24LRASMLQBESD-0002 Q&A

Section 1.4 (page 3) states "…Quality Management Plan utilized by DNR Environmental Services Division and the Quality Assurance Project Plan Amendment…" Can you please provide a copy of the Quality Management Plan and the Quality Assurance Project Plan Amendment?
Yes, these documents will be posted as attachments.

Section 4.2 Task 2 (page 15) states "…including infrastructure for food waste prevention." Is the intention to focus on infrastructure associated with food rescue facilities and food pantries?
DNR expects that Task 2's reference to food waste prevention will focus on inventorying and assessing the existing system of food rescue facilities/food pantries in Iowa. However, the contractor may identify other food waste prevention infrastructure/systems that might include software systems, such as LeanPath, programs promoting consuming "ugly" produce, or systems that utilize food by-products. It is realized that potential contractors may need to define the scope of their proposed work.

Section 4.2 Task 4 (page 16) states "Measure and estimate food waste generation…" Does the DNR desire field activities to physically measure generated food waste or is this work to estimate and model based on available industry data?
DNR anticipates that potential contractors will propose and describe field activities to gain Iowa specific data that can be combined with or compared to industry-accepted data.

Section 4.2 Task 4 (page 16) states to "Assess associated environmental, economic and social impacts." Is the intention to assess the impacts of diverting estimated food waste generated or to assess the current impacts assuming that the food waste is not being diverted?
Regardless of the method, DNR would like to be able to quantify food waste generation (food that is produced, processed, distributed for consumption by Iowans but is not) and its associated impacts.

Section 4.2 Task 9 (page 16) Develop Framework – Data Collection. Is the desired result of this task to identify a framework that the DNR could use to request and receive data from food waste generators, food rescue organizations, and food waste managers concerning their managed volumes by organic waste type? Please clarify the framework being requested.
DNR is seeking the contractor's recommendation, with DNR collaboration, for a framework based on the contractor's research and analysis as part of Tasks 1-8. It is understood that proposing a detailed framework in the RFP may not be realistic. However, DNR is interested in the methodology a potential contractor may use to recommend and develop a framework.

In Task 2, regarding the state's wish to study 'food waste management facilities' to be focused on post-consumer/distribution of food (as opposed to the manufacturing of food)?
It is difficult to state a focus because it is expected that the assessment will identify more than post-consumer food as a major, food-waste derived feedstock or potential feedstock for composting facilities, etc. The assessment itself will most likely identify the major areas of focus. It is realized that potential contractors may need to define the scope of their proposed work.

In Task 2, does the state anticipate surveying the existing Iowa organics/food waste management facilities, or is this a desktop study of publicly available information?
DNR expects that most of what is needed can be gained from existing information or a desktop study.

However, it is expected that follow-up communication and even some field work may be necessary to gain a full picture.

In Task 4, does the state anticipate surveying stakeholders of the sectors of interest, or relying on publicly available information on food waste generation (i.e., IDNR, EPA)? DNR wishes for this information to be as Iowa-specific as possible. Please see the response to Item 3 above.

For the cost/benefit analysis, what level of cost estimation techniques is the state seeking?
DNR wishes the contractor to dig to a level that can prove or disprove that investing in the recommended infrastructure has a financial return on investment and/or is worthy of investment for its environmental benefits. The level should be appropriate for making a case to decision-makers to approve funding for the recommended infrastructure.

Does this study intend to evaluate agricultural waste?
Agricultural organic waste is not the focus of this study. Nonetheless, it may be beneficial to evaluate certain agricultural waste for prevention measures, such as gleaning. More indirectly, certain agricultural wastes, such as crop residues and animal waste, may be noteworthy in the study as feedstocks in composting and other organics management methods.

Task 4 includes "Assess associated environmental, economic, and social impacts" associated with food waste. Would you be able to elaborate on the types of economic and social impacts that you are looking to assess and quantify?
Types of economic impacts to be assessed may include cost/revenue estimations for various management methods, such as food rescue, composting and disposal as well as types of food waste, such as commercial, pre-consumer and post-consumer. Economic impacts may also include assessing existing infrastructure and projecting costs for expanded or increased infrastructure. As applicable, social impacts may include the EPA's environmental justice measures or an alternative measure.

Is there any interest in considering stakeholder advisory groups as a part of this study?
DNR is open to stakeholder advisory groups as part of a bidder's proposal.

Could you elaborate on what the State is looking for in Task 9? Is this task referring to a data collection framework, a framework for minimizing food waste/managing food waste or a combination of these two things?
In Task 9, DNR is seeking a framework for both preventing food waste and managing food waste. Currently, Iowa does not have a method for measuring food that is rescued, is wasted but could have potentially been rescued, or is managed through landfill diversion methods such as composting.

Given the multi-year time frame of this project, can you provide any yearly budget information?
No annual budget information is available at this time

24ESDLQBLRASM-0002 Q&A

Section 3.2.2 (on page 11) states that as part of the “Mandatory Specifications and Scored Technical Specifications” section of the proposal, “The Respondent must answer whether or not it will comply with each specification in Section 5 of the RFP.” There is no section 5 in the RFP and no section labelled “Specification.” Can you clarify this requirement?

Section 5 is marked RESERVED so any and all criteria related to section 5 will be deemed irrelevant to the RFP.

Section 6.3.7 (on page 18), on evaluation criteria, states that “Respondent’s proposed plan of approach, work plan and proposed implementation timeline to complete responsibilities described in the Statement of Work. (20 Points).” There is currently no section in the Technical Proposal requirements (Section 3.2, page 10 of the RFP) for that type of information. Are we to understand that the approach/work plan/timeline is to be addressed in the “Mandatory Specifications and Scored Technical Specifications” section (question above)?

The emphasis here should be directed towards the verbiage “as described in the Statement of Work”, which is outlined and described in section 4.2. This will be the formal grading of the method of implementation for the technical proposal.

MEMORANDUM

SUBJECT: Approval of the Quality Management Plan (QMP) QMP-05 for the Iowa Department of Natural Resources

FROM: Diane Harris
Regional Quality Assurance Manager
Laboratory Services and Applied Science Division

THRU: Michael Jay
Deputy Director
Laboratory Services and Applied Science Division

Cecilia Tapia
Director
Laboratory Services and Applied Science Division

TO: Ed Chu
Acting Regional Administrator

We have completed our review of the subject document dated September 9, 2021 and it can be approved. Please sign the attached approval letter and QMP signature page (see the title page in the QMP).

If you have any questions, please contact me at x7258.

Attachment

CONCURRENCE: Name/Ext/Date/File Location Davis:7502:07232021:N:/LSASD/IO/QA/2021/2021167.mem.docx				
DIV/BR	LSASD/IO	LSASD/IO	LSASD/IO	Acting Regional Administrator
NAME	DIANE HARRIS Digitally signed by DIANE HARRIS Date: 2021.07.26 07:28:22 -05'00'	MICHAEL JAY Digitally signed by MICHAEL JAY Date: 2021.07.23 12:03:43 -05'00'	CECILIA TAPIA Digitally signed by CECILIA TAPIA Date: 2021.07.23 11:44:18 -05'00'	Brincks, Mike Digitally signed by Brincks, Mike Date: 2021.07.28 15:16:25 -05'00'
DATE				
INITIALS				

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

Jul 26, 2021

MEMORANDUM

SUBJECT: Approval of the Quality Management Plan (QMP) QMP-05 for the Iowa Department of Natural Resources

FROM: Diane Harris
Regional Quality Assurance Manager
Laboratory Services and Applied Science Division

DIANE HARRIS
Digitally signed by DIANE HARRIS
Date: 2021.07.26 07:29:26 -05'00'

THRU: Michael Jay
Deputy Director
Laboratory Services and Applied Science Division

CECILIA TAPIA
Digitally signed by CECILIA TAPIA
Date: 2021.07.26 14:47:59 -05'00'

Cecilia Tapia
Director
Laboratory Services and Applied Science Division

CECILIA TAPIA
Digitally signed by CECILIA TAPIA
Date: 2021.07.23 11:45:52 -05'00'

TO: Ed Chu
Acting Regional Administrator

We have completed our review of the subject document dated September 9, 2021 and it can be approved. Please sign the attached approval letter and QMP signature page (see the title page in the QMP).

If you have any questions, please contact me at x7258.

Attachment - IDNR QAPP

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

Jul 28, 2021

OFFICE OF THE
REGIONAL ADMINISTRATOR

Kayla Lyon
Director
Iowa Department of Natural Resources
Wallace State Office Building
502 E. Ninth Street
Des Moines, IA 50319-0034

Dear Ms. Lyon:

We have completed the review of the Quality Management Plan (QMP) QMP-05 dated September 1, 2021 for the Environmental Services Division for the Iowa Department of Natural Resources. The document complies with *EPA Requirements for Quality Management Plans* (EPA QA/R-2, March 2001) and is approved. The original approval page and copy of the QMP are enclosed.

The anniversary date for the QMP is July 2026 and the QMP must be updated appropriately and submitted on or before the anniversary date to the Regional Quality Assurance Manager for review and approval. If there are significant changes to your quality program before the anniversary date, a revised QMP must be submitted to EPA for review and approval at the time the changes occur. Any minor revisions made to the QMP should be submitted to the Regional Quality Assurance Manager as a report when those changes occur.

If you have any questions, please call Diane Harris, Regional Quality Assurance Manager at (913)551-7258.

Sincerely,

Brincks, Mike

Digitally signed by Brincks, Mike
Date: 2021.07.28 15:17:15 -05'00'

Edward H. Chu
Acting Regional Administrator

Enclosure

cc w/enclosure: Tim Hall, Quality Assurance Manager
Environmental Services Division, Iowa Department of Natural Resources

bcc: Dana Skelley, Director, Air & Radiation Division
Mary Peterson, Director, Superfund & Emergency Management Division
Jeff Robichaud, Director, Water Division
DeAndre Singletary, Director, Land, Chemical & Redevelopment Division
Diane Huffman, Acting Director, Enforcement & Compliance Assurance Division

Iowa Department of Natural Resources (DNR)
Environmental Services Division
Quality Management Plan (QMP)
QMP-05
September 1, 2021

Wallace State Office Building
502 E. Ninth Street
Des Moines, IA 50319-0034

QUALITY MANAGEMENT PLAN APPROVAL

Kayla Lyon Digitally signed by Kayla Lyon
Date: 2021.06.30 10:57:49
-05'00'

Kayla L on, Director
Iowa Department of Natural Resources

Tim Hall, Quality Assurance Manager
Iowa Department of Natural Resources

Brincks, Mike Digitally signed by Brincks, Mike
Date: 2021.07.28 15:17:32
-05'00'

Edward H. Chu
Acting Regional Administrator
U.S. Environmental Protection Agency, Region 7

DIANE HARRIS Digitally signed by DIANE HARRIS
Date: 2021.07.26 07:30:28 -05'00'

Diane Harris, Regional Quality Assurance Manager
U.S. Environmental Protection Agency, Region 7

RECEIVED 07/02/2021
2021167

TABLE OF CONTENTS

LIST OF ACRONYMS

AQB – Air Quality Bureau
BC – Bureau Chief
CFR – Code of Federal Regulations
CWA – Clean Water Act
DA – Division Administrator
DNR – Iowa Department of Natural Resources
DQA – Data Quality Assessment
DQO – Data Quality Objective
EPA – Environmental Protection Agency
ESD – Environmental Services Division
FSCB – Field Services and Compliance Bureau
GIS – Geographical Information Systems
IAC – Iowa Administrative Code
LQB – Land Quality Bureau
LUST – Leaking Underground Storage Tank
MSR – Management System Review
OCIO -- Office of the Chief Information Officer
QA - Quality Assurance
QAC – Quality Assurance Coordinators
QAM – Quality Assurance Manager
QAPO – Quality Assurance Project Officers
QAPP – Quality Assurance Project Plan
QC – Quality Control
QM – Quality Management
QMP – Quality Management Plan
QMS – Quality Management System
RQAM – Regional Quality Assurance Manager
SHL – State Hygienic Laboratory
SOP – Standard Operating Procedure
UST – Underground Storage Tank
WQB – Water Quality Bureau

GLOSSARY OF TERMS

activity - an all-inclusive term describing a specific set of operations or related tasks to be performed, either serially or in parallel (e.g., research and development, field sampling, analytical operations, equipment fabrication), that in total result in a product or service.

assessment - the evaluation process used to measure the performance or effectiveness of a system and its elements. As used here, assessment is an all-inclusive term used to denote any of the following: audit, performance evaluation, management systems review, peer review, inspection, or surveillance.

audit (quality) - a systematic and independent examination to determine whether quality activities and related results comply with planned arrangements and whether these arrangements are implemented effectively and are suitable to achieve objectives.

contractor - any organization or individual independent of ESD that furnish services, items, or performs work for ESD for money.

corrective action - measures taken to rectify conditions adverse to quality and, where possible, to preclude their recurrence.

data of known quality - data that have the qualitative and quantitative components associated with their derivation documented appropriately for their intended use, and when such documentation is verifiable and defensible.
data quality assessment (DQA) - a statistical and scientific evaluation of the data set to determine the validity and performance of the data collection design and statistical test, and to determine the adequacy of the data set for its intended use.
data quality objectives (DQOs) process - a systematic strategic planning tool based on the scientific method that identifies and defines the type, quality, and quantity of data needed to satisfy a specified use.
document - any written or pictorial information describing, defining, specifying, reporting, or certifying activities requirements, procedures, or results.
environmental data (sometimes referred to as **environmental information)** - any measurements or information that describe environmental processes, location, or conditions; ecological or health effects and consequences; or the performance of environmental technology. This includes information collected directly from measurements, produced from models, and compiled from other sources such as databases or literature.
graded approach - the process of basing the level of application of managerial controls applied to an item or work according to the intended use of the results and the degree of confidence needed in the quality of the results.
independent assessment - an assessment performed by a qualified individual, group, or organization that is not part of the organization directly performing and accountable for the work being assessed.
management - those individuals directly responsible and accountable for planning, implementing, and assessing work.
management system - a structured non-technical system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for conducting work and producing items and services.
management systems review (MSR) - the qualitative assessment of a data collection operation and/or organization(s) to establish whether the prevailing quality management structure, policies, practices, and procedures are adequate for ensuring that the type and quality of data needed are obtained.
may - denotes permission but not a requirement
organization - a company, corporation, firm, enterprise, or institution, or part thereof, whether incorporated or not, public or private, that has its own functions and administration.
organization structure - the responsibilities, authorities, and relationships, arranged in a pattern, through which an organization performs its functions.
procedure - a specified way to perform an activity
process - a set of interrelated resources and activities which transforms inputs into outputs. Examples of processes include analysis, design, data collection, operation, fabrication, and calculation.
project - an organized set of activities within a program.
quality - the totality of features and characteristics of a product or service that bear on its ability to meet the stated or implied needs and expectations of the user.
quality assurance (QA) - an integrated system of management activities involving planning, implementation, assessment, reporting, and quality improvement to ensure that a process, item, or service is of the type and quality needed and expected by the client.
quality assurance coordinator (QAC) - an individual within a bureau designated as responsible for QA activities, including certifying QA documents, assessments, providing support to QAPOs or serving as a QAPO, and communicating with the QAM
quality assurance manager (QAM) - the individual designated as the principal manager within the organization having management oversight and responsibilities for planning, coordinating, and assessing the effectiveness of the quality management system for the organization.

quality assurance project officer (QAPO) - an individual within a section designated as responsible for QA documents, assessments, and/or corrective actions for a specific project/QAPP
quality assurance project plan (QAPP) - a formal document describing in comprehensive detail the necessary QA, QC, and other technical activities that must be implemented to ensure that the results of the work performed will satisfy the stated performance criteria.
quality control (QC) - the overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer; operational techniques, and activities that are used to fulfill requirements for quality.
quality improvement - a management program for improving the quality of operations. Such management programs generally entail a formal mechanism for encouraging worker recommendations with timely management evaluation and feedback or implementation.
quality management - that aspect of the overall management system of the organization that determines and implements the quality policy. Quality management includes strategic planning, allocation of resources, and other systematic activities (e.g., planning, implementation, and assessment) pertaining to the quality system.
quality management plan (QMP) - a formal document that describes the quality system in terms of the organizational structure, functional responsibilities of management and staff, lines of authority, and required interfaces for those planning, implementing, and assessing all activities conducted.
quality management system (QMS) - a structured and documented management system describing the policies, objectives, principles, organizational authority, responsibilities, accountability, and implementation plan of an organization for ensuring quality in its work processes, products (items), and services. The quality management system provides the framework for planning, implementing, and assessing work performed by the organization and for carrying out required QA and QC.
record (quality) - a document that furnishes objective evidence of the quality of items or activities and that has been verified and authenticated as technically complete and correct. Records may include photographs, drawings, magnetic tape, and other data recording media.
self-assessment - assessments of work conducted by individuals, groups, or organizations directly responsible for overseeing and/or performing the work.
standard operating procedure (SOP) - a written document that details the method for an operation, analysis, or action with thoroughly prescribed techniques and steps, and that is officially approved as the method for performing certain routine or repetitive tasks.
technical systems audit (TSA) - a thorough, systematic, on-site, qualitative audit of facilities, equipment, personnel, training, procedures, recordkeeping, data validation, data management, and reporting aspects of a system.
work - the process of performing a defined task or activity (e.g., research and development, field sampling, analytical operations, equipment fabrication).
work plan - a document that describes, in sufficient detail, how a field investigation at a particular site will be performed for a specific project at that site.

1 DOCUMENT OVERVIEW & ADMINISTRATION

1.1 Purpose

This Quality Management Plan (QMP) documents and describes the quality management system (QMS) utilized by the Iowa Department of Natural Resources (DNR), Environmental Services Division (ESD). The QMS provides the framework for planning, implementing, documenting, and assessing work performed by the division in fulfillment of its mission. This document outlines quality assurance (QA) policies and procedures in place to ensure that the data generated, compiled and used by the ESD are of known and documented quality, and helps assure compliance with 48 Code of Federal Requirements (CFR) Part 46, or 40 CFR Parts 31 and 35, and other

federal regulations as applicable. It also fulfills the ESD's requirement to develop and implement a "quality assurance program" as required by 40 CFR Part 58.

1.2 Document Organization and Preparation

The QMP contains the following ten chapters organized in accordance with *EPA Requirements for Quality Management Plans* (EPA QA/R-2).

- Management and Organization
- Quality System Components
- Personnel Qualifications and Training
- Procurement of Items and Services
- Documents and Records
- Computer Hardware and Software
- Planning
- Implementation of Work Processes
- Assessment and Response
- Quality Improvement

1.3 Responsible Official

Name: Kayla Lyon
Title: Director, Iowa DNR
Phone: 515/725-8282
E-mail: Kayla.Lyon@dnr.iowa.gov

1.4 Quality Assurance Manager (QAM)

Name: Tim Hall
Phone: (515) 452-6633
E-mail: Tim.Hall@dnr.iowa.gov

1.5 Document Applicability

The requirements outlined in the QMP are applicable when activities involve generating, compiling, using or reporting environmental data, which includes any measurements or information that describe environmental processes, location, or conditions; ecological or health effects and consequences; or the performance of environmental technology. This includes information collected directly from measurements, produced from models, and compiled from other sources such as databases or literature. Additionally, one or more of the following subsections may apply:

1.5.1 Federally Delegated Programs

Activities are conducted as part of federal Environmental Protection Agency (EPA) programs delegated to the DNR or any predecessor agency.

1.5.2 EPA Grants/Cooperative Agreements

Activities are conducted as part of programs or projects funded in whole or in part by EPA grants or conducted as part of any cooperative agreement with EPA.

1.6 QMP Expiration

The QMP shall be valid for a period of no more than five years from the most recent EPA approval date as contained in the document history, section 1.9. The QMP shall be submitted for re-approval no less than 60 days prior to its expiration.

1.7 QMP Revisions and Approval

1.7.1 Revisions
The QMP shall be revised as needed to clarify roles and responsibilities, correct problems, and institutionalize improvements. Recommended changes identified and suggested by ESD employees should be e-mailed to QAM and Quality Assurance Coordinator (QAC) for the area in which the individual is assigned (see section 2.5.3). Revisions to the QMP shall be initiated by the QAM. Conditions requiring revisions of an approved QMP:

- Expiration of the document;
- Changes or clarifications in mission, responsibilities, standards, processes or procedures;
- Re-organization of existing functions that affect programs covered by the QMP; or
- Assessment findings requiring corrective actions and response.

1.7.2 Peer Review
All revisions made to the QMP shall be peer reviewed to ensure such changes are accurate and understandable by those who use the document. The peer review will be conducted by other ESD staff trained in quality management (QM).

1.7.3 Internal Approval
The QAM and ESD Administrator shall approve revisions made to the QMP.

1.7.4 EPA Approval
EPA approval of the QMP and subsequent revisions are required if such revisions result in significant changes that affect the performance of work and/or upon expiration of this document. The QAM shall submit the QMP to the EPA Regional Quality Assurance Manager (RQAM) as such changes or revisions occur. Minor revisions shall be reported to RQAM as they occur. With EPA approval, ESD has been granted the authority to approve quality assurance project plans (QAPPs) and other supporting QA documentation developed for or by ESD, except for those developed in support of a Superfund Cooperative Agreement. In that case, the QAPP will be developed and submitted to the EPA for approval in accordance with 40 CFR Part 35, Subpart O.

1.8 Change Management and Document Control
Revisions, as described in section 1.7, will be incorporated into the document by the QAM – once approved, and the date and version number on the QMP will be revised accordingly. Notification of changes will be e-mailed by QAM to the “ESD_Supervisor” group and RQAM. Section supervisors are responsible to ensure appropriate technical staff receive the notification. Notification will provide a description of the change and either a link to obtain the revised version or the revised QMP as an attachment.

The QMP is a controlled document. Recipients are responsible for keeping their copies available and up to date. The most recent version of the QMP is available on the DNR Employee Intranet; the official record is located in records under ADM 01-05.G.

1.9 Document History
Item Date
Environmental Protection Division Quality Management Plