1.0   Introduction

The following Quality Management Plan (QMP) is provided by the State of Ohio Environmental Protection Agency (OEPA), Division of Emergency and Remedial Response (DERR), at the request of the United States Environmental Protection Agency, Region 5. To the extent possible, the information provided addresses the Quality Management Plan Requirements as outlined in the US EPA Quality Assurance (QA/R2) document, External Review Draft Final document, October 1998.

The Ohio EPA/DERR QMP addresses the following quality system components and is presented as follows:

1.0   Introduction
2.0   Management and Organization
3.0   Quality Systems and Description
4.0   Personnel Qualifications and Training
5.0   Procurement of Items and Services
6.0   Documentation and Records
7.0   Computer Hardware and Software
8.0   Planning
9.0   Implementation of Work Processes
10.0   Assessment and Response
11.0   Quality Improvement
12.0   Appendix with Exhibits

The Ohio EPA/DERR approach was to utilize the existing "umbrella" sections for the OEPA Agency report which reflect our overall agency approach. Material and information specific to the activities within DERR have been noted throughout this document. The bulk of information, however, is reflective of the overall operating system within OEPA. The relationship between the "umbrella" sections (and information) of the Ohio EPA Agency Report and the DERR quality system are as follows;

The Ohio EPA Agency Report material/language within this QMP is reflective of the procedures and activities which are conducted and implemented throughout the Agency and have relevance to all programs (including DERR).

The DERR quality system implements the specific items which are associated with the Ohio EPA Agency Report, however, the DERR also maintains its own specific quality system which

is pertinent to its program activities. As stated above, the material and information specific to the activities and quality systems within DERR have been noted throughout this document.

The following Ohio EPA employees contributed to the report:

Barb Brdicka, Director's Office, Management and Information Systems
Al Franks, Director's Office, Quality
Jeanne Barrett, Director's Office, Quality
Rod Spain, Office of Employee Services, Training
Don McNeal, Fiscal
Alan Lapp, Legal
Mike Mead, Data and Systems
Gavin Armstrong, DERR
Dave Scholtis, DHWM
Dan Harris and Scott Hester, DSIWM
Randy Hock, DAPC
Jim Evans and Lindsay Talliaferro, DDAGW
Dan Dudley and Chris Yoder, DSW

Within DERR, Gavin Armstrong, the Division's QA/QC Coordinator, was solely responsible for the creation and content of this document.

2.0 Management and Organization

Both USEPA and Ohio EPA/DERR have a strong commitment to using sound and reliable data to make environmental decisions. This Quality Management Plan (QMP) documents the policies, processes and tools used by the Ohio EPA/DERR in executing that commitment on a day to day basis. It presents the framework by which the Quality Assurance/Quality Control (QA/QC) functions are administered by the DERR, the Agency and its programs covered in this plan. Ohio EPA/DERR regards this QMP as a dynamic document and process that will be continuously improved and updated as programmatic practices and procedures change and evolve.

2.1 Table of Organization

Appendix A is the Ohio EPA/DERR's Table of Organization. The Division's senior management team consists of the chief, assistant chief and both Central Office and District Office Managers. They are responsible for establishing and implementing the DERR's direction and policies. The DERR functional overview and sections covered by this QMP are as follows;

C   Division of Emergency and Remedial Response (DERR) - The Division of Emergency and Remedial Response is made up of the Remedial Response program (organized as two sections), and the Emergency Response Section. The Remedial Response Program oversees the investigation and cleanup work at abandoned and unregulated hazardous waste sites and works with U.S. EPA to oversee the cleanup of Superfund sites. The Emergency Response Section provides assistance to industries and communities during a spill or other environmental accidents. All activities within DERR have been detailed in the attached flow charts - hard copies only. These flow charts demonstrate the routine activities as they occur in DERR.

C   Administration - This section comprises one manager who oversees all administrative functions for the Division. These functions include office assistance, records management, network administrators, data and systems coordinators, programers and DERR's grants and contracts administrators.

C   Remedial Response - This section consists of one manager who oversees the activity in two areas. Those areas being policy and site work. Policy consists of an enforcement coordinator as well as technical staff. Site work consists as well of an enforcement coordinator and technical staff. These individuals are responsible for

reviews of site-specific projects and accompanying documentation, as well as the for the development and implementation of DERR functional policies. The QA/QC Coordinator is located within this section and provides much the of same roles and responsibilities. All authority for QA/QC activities within DERR is located within this section.

C   Voluntary Action Program - This section consists of one manager who oversees the implementation of the State-developed real estate re-use program.

C   Emergency Response - This section consists of one manager who oversees the implementation of the Emergency Response program, and Site Field Investigations. These units within this section include staff which does the bulk of data-gathering activities for DERR.

2.2 Quality Assurance Policy

The DERR, as of this writing, does not have an established Quality Assurance Policy , but rather follows the USEPA Region V Superfund Division, established Divisional Quality Assurance Policy (as indicated in section 1.1 of the *Superfund Division QA Management Plan, February 1999).* The aforementioned QA Policy statement is pertinent to all programs within the DERR - which includes district office activities. Some language from this Federal document has been included in this DERR QMP. The language adopted from the Region V SFD QMP document and included herein reflect acivities that the DERR engages in, thus establishing and meeting the criteria for it to be considered a stand-alone document. Similarities in language were purposely done to reduce confusion between OEPA DERR and Region V SFD. Copies of the USEPA Region V SFD QMP will be made available to DERR District Offices and will also be a topic for annual staff QA training.

DRAFT OHIO EPA QUALITY ASSURANCE /QUALITY CONTROL (QA/QC) POLICY

The Agency is in the process of evaluating and establishing a quality assurance/quality control. An initial draft of that policy is presented below.

To ensure that sound environmental decisions are made using data appropriate for the decision, Ohio EPA will conduct all data collection and analysis activities according to scientific methods and techniques that have been sanctioned or approved by the scientific community and/or U. S. EPA. It is the responsibility of all managers and staff to follow this policy. The OEPA QA/QC Guidance Team intends to meet, at a minimum, on a quarterly basis. Development and completion of these QA policies is expected to occur by the 3rd quarter of 2001.

2.3 Quality Assurance Responsibilities

2.3.1 Quality Assurance/Quality Control Coordinator:

The QA/QC Coordinator serves as the central QA contact for all sections within the DERR. The QA/QC Coordinator is responsible, as appropriate, for;

Ž   Logging in and reviews of QAPPs, SAP's, SOP's and WP's - including the review status of each.

Ž   Assist project personnel with the DQO process and planning of site-related activities.

Ž   Maintain all files and records pertaining to the DERR QAPPs, Data Validation reviews, QA quarterly reports, and other significant QA-related material.

Ž   Review and approve QAPPs, SOPs, and SAPs.

Ž   Conduct, when needed, data evaluation for achievement of DQOs.

Ž   Assist, where needed, with laboratory audits.

Ž   Conduct, when necessary, on-site audits of the data-gathering activities.

Ž   Identify and provide on-going training to DERR staff on QA/QC issues and practices.

Ž   Assist DERR staff, when needed, with all other potential QA/QC-related questions and issues.

Ž   Serve as DERR liaison, when needed, to OEPA quality teams and work groups. One such team is the OEPA QA/QC Guidance Team, which consists of representatives from each Division within OEPA. Descriptions of this particluar OEPA QA/QC Guidance Team can be located in Section 3.0 of this document. Other OEPA teams and workgroups that might desire the assitance of the DERR QA/QC Coodinator are ones that include both technical and policy related issues. Participation on these teams is at the discretion of the team sponsor and may involve active participation to concept reviews.

The quality assurance/quality control coordinator is the DERR's Quality Assurance Manager.

The responsibilities of the quality coordinator with respect to the DERR's QA/QC function are:

Ž   coordinating the writing and approval of the DERR's QAMP, QAPP, SOP's, and any potential other practices and procedures associated with QA/QC, data collection and data evaluation.

Ž   being the focal point for the development and implementation of DERR's QA/QC policies.

Ž   assessing the effectiveness of the practices, implemented as contained in the QMP.

Ž   assisting the program management and staff in implementing QA/QC processes within their sections.

Ž   assessing and identifying problems or developing improvements in the quality practices associated with data collection and interpretation within DERR.

Ž   Assesses the effectiveness of the quality system of the DERR.

Ž   Coordinates and participates in providing QA training to DERR staff.

All responsibilities and authority for QA/QC activities are beholden to the DERR QA/QC Coordinator who works with individual staff and coordinates sign-off activities with DERR senior management. Please see attached flow charts (Exhibit 7 - hard copies) for the routine activities associated with the DERR.

2.3.2 DERR Managers responsibilities:

QA and QC roles and responsibilities of the DERR managers include continuing communication and coordination of the program goals and objectives. Managers also address QA and QC issues and concerns within the program by;

Ž   Review and recommend the required management-level corrective actions to the DERR Division Chief as well as the OEPA Agency Director.

Ž   Assist DERR staff with program and project oversight, including establishing annual goals and objectives.

Ž   Participate in mid-year and annual planing meetings with USEPA Region V.

Ž   Assist each District Office manager to ensure that program goals and objectives are

being met.

Ž   Review and approve annual staff training needs - to include QA/QC training.

Ž   Track program activities - to include items and issues involving QA/QC.

Ž   Coordinate and provide annual reports on program activities - including potential QA/QC issues and concerns.

Ž   Ensure that all applicable environmental programs for which management is responsible and which are performed by outside organizations for OEPA comply fully with QA/QC requirements.

Ž   Ensure that quality management is an identified activity with associated resources adequate to accomplish its program quality goals.

2.3.3 DERR Staff responsibilities:

DERR staff personnel are responsible for implementation of QA components into their specific activities. The primary responsibilities include:

Ž   Coordinate QA/QC activities through QA/QC Coordinator and program managers.

Ž   Ensure that the DERR program activities comply with established DERR QA components.

Ž   Ensure that all applicable external environmental programs and components for which they are responsible, including those which are performed by organizations other than OEPA, follow established DERR QA components.

Ž   Identify their individual training needs - to include QA any QA training.

