samples Soil	Munsel_Y	Text	30	Munsel Color Code	No
Samples Soil	Munsel_R	Text	30	Munsel Color Code	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Samples Soil Gas	SamplesSoilGasID	AutoNumber	4	Database AutoNumber	No
Samples Soil Gas	Site_No	Text	12	Site Number (PK, FK)	Yes
Samples Soil Gas	Samp_No	Text	50	Sample Number. Scribe requires a unique sample number. (PK, FK)	Yes
Samples Soil Gas	Color	Text	25	Sample Color	No
Samples Soil Gas	Soil_Descr	Text	25	Soil Description (i.e. Sandy/Silty/Clay)	No
Samples Soil Gas	HNU	Double	8	measurement	No
Samples Soil Gas	OVA	Double	8	measurement	No
Samples Soil Gas	LEL	Double	8	measurement	No
Samples Soil Gas	O2	Double	8	measurement	No
Samples Soil Gas	Soil_Temp	Double	8	measurement	No
Samples Soil Gas	Methane	Double	8	measurement	No
Samples Soil Gas	Other1	Double	8	measurement	No
Samples Soil Gas	Other2	Double	8	measurement	No
Sample Tags	SamplesTagID	AutoNumber	4	Database AutoNumber	No
Sample Tags	Site_No	Text	12	Site Number (PK, FK)	Yes
Sample Tags	Samp_No	Text	50	Sample Number. Scribe requires a unique sample number. (PK, FK)	Yes
Sample Tags	Tag	Text	15	Sample Tag. Scribe UI defaults this to 'A' (PK, FK)	Yes
Sample Tags	COC	Text	30	Chain of Custody Number (FK)	No
Sample Tags	CLP_Sample_No	Text	25	CLP Sample # for samples submitted to the CLP	No
Sample Tags	Coll_Method	Text	30	Collection Method	No
Sample Tags	Container	Text	30	Container	No
Sample Tags	No_Container	Double	8	Number of Containers	No
Sample Tags	Storage	Text	30	Sample Storage	No
Sample Tags	Preservation	Text	30	Sample Preservation	No
Sample Tags	Analyses_IDD	Text	4	System Field	No
Sample Tags	Analyses	Text	50	Lab Analyses (FK)	No
Sample Tags	Preliminary_Results	Boolean		Preliminary Results Requested	No
Sample Tags	Tared_Weight	Double	8	Tared Weight	No
Sample Tags	Final_Weight	Double	8	Final Weight	No
Sample Tags	Sample_Weight	Double	8	Sample Weight	No
Sample Tags	Tag_Matrix	Text	20	Tag matrix	No
Sample Tags	Tag_Measurement	Double	8	Tag Measurement - i.e. Tag Weight	No
Sample Tags	Tag_Units	Text	20	Tag Units of measurement	No
Sample Tags	MS_MSD	Text	1	Y=Lab QC (Y or N)	No
Sample Tags	Description	Text	30	Description	No
Sample Tags	TAT	Double	8	Turnaround time for the analysis	No
Sample Tags	TAT_Units	Text	25	Turnaround time units	No
Samples Water	SamplesWaterID	AutoNumber	4	Database AutoNumber	No
Samples Water	Site_No	Text	12	Site Number (PK, FK)	Yes
Samples Water	Samp_No	Text	50	Sample Number. Scribe requires a unique sample number. (PK, FK)	Yes
Samples Water	Color	Text	25	Water Quality	No
Samples Water	Odor	Text	15	Water Quality	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Samples Water	Temp	Double	8	Water Quality Measurement	No
Samples Water	pH	Double	8	Water Quality Measurement	No
Samples Water	Diss_O2	Double	8	Water Quality Measurement	No
Samples Water	Conductivity	Double	8	Water Quality Measurement	No
Samples Water	ORP	Double	8	Water Quality Measurement	No
Samples Water	Salinity	Double	8	Water Quality Measurement	No
Samples Water	Turbidity	Double	8	Water Quality Measurement	No
Samples Water	Container_No	Text	15	Container Number(s)	No
Samples Water	ConductUnits	Text	15	Water Quality Measurement	No
Samples Water	Diss02Units	Text	15	Water Quality Measurement	No
Samples Water	Depth_To_Water	Double	8	Depth To Water	No
Samples Water	Depth_To_Water_Units	Text	25	Depth To Water Units	No
Samples Wipe	SamplesWipeID	AutoNumber	4	Database AutoNumber	No
Samples Wipe	Site_No	Text	12	Site Number (PK, FK)	Yes
Samples Wipe	Samp_No	Text	50	Sample Number. Scribe requires a unique sample number. (PK, FK)	Yes
Samples Wipe	Composite_Discrete	Text	10	Composite or Discrete	No
Samples Wipe	Area1	Double	8	Measurement	No
Samples Wipe	Area2	Double	8	Measurement	No
Samples Wipe	Area_Surface	Text	50	Area Surface	No
Samples Wipe	Dust_PumpID	Text	50		No
Samples Wipe	Dust_Start_Date	Date/Time	8		No
Samples Wipe	Dust_Start_Time	Date/Time	8		No
Samples Wipe	Dust_Stop_Date	Date/Time	8		No
Samples Wipe	Dust_Stop_Time	Date/Time	8		No
Samples Wipe	Dust_Time_Counter	Text	10		No
Samples Wipe	Dust_Start_Count	Double	8		No
Samples Wipe	Dust_Stop_Count	Double	8		No
Samples Wipe	Dust_Total_Time	Double	8		No
Samples Wipe	Dust_Pre_Cal	Double	8	Start Flow Rate	No
Samples Wipe	Dust_Post_Cal	Double	8	Stop Flow Rate	No
Samples Wipe	Dust_Avg_Flow	Double	8		No
Samples Wipe	Dust_Flow_Units	Text	20		No
Samples Wipe	Dust_Pump_Fault	Text	1	Y/N	No
Site	SiteID	AutoNumber	4	Database AutoNumber	No
Site	Site_No	Text	12	Site Number (PK)	Yes
Site	Site_Numb	Text	12	User assigned site number	No
Site	Option_Period	Text	5	Contract Option Period	No
Site	Site_Name	Text	50	Name of site or project	No
Site	Area	Text	60	Area, location of site	No
Site	Site_State	Text	20	Site State	No
Site	Site_Phone	Text	30	Site Phone #	No
Site	Description	Text	50	Site Description	No
Site	Site_Action	Text	30	Site Action (i.e. Emergency, TC, NTC, Remedial)	No
Site	DO_Number	Text	30	Delivery ORder Number	No
Site	CERCLIS	Text	20	Cerclis Number	No
Site	AccountCode	Text	50	Regional Account Code	No
Site	ProjectCode	Text	50	Regional Project Code	No

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Site	Numeric_Tags	Boolean	1	Calculate numeric TAG numbers for analytical samples	No
Site	CaseNumber	Text	5	CLP CaseNumber	No
Site	Next_CLP_Sample_No	Text	50	Next CLP Sample No.	No
Site	Next_Tag	Text	15	Next Tag No.	No
Site	Region_Tag_Prefix	Boolean	1	Prefix Tags with the Region Number (i.e. 6-)	No
Site	Response_Authority	Text	30	Response_Authority (i.e. OPA,	No
Site	NPL_Status	Text	20	i.e. Non NPL	No
Site	DASNumber	Text	50	DAS Number	No
Site	EPARegionNumber	Text	10	EPA Region Number	No
Site	EPA_OrgName	Text	50	EPA Organication (i.e. ERT)	No
Site	EPAContract_No	Text	50	EPA Contract #	No
Site	EPAProj_No	Text	50	EPA Project Number	No
Site	EPAContact	Text	50	Primary EPA contact	No
Site	EPAPhone	Text	50	Primary EPA contact phone #	No
Site	Contract_Name	Text	50	Name of the contract (i.e. START)	No
Site	Contractor	Text	50	Contractor name/company name	No
Site	CTRContact	Text	50	Contractor Contact	No
Site	Address1	Text	50	Contractor Address	No
Site	Address2	Text	50	Contractor Address	No
Site	City	Text	50	Contractor City	No
Site	State	Text	20	Contractor State	No
Site	Zip	Text	20	Contractor Zip	No
Site	CTRPhone	Text	50	Contractor Phone	No
Site	CTRWano	Text	50	Contractor WA #	No
Site	Unit_Of_Meas	Text	50	Unit Of Measurement (i.e. Metric or Imperial etc.)	No
Site	Remarks	Memo	0	Remarks	No
Site	Date_Input	Date/Time	8	System Generated Date Input	No
Site	Date_Edit	Date/Time	8	System Genererated Date Edited	No
Site	Edited_By	Text	20	system Generated User Login Name	No
Site	Control_No	Text	30	Control # used by master database to track distributed data	No
Site	VER_NO	Long Integer	4	System DB VER_NO	No
Site	Template_File_Path	Text	255	Scribe Template File (mdb) used to create the Project	No
Site	ScribeNetProjectID	Long Integer	4	System Scribe.NET Project ID	No
Site	ScribeNetCustomerID	Long Integer	4	System Scribe.NET Customer/Subscription ID	No
Site	CLP_Tag_Mast	Text	50	CLP Project Level Tag Format Mask	No
Site	Project_Default	Text	20	Default Project Type for Layouts and COC Settings.	No
Action Levels	ActionLevelDBID	AutoNumber	4	Database AutoNumber	No
Action Levels	Site_No	Text	12	Site Number (PK, FK)	Yes
Action Levels	SourceID	Text	100	Source of the Action Level	Yes
Action Levels	Matrix	Text	40	Matrix	Yes

SCRIBE Data Dictionary

Table	Field Name	Type	Size	Description	Primary Key
Action Levels	Analyte	Text	60	Analyte / Paramater Name	Yes
Action Levels	CAS_NO	Text	8	Chemical Abstract Number	Yes
Action Levels	Value	Double	8	Action Level Value	No
Action Levels	Unit	Text	20	Unit of measurement	Yes
Action Levels	Notes	Text	255	Remarks	No

SCRIBE – EDD Field Descriptions

Location EDD

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Location	Sampling Location Code/Monitoring Location Code (PK)	Text	50	PK	Yes
Longitude	Longitude	Numeric		No	No
Latitude	Latitude	Numeric		No	No
Altitude	Altitude	Numeric		No	No
Coord_Sys_Desc	Coordinate system	Text	70	No	No
Datum	Geopositioning datum associated with the Latitude and Longitude coordinates. (i.e. NAD27; NAD83)	Text	50	No	No
Easting	Easting	Numeric		No	No
ElevDatum	Datum used to determine the elevation measurement. (i.e NAVD88; NGVD29; WGS84; Sea Level; Unknown) Datum used to determine the elevation measurement Datum used to determine the elevation measurement. i.e. NAVD88; NGVD29; WGS84; Sea Level; Unknown	Text	50	No	No
ElevMethod	Method used to determine the elevation measurement. (i.e. Altimetry; GPS; Interpolation; Other; Survey)	Text	30	No	No
GeoMethod	Geopositioning method used to establish Latitude and Longitude coordinates. (i.e. GPS; Interpolation; Survey)	Text	30	No	No
GeoScale	Scale of the map or photo used to interpolate the Latitude and Longitude coordinates	Text	20	No	No
GPS_Collected_By	Collector of GPS Data	Text	30	No	No
GPS_Comment	GPS comment recorded	Text	50	No	No
GPS_CorrectionType	GPS Correction Type (i.e. uncorrected; corrected)	Text	50	No	No
GPS_Date	GPS Date Recorded	DateTime		No	No
GPS_PDOP	Position Dilution of Precision	Numeric		No	No
GPS_Phase	Phase that GPS coordinate was captured.	Text	30	No	No
GPS_Time	GPS Time Recorded	DateTime		No	No
Location_Image_Path	File path to a related file or image	Text	255	No	No
LocationComment	Location Comment	Text	250	No	No
LocationDescription	Location Description further describes the Location Code.	Text	100	No	No
LocationZone	Location Zone describes the area impacted relative to the site.	Text	25	No	No
Northing	Northing	Numeric		No	No

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
PropertyID	Property ID (FK)	Text	50	No	No
Surf_Elev	Surface Elevation records the Ground elevation of a geographic point where samples or field measurements are collected.	Numeric		No	No
Surf_Units	Surface Elevation Units (i.e. feet; meters)	Text	20	No	No

Water Sampling

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Samp_No	Sample Number. Scribe requires a unique sample number (Required)	Text	50	PK	Yes
Location	Sampling Location Code (Required)	Text	50	No	Yes
Tag	Samples Tag (Required. Defaults to A)	Text	15	PK	No
Altitude	Altitude	Numeric		No	No
Analyses	Lab Analyses for this sample (i.e. VOCs) (FK)	Text	64	No	No
COC	Chain of Custody Number (FK)	Text	30	No	No
Coll_Method	Collection Method	Text	30	No	No
Color	Sample Color	Text	25	No	No
Conductivity	Water Quality Measurement	Numeric		No	No
ConductUnits	Water Quality Measurement	Text	15	No	No
Container	Sample Container	Text	30	No	No
Coord_Sys_Desc	Sampling location coordinate system. (i.e UTM NAD83)	Text	70	No	No
Datum	Datum of the stations coordinates	Text	50	No	No
Description	Sample Analyses Decription	Text	30	No	No
Diss_O2	Water Quality Measurement	Numeric		No	No
Diss02Units	Water Quality Measurement	Text	15	No	No
Depth_To_Water	Depth to Water	Numeric		No	No
Depth_To_Water_Units	Depth to Water Units	Text	15	No	No
Easting	Easting	Numeric		No	No
ElevDatum	Datum used to determine the elevation measurement.(i.e NAVD88; NGVD29; WGS84; Sea Level; Unknown) Datum used to determine the elevation measurement Datum used to determine the elevation measurement. i.e. NAVD88; NGVD29; WGS84; Sea Level; Unknown	Text	50	No	No
ElevMethod	Method used to determine the elevation measurement. (i.e. Altimetry; GPS; Interpolation; Other; Survey)	Text	30	No	No
EventID	EventID. Use to group data by sampling events. Defaults to 'Sampling' (i.e. EOC; Site Assessment)	Text	50	No	No
GeoMethod	Geopositioning method used to establish Latitude and Longitude coordinates. (i.e. GPS; Interpolation; Survey)	Text	30	No	No

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
GeoScale	Scale of the map or photo used to interpolate the Latitude and Longitude coordinates	Text	20	No	No
Image_Path	Image File Path to an image file	Text	100	No	No
Imported	System field. N = Has Not been imported. Y = Has been imported into a Scribe project	Text	1	No	No
Latitude	Latitude	Numeric		No	No
LinkSampleNo	Linked Sample Number	Text	25	No	No
Location_Image_Path	Location Image Path to related image file.	Text	255	No	No
LocationComment	Location Comment	Text	250	No	No
LocationDescription	Location Description	Text	100	No	No
LocationZone	Describes the area impacted relative to the site	Text	25	No	No
Longitude	Longitude	Numeric		No	No
Activity	Sampling Activity	Text	50	No	No
Matrix	Sample Matrix. i.e. Water; Filtered Water; Ground Water	Text	40	No	No
MS_MSD	Y = Lab QC (Y,N)	Text	1	No	No
No_Container	Number of Sample Containers	Numeric		No	No
Northing	Northing	Numeric		No	No
Odor	Sample Data	Text	15	No	No
ORP	Water Quality Measurement	Numeric		No	No
pH	Water Quality Measurement	Numeric		No	No
Preservation	Sample Preservation	Text	30	No	No
PropertyID	Property ID (FK)	Text	50	No	No
RecordId	System field	Numeric		No	No
Remarks	Remarks	Text	250	No	No
Salinity	Water Quality Measurement	Numeric		No	No
Samp_Concentration	Sample Concentration (low; medium; high)	Text	20	No	No
Samp_Depth	Sampling Depth	Numeric		No	No
Samp_Depth_To	Sampling Depth	Numeric		No	No
Samp_Depth_Units	Sampling Depth Units	Text	20	No	No
SampleCounter	System field	Numeric		No	No
SampleDate	Date Sample Taken	DateTime		No	No
Sampler	Sampler Name	Text	30	No	No
SampleTime	Time Sample taken. Format used is hh:mm	Text	5	No	No
SampleMedia	Record the source of the sample. i.e. Drainage; Groundwater; Monitoring Well; Residential; Tap	Text	30	No	No
SampleCollection	Sample Collection Method (i.e. Grab, Composite, Discrete Interval)	Text	30	No	No
SampleType	Sample Type (i.e. Field Sample, Field Duplicate, Lab QC, Spike, Trip Blank)	Text	30	No	No
Storage	Sample Storage	Text	30	No	No
Sub_Location	Sub Location. Use to describe Location. For example; for a residential sampling location: Living Room; Basement; etc.	Text	25	No	No

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Surf_Elev	Surface Elevevation	Numeric		No	No
Surf_Units	Surface Elevevation Units	Text	20	No	No
CLP_Sample_No	CLP Sample Number	Text	25	No	No
Preliminary_Results	Preliminary Results Requested (Yes/No)	Boolean		No	No
Tared_Weight	Tared Weight	Numeric		No	No
Final_Weight	Final Weight	Numeric		No	No
Sample_Weight	Sample Weight	Numeric		No	No
Tag_Matrix	Tag Matrix	Text	20	No	No
Tag_Measurement	Tag Measurement	Numeric		No	No
Tag_Units	Tag Units of measurement	Text	20	No	No
Task_ID	System Field: Task_ID (FK)	Text	4	No	No
Temp	Water Quality Measurement	Numeric		No	No
TimeStamp	System field	DateTime		No	No
Turbidity	Water Quality Measurement	Numeric		No	No
UnitID	System field	Numeric		No	No
UserName	System field	Text	255	No	No
Witness	Witness Name	Text	30	No	No

Soil/Sediment Sampling

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Samp_No	Sample Number. Scribe requires a unique sample number (Required)	Text	50	PK	Yes
Location	Sampling Location Code (Required)	Text	50	No	Yes
Tag	Samples Tag (Required. Defaults to A)	Text	15	PK	No
SampleDate	Date Sample Taken	DateTime		No	No
Samp_Depth_Units	Sampling Depth Units	Text	20	No	No
Samp_Depth	Sampling Depth	Numeric		No	No
Remarks	Remarks	Text	250	No	No
Activity	Sampling Activity	Text	50	No	No
Matrix	Sample Matrix (i.e. Soil)	Text	40	No	No
SampleMedia	Sample Media	Text	30	No	No
SampleCollection	Sample Collection Method (i.e. Grab, Composite, Discrete Interval)	Text	30	No	No
SampleType	Sample Type (i.e. Field Sample, Field Duplicate, Lab QC, Spike, Trip Blank)	Text	30	No	No
EventID	EventID. Use to group data by sampling events. Defaults to 'Sampling' (i.e. EOC; Site Assessment)	Text	50	No	No
Description	Sample Analyses Decription	Text	30	No	No
Altitude	Altitude	Numeric		No	No

