

FD 1000 Audit Checklist

To use this field audit checklist effectively, the auditor must be familiar with FD 1000 (Documentation Procedures) in “DEP Standard Operating Procedures for Field Activities”, (DEP-SOP-001/01)

Universal Documentation Requirements

Waterproof ink, or pencil when using waterproof paper, was used for all paper documentation.

Errors in documentation were corrected without obliteration.

All cleaning procedures associated with the project were documented.

All instrument calibrations were properly documented.

Names of all sampling personnel were recorded.

The type(s) of sampling equipment used to collect all samples was recorded in the field record.

Where applicable to the analyte groups collected, the location and use of fuel-powered vehicles or equipment during the sampling project was recorded.

Date of sample collection was recorded for all samples.

Time of sample collection was recorded for all samples having maximum holding times of ≤ 72 hours (or for all sampling if data will be entered in the FDEP WIN database).

Ambient field conditions were recorded for all samples.

A specific description of all sampling locations (sources) was recorded.

Where applicable, latitude and longitude were recorded for all sampling locations.

Where applicable, sampling locations were designated on scaled maps and drawings.

The matrix collected was recorded for all samples.

For composite samples, the number of subsamples, the amount collected for each subsample and the location of collection (sampling point or source) and, where applicable, the time of collection for each subsample was recorded.

The types, number, collection location and collection sequence of all field quality control samples was recorded in the field record.

Chemical preservation information and verification was recorded for each sample, as applicable.

Thermal preservation information, such as “in ice,” was recorded for each sample, as applicable.

Ancillary records such as photographs, videotapes and maps were archived and linked to the sample unique field identification codes and the date of the sampling project.

Each sample container or group of containers was tagged or labeled with a unique field identification code that distinguishes the sample from all other samples.

Sample containers and labels were attached so as to prevent contact between the sample and the label or tag when pouring or dispensing from the container.

The unique identification codes for samples were recorded in a manner that linked the codes to all other field records associated with the samples.

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Groundwater monitoring well purging and sampling

Information about the following topics was recorded for each sample, as applicable:

- Purging equipment
- Purging procedure
- Well casing composition
- Well diameter
- Water table depth
- Depth of well
- Volume of water in the well
- Equipment dimensions and volumes for pumps, tubing and flow containers (flow cells)
- Purge volume calculations
- Total volume of water purged
- Total well volumes or equipment volumes purged
- Date of purging
- Starting and ending times for purging
- Purging rate (pumping or flow rate) and associated calculations
- Flow meter readings
- Stabilization measurements for purge completion criteria
- Elapsed time for one well volume or equipment volume purge at stabilized flow rate
- Water level drawdown measurements during purging (depth to water table)

Groundwater sampling of plumbing systems (groundwater sources)

Information about the following topics was recorded for each sample, as applicable:

- Plumbing and tap material construction
- Purging rate (flow rate)
- Total purge time at stabilized purge rate (flow rate)
- Flow rate at time of sample collection
- Identification number for public supply system, if applicable
- Name, address and emergency phone number of public supply system, if applicable

Soil and Sediment Sampling

Information about the following topics was recorded for each sample, as applicable:

- Sample collection depth
- Areal location of sample
- Sample collection devices
- Tare weight of VOC vials, if applicable (EPA method 5035)

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- Weight of VOC sample and vial, if applicable (EPA method 5035)

Surface Water Sampling

Information about the following topics was recorded for each sample, as applicable:

- Depth of all samples and subsamples
- Beginning and ending times for all timed composites
- Type of composite sample

Biological sampling

Physical and chemical characterization information was documented for each waterbody assessment, as applicable.

Stream or river habitat assessment information was documented for each waterbody reach, as applicable.

Lake habitat assessment information was documented for each waterbody or lake sector, as applicable.

Biorecon (rapid bioassessment) information was documented for each waterbody or lake sector, as applicable.

Field-Testing Instrument Calibrations

Information about all calibration standards and reagents used for field testing were linked to the calibration information associated with the field testing measurements for the project.

The concentration or other assay value, the vendor catalog number and the description of the standard or reagent were recorded for all preformulated solutions, neat liquids and powders.

Certificates of assay, grade and other vendor specifications for all standards and reagents were retained and recorded for the standards and reagents linked to the sampling project.

For standards formulated in-house for use on the sampling project, the dates of preparation and all calculations used to prepare calibration standards and reagents were recorded.

For standards formulated in-house for use on the sampling project, the records of preparation for all related calibration standards and reagents were linked to indicate the source of parent standards or reagents and any dilutions performed.

Expiration dates for all calibration standards and reagents used on the sampling project were recorded.

Verified analyses (calibration acceptance) were recorded for all expired standards and reagents used on the sampling project.

Preparation steps in all procedures used for preparation of standards or reagents in-house were documented either by description or reference to an SOP (DEP SOP or internal SOP).

All acceptable initial calibrations and calibration verifications were documented and linked to the field measurements for the sampling project.

Manufacturer-certified calibration specifications were retained for all factory-calibrated instruments used for the sampling project.

For each instrument unit used for the sampling project, the following information was recorded for all calibrations:

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- Unique identification (designation code) for the instrument calibrated
- Date and time of each calibration or calibration verification
- Instrument reading or result (display value) for all calibration verifications, with appropriate measurement units
- Names of analysts performing each calibration for the instrument
- Designation of each calibration standard used to calibrate or verify the instrument, linked to the associated records for the calibration standard
- The acceptance criteria for each calibration and verification used to accept the instrument calibration or verification
- The assay specifications or acceptance criteria for any QC standard or sample used to independently verify the calibration of the instrument
- Positive indication in the record of acceptable (successful) initial calibration and acceptable initial and continuing calibration verifications
- Positive indication of all failed calibrations or verifications
- All corrective actions performed on the instrument prior to attempting re-verification or recalibration of the instrument are linked to the records required for preventive maintenance
- Any instances of discontinuation of use of the instrument due to calibration or verification failures
- A description or citation of the specific calibration and verification procedures used for the instrument (DEP SOP or internal SOP)

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Field Testing Measurements (Field Analysis of Samples)

All field measurement tests and related data were recorded and linked to the project, the date and the sample source.

All field measurements were recorded with the appropriate reporting units, the value of the test result, the parameter measured or tested, the name of the analyst performing the test, the time of the measurement and the unique identification for the test instrument used.

Transmittal of Samples and Sample Information to a Laboratory or Other Party

For all samples, the following information was transmitted to the analyzing lab or other party.

- Site name and address
- Client code substituted for but linked to site name and address, where applicable
- Date and time of sample collection
- Name of sampler responsible for sample transmittal
- Unique field identification code for each sample container or group of containers
- Total number of samples transmitted
- Required analyses for each sample container or group of containers
- Sample preservation used for each container or group of containers
- Comments about samples, sample sources or other relevant field conditions
- Identification of common carrier used to transport the samples, when applicable

Shipping invoices and related records from common carriers were archived with the field records, when applicable.

Decontamination of equipment and sample containers

Cleaning steps in all procedures used for decontamination were documented either by description or reference to an SOP (DEP SOP or internal SOP).

Certificates of cleanliness provided by vendors supplying cleaned equipment or sample containers were archived and linked to the date of the sampling project and the types of equipment or sample containers used for the project.

For equipment decontaminated on-site in the field, the date and time of the cleaning procedure associated with the affected equipment was recorded in the field records.

If sampling kits (sample containers, sampling equipment and ancillary supplies) were provided to another party, the following information was recorded for the kit:

- Quantity, description and material composition of all containers, container closures or closure liners
- Intended application for each sample container type indicated by approved analytical method or analyte group(s)
- Type and concentration of preservative added to clean sample containers and/or shipped as additional preservative
- Intended use of any additional preservatives or reagents
- Description of any analyte-free water (i.e., deionized, organic-free, etc.)

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- Date of analyte-free water containerization
- Date of sampling kit preparation
- Description and material composition of all reagent transfer implements (e.g., pipets) shipped in the sampling kit
- Intended use of all implements
- Quantity, description and material composition of all sampling equipment
- Tare weight of VOC vials, as applicable (this item is necessary in cases where EPA 5035 VOC sample vials are provided by a third party supplier)

Documentation for reagents and other chemicals used for cleaning and sample preservation

The lot numbers and inclusive dates of use were recorded for all reagents, detergents, solvents and other chemicals used for decontamination and preservation of samples.

Documentation of equipment and instrument maintenance

Each applicable instrument or equipment unit (inventory item) was identified with a unique designation or identification code that distinguishes the unit from all others.

The following information was recorded for all equipment associated with the sampling project:

- Maintenance and repair procedures for equipment or instrument unit
- Routine cleaning procedures for each unit
- Filling solution replacement for probes
- Parts replacement for instruments or probes
- Calendar date for each procedure performed on each unit
- Names of personnel performing maintenance and repair tasks for each unit
- Description of malfunctions associated with any maintenance and repair for each unit

Vendor service records were retained for all affected equipment or instruments associated with the sampling project.

The inclusive rental dates, types and unique descriptions of rental equipment associated with the sampling project were recorded.

Manufacturers' operation & maintenance manuals and instructions were retained for all equipment and instruments associated with the sampling project.