Ž   Are both aware of, and familiar with specific QA/QC requirements for environmental data collection (or coordinate with QA/QC Coordinator to ensure these requirements are being met).

2.3.4 District Offices responsibilities:

The DERR District Offices (DOs) conduct themselves in a manner that is consistent with overall DERR program goals and objectives. The specific QA responsibilities are consistent

with the items listed above and are coordinated out of DERRs Central Office. DERR DO management conduct themselves in a manner to ensure uniformity of program QA activities on the District level.

2.3.5 Laboratory Quality Assurance Officer responsibilities:

OEPA DERR does not have a staff person as the Laboratory Quality Assurance Officer. The OEPA Laboratory is not under the responsibility of the DERR.

3.0 Quality Systems & Description

The previous section described how Ohio EPA/DERR is organized along its program lines to carry out its mission. The following information is taken from the OEPA Office of Quality and Accountability. The DERR generally follows the material, practices and procedures as they are detailed from the Ohio Office of Quality Services (see exhibits 5 and 6 - hard copy). DERR District Offices (DO) follow the established QA activities, planning, and training as it is established within the overall program of DERR. The Central Office QA/QC Coordinator and DO management ensures that consistency of QA practices are being implemented in the District Offices.

The Office of Quality and Accountability has been established to coordinate the Agency's planning, performance reporting, quality improvement and quality assurance/quality control functions. This coordination is done by using a team approach to managing these functions. A Strategic Management Council guides the coordinated strategic planning and management activities of the Agency to ensure the effective and efficient use of all resources to establish and attain the Agency's vision, mission and goals. The quality and process improvement activities are lead by the Quality Service through Partnership steering committee. Implementing and executing the Quality Service through Partnership program for the Agency's quality assurance/quality control functions is lead by the QA/QC Guidance Team under the leadership of the Agency quality coordinator. This section outlines how these teams are used to carry out the Agency's mission. Also, contained in this section is how the program divisions perform their specific environmental responsibilities and use their QA/QC procedures in managing their data.

Ohio EPA uses a guidance team approach to ensure that the proper QA/QC procedures as documented in the QMP are followed. Each division would name 2 people responsible for QA/QC in the division to be on the team. This would be written in their job description with a specified percent of time. The team would be made up of a senior manager overseeing the QA/QC in the division, and the designated division QA/QC manager, not the staff actually doing the work. Al Franks, Chief of the Office of Quality, Accountability, and Customer Service would coordinate the team. The team's primary responsibilities would be performance program reviews of QA/QC process as described in here with people both inside and external to the division understudy. The purpose of the review is to identify strengths and areas for improvement as well as compliance with the QMP.

     C   the QA/QC Guidance Team would designate sub teams or affinity groups of like skills or technology who meet quarterly to share ideas, examples or get new training. Some of these might be statistics, toxicologists or other areas as needed. The groups would support each other and help transfer knowledge.

They would be identified as technical experts in the agency and help foster multi-media approaches . They would research and recommend strategies for our QA/QC System including but not limited to: project plans, standard operating procedures, peer and cross-divisional reviews, and management assessments.

C   divisions set up their own management procedures for their Quality Systems, share best practices and receive approval from the team.

C   at present, we maintain a decentralized approach to our Quality System with the most technical expertise in our divisions. We will coordinate the effort from the Director's Office, but are empowering our divisions to continue to bring their best technical expertise forward. The QA/QC Guidance Team will formulate draft policies and make recommendations to the Director on the operation of the QA/QC efforts at Ohio EPA. The Director's Office will work to provide necessary resources in line with our budget cycles and other resource priority considerations. We will encourage the sharing of resources across division lines via the QA/QC guidance team to promote QA/QC agency-wide.

C   the technical tools such as QAPPs, DQOs, etc., are used in the divisions to ensure their quality system for ongoing work and special projects. The expertise in how to do this for a wide variety of work exists in the division. The QA/QC team's role will bring the right rescuers to bear when and where needed to share that expertise where and as needed.

•   the DERR QA/QC Coordinator serves as the representative to the OEPA QA/QC Guidance Team.

3.1 STRATEGIC MANAGEMENT

The Strategic Management Council's (SMC) role is to manage and improve the Strategic Management Process (SMP). Exhibit 1 (hard copy) displays the Strategic Management Process and describes the six phases of the process. The responsibility for executing the process starts with the director and proceeds through the deputies and chiefs to ensure that all parts of the Agency are functioning towards the same goals. The SMP covers all program divisions and district offices.

As can be seen by the diagram, all the work activities performed by management and staff are governed by the SMP. The programmatic strategic direction is established by the director and the deputies. The strategies to move in that direction are developed by the program and district management, then approved by the assistant director. After the budget is approved

by the legislature, annual plans are established by the program/district management and staff to focus on the areas in the strategies. In the last phase of the process, staff members with their management's guidance develop their individual work plans. In Section 8.0 Planning, the program divisions explain their specific processes for implementing the Agency plans.

The strategic management council's role is to improve the SMP and monitor its effective use by Agency personnel. Part of its improvement process includes auditing the phases of the process to see if they are completed according to the plan and time lines. Based on the results of these audits, plans are developed to improve the functioning of the process.

3.2 QUALITY SERVICE THROUGH PARTNERSHIP

Section 11.0 of this document describes the Quality Service through Partnership (QStP) process. As part of the QMP, the QStP process is used to improve the processes covered in this document and rectify any problems identified through program reviews or audits.

3.3 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

The responsibility to ensure that the proper quality assurance/quality control (QA/QC) procedures (as documented by this QMP) are implemented lies with the DERR QA/QC Coordinator. The QA/QC Coordinator is responsible for leading the development and maintenance of the QMP (please reference Section 2.0 for applicable responsibilities of the QA/QC Coordinator), and obtaining approval of the QMP by the DERR Division Chief and management.

3.4 DERR QUALITY SYSTEM AND DESCRIPTION

Within the DERR, the Quality System and Description content material is as follows;

Ž   Data Quality Objectives (DQOs) Process - The DERR quality system includes implementation of the DQO process for data-gathering projects, as it is deemed both relevant and appropriate. This systematic planning process is reflected in program QAPPs as well as project-specific QAPPs.

DQOs are qualitative and quantitative statements developed to ensure that data of known and appropriate quality and quantity are obtained. This data is utilized for the purpose of support in making specific decisions. The DQO process is a seven step planning approach used to prepare for data collection activities. It provides a structured, systematic approach for defining the criteria that a data collection design should satisfy, including when, where , how many, and how to collect samples; and

includes the tolerable decision error rates for the collected data. The DQO process helps investigators ensure that the collected data are of appropriate type, quantity and quality needed to support environmental decisions. The DERR utilizes the following documents when considering and utilizing the DQO process; "Data Quality Objectives Process for Superfund" EPA 540-R-93-071, September 1993 and "Guidance for the Data Quality Objectives Process" EPA QA/G-4, September 1994. The systematic project planning process used by DERR staff may include implementation of the DQO process. Typically, a project scoping meeting is held by District Office staff to review site specific conditions and requirements. This activity incorporates the applicable QA requirements for environmental data collection and other site-specific QA related requirements.

Ž   Quality Assurance Project Plans (QAPPs) - All work performed for or by the Ohio EPA/DERR that involves the collection of data will be done according to an approved QAPP. The QAPP is developed, reviewed, approved, and revised by the DERR QA/QC Coordinator. Final approval of this QAPP is done by the appropriate QA representative at USEPA Region V. Other approvals include the DERR Division Chief, Field staff supervisor, and Program Grants Coordinator. The QAPP is developed on a project-specific basis and is routinely reviewed and revised on an annual basis. This activity is coordinated with input from the USEPA Region V QA staff. Each step of the QAPP process is the responsibility of the DERR QA/QC Coordinator. The QAPP documents how environmental data collection operations are planned, implemented, and assessed during the life cycle of a project or task. The purpose of the QAPP is to define and detail how the various quality assurance components and activities will be implemented for a particular project.

DERRs Remedial, and Emergency Response Sections collect and manage environmental data. Each unit maintains a process for QAPP preparation, review and approval. This is then coordinated through the DERR QA/QC Coordinator. Most requirements are grant-specific and follow the desires of USEPA Region V. QAPPs will be prepared primarily by the QA/QC Coordinator with influence by different parties, depending on the project. QAPPs for sites that involve a Potentially Responsible Party (PRP) lead will be prepared by the PRP or their contractor. These site-specific documents require approval from the OEPA/DERR. These documents usually obtain division approval from the DERR QA/QC Coordinator, however, District Office Management often coordinates the site-specific approvals with DO staff. DERR project managers are not responsible for the preparation of QAPPs. This responsibility, again, is the role of DERR QA/QC Coordinator. DERR project managers may, at times, review project-specific QAPPs and therefore, may also approve the QAPP. This activity and authority is currently under re-consideration and therefore subject to change in the immediate future. QAPPs for Fund lead projects will be prepared by OEPA/DERR or its contractor for that particular project.

QAPP preparation, reviews, and approvals are primarily conducted by the QA/QC Coordinator, who upon agreement with the content, signs off on the document. The QAPP approval authority is currently under consideration and subject to change in the immediate future. This change will then clarify this authority to the DERR QA/QC Coordinator. The DERR QA/QC Coordinator is also responsible for organizing, reviewing and approving all Standard Operating Procedures (SOPs) for the Division. SOPs are reviewed annually and updated as needed. DERR field staff typically write the SOPs and then are submitted to the QA/QC Coordinator for final approval. SOPs are revised and new ones created as technology and procedures change. Finally, the DERR QA/QC Coordinator assists DERR staff with issues involving technical assessment (laboratory reviews, audits, etc., as well as reviews, audits, etc., of field practices and procedures) and data quality assessment (DQA). The QA/QC Coordinator has the greatest responsibility for implementation of the Quality System within DERR. DERR management, however, also plays a major role in this implementation process. This is especially true at the District Office level. There is only one position with in DERR that is dedicated to the QA activities within DERR. There is currently no established mechanism for evaluation or assessment techniques for evaluating the DERR Quality System. It is a future goal to implement a complete DQA system for DERR projects. This assessment will provide adequate evaluation of the Quality System within DERR.

4.0 Personnel Qualifications and Training

Personnel qualifications are established by the hiring manager and the Office of Employee Services, as required by the State of Ohio's Administrative Code. These qualifications are documented in the employee's position description. Ohio EPA follows requirements in the Ohio Administrative Code and the OCSEA bargaining unit agreement which state that each person must have a performance evaluation annually.

Personnel qualifications are assessed and training is provided through the Agency's Professional Development Program. Employees and their supervisors create individualized professional development plans (PDP) that identify areas for improvement, training needed and opportunities to apply new or improved skills. Training is provided through class instruction and on-the-job mentoring.

4.1 Training Policy

Management and staff are expected to continually develop knowledge and skills needed to provide excellent service to Ohio citizens. They are also expected to develop skills that will be needed for forecasted Agency services. The Agency assists them through its Professional Development Program.

4.1.1 Basic training required for all program staff:

OEPA uses an individualized program called Probationary Professional Development. Managers create probationary PDPs for all new employees that are used throughout the employee's probationary period (which lasts 6 months). QA is (or can be) included in these plans. All new employees must take New Employee Orientation at which time details of basic and specific training are conveyed to staff.

4.1.2 Special training for staff to perform special assignments:

This is division-specific training that would be included in either probationary PDPs or permanent employees' PDPs.

4.1.3 Safety training for field and laboratory personnel:

Beth Wolf, OEPA Health and Safety Coordinator, implements this training through the use of contractor support. This training takes place on an on-going basis throughout the year.

4.1.4 QA training for all technical staff:

This is division-specific training. However, the training can be identified and offered through the PDP Programs described above.

The type of QA training required to perform certain QA duties such as project planning using DQO process; QAPP development, review and approval; and data review and validation is done on Division-specific basis. The DERR does not currently implement annual QA training for its staff, however, this specific training will become an on-going, annual feature for District Office staff. This training will be provided by the DERR QA Coordinator and will include various QA features as well as specific technical issues (such as new sampling procedures, analytical methods, and data interpretation). Files (and/or a tracking system) of these various trainings will be kept for each DERR staff person and will be updated appropriately. These files can then be utilized to identify completed training as well as identify any QA or technical needs of the DERR staff.

The support mechanism for QA activities within the [DERR, DHWM, DDAGW, DSW], including orientation for new hires on QA policies and practices does not currently exist on an Agency-wide basis. The current support mechanism for QA activities within DERR comes from the QA/QC Coordinator. QA orientation for new hires is made available from the QA/QC Coordinator at the specific request of the District Office management when a new employee begins service.

4.2 Certification Requirements

Each division identifies the statutory, regulatory or professional certifications required for its employees to perform Agency operations. The processes for ensuring employee certification are explained below:

Within DERR, programmatic and technical/safety training is necessary for DERR staff to satisfactorily perform their jobs. Health and safety training is required for personnel who engage in field activities. This training primarily consists of an initial 40 hours of training together with annual 8-hour refreshers. DERR Technical Staff, Site Coordinators, and Field Staff (SIFU & ER staff) are required to attend appropriate courses offered by the CERCLA Education Center and/or other applicable and appropriate entities, such as the Northeast Environmental Enforcement Project and the Mid-West Environmental Enforcement Association. Other specific training and certifications are identified through oral personnel reviews between management and staff. This is typically done on an annual basis. Finally, individual staff requests for training and certifications are done routinely and occur if appropriate need, time and funding exist for the particular training.

4.3 Training Process

Training needs are identified from courses included in professional development plans and will also be identified through the DERR staff training files. The Office of Employee Services maintains a database of Agencywide training needs and the DERR QA/QC Coordinator maintains a file of DERR-specific QA-related and technical training needs of DERR staff.

Technical training is offered through each division. Quality improvement, non-technical training is offered through the Office of Quality and Accountability. Management and other nontechnical training is offered through the Office of Employee Services and the divisions. Employees apply the skills learned in training through guidance from their supervisors, managers and coworkers.

Currently, most divisions keep transcripts of their employees' technical training, and the Office of Employee Services keeps transcripts of some nontechnical training. Beginning FFY 00, the Office of Employee Services will keep transcripts of all Agency training in one database. This language describes the basic process and procedures utilized to conduct basic, special, and continuing training within the Ohio EPA. The DERR participates in this Agency-wide approach to these types of training. QA related and technical training will be tracked by the DERR QA/QC Coordinator for the DERR staff.

4.4 Staff Proficiency

Staff proficiency in critical technical disciplines is maintained and documented through the Agency's Professional Development Program, as explained above. Again, this done on an individual basis and is done, at a minimum, annually for each staff person. DERR conducts its evaluation and review of staff proficiency on an annual basis as well.

4.5 DERR Training

The DERR QA/QC Coordinator routinely provides technical training, or arranges for certain technical training for the DERR staff. The DERR QA/QC Coordinator is also responsible for providing training to DERR staff on the DQO, DQA, and QAPP preparation process. There is no specific Quality Assurance Training being conducted on an Agency-wide basis. Should this training become available, DERR staff will participate in this training. Specific DQO training has been developed by the QA/QC Coordinator, but has yet to be fully implemented to the entire DERR staff. Plans are currently being made to present this to DERR staff.

5.0 Procurement of Items and Services

The OEPA/DERR follows the established Agency guidelines for the procurement of Items and Services. If, for example, sub-contractors or LOE contractors are utilized for a specific project, appropriate documentation (project specific as in development of DQOs and QAPPs, as well as personnel qualifications) are submitted (for review and approval by the QA/QC Coordinator) during the bid period for procurement of such services as deemed necessary. The following information is specific to the activities and practices implemented on an Agency-wide basis.

The Ohio EPA's Office of Fiscal Administration has the administrative oversight for the Agency to ensure that its divisions, districts and offices make purchases that meet state and Federal procurement requirements. The Agency has developed a standard fiscal procedure on purchasing guidelines (Exhibit 2) that all divisions, districts and offices follow when making purchases. Included in that procedure are request for proposal (RFP) (Exhibit 3) requirements that clearly set forth the criteria for the evaluation, selection, quality, inspections, audits and examination of the items and services to be provided.

For example, the Agency's Air Lab recently prepared an RFP (Exhibit 3) for six ozone monitors which contained the above criteria. The selected vendor was asked to provide a sample unit for our evaluation which was found not to meet our specifications and quality requirements. The sample unit was, therefore, returned as not acceptable.

Another example can be found in the public water criteria for labs throughout the State of Ohio. An onsite evaluation of the lab is performed for such criteria as quality, types of equipment and testing parameters. If all criteria are met, Ohio EPA Contract (Exhibit 4) is entered into with the selected lab.

5.1 DERR

DERR follows Ohio EPA's standard fiscal procedures in procuring the services of vendors to perform tasks in support of the Division's and Ohio EPA's goals and strategies. These procedures include using the Request for Proposal (RFP) requirements that clearly set forth the criteria for the evaluation, selection, quality, inspections, audits and examination of the items and services to be provided. In procuring the services of a contractor to provide the Division with analytical laboratory services, DERR requires potential vendors to provide the following in their RFPs:

- Ž Contractor Profile;
- Ž Personnel Profile and Qualifications;
- Ž Technical Qualifications;
- Ž Identification of the Analyses that can Performed On-Site by the Bidder;
- Ž Itemized List of All Applicable Instrumentation Currently Operable On-Site to Complete the Analyses Listed in the RFP;
- Ž Concise Description of the Laboratory's Accommodations, Testing Areas, Heating and Ventilation Systems, and Monitoring Systems;
- Ž All Standard Laboratory Operating Procedures;
- Ž A Complete Copy of a Written Laboratory Quality Assurance Project Plan (prepared in accordance with U.S. EPA's guidance: "Preparation Aids for the Development of Category 1 Quality Assurance Project Plans," EPA/600/8-91/003, February, 1991 or comparable QAPP-related guidelines);
- Ž An Example Hard Copy of an Analytical Deliverable for a TCLP VOC Analysis;
- Ž An Example of Diskette Deliverables on a 3.5" Disk;
- Ž Performance Evaluation Results from a Minimum of Three Applicable State Certification Round Robins;
- Ž One Copy of the Most Recent State or Government System Audit; and
- Ž Names, Addresses, Phone Numbers and Contacts for all Companies Currently Used for Disposal of Hazardous Waste Streams Generated as a Result of Lab Operations.

DERR evaluates the bids pursuant to the criteria listed in the RFP package and selects a vendor. Ohio EPA's Legal Section assists DERR in negotiating a contract with the selected vendor. The contract then must be approved by Ohio EPA's Director's Office. A DERR staff member in the Central Office oversees the contract and acts as the Division's liaison with the District Offices and the contractor.

The Chief of Fiscal Administration requested that the fiscal staff for DERR create a Fiscal Desk Manual which documents step by step procedures on how the agency's fiscal policies are implemented. This desk manul was completed in January 2000 and was distributed to all the DERR fiscal staff to ensure consistency in the processing of procurement. Please refer to Exhibit 4 for hard copies of Procurement of Items and Services that DERR follows.

The DERR contracting staff also has a DRAFT Contract Administration Guidance (March 4, 1999) which covers roles, ethics in contracting, and contracting procedures to ensure consistency in how contracts are implemented as well as how to acquire the best performance from contractors. Please refer to DERR-00-DI-010 (exhibit 4) for detailed discussions regarding these issues.

For a description of the process used for the evaluation of services received under DERR contracts, please refer to DERR-00-DI-010, Contract Administration, Invoices (page 18).

Regarding a description of the process used for the evaluation of goods - this process is usually conducted by Agency Central Support Staff that maintain the Agency's Inventory.

Finally, to ensure that the contracts DERR procures will provide the appropriate services and data needed, DERR follows the Draft Contract Administrative Guidance, which enlists a team of four people, a technical contact, a contract administrator, an attorney and in the near future, a Data Quality Objective Facilitator (DQOF). The DQOF plays an essential role in scoping out projects, following the 7 step process to ensure that the scope of work addresses the data gaps and that the project stays focused. The DQOF is to be the DERR QA/QC Coordinator.

There is no specific Ohio EPA/DERR policy on laboratory audits. Whenever a RFP for laboratory services is generated, language is included which makes a laboratory audit a mandatory component of the RFP decision process.

Laboratory audits generally follow a thorough, systematic on-site qualitative inspection of facilities, equipment, personnel, training, procedures, record-keeping, quality control practice and data validation, data management, and reporting aspects of a system. Laboratory audits will also include an evaluation of past performance evaluations that are a part of the QA system for the particular laboratory. When auditing a particular lab, the DERR follows its own checklist/procedures titled, *"Laboratory System Audit Checklist,* January 1996. The DERR does not currently follow any specified SOP for this process, however, such a formalized process, similar to as it is currently implemented, will be created in the near future. Please note that only the laboratory which is chosen through the contracting RFP process is the only lab that goes through an audit.

For obtaining analytical and technical services within the Ohio EPA some formal and informal processes exist. For programs where more routine assistance is requested, a formalized process has been developed. For obtaining assistance with groundwater and hydro geological issues a Memorandum of Agreement (MOA) exists between DERR and the Division of Drinking and Groundwater which is updated annually. The MOA outlines the roles, process, funding and annual workload projections. A work request/tasking form provides the details on what service is specifically requested for each task and what turn-around time is needed. A tasking document is provided by DERR's Site Investigation Field Unit to task any surface water assessment work from our Division of Surface Water.

For less frequent requests for assistance from, for example, the Division of Solid and Infectious Waste or the Division of Hazardous Waste Management, each district has a

working relationship where they will provide the appropriate division documentation outlining the details on the type of service or review desired. For any analytical chemical analysis from our Division of Environmental Services (DES), we use the DES standard process and contact their sample receiving personnel to coordinate sample receipt and analysis.

6.0 Documentation and Records

The Ohio Revised Code provides clear directives to State of Ohio public offices and departments regarding the establishment and implementation of effective record management programs. Section 149.34, O.R.C. requires the head of each State agency to establish, maintain, and direct an active continuing program for the effective management of the agency's records, including the creation and submittal of record retention schedules and the proper storage of agency records. Section 149.351, O.R.C. provides that all records are the property of the public office concerned, and further provides that such records may not be removed, transferred, destroyed, or otherwise disposed of except in accordance with law.

! The proper maintenance and disposition of records is generally accomplished through the creation and utilization of record retention schedules. The Ohio Department of Administrative Services and its record administration program is responsible for the creation of "general schedules" for categories of records that typically are common to various State departments. Each State department possessing records belonging to such categories must then manage those records in accordance with the applicable general schedule, or submit for approval to the Department of Administrative Services, the Auditor of State, and the State Archivist individual schedules designed to apply to its records. Once such agency-specific schedules are approved, the agency's records must be managed in accordance with the approved schedules.

! Each Ohio EPA office and division maintains its own records, and is responsible for the proper management of its records. With assistance from the Agency's Legal Office, the record management personnel in each division and office create record retention schedules, oversee the management of records in accordance with the approved schedules, and arrange for the storage and retrieval of records from the Fireproof Records Center, the secure off-site commercial storage facility utilized by the Ohio EPA. The Legal Office distributes guidance documents pertaining to record management and provides, with the Department of Administrative Services, periodic training with respect to record management programs.

! Retention schedules are designed to adhere to all statutory or other legally-imposed retention periods, and in addition, to reflect the administrative, fiscal, and historical value of record categories. Records stored at the Fireproof Records Center may be destroyed only upon the submission of a Records Destruction Authorization signed by three different Ohio EPA designated representatives.

The DERR maintains and organizes its records and record retention through a Records

Management Officer. It is the sole responsibility of this individual to ensue that all aspects and requirements of records organization and retention are followed. Routinely, and when needed, review of the DERR records and documentation procedures is conducted and revised.

6.1 DOCUMENTATION AND RECORDS - DERR

Records are kept for all the major business processes (e.g. contracts, grants, Voluntary Action Program Certified Labs & Certified Professionals, fiscal records w/i our Office of Fiscal Administration, and site records, time card and cost recovery records, etc.) within the division. Appropriate standardized file structures have been developed for each business process. A mix of hard copy records and electronic records are kept as appropriate. Databases have been developed for many of the business processes to document receipt of records.

C   Like any major business, tracking systems have been developed for appropriate major business processes. The state (Central Accounting System) and agency have electronic databases that captures all purchases and provide fiscal accounting within the agency. The agency also has an agency-wide process of inventorying equipment as soon as it arrives at the agency. The agency also follows an annual strategic management process to determine workloads and needed resources to plan, prioritize and fund work based on available resources. Our District Offices are the official repository for remedial records which are filed and documented following a standardized site file structure and tracking system developed using Total Quality Management principles. Like-wise our Central Office is the official repository for Voluntary Action Program records which are filed and documented following a standardized site file structure and tracking system. Emergency response calls and spill responses are entered into a database; we are currently in transition from our historical FoxPro application to an Oracle/Powerbuilder application.

C   Extensive documentation has been developed for staff to follow for the various business processes. The Office of Fiscal Administrative has a large manual titled, "Ohio EPA, Office of Fiscal Administration's Division of Emergency and Remedial Response Desk Procedure Manual" which includes among various other categories the step-wise procedures which staff follow for purchasing, processing and paying invoices, travel expense reports and spending authority adjustments. The Division of Emergency and Remedial Response has a huge Policy, Procedure and Guidance Manual which includes among numerous other topics, Contract Administration Guidance, several guidances in relationship to Emergency Response Records Management and data entry protocol, Fiscal Management and Record Keeping Procedures, a users manual for using electronic time cards for documenting work,

Cost Accounting/Cost Recovery Procedures and Methods. Our Voluntary Action Program has written procedures for receipt of records and data base documentation of records and filing of records. A division-wide standardize site file structure for Remedial and Voluntary Action Program site records has been developed. DERR has also written DERR Remedial Site File Structure Guidelines which staff are to follow.

C   Data entry personnel check data once it is entered for any transcription errors. Throughout all our business processes there are various data quality checks and auditing processes implemented to check data quality. A data systems coordinator quality checks all our emergency response calls and spill response data entries to evaluate for transcription errors and accurate reporting.

C   References to QA documents such as QAPPs, SOPs, etc. are addressed in previous sections of this QMP. This information includes language which covers the preparation, review, approval and revisions to these QA documents. Please refer to the previous QMP sections for this material.

7.0 Computer Hardware and Software

Much of the function relating to Information Management and Technology at Ohio EPA is centralized in the Office of Data & Systems (D&S). This Office, which reports to the Deputy Director for Management Systems, provides leadership and coordination in taking an Agency-wide approach to managing and delivering the Agency's information resources.

Data & Systems is responsible for long-range Information Systems planning, setting Agency-wide hardware and software standards, programming for major critical systems, administration and support for the Agency's wide area network (and the Central Support local area network), system administration for the Agency's database servers, and database administration for all critical databases. D&S also provides data entry support services for data not directly entered by system users, and coordination and approval for all computer-related procurements and acquisitions.

Those centralized functions are complemented by information management units within individual divisions and districts, which may receive guidance and support from D&S, but which report directly to the management of their own organizations. These units are generally responsible for day-to-day administration of departmental local area networks; maintenance and support for individual desktop hardware and applications; programming for more localized, less-critical systems; and development and production of reports and queries from local databases, as well as from Agency-wide databases. Geographic information system (GIS) services are frequently provided by these units, and computer and peripheral hardware and software acquisitions often originate there, as well.

Another body, the Data Management Coordinating Committee (DMCC), is a standing organization, involving all programs and districts, that has been chartered by senior management to develop policy, procedure, and standards for adherence to the Agency's Enterprise Data Model (EDM). The EDM is the Agency's blueprint for the structure and form of all shared data in the Agency. It defines specific data structures, business rules, and data formats, as well as coding, and referential integrity standards for core data used by all major Agency systems. Also associated with the EDM (and developed by the DMCC) are standards for coding textual information and addresses and for defining and reconciling facilities among programs. Procedures developed by the DMCC also specify who in the Agency may update shared data in the Core databases, and under what circumstances. Many of these DMCC policies are implemented in the database itself by means of rules, roles, triggers, and procedures.

7.1 Entry of data into the databases is generally accomplished in one of three ways:

- The regulated entity or lab enters the data itself, using Agency-developed PC-based data entry modules (DEMs) and forwards a file to the Agency electronically. These DEMs are specifically designed to work with each of the Agency's major programmatic systems, storing data in exactly the same formats and enforcing the same database constraints as the central databases. The DEMS do validity checking on individual fields, and also do completeness checking to assure that all required fields and forms are complete, checking for dependencies of one data field on the content of another, perhaps even on another form. DEM output may be sent to the Agency on hard copy, on floppy disk, or by e-mail. If e-mailed, a receipt is sent to the sender. Those receipts are logged and the logs are manually compared to files actually entered into the systems, as a check against lost data.

- Data & Systems' media conversion staff enter and verify transaction data, which is entered into the databases through batch production cycles. Both the data entry programs and the production cycles screen for valid data in fields. Professional data entry operators use a double-entry approach to create batch transactions for input to various systems. A different operator verifies each batch than originally entered it. Batches are created in the program offices, with logs of the individual forms in each batch. Batches are also logged in D&S and transaction files are associated with each batch. Upload procedures are manually checked to assure that the file associated with each batch received was passed to the system for processing. Program staff then verify that all batches were processed and that the correct numbers of forms or records were processed in the run. All batch data entry is done according to pre-established schedules for both receipt of data and completion of entry, in order to meet timeliness requirement..

- Program staff use the entry capabilities of programmatic systems to enter information. The programmatic systems, being designed specifically to handle data stored for each program, have built-in mechanisms to screen for valid data and appropriate data relationships. A program person is also in a unique position to evaluate the quality of the data being entered and to spot potential errors or inconsistencies. Specific procedures and processes for assuring accuracy and timeliness of data entry vary with each program.

7.2 **Hardware Acquisitions**

Hardware acquisitions normally originate in the division, office, or district that has need for the equipment. Originators are welcome to explore products in the marketplace to get an idea of what options might be available, at any given time, to meet their business needs and of what price ranges they should expect. They are, however, also encouraged to seek guidance from the Office of Data & Systems early in the acquisition process. The Ohio EPA has adopted hardware standards for many common items one might seek to procure, from desktop personal computers, to GIS workstations, to file and print servers, to large multi-processor database servers. These standards have been determined by D&S based upon a variety of factors, including suitability for the Agency's overall business needs, product reliability, compatibility with other Agency standard equipment (and previous standards), expandability, expected life cycle, vendor reputation, and others. The standards may include a range of vendors and products, or may be very specific as to vendor and model, depending upon the equipment in question. The originator of a purchase request is informed of the standards that apply early on.

While most of those standards are documented in the Agency's Long-range Information Technology (IT) Plan, that plan is only updated every two years. Obviously in the technology field, standards are likely to change or be updated more often than that. The Administrative Assistant (AA) to the Chief of D&S coordinates all computer-related purchasing within the Agency and *acts as a clearinghouse for any new or revised standards that may apply*. That individual also provides guidance and information regarding the latest products, their availability, and best sources and pricing.

The State of Ohio also has very specific computer-related acquisitions policies and procedures, of which the AA is knowledgeable. The procedures are described here not just to document a bureaucratic process, but because they offer, at each step of the process, a requirement for assessment of the suitability of the requested equipment for it's desired purpose. All acquisitions must be part of the long-range Information Technology Plan, developed by each agency on a biennial basis and submitted by the Director. These plans take a long-term look at agencies' information management vision and strategy, based upon internal and external business drivers. They then lay out the specific projects to be undertaken during the upcoming biennium and specify the acquisitions and procurements, in general terms, that will be required to support each project. Every computer-related purchase (hardware OR software) must receive a pre-approval from the Ohio Department of Administrative Services (DAS), Division of Computer Services before being processed and, in order to receive that pre-approval, the IT Plan project in which the acquisition was described must be referenced. The pre-approval request must be signed by an authorized individual, who, at Ohio EPA, is the Chief of D&S.

For purchases under $25,000, pre-approval authority is delegated by DAS to the Agency data processing manager, in our case, also the Chief of D&S. The Chief's AA tracks and coordinates the issuance of all pre-approvals. This process ensures that each and every computer-related purchase in the Agency, whether requiring DAS pre-approval for $25,000 or more, or receiving internal pre-approval under the Agency's "blanket" authority, passes by the chief of D&S for signature and approval. Acting in this gate-keeping role is one way in which the Chief of D&S is able to ascertain that appropriate research and evaluation has been done to assure that the hardware being sought is appropriate to support programmatic purposes and specifications, including any QA issues. Any questions regarding suitability, appropriateness, or standards compliance must be resolved before the purchase is approved.

Both the D&S Chief and the AA, as well as the Department of Administrative Services, utilize the pre-approval process, then, to examine the details of each purchase for conformance to standards and, equally as important, for confirmation *that the technical specifications fit the specific requirements of its intended purpose.* The choice of equipment must also exhibit an attractive price/performance ratio in comparison to other equipment available, or be cost justified by a particular technical specification not available elsewhere. Issues of product quality, reliability, and support are examined thoroughly. Other specific expertise within D&S may be called upon to assist in evaluating the purchase request. For example, the Technical Services Manager is frequently consulted for input regarding hardware specifications and compatibility. If the purchase fails to meet any of the above criteria, D&S will work with the requestor to pursue other options, until all hardware-specific objectives, as well as those described above, are met.

Changes to existing hardware configurations generally require a purchase of some kind, even if just for contracted maintenance, and are therefore subject to exactly the same scrutiny. Because of the complexity of the Agency's Wide Area Network, and the inter-operability of its many components, even a change requiring no purchase will need to be coordinated with the D&S Technical Services Manager. This is the same individual who is frequently consulted regarding new purchases, and who, as the person responsible for the continuous operation of the Agency network, is attuned to the many factors involved in a successful hardware configuration. Any potential issues affecting the integrity of hardware components or their ability to serve the Agency needs for which they were intended are immediately brought to the attention of the Chief of D&S. As with new purchases, D&S then works with the individual in question to make certain that any changes imposed on the hardware will allow it to still meet all of its original (and any revised) objectives.

Once received from the vendor, all equipment is first inspected and checked against the

original purchase order by Receiving personnel, to assure that all specified items are received and in good order. Frequently those personnel, because of the technical nature of the acquisition, require assistance from D&S or a Division/District computer technical person in evaluating the completeness and correctness of an order. Equipment is then turned over to computer technical staff, either in D&S or in the program divisions or district offices, as appropriate. That person then installs the equipment and evaluates and tests it against the original specifications. Further testing and evaluation is then performed by the programmatic individual or group that originated the request. Any problems encountered at any of these stages are brought to the attention of the vendor for resolution. The State does not consider itself obligated to accept or pay for any item that does not perform to specifications.

7.3 Software Acquisition and Development

For many software applications, the Agency has also set standards. This is especially true in regard to some of the more ubiquitous software products and applications, such as operating systems, e-mail/groupware, word processing, development tools, query tools, database managements systems, GIS, virus checkers, and backup software. Most of these products are kept under maintenance by D&S, via site licensing agreements for the entire Agency, and are not open to selection by any user office or division. The software choices selected as standards are generally made by a team of technical experts from D&S, working in conjunction with stakeholders to examine functionality, product quality, appropriateness to Agency business needs, compatibility with other existing standard hardware and software, price/performance, complexity of internal support, vendor reliability, market share, stability, vendor support, and openness, among other criteria.

For products not subject to standards, acquisition of off-the-shelf software follows exactly the same procedures as those described with respect to hardware. The pre-approval process applies to software, as well as hardware, and offers D&S the same opportunity for scrutiny and evaluation. Similar evaluation criteria to those used for hardware decisions apply, and the same level of technical expertise is utilized for purchases where the product has not already been examined.

Custom software, on the other hand, is acquired both through contractors/consultants and through in-house development. Contracts for major systems may be out-sourced to contractors via Sealed Competitive Proposals, through the Ohio Department of Administrative Services (DAS). Proposals, from contractors who have requested inclusion on the State's bidders list, are solicited by means of a Request for Proposal (RFP). The RFP includes a fairly detailed exposition of the State's system needs (to the extent known), including business processes to be supported, functional requirements, inputs and outputs, as well as a

background and context for the systems development effort. It also describes an agency's information management approach, any standards that apply, and a list of qualifications and requirements for various team members that contractors will propose in their responses. Contractors must then submit a response that includes a contractor profile, financial history, development approach, personnel profiles (showing how each team member meets required qualifications), a detailed work plan, and cost summary.

Proposals are evaluated by a team of individuals from the program division requesting the contract, D&S, and DAS Acquisitions Management. Usually Ohio EPA opts for fixed-price contracts, based upon a set of "Deliverables" pre-defined in the RFP. Contract awards are made on a basis of the best normalized price/performance ratio, calculated as the fixed cost proposed, divided by total evaluation points received. Proposals not satisfying required RFP elements are eliminated, to ensure that only quality proposals are evaluated. D&S evaluators always look for a well-defined systems development methodology and a thorough approach to system testing by the user, as part of the evaluation. These crucial steps in the process help lead to a better-defined and ultimately more reliable system.

All of the major development projects bid by the Agency have included, as specific requirements, the conduct of Joint Application Design (JAD) sessions for users, followed by the development of detailed system requirements specification (SRS) documents. These documents detail system/program functionality, including process flow, logic, mathematical formulae, etc., as appropriate, to be incorporated into the system. These specifications are submitted to staff and management for review and must receive sign-off by the project manager before coding may begin. A separate document, the Acceptance Test Plan details the exact behavior the completed program/system must exhibit in order to be accepted. This plan is also submitted to program staff and management, and becomes the guide for testing the system's functionality. System documentation and training are also separate deliverables in these projects. The documentation requirements include both technical documentation for programmers who must maintain the systems, and user-oriented documentation, which describe system processes, formulae, functionality and usage. Training of both programmers and users is required in all contracts.

As mentioned earlier, all major systems developed in and for the Agency use a common "Core" database, based on the Agency-wide EDM, that enforces business rules, referential integrity, and field validity for all data entered. In addition, all software systems must verify valid ranges and any other system-specific relationships that can be enforced in the software. Most of the major systems being developed also include a remote Data Entry Module (DEM), that is a stand-alone PC application which can be distributed to all Agency customers who supply data for the system in question. This data might be in the form of an electronic permit application or a periodic compliance report.

The DEMs operate on a local database (on the PC), which is an exact copy of the Agency database, with the same rules and constraints. The DEMs also provide context-sensitive help with filling out the electronic forms, and provide the same level of data verification as their associated systems. Completeness checking for all submissions is also performed prior to forwarding data to the Agency electronically. One can therefore make the assumption that, if data was successfully entered into the DEM, it will also successfully load into the database through the associated system. The context-sensitive "help" functionality also helps to assure data fields are interpreted properly and filled out correctly. D&S provides ongoing oversight to all major system development contracts.

In-house software development is accomplished in D&S, using as rigorous an approach as we demand from our contractors. Ohio EPA has developed its own systems development methodology using Rapid Application Development (RAD), and emphasizing front-end user input and prototyping, as well as thorough back-end testing. This methodology has been used successfully for several major in-house development efforts, and continues to evolve through a quality-oriented approach.

All systems developed, whether in-house or by contractors, are expected to enforce, to the maximum degree possible, the policies and procedures developed by the DMCC for managing Agency data. Programmers and contractors alike are provided with -- and expected to learn -- the background and objectives of the Agency's enterprise data management strategy, the EDM itself (including business rules and referential integrity requirements), address and other textual standards, and DMCC policies and procedures. An extensive and detailed training manual, documenting all of these components, is widely distributed.

