

## 2.0 ADMINISTRATIVE PROCEDURES

### 2.1 Intent and Purpose

This chapter of the QASR manual summarizes policies, guidance documents, and procedures related to implementation of the CERP QA program. The procedures and guidance memoranda developed by RECOVER and Design Coordination Team as well as other subteams, e.g., the QAOT, Data and Information Management Team, supersede those provided herein. Development of CERP policies, guidance documents, and procedures is a dynamic, on-going process, and many of the teams of RECOVER and CERP may be currently working on procedural or CGM revisions while the QASR manual is also being revised. Each update to the QASR manual will refer to relevant documents developed by CERP teams as they become available.

The minimum guidance for alternative laboratory or field procedures shall be the provisions of the following:

- Chapter 62-160, FAC  
<http://www.dep.state.fl.us/legal/Rules/general/62-160/62-160.pdf>
- FDEP New and Alternative Analytical Laboratory Methods (DEP QA 001/01)
- FDEP SOP 001/01, section FA 2000 (criteria for alternative procedures)  
<ftp://ftp.dep.state.fl.us/pub/labs/assessment/sopdoc/2008sops/fa1000.pdf>

Other alternative procedures are described in the following:

- Code of Federal Regulations (CFR), Title 40  
<http://www.epa.gov/regulations/search/40cfr.html>
- Department of Defense (DOD) Quality Systems Manual (QSM) (January 2006 or later)  
<http://chppm-www.apgea.army.mil/dls/DoDV3.pdf>
- USACE Memorandum on Hazardous, Toxic and Radioactive Waste (HTRW) Chemical Data Quality Management Policy for Environmental Laboratory Testing (9/30/2004)

All participants who are conducting, monitoring, or performing laboratory analyses for CERP must adhere to the applicable procedures and protocols in the QASR manual. The process of review and approval of variances to the methods and requirements described in the QASR must follow the procedures identified in **Section 2.3**. The QASR will be reviewed and updated accordingly under the guidance of the QAOT. The procedure and frequency for this process is described in the QAOT implementation procedures manual. Interim updates and changes to the QASR will be distributed to the intended users via email and web postings.

### 2.2 Responsibilities

Each agency, contractor, consultant, and individual involved with CERP monitoring must share responsibility for maintaining knowledge of the QA/QC program and for adhering to the procedures identified in the QASR. However, the ultimate responsibility for implementation of the QA/QC program rests with the QAOT.

### **2.2.1 Quality Assurance Oversight Team**

The QAOT, working and coordinating with RECOVER'S Assessment is charged with implementation and oversight of the CERP QA/QC program and will ensure that monitoring adheres to the QASR. The QAOT is responsible for dealing with QA issues, establishing a mechanism for distribution of quality system information and changes, and ensuring data meet or exceed the DQOs of the Monitoring and Assessment Plan (MAP). Some of the team's duties with respect to the MAP will entail the following:

- Developing and implementing data review criteria
- Conducting audits of field and laboratory activities
- Performing QA reviews of monitoring data
- Implementing laboratory and field performance evaluation (PE) programs to assess consistency among agencies involved in the data collection activities
- Producing annual Quality Assessment Reports and submitting them to management
- Developing Quality Management Plans for the MAP and associated quarterly quality assessment reports
- Coordinating a team of governmental and commercial laboratories to ensure adequate training, coordination, and consistency in laboratory and field procedures
- Initiating/conducting systems audits, performance audits, and corrective actions
- Reviewing new and alternative methods and requests for sample modifications
- Conducting data verification, validation, and quality assessment as needed
- Coordinating training for these functions and making sure the guidelines are followed and any deficiencies are corrected.

How the elements should be monitored individually and collectively will be determined through consultation with the QAOT, RECOVER, and the agencies or organization(s) responsible for implementing the various elements of the monitoring plan (MP). Standardized monitoring/data collection methodologies, sampling schemes, laboratory analytical methods, and QA and reporting procedures for each of the monitoring parameters will be agreed upon and used by all participating investigators in the program for collecting, processing, and managing water quality and hydrologic data. Any changes in methods during the implementation of the plan, once approved, will be documented. The CERP QAOT will also interact with the CERP Data Management Program to review and comment on all data-related technical specification; ensure that a proper data QA/QC process will be in place, particularly for data acquisition contracts; and review contract Statements of Work (SOWs) for environmental monitoring.

The following sections describe the specific duties of the four agencies (USACE, SFWMD, FDEP and Environmental Protection Agency (EPA)) responsible for implementing the QASR.

## **2.2.2 Florida Department of Environmental Protection**

FDEP is responsible for the maintenance and implementation of the department's QA rule, Chapter 62-160, FAC. The FDEP will also provide technical assistance to the QAOT.

## **2.2.3 Environmental Protection Agency**

EPA will provide technical advice and participate in the QAOT.

## **2.2.4 United States Army Corps of Engineers and South Florida Water Management District**

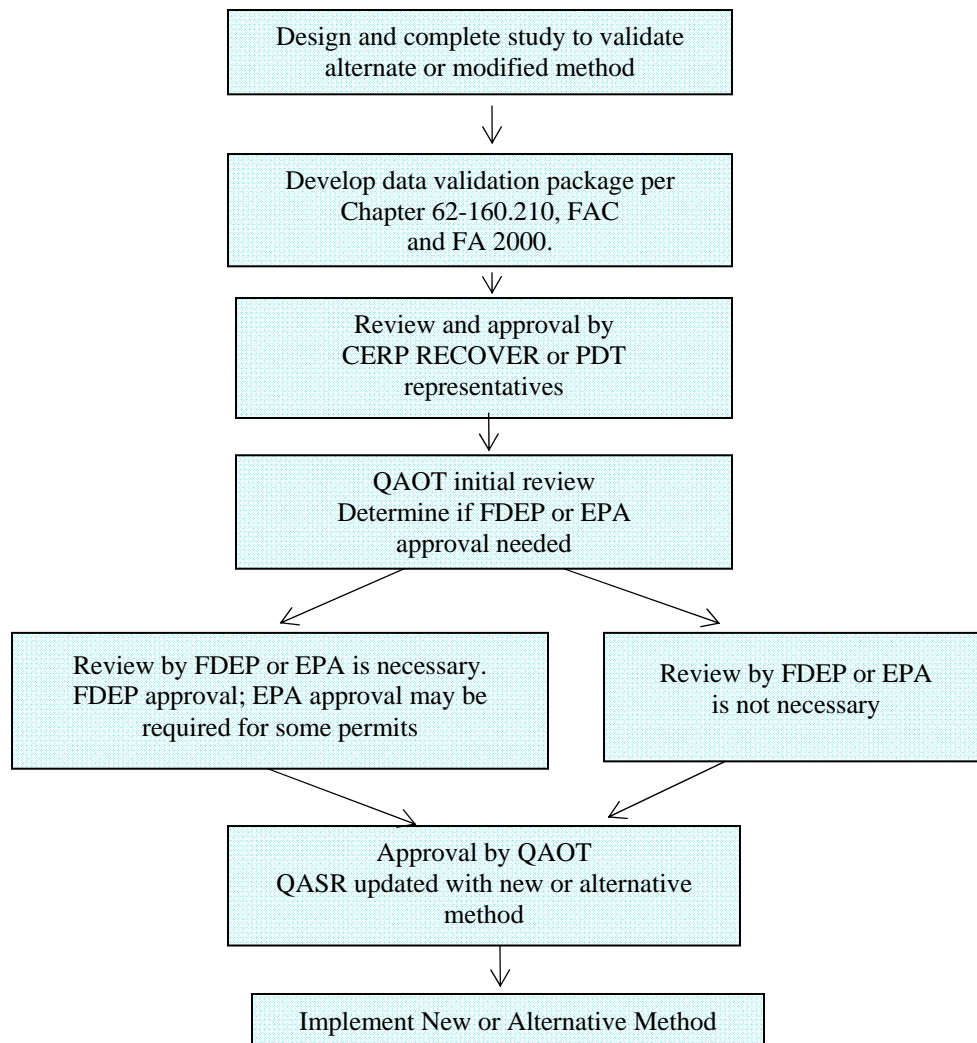
The USACE and SFWMD, as lead agencies in implementation and adherence of CERP projects to the QASR, will ensure that data meet or exceed each project's DQOs. The major responsibilities of these agencies include the following:

- Develop and implement data review and assessment procedures
- Standardize data review and electronic data deliverables (EDDs)
- Oversee approval of variances from approved methods
- Oversee field and laboratory audits
- Oversee data QA and data quality investigations
- Oversee the laboratory and field PE program
- Prepare Quality Assessment Reports for CERP management
- Assist in developing CERP Quality Assurance Project Plans (QAPPs) or project MPs, depending on the program requirements
- Review MPs for compliance with the QASR
- Coordinate with the PDTs and RECOVER teams on QA/QC issues
- Ensure adequate training, coordination and consistency in laboratory and field procedures
- Standardize third-party validation procedures for field and laboratory analyses
- Maintain familiarity with the provisions of the DOD QSM and the Memorandum on HTRW, which also must be followed during CERP implementation

## **2.3 Alternative Procedures or Variance**

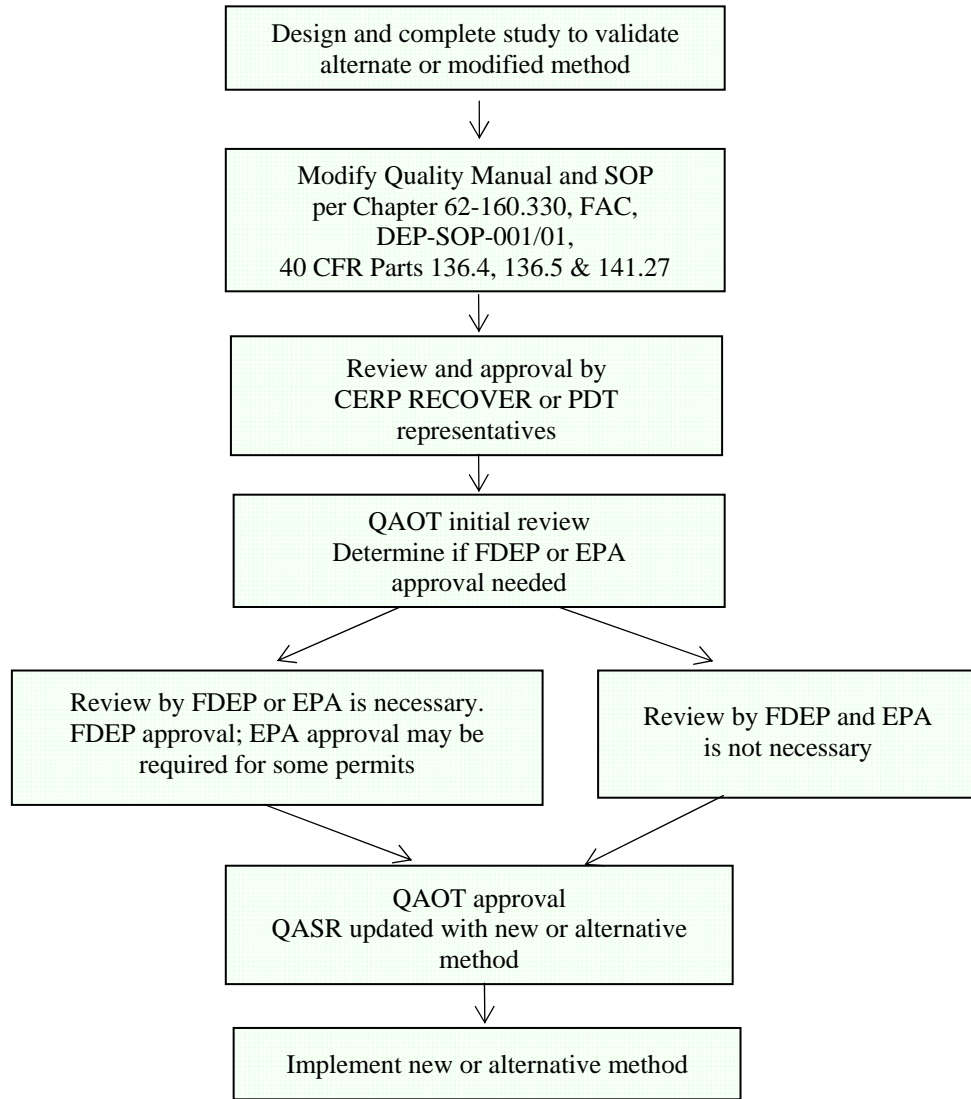
To maintain a level of standardization and consistency, and to help ensure verifiable data quality, it is critical that QASR provisions are adhered to. However, the intention of QASR is not to be restrictive, and therefore, new methods and innovations are encouraged. Proper approvals, including those of FDEP or EPA, if deemed necessary by the QAOT, are required prior to implementing a variance from the QASR. Variances may involve the use of alternate laboratory or field procedures, QA/QC elements, and data validation or data management procedures. Variances may be driven by project limitations, a need for enhancements or improvements, such as better technology, or for experimental or research purposes. **Figures 2.1 to 2.3** illustrate the

processes that will be used for review and approval of variances for water quality monitoring and analysis; alternate biological, ecological, and hydrologic procedures; and remote sensing procedures and protocols. The ultimate goal of the variance process is to ensure that the proposed alternative procedure or method will produce comparable or better results and maintain consistency within CERP data gathering activities.



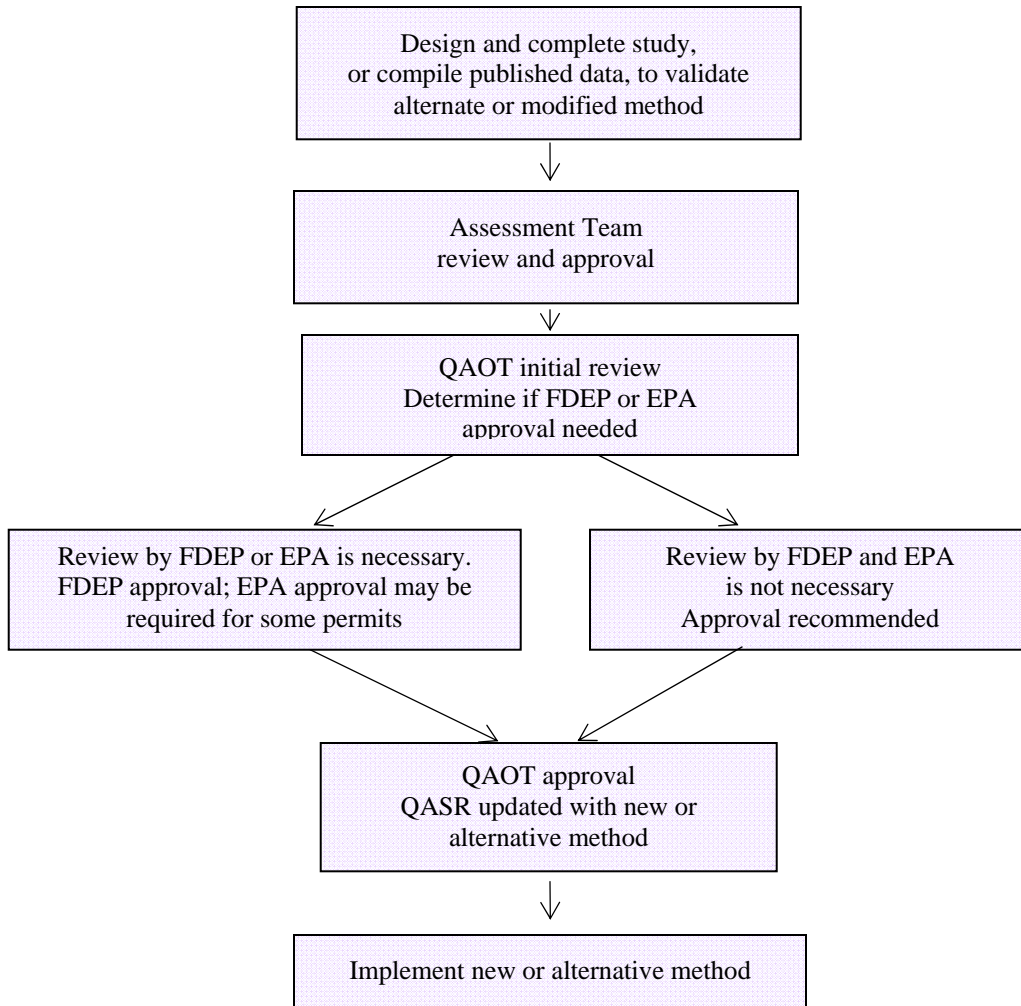
**Figure 2.1 Approval Process for Modification to Water Quality Monitoring Protocols**

*(subject to change with implementation of QAOT procedures)*



**Figure 2.2 Approval Process for Modification to Water Quality Analysis Protocols**

*(subject to change with implementation of QAOT procedures)*



**Figure 2.3 Approval Process for Alternate Biological, Ecological, Hydrologic, and Remote Sensing Procedures and QA/QC Protocols**

*(subject to change with implementation of QAOT procedures)*

### **2.3.1 Responsibilities**

The variance approval process involves technical review by the project management team and a designated QA representative, with final review by the QAOT (**Figures 2.1 to 2.3**). The QAOT will recommend an approved variance be included in the QASR, and the Design Coordination Team (DCT) will finalize approval of the QASR revisions.

### **2.3.2 Required Documentation**

#### **2.3.2.1 Method Performance Package**

Those individuals seeking approval of a variance from established methods must prepare a method performance package in accordance with the following:

- DEP SOP FA 1000 – 2240
- 40 CFR Part 136.4 (Application for alternate test procedures) and 136.5 (Approval of alternate test procedures)
- 40 CFR Part 141.27 (Alternate analytical techniques) and 142.46 (Alternative treatment techniques) for drinking water monitoring.

The variance proposal must demonstrate the effectiveness of the proposed alternative procedure.

#### **2.3.2.2 Documentation Package**

The documentation package must be comprised of the following information:

- Title and description of the project
- Project DQOs, with a clear discussion on the type of data that will be collected, proposed use of the data, and any constraints
- Thorough description of the alternative method or variance
- Justification for the use of the alternate method or variance
- Performance validation procedure
- Supporting data
- Peer review report
- Conclusions and recommendations, including scope and application of the alternate method or variance

## 2.4 Relevant CERP Guidance Memoranda

CGMs are guidance documents created by program managers to address various issues pertinent to CERP projects. The entities involved in CERP projects must be familiar with and apply the relevant provisions of the CGM. Approved CGMs are posted on the website: [http://www.evergladesplan.org/pm/program\\_docs/cerp-guidance-memo.aspx](http://www.evergladesplan.org/pm/program_docs/cerp-guidance-memo.aspx).

Relevant CGMs are listed below:

- CGM 23.01 - Addresses water quality considerations necessary for the formulation, evaluation, and design of CERP Project Management Plans and Project Implementation Reports.
- CGM 27 - Provides guidance to USACE and SFWMD staff for conducting external, independent peer review of technical and scientific documents and other products of the RECOVER team.
- CGM 28 - Provides guidance and recommendations for all Geographic Information Systems (GIS) datasets for CERP projects. Ensures that a high quality, well-documented GIS data set is maintained.
- CGM 40 - Provides guidance to USACE and SFWMD staff and members of the PDTs for incorporating monitoring, assessment, and costs in planning, design and implementation documents for CERP projects.
- CGM 41 - Provides guidance to USACE, SFWMD and members of the Program and PDTs for establishing and administering the CERP QA/QC and data validation program. Also establishes agency responsibilities for environmental data QA/QC and validation through the formation of a QAOT.
- CGM 42 - Provides guidance on screening for toxic substances, such as mercury and pesticides, in CERP projects. The purpose of this CGM is to provide project managers and teams with a uniform scheme for (1) screening project alternatives for the likelihood of unacceptable impacts from toxic substances; and (2) detecting project-related impacts of toxic substances and monitoring their mitigation.

## 2.5 Data Quality Objectives

Formulating project DQOs brings awareness to project participants of the minimum data quality required for a project. The DQO process is a tool used to define the type, quality, and quantity of data needed to make defensible decisions for a project. This process systematically defines the requirements for a field investigation and the limits on tolerable error rates. It also identifies the intended end use of the data, including decisions that may be made based on the results of a project.

The DQO process has both qualitative and quantitative components. The qualitative steps encourage logical and practical planning for environmental data collection activities, while the quantitative steps use statistical methods to design a data collection operation that will efficiently control the probability of making an incorrect decision. Although the quantitative steps of the DQO process are important, investigators and decision makers may choose not to apply statistics

to every environmental field investigation. In some cases, the planning team may utilize only the qualitative steps of the DQO process during the investigation planning phases to generate authoritative data that may be used to confirm site characteristics.

The DQO process comprises seven, iterative steps that should be revisited as new information about a problem becomes available. This section is adapted from *Guidance for the Data Quality Objective Process* (EPA/600/R-96/055) and a simplified version prepared by the QAOT (*Guidance in Understanding and Developing the Data Quality Objectives, effective 8/15/2005*) posted at [http://www.evergladesplan.org/pm/pm\\_docs/qaot/081505\\_qaot\\_dqo\\_process.pdf](http://www.evergladesplan.org/pm/pm_docs/qaot/081505_qaot_dqo_process.pdf).

## **2.6 Quality Assurance Project Plan**

A QAPP describes the activities of an environmental data operations project involved with the acquisition of environmental information, whether generated from direct measurements, collected from other sources, or compiled from computerized databases and information systems. The purpose of a QAPP is to document the results of a project's technical planning process, provide a clear, concise, and complete plan for the environmental data operation and its quality objectives, and identify key project personnel.

Developing a QAPP is recommended for CERP projects but is not required by either the FDEP or the CERP QA/QC program. CERP projects that do not have a QAPP are required to have the necessary QA elements in the project's sampling and analysis plan or MP (See CGM 40).

### **2.6.1 Quality Assurance Project Plan Development**

Developing a QAPP is a multi-step process, briefly summarized below:

1. Assemble a project team and systematically plan what needs to be done, including establishment of DQOs
2. Write the QAPP using the results of that planning process
3. Submit the QAPP for review and approval
4. Distribute the approved QAPP to all pertinent individuals involved with the project

The QAPP should be reviewed periodically to ensure that it remains relevant to the project's objectives. Any changes to the QAPP should be documented and, if necessary, submitted for review and approval, and re-distributed to all pertinent parties.

### **2.6.2 Quality Assurance Project Plan Groups and Elements**

The EPA document *Guidance for Quality Assurance Project Plan Elements (G-5)* – (December 2002, EPA/240/R-02/009) posted at <http://www.epa.gov/QUALITY/qs-docs/g5-final.pdf> provides guidance on developing a QAPP. A checklist to assist in reviewing a QAPP, based on the EPA guidance, is included as **Appendix 2-A** and is posted at [www.epa.gov/region3/esc/QA/qappprepcklist\\_rev1.doc](http://www.epa.gov/region3/esc/QA/qappprepcklist_rev1.doc)

The level of detail for each element described in the QAPP will depend on the type of project, the data to be obtained, the decisions to be made, and the consequences of potential decision errors. For example, for a modeling project or a project using existing information, the elements concerning collecting samples may not be pertinent. The elements of a QAPP are categorized into groups, according to function, and are summarized as follows.

**Group A: Project Management** – These elements address project administrative functions and project concerns, goal(s), and approach(es) to be followed, including identification of key project officials, project overview, pertinent background information, project and task organization, outputs from the DQO process, and measurement performance or acceptance criteria, and any required training or certification. Recordkeeping and documentation also are addressed in Group A.

**Group B: Measurement/Data Acquisition** – These elements address all of the aspects of measurement system design and implementation to ensure that appropriate methods of sampling, analysis, data handling, and QC are applied and documented. These include sampling and analytical methodologies, sample handling and custody, field and laboratory QC provisions, data acquisition requirements and data management.

**Group C: Assessment and Oversight** – Assessments or evaluations are designed to determine whether the QAPP is being implemented as approved (conformance/nonconformance), to increase confidence in the information obtained, and ultimately to determine whether the information may be used for its intended purpose. The elements in this group detail what assessments or evaluations will occur both during and after the project.

**Group D: Data Validation and Usability** – The elements in this group address the final project checks to determine if the data or product obtained will conform to the project’s objectives, and to estimate the effect of any deviations. For projects that use existing data, these elements focus on evaluating how data values from these acquired data sets will be used to determine the quality objectives for the new data use. For a modeling project, this process is similar to confirming that the steps in the modeling process were followed correctly to produce the model outputs and that the results meet project objectives.

## 2.7 Preparing a Monitoring Plan

A MP guides the activities and different processes within a project, and documents project design and procedures used for the project. If the information relevant to the topics outlined below is already specified in other documents, those may be incorporated by reference. A MP should encompass all aspects of the contract.

A good start when planning to write a MP is CGM 40. Although that guidance is currently specific to water quality and hydrometeorologic monitoring, there are general sections that also apply to biological monitoring and assessment work. Refer also to **Section 2.5** on DQO preparation.

The basic elements of a MP are:

- Introduction about the project

- Data Quality Objectives – DQO is the scientific process that identifies the intended use of the data including the types of decisions that will be made based on the results of the project. Refer to QASR **Section 2.5** for DQO process and **Appendix 2-A** for checklist of preparing or reviewing a QAPP;
- Data Quality Indicators (DQIs) – DQIs are specific calculations that measure performance as reflected in the DQOs and performance and acceptance criteria. DQIs include precision, accuracy, representativeness, completeness, consistency, and sensitivity. These indicators are defined in the QASR **Appendix 2-A** for QAPP elements;
- Field Activities – Methodologies, equipment, and instrumentation; maintenance and documentation procedures. Refer to QASR, **Chapter 3, Chapter 6, Chapter 7, Chapter 8 and Chapter 9.**
- Laboratory Activities – methodologies, equipment, and instrumentation; maintenance and documentation procedures. Refer to QASR, **Chapter 4, Chemical Analysis;**
- Documentation and Record Keeping Requirements – Refer to QASR, **Chapter 10.**
- Reporting Requirements;
- Quality Control Requirements – Refer to QASR, **Chapter 3, Chapter 6, Chapter 7, Chapter 8 and Chapter 9.**
- Data verification and validation procedures – Refer to QASR, **Chapter 5.**
- Data management procedures – Refer to QASR, **Chapter 10.**

## **2.8 Sampling Strategy and Statistical Power Analysis**

When preparing a MP, an important factor to consider is selecting the specific sampling plan or strategy that can be used to improve the quality of the environmental data collected. Sampling strategies are developed by the project team to satisfy the project-data needs. More detailed information on evaluating various sampling strategies is presented in **Chapter 3, Section 3.6.2** (Sampling Strategies) of the QASR. Also, refer to “*Guidance for Choosing a Sampling Design for Environmental Data Collection* (EPA QA/G-5S)”.

## **2.9 Contracting Guidelines**

This guide is to help project managers and consultants in planning, implementing, and managing biological or ecological assessment work for CERP. The guide is divided into these major phases of contracting:

- Contract Preparation - Developing a SOW
- Contractor Selection
- Contract Implementation Management
- Deliverables
- Contingencies
- Peer Review

## **2.9.1 Contract Preparation - Developing a Statement of Work**

A clear, specific, and thorough SOW can help avoid misunderstanding, misinterpretations, incomplete work, unsatisfactory deliverables, delays, budget exceedances, and legal challenges. SOWs and MPs should clearly state the studies at each phase of the assessment. They should describe the following:

- Which studies should be conducted?
- Why they should be conducted?
- When and where they should be conducted?
- Why the data should be collected?
- What data should be collected?
- How samples should be collected, handled and analyzed?
- How data should be evaluated?
- What reports should be produced?

### **2.9.1.1 Critical Elements of a Statement of Work**

#### **Project Background Information**

This section should include information on any preliminary assessments, background data, site inspections, any available literature citations, or any relevant studies. Information should relate to site history, physical features of the site, species expected at or near the site, etc. This information helps the contractor understand the nature of the project and provides a basis for the MP or study design, if its development is part of the contract.

#### **Project Objectives**

Project Objectives should include DQOs (also see DQOs in **Section 2.5**). DQOs are quantitative and qualitative statements of the overall level of uncertainty that a decision-maker is willing to accept. Consequently, DQOs reflect the statistical design of the study and the level of significance needed to support any conclusion that might be drawn from the study. The study design should specify a sample size large enough to account for natural variability to ensure that DQOs are met. In outlining project objectives, the SOW should do the following:

- Discuss the intended use of the data, including the types of decisions that will be made based on the results
- Specify what biological indicators are being assessed and what are the expected outcomes
- Discuss the types of quality control measures to be used to monitor the data quality and how frequently will they be used
- Identify the methods that they must use or the requirements for a new or alternative method if the contractor is to develop a method

## **Health and Safety Requirements**

It is strongly advisable to require a written health and safety plan for projects involving field work. This plan covers all aspects of on-site field operations and activities associated with the contract. This plan must comply with all applicable health and safety regulations and any project-specific requirements specified. Having a health and safety plan does not relieve the contractor of the responsibility for providing employees with a safe and healthful work environment. This concept should be communicated to the contractor by the Contract Manager and also incorporated into the contract document.

## **Regulatory Requirements**

The contract should specify that contractors must follow all local, state, and federal regulations that must be conformed to while carrying out the responsibilities under the contract. A list of some of these regulations specific to biological studies is included in QASR **Chapter 8**.

## **Technical Requirements**

Ask for a monitoring plan. Listed below are example questions to address in the SOW:

- What are the specific monitoring or assessment parameters, measurements, or surveys that are required?
- What is the frequency of collections or surveys?
- Where are the specific sites? Are these fixed sites, or is there flexibility?
- Are there any specific methods or procedures that must be used? Is the PI (Principal Investigator) being required to develop and present a new procedure? If yes, what are the required data quality and reporting elements?
- From how deep does the sample need to be collected?
- Is power-driven equipment necessary?
- Can power equipment reach the site?
- What is the amount of material to be sampled?
- What is the physical state of the sample (i.e., aerobic vs. anaerobic)?
- What are the units of measure (dry weight vs. wet weight)?
- What is the moisture content?
- What are the processing requirements (drying, fractionation, partitioning of plants, etc.)?

## **Quality Assurance and Quality Control**

The SOW should specify the required QA/QC elements, data quality objectives, data quality indicators, and required documentation. The project manager should be specifying this whenever possible; it should not be left to the discretion of the PIs. These elements are usually also presented in the MP.

## **Reporting and Documentation Requirements**

The contract should be specific in identifying what needs to be recorded during the course of the work and what needs to be reported in the data submission. Include any recording template or forms that may be available to ensure that all data elements are recorded regardless of whom is performing the work. Since the PIs or contractors may change during the life of the project, it is best to request a copy of all field, laboratory, and other documents related to the data gathering activities. Specify when these documents must be submitted and in what format. For auditing purposes, these documents must be organized and traceable to the original source.

To avoid delays in data loading, the contract should also specify the format and provide any data reporting templates. These may be obtained from the CERP Data and Information Team or designated CERP Data Steward.

### **2.9.2 Contractor Selection**

#### **2.9.2.1 Evaluating the Contract Proposal or Bid**

Different agencies may have different procedures for the selection of contractors. The following sections discuss some critical items that should be considered when evaluating contract proposals or bids.

#### **Understanding of Scope and Proposed Approach**

Verify that the contractor has a good understanding of the work that is being asked. This can be accomplished by examining the entire proposal. Some of the red flags follow:

- Proposed cost is too low
- Proposed cost is too high
- Specified project staff do not have the right qualifications
- Proposed approach is not sufficient to address what is required by the contract
- Proposed method or equipment are not acceptable

#### **Technical Capabilities and Company Qualifications**

Verify that the contractor has the relevant knowledge and demonstrable experience, trained personnel, proper facilities, and specialized equipment necessary to carry out the work. Ask for proof of training and experience, as well as references that are directly relevant to the type of work that is being asked for in the contract. For example, for a contract requiring benthic invertebrate sampling and identification, the contractor must:

- Be familiar with the types of equipment appropriate to the study site
- Know how and where to collect samples
- Know what kinds of environmental data to collect along with the biological or ecological surveys

- Have the requisite taxonomic expertise to identify the organisms collected?

Technical publications in a nationally recognized journal or textbook may be an added indication of the individual's or firm's capability.

### **Verification of Capability**

Evaluating a contractor based on submitted proposal alone is often times insufficient. The PI or designated contract manager should verify the information stated in written proposals. This can be done in different ways, including a reference check, verification of the firm's performance in projects of similar scope, (PEs), and actual hands-on tests.

### **2.9.3 Contract Implementation Management**

The work scope should coordinate with other activities, such as sample collection for chemistry analysis, if correlation with chemistry data is part of project objectives.

Consider a phased/tasked approach implementation so that if one aspect of the contract or project fails, then contractor's work would not proceed.

### **2.9.4 Deliverables:**

All deliverables should be specified in the MP. An example of a Work Breakdown Schedule is listed:

Task 1 - Site Description and Reconnaissance

Task 2 - Draft of MP (Deliverable Due)

Task 3 - Data Collection

Task 4 - Preliminary Data Presentation (Deliverable Due)

Task 5 - Final Data Collection

Task 6 - Draft Report Preparation (Deliverable Due)

Task 7 - Final Reporting (Deliverable Due)

### **2.9.5 Contingencies**

There should be sufficient and clear provisions in the contract regarding contingencies, such as in cases when deliverables are unacceptable, or if sampling or surveys cannot be done for any reasons.

### **2.9.6 Peer Review**

Routine to CERP program is the peer review of technical documents. This should include any SOW, QAPP, and MPs. The documents should be reviewed by those who are most familiar with the project and methodologies, as well as those who would be evaluating the data and information gathered from the contracted project. Proper time should be scheduled into the project to allow for peer review of specific deliverables.