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Analyses	Lab Analyses for this sample (FK)	Text	64	No	No
COC	Chain of Custody Number (FK)	Text	30	No	No
Coll_Method	Collection Method	Text	30	No	No
Color	Sample Color	Text	25	No	No
Container	Sample Container	Text	30	No	No
Coord_Sys_Desc	Sampling location coordinate system. (i.e UTM NAD83)	Text	70	No	No
Datum	Datum of the stations coordinates	Text	50	No	No
Easting	Easting	Numeric		No	No
ElevDatum	Datum used to determine the elevation measurement. (i.e NAVD88; NGVD29; WGS84; Sea Level; Unknown) Datum used to determine the elevation measurement Datum used to determine the elevation measurement. i.e. NAVD88; NGVD29; WGS84; Sea Level; Unknown	Text	50	No	No
ElevMethod	Method used to determine the elevation measurement. (i.e. Altimetry; GPS; Interpolation; Other; Survey)	Text	30	No	No
GeoMethod	Geopositioning method used to establish Latitude and Longitude coordinates. (Values: GPS; Interpolation; Survey)	Text	30	No	No
GeoScale	Scale of the map or photo used to interpolate the Latitude and Longitude coordinates	Text	20	No	No
Image_Path	Image File Path	Text	100	No	No
Imported	System field. N = Has Not been imported. Y = Has been imported into a Scribe project	Text	1	No	No
Latitude	Latitude	Numeric		No	No
LinkSampleNo	Linked Sample Number	Text	25	No	No
Location_Image_Path	Location Image Path to related image file	Text	255	No	No
LocationComment	Location Comment	Text	250	No	No
LocationDescription	Location Description	Text	100	No	No
LocationZone	Describes the area impacted relative to the site	Text	25	No	No
Longitude	Longitude	Numeric		No	No
MS_MSD	Y = Lab QC (Y,N)	Text	1	No	No
Munsel_R	Munsel Color Code	Text	30	No	No
Munsel_Y	Munsel Color Code	Text	30	No	No
No_Container	Number of Containers	Numeric		No	No

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Northing	Northing	Numeric		No	No
Preservation	Sample Preservation	Text	30	No	No
PropertyID	Property Id (FK)	Text	50	No	No
RecordId	System field	Numeric		No	No
Samp_Concentration	Sample Concentration (low; medium; high)	Text	20	No	No
Samp_Depth_To	Sampling Depth	Numeric		No	No
SampleCounter	Temporary Sample ID	Numeric		No	No
Sampler	Sampler Name	Text	30	No	No
SampleTime	Time Sample Taken (hh:mm)	Text	5	No	No
Soil_Descr	Soil Description (i.e. Sandy/Silty/Clay)	Text	25	No	No
Storage	Sample Storage	Text	30	No	No
Sub_Location	Sampling Sub Location (i.e. Fence Line; Perimeter. For residential: Living Room; Kitchen; etc.)	Text	25	No	No
Surf_Elev	Surface Elevation	Numeric		No	No
Surf_Units	Surface Elevation Units	Text	20	No	No
CLP_Sample_No	CLP Sample Number	Text	25	No	No
Preliminary_Results	Preliminary Results Requested (Yes/No)	Boolean		No	No
Tared_Weight	Tared Weight	Numeric		No	No
Final_Weight	Final Weight	Numeric		No	No
Sample_Weight	Sample Weight	Numeric		No	No
Tag_Matrix	Tag Matrix	Text	20	No	No
Tag_Measurement	Tag Measurement (i.e. Tag Weight)	Numeric		No	No
Tag_Units	Tag Units of measurement	Text	20	No	No
Task_ID	Scribe System Task_ID (FK)	Text	4	No	No
TimeStamp	System field	DateTime		No	No
UnitID	System field	Numeric		No	No
UserName	System field	Text	255	No	No
Witness	Witness Name	Text	30	No	No

Laboratory Analysis

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Analyses	Analysis Name	Text	50	PK	Yes
Analyses_Type	Analyses Type (i.e. Organics, Inorganics, RCRA, USER_DEFINED, Other)	Text	20	No	No
Program_Type	The Program (i.e. CLP or Non-CLP)	Text	10	No	No
Analyses_Abbrev	Analyses Abbrev	Text	20	No	No
Turnaround	Turnaround time for the analysis	Number		No	No
Turnaround_Units	Turnaround time units for the analysis (i.e. Days, Hours)	Text	25	No	No

Analyses_Container	Container	Text	30	No	Mo
Analyses_Preservation	Sample Preservation	Text	30	No	No
LabQCType	Lab QC to be done on the analysis	Text	50	No	No
Analytical_Method	Analytical Method	Text	100	No	No
Analyses_Comment	Analyses Comment	Text	100	No	No

Laboratory Results

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Samp_No	Scribe/Field Sample Number (Required PK)	Text	50	PK	Yes
Analysis	Lab Analysis (i.e VOCs) (Required PK)	Text	100	PK	Yes
Analyte	Analyte/Paramater name (i.e. Lead; Arsenic; etc.) (Required PK)	Text	60	PK	Yes
Result_Units	Result Unit of measurement (Required PK)	Text	20	PK	Yes
Analytical_Method	Lab Analytical Method (i.e. 8270M)	Text	100	No	No
Basis	"Wet" for wet_weight basis reporting; "Dry" for dry_weight reporting	Text	10	No	No
Cas_no	Chemical Abstract Number (CAS)	Text	50	No	No
CLP_Sample_No	CLP Sample Number for samples submitted to the CLP program.	Text	25	No	No
Comments	Result Comments	Text	250	No	No
Date_Analyzed	Date Analysis was performed by Lab	DateTime		No	No
Date_Collected	Date Sample Collected as reported by the Lab	DateTime		No	No
Date_Extracted	Date Samples Extracted by Lab	DateTime		No	No
Date_Received	Date Samples Received by Lab	DateTime		No	No
Detected	Detected or Not Detected. i.e. "Y" for detected analytes or "N" for non_detects.	Text	20	No	No
Dilution_Factor	Effective test dilution factor.	Numeric		No	No
Extraction_Method	Lab Extraction Method (i.e. MEP; TCLP; SPLP; EP)	Text	100	No	No
Final_Volume	The final volume of the sample after sample prepartion. Include all dilution factors.	Numeric		No	No
Final_Volume_Unit	The unit of measurement that corresponds to the final_amount.	Text	20	No	No
Lab_Batch_No	Lab Batch Number	Text	30	No	No
Lab_Coc_No	Chain of Custody Number as reported by the Lab	Text	50	No	No
Lab_Location_ID	Sample Location ID reported by the lab	Text	30	No	No
Lab_Name	Laboratory that performed the analysis	Text	50	No	No
Lab_Result_Qualifier	Result Qualifier as Reported by the Lab	Text	10	No	No
Lab_Samp_No	Lab Sample Number	Text	25	No	No
Matrix_ID	Matrix ID reported by Lab. (i.e. Soil; Water; Air; etc.)	Text	20	No	No
MDL	Method Detection Limit (MDL)	Numeric		No	No

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
MDL_Units	MDL Units	Text	20	No	No
Percent_Lipids	Percent Lipids	Numeric		No	No
Percent_Moisture	Percent Moisture of the sample portion used in the test	Numeric		No	No
Percent_Recovery	Percent Recovery	Numeric		No	No
Percent_Solids	Percent Solids	Numeric		No	No
QA_Comment	QA Comment	Text	250	No	No
QA_Date	QA Date	DateTime		No	No
QA_UserName	QA Username	Text	50	No	No
QAFlag	QAFlag (Values: 0 = Not QAed 1=QAed)	Numeric		No	No
QC_Type	Laboratory_Control_Sample; Method_Blank	Text	40	No	No
Quantitation_Limit	Quantitation Limits as determined by the lab.	Numeric		No	No
Quantitation_Limit_Units	Quantitation Limit Units	Text	20	No	No
Reportable_Result	"Yes" for results which are considered to be reportable; or "No" for other results	Text	5	No	No
Reporting_Limit	Reporting Limits as determined by the lab.	Numeric		No	No
Reporting_Limit_Units	Reporting Limit Units	Text	20	No	No
Result	Result (number) returned from lab	Numeric		No	No
Result_Qualifier	Final/Validated Result qualifier/flag (i.e. J;U;ND;<;>)	Text	10	No	No
Result_Type_Code	"TRG" for a target or regular result; "TIC" for tentatively identifed compounds; "SUR" for surrogates; "IS" for internal standards; or "SC" for spiked compounds.	Text	10	No	No
Sample_Type_Code	Code which distinguishes between different types of samples. For example normal samples must be distinguished from lab method blank samples	Text	10	No	No
SubSample_Amount	Amount of sample used for test.	Numeric		No	No
SubSample_Amount_Unit	Unit of measurement for subsample amount.	Text	20	No	No
Test_Type	Type of test (i.e. "initial"; "reextract1"; "reextract2"; "reextract3"; "reanalysis"; "dilution1"; "dilution2"; and "dilution3")	Text	10	No	No
Total_Or_Disolved	"D" for dissolved or filtered (metal) concentration; or "T" for everything else	Text	1	No	No
Validation_Level	Validation Level	Text	30	No	No

Biota Sampling

Scribe Fields	Description	Data Type	Field Size	Primary Key	Required
Samp_No	Sample Number. Scribe requires a unique sample number (Required)	Text	50	PK	Yes
Location	Sampling Location Code (Required)	Text	50	No	Yes
Tag	Samples Tag (Required. Defaults to A)	Text	15	PK	No
Age	Age	Numeric		No	No
AgedBy	Aged By Units	Text	20	No	No

Altitude	Altitude	Numeric		No	No
Analyses	Lab Analyses for this sample (FK)	Text	64	No	No
COC	Chain of Custody Number (FK)	Text	30	No	No
Coll_Method	Collection Method	Text	30	No	No
ComName	Common Name	Text	50	No	No
Container	Sample Container	Text	30	No	No
Coord_Sys_Desc	Sampling location coordinate system. i.e UTM NAD83	Text	70	No	No
Datum	Datum of the stations coordinates	Text	50	No	No
Description	Sample Analyses Decription	Text	30	No	No
EarLength	measurement	Numeric		No	No
Easting	Easting	Numeric		No	No
ElevDatum	Datum used to determine the elevation measurement. i.e NAVD88; NGVD29; WGS84; Sea Level; Unknown Datum used to determine the elevation measurement Datum used to determine the elevation measurement. i.e. NAVD88; NGVD29; WGS84; Sea Level; Unknown	Text	50	No	No
ElevMethod	Method used to determine the elevation measurement. i.e. Altimetry; GPS; Interpolation; Other; Survey	Text	30	No	No
EventID	EventID. Use to group data by sampling events. Defaults to 'Sampling' (i.e. EOC; Site Assessment)	Text	50	No	No
Family	Family	Text	50	No	No
FiletWeight	measurement	Numeric		No	No
ForkLength	measurement	Numeric		No	No
FP	Fresh or Preserved	Text	20	No	No
Genus	Genus	Text	50	No	No
GeoMethod	Geopositioning method used to establish Latitude and Longitude coordinates. Values: GPS; Interpolation; Survey	Text	30	No	No
GeoScale	Scale of the map or photo used to interpolate the Latitude and Longitude coordinates	Text	20	No	No
HindFootLength	measurement	Numeric		No	No
Image_Path	Image File Path	Text	100	No	No
Imported	System field. N = Has Not been imported. Y = Has been imported into a Scribe project	Text	1	No	No
Latitude	Latitude	Numeric		No	No
LinkSampleNo	Linked Sample Number	Text	25	No	No
LiveDead	Sample Taken Alive or Dead. Values: Live; Dead	Text	20	No	No
Location_Image_Path	Location Image Path. File path to related image file.	Text	255	No	No
LocationComment	Location Comment	Text	250	No	No
LocationDescription	Location Description further describes the Sample Location	Text	100	No	No
LocationZone	Describes the area impacted relative to the site	Text	25	No	No
Longitude	Latitude	Numeric		No	No
Activity	Sampling Activity	Text	50	No	No
Matrix	Sample Matrix. i.e. Biota	Text	40	No	No
Maturity	Relative Age Class	Text	20	No	No
MS_MSD	Y = Lab QC (Y,N)	Text	1	No	No

No_Container	Number of Containers	Numeric		No	No
Northing	Northing	Numeric		No	No
Preservation	Sample Preservation	Text	30	No	No
PropertyID	Property ID (FK)	Text	50	No	No
RecordId	System field	Numeric	0	No	No
Remarks	Remarks	Text	250	No	No
Samp_Concentration	Sample Concentration (low; medium; high)	Text	20	No	No
SampleCounter	System field	Numeric		No	No
SampleDate	Date Sample Taken	DateTime		No	No
Sampler	Sampler Name	Text	30	No	No
SampleTime	Time Sample taken (hh:mm)	Text	5	No	No
SampleType	Sample Type (i.e. Field Sample, Field Duplicate, Lab QC, Spike, Trip Blank)	Text	30	No	No
Sex	Male; Female	Text	20	No	No
SPCode	SPCode	Text	3	No	No
Species	Species	Text	50	No	No
StandardLength	measurement	Numeric		No	No
Storage	Sample Storage	Text	30	No	No
Sub_Location	Sub Location. i.e. further describe Location info. i.e. Living Room. Does NOT relate to the Location table	Text	25	No	No
Surf_Elev	Surface Elevation	Numeric		No	No
Surf_Units	Surface Elevation Units	Text	20	No	No
CLP_Sample_No	CLP Sample Number	Text	25	No	No
Preliminary_Results	Preliminary Results Requested (Yes/No)	Boolean		No	No
Tared_Weight	Tared Weight	Numeric		No	No
Final_Weight	Final Weight	Numeric		No	No
Sample_Weight	Sample Weight	Numeric	0	No	No
Tag_Matrix	Tag matrix - i.e. Small Mammal Matrix (liver; etc.)	Text	20	No	No
Tag_Measurement	Tag Measurement (i.e. Tag Weight)	Numeric		No	No
Tag_Units	Tag Units i.e. units of measurement	Text	20	No	No
TailLength	measurement	Numeric		No	No
Task_ID	System Assigned Task_ID (FK)	Text	4	No	No
TimeStamp	System field	DateTime		No	No
TotalLength	measurement	Numeric		No	No
TrapType	Trap Type	Text	20	No	No
UnitID	System field	Numeric		No	No
UserName	System field	Text	255	No	No
WholePart	Whole or Partial Sample Taken	Text	20	No	No
WholeWeight	measurement	Numeric		No	No
Witness	Witness Name	Text	30	No	No

Scribe Reference Tables

Matrix	Matrix_Code
Air	Air
Asbestos	As
Benthic	BE
Blank	BK
Filtered Water	FG
Ground Water	GW
Lab Sand	LS
Liquid Waste	LW
Potable Water	PW
Sand	SA
Sediment	SD
Soil	S
Soil Gas	SG
Solid Waste	SW
Surface Water	SWA
Tissue	TS
Waste	WAS
Waste Water	WW
Water	W

Laboratory Name	Lab Contact	Phone #	City	State
A4 Scientific, Inc	Reddy Pakanati	281-292-5277	The Woodlands	TX
AGAT Laboratories Ltd.	Philippe Morneau	514-337-1032	Ville Saint-Laurent	QC
ALS Laboratory Group - Canada	Alastair Blythe	905-331-3111	Burlington	ON
ALS Laboratory Group - Salt Lake City	Roxy Olson	801-266-7700	Salt Lake City	UT
Analytical Resources, Inc.	Susan D. Dunnihoo	206-695-6207	Tukwila	WA
AXYS Analytical Services Ltd.	Teresa Cameron	250-655-5800	Sidney	BC
Bonner Analytical Testing Company	Chris Bonner	601-264-2854	Hattiesburg	MS
Cape Fear Analytical, LLC	Chris Cornwell	910-795-0421	Wilmington	NC
Chemtech Consulting Group	Divya Mehta	908-789-8900	Mountainside	NJ
Columbia Analytical Services	Arthi Kodur	713-266-1599	Houston	TX
ERT/SERAS		732-321-4200	Edison	NJ
Frontier Analytical Laboratory	Brad Silverbush	916-934-0900	El Dorado Hills	CA
KAP Technologies Inc	Rao Alsakani	281-367-0065	The Woodlands	TX
Liberty Analytical Corporation	Ken Grzybowski	919-379-4100	Cary	NC
PACE Analytical Services	Scott Unze	612-607-6383	Minneapolis	MN
SGS North America	Trent Temperly	317-370-9644	Wilmington	NC
Shealy Environmental Services	Robert Zhu	803-791-9700	West Columbia	SC
Southwest Research Institute	Shraddha Quarderer	210-522-3219	San Antonio	TX
Spectrum Analytical, Inc. DBA: MITKEM Laboratories	Yihai Ding	401-732-3400	North Kingstown	RI
Spectrum Analytical, Inc. DBA: PEL Laboratories	John Heyman	813-888-9507	Tampa	FL
TestAmerica Laboratories, Inc - Savannah, GA	Diane Mosley	912-354-7858	Savannah	GA
TestAmerica Laboratories, Inc - South Burlington	R.J. Lavigne	802-660-1990	South Burlington	VT
TestAmerica Laboratories, Inc. - Sacremento	Robert Weidenfeld	916-374-4333	West Sacramento	CA

CAS Number	Analyte Name
71-55-6	1,1,1,-Trichloroethane
71-55-6	1,1,1-Trichloroethane
79-34-5	1,1,2,2-Tetrachloroethane
76-13-1	1,1,2-Trichloro-1,2,2-trifluroethane
79-00-5	1,1,2-Trichloroethane
92-52-4	1,1'-Biphenyl
75-34-3	1,1-Dichloroethane
75-35-4	1,1-Dichloroethene
75-35-4	1,1-Dichloroethylene
35822-46-9	1,2,3,4,6,7,8-HpCDD
67562-39-4	1,2,3,4,6,7,8-HpCDF
55673-89-7	1,2,3,4,7,8,9-HpCDF
39227-28-6	1,2,3,4,7,8-HxCDD
70648-26-9	1,2,3,4,7,8-HxCDF
57653-85-7	1,2,3,6,7,8-HxCDD
57117-44-9	1,2,3,6,7,8-HxCDF
19408-74-3	1,2,3,7,8,9-HxCDD
72918-21-9	1,2,3,7,8,9-HxCDF
57117-41-6	1,2,3,7,8-Pe CDF
40321-76-4	1,2,3,7,8-PeCDD
96-18-4	1,2,3-Trichloropropane
95-94-3	1,2,4,5-Tetrachlorobenzene
120-82-1	1,2,4-Trichlorobenzene
96-12-8	1,2-Dibromo-3-chloropropane
106-93-4	1,2-Dibromoethane
95-50-1	1,2-Dichlorobenzene
107-06-2	1,2-Dichloroethane
78-87-5	1,2-Dichloropropane
122-66-7	1,2-Diphenylhydrazine
156-60-5	1,2-Trans-Dichloroethylene
541-73-1	1,3-Dichlorobenzene
542-75-6	1,3-Dichloropropene
542-75-6	1,3-Dichloropropylene
99-65-0	1,3-Dinitrobenzene
106-46-7	1,4-Dichlorobenzene
108-60-1	2,2'-oxybis(1- Chloropropane)
674	2,3,4,5-Tetrachlorophenol
60851-34-5	2,3,4,6,7,8-HxCDF
58-90-2	2,3,4,6-Tetrachlorophenol
57117-31-4	2,3,4,7,8-PeCDF

CAS Number	Analyte Name
3481-20-7	2,3,5,6-Tetrachloroaniline
1746-01-6	2,3,7,8-TCDD
1746-01-6	2,3,7,8-TCDD-Dioxin
51207-31-9	2,3,7,8-TCDF
576-24-9	2,3-Dichlorophenol
93-72-1	2,4,5-TP (Silvex)
636-30-6	2,4,5-Trichloroaniline
95-95-4	2,4,5-Trichlorophenol
634-93-5	2,4,6-Trichloroaniline
88-06-2	2,4,6-Trichlorophenol
94-75-7	2,4-D
554-00-7	2,4-Dichloroaniline
120-83-2	2,4-Dichlorophenol
105-67-9	2,4-Dimethylphenol
51-28-5	2,4-Dinitrophenol
121-14-2	2,4-Dinitrotoluene
583-78-8	2,5-Dichlorophenol
87-65-0	2,6-Dichlorophenol
606-20-2	2,6-Dinitrotoluene
78-93-3	2-Butanone
110-75-8	2-Chloroethylvinyl Ether
91-58-7	2-Chloronaphthalene
95-57-8	2-Chlorophenol
591-78-6	2-Hexanone
534-52-1	2-Methyl-4,6-Dinitrophenol
91-57-6	2-Methylnaphthalene
95-48-7	2-Methylphenol
88-74-4	2-Nitroaniline
88-75-5	2-Nitrophenol
91-94-1	3,3'- Dichlorobenzidine
91-94-1	3,3'-Dichlorobenzidine
95-76-1	3,4-Dichloroaniline
95-77-2	3,4-Dichlorophenol
108-42-9	3-Chloroaniline
108-43-0	3-Chlorophenol
59-50-7	3-Methyl-4-chlorophenol
99-09-2	3-Nitroaniline
72-54-8	4,4'-DDD
72-55-9	4,4'-DDE
50-29-3	4,4'-DDT

CAS Number	Analyte Name
534-52-1	4,6-Dinitro-2- methylphenol
534-52-1	4,6-Dinitro-2-methylphenol
101-55-3	4-Bromophenyl phenyl ether
101-55-3	4-Bromophenyl- phenylether
017	4-Bromophenyl phthalate
59-50-7	4-Chloro-3- methylphenol
59-50-7	4-Chloro-3-methylphenol
106-47-8	4-Chloroaniline
106-48-9	4-Chlorophenol
7005-72-3	4-Chlorophenyl phenyl ether
7005-72-3	4-Chlorophenyl- phenyl ether
108-10-1	4-Methyl-2-Pentanone
106-44-5	4-Methylphenol
100-01-6	4-Nitroaniline
100-02-7	4-Nitrophenol
319-84-6	a-BHC
83-32-9	Acenaphthene
208-96-8	Acenaphthylene
67-64-11	Acetone
98-86-2	Acetophenone
5103-71-9	a-Chlordane
107-02-8	Acrolein
107-13-1	Acrylonitrile
959-98-8	a-Endosulfan
309-00-2	Aldrin
018	Aliphatic chlorinated hydrocarbons (each)
004	Aliphatic chlorinated hydrocarbons, total
319-84-6	alpha-BHC
5103-71-9	alpha-Chlordane
7429-90-5	Aluminim
7429-90-5	Aluminum
7664-41-7	Ammonia
120-12-7	Anthracene
7440-36-0	Antimony
12674-11-2	Aroclor 1016
11104-28-2	Aroclor 1221
11141-16-5	Aroclor 1232
53469-21-9	Aroclor 1242
12672-29-6	Aroclor 1248
11097-69-1	Aroclor 1254

CAS Number	Analyte Name
11096-82-5	Aroclor 1260
12674-11-2	Aroclor-1016
11104-28-2	Aroclor-1221
11141-16-5	Aroclor-1232
53469-21-9	Aroclor-1242
12672-29-6	Aroclor-1248
11097-69-1	Aroclor-1254
11096-82-5	Aroclor-1260
7440-38-2	Arsenic
22569-72-8	Arsenic III
17428-41-0	Arsenic V
1332-21-4	Asbestos
1912-24-9	Atrazine
7440-39-3	Barium
319-85-7	b-BHC
33213-65-9	b-Endosulfan
100-52-7	Benzaldehyde
71-43-2	Benzene
92-87-5	Benzidine
56-55-3	Benzo(a)anthracene
50-32-8	Benzo(a)pyrene
205-99-2	Benzo(b)fluoranthene
191-24-2	Benzo(g,h,i)perylene
191-24-2	Benzo(ghi)perylene
207-08-9	Benzo(k)fluoranthene
65-85-0	Benzoic Acid
100-51-6	Benzyl alcohol
7440-41-7	Berylium
7440-41-4	Beryllium
319-85-7	beta-BHC
608-73-1	BHC
92-52-4	Biphenyl
111-91-1	bis(2-Chloroethoxy) methane
111-44-4	Bis(2-chloroethyl) ether
111-44-4	bis(2-Chloroethyl)ether
39638-32-9	Bis(2-chloroisopropyl) ether
117-81-7	bis(2-Ethylhexyl) phthalate
7440-42-8	Boron
7726-95-6	Bromine
74-97-5	Bromochloromethane

CAS Number	Analyte Name
75-27-4	Bromodichloromethane
75-25-2	Bromoform
74-83-9	Bromomethane
85-68-7	Butyl benzyl phthalate
85-68-7	Butylbenzylphthalate
7440-43-9	Cadmium
7440-70-2	Calcium
105-60-2	Caprolactam
63-25-2	Carbaryl
86-74-8	Carbazole
1563-66-2	Carbofuran
75-15-0	Carbon Disulfide
56-23-5	Carbon Tetrachloride
120-80-9	Catechol
57-74-9	Chlordane
16887-00-6	Chloride
005	Chlorinated hydrocarbons, total
7782-50-5	Chlorine (TRC)
79-07-2	Chloroacetamide
108-90-7	Chlorobenzene
108-90-7	Chlorobenzene (each)
108-90-7	Chlorobenzene, total
124-48-1	Chlorodibromomethane
75-00-3	Chloroethane
67-66-3	Chloroform
74-87-3	Chloromethane
25586-43-0	Chloronaphthalene
022	Chlorophenols (each)
25167-80-0	Chlorophenols (total)
2921-88-2	Chloropyrifos
7440-47-3	Chromium
1308-14-1	Chromium III
18540-29-9	Chromium IV
218-01-9	Chrysene
156-59-2	cis-1,2-Dichloroethene
156-59-2	cis-1,2-Dichloroethylene
10061-01-5	cis-1,3-Dichloropropene
1476-11-5	Cis-1,4-dichloro-2-butene
7440-48-4	Cobalt
7440-50-8	Copper

CAS Number	Analyte Name
8001-58-9	Creosote(s)
1319-77-3	Cresol(s)
710	Cresols
57-12-5	Cyanide
007	Cyanide, complex (total)
57-12-5	Cyanide, free (total)
110-82-7	Cyclohexane
108-94-1	Cyclohexanone
319-86-8	d-BHC
72-54-8	DDD
72-55-9	DDE
50-29-3	DDT
319-86-8	delta-BHC
8065-48-3	Demeton
117-81-7	Di(2-ethylhexyl)phthalate
333-41-5	Diazinon
53-70-3	Dibenzo(a,h)- anthracene
53-70-3	Dibenzo(a,h)anthracene
132-64-9	Dibenzofuran
124-48-1	Dibromochloromethane
106-93-4	Dibromoethane
74-95-3	Dibromomethane
25321-22-6	Dichlorobenzene
75-27-4	Dichlorobromomethane
75-71-8	Dichlorodifluoromethane
75-09-2	Dichloromethane
SEQ NO-35-8	Dichlorophenols, total
542-75-6	Dichloropropene
60-57-1	Dieldrin
84-66-2	Diethylphthalate
131-11-3	Dimethyl phthalate
131-11-3	Dimethylphthalate
84-74-2	Di-n-butyl phthalate
84-74-2	Di-n-butylphthalate
51-28-5	Dinitrophenol
117-84-0	Di-n-octyl phthalate
117-84-0	Di-n-octylphthalate
902	Dioctylphthalate
72-55-9	EDDE
115-29-7	Endosulfan

CAS Number	Analyte Name
959-98-8	Endosulfan I
33213-65-9	Endosulfan II
1031-07-8	Endosulfan sulfate
72-20-8	Endrin
7421-93-4	Endrin aldehyde
53494-70-5	Endrin ketone
100-41-4	Ethyl benzene
97-63-2	Ethyl Methacrylate
100-41-4	Ethylbenzene
107-06-2	Ethylene dichloride
107-21-1	Ethylene glycol
206-44-0	Fluoranthene
86-73-7	Fluorene
16984-48-8	Fluoride(s)
7782-41-4	Fluorine
110-00-9	Furan
58-89-9	gamma-BHC (Lindane)
5103-74-2	gamma-Chlordane
8006-61-9	Gasoline
58-89-9	g-BHC
5566-34-7	g-Chlordane
86-50-0	Guthion
76-44-8	Heptachlor
1024-57-3	Heptachlor Epoxide
118-74-1	Hexachlorobenzene
87-68-3	Hexachlorobutadiene
608-73-1	Hexachlorocyclohexane
77-47-4	Hexachlorocyclopentadiene
67-72-1	Hexachloroethane
023	High Molecular Weight PAHs
123-31-9	Hydrochinon
193-39-5	Indeno(1,2,3-c,d)pyrene
193-39-5	Indeno(1,2,3-cd)- pyrene
7553-56-2	Iodine
74-88-4	Iodomethane
7439-89-6	Iron
78-59-1	Isophorone
98-82-8	Isopropylbenzene
143-50-0	Kepone
7439-91-0	Lanthanum

CAS Number	Analyte Name
7439-92-1	Lead
58-89-9	Lindane (g-BHC)
7439-93-2	Lithium
026	Low Molecular Weight PAHs
7439-95-4	Magnesium
121-75-5	Malathion
12427-38-2	Maneb
7439-96-5	Manganese
108-39-4	m-Cresol
7439-97-6	Mercury
7439-97-6	Mercury, Inorganic
72-43-5	Methoxychlor
79-20-9	Methyl Acetate
74-83-9	Methyl Bromide
74-87-3	Methyl Chloride
78-93-3	Methyl Ethyl Ketone
108-10-1	Methyl isobutyl ketone
1634-04-4	Methyl tert-Butyl Ether
108-87-2	Methylcyclohexane
75-09-2	Methylene chloride
22967-92-6	Methylmercury
8002-05-9	Mineral oils
2385-85-5	Mirex
7439-98-7	Molybdenum
009	Monochlorophenols, total
010	Monocyclic Aromatic Hydrocarbons, Total
91-20-3	Naphthalene
84-74-2	n-Butylphthalate
7440-02-0	Nickel
98-95-3	Nitrobenzene
86-30-6	N-Nitroso diphenylamine
621-64-7	N-Nitroso-di-n propylamine
621-64-7	N-Nitrosodi-n-propylamine
86-30-6	N-Nitrosodiphenylamine
3268-87-9	OCDD
39001-02-0	OCDF
95-48-7	o-Cresol
8002-05-9	Oil
626	Oil and Grease
029	Organochlorinated pesticides (each)

CAS Number	Analyte Name
011	Organochlorinated pesticides, total
72-54-8	p,p'-DDD
72-55-9	p,p'-DDE
50-29-3	p,p'-DDT
SEQ NO-27-3	PAHs
56-38-2	Parathion
2051-60-7	PCB 1
33146-45-1	PCB 10
39485-83-1	PCB 100
37680-73-2	PCB 101
68194-06-9	PCB 102
60145-21-3	PCB 103
56558-16-8	PCB 104
32598-14-4	PCB 105
70424-69-0	PCB 106
70424-68-9	PCB 107
70362-41-3	PCB 108
74472-35-8	PCB 109
2050-67-1	PCB 11
38380-03-9	PCB 110
39635-32-0	PCB 111
74472-36-9	PCB 112
68194-10-5	PCB 113
74472-37-0	PCB 114
74472-38-1	PCB 115
18259-05-7	PCB 116
68194-11-6	PCB 117
31508-00-6	PCB 118
56558-17-9	PCB 119
2974-92-7	PCB 12
68194-12-7	PCB 120
56558-18-0	PCB 121
76842-07-4	PCB 122
65510-44-3	PCB 123
70424-70-3	PCB 124
74472-39-2	PCB 125
57465-28-8	PCB 126
39635-33-1	PCB 127
38380-07-3	PCB 128
55215-18-4	PCB 129

CAS Number	Analyte Name
2974-90-5	PCB 13
52663-66-8	PCB 130
61798-70-7	PCB 131
38380-05-1	PCB 132
35694-04-3	PCB 133
52704-70-8	PCB 134
52744-13-5	PCB 135
38411-22-2	PCB 136
35694-06-5	PCB 137
35065-28-2	PCB 138
56030-56-9	PCB 139
34883-41-5	PCB 14
59291-64-4	PCB 140
52712-04-6	PCB 141
41411-61-4	PCB 142
68194-15-0	PCB 143
68194-14-9	PCB 144
74472-40-5	PCB 145
51908-16-8	PCB 146
68194-13-8	PCB 147
74472-41-6	PCB 148
38380-04-0	PCB 149
2050-68-2	PCB 15
68194-08-1	PCB 150
52663-63-5	PCB 151
68194-09-2	PCB 152
35065-27-1	PCB 153
60145-22-4	PCB 154
33979-03-2	PCB 155
38380-08-4	PCB 156
69782-90-7	PCB 157
74472-42-7	PCB 158
39635-35-3	PCB 159
38444-78-9	PCB 16
41411-62-5	PCB 160
74472-43-8	PCB 161
39635-34-2	PCB 162
74472-44-9	PCB 163
74472-45-0	PCB 164
74472-46-1	PCB 165

CAS Number	Analyte Name
41411-63-6	PCB 166
52633-72-6	PCB 167
59291-65-5	PCB 168
32774-16-6	PCB 169
37680-66-3	PCB 17
35065-30-6	PCB 170
52663-71-5	PCB 171
52663-74-8	PCB 172
68194-16-1	PCB 173
38411-25-5	PCB 174
40186-70-7	PCB 175
52663-65-7	PCB 176
52663-70-4	PCB 177
52663-67-9	PCB 178
52663-64-6	PCB 179
37680-65-2	PCB 18
35065-29-3	PCB 180
74472-47-2	PCB 181
60145-23-5	PCB 182
52663-69-1	PCB 183
74472-48-3	PCB 184
52712-05-7	PCB 185
74472-49-4	PCB 186
74487-85-7	PCB 188
39635-31-9	PCB 189
38444-73-4	PCB 19
41411-64-7	PCB 190
74472-50-7	PCB 191
74472-51-8	PCB 192
69782-91-8	PCB 193
35694-08-7	PCB 194
52663-78-2	PCB 195
42740-50-1	PCB 196
33091-17-7	PCB 197
68194-17-2	PCB 198
52663-75-9	PCB 199
2051-61-8	PCB 2
38444-84-7	PCB 20
52663-73-7	PCB 200
40186-71-8	PCB 201

CAS Number	Analyte Name
2136-99-4	PCB 202
52663-76-0	PCB 203
74472-52-9	PCB 204
74472-53-0	PCB 205
40186-72-9	PCB 206
52663-79-3	PCB 207
52663-77-1	PCB 208
2051-24-3	PCB 209
55702-46-0	PCB 21
38444-85-8	PCB 22
55720-44-0	PCB 23
55702-45-9	PCB 24
55712-37-3	PCB 25
38444-81-4	PCB 26
38444-76-7	PCB 27
7012-37-5	PCB 28
15862-07-4	PCB 29
2051-62-9	PCB 3
35693-92-6	PCB 30
16606-02-3	PCB 31
38444-77-8	PCB 32
38444-86-9	PCB 33
37680-68-5	PCB 34
37680-69-6	PCB 35
38444-87-0	PCB 36
38444-90-5	PCB 37
53555-66-1	PCB 38
38444-88-1	PCB 39
13029-08-8	PCB 4
38444-93-8	PCB 40
52663-59-9	PCB 41
36559-22-5	PCB 42
70362-46-8	PCB 43
41464-39-5	PCB 44
70362-45-7	PCB 45
41464-47-5	PCB 46
2437-79-8	PCB 47
70362-47-9	PCB 48
41464-40-8	PCB 49
16605-91-7	PCB 5

CAS Number	Analyte Name
62796-65-0	PCB 50
68194-04-7	PCB 51
35693-99-3	PCB 52
41464-41-9	PCB 53
15968-05-5	PCB 54
74338-24-2	PCB 55
41464-43-1	PCB 56
70424-67-8	PCB 57
41464-49-7	PCB 58
74472-33-6	PCB 59
25569-80-6	PCB 6
33025-41-1	PCB 60
33284-53-6	PCB 61
54230-22-7	PCB 62
74472-34-7	PCB 63
52663-58-8	PCB 64
33284-54-7	PCB 65
32598-10-0	PCB 66
73575-53-8	PCB 67
73575-52-7	PCB 68
60233-24-1	PCB 69
33284-50-3	PCB 7
32598-11-1	PCB 70
41464-46-4	PCB 71
41464-42-0	PCB 72
74338-23-1	PCB 73
32690-93-0	PCB 74
32598-12-2	PCB 75
70362-48-0	PCB 76
32598-13-3	PCB 77
70362-49-1	PCB 78
41464-48-6	PCB 79
34883-43-7	PCB 8
33284-52-5	PCB 80
70362-50-4	PCB 81
52633-63-4	PCB 82
60145-20-2	PCB 83
52663-60-2	PCB 84
65510-45-4	PCB 85
55312-69-1	PCB 86

CAS Number	Analyte Name
38380-02-8	PCB 87
55215-17-3	PCB 88
73575-57-2	PCB 89
34883-39-1	PCB 9
68194-07-0	PCB 90
68194-05-8	PCB 91
52663-61-3	PCB 92
73575-56-1	PCB 93
73575-55-0	PCB 94
38379-99-6	PCB 95
73575-54-9	PCB 96
41464-51-1	PCB 97
60233-25-2	PCB 98
38380-01-7	PCB 99
52663-68-0	PCB187
1336-36-3	PCBs
106-44-5	p-Cresol
527-20-8	Pentachloroaniline
608-93-5	Pentachlorobenzene
76-01-7	Pentachloroethane
87-86-5	Pentachlorophenol
012	Pesticides, total
629	pH
85-01-8	Phenanthrene
108-95-2	Phenol
7723-14-0	Phosphorus
7723-14-0	Phosphorus, elemental
013	Phthalates, total
1336-36-3	Polychlorinated biphenyls
014	Polycyclic chlorinated hydrocarbons, total
SEQ NO-27-3	Polynuclear aromatic hydrocarbons
7440-09-7	Potassium
78-87-5	Propylene dichloride
129-00-0	Pyrene
101-86-1	Pyridine
108-46-3	Resorcinol
7782-49-2	Selenium
7440-22-4	Silver
7440-23-5	Sodium
10098-97-2	Strontium

CAS Number	Analyte Name
100-42-5	Styrene
7783-06-4	Sulfide
7704-34-9	Sulfur
7440-26-8	Technetium
032	Tetrachlorobenzene
79-34-5	Tetrachloroethane
127-18-4	Tetrachloroethene
127-18-4	Tetrachloroethylene
56-23-5	Tetrachloromethane
015	Tetrachlorophenols, total
109-99-9	Tetrahydrofuran
110-01-0	Tetrahydrothiophene
7440-28-0	Thallium
034	Thiocyanates
035	Thiodiglycol
7440-31-5	Tin
7440-32-6	Titanium
108-88-3	Toluene
50-29-3	Total DDT
SEQ NO-27-3	Total PAH
1336-36-3	Total PCB
41903-57-5	Total TCDD
8001-35-2	Toxaphene
156-60-5	trans-1,2-Dichloroethene
156-60-5	trans-1,2-Dichloroethylene
10061-02-6	trans-1,3-Dichloropropene
110-57-6	trans-1,4-Dichloro-2-Butene
75-25-2	Tribromomethane
688-73-3	Tributyl tin
12002-48-1	Trichlorobenzene
79-00-5	Trichloroethane
79-01-6	Trichloroethene
79-01-6	Trichloroethylene
75-69-4	Trichlorofluoromethane
25167-82-2	Trichlorophenols, total
7440-33-7	Tungsten
7440-61-1	Uranium
7440-62-2	Vanadium
108-05-4	Vinyl Acetate
75-01-4	Vinyl Chloride

CAS Number	Analyte Name
1330-20-7	Xylene
108-38-3	Xylene, m-
1330-20-7	Xylene, total
1330-20-7	Xylenes (total)
7440-66-6	Zinc

Table Column	Item Code	Item Name	Item_Description
Air Collection Method		NA	
Air Container		MCE Cassette	
Air Container		Summa Canister	
Air Container		Tedlar Bag	
Air Container		TEM Cassette	
Air Flow Units		cc/min	
Air Flow Units		L/min	
Air Flow Units		m3/min	
Air Media		Anasorb C300/200 mg	
Air Media		Carbon/150 mg	
Air Media		Carbon/600mg	
Air Media		MCE Cassette	
Air Media		MCE Filter	
Air Media		OVS Tubes	
Air Media		PUF/Glass	
Air Media		PVC filter	
Air Media		Silica Gel	
Air Media		Summa Canister	
Air Media		Tedlar Bag	
Air Media		TEM Cassette	
Air Media		XAD-2/150 mg	
Air Media		XAD-2/600 mg	
Air Media		Zeflour PTFE	
Air Units		cc	
Air Units		Liters	
Air Units		m3	
Bio Collection Method		crayfish trap	
Bio Collection Method		electroshocker	
Bio Collection Method		Gill nets	
Bio Collection Method		Kicknets	
Bio Collection Method		minnow trap	
Bio Collection Method		Seine	
Bio Collection Method		Trap	
Bio Container		1L amber	
Bio Container		1L poly	
Bio Container		2 oz glass	
Bio Container		32oz glass	
Bio Container		4 oz. glass	
Bio Container		40 ml	
Bio Container		8oz glass	

Table Column	Item Code	Item Name	Item_Description
Bio Container		8oz poly	
Bio Container		Foil	
Bio Fresh Preseved		Fresh	
Bio Fresh Preseved		Preserved	
Bio LiveDead		Alive	
Bio LiveDead		Dead	
Bio Mamaries		Lactating	
Bio Mamaries		Large	
Bio Mamaries		Small	
Bio Matrix	BC	BC Crab	
Bio Matrix	BE	Benthic	
Bio Matrix	BS	Brown Shrimp	
Bio Matrix	FC	Fid. Crab	
Bio Matrix	KI	Kidney	
Bio Matrix	KL	Kidney,Liver	
Bio Matrix	LV	Liver	
Bio Matrix	LK	Liver, Kidney, Testes	
Bio Matrix	MG	marsh grass	
Bio Matrix	SP	Spot	
Bio Matrix	Ts	Testes	
Bio Matrix	WB	Whole Body	
Bio Maturity		Adult	
Bio Maturity		Juvenille	
Bio Maturity		Sub Adult	
Bio Maturity		Unknown	
Bio Measurements		Adrenals	
Bio Measurements		Colon	
Bio Measurements		Kidney	
Bio Measurements		Liver	
Bio Measurements		Spleen	
Bio Measurements		Stomach	
Bio Measurements		Thymus	
Bio Repro Stage		Multiparous	
Bio Repro Stage		Nulliparous	
Bio Repro Stage		Semiparous	
Bio Sex		Female	
Bio Sex		Male	
Bio Sex		Unknown	
Bio Trap Type		110 Conibear	
Bio Trap Type		BEAR TRAP	

Table Column	Item Code	Item Name	Item_Description
Bio Trap Type		Crayfish	
Bio Trap Type		Foothold 1.5 DB	
Bio Trap Type		Havahart	
Bio Trap Type		Kicknet	
Bio Trap Type		Museum Special	
Bio Trap Type		Sherman live trap	
Bio Trap Type		Tomahawk	
Bio Units		g	
Bio Units		mm	
Bio Units		na	
Bio Whole Part		Partial	
Bio Whole Part		Whole	
Carrier List		FedEx	
Collection Method		Composite	
Collection Method		Discrete Interval	
Collection Method		Grab	
Concentration		H	
Concentration		L	
Concentration		M	
Elevation Method		Altimetry	
Elevation Method		GPS	
Elevation Method		Interpolation	
Elevation Method		Other	
Elevation Method		Survey	
EPARegionNumber		1	
EPARegionNumber		10	
EPARegionNumber		2	
EPARegionNumber		3	
EPARegionNumber		4	
EPARegionNumber		5	
EPARegionNumber		6	
EPARegionNumber		7	
EPARegionNumber		8	
EPARegionNumber		9	
Geo Method		GPS	
Geo Method		Interpolation	
Geo Method		Survey	
Horz Datum		NAD83	
Horz Datum		OTHER	
Horz Datum		UNKWN	

Table Column	Item Code	Item Name	Item_Description
Horz Datum		WGS84	
Lab Analyses Container		1 L poly	
Lab Analyses Container		1 L Tedlar Bag	
Lab Analyses Container		1 liter amber	
Lab Analyses Container		1 liter plastic	
Lab Analyses Container		16 oz glass	
Lab Analyses Container		18 oz Plastic	
Lab Analyses Container		2 oz Septa	
Lab Analyses Container		2 oz glass	
Lab Analyses Container		32 oz Amber	
Lab Analyses Container		32 oz glass	
Lab Analyses Container		4 L cubitainer	
Lab Analyses Container		4 oz glass	
Lab Analyses Container		40 ml	
Lab Analyses Container		5 gal bucket	
Lab Analyses Container		5 gal Cube	
Lab Analyses Container		8 oz glass	
Lab Analyses Container		8 oz poly	
Lab Analyses Container		Acetate Core	Water Sampling
Lab Analyses Container		Core	
Lab Analyses Container		DMLS Cell	
Lab Analyses Container		Foil	
Lab Analyses Container		Foil Cap	Water Sampling
Lab Analyses Container		Foil/bag	
Lab Analyses Container		Glass Jar	Water Sampling
Lab Analyses Container		Jar	
Lab Analyses Container		MCE Cassette	
Lab Analyses Container		Metal	Water Sampling
Lab Analyses Container		Paper Cap	Water Sampling
Lab Analyses Container		Plastic Bag	
Lab Analyses Container		Plastic Jar	Water Sampling
Lab Analyses Container		Summa Canister	
Lab Analyses Container		Tedlar Bag	
Lab Analyses Container		Teflon Cap	Water Sampling
Lab Analyses Container		Teflon XRF cup	
Lab Analyses Container		TEM Cassette	
Lab Analytical Method		NA	
Lab QC Type		Laboratory Control Sample	
Lab QC Type		Method Blank	
Lab Result Qualifier		J	

Table Column	Item Code	Item Name	Item_Description
Lab Result Qualifier		U	
Lab Units		mg/kg	
Lab Units		ug/kg	
Lab Units		ug/L	
Monitoring Meas. Surface		AIR	
Monitoring Meas. Surface		Concrete	
Monitoring Meas. Surface		GROUND	
Monitoring Meas. Units		%	
Monitoring Meas. Units		degrees C	
Monitoring Meas. Units		mg/m3	
Monitoring Meas. Units		mm Hg	
Monitoring Meas. Units		ppb	
Monitoring Meas. Units		ppm	
Monitoring Meas. Units		ug/m3	
Monitoring Parameter		LEL	
Monitoring Parameter		Mercury Concentration	
Monitoring Parameter		NA	
Monitoring Parameter		Oxygen	
Monitoring Qualifier		ND	
Monitoring Source		ALPHA	
Monitoring Source		BETA	
Monitoring Source		GAMMA	
Monitoring Source		NA	
NPL Status		Non NPL	
NPL Status		NPL	
Occupant Age Units		Months	
Occupant Age Units		Years	
Occupant Gender		Female	
Occupant Gender		Male	
Property Type		Commercial	
Property Type		Residential	
Response Authority		CERCLA	
Response Authority		CERCLA/OPA	
Response Authority		CWA	
Response Authority		OPA	
Response Authority		Stafford Act	
Sample Preservative		0 C	
Sample Preservative		4 C	
Sample Preservative		Alcohol	
Sample Preservative		Bouins	

Table Column	Item Code	Item Name	Item_Description
Sample Preservative		Formalin	
Sample Preservative		H2SO4 pH<2	
Sample Preservative		H2SO4 pH>2	
Sample Preservative		HCl	Water Sampling
Sample Preservative		HNO	Water Sampling
Sample Preservative		HNO3 pH<2	
Sample Preservative		MeOH	
Sample Preservative		Na2SO4	Water Sampling
Sample Preservative		NaOH	Water Sampling
Sample Preservative		None	Water Sampling
Sample Preservative		Wet ice	
Sample Preservative		Zn Acetate	Water Sampling
Sample Storage		Ambient	Water Sampling
Sample Storage		Dry Ice	Water Sampling
Sample Storage		HNO3	
Sample Storage		Ice	Water Sampling
Sample Storage		Wet Ice	Water Sampling
Sample Type		Field Duplicate	
Sample Type		Field Sample	
Sample Type		Lab QC	
Sample Type		Spike	
Sample Type		Trip Blank	
Site Description		Commercial	Site Info
Site Description		Farmland	Site Info
Site Description		Floodplain	Site Info
Site Description		Gully	Site Info
Site Description		Hedgerow	Site Info
Site Description		Industrial	Site Info
Site Description		Lacustrine	Site Info
Site Description		Landfill	Site Info
Site Description		Lowland Riverine	Site Info
Site Description		Oil Field	Site Info
Site Description		Residential	Site Info
Site Description		Upland Palustrine	Site Info
Site Description		Wooded	Site Info
Site_Action		Removal Action	
Site_Action		Removal Assessment	
Soil Collection Method		Bulk Sample	
Soil Collection Method		Composite	
Soil Collection Method		Grab	

Table Column	Item Code	Item Name	Item_Description
Soil Collection Method		Shelby Tube	
Soil Collection Method		Split Spoon	
Soil Color		Black	
Soil Color		Brown	
Soil Color		Brownish Yellow	
Soil Color		Dark Brown	
Soil Color		Dark Gray	
Soil Color		Dark Grayish Brown	
Soil Color		Dark Red	
Soil Color		Dark Reddish Brown	
Soil Color		Dark Reddish Gray	
Soil Color		Dark Yellowish Brown	
Soil Color		Dirty	
Soil Color		Dusky Red	
Soil Color		Gray	
Soil Color		Grayish Brown	
Soil Color		Light Brownish Gray	
Soil Color		Light Gray	
Soil Color		Light Reddish Brown	
Soil Color		Pink	
Soil Color		Pinkish Gray	
Soil Color		Pinkish White	
Soil Color		Reddish Brown	
Soil Color		Reddish Gray	
Soil Color		Reddish Yellow	
Soil Color		Strong Brown	
Soil Color		Tan	
Soil Color		Very Dark Brown	
Soil Color		Very Dark Gray	
Soil Color		Very Dark Grayish Brown	
Soil Color		Very Dusky Red	
Soil Color		Very Pale Brown	
Soil Color		Weak Red	
Soil Color		White	
Soil Color		Yellow Brown	
Soil Color		Yellowish Brown	
Soil Container		16 oz glass	
Soil Container		Jar	
Soil Description		Clay	
Soil Description		Dirt	

Table Column	Item Code	Item Name	Item_Description
Soil Description		Filter Cake	
Soil Description		Peat like Sand	
Soil Description		Sand	
Soil Description		SAND,lit-Org,-Grv,trc-Slt	
Soil Description		SAND,lit-Slt,lit-Cly	
Soil Description		SAND,lit-Slt,lit-Gvl	
Soil Description		SAND,lit-Slt,trc-Cly	
Soil Description		SAND,lit-Slt,trc-Cly,-Gvl	
Soil Description		SAND,som-Slt	
Soil Description		SAND,som-Slt,lit-Cly	
Soil Description		SAND,som-Slt,lit-Gvl	
Soil Description		SAND,som-Slt,som-Cly	
Soil Description		Sandy, Silty, Clay	
Soil Description		Silt	
Soil Description		SILT,and-Cly	
Soil Description		SILT,and-Cly,lit-Snd	
Soil Description		SILT,lit-Cly	
Soil Description		SILT,lit-Cly,lit-Snd	
Soil Description		SILT,lit-Cly,trc-Snd	
Soil Description		SILT,lit-Snd,trc-Cly	
Soil Description		SILT,som-Cly	
Soil Description		SILT,som-Cly,trc-Snd	
Soil Description		SILT,som-Snd,som-Cly	
Soil Description		SILT,trc-Snd,trc-Cly	
Soil Description		Silty Clay	
Soil Description		Silty Sand	
Soil Type		Composite	
Soil Type		Discrete Interval	
Soil Type		Grab	
Sub Location		1st Floor	
Sub Location		2nd Floor	
Sub Location		Basement	
Surface Elevation Units		feet	
Surface Elevation Units		meters	
Units		centimeters	
Units		feet	
Units		inches	
Units		meters	
Units		yards	
Vert Datum		NAVD88	

Table Column	Item Code	Item Name	Item_Description
Vert Datum		NGVD29	
Vert Datum		OTHER	
Vert Datum		UNKWN	
Water CleanPR		Acetone Rinse	Water Sampling
Water CleanPR		Detergent Wash	Water Sampling
Water CleanPR		Hexane Rinse	Water Sampling
Water CleanPR		Lo-Hi Conc.	Water Sampling
Water CleanPR		Water Rinse	Water Sampling
Water Collection Method		5 Gal Bucket	
Water Collection Method		Auger	
Water Collection Method		bailer	
Water Collection Method		DMLS	
Water Collection Method		Geoprobe	
Water Collection Method		Grab	
Water Collection Method		GW Pump	
Water Collection Method		Hose	
Water Collection Method		Irrig. sprinkle	
Water Collection Method		NA	
Water Collection Method		OtterTrawl	
Water Collection Method		packer	
Water Collection Method		peristaltic	
Water Collection Method		Ponar	
Water Collection Method		Priming pump	
Water Collection Method		Sample Port	
Water Collection Method		Spigot	
Water Collection Method		ss spoon	
Water Collection Method		submers. pump	
Water Collection Method		teflon bailer	
Water Collection Method		Teflon Tubing	
Water Collection Method		TracHoe	
Water Collection Method		vacuum box	
Water Color		Black	Water Sampling
Water Color		Brown	Water Sampling
Water Color		Clear	Water Sampling
Water Color		Gray	Water Sampling
Water Color		Yellow	Water Sampling
Water Container		1 L poly	
Water Container		1 L Tedlar Bag	
Water Container		1 liter amber	
Water Container		1 liter plastic	

Table Column	Item Code	Item Name	Item_Description
Water Container		16 oz glass	
Water Container		18 oz Plastic	
Water Container		2 oz Septa	
Water Container		3" acrylic slv	
Water Container		32 oz Amber	
Water Container		32 oz glass	
Water Container		4 L cubitainer	
Water Container		4 oz glass	
Water Container		4 oz. sept	
Water Container		40 ml VOA	
Water Container		5 gal. bucket	
Water Container		5 Gal. Cube	
Water Container		8 oz glass	
Water Container		Acetate Core	Water Sampling
Water Container		Core	
Water Container		DMLS Cell	
Water Container		Foil Cap	Water Sampling
Water Container		Foil/bag	
Water Container		Glass Jar	Water Sampling
Water Container		Metal	Water Sampling
Water Container		Paper Cap	Water Sampling
Water Container		Plastic Bag	
Water Container		Plastic Jar	Water Sampling
Water Container		Teflon Cap	Water Sampling
Water Container		Teflon XRF cup	
Water Flow		East	Water Sampling
Water Flow		North	Water Sampling
Water Flow		South	Water Sampling
Water Flow		West	Water Sampling
Water Odor		None	Water Sampling
Water Source		Blank	
Water Source		Drainage	
Water Source		Groundwater	Water Sampling
Water Source		Monitoring Well	
Water Source		Potable water	Water Sampling
Water Source		Residential	
Water Source	SW	Surface Water	
Water Source		Tap	Water Sampling
Water Units		mS	
Water Units		ppb	

Table Column	Item Code	Item Name	Item_Description
Water Units		ppm	
Water Units		uS	
Wipe Collection Method		Composite	
Wipe Collection Method		Discrete	
Wipe Media		Gauze pad	

Category (Database Table)	Data Element (Database Field)	Valid Value
Events	Activity	Remedial Design
Events	Activity	Remedial Design Oversight
Events	QAPP_Approved	Y
Events	QAPP_Approved	N
Events	QAPP_ApprovedBy	US EPA Region 10
Events	QAPP_ApprovedBy	ODEQ
Location	CountryCode	US
Location	CountyCode	051
Location	Datum	NAD83
Location	Datum	UNKWN
Location	Datum	WGS84
Location	ElevDatum	NAVD88
Location	ElevDatum	NGVD29
Location	ElevDatum	OTHER
Location	ElevDatum	UNKWN
Location	ElevMethod	Altimetry
Location	ElevMethod	GPS
Location	ElevMethod	Interpolation
Location	ElevMethod	Other
Location	ElevMethod	Survey
Location	GeoMethod	GPS-Unspecified
Location	GeoMethod	Unknown
Location	GeoMethod	GPS
Location	GeoMethod	Interpolation
Location	GeoMethod	Survey
Location	HorizAccuracyMeasureUnit	Ft
Location	HorizAccuracyMeasureUnit	Meter
Location	HucEightDigitCode	17090012
Location	HucTwelveDigitCode	170900120201
Location	HucTwelveDigitCode	170900120202
Location	HucTwelveDigitCode	170900120301
Location	HucTwelveDigitCode	170900120305
Location	HucTwelveDigitCode	170900120304
Location	HucTwelveDigitCode	170900120302
Location	HucTwelveDigitCode	170900120303
Location	HucTwelveDigitCode	170900120102
Location	HucTwelveDigitCode	170900120104
Location	HucTwelveDigitCode	170900120101
Location	HucTwelveDigitCode	170900120103
Location	<Structuring of location (Site, subsite[by river mile], and SMA) will be determined with the EPA RPM> Developed as a part of the Portland Harbor Scribe Template.	
Location	LocationZone	Borehole
Location	LocationZone	Canal Transport
Location	LocationZone	Combined Sewer
Location	LocationZone	Estuary
Location	LocationZone	Facility Industrial
Location	LocationZone	Facility Other
Location	LocationZone	Lake
Location	LocationZone	Land
Location	LocationZone	Land Flood Plain
Location	LocationZone	Landfill
Location	LocationZone	Ocean
Location	LocationZone	Other-Ground Water
Location	LocationZone	Other-Seawater
Location	LocationZone	Other-Surface Water
Location	LocationZone	Other-Surface Water
Location	LocationZone	Pond-Stormwater
Location	LocationZone	Reservoir
Location	LocationZone	River/Stream
Location	LocationZone	River/Stream
Location	LocationZone	Seep
Location	LocationZone	Spring
Location	LocationZone	Storm Sewer
Location	LocationZone	Test Pit
Location	LocationZone	Waste Pit

Category (Database Table)	Data Element (Database Field)	Valid Value
Location	LocationZone	Waste Sewer
Location	LocationZone	Well
Location	LocationZone	Wetland Undifferentiated
Location	State Code	OR
Location	Sub_Basin	Lower Willamette
Samples	Activity	Pre-Design
Samples	Activity	Design
Samples	Matrix	Air
Samples	Matrix	Air Indoor
Samples	Matrix	Asbestos
Samples	Matrix	Biological
Samples	Matrix	Benthic
Samples	Matrix	Drinking Water
Samples	Matrix	Dust
Samples	Matrix	Filtered Water
Samples	Matrix	Ground Water Dissolved
Samples	Matrix	Ground Water Total
Samples	Matrix	Habitat
Samples	Matrix	Lab Sand
Samples	Matrix	Liquid Waste
Samples	Matrix	Porewater Dissolved
Samples	Matrix	Porewater Total
Samples	Matrix	Potable Water
Samples	Matrix	Saline Water Dissolved
Samples	Matrix	Saline Water Total
Samples	Matrix	Sand
Samples	Matrix	Sediment
Samples	Matrix	Sediment <2mm
Samples	Matrix	Sediment <63um
Samples	Matrix	Sediment 125-250um
Samples	Matrix	Sediment 63-125um
Samples	Matrix	Sediment 63-250um
Samples	Matrix	Sediment Bulk
Samples	Matrix	Sediment Subsurface
Samples	Matrix	Sediment Surface
Samples	Matrix	Septic Effluent
Samples	Matrix	Soil
Samples	Matrix	Soil Gas
Samples	Matrix	Soil Subsurface
Samples	Matrix	Soil Surface
Samples	Matrix	Solid Waste
Samples	Matrix	Stormwater
Samples	Matrix	Surface Water
Samples	Matrix	Surface Water Dissolved
Samples	Matrix	Surface Water Total
Samples	Matrix	Tissue
Samples	Matrix	Waste
Samples	Matrix	Subsurface Soil/Sediment
Samples	Matrix	Surface Soil/Sediment
Samples	Samp_Depth_Units	Ft
Samples	SampleCollection	Activity Trap
Samples	SampleCollection	A-Frame Net
Samples	SampleCollection	Anchor Box Dredge
Samples	SampleCollection	Artificial Substrate
Samples	SampleCollection	Backpack Electroshock
Samples	SampleCollection	Beach Seine Net
Samples	SampleCollection	Beam Trawl
Samples	SampleCollection	Benthic Corer (Other)
Samples	SampleCollection	Benthic Dredge (Other)
Samples	SampleCollection	Benthic Grab (Other)
Samples	SampleCollection	Birge Closing Net
Samples	SampleCollection	Black Light Trap
Samples	SampleCollection	Block Net
Samples	SampleCollection	Boat-Mounted Electroshock
Samples	SampleCollection	Bod Dredge
Samples	SampleCollection	Bongo Net
Samples	SampleCollection	Boomerang Corer
Samples	SampleCollection	Boomerang Grab

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Box Corer
Samples	SampleCollection	Box Sampler
Samples	SampleCollection	Brail
Samples	SampleCollection	Bucket
Samples	SampleCollection	Burrell Epibenthic Sled
Samples	SampleCollection	Campbell Grab
Samples	SampleCollection	Cast Net
Samples	SampleCollection	Center Bag
Samples	SampleCollection	Chain Dredge
Samples	SampleCollection	Clam-Shell Grab
Samples	SampleCollection	Clarke-Bumpus Net
Samples	SampleCollection	Concussion
Samples	SampleCollection	Creel Survey
Samples	SampleCollection	Danish Seine Net
Samples	SampleCollection	Dart Corer (Gravity)
Samples	SampleCollection	D-Frame Net
Samples	SampleCollection	DH-81
Samples	SampleCollection	DH-95
Samples	SampleCollection	Dietz-Lafond Grab
Samples	SampleCollection	Dip Net
Samples	SampleCollection	Draw Down
Samples	SampleCollection	Drift Gill Net
Samples	SampleCollection	Drilled Sampler
Samples	SampleCollection	Drive Sampler (Generic)
Samples	SampleCollection	Drop Net
Samples	SampleCollection	Ekman Grab
Samples	SampleCollection	Electric Seine
Samples	SampleCollection	Electroshock (Other)
Samples	SampleCollection	Emergence Trap
Samples	SampleCollection	English Umbrella Net
Samples	SampleCollection	Erwin Piston Corer
Samples	SampleCollection	Ewing Gravity Corer
Samples	SampleCollection	Experimental Brail
Samples	SampleCollection	Experimental Gill Net
Samples	SampleCollection	Fish Weir
Samples	SampleCollection	Free Fall Grab
Samples	SampleCollection	Fry Trap
Samples	SampleCollection	Funnel Trap
Samples	SampleCollection	Fyke Net
Samples	SampleCollection	Glass Slide
Samples	SampleCollection	Glass Slide Device
Samples	SampleCollection	Gravity Corer (Generic)
Samples	SampleCollection	Hand Corer
Samples	SampleCollection	Herring Trawl
Samples	SampleCollection	Hess Sampler
Samples	SampleCollection	Hester-Dendy
Samples	SampleCollection	Hook And Line
Samples	SampleCollection	Hydraulic Grab
Samples	SampleCollection	Hydroacoustics
Samples	SampleCollection	Hydroplastic (PVC) Corer
Samples	SampleCollection	Insect Trap
Samples	SampleCollection	Isaacs-Kidd Trawl
Samples	SampleCollection	Juday Trap
Samples	SampleCollection	Kemmerer Bottle
Samples	SampleCollection	Kick Net
Samples	SampleCollection	Kullenberg Gravity Corer
Samples	SampleCollection	Larval Light Fish Trap
Samples	SampleCollection	Long Line
Samples	SampleCollection	Marmap Neuston Net
Samples	SampleCollection	Minnow Seine Net
Samples	SampleCollection	Miscellaneous (Other)
Samples	SampleCollection	Mochness Net
Samples	SampleCollection	Modified Surber Sampler
Samples	SampleCollection	MTD Net
Samples	SampleCollection	Nansen Bottle
Samples	SampleCollection	Natural Substrate
Samples	SampleCollection	Net Vertical Tow (Other)
Samples	SampleCollection	Net/Horizontal Tow (Other)

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Net/Non Tow (Other)
Samples	SampleCollection	Niskin Bottle
Samples	SampleCollection	Norpac Net
Samples	SampleCollection	Orange-Peel Grab
Samples	SampleCollection	Original Surber Sampler
Samples	SampleCollection	Other Toxicant
Samples	SampleCollection	Otter Trawl
Samples	SampleCollection	Pair Trawl
Samples	SampleCollection	Pamatmat Multiple Quartz Corer
Samples	SampleCollection	Peterson Grab
Samples	SampleCollection	Petite Ponar Grab
Samples	SampleCollection	Phleger Corer (Gravity)
Samples	SampleCollection	Pipe Dredge
Samples	SampleCollection	Piston Corer (Generic)
Samples	SampleCollection	Plankton Net
Samples	SampleCollection	Plexiglass Slide Device
Samples	SampleCollection	Plexiglass Trap
Samples	SampleCollection	Plummet Net
Samples	SampleCollection	Polar Orga. Chem. Integrative Sampler
Samples	SampleCollection	Ponar Grab
Samples	SampleCollection	Pound Net
Samples	SampleCollection	Pram Electroshock
Samples	SampleCollection	Probe/Sensor
Samples	SampleCollection	Pull Sled
Samples	SampleCollection	Pump/Air Lift
Samples	SampleCollection	Pump/Bailer
Samples	SampleCollection	Pump/Centrifugal
Samples	SampleCollection	Pump/Jet
Samples	SampleCollection	Pump/Non-Submersible
Samples	SampleCollection	Pump/Peristaltic
Samples	SampleCollection	Pump/Piston
Samples	SampleCollection	Pump/Rotary
Samples	SampleCollection	Pump/Submersible
Samples	SampleCollection	Pump/Turbine
Samples	SampleCollection	Purse Seine Net
Samples	SampleCollection	Push Net
Samples	SampleCollection	Push Point Sampler
Samples	SampleCollection	Radiello
Samples	SampleCollection	Rectangular Net
Samples	SampleCollection	Remotely Operated Vehicle
Samples	SampleCollection	Rock Basket
Samples	SampleCollection	Roller Frame Trawl
Samples	SampleCollection	Rotenone
Samples	SampleCollection	Roving Drop Net
Samples	SampleCollection	Scoop Fish Grab
Samples	SampleCollection	Sediment Trap
Samples	SampleCollection	Seine Net
Samples	SampleCollection	Semipermeable Membrane Device
Samples	SampleCollection	Set (Passive) Gill Net
Samples	SampleCollection	Shelby Tube
Samples	SampleCollection	Ship Sea Chest
Samples	SampleCollection	Shipek Grab
Samples	SampleCollection	SHOVEL
Samples	SampleCollection	Shrimp Trawl
Samples	SampleCollection	Simple Conical Net
Samples	SampleCollection	Single-Vessel Operated Tow Net
Samples	SampleCollection	Smith-McIntire Grab
Samples	SampleCollection	Sodium Cyanide
Samples	SampleCollection	Spear/Gun
Samples	SampleCollection	Spear/Hand
Samples	SampleCollection	Spear/Hawaiian Sling
Samples	SampleCollection	Split Spoon
Samples	SampleCollection	Square-Mouth Net
Samples	SampleCollection	Stainless Steel Spoon
Samples	SampleCollection	Stationary Drop Net
Samples	SampleCollection	Still Camera
Samples	SampleCollection	Stop Net
Samples	SampleCollection	Storm Water Sampler

Category (Database Table)	Data Element (Database Field)	Valid Value
Samples	SampleCollection	Stovepipe Sampler
Samples	SampleCollection	Stream-Side Electroshock
Samples	SampleCollection	Suction Dredge
Samples	SampleCollection	Summa
Samples	SampleCollection	Surber Sampler
Samples	SampleCollection	Syringe
Samples	SampleCollection	Terminal Bag
Samples	SampleCollection	Tile Plate
Samples	SampleCollection	Tow Net
Samples	SampleCollection	Towed Dredge
Samples	SampleCollection	Trammel Net
Samples	SampleCollection	Trap Net
Samples	SampleCollection	Trap Substrate (Other)
Samples	SampleCollection	Traveling Screen
Samples	SampleCollection	Trot Line
Samples	SampleCollection	T-Sampler
Samples	SampleCollection	Tucker Net
Samples	SampleCollection	Two-Vessel Operated Tow Net
Samples	SampleCollection	Van Dorn Bottle
Samples	SampleCollection	Van Veen Grab
Samples	SampleCollection	Variable Mesh Gill Net
Samples	SampleCollection	Vibrating Corer
Samples	SampleCollection	Video Camera
Samples	SampleCollection	Vinyl Tube
Samples	SampleCollection	Visual Sighting
Samples	SampleCollection	Water Bottle
Samples	SampleCollection	Water Sampler (Other)
Samples	SampleCollection	WBH-96
Samples	SampleCollection	Whirl-pak bag
Samples	SampleCollection	Wisconsin-Style Net
Samples	SampleCollection	Yankee Trawl
Samples	SampleCollection	Young Grab
Samples	Sampler	<Performing Parties> Will be added as they are defined and organized into groups
Samples	SampleType	Depth Integrated Sample
Samples	SampleType	Field Duplicate
Samples	SampleType	Field Msr/Obs
Samples	SampleType	Field Sample
Samples	SampleType	Incremental Sampling Horiz
Samples	SampleType	Incremental Sampling Vert
Samples	SampleType	QC Blank - Bottle/Preservative
Samples	SampleType	QC Blank - Field
Samples	SampleType	QC Blank - Filter
Samples	SampleType	QC Blank - Rinsate/Equipment
Samples	SampleType	QC Blank - Trip
Samples	SampleType	Sample-Composite Without Parents
LabResults	Analysis	<To be determined from performing party site specific sampling plan>
LabResults	Analyte	1,1-Dichloroethane
LabResults	Analyte	1,1-Dichloroethene
LabResults	Analyte	1,1-Dichloroethylene
LabResults	Analyte	1,1,1-Trichloroethane
LabResults	Analyte	1,1,1,-Trichloroethane
LabResults	Analyte	1,1,2-Trichloroethane
LabResults	Analyte	Trichloroethane
LabResults	Analyte	1,1,2,2-Tetrachloroethane
LabResults	Analyte	Tetrachloroethane
LabResults	Analyte	1,2-Dibromoethane
LabResults	Analyte	Dibromoethane
LabResults	Analyte	1,2-Dichloroethane
LabResults	Analyte	Ethylene dichloride
LabResults	Analyte	1,2-Dichloropropane
LabResults	Analyte	Propylene dichloride
LabResults	Analyte	1,2,3-Trichloropropane
LabResults	Analyte	1,2,3,4,7,8-HxCDF
LabResults	Analyte	1,2,3,7,8-PeCDD
LabResults	Analyte	1,2,4-Trichlorobenzene
LabResults	Analyte	1,2-Dichlorobenzene
LabResults	Analyte	1,3-Dichlorobenzene
LabResults	Analyte	1,4-Dichlorobenzene

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	2-Butanone
LabResults	Analyte	Methyl Ethyl Ketone
LabResults	Analyte	2-Hexanone
LabResults	Analyte	2-Chloroethylvinyl Ether
LabResults	Analyte	2,4,5-TP (Silvex)
LabResults	Analyte	2,2'-oxybis(1- Chloropropane)
LabResults	Analyte	2,3,4,6-Tetrachlorophenol
LabResults	Analyte	2,3,4,7,8-PeCDF
LabResults	Analyte	2,3,7,8-TCDF
LabResults	Analyte	2,3,7,8-TCDD-Dioxin
LabResults	Analyte	2,3,7,8-TCDD
LabResults	Analyte	2,4,5-Trichlorophenol
LabResults	Analyte	2,4,6-Trichlorophenol
LabResults	Analyte	2,4-Dichlorophenol
LabResults	Analyte	2,4-D
LabResults	Analyte	2,4-Dimethylphenol
LabResults	Analyte	Dinitrophenol
LabResults	Analyte	2,4-Dinitrophenol
LabResults	Analyte	2,4-Dinitrotoluene
LabResults	Analyte	2,6-Dinitrotoluene
LabResults	Analyte	2-Chloronaphthalene
LabResults	Analyte	2-Chlorophenol
LabResults	Analyte	2-Methylnaphthalene
LabResults	Analyte	o-Cresol
LabResults	Analyte	2-Methylphenol
LabResults	Analyte	2-Nitroaniline
LabResults	Analyte	2-Nitrophenol
LabResults	Analyte	3,3'-Dichlorobenzidine
LabResults	Analyte	3,3'- Dichlorobenzidine
LabResults	Analyte	3-Nitroaniline
LabResults	Analyte	Methyl isobutyl ketone
LabResults	Analyte	4-Methyl-2-Pentanone
LabResults	Analyte	4-Bromophenyl- phenylether
LabResults	Analyte	4-Bromophenyl phenyl ether
LabResults	Analyte	3-Methyl-4-chlorophenol
LabResults	Analyte	4-Chloro-3-methylphenol
LabResults	Analyte	4-Chloro-3- methylphenol
LabResults	Analyte	4-Chloroaniline
LabResults	Analyte	4-Chlorophenyl phenyl ether
LabResults	Analyte	4-Chlorophenyl- phenyl ether
LabResults	Analyte	4-Methylphenol
LabResults	Analyte	p-Cresol
LabResults	Analyte	4-Nitroaniline
LabResults	Analyte	4-Nitrophenol
LabResults	Analyte	Acenaphthene
LabResults	Analyte	Acenaphthylene
LabResults	Analyte	Acrolein
LabResults	Analyte	Acrylonitrile
LabResults	Analyte	Aldrin
LabResults	Analyte	Aluminum
LabResults	Analyte	Aluminim
LabResults	Analyte	Anthracene
LabResults	Analyte	Antimony
LabResults	Analyte	Arsenic
LabResults	Analyte	Benzene
LabResults	Analyte	Benzo(a)anthracene
LabResults	Analyte	Benzo(a)pyrene
LabResults	Analyte	Benzo(b)fluoranthene
LabResults	Analyte	Benzo(ghi)perylene
LabResults	Analyte	Benzo(g,h,i)perylene
LabResults	Analyte	Benzo(k)fluoranthene
LabResults	Analyte	Benzoic Acid
LabResults	Analyte	Benzyl alcohol
LabResults	Analyte	bis(2-Chloroethoxy) methane
LabResults	Analyte	Bis(2-chloroethyl) ether
LabResults	Analyte	bis(2-Chloroethyl)ether
LabResults	Analyte	bis(2-Ethylhexyl) phthalate
LabResults	Analyte	Di(2-ethylhexyl)phthalate

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Bromochloromethane
LabResults	Analyte	Bromodichloromethane
LabResults	Analyte	Dichlorobromomethane
LabResults	Analyte	Tribromomethane
LabResults	Analyte	Bromoform
LabResults	Analyte	Bromomethane
LabResults	Analyte	Methyl Bromide
LabResults	Analyte	Butylbenzylphthalate
LabResults	Analyte	Butyl benzyl phthalate
LabResults	Analyte	Cadmium
LabResults	Analyte	Carbazole
LabResults	Analyte	Carbon Disulfide
LabResults	Analyte	Tetrachloromethane
LabResults	Analyte	Carbon Tetrachloride
LabResults	Analyte	Chlorobenzene, total
LabResults	Analyte	Chlorobenzene
LabResults	Analyte	Chlorobenzene (each)
LabResults	Analyte	Chlorodibromomethane
LabResults	Analyte	Dibromochloromethane
LabResults	Analyte	Chloroethane
LabResults	Analyte	Chloroform
LabResults	Analyte	Methyl Chloride
LabResults	Analyte	Chloromethane
LabResults	Analyte	Chromium
LabResults	Analyte	Chrysene
LabResults	Analyte	cis-1,2-Dichloroethylene
LabResults	Analyte	cis-1,2-Dichloroethene
LabResults	Analyte	cis-1,3-Dichloropropene
LabResults	Analyte	Copper
LabResults	Analyte	Cyanide
LabResults	Analyte	Cyanide, free (total)
LabResults	Analyte	Dibenzo(a,h)anthracene
LabResults	Analyte	Dibenzo(a,h)- anthracene
LabResults	Analyte	Dibenzofuran
LabResults	Analyte	Dibromomethane
LabResults	Analyte	Dichlorodifluoromethane
LabResults	Analyte	DDD
LabResults	Analyte	4,4'-DDD
LabResults	Analyte	p,p'-DDD
LabResults	Analyte	p,p'-DDE
LabResults	Analyte	4,4'-DDE
LabResults	Analyte	EDDE
LabResults	Analyte	DDE
LabResults	Analyte	p,p'-DDT
LabResults	Analyte	Total DDT
LabResults	Analyte	4,4'-DDT
LabResults	Analyte	DDT
LabResults	Analyte	Dieldrin
LabResults	Analyte	Diethylphthalate
LabResults	Analyte	Dimethyl phthalate
LabResults	Analyte	Dimethylphthalate
LabResults	Analyte	Di-n-butyl phthalate
LabResults	Analyte	Di-n-butylphthalate
LabResults	Analyte	n-Butylphthalate
LabResults	Analyte	Di-n-octyl phthalate
LabResults	Analyte	Di-n-octylphthalate
LabResults	Analyte	Endosulfan I
LabResults	Analyte	a-Endosulfan
LabResults	Analyte	b-Endosulfan
LabResults	Analyte	Endosulfan II
LabResults	Analyte	Endosulfan sulfate
LabResults	Analyte	Endrin
LabResults	Analyte	Endrin aldehyde
LabResults	Analyte	Endrin ketone
LabResults	Analyte	Ethyl benzene
LabResults	Analyte	Ethylbenzene
LabResults	Analyte	Fluoranthene
LabResults	Analyte	Fluorene

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Analyte	Heptachlor
LabResults	Analyte	Heptachlor Epoxide
LabResults	Analyte	Hexachlorobenzene
LabResults	Analyte	Hexachlorobutadiene
LabResults	Analyte	Hexachlorocyclopentadiene
LabResults	Analyte	Hexachloroethane
LabResults	Analyte	Indeno(1,2,3-c,d)pyrene
LabResults	Analyte	Indeno(1,2,3-cd)- pyrene
LabResults	Analyte	Iodomethane
LabResults	Analyte	Isophorone
LabResults	Analyte	Isopropylbenzene
LabResults	Analyte	Manganese
LabResults	Analyte	Mercury
LabResults	Analyte	Mercury, Inorganic
LabResults	Analyte	Methoxychlor
LabResults	Analyte	Methylmercury
LabResults	Analyte	2-Methyl-4,6-Dinitrophenol
LabResults	Analyte	4,6-Dinitro-2- methylphenol
LabResults	Analyte	4,6-Dinitro-2-methylphenol
LabResults	Analyte	Methylene chloride
LabResults	Analyte	Dichloromethane
LabResults	Analyte	Methyl tert-Butyl Ether
LabResults	Analyte	Naphthalene
LabResults	Analyte	Nickel
LabResults	Analyte	Nitrobenzene
LabResults	Analyte	N-Nitroso-di-n propylamine
LabResults	Analyte	N-Nitrosodi-n-propylamine
LabResults	Analyte	N-Nitrosodiphenylamine
LabResults	Analyte	N-Nitroso diphenylamine
LabResults	Analyte	Pentachlorophenol
LabResults	Analyte	Phenanthrene
LabResults	Analyte	Phenol
LabResults	Analyte	Pyrene
LabResults	Analyte	Selenium
LabResults	Analyte	Silver
LabResults	Analyte	Styrene
LabResults	Analyte	Tetrachloroethylene
LabResults	Analyte	Tetrachloroethene
LabResults	Analyte	Toluene
LabResults	Analyte	Toxaphene
LabResults	Analyte	1,2-Trans-Dichloroethylene
LabResults	Analyte	trans-1,2-Dichloroethylene
LabResults	Analyte	trans-1,2-Dichloroethene
LabResults	Analyte	trans-1,3-Dichloropropene
LabResults	Analyte	trans-1,4-Dichloro-2-Butene
LabResults	Analyte	Tributyl tin
LabResults	Analyte	Trichloroethylene
LabResults	Analyte	Trichloroethene
LabResults	Analyte	Trichlorofluoromethane
LabResults	Analyte	Vanadium
LabResults	Analyte	Vinyl Acetate
LabResults	Analyte	Vinyl Chloride
LabResults	Analyte	Xylene
LabResults	Analyte	Xylene, total
LabResults	Analyte	Xylenes (total)
LabResults	Analyte	Zinc
LabResults	Analyte	alpha-BHC
LabResults	Analyte	a-BHC
LabResults	Analyte	beta-BHC
LabResults	Analyte	b-BHC
LabResults	Analyte	g-BHC
LabResults	Analyte	gamma-BHC (Lindane)
LabResults	Analyte	Lindane (g-BHC)
LabResults	Analyte	delta-BHC
LabResults	Analyte	d-BHC
LabResults	Result_Units	<To be determined from performing party site specific sampling plan>
LabResults	Total_or_Dissolved	Total
LabResults	Total_or_Dissolved	Dissolved

Category (Database Table)	Data Element (Database Field)	Valid Value
LabResults	Total_or_Dissolved	NA
LabResults	Total_or_Dissolved	DI Leach
LabResults	Total_or_Dissolved	MWM (Meteoric Water Mobility Ext)
LabResults	Total_or_Dissolved	SPLP
LabResults	Total_or_Dissolved	Suspended
LabResults	Total_or_Dissolved	TCLP
LabResults	Total_or_Dissolved	Acid Soluble
LabResults	Total_or_Dissolved	Bioavailable
LabResults	Total_or_Dissolved	Comb Available
LabResults	Total_or_Dissolved	Extractable
LabResults	Total_or_Dissolved	Filterable
LabResults	Total_or_Dissolved	Fixed
LabResults	Total_or_Dissolved	Free Available
LabResults	Total_or_Dissolved	Inorganic
LabResults	Total_or_Dissolved	Non-filterable
LabResults	Total_or_Dissolved	Non-settleable
LabResults	Total_or_Dissolved	Non-volatile
LabResults	Total_or_Dissolved	Organic
LabResults	Total_or_Dissolved	Pot. Dissolved
LabResults	Total_or_Dissolved	Settleable
LabResults	Total_or_Dissolved	Supernate
LabResults	Total_or_Dissolved	Total Recoverable
LabResults	Total_or_Dissolved	Total Residual
LabResults	Total_or_Dissolved	Vapor
LabResults	Total_or_Dissolved	Volatile
LabResults	Total_or_Dissolved	WAD
LabResults	Analytical_Method	<To be determined from performing party site specific sampling plan>
LabResults	Basis	Wet
LabResults	Basis	Dry
LabResults	Lab_Name	<To be determined from performing party site specific sampling plan>
LabResults	QA_Comment	Final
LabResults	QA_Comment	Accepted
LabResults	QA_Comment	Preliminary
LabResults	QA_Comment	Rejected
LabResults	QA_Comment	Validated
LabResults	Result_Qualifier	J
LabResults	Result_Qualifier	U
LabResults	Result_Qualifier	UJ
LabResults	Result_Qualifier	J-
LabResults	Result_Qualifier	J+
LabResults	Result_Qualifier	R
LabResults	Validated	Yes
LabResults	Validated	No
LabResults	ValidationLevel	S2BVEM
LabResults	ValidationLevel	S3VEM
LabResults	ValidationLevel	S4VEM
LabResults	ValidationLevel	NA
LabResults	ValueType	Actual
LabResults	ValueType	Calculated
LabResults	ValueType	Blank Corrected Calc
LabResults	ValueType	Control Adjusted
LabResults	ValueType	Estimated

APPENDIX D

List of Historical Tabular Datasets

Data Source File Name	Matrix	Start Date	End Date	Record Count	Notes
2016-02-08 PHRI A3[1]	SO	8/6/2001	9/1/2005	417	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	WO	8/13/2002	3/12/2008	51334	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	TA	6/25/2002	5/28/2008	136255	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	SEIRT	4/6/2004	1/14/2010	26795	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	SE	5/6/1997	3/25/2010	787832	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	WP	11/2/2004	4/25/2005	378	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	WSXADC	11/9/2004	3/10/2007	30157	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	WS	2/5/1992	9/5/2008	37866	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	WSXAD			4182	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]		11/9/2004	3/10/2007	30080	Source: 2016 RI.pdf
2016-02-08 PHRI A3[1]	TZW	1/29/2004	10/6/2007	34486	Source: 2016 RI.pdf
AppendixM_Data_Files Phase 1 GS.xlsx	SE	6/1/1987	6/10/2008	52359	
AttachA3_SCRA_SW0507.xlsx	WS	7/5/2005	7/20/2005	7056	
CONFIDENTIAL_Geosyntec Data 2016.xlsx	SE	3/4/2016	3/4/2016	286	Geosyntec; Sediment Sampling Data Report, Swan Island Lagoon, Aug 2016
CopyofAppendixN_DataFiles.xls	SE	5/12/2008	3/25/2010	28726	GSI Water Solutions, Inc. and Hart Crowser, Inc. Field and Data Report, Downtown Portland Sediment Characterization Phase II, June 2010
GrainSize_TOC_2015.xlsx	SE	8/11/2014	10/23/2015	1592	See Note 2
GrainSize_TOC_2015.xlsx	S	8/22/2014	8/22/2014	7	See Note 2
GS Data Complied flat (070517jaa).xlsx	SE			1095	Geosyntec generated. Contains Grain Size Data. Kleinfelder[5]
Kleinfelder 2014 - Grain Size Analysis Compiled.xlsx	SE		12/3/2014	1660	
Kleinfelder 2014 All Data - flat file (070617jaa).xlsx	SE		12/3/2014	1641	Geosyntec generated. Contains Grain Size Data. Kleinfelder[5]
LWGFSdbwEECA_GASCOandArkema_20141117_v2.accdb	SE	6/10/1997	4/15/2013	1335104	Source[4]
NF2015SampleData.xlsx	SE	8/11/2014	10/23/2015	40960	See Note 2. Newfields[3]
NF2015SampleData.xlsx	WS	8/11/2014	10/27/2015	3230	See Note 2. Newfields[3]
NF2015SampleData.xlsx	S	8/22/2014	8/22/2014	378	See Note 2. Newfields[3]
NF2015SampleData.xlsx	W	8/11/2014	10/26/2015	911	See Note 2. Newfields[3]
NF2015SampleData.xlsx	FP	10/21/2015	10/21/2015	242	See Note 2. Newfields[3]
SCRA_R3WS2_20070320.xlsx	WS	9/4/2006	9/13/2006	8474	

Data Source File Name	Matrix	Start Date	End Date	Record Count	Notes
SCRA_R3WS3_20070327.xlsx	WS	11/2/2006	11/5/2006	22422	
SCRA_R3WS4_20070726_0.xlsx	WS	3/8/2007	3/8/2007	10	
SCRA_R3WS4_20070831_0.xlsx	WS	1/15/2007	3/10/2007	21810	

Notes:

1. 2016-02-08 Portland Harbor RI Appendix A3_RI-Dataset_RA-SummedParams.accdb
2. Appears to be 2015 Exxon Field Sampling Report.
3. NewFields Concentrations and Character of PAH in Sediments in the Proposed Remedial Alternatives Area of the Portland Harbor Superfund Site, River Miles 5-6 2015 Investigation, March 2016.
4. Portland Harbor RIFS Feasibility Study June 2016_840000.pdf.
5. Kleinfelder Sediment Sampling Data Report, June 2015.

Matrix Codes: SE = Sediment; W = Water; WS = Surface Water; WP = Seep Water; SEIRT = Sediment from In River Trap; TA = Tissue; WSXADC = surface water from XAD column; WSXAD = surface water from XAD column + filter; TZW = Transition Zone Water; S = Solid.

APPENDIX E

Geodatabase Specifications

Portland Harbor Historical Geospatial Datasets

Feature Name	Geometry	Primary Attributes	Metadata Y/N	Date	Note
Ownership_labels_Sites_n_Waterfront.shp	Polygon	Label_Own, RLIS_OWN, UserRank	Y	1/18/2007	
TechAltBActive.shp	Polygon	Null	N	Null	
AltFMod_TechAssigns.shp	Polygon	Assignment, Acres	N	Null	
BeachandType.shp	Polygon	Location, BeachType, Station_ID	N	Null	
Bounds.shp	Polyline	Rivermile	N	Null	
dock_structures.shp	Polgyon	Type, IsPublic, Name	Y	6/27/1905	
EPALWG_TotalArolclors.shp	Point	Depth_clas, task_code, Task_descr, Sys_loc_co, Loc_Name, Elev, Elev_unit, River_Stre, Sample_nam, Matrix_cod, Lab_matrix, Sample_typ, Sample_dat, End_depth, Depth_unit, Depth_inte, Group_desc, Chemical_n, Cas_rn, Analytic_m, Total_diss, Basis, Reportable, Result_typ, Result_Val, Interprete, Detect_Fla, Unit, NumberResu, Approval_C, NumberOfSi, Anl_Short_, change, DepthInt, neg_depth	N	Null	Contains Chemistry data. Probably exists in tabular format.
ImpactedShoreline.shp	Polyline	Contour, IsBeach, Length_Ft	Y	8/1/2006	
Kleinfelder_2014_PCBs_ND_MDL.shp	Point	Sample_Num, X_Coord, Y_Coord, Sample_ID, TOTAL__PCB, Data__Qual	N	Null	Contains Chemistry data. Probably exists in tabular format.
navchannel-coe.shp	Null	Null	Null	Null	
NewFields_2015_PCBs_ND_MDL.shp	Point	Station_ID, Horizon, Matrix, Depth, River__Mil, X_Coord, Y_Coord, Client_ID, Total_PCBs, Data__Qual	N	Null	Contains Chemistry data. Probably exists in tabular format.
Ownership_labels_Sites_n_Waterfront.shp	Polygon	Rep_locati, Label_Own, RLIS_OWN, UserRank	Y	1/18/2007	
Parks_pdx.shp	Polygon	PROPERTYID, NAME, ACRES, SHAPE_STAR, SHAPE_STLE, Public_Pri	N	Null	
PrimarySMA_Refinement_Sample_Locations.shp	Point	Name, Descriptio, timestamp, begin, end, altitudeMo, tessellate, extrude, visibility, drawOrder, icon	N	Null	Data error. Only contains Null values.
x2013_16_PCBseds0.shp	Point	Samp_ID, Sampler, Sdate, X_Coord, Y_Coord, tPCBCong_0	N	Null	Contains Chemistry data. Probably exists in tabular format.
WBSMB_2012\WBSMB_2012.shp	Point	RM, LocID, Date_, Purpose, Lat, Lon, TotalPCB_c, Qualifier, TotalPCB_t, Lipids_per, TotalPCBc_	N	Null	Contains Chemistry data. Probably exists in tabular format.
6_05_WR_OUTFALLS.shp	Point	ID, ORG_OWNER_, SIZE_, MATERIAL, STATUS, X_COORD, Y_COORD, DISCHARGE_	Y	6/5/2001	Not Chemistry data.
4_06_WR_OUTFALLS.shp	Point	ID, ORG_OWNER_, SIZE_, MATERIAL, STATUS, X_COORD, Y_COORD, DISCHARGE_	Y	5/18/2006	Not Chemistry data.
AQ_AlternativeB	Polygon	Shape_Length, Shape_Area, Alternative, Area	Y	5/1/2012	
AQ_AlternativeC	Polygon	Shape_Length, Shape_Area, Alternative	Y	5/1/2012	
AQ_AlternativeD	Polygon	Shape_Length, Shape_Area, Alternative, Area	Y	5/1/2012	
AQ_AlternativeE	Polygon	Shape_Length, Shape_Area, Alternative, Area	Y	5/1/2012	
AQ_AlternativeF	Polygon	Shape_Length, Shape_Area, Alternative, Area	Y	5/1/2012	
AQ_AlternativeG	Polygon	Shape_Length, Shape_Area, Alternative, Area		5/1/2012	
AOPC_Aug2011	Polygon	SMA_numeric, SMA_Abbr, SMA, Shape_Length, Shape_Area	Y	8/1/2011	
LWG_ModelGrid	Polygon	I, J, IJ, Shape_Length, Shape_Area	Y	5/1/2012	

Portland Harbor Historical Geospatial Datasets

Feature Name	Geometry	Primary Attributes	Metadata Y/N	Date	Note
AQ_subSMA_AltF	Polygon	Alternative, SMA_Abbr, subSMA_ID, uniqueNo, physicalFeature, WaveZone, MaxDredgeDepth, CAD_CDF, EMNR, RemovalFocused, IntegratedFocused	Y	5/1/2012	
AQ_subSMA_AltE	Polygon	Alternative, SMA_Abbr, subSMA_ID, uniqueNo, physicalFeature, WaveZone, MaxDredgeDepth, CAD_CDF, EMNR, RemovalFocused, IntegratedFocused	Y	5/1/2012	
AQ_subSMA_AltD	Polygon	Alternative, SMA_Abbr, subSMA_ID, uniqueNo, physicalFeature, WaveZone, MaxDredgeDepth, CAD_CDF, EMNR, RemovalFocused, IntegratedFocused	Y	5/1/2012	
AQ_subSMA_AltB	Polygon	Alternative, SMA_Abbr, subSMA_ID, uniqueNo, physicalFeature, WaveZone, MaxDredgeDepth, CAD_CDF, EMNR, RemovalFocused, IntegratedFocused	Y	5/1/2012	
AQ_subSMA_AltC	Polygon	Shape_Length, Shape_Area, Alternative	Y	5/1/2012	
PhysFeat_subSMAinfo_Structures	Polygon	Structure	Y	5/1/2012	
PhysFeat_subSMAinfo_PotentialFMD	Polygon	PotFutDredge, MaxDredgeDepth	Y	5/1/2012	
PhysFeat_subSMAinfo_NavChannel	Polygon	NavChan	Y	5/1/2012	
PhysFeat_subSMAinfo_WindWaveZone	Polygon	Shape_Length, Shape_Area, WaveZone	Y	5/1/2012	
DepthOfImpact_AltC	Polygon	Alternative, SMA_Abbr, Sys_loc_code, DepthOfImpact_ft	Y	5/1/2012	
DepthOfImpact_AltD	Polygon	Alternative, SMA_Abbr, Sys_loc_code, DepthOfImpact_ft	Y	5/1/2012	
DepthOfImpact_AltE	Polygon	Alternative, SMA_Abbr, Sys_loc_code, DepthOfImpact_ft	Y	5/1/2012	
DepthOfImpact_AltF	Polygon	Alternative, SMA_Abbr, Sys_loc_code, DepthOfImpact_ft	Y	5/1/2012	
DepthOfImpact_AltB	Polygon	Alternative, SMA_Abbr, Sys_loc_code, DepthOfImpact_ft	Y	5/1/2012	
PhysFeat_subSMAinfo_CDF_ArkemaBerth1	Polygon	CDF	Y	5/1/2012	
PhysFeat_subSMAinfo_CDF_ArkemaBerth2	Polygon	CDF	Y	5/1/2012	
PhysFeat_subSMAinfo_CDF_SwanIs	Polygon	CDF	Y	5/1/2012	
PhysFeat_subSMAinfo_CDF_T4	Polygon	CDF	Y	5/1/2012	
PhysFeat_subSMAinfo_CAD_SwanIs	Polygon	CDF	Y	5/1/2012	
PhysFeat_subSMAinfo_ExistingT4Cap	Polygon	PhysicalFeature	Y	5/1/2012	
Risk_Benthic_Reduced_Areas	Polygon	Shape_Length, Shape_Area, Description	Y	5/1/2012	
Risk_Benthic_Comprehensive	Polygon	Shape_Length, Shape_Area, Description	Y	5/1/2012	
RAL_bapeq_15000ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_bapeq_1500ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_bapeq_20000ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_bapeq_4000ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_bapeq_8000ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_pecdf23478_pt01ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_pecdf23478_pt02ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_sumddd_100ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_sumddd_50ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_sumdde_1000ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_sumdde_200ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_sumdde_20ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_sumdde_50ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	

Portland Harbor Historical Geospatial Datasets

Feature Name	Geometry	Primary Attributes	Metadata Y/N	Date	Note
RAL_sumddt_150ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_sumddt_60ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_totpcb_1000ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_totpcb_200ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_totpcb_500ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_totpcb_750ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
RAL_totpcb_75ppb	Polygon	Shape_Length, Shape_Area, RALchemical, RALvalue, RALunits	Y	6/1/2012	
ShearStress_AvgPascals	Polygon	POLYGON_ID, MOD_I, MOD_J, MOD_IJ, GIS_I, GIS_IJ, AVG_TAU_PA	Y	6/1/2012	
ShearStress_MaxPascals	Polygon	POLYGON_ID, MOD_I, MOD_J, MOD_IJ, GIS_I, GIS_IJ, AVG_TAU_PA	Y	6/1/2012	
ExistingDebris_StudyArea.shp	Point	Primary_	N	1/21/2014	Debris points.
GroundwaterDischargeAreas.shp	Polgyon	Shape_Length, Shape_Area	N	1/21/2014	
capping_areas.shp	Polygon	Linetype, Text_, start_date, end_date, ET_ID, Shape_Leng, Shape_Area, Perimeter, Area, Acres	Y	8/1/2006	
contour_13ft_NAVD88.shp	Polyline	OBJECTID, ID, CONTOUR, Shape_Leng	Y	2/12/2007	
dredged_areas.shp	Polygon	LAYER, VOLUME, NAME, COE,Ranges_dat, DepthNAVD8, Comments, Event_Date	Y	12/7/2006	
ContamShore.shp	Polyline	ID, IsScen2, IsScen5, LinearFt	N	7/8/1905	
NavFMD_Simplify	Polygon	NavChan, Shape_Length, Shape_Area	Y	12/10/2015	
TechAssign_AltB_poly	Polygon	Id, gridcode, Shape_Length, Shape_Area, final_tech_B		7/15/2015	
TechAssign_AltC_poly	Polygon	Id, gridcode, Shape_Length, Shape_Area, Ffinal_tech_C	N	7/15/2015	
TechAssign_AltD_poly	Polygon	Id, gridcode, Shape_Length, Shape_Area, final_tech_D	N	7/15/2015	
TechAssign_AltE_poly	Polygon	Id, gridcode, Shape_Length, Shape_Area, final_tech_E	N	7/15/2015	
TechAssign_AltF_poly	Polygon	Id, gridcode, Shape_Length, Shape_Area, final_tech_F	N	7/15/2015	
TechAssign_AltG_poly	Polygon	Id, gridcode, Shape_Length, Shape_Area, final_tech_G	N	7/15/2015	
TechAssign_AltB_poly_NavFMD	Polygon	FID_TechAssign_AltB_poly, Id, gridcode, final_tech_B, FID_NavFMD_Simplify, NavChan, Shape_Length, Shape_Area, TechAssignLabel	N	7/15/2015	
TechAssign_AltB_poly_NavFMD_dlsv	Polygon	TechAssignLabel, Shape_Length, Shape_Area	N	7/15/2015	
TechAssign_AltB_poly_NavFMD_dlsv_sm	Polygon	TechAssignLabel, Shape_Length, Shape_Area, InPoly_FID, SmoPgnFlag, Proxy	N	7/15/2015	
TechAssign_AltC_poly_NavFMD	Polygon	FID_TechAssign_AltC_poly, Id, gridcoe, final_tech_C, FID_NavFMD_Simplify, NavChan, Shape_Length, Shape_Area, TechAssignLabel	N	7/15/2015	
TechAssign_AltC_poly_NavFMD_dlsv	Polygon	TechAssignLabel, Shape_Length, Shape_Area	N	7/15/2015	
TechAssign_AltC_poly_NavFMD_dlsv_sm	Polygon	TechAssignLabel, Shape_Length, Shape_Area, InPoly_FID, SmoPgnFlag	N	7/15/2015	
TechAssign_AltD_poly_NavFMD	Polygon	FID_TechAssign_AltD_poly, Id, gridcode, final_tech_D, FID_NavFMD_Simplify, NavChan, Shape_Length, Shape_Area, TechAssignLabel	N	7/15/2015	
TechAssign_AltD_poly_NavFMD_dlsv	Polygon	TechAssignLabel, Shape_Length, Shape_Area	N	7/15/2015	
TechAssign_AltD_poly_NavFMD_dlsv_sm	Polygon	TechAssignLabel, Shape_Length, Shape_Area, InPoly_FID, SmoPgnFlag	N	7/15/2015	

Portland Harbor Historical Geospatial Datasets

Feature Name	Geometry	Primary Attributes	Metadata Y/N	Date	Note
TechAssign_AltE_poly_NavFMD	Polygon	FID_TechAssign_AltE_poly, Id, gridcode, final_tech_E, FID_NavFMD_Simplify, NavChan, Shape_Length, Shape_Area, TechAssignLabel	N	7/15/2015	
TechAssign_AltE_poly_NavFMD_dlsv	Polygon	TechAssignLabel, Shape_Length, Shape_Area	N	7/15/2015	
TechAssign_AltE_poly_NavFMD_dlsv_sm	Polygon	TechAssignLabel, Shape_Length, Shape_Area, InPoly_FID, SmoPgnFlag	N	7/15/2015	
TechAssign_AltF_poly_NavFMD	Polygon	FID_TechAssign_AltF_poly, Id, gridcode, final_tech_F, FID_NavFMD_Simplify, NavChan, Shape_Length, Shape_Area, TechAssignLabel	N	7/15/2015	
TechAssign_AltF_poly_NavFMD_dlsv	Polygon	TechAssignLabel, Shape_Length, Shape_Area	N	7/15/2015	
TechAssign_AltF_poly_NavFMD_dlsv_sm	Polygon	TechAssignLabel, Shape_Length, Shape_Area, InPoly_FID, SmoPgnFlag	N	7/15/2015	
TechAssign_AltG_poly_NavFMD	Polygon	FID_TechAssign_AltG_poly, Id, gridcode, final_tech_G, FID_NavFMD_Simplify, NavChan, Shape_Length, Shape_Area, TechAssignLabel	N	7/15/2015	
TechAssign_AltG_poly_NavFMD_dlsv	Polygon	TechAssignLabel, Shape_Length, Shape_Area	N	7/15/2015	
TechAssign_AltG_poly_NavFMD_dlsv_sm	Polygon	TechAssignLabel, Shape_Length, Shape_Area, InPoly_FID, SmoPgnFlag	N	7/15/2015	
ProposedCoreSamples_SalmonAECOM.shp	Polygon	ObjectID, LocID, Depth_cm, Type, Loc_ID	N	Null	
proposed_surfsed2017_tG0.shp	Point	SampleID, Site, Type, X1, Y1, Scope	N	Null	Survey data? Not chemistry
AltBActiveShoreline.shp	Polyline	OBJECTID, ID, CONTOUR, Shape_Leng, IsBeach, LengthFt	Y	2/12/2007	
AltF_88DHab.shp	Polygon	Alternativ, SMA_Abbr, subSMA_ID, UniqueNo, PhysicalFe, WaveZone, MaxDredgeD, CAD_CDF, EMNR, RemovalFoc, Integrated, Shape_Leng, Shape_Area, Area	Y	Null	
AltF_88Hab.shp	Polygon	Shape_Leng, Shape_Area, Alternativ, Area	Y	Null	
AltIActiveHab.shp	Polygon	OBJECTID, Proxy, Shape_Leng, Shape_Area, Sq_Ft	N	Null	
AltIActiveShoreline2.shp	Polyline	OBJECTID, ID, CONTOUR, Shape_Leng, IsBeach, Length_Ft	Y	2/12/2007	
AQ_AlternativeF_DBuffer.shp	Polygon	No Values	Y	Null	
Bounds.shp	Polyline	Id, Rivermile	N	Null	
Ownership_labels_Sites_n_Waterfront.shp	Polgyon	OBJECTID, Rep_locati, Perimeter, Area, Label_Own, RLIS_OWN, Shape_Leng, Shape_Area, On_other_s, UserRank	Y	1/18/2007	
PhysFeat_subSMAinfo_PotentialFMD.shp	Polygon	PotFutDredge, MaxDredgeDepth, Shape_Length, Shape_Area	Y	Null	
PipelineAreasNOAAENC.shp	Polygon	LNAM, RCID, PRIM, GRUP, OBJL, RVER, RESTRN, INFORM, SCAMIN, SORDAT, SORIND	N	Null	
ROD_RM5_6All.shp	Polygon	Assignment, Acres, Proxy	N	Null	
TechAltIActiveDB.shp	Polygon	Null	N	Null	
Tech_Assign_IV2.shp	Polygon	Id, Assignment, Acres, Proxy	N	Null	
Prop_Fish_Track.shp	Polygon	Type	N	7/4/1905	
AQ_AlternativeF_ShoreClip2.shp	Polyline	OBJECTID, ID, CONTOUR	Y	2/12/2007	
AQ_AlternativeF_Buffer2.shp	Polygon	No values	Y	Null	
AltBActiveStruct.shp	Polygon	Id, Area, Sq_Ft	Y	2/12/2007	
Structure_AltF.shp	Polygon	Shape_Leng, Shape_Area, Alternativ	Y	Null	
AltIActiveStruct.shp	Polygon	Shape, Id, Area, Sq_Ft	Y	2/12/2007	
TechAltIActive.shp	Polygon	OBJECTID, Proxy, Shape_Leng, Shape_Area, Sq_Ft	N	Null	

Portland Harbor Historical Geospatial Datasets

Feature Name	Geometry	Primary Attributes	Metadata Y/N	Date	Note
bike_routes.shp	Polyline	Shape, BIKEID, NAME, BIKETYP, BIKETHERE, F_ZLEV, T_ZLEV, LENGTH	Y	Null	
AQ_AlternativeF_DBuffer.shp	Polygon	No Values	Y	Null	
con15ftnavd88_3.shp	Polyline	Shape, CONTOUR	N	Null	
Cable_Crossings.shp	Polyline	Shape, Id, OWNER	N	Null	
TechAltBActiveD.shp	Polygon	Shape, Proxy, Sq_Ft	N	Null	
PRPs.shp	Polygon	OBJECTID, NAME, PCB, COLOR, NAMED, PROJ_STATU, SCE_STATUS, SHAPE_Leng, SHAPE_Area, IsPRP, IsEPA104	N	Null	has some chemistry data
Scenario2_thiessen.shp	Polygon	OBJECTID, SampleID, Lat, Lon, Date_, Depth, Total_PCBs, Total_PC_1, Sample_ID, Collection, Time_, Northing, Easting, St_Dpth, En_Depth, RM, Total_PC_2, RI_Flags, Total_PC_3, FS_Flags, Location_l, TOTAL_PC_4, LONG_, Site, TotalPCBs_, Area, Acres, SWAC_pct_a, SWAC_pct_1, SWAC_pct_2, SWAC_pct_3, SWAC_pct_4, SWAC_pct_B, SWAC_Conc_, SWAC_Conc1, SWAC_Con_1, SWAC_Con_2, SWAC_Con_3, SWAC_Con_4, SWAC_Con_5, SIL_area, SWAC_SILco, Shape_Leng, Shape_Area, Sq_Ft	N	Null	has chemistry data
TechIScenario2V2.shp	Polygon	TechAssign, InPoly_FID, SmoPgnFlag, Shape_Leng, Shape_Area, Sq_Ft, AreaNumber	N	Null	
Sediment_Station_Locations.shp	Point	Survey_gro, Task, sys_loc_co, Location, X, Y, sample_cla, surf_elev, SampleYear, Matrix, RiverZone, RiverMile, RiverMile_, RiverReach, sampling_r, date_queri, dredge_cap, subsurface, surface	Y	12/2/2007	
H11859_1m_CRD	no data	No Values	N	Null	
RM5_6cPAH.shp	Point	LOC_ID, Dup_alias, SurfaceElv, Depth, Total_cPAH, X_Coord, Y_Coord, IsDExceed, IsExceed, Display, Display2	N	Null	
TechIScenario5V2.shp	Polygon	TechAssign, InPoly_FID, SmoPgnFlag, Shape_Leng, Shape_Area, Sq_Ft, SF2	N	Null	
HydroLocs.shp	Point	Id, Location, Lat_NAD84, Long_NAD84, X_OSPft, Y_OSPft	N	Null	
CargillVessel.shp	Polyline	No Values	N	Null	
GlacierApproach_Depart.shp	Polyline	No Values	N	Null	
contour5ftmllw.shp	Polyline	ID, CONTOUR	N	Null	
contour1ftmllw.shp	Polyline	ID, CONTOUR	N	Null	
contour10ft88.shp	Polyline	ID, CONTOUR	N	Null	
contour2ft88.shp	Polyline	ID, CONTOUR	N	Null	
Prop_SampAll.shp	Point	OBJECTID_1, OBJECTID, Type, Loc_ID, Re_Occupy	N	Null	
Kleinfelder_2014_PCBs_ND_MDL.shp	Point	Sample_Num, X_Coord, Y_Coord, Sample_ID, TOTAL__PCB, Data__Qual	N	Null	
SMB_2012PCBtissue.shp	Point	OBJECTID, RM, LocID, Date_, Purpose, Lat, Lon, TotalPCB_c, Qualifier, TotalPCB_t, Lipids_per, TotalPCBc_	N	Null	Has Chemistry Data
all_ft88hs	Raster	No Values	N	Null	
PhysFeat_subSMAinfo_PotentialFMD	Polygon	PotFutDredge, MaxDredgeDepth, Shape_Length, Shape_Area	N	Null	
cont10ft.shp	Polyline	ID, CONTOUR	N	Null	
PhysFeat_subSMAinfo_WindWaveZone	Polygon	Shape_Length, Shape_Area, WaveZone	Y	Null	
Page202.tif	TIF	No Values	N	Null	
record-of-decision-jan2017 203.tif	TIF	No Values	N	Null	

Portland Harbor Historical Geospatial Datasets

Feature Name	Geometry	Primary Attributes	Metadata Y/N	Date	Note
record-of-decision-jan2017 204.tif	TIF	No Values	N	Null	
record-of-decision-jan2017 205.tif	TIF	No Values	N	Null	
record-of-decision-jan2017 206.tif	TIF	No Values	N	Null	
Scenario3_thiessen.shp	Polygon	OBJECTID_1, SampleID, Lat, Lon, Date_, Depth, Total_PCBs, Total_PC_1, Sample_ID, Collection, Time_, Northing, Easting, St_Dpth, En_Depth, RM, Total_PC_2, RI_Flags, Total_PC_3, FS_Flags, Location_I, TOTAL_PC_4, LONG_, Site, TotalPCBs_, Area, Acres, SWAC_pct_a, SWAC_pct_S, SWAC_pct_2, SWAC_pct_3, SWAC_pct_4, SWAC_pct_B, SWAC_Conc1, SWAC_Con_1, SWAC_Con_2, SWAC_Con_3, SWAC_Con_4, SWAC_Con_5, SWAC_SILco, OBJECTID, TotalPCBs1, SWAC_pct_5, SWAC_pct_6, SWAC_pct_7, SWAC_pct_8, SWAC_pct_9, SWAC_pct_10, SWAC_pct_11, SWAC_Con_6, SWAC_Con_7, SWAC_Con_8, SWAC_Con_9, SWAC_Co_10, SWAC_Co_11, SWAC_Co_12, SWAC_SIL_1, Total_PC_5, Total_PC_6, Total_PC_7, Location_1, TOTAL_PC_8, SHape_Leng, Shape_Le_1, Shape_Area	N	Null	Has Chemistry Data
Scenario4_thiessen.shp	Polygon	OBJECTID_1, SampleID, Lat, Lon, Date_, Depth, Total_PCBs, Total_PC_1, Sample_ID, Collection, Time_, Northing, Easting, St_Dpth, En_Depth, RM, Total_PC_2, RI_Flags, Total_PC_3, FS_Flags, Location_I, TOTAL_PC_4, LONG_, Site, TotalPCBs_, Area, Acres, SWAC_pct_a, SWAC_pct_1, SWAC_pct_S, SWAC_pct_2, SWAC_pct_3, SWAC_pct_4, SWAC_pct_B, SWAC_Conc_, SWAC_Conc1, SWAC_Con_1, SWAC_Con_2, SWAC_Con_3, SWAC_Con_4, SWAC_Con_5, SIL_area, SWAC_SILco, OBJECTID, TotalPCBs1, SWAC_pct_5, SWAC_pct_6, SWAC_pct_7, SWAC_pct_8, SWAC_pct_9, SWAC_pc_10, SWAC_pc_11, SWAC_Con_6, SWAC_Con_7, SWAC_Con_8, SWAC_Con_9, SWAC_Co_10, SWAC_Co_11, SWAC_Co_12, SWAC_SIL_1, Total_PC_5, Total_PC_6, Total_PC_7, Location_1, TOTAL_PC_8, Shape_Leng, SHape_Le_1, Shape_Area	N	Null	
PortHarborsAltD	TIF	No Values	N	Null	
AQ_AlternativeB_DredgeClip.shp	Polyline	OBJECTID, ID, CONTOUR, Shape_Leng	Y	2/12/2007	
AQ_AlternativeB_DBuffer.shp	Polygon	No Values	Y	Null	
Structure_AltBDredge.shp	Polygon	No Values	Y	2/12/2007	
Structure_AltFDredge.shp	Polygon	No Values	Y	2/12/2007	
AQ_AlternativeF_DredgeClip.shp	Polyline	ID, CONTOUR, Shape_Leng	Y	2/12/2007	
ProposedRandomGrabSamples.shp	Point	ET_ID, Shape__Are, Segment, Side, ET_X, ET_Y	Y	8/21/2017	Jrosen is author

S_LOCATIONS_FC
GENERAL point feature

Field	Report Name	Data Type	Length	Precision	Scale	Description	IS Nullable?	PK	Domain Table
OBJECTID	OBJECT_ID	Long				ESRI Object Identification	No		
SHAPE	SHAPE	OLE Object				Geometry	No		
SURVEYID	SURVEY_ID	Text	30			Globally Unique Identifier	No	Yes	
sys_loc_code	LOCATION	Text	20			AECOM field identification defined by boat name and sequential number. Example: BF0001	No	Yes	
TEAM	TEAM_NO	Text	12			Field Team # (if not associated with a vessel)	Yes		
DATE	SURVEY_DATE	Date	20			Survey Date	Autofill		
VESSEL	VESSEL	Text	20			Survey Vessel	No		RT_VESSEL
SURVEYTYPE	SURVEY_TYPE	Text	3			Type of Survey Point (Sample Location/Survey Check/Reference, etc)	No		RT_OBSERVATION_TYPE
SURVEYTXT	SURVEY_NOTES	Text	100			Notes about the survey	No		
USERFLAG	USERFLAG	Integer				User defined	No		
company_code	COMPANY_CODE	Text	40			The identifier of the company collecting the respective coordinates.	Yes		RT_CONTRACTOR
facility_id	FACILITY_ID	int	4			The system-generated identifier for the facility to which the coordinates pertain.	No		
identifier	IDENTIFIER	varchar	20			The identifier (e.g. 1 or PRIMARY) used to designate when a coordinate system should be used.	No		
reference_point	REFERENCE_POINT	varchar	50			The point of reference from where a coordinate was collected.	Yes		
remark	REMARK	Text	250			Any additional remarks or comments pertaining to a location's coordinates.	Yes		
surveyor_name	SURVEYOR	varchar	50			The name of the surveyor who took the coordinate readings.	No		
x_coord	X_COORD	double	20			The x-coordinate in a coordinate system.	No		
y_coord	Y_COORD	double	20			The y-coordinate in a coordinate system.	No		
elev	ELEVATION	varchar	20			The measured elevation of a specific location.	Yes		
elev_unit	ELEV_UNIT	varchar	15			The unit of measurement for the elevation measurement.	Yes		
horz_collect_method_code	HORZ_COLLECT_METHOD_CODE	varchar	20			The code which identifies the method used to measure the horizontal coordinates, populated from RT_COORD.HORZ_METHOD.	No		
coord_zone	COORD_ZONE	varchar	15			The zone associated with a coordinate system, such as UTM zone 17.	No		
horz_accuracy_value	HORZ_ACCURACY_VALUE	varchar	20			The accuracy to which the horizontal (x and y) coordinates are measured.	Yes		
horz_accuracy_unit	HORZ_ACCURACY_UNIT	varchar	15			The unit of measurement for the horizontal (x and y) coordinate accuracy.	Yes		
coord_type_code	COORD_TYPE_CODE	varchar	20			The location-specific code which refers to a specific coordinate type, for example, "LATLONG" for a latitude/longitude coordinate system.	No		
elev_accuracy_unit	ELEV_ACCURACY_UNIT	varchar	15				Yes		

S_LOCATIONS_FC
GENERAL point feature

Field	Report Name	Data Type	Length	Precision	Scale	Description	IS Nullable?	PK	Domain Table
elev_accuracy_value	ELEV_ACCURACY_VALUE	varchar	20			The accuracy to which the elevation is measured.	Yes		
elev_collect_method_code	ELEV_COLL_METHOD_CODE	varchar	20			The code which identifies the method used to measure the elevation, populated from RT_CODE.ELEV_METHOD.	Yes		
elev_datum_code	ELEV_DATUM_CODE	varchar	20			The code that describes the reference point against which elevation measurements are made.	Yes		
horz_datum_code	HORZ_DATUM_CODE	varchar	20			A code that describes the datum (reference point) against which horizontal measurements are made, populated from RT_COORD.HORZ_DATUM.	No		
remark_1	REMARK_1	varchar	250			Any additional remarks or comments pertaining to a location's coordinates.	Yes		
remark_2	REMARK_2	varchar	250			Any additional remarks or comments pertaining to a location's coordinates.	Yes		
loc_county_code	LOC_COUNTY_CODE	varchar	30			The identifying code that describes the county in which a location is located.	Yes		
loc_desc	LOC_DESCRIPTION	varchar	255			A general description of the location type.	Yes		
loc_name	LOC_NAME	varchar	40			The descriptive name of a specific location. Note: WQX requires 80 characters - which is more than the 40 set by EQuIS.	Yes		
loc_type	LOC_TYPE	varchar	20			The type of specific location, for example "Monitoring Well", with lookup values from RT_LOCATION_TYPE.	Yes		
loc_type_2	LOC_TYPE_2	varchar	30			A secondary field for the type of location.	Yes		
stream_mile	RIVER_MILE	real	4			This indicates which rivermile this location is associated with	Yes		
subfacility_code	SUBFACITLIY_CODE	varchar	20			The identifying code that describes the subfacility where a specific location is located.	Yes		
total_depth	TOTAL_DEPTH	real	4			The total measured depth of the location.	Yes		
units	DEPTH_UNITS	varchar	15				Yes		
source_scale	SOURCE_SCALE	varchar	20			The scale of a source.	Yes		

S_SURVEY

Survey & Reference GPS point feature

Field	Report Name	Data Type	Length	Precision	Scale	Description	IS Nullable?	PK	Domain Table
OBJECTID	OBJECT_ID	Long				ESRI Object Identification	No		
SHAPE	SHAPE	OLE Object				Geometry	No		
SURVEYID	SURVEY_ID	Text	30			Globally Unique Identifier	No	Yes	
sys_loc_code	LOCATION	Text	20			AECOM field identification defined by boat name and sequential number. Example: BF0001	No	Yes	
TEAM	TEAM_NO	Text	12			Field Team # (if not associated with a vessel)	Yes		
DATE	SURVEY_DATE	Date	20			Survey Date	Autofill		
VESSEL	VESSEL	Text	20			Survey Vessel	No		RT_VESSEL
SURVEYTYPE	SURVEY_TYPE	Text	3			Type of Survey Point (Sample Location/Survey Check/Reference, etc)	No		RT_OBSERVATION_TYPE
SURVEYTXT	SURVEY_NOTES	Text	100			Notes about the survey	No		
USERFLAG	USERFLAG	Integer				User defined	No		
company_code	COMPANY_CODE	Text	40			The identifier of the company collecting the respective coordinates.	Yes		RT_CONTRACTOR
facility_id	FACILITY_ID	int	4			The system-generated identifier for the facility to which the coordinates pertain.	No		
identifier	IDENTIFIER	varchar	20			The identifier (e.g. 1 or PRIMARY) used to designate when a coordinate system should be used.	No		
reference_point	REFERENCE_POINT	varchar	50			The point of reference from where a coordinate was collected.	Yes		
remark	REMARK	Text	250			Any additional remarks or comments pertaining to a location's coordinates.	Yes		
surveyor_name	SURVEYOR	varchar	50			The name of the surveyor who took the coordinate readings.	No		
x_coord	X_COORD	double	20			The x-coordinate in a coordinate system.	No		
y_coord	Y_COORD	double	20			The y-coordinate in a coordinate system.	No		
remark_1	REMARK_1	varchar	250			Any additional remarks or comments pertaining to a location's coordinates.	Yes		
remark_2	REMARK_2	varchar	250			Any additional remarks or comments pertaining to a location's coordina	Yes		

S_PHOTOS

A GPS point feature used to represent the locations of photos taken during the survey

Field	Report Name	Data Type	Length	Precision	Scale	Description	Required	PK	Domain Table
OBJECTID	OBJECT_ID	Long				ESRI Object Identification	Yes		
SHAPE	SHAPE	OLE Object				Geometry	Yes		
PHOTOID	PHOTO_ID	Text	30			Globally Unique Identifier	Yes	Yes	
DATE	PHOTO_DATE	Date/Time				Date (mm,dd,yyyy)	No		
sys_loc_code	SYS_LOC_CODE	Varchar				Location this photo is associated with Example: BF0001			
PHOTOTM	PHOTO_TIME	Text	25			Date and time	No		
UTCTIME	PHOTO_TIME_UTC	Text	12			Time (UTC time zone of GPS)	Auto		
UTCDATE	PHOTO_DATE_UTC	Text	12			Date (UTC time zone of GPS)	Auto		
PHOTONAME	PHOTO_NAME	Text	50			Name of photo.jpg file	No		
NOTES	NOTES	Text	250			Optional descriptive notes of photo	No		
PHOTOGRAPHI	PHOTOGRAPHER	Varchar	50			The name of the surveyor who took th	No		
USERFIELD	USERFIELD	Integer				User defined code	No		

Miscellaneous Tables
Domain Values

Domain Table	Field1	Field1 Value	Field2	Field2 Value
RT_FACILITY	FACILITY	1	FACDESC	ACCESS ROAD
RT_FACILITY	FACILITY	2	FACDESC	ANCILLARY FACILITY
RT_FACILITY	FACILITY	3	FACDESC	CENTERLINE
RT_FACILITY	FACILITY	4	FACDESC	OTHER
RT_FACILITY	FACILITY	5	FACDESC	REROUTE
RT_FACILITY	FACILITY	6	FACDESC	TRANSMISSION LINE
RT_OBSERVATION_TYPE	OBSERVTYP	1	OBSERVAT	BATHYMETRY
RT_OBSERVATION_TYPE	OBSERVTYP	2	OBSERVAT	SURFACE SEDIMENT
RT_OBSERVATION_TYPE	OBSERVTYP	3	OBSERVAT	SEDIMENT CORING
RT_OBSERVATION_TYPE	OBSERVTYP	4	OBSERVAT	FISH TRACKING
RT_OBSERVATION_TYPE	OBSERVTYP	5	OBSERVAT	FISH TISSUE
RT_OBSERVATION_TYPE	OBSERVTYP	6	OBSERVAT	SURFACE WATER
RT_OBSERVATION_TYPE	OBSERVTYP	7	OBSERVAT	PORE WATER
RT_OBSERVATION_TYPE	OBSERVTYP	8	OBSERVAT	SEDIMENT TRAPS
RT_OBSERVATION_TYPE	OBSERVTYP	9	OBSERVAT	CHECK POINT
RT_OBSERVATION_TYPE	OBSERVTYP	10	OBSERVAT	BOUNDARY
RT_OBSERVATION_TYPE	OBSERVTYP	11	OBSERVAT	POINT OF INFLECTION
RT_OBSERVATION_TYPE	OBSERVTYP	12	OBSERVAT	REFERENCE POINT
RT_OBSERVATION_TYPE	OBSERVTYP	13	OBSERVAT	OTHER
RT_SURVEYDIRECTION	SURVEYDIR	1	DESCRIPT	DOWNSTREAM
RT_SURVEYDIRECTION	SURVEYDIR	2	DESCRIPT	UPSTREAM
RT_VESSEL	VESSEL	BF	VESSELDESC	BLACKFOOT
RT_VESSEL	VESSEL	CS	VESSELDESC	CASSIAR
RT_VESSEL	VESSEL	CY	VESSELDESC	CAYUSE
RT_VESSEL	VESSEL	LC	VESSELDESC	LOCHSA
RT_VESSEL	VESSEL	MZ	VESSELDESC	MAZAMA
RT_VESSEL	VESSEL	TI	VESSELDESC	TIETON
RT_VESSEL	VESSEL	OT	VESSELDESC	OTHER
RT_CONTRACTOR	CONTRACTOR	1	CONTRACTOR	AECOM
RT_CONTRACTOR	CONTRACTOR	2	CONTRACTOR	DEA
RT_CONTRACTOR	CONTRACTOR	3	CONTRACTOR	Gravity
RT_CONTRACTOR	CONTRACTOR	4	CONTRACTOR	HTI-Vemco
RT_CONTRACTOR	CONTRACTOR	5	CONTRACTOR	Other

APPENDIX F

Data Request/Transmittal Form

Data Request / Transmittal Form

Project Name	Portland Harbor
Project Number	60554349
Form Type	☐ Data Request ☐ Data Transmittal
Tabular / Geospatial	☐ Tabular ☐ Geospatial
Dataset Description	
Tabular Data Content	☐ Location ☐ Analytical ☐ Sample ☐ Lithology ☐ Field Measurements ☐ Other: _____
Geospatial Data Content	Geodetic Parameters (projection, coordinate system, etc.) Format (ArcGIS version, FGDB, web service, etc.) Content (Acoustic Fish Array, Bathymetry, Base Layers, Derivative/Analysis Work Product, Hybrid Tabular/Geospatial)
Contractor / Stakeholder	
Requested By	
Provided By	
Date / Time	

Notes / Comments	
Field Data QA / QC Complete	☐ Yes ☐ No ☐ N/A
Lab Data QA / QC Complete	☐ Yes ☐ No ☐ N/A
Certification (Only Required for Transmittals)	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. _____ Name _____ Title _____ Signature _____ Date

APPENDIX G

Tabular Data QA/QC Forms

Field Data Submittal QA / QC Checklist

Project Name	Portland Harbor
Project Number	60554349
Sample Event	
Date	
Time	
Data Package Name	

Item	Yes / No /	Notes
Field Office QA / QC Checks		
All field sheets / forms submitted to field office		
Check legibility (of paper forms)		
Check for completeness of data fields		
Check significant figures (transformed data may not always carry over significant figures)		
Electronic data download complete and / or data transcribed to electronic format complete		
SME expert check / sign before submittal to SharePoint		
All proper files uploaded into SharePoint		
Project Database Loading QA / QC Checks		
Download files from SharePoint		
Initial data file check for completeness (may check this with EDP also)		
Use EDP for inconsistency / valid value checks		
Check significant figures (transformed data may not always carry over significant figures)		

Check Sample ID / nomenclature correctness		
Create Package and Commit to database. (Insert Only, if new records)		
Save package xml file and load / save to SharePoint / Network share		
Cross check loaded sample counts to submitted field sample data		
Confirm QA / QC Check Complete in SharePoint		
Submitted By	Name	Title
	Signature	Date

Lab Data Submittal QA / QC Checklist

Project Name	Portland Harbor
Project Number	60554349
Package Name	
COC ID	
SDG ID	
Lab EDD Received Date	

Item	Yes / No / NA	Notes
Review the sample tracking list for recently submitted data. Review metadata for completeness / accuracy		
Download EDD for EQuIS check		
Use EDP for inconsistency / valid value checks		
Check significant figures (transformed data may not always carry over significant figures)		
Cross check Sample IDs for compliance with QWAPP / DQMP nomenclature rules		
Create Package and Commit to database. (Insert only, if new records)		
Save package xml file and load / save to SharePoint / network share		
Confirm loaded sample counts match submittal information		
Create DVA report		
Use “DVR QA Reports” report to check DVA sample counts vs EQuIS sample count		
Send / notify project chemist of DVA readiness		
Confirm receipt of updated / qualified DVA from project chemist		

Use EDP and “LoadDVA” format file to validate and check DVA file		
Create Package and Commit as “Update Only”		
Save Package xml file and load / save to SharePoint / Network		
Verify correct / proper upload of validation qualifiers to project database		
Confirm QA / QC Check Complete in SharePoint		
Submitted by	Name	Title
	Signature	Date

APPENDIX H

Geospatial Data QA/QC Form

GIS Detail Check Report

Project Name:	Portland Harbor	Project Number:	60554349
Project Location:	Portland, OR	Client Name:	Pre-Remedial Design Group
PM Name:		PIC Name:	

Identifying Information

This section is to be completed by the Project GIS Lead.

Assigned Checker:

Deliverable to be checked:

Work Product Originator:

Checker's comments required by:

☐ This Detail Check is a technical edit only.

☐ This is a detail check for Report submittal.

Submitted by: _____ _____

Project GIS Lead Signature **Date**

Checker Report

This Section is to be completed by the Checker.

Check box A **or** B:

☐ A. All items have been found to be correct. Checker has no comments.

_____ _____

Checker Signature **Date**

or

☐ B. Checker's comments have been provided on:

- ☐ Deliverable
- ☐ Comment and Disposition Form
- ☐ Other _____

This section is to be completed after verification of comment incorporation, if box B is checked off above.

Check box C **or** D **and** E:

☐ C. Back-check of Checker's comments has been performed by Originator AND all issues have been resolved between Originator and Checker.

or

☐ D. Unresolved issues have been submitted to the Project Manager, Principal-in-Charge or designee for resolution.

and

☐ E. Verification of correct incorporation of resolved comments into final document is complete.

_____ _____

Checker Signature **Date**

APPROVAL and DISTRIBUTION

*To be signed after box A **or** E are completed.*

☐ The Detail Check has been completed. Any significant issues not resolved between the Checker and the Originator has been resolved by the Approver.

_____ _____

Project Manager, Principal-in-Charge or Designee Signature Date

Distribution:

Project Central File – Quality folder

AECOM

GIS Detail Check Report

Map Product

This Section is to be completed by the Reviewer.

Digital Review Summary:

Standard Elements Check List (check where present, circle N/A where appropriate)

Y / N / NA Township/Range/Section (PLSS)

Y / N / NA Graphic text is spelled correctly

Y / N / NA Projection of MXD/data

☐ Other _____

☐ Other _____

Hard-Copy Review Summary:

Standard Elements Check List (check where present, circle N/A where appropriate)

Y / N / NA North Arrow & scale bar present
Y / N / NA Source citations
Y / N / NA Figure or Map

Y / N / NA All logos present
Y / N / NA Map features are uniform for all project/report maps
Y / N / NA Graphic text in data frame

Y / N / NA All features are in legend
Y / N Path name to PDF is correct
Y / N / NA Initials on path name
Y / N Figure is 508 compliant

EPA Checklist:

☐ Is each static map provided in an electronic format (300 dpi or higher)?
☐ Does each static map have fonts embedded?
☐ Has the page and print setup for map documents been configured to NOT use printer-specific paper settings?
☐ Are map documents set to use relative paths?
☐ Are map names prefixed with the project name?
☐ Are map documents accompanied with their relevant data in a stand-alone directory structure?
☐ Does each map have FGDC compliant metadata in an associated file?

Data Product

This Section is to be completed by the Reviewer.

Appearance of Data

Appropriate Source Data Used

☐ Yes

☐ No _____

Appropriate Scale Used to Digitize

☐ Yes

☐ No _____

Georeferencing of Source Data

☐ N/A

☐ Approved

☐ Redo _____

Zero Length/Area/Points

☐ Yes

☐ No

Label Errors (Coverage)

☐ Yes

☐ No

Projected

☐ Yes _____

☐ No

Metadata

Describes Source

☐ Yes

☐ Edits Needed

Describes Data

☐ Yes

☐ Edits Needed

Name/Address filled in

☐ Yes

☐ No

Topology

Data Passes Geodatabase Validation or Data Passes Check Geometry

☐ Yes

☐ No

Planarize Lines

☐ Yes

☐ No

☐ N/A

Multipart Features

☐ Explode

☐ Ignore

☐ N/A

Additional Topology Rules Needed:

☐ Must not have gaps/slivers

☐ Must not overlap (self/other)

☐ Must not have dangles/pseudo nodes

☐ Must not intersect (self/other)

☐ Other(s) _____

Attribute Table

Fully Populated

☐ Yes

☐ No

☐ N/A

Correct Spelling

☐ Yes

☐ No

Change these field(s) to dropdowns

_____

Add additional fields _____

Geospatially Derived Products:

☐ Calculations and data interpretations verified by independent reviewer.

_____ _____

Independent Reviewer Signature **Date**

EPA Checklist:

☐ Is each raster file in its native projection?

☐ Is each data file one of the EPA acceptable formats?

☐ Does each data file have FGDC compliant metadata in an associated file?

☐ Are the primary and foreign keys documented for tabular data?

☐ Is a README text file included with a directory structure explaining how the structure is organized?

AECOM
111 SW Columbia Avenue
Suite 1500
Portland
OR, 97217
USA
aecom.com

Geosyntec
520 Pike Street
Suite 1375
Seattle
WA, 98101
USA
geosyntec.com