The same manual is used to train system end-users, system administrators, and those involved in doing ad hoc queries of the database, in the issues cogent to their jobs. The manual is organized in increasingly complex modules corresponding to the material needed to perform increasingly complex and technical work with the database. The manual directly addresses the need, whether inputting data as an end-user or retrieving data for analysis, the importance of understanding at a detail level, the meaning and use of each data field, its relationship to other data fields, and the rules governing its use.

In summary, then, the Agency is attempting to promote high standards in data quality by:

- taking a strategic Agency-wide approach to data management,
- engaging in rigorous control over infrastructure management and system development,

- clearly defining data standards and policy, and
- educating contractors and staff at all levels appropriately in those areas.

7.4 THE DIVISION AND EMERGENCY AND REMEDIAL RESPONSE'S QUALITY PROCESS FOR PURCHASING HARDWARE AND SOFTWARE:

1)as appropriate, benchmark with the Ohio EPA's Office of Data & Systems, other division's, other states, U.S. EPA, environmental consultants and information management consultants to evaluate equipment and software options and consistency needs.

2)evaluate specs of 3 or 4 vendors products.

3)evaluate web sites, computer and environmental trade association publications that provide reviews of the hardware or software desired.

4)chose the appropriate hardware or software and follow the state purchasing process; for major information management software development, use an appropriate state contracting mechanism if work is to be out-sourced to a consultant.

5) get approval through the Office of Data & Systems to insure the hardware and software is consistent with the current Agency Information Technology Plan and agency wide needs.

6) work with fiscal administration and grant coordinators to ensure correct funding and fiscal codes are used for the hardware or software being purchased.

7)complete purchase order process and order equipment.

8) when the item purchase arrives complete receiving report, inventory and as appropriate register the hardware/software; state and federal inventory tags placed equipment as appropriate.

7.5 SOFTWARE TRAINING

The Ohio EPA and the Division of Emergency and Remedial Response do not have the financial resources to support a comprehensive software training program. When new software or upgrades are implemented agency-wide, the Office of Data & Systems provides introductory training and documentation on how to use the application. The Division of

Emergency and Remedial Response does have a Help Desk that provides assistance to end-users on hardware and software issues and questions. The state's union provides workforce development money for employees to obtain computer training. The agency follows the quality process of determining all training needs through an annual Professional Development Plan process. Appropriate software training needs would be placed in the Professional Development Plan with release time allowed if workforce development funding is available.

8.0 Planning

It is DERR policy that activities for collecting of environmentally related data are planned effectively. Quality planning must occur at different levels to ensure that data meets the DERR programmatic and quality goals:

- Program Specific
- Project Specific

8.1 Program Specific

The DERR Programs covered by this management plan are:

- Remedial Program
- Removal Program (Emergency Response, Site Assessment and Brownfields)

Developing DQOs when initiating a new program or incorporating major changes is a mandatory component of QA planning at the program level.   DQOs at the program level include all sources of error (e.g., design, sampling, measurement, or indicator error) that will accumulate and affect the interpretation of data.   Program level DQOs are defined by their ability to meet DERR program objectives discussed with desired certainty (allowable total error).   The acceptable probability of all sources of error established by decision makers are the DQOs. Data Quality Objectives are used as performance criteria for assessment of data quality for their adequacy in determining status and trends. The following documents are used for the implementation of the DQO process for superfund sites: "Data Quality Objectives Process for Superfund" EPA 540-R-93-071, September 1993 and "Guidance for the Data Quality Objectives Process " EPA QA/G-4, September 1994.

It is critical to include this QAMP as part of the planning when modifying existing programs or designing new programs. Although this portion of the QAMP outlines the minimum QA requirements for the DERR programs, it is likely that some of the programs covered by this QAMP may need more QA specificity and detail for implementing their programs. In that case, supplemental QA components should be developed as an addendum to this QAMP. This addenda will be included as appendices in future revisions of this QAMP.

It is responsibility of senior management in the program to ensure that line managers evaluate the need to include statisticians in the network design stage.

The work plan should outline QA activities for the upcoming year, including budget information.

All reviews of this material are conducted by DERR staff in coordination with DERR technical staff, where needed, and DERR senior management. Approvals of all such plans are done by DERR senior management.

8.2 Project Level Planning

A project is an organized set of activities within a program. The QAPP is a primary vehicle for documenting the required level of data quality for the project. Section 2 describes the process used to develop and prepare a QAPP; QAPP planning documentation should identify the personnel responsible for all components of the QAPP described there. DERR Site Coordinators (SC) will be responsible for the development of these components. As part of the project planning, SCs will develop schedules for development, review and completion of required documentation. Appropriate reviewers of the documentation should be identified.

The QA Coordinator, with assistance from the DERR Central Office (CO) Technical staff, will be included in the project planning process, and will assist DERR SCs to determine the need of statistical assistance. The QA Coordinator and CO Technical staff review the draft project QAPP & Work Plan. The review and approval process is as follows: NOTE: QA practices being used should be reflected as a well defined activity in each project plan involving the collection or use of environmental data.

Project level planning utilizes a team concept and DQO approaches to address concepts of customer satisfaction and acceptance decision uncertainty, respectively. Team project planning and DQO techniques are used in DERR projects to answer various project planning questions. These questions, which work in tandem with those of the DQO process are as follows: (note that this form of systematic planning process is required for all projects which generate environmental data with in DERR).

C   *What is the problem and how does it relate to the DERR Mission?*

Verbal statements of the general problem should be narrowed into succinct questions that are unambiguous and can be answered with specific data.

C   *Once the questions are defined, what are the variables that answer the questions?*

This process tries to define the smallest set of variables necessary to answer the specific questions raised in the first step. Then, these variables can be assembled into precise project objectives that illustrate how the variables will be measured and combined to answer the question.

¢ **What is the allowable level of uncertainty permitted that still enables the question to be answered?**

This step is necessary for the development of sampling design (i.e., where to sample, how many samples to collect, methods of analysis, etc.) and for the development of QA program to reduce the uncertainty to allowable limits.

¢ **Who are the customers and what are their expectations?**

The customers that will utilize the information must be identified. The plan must identify what types of information are needed (e.g., summary information, detailed trends, graphs, geographic information system (GIS), etc.). This information will assist the project leaders in focusing the project objectives, as well as determining the necessary data quality.

¢ **Who are the suppliers and what are their responsibilities?**

Details on the organizations participating in the project and their responsibilities are required to ensure that important phases and operations of the program are not overlooked. Project phases should include: management, design, implementation, methods development, planning and budget, information management, reporting, and QA.

In developing QAPPs and DQOs for various projects, DERR Site Coordinators should understand that each data collection activity must produce statistical valid data in order to meet both program and project-level objectives. During the planning stage of a project, the SCs should include a statistician and other technical staff to help determine how the measurement data will be used to answer the project's questions. Various design scenarios can be developed to assist SCs in utilizing their resources in the most efficient manner, while maintaining an adequate level of data quality.

Any and all related reviews and approvals of such project level activity is done by the DERR staff - both project level and technical, and the DERR senior management.

All QA-related documentation is reviewed and approved by the DERR QA/QC Coordinator.

Project-related data are reviewed and deemed acceptable, for the purposes of the particular project, by the DERR staff, DERR technical staff, and DERR management. The DERR QA/QC Coordinator assists in determining if the data is acceptable, or if perhaps a statistician is needed. This determination includes the potential for statistician involvement in the network design stage and involves the QA/QC Coordinator as well.

The DERR utilizes both internal and external guidance for the purposes of reviews and generations of project-specific DQOs and QAPPs.

8.3 Quality Assurance Project Plans (QAPP)

Various internal and external environmental projects that involve ambient air data collection may require a Quality Assurance Project Plan or **QAPP**. These plans are prepared by the DERR QA/QC Coordinator or by consultants for companies. The current format being utilized for these documents is the DERR, *Guidelines and Specifications For Preparing Quality Assurance Project Plans*, DERR-00-RR-008 (Sept. 1998). The format of the QAPPs will begin to follow the format specified in the "EPA Requirements for Quality Assurance Projects Plans for Environmental Data Operations", EPA QA/R-5. This format change is expected to be implemented in the 3rd quarter of Sate Fiscal Year 2002. The DERR-00-RR-008 content elements are as follows:

(1) Title and Approval Page
(2) Table of Contents
(3) Problem Definition/Background Project/Task Description
(4) Project/Task Organization
(5) Quality Objectives and Criteria for Measurement Data
(6) Sampling Process Design/Procedures
(7) Sample Handling and Custody Requirements
(8) Instrument Calibration and Frequency
(9) Analytical Methods Requirements/Procedures
(10) Data Review, Validation and Verification Requirements
(11) Quality Control Requirements
(12) Audits - Performance and System
(13) Preventative Maintenance
(14) Data Assessment/Validation Procedures
(15) Corrective Actions
(16) Routine Quality Assurance Reports

For the sake of avoiding redundancy, the aforementioned USEPA documents are indicated

herein by reference. Any and all inquiries into the content of these EPA documents can be obtain through review of these documents. A copy of each of these EPA documents will be located in each of the OEPA/DERR District Offices. The aforementioned documents are also made available (upon request) as a means to assit anyone developing and/or preparing a QAPP. Review of the QAPPs for site-specific projects will be conducted by the Quality Assurance/Quality Control Coordinator. The QAPPs must be approved before the project activities are implemented. It is the responsibility of the QA/QC Coordinator to review and approve project specific QAPPs. It is the responsibility of the PRP to ensure that appropriate revisions are made to these site-specific documents. For DERR-related projects, it is the responsibility of the DERR QA/QC Coordinator to write, review, approve, and revise the QAPPs as they pertain to the projects in which the DERR field staff are engaged.

8.4 **SOPs**

Program SOPs have been discussed in detail in previous sections of this QMP. The DERR utilizes the "Guidance For the Preparation of Standard Operating Procedures (SOPs) for Field and Laboratory Measurements" when developing specific SOPs. It should be noted, however, that this guidance is not necessarily followed to the letter, but rather utilized as a "boiler-plate" source for SOPs. SOPs generally document the protocols for performing routine or repetitive tasks related to some segment of the environmental monitoring activity. For Ohio EPA DERR, the QAPP is the essential documentation for all monitoring tasks. Each District Office, however, does have a copy of the OEPA DERR SOPs and will reference them, where appropriate, in project-specific documents. SOPs for sample collection and the acquisition of environmental data should include, at a minimum, the following elements:

    (1)   Title
    (2)   Specific Reference Number/Approval Line/Revision Number
    (3)   Scope and Application
    (4)   Limitations
    (5)   Safety
    (6)   Equipment/Equipment Composition
    (7)   Checklist
    (8)   Procedures

Please refer to the previous sections for language which discusses the process and procedures used to develop and document SOPs.

Project level SOPs are developed by individual parties engaged in the environmental data collection activities. These are most typically entities associated with the PRP for a site and

are environmental consulting firms. It is the responsibility of various consulting firms to develop their own SOPs and submit them along with other project QA documents. The DERR QA/QC Coordinator will typically review and approve these SOPs.

There is no formal process utilized by the DERR to review and approve QA-related data and documentation. As there exists no process, there does not exist any qualifications or training for DERR staff with regards to performing the function of reviewing project-level planning activity and QA-related data and documentation. This process is, however, scheduled for review and a formalized process, including appropriate training for DERR staff, should be implemented by the beginning of State Fiscal Year of 2003.

9.0 Implementation of Work Processes

9.1 Program Implementation

All programs that collect environmentally related data shall document their QA procedures and develop appropriate SOPs for their program.

All SOPs shall be documented in writing and made accessible to all persons involved in the implementation of the program. If SOP or written documentation of those SOPs do not exist for a particular program, it is the responsibility of the management of that program to ensure that needed SOPs are developed, appropriately reviewed, and made available to program staff. All SOPs are reviewed and approved by the DERR QA/QC Coordinator.

Where the program uses data generated by others, it must develop criteria and process with which to evaluate the acceptability of the data supplied. This ensures that the data fit within the margin of error constraints, as established by DERR program management.

9.2 Project Level Implementation

The Workplan and quality products outlined in the QAPP will be implemented as approved. Any changes to the QAPP will be documented and the QAPP amended. Any amendments to the QAPP will need to be reviewed and approved by the QA Coordinator and specific technical staff as appropriate. The project time line should include specific target dates for QA/QC products (e.g., QAPP development, auditing time-lines) so that progress and completion of the QA/QC activities can be tracked.

To ensure the quality of sampling activities undertaken either by the remedial contractors or the DERR Field Crews, DERR requires that all sampling be conducted in accordance with an EPA approved QAPP and Field Standard Operating Procedures.

Because of the nature of emergency response and removal action work, a site specific sampling plan is not prepared prior to the commencement of field work. The On Scene Coordinator (OSC) for each emergency response or removal action determines what sampling is necessary in the field during the removal action or removal site assessment, at which time the contractor collects and documents the necessary samples according to the approved procedures in the QAPP. At the discretion of the OSC, a sampling plan will be prepared and approved by the OSC. A sampling plan may not be required for emergency response site work.

There are rare instances when a contractor other than Level of Effort (LOE) is used for a large removal project. In these instances, a site specific QAPP will be prepared by the contractor. These QAPPs will be sent to the QA Coordinator for review, and the Site Coordinator/OSC.

Site assessment work is also performed by the DERR Site Investigation Field Unit (SIFU) and LOE contractors. A generic QAPP has been developed by each of these separate entities, and has been approved (by the DERR QA/QC Coordinator). Site assessment work performed by the SIFU will be conducted under the SIFU (PA/SI) generic QAPP. Site specific sampling plans are prepared for each site sampled by the SIFU and LOE contractors. Changes and amendments to a QAPP for work performed under a Cooperative Agreement (CA) with US EPA will be reviewed and approved by USEPA.

Managers and QA reviewer are responsible for ensuring that specific requirements of reports on the QA products are included in every work assignment and task delivery order that involves environmentally related data collection.

Internal DERR QAPPs are prepared, reviewed and approved by the DERR QA/QC Coordinator and are then reviewed and approved by USEPA Region V QA personnel. These internal, or "generic" QAPPs are specific to grant-related activities, thus the reason for having approval by USEPA Region V QA personnel. The generic QAPP for these activities will be approved by USEPA Region V. This generic QAPP covers Site Assessments and Brownfields Assessments conducted under CAS with the USEPA.

More detail regarding the Implementation of the DERR Work Process can be seen in the attached flow charts. These charts detail the flow of activities within DERR.

There is no formal established process or procedure utilized to inform managers and staff of their QA roles and responsibilities.

10.0   Assessment and Response

The DERR QA Coordinator, SIFU personnel, OSCs, and SCs are responsible for the periodic assessment and response to reports and projects they are engaged in to complete. Several activities are implemented to assess the effectiveness of the DERR programs. Content of the reports varies, but all are provided to DERR management for review. The basic mechanism for this activity is done through monthly reports. The monthly reports detail the specific site-related activities and make note of any problems encountered during that month of activity.

Additional assessments and response of PRPs and LOE contractor projects are achieved through periodic evaluations and reviews of submitted monthly reports. These reports are a requirement and are reviewed for completeness and adequacy specific to the project.

Additional quarterly reports are provided from DERR to EPA for those projects where funding via grants have been established. The content of these reports varies, but most provide a basic overview of activities and achievements for the specified time period.

10.1   Annual Review of the Quality Assurance Management Plan

The QA procedures described in the QAMP will be assessed annually and updated as necessary. The Quality Assurance Coordinator will be responsible for coordinating this effort and ensuring that appropriate changes are incorporated into the QAMP. Each manager will be responsible for ensuring that appropriate staff participate in the review of the Division-wide QAMP as well as reviewing any addenda to the QAMP. The program -specific changes will be provided to the QA Coordinator for incorporation into QAMP.

10.2   Audits and Assessment

Periodically, the DERR QA Coordinator will conduct both audits and assessments of the data-gathering activities within the Division and those activities that are contracted to the LOE contractors. These audits/assessments take place either on-site, or via review of log-books, SOPs, or analytical results. Results of such audits are provided to DERR SCs, SIFU personnel, and management for review and acknowledgment.

All audits are conducted according to established protocols and Field Standard Operating Procedures.

10.3 Data Quality Assessment (DQA)

The Data Quality Assessment process includes both the qualitative review of the project to determine if project-specific QA/QC practices are followed and project objectives are achieved, and the statistical analysis of data to determine if data obtained from environmental data operations are of the right type, quality, and quantity to support their intended use and quantitative evaluation of the documentation and procedures associated with environmental measurements to verify that the resulting data are of acceptable quality. A complete or partial DQA process can be performed during the assessment phase of data life cycle, which includes the planning, the implementation and the assessment phases. DQA is used to determine if the planning objectives were achieved. During the DQA, the data is first validated and verified to ensure that the sampling and analysis protocols specified in the QAPP were followed, and that measurement systems performed in accordance with the criteria specified in the FSOPs. Then the validated data is reviewed to determine if the quality of the data is satisfactory.

DQAs will be conducted and utilized on project by project basis. The results of the DQA should be used for two specific purposes. First, for the specific decision, it can be used in making recommendations to the decision maker to modify portions of DQAs. Secondly, it can be used as a guide for the planning and acquisition of supplemental data for the project.

The DQA process involves three major areas that begin with a review of the planning documentation and end with answer to the question posed during the planning phase of the study:

1.   **Project implementation**: Evaluate the following:

ᴄ   Field activities :Chain-of-Custody, holding times, number of samples and QC samples collected, number of locations sampled, method used for collection, approved procedures used, measurement conducted, field data validation conducted,

ᴄ   Laboratory analysis: parameters reported; holding times; approved procedures used, data validation conducted

ᴄ   Others: field inspection conducted, calibration checks on equipment, independent validation performed, corrective actions appropriately implemented for both filed and laboratory activities

2.   **Conformance to approved performance criteria**: Evaluate the field and laboratory

data through reviewing the data sets to determine the conformance to the requirements specified in the approved QAPPs. The QA Coordinator and SCs are responsible for initiating the data review/validation request to the respective program technical staff. Data will be assessed in terms of its: precision, accuracy, representativeness, completeness, comparability (PARCC).

3. **Achievement of project objectives:** Evaluates the following:

C   Specific objectives are met;

C   The overall project objectives are met

      S   Data adequacy is sufficient for overall project objectives (i.e., valid conclusion can be made)

      S   Regulatory decision can be made

C   The overall project objectives are achieved

      S   Data support original assumptions/hypothesis

      S   Data indicate the needs of establishing new assumption/hypothesis

QAD's guidance titled "Guidance for Data Quality Assessment, EPA QA/G-9, 1996, and the Data Quality Evaluation Statistical Tools, EPA QA/G-9D, 1996 (or DataQUEST software program) will be used as a guide.

10.4 Management System Reviews (MSR)

Management System Reviews, as a specific function of the Quality Process, are new to OEPA DERR and will be developed and implemented within the Sate Fiscal Year 2001.

Specifically, the MSR will be an on-site evaluation, interviews with District Office management and staff, and file reviews to assess the DERRs internal management structure and its documents to determine whether the DERR is implementing a satisfactory program. The DERR QA Coordinator provides input, when needed, as to the determination of the effectiveness of, and adherence to the established QA program and protocols, and the adequacy of resources and personnel provided to achieve the required data quality. Much of this is determined through implementation of the DQO process. A written report which identifies findings and makes recommendations to DERR management for relevant and appropriate improvements will follow each MSR. An appropriate time-line for implementation of the potential corrective actions will then be established for each of the MSR findings.

The QA program implemented within DERR will include (but not be limited to) the

implementation of the following items:

Ž   Project planning procedures that would include implementation of the DQO process.

Ž   Procedures for QAPP development, preparation review and approval.

Ž   Process and procedures for developing and approval of standard operating procedures (SOPs).

Ž   Implementation of the various QA program practices and procedures.

Ž   Process which reviews document control and records keeping.

The internal MSRs within DERR are primarily conducted by the DERR QA/QC Coordinator and the DERR Grant Coordinator. The rate of the MSR is typically at least once per year for each program element.

Results of the MSR are communicated to DERR management and appropriate staff persons. This communication takes the form of either written comments, or oral discussions. This follow-up process takes place shortly after the completion of the MSR.

Other assessment tools utilized for MSRs include, but are not limited to:

Ž   DERR annual planning.

Ž   Staff performance evaluations.

Ž   Mid-year reviews of activities and milestones.

Ž   Continual implementation of the Quality Improvement Process.

11.0   Quality Improvement

- Note: When we discuss "quality" at Ohio EPA it falls into two distinct categories. One is a general total quality initiative which covers a wide variety of areas. Ohio has worked diligently, statewide, to incorporate quality into all we do. The other type of quality to be discussed, specifically relates to Quality Assurance and Quality Compliance. This will also be addressed in this section and has been addressed in Section 3: Quality Systems. In order to give you a complete picture of quality at Ohio EPA, "quality" in its totality will be discussed and summarized below.

General Background and Information **- QStP Statewide Quality Efforts**

- Since 1991, the State of Ohio has undertaken a comprehensive total quality management program, called Quality Services through Partnerships (QStP). QStP utilizes a nine step continuous improvement process and was adapted from a Xerox Corporation model. QStP training is mandatory for all state employees with the latest comprehensive figures showing approximately 55,000 trained state employees (Reference in Appendix, "Changing the Way We Do Business", page 2). Ohio EPA has maintained a 97% Basic QStP training rate, offering two classes annually.

- Facilitation training is offered as well. There are close to 2,000 trained facilitators in the State of Ohio. Ohio EPA maintains a facilitator network of approximately 160, or 11% of our workforce. EPA facilitators work with stakeholder groups, one or two day meetings, as well as with work process improvement teams which may last from six months to over one year. They work outside their own divisions and districts to provide neutral process assistance and also work with cross agency teams and issues.

- Additional specialized training in the areas such as: "Tool Time" (use of Quality Tools), Measurement, Advanced Facilitation, Team Training , Leadership Skills in a High Performance workplace, among others, have been offered.

Teams, Results and Accomplishments **- QStP**

- The State of Ohio has formed over 2500 QStP teams, while Ohio EPA has had over 78 QStP teams, with over 47% of our workforce actively participating on, what we define as a "formal QStP team". In addition to our formal QSTP Teams which diligently use the 9 step improvement process, we have had many other "informal" problem-solving workgroups and teams.

- A number of our teams have received Statewide Recognition and Awards. These include the "Ringy Dingy Team" from our Southwest District Office in Logan, Ohio,

which revamped an antiquated phone system resulting in improved external customer service and internal employee satisfaction, and achieved significant cost-savings. In 1998, this team placed in the top 2 Statewide in the annual "Team Excellence in the Public Sector" or TEPS competition. After receiving high scores from a panel of private sector judges, they went on to present their process improvement side by side with private sector teams at the annual Ohio Manufacturer's Association Leadership Conference in Cleveland. Our Strategic Planning Team, responsible for an agency-wide strategic planning process, received Statewide recognition and an award from the Governor in 1998 during Public Service Recognition week. A Statistics Workgroup from our Division of Drinking and Ground Water has also been selected to receive a Statewide Ohio Innovator Award in May of 1999. We also currently have 20 quality improvement projects published in a Statewide Results Book, published by the Ohio Office of Quality Services.

Quality Improvement Infrastructure - QSTP

- We have an infrastructure in place which consists: 1) A Chief of Quality, Accountability, and Customer Services and a Quality Coordinator, both housed in the Director's Office; 2) An agency-wide Quality Steering Committee. This committee consists of the Director, Union President and a split of union, non-union employees at various levels in the agency; 3) Six Quality Coordinating Teams (QCTs) in central office and within each of our five district offices. District Chiefs or Assistant Chiefs all serve on District QCTs along with a mix of union/non-union employees from various levels in the organization.

- The Steering Committee functions to guide the agency on improving quality, sponsors intra-agency improvement teams, conducts climate surveys, proposes policy, and leads other initiatives. The QCTs are available to provide on-site assistance in districts and divisions. The QCTs provide general guidance, training, information and other services. We have created this infrastructure to help underscore the importance of quality being in every corner of the agency. Improvement is everyone's responsibility.

Quality Improvement Infrastructure - QA/QC

- From Section 3.0, the Quality Systems section of this report, it can be seen that we have a designated team in place to oversee QA/QC in the divisions, with team leadership/coordination from our Chief of Quality, Accountability, and Customer Service in the Director's Office.

- As stated in Section 3.0 each designated division will appoint 2 members to the QA/QC Guidance Team, including a senior manager and the designated divisional QA/QC Manager. The Guidance Team would meet quarterly to undertake duties described in Section 3.0, as well as identify opportunities to improve systems and practices agency-wide.

Accountability and Responsibility - QStP

- Program, Division, and District Chiefs are required to submit a quarterly report to the Director's Office. This report includes progress to date on shorter term performance standards and longer term goals. Another part of the report deals with "Quarterly Quality Information" and is to include a summary of formal QStP teamwork, informal workgroup teamwork, and a miscellaneous quality section. The Chief of each section is responsible for the information in the report, analyzing it in, and looking for potential areas where teams might be formed or improvements. Teams are formed in areas where gaps remain between our "as is" and "desired state" of reaching our goals. Chiefs discuss this information in regular meetings with the Director's Office Senior Staff (primarily the Assistant Director and Deputies.)

- While Chiefs do have ownership and accountability for the report we see quality and process improvement as part of everyone's job at Ohio EPA. We maintain a quality policy that all employees are expected to be involved in process improvement. Ohio EPA employees are expected and encouraged to bring up deficiencies in processes so appropriate process improvements can be made or, when necessary, teams can be created. We work to have formal team charters created for clarity, appropriate sponsorship to be sure pilot projects get implemented, and appropriate team membership to be sure all areas of the process are involved. Ohio EPA process improvement and other types of teams have been formed by the Quality Steering Committee, the QCTs, Deputies and Chiefs, and by employees who are closest to the processes.

- Staff at all levels are encouraged to recognize and voice improvement opportunities. QStP training and facilitators have provided our agency with tools and techniques to determine root cause (Fishbone diagrams, Pareto Charts etc.) and to look for special and common cause variation in processes (Run Charts, Control Charts etc.) We have worked toward a great deal of culture change since 1991 providing information and training on concepts such as empowerment and encouraging all employees to work with their suppliers and customers, both internal and external to continuously improve

the way we do business at Ohio EPA. By providing appropriate training and ongoing learning opportunities, creating a quality infrastructure, and providing encouragement, support and resources, we are committed to long term continuous improvement. We have come a long way yet recognize that we still have many improvement opportunities as an agency.

- (Suggested Section references: "Changing the Way We Do Business"- OQS 10/98, " A Summary of Quality Improvement at Ohio EPA" - Ohio EPA Steering Committee 1/99, Quality Overview - Graph Q1-Q5, QStP Tool Kit for Quality - OQS 12/95) (Sample Quarterly Quality Report or report? Ohio EPA excerpts from Results Book).

Accountability and Responsibility - QA/QC

- To ensure accountability and responsibility for QA/QC systems agency wide, the Chief of the Office of Quality, Accountability, and Customer Services will chair/coordinate the QA/QC Guidance Team. Should problems arise in divisions, they will be brought forward to his attention by the technical experts in the Division (designated Divisional QA/QC Managers). He will work with the Director and the Assistant Director of the agency, who have line authority over the Division Chiefs, to ensure that workable systems are in place and necessary improvements are made. The agency, with input and recommendation from the QA/QC Divisional Managers, will create an evaluation process to be undertaken annually in the divisions to pro-actively note areas in need of improvement. The QA/QC Guidance Team will, on an ongoing basis, make recommendations to the Director on how to implement best practices to ensure accountability and responsibility for systems agency wide.

11.1 <u>DERR-specific</u>

The intent of this QMP is to provide the basis for integrating appropriate QA activities into the various DERR programs - from planning phases through the evaluation phases. It is intended that the principles, established through a sound QA program and the content of this QMP are followed and therefore, problems can be detected in a timely manner, before programmatic and financial issues become critical and hinder the program mission and implementation of sound decision making.

Program Review - The DERR QA/QC Coordinator will be responsible, through input and assistance from DERR senior management, for the planning, implementing, and evaluating the effectiveness of quality improvement activities at the program level. This same course of activity is implemented if and/or when DERR conducts a Program Review of its QA System. Creation and annual review of this QMP will serve as one of the many mechanisms utilized in order to achieve this goal of quality implementation and improvement.

Annually, the QMP will be reviewed by the QA Coordinator and modified, if needed, to reflect

changing needs or additional guidance. Revisions will be noted by the change in revision number and date of the revision included in the header information. All revisions will be distributed to each senior manager for potential review, if needed, before implementation. A copy of the revised QMP will also be sent to the USEPA Region V QA Manager.

Project Reviews - It is DERR practice that individual Site Coordinators, with assistance from the QA Coordinator and technical support staff, review project implementation and data gathering activities at determined intervals where improvements in data quality can occur. These reviews can be initiated at any time during the planning and implementation stages of a project and can involve, among other items, data collection activities, sample handling, analyte evaluation, information requests and reviews, and data analysis.

Project reviews may be conducted by using the following tools:

- Ž   Technical audits;
- Ž   Data Quality Assessments;
- Ž   Peer reviews;
- Ž   Conference calls;
- Ž   Meetings
- Ž   Other communicative mechanisms (e-mail, etc.)

It is recommended that the DERR Site Coordinators work with the Technical Staff in determining the quality of the collected data and its pertinence to the goals of the particular project. Specifically, an evaluation is conducted after each project to determine if the established DQOs were met for that project. Engaging in such a routine activity enables DERR staff to identify problems encountered with the project and implement corrective actions for future similar data-gathering activities. This represents the process for conducting project reviews while utilizing the tools mentioned above. Again, the responsible parties for this activity are primarily the DERR Site Coordinators and Technical Staff.