

STANDARD OPERATING PROCEDURES FOR FIELD ACTIVITIES QUALITY MANUAL

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF LAW ENFORCEMENT

BUREAU OF EMERGENCY RESPONSE

3900 COMMONWEALTH BLVD., MS 659

TALLAHASSEE, FLORIDA 32399-3000

(850) 245-2010

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FOREWORD

The Florida Department of Environmental Protection's *Standard Operating Procedures for Field Activities*, DEP-SOP-001/01 requires that each organization generating data from field sampling must have a quality manual that outlines their quality system, quality assurance policies and quality control procedures. This manual was prepared for the Bureau of Emergency Response (BER) in accordance with the requirements.

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3.0 BER STATEMENT OF POLICY REGARDING GENERATION OF DATA THROUGH SOUND QA/QC MANAGEMENT PRACTICES

It is a matter of policy that representatives of the FDEP, DLE and BER are committed to the generation of accurate and reliable data through the use of sound management practices, appropriate field operations and thorough review of data and the subsequent reporting process. It is through the use of the Quality Assurance and Quality Control Practices that legally defensible data may be obtained. The FDEP – BER remains a dynamic extension of the Department of Environmental Protection through adoption of these SOPs, a constant review process, the commitment of Department management for the securing of appropriate resources for field applications, and the continual classroom and practical training of employees. FDEP – BER is committed to following the published SOPs to ensure consistent and reliable sample data.

4.0 BER COMPLIANCE TO ORGANIZATIONAL ETHICS AND TRAINING POLICY

FDEP – DLE General Order 2-1 and DEP Directive 202 both address what is expected of each employee with regards to ethics and training. All Bureau of Emergency Response (BER) employees responsible for sampling activities as specified in DEP-SOP-001/01 are employees of the State of Florida. As such, each employee has sworn an oath to support the Constitution of the United States of America and the State of Florida. Poor performance, unethical behavior or any activity that might misrepresent the quality of the organization's work will be handled with appropriate disciplinary action as deemed necessary by BER management.

Adequate components of accountability are incorporated into the BER Emergency Response Plan that outline departmental policies and directives in an effort to ensure that employees are adequately trained and prepared prior to providing sampling services to the department. DEP Directive 202 specifically states that all employees will receive training with regards to the agency's code of ethics. As new regulations are promulgated, district managers and their associated QA officers are trained to the most recent level of sampling protocols, methodologies, and procedures. QA officers are then responsible for assuring the efficacy of sampling events of all personnel responsible for the collection of field samples.

5.1 BER ORGANIZATIONAL CHART

Attachment 1 illustrates the current BER organizational structure. This chart reflects the chain of command and function of each BER employee as it relates to the quality system. Each district office has administrative support from the Tallahassee Headquarters. Each district is assigned a District Forensic Sampling Specialist who functions as a quality assurance officer and, if necessary, can forward audit reviews and information to upper management in support of obtaining FDEP – BER quality assurance objectives.

5.2 BER JOB DESCRIPTIONS

A complete record of all BER employees and their job descriptions is maintained at BER headquarters in Tallahassee. These job descriptions include detailed descriptions of duties including field sampling and data review activities.

5.3 APPROVED SIGNATORIES

By assigned duties and as outlined in the BER Organizational Chart, signatories are authorized by appointment, training or experience to sign QA / QC required documents on behalf of the BER. The flow of authority reflects the departmental commitment to providing sound environmental data as outlined in DEP-SOP-001/01. Specifically, headquarters command staff, district managers, designated forensic sampling specialists, and qualified emergency response specialists may sign properly reviewed reports.

