Field Logbook Use and Maintenance

1.0 PURPOSE

This procedure establishes standard formats recording field observations for Region 10 EPA (URS Greiner) RAC Projects and describes the methods for use and maintenance of field logbooks. Examples of proper logbook data entry for particular field tasks are included.

Proper maintenance of field logbooks is a critical aspect of field operations. Field logbooks provide a means for recording all activities performed at a site and are intended as a record of data and observations sufficient to enable reconstruction of events that occurred during field activities. As such, all entries are to be organized, factual, detailed, and descriptive enough to allow a particular situation to be reconstructed without reliance on the memory of the field technician. Field logbooks are also used to complete field-generated data entry forms and to check other field documents.

2.0 RESPONSIBILITIES

Field personnel will be responsible for performing the applicable tasks in accordance with this procedure when conducting work related to environmental and/or other projects. Daily logs will be kept during field activities, observations, and measurements taken in the field.

The project manager will check all work performances by reviewing the field logbook and acknowledge that the applicable tasks required by this procedure have been performed by signing the logbook.

3.0 PROCEDURE

3.1 Logbook Setup

Field logbooks will be hardbound books (typically 4 by 7 inches to 8 by 10.5 inches) with water-resistant or waterproof pages. Prior to commencement of fieldwork, logbooks will be assigned to field personnel by the project manager. If changes in field personnel must be made during a project, the successor may use the same logbook. In this case, the inside cover page of the logbook will indicate all persons who have made entries and the dates (Exhibit 4.26-1).

The inside cover page of each logbook will include the following information (Exhibit 4.26-1):

- Project Name
- Book Number (if any)
- Contract Number
- Project Number
- Site Name
- Start Date
- End Date
- Person(s) to whom the logbook is assigned
- Company Name
- Company Address
- Company Phone Number

3.2 Logbook Entries (General Information)

Logbook entries will be made daily during field activities by, at a minimum, one-field team member to maintain records of all significant events, observations, and measurements collected during field operations. Entries will be organized into easily understood tables whenever possible. Entries will begin at the top of the first blank page and extend through as many pages as necessary. Pages will be numbered consecutively as the logbook is filled.

Entries will be made in indelible black or blue ink. Entries will be concise and legible. Any incorrect entries will be crossed out with a single line, initialed and dated by the originator.

Each page of the logbook will be signed and dated at the bottom. The time of each entry will be recorded next to the entry. If less than a full page is used during the course of a day, a diagonal line will be drawn across the unused portion of the page and the page will be signed. If the project has been completed, a diagonal line will be drawn across the first blank page after the last entry, with the notation "no further entries; this page will be signed and dated.

Logbook entries will be chronological, according to a 24-hour clock. Field personnel will start a new page at the beginning of each workday. If more than one person makes entries in the logbook, each person will sign at the end of the section he or she has written. Next to or under the originator's signature on the last page of the day's notes will be the notation "reviewed by" with the space provided for the project manager's signature.

If specific information from the field logbook is being compiled on another (e.g., a health and safety log), the field logbook document control number and page number from which the specific information is being taken will be noted on the log.

Copies or duplicate backups of logbook entries should be made daily if possible or, at a minimum, once a week to prevent loss of information that may be costly to replace or reconstruct.

If appropriate, a hand-sketched map of the site will be included in the logbook. Included on this map will be information such as directional arrow indicating north, any discernable gradient, wind direction, vegetation, manmade structures, surrounding facilities (gas stations, storage tanks, etc.), direction of water flow, scale, sampling, and well locations, a legend if symbols are used, and anything else that may be considered important.

At a minimum, logbook entries will include the following information each day, as appropriate to the field activities:

- Date
- Start Time
- Weather (include barometric pressure if available)
- Notes from health and safety meeting
- Field activities to be performed
- Sampling locations and numbers
- Methods used for decontamination
- Procedures used for the containerization of investigative-derived waste

- All field personnel present and directly involved
- Visitors to the site (including times)
- Level of personal protective equipment used on the site
- Equipment used and procedures followed
- Signature of the person making the entry

4.3 Logbook Entries (Specific Information)

Project Information

Prior to commencement of field activities, the project plans will be summarized in the beginning of the field logbook to serve as a quick reference for field personnel and subsequent users of the logbook. This summary will include: (1) critical equipment and procedures to be used or followed during field activities, (2) field sampling equipment, (3) health and safety equipment, (4) health and safety thresholds, (5) information on equipment calibration (6) field screening procedures, (7) sampling rationale, (8) laboratory criteria, (9) decontamination protocol, (10) units of measure, and (11) quality assurance objectives (Exhibit 4.26-2).

The summary will indicate the location (pages) in the field logbook of the sample inventory log and the project plan deviation log. These logs, which are generally placed near the end of the logbook, are described in the next two subsections.

Sample Inventory Log

The sample inventory log will include information on all samples collected. It will include all data necessary to complete the Sample Collection Information forms. The following information will be included in the sample inventory log: site and location identifiers, date time, depth interval, sample matrix (groundwater, subsurface soil, sediment, etc.), analytical method, sample number, sample type, associated trip blank (if applicable), and analytical methods to be used (Exhibit 4.26-3).

Project Plan Deviation Log

The project plan deviation log will indicate any deviations from the project plans that occurred during field activities. It will provide the following information: a description of the deviation, the rationale for the deviation, the person authorizing the deviation, and the date of the deviation (Exhibit 4.26-4). If extensive text is necessary to explain the deviation, the log will indicate the page in the logbook that provides the rationale for the deviation.

Lithologic

Lithologic information for surface soil, subsurface soil, and sediment samples will be documented in the logbook as shown in Exhibit 4.26-5. The following information will be included in the lithologic log (if applicable): site and location

identifiers, investigative-derived waste container number, time, depth interval, blow counts, sample recovery, field screening information, sample number, USCS description, and lithologic description.

Well Construction Log

Well construction information will be documented in the logbook as shown in Exhibit 4.26-6. The well construction log will immediately follow the applicable lihologic log. Well construction will be performed in accordance with specific SOPs for Monitoring Well Installation and Development. The following information will be included in the well construction log: site and location identifiers, scaled drawing of well construction, total depth of well below ground surface(bgs), water level of well (bgs), sump depth, screen depth, depth of well blank, depths of well construction materials, and type of well completion.

Monitoring Well Development Log

Information on monitoring well development will be documented in the logbook as shown in Exhibit 4.26-7. The monitoring well development log will include the following information: site and location identifiers, total depth water level, depth of product (if applicable), water column height, well volume, and investigation-derived waste container number. Project-specific items to document may include time, temperature, salinity, specific conductance, pH, turbidity, dissolved oxygen, oxidation-reduction potential, color, flow rate, gallons removed, water level, and additional comments noted during well development.

Groundwater Sample Log

Information on groundwater samples will be documented in the logbook as shown in Exhibit 4.26-8. The groundwater sample log will include the following information: site and location identifiers, total depth, water level, depth to product (if applicable), water column height, well volume, investigative-derived waste container number, sample number, and associated trip blank. Project-specific terms to document may include time, temperature, salinity, specific conductance, pH, turbidity, dissolved oxygen, oxidation-reduction potential, color, flow rate, gallons removed, water level and additional comments noted during sampling.

Surface Water Sample Log

Information on surface water samples will be documented in the logbook as shown in Exhibit 4.26-9. The surface water sample log will include the following information: site and location identifiers, sample number and associated trip blank. Project specific items to document may include time, temperature, salinity, specific conductance, pH, turbidity, dissolved oxygen, oxidation-reduction potential, color, flow rate and additional comments noted during sampling.

Whether conditions (dry season or storm event) will also be documented if applicable to the project.

Investigative-Derived Waste Log

Information on investigative-derived waste will be documented in the logbook as shown in Exhibit 4.26-10. The investigative-derived waste log will include the following information: site and location identifiers, waste container number, matrix type, date, and associated sample numbers.

Water Level Measurement Log

Water level measurements will be documented as shown in Exhibit 4.26-11. The water level measurement log will include the following and information: site and location identifiers, time, total depth, static water level, and depth to product (if applicable). Additionally, barometric pressure readings will be recorded if available.

Slug Test Log

Slug test data will be documented as shown in Exhibit 4.26-12. The slug test logs will include the following information: site and location identifiers, time total depth, water level, and type of test (rising- or falling-head). Other information will be included when data are collected via electronic means, are depth and psi of the pressure transducer and height of water above the pressure transducer, which corresponds to the static water level measurement according to the pressure transducer.

Logbook Review

The project manager will check field logbooks with other site documents for completeness and accuracy. Any discrepancies in these documents will be noted and returned to the originator for correction. All review comments will be recorded on the next available blank page of the logbook or the next consecutive logbook for that project. References to the comment page will be made next to the notes to be corrected. The reviewer will acknowledge that these review comments have been incorporated by signing and dating the comment pages and applicable reviewed document pages.