5.4 EMPLOYEE CREDENTIALS AND TRAINING

The FDEP – BER Emergency Response Plan, Annex C, outlines the specific hiring credentials for all BER employees charged with sampling duties. Specifically, it is the policy of the Division of Law Enforcement and the Bureau of Emergency Response to fill vacant positions with the best qualified individuals. The BER shall comply with DEP Directive 404 and General Order 2-13 when recruiting and selecting employees. In general, BER should hire applicants that meet the following criteria:

- Possess good moral character as determined through a background check.
- Be in good mental and physical condition to perform the duties required for the position.
- Be able to wear various levels of PPE up to, and including, Level A.
- Be able to obtain a fitness for duty statement from the DEP's medical monitoring provider.
- Possess a valid Florida driver's license.
- Possess a college degree in one of the sciences, or have experience directly related to the knowledge, skills, and abilities required for that position.

The BER is committed to providing the appropriate training, education, supervision and field experience necessary to ensure that the quality objectives are met as outlined in DEP-SOP-001/01, Section FA 1000. The FDEP – BER Emergency Response Plan, Annex O also discusses the training requirements set forth for those employees required to take part in sampling activities.

6.0 DOCUMENTATION

Introduction:

This section of the quality manual provides the procedural outline for the generation of documents by the FDEP – BER. This outline allows for the creation of legally defensible, accurate and methodical records necessary for documentation of sample collection, sample handling and field-testing activities.

The generation and management of records shall be conducted in accordance with DEP – SOP-001/01 Revised February 1, 2004, FD 1000. Additionally, records generated by BER will follow departmental procedures for the generation, retention and storage of records as outlined in BER ERP Annex I, Section III Subparts 1 – 4. These SOPs provide a detailed listing of the information required for documentation of all sampling procedures and field-testing. BER personnel are to refer to the associated sampling or field-testing SOP for any requirements for the chronological or sequential documentation of data.

The project file review process and the QA audit and review procedures are set forth to monitor and verify accurate data entry and record keeping for all documentation tasks outlined in this SOP.

6.1 PROCEDURES FOR THE GENERATION, RETENTION AND STORAGE OF RECORDS

6.1.1 Generation of Records

Record generation is completed in accordance with applicable sections of DEP – SOP - 001/01, BER – ERP, and FDEP – DLE General Orders. In general, records are generated for all field activities and summarized in final incident reports or other work product.

6.1.2 Retention of Records

BER records are retained per the FDEP QA Rule, 62-160.220 & .340, F.A.C which states that all documentation must be kept for a minimum of 5 years after the date of project completion or permit cycle unless otherwise specified. Record retention is completed in accordance with applicable sections of DEP – SOP - 001/01, BER – ERP, and FDEP – DLE General Orders.

6.1.3. Storage of Records

BER record storage is completed in compliance with the requirements of DEP – SOP-001/01 FD1000. Records are stored in a secure filing cabinet for a minimum of 5 years. Criminal cases are clearly marked and placed in red file folders. Criminal cases are also kept separate from non-criminal cases. Additionally, FDEP – BER records are ultimately mailed or otherwise transported to the Tallahassee District office for appropriate archiving of state documents.

6.2 Procedures for Controlling and Maintaining Documentation

Control and maintenance of BER records are completed in compliance with the requirements of DEP – SOP-001/01 FD1000 – Documentation Procedures. Documents are secured in file cabinets at BER district offices and at BER headquarters. Criminal files and other documents exempt from public disclosure are uniquely identified and kept locked until such a time as they may be returned to public record.

6.3 Types of Documents and Reports Generated by BER

The primary documents / reports generated by BER for sampling events include sample plans, incident reports, and analytical summaries. Support documents / reports for these activities include:

- Records of equipment cleaning.
- Records of reagents / chemicals with expiration dates.
- Log of equipment maintenance and repair.
- Log of instrument calibration.
- Chain of custody.
- Field Notebook.

6.4 Procedures to Ensure Accurate Sample Identification and Data Integrity

BER ensures accurate identification of samples by following DEP – SOP – 001/01. Specifically, sample identification and nomenclature is specified in the sample plan. All sample containers are labeled with a unique identifier in the field. These unique identifiers are also recorded on chain of custody forms and in the field notebook. Each case is assigned a unique case number and all records associated with that case reference the case number.

6.5 Procedures to ensure Client Confidentiality

When necessary BER assigns only numeric case number references to projects requiring client confidentiality. Confidential criminal investigation cases are managed in accordance with Florida Statute 73.0155.

7.0 BER SAMPLING CAPABILITIES

7.1 BER Capabilities

The FDEP Bureau of Emergency Response (BER) responds to a variety of emergency incidents, including spills, abandoned containers or materials, and illegal dumping. Releases may occur to or impact any environmental matrix. BER sampling events generally involve high-level contaminants such as a toxic industrial compound or hazardous waste that has impacted a medium. The primary goal is to collect samples for field screening and confirmatory identification, to secure proof of contamination, or to conduct closure analyses for initial source removal operations. Media may also be sampled for waste characterization and disposal. The majority of BER sampling activities will involve criminal or civil enforcement actions and as such evidentiary level field sampling protocols are employed. FDEP – BER has adopted the DEP SOPs for Field Activities “DEP-SOP-001/01” February 1, 2004. It is imperative that any sample collection event or field screening of materials does not contaminate or degrade evidentiary laboratory sample collection activities. The BER ERP details the various field screening techniques.

7.2 Specific Sampling Procedures Used By BER

BER may be called upon to sample a wide variety of media and matrices. BER is committed to following the specific sampling procedures set forth in DEP – SOP – 001/01, “Standard Operating Procedures for Field Activities.” As stated in DEP – SOP – 001/01, FA 2100.2.1.5, BER may deviate from the SOPs to the extent necessary to protect human health, public safety, and the environment. In some instances BER may be required to follow specific procedures as identified by program area or other guidance. Most frequently, BER follows the procedures identified in:

- BER Emergency Response Plan (ERP)
- Guidelines for Assessment and Source Removal of Petroleum Contaminated Soil, FDEP BPSS, May 1998
- SOP PCS-004 Soil Assessment and Sampling Methods for Florida Bureau of Petroleum Storage System Sites New and Effective October 1, 2002
- DEP Division of Law Enforcement General Order 4-5, Evidence Collection, Preservation and Documentation, Lost/Abandoned Property

7.3 Field and Laboratory Test Methods

All field testing equipment is operated in accordance with DEP – SOP – 001/01, FT 1000, program guidance and operating manuals. BER operates some mobile lab equipment for the purpose of field screening and contaminant identification. However, the mobile lab is not NELAC certified.

7.4 Field and Laboratory Instruments and Equipment

BER has significant field testing capabilities to assist in identifying contaminants prior to laboratory analysis. These include:

- Combustible Gas Indicator or CGI
- pH Meter
- Photoionization Detector or PID
- Radiation Detector
- HazCat Kit (Field portable wet chemistry for ID of unknowns)
- Flame Ionization Detector or FID
- Colorimetric tubes (Draeger)
- Toxic Gas Sensors
- X-ray Fluorescence
- Infrared Spectroscopy
- Raman Spectroscopy
- Mercury Vapor Detector
- Portable Gas Chromatograph/Mass Spectrometer

Each BER district office maintains an instrument and equipment inventory. All personnel that are expected to utilize field sampling equipment are responsible for the appropriate maintenance, record keeping and corrective action necessary to keep all field equipment and instruments operable and in supply to perform specific job duties.

7.5 BER Sample Management, Handling, Transportation, and Submittal to the Laboratory

All samples are handled with the utmost care to ensure evidentiary integrity. DEP-SOP-001/01 FD 5000 highlights proper collection, preservation and transport of samples. Specifically, it is necessary to label **all** containers with a unique field identifier that distinguishes each sample container from all others. It is also necessary to link the unique field identifier to the sample source and/or sampling point and to record the unique field identifier in the field notebook. All sampling team personnel should be recorded as well as the date and time of sample collection. It is important that all samples be given a specific description with regards to sample location. The matrix sampled should also be noted.

When submitting samples to the lab, it is necessary to include all information already noted as well as the sampler responsible for sample transmittal, required analyses, preservation protocol and identification of common carrier if used. If the transmittal forms are shipped in the transport containers it is important to place them in waterproof enclosures. If using a common carrier for shipping, all transport containers should be secured with strapping tape. All shipping bills should be kept with the file.

If the samples are evidentiary in nature, then it is **vital** to maintain a chain of custody form. DEP-SOP-001/01 FD 7000 speaks specifically about legal or evidentiary documentation. The procedure for sample collection is the same, however, it is also important to establish and maintain the integrity of the samples by handling and transferring them in a manner that eliminates possible tampering. All time periods must be accounted for once the samples are collected, including physical possession and storage, until the final analytical result.

The chain of custody form accounts for all time periods associated with the physical samples. This form must include signatures of all individuals who physically handle the samples and their activity with the sample (e.g. "received by"). It is also important that all samples be sealed with tamper-indicating seals or evidence tape to maintain that the chain of custody has not been broken.

8.0 EQUIPMENT AND INSTRUMENTS

8.1.1 Procedures Used for the Calibration of Instruments

All BER equipment utilized for field screening or real-time analytical results is maintained according to the manufacturer's specifications. Each field instrument should be calibrated at least once per month or on the factory recommended calibration schedule per the instrument's instructions. A calibration log should be kept to document calibration. These calibrations may include yearly manufacture calibration as well as field / office calibration prior to field usage. Equipment calibration procedures are outlined in BER ERP Annex I, Section V and Section VIII as well as DEP-SOP-001/01 FD 4000 and FT 1000.

8.1.2 Source, Preparation and Documentation of Standards

BER uses standards from various sources, including district laboratories, the DEP central laboratory, and instrument manufacturers. BER ensures that these standards meet acceptable quality levels and have not expired. DEP-SOP-001/01 FD1000 and FT 1000 address these issues.

8.1.3 Procedures Used to Generate, Assess and Document Calibrations

All equipment is calibrated on a routine schedule and also prior to critical use. These calibrations are recorded on a calibration log. Guidelines for the calibration of equipment are found in DEP-SOP-001/01 FD1000 and FT1000. Equipment calibration procedures are outlined in BER ERP Annex I, Section V and Section VIII. Verification of calibration is based upon manufacturer specifications per instrument.

8.2 Routine Procedures Used to Maintain Analytical Instruments and Sampling Equipment and the Associated Documentation

All analytical instruments and sampling equipment are maintained on a regular basis. Routine tests of functionality and calibration ensure that the equipment is working properly. Batteries are checked on a regular basis. The equipment is also inspected and cleaned at regular intervals. Annual inventory of all equipment maintains the supply necessary to respond to an emergency situation. Logs are kept of all maintenance, calibrations and inventories of all instruments and equipment. All of the equipment is assigned to a custodian who ensures that it is maintained in accordance with applicable SOPs and manufacturer's instructions.

9.0 Reviews and Assessment

9.1 Quality Control Measures Used

Field quality control measures monitor the sampling event to ensure that the collected samples are representative of the sample source and that field-collected data have stated limits of precision and accuracy. BER is committed to complying with required field quality control procedures.

9.1.1 Types and Frequency of Field Generated Quality Controls

At a minimum, BER complies with the mandatory field quality controls stated in FQ 1230. Blanks (excluding trip blanks) are collected at a minimum of 5% of each reported test result/matrix combination for the life of a project. BER defines a project as a specific case or incident. Thus at least one blank will be collected for each case or incident where field samples are collected.

Background samples are collected to verify the completion of cleanup activities. Background samples are also useful in showing the matrix in an “unpolluted” state for verification that pollution has occurred. A background sample would be collected to show that the background matrix is as clean as or cleaner than the subject area.

9.1.2 Types and Frequency of any Ongoing Quality Control Program to Ensure the Accuracy of Laboratory Data

BER uses the FDEP Central Laboratory for the vast majority of our laboratory analytical needs. Periodically, BER may use private laboratories. In these events, BER will ensure that these labs are NELAC (National Environmental Laboratory Accreditation Conference) certified and are capable of providing the required analyses. DEP-SOP-001/01 FM 2140 and 2150 help to ensure the accuracy of lab data.

9.1.3 Criteria against Which Each Quality Control Measure will be Assessed

Field quality control measures are assessed to determine field conditions, equipment cleanliness, and storage/transport conditions. The results of the quality control measures are taken into consideration during data validation. Laboratory quality control reports are also taken into consideration during data validation.

9.2 Procedures Used to Review and Assess Raw Data, Laboratory Data and Project Data

BER personnel review and assess all data and quality control reports to ensure accuracy and quality.

9.2.1 Data Reduction: How Raw Data are Reviewed and Assessed

BER receives and reviews laboratory reports from the respective laboratory. The reports are reviewed for accuracy. The BER staff responsible for the sampling event then reduces the analytical results to a summary relevant to the case. This summary is then forwarded on to the respective agent and/or prosecutor as necessary.

9.2.2 Data Verification: How Data are Assessed with Respect to Calculations

BER ensures that any laboratory generating data for use in enforcement cases is NELAC certified for the analyses requested. Laboratory data is reviewed, verified and certified by the laboratory. BER reviews the data and QA/QC report to ensure that the data appears accurate.

9.2.3 Data Validation: How Project Data are Reviewed and Assessed

BER reviews reported data, data qualifiers, comments and QA/QC reports. Ultimately, the data is compared to the applicable regulatory limits for the specific case. The DEP Quality Assurance Rule 62-160.670 specifically discusses data validation.

9.3 Criteria for Determining When Corrective Action Must be Initiated for each QC Measure and the Procedures Used to Implement Corrective Action

If BER finds that critical data is outside of QA/QC limits or that data qualifier codes make the data unusable, BER may institute corrective actions. These actions may include (but are not limited to):

- Resampling the source
- Requesting that the lab re-analyze the samples

9.4 Procedures to be used in the Case of Deviations from the Documented Policies and Procedures

BER personnel shall refer to F.A.C. 62-160.220 which discusses the policy and procedure for deviation from the given standard operating procedures. As stated in DEP – SOP – 001/01 FA 2100.2.1.5, BER may deviate from the SOPs to the extent necessary to protect human health, public safety, and the environment. In the event of a deviation, BER will make every effort to ensure data quality and evidentiary integrity. All deviations will be recorded in the field documentation.

9.5 Types of Performance, Systems and Management Audits to be Performed

The FDEP-DLE forensics program reviews the sampling procedures and analytical data required for all casework. Audits are performed annually or on an as-needed basis. The Environmental Forensics Sampling Quality Assurance Officer is responsible for initiating and completing internal audits.

10.0 Consumer Relations

BER works with members of the public, industries, and local, state, and federal agencies. BER strives to maintain good consumer relationships.

10.1 Policies and Procedures Regarding Review of Proposed Work to Ensure Adequate Personnel and Equipment

BER uses a Field Sampling Plan to ensure that there are adequate personnel and equipment available for each sampling event. The BER *Request for Technical Assistance* also allows for adequate personnel to be available for each event.

10.2 Policies and Procedures for Dealing with Complaints

BER staff complies with all requirements for formal and informal hearings in the event of a complaint. Complaints are directed via chain of command in accordance with BER policies and procedures. The Forensic Coordinating Committee has been established and meets quarterly. This committee discusses any and all complaints within the quarter to ensure corrective action has occurred if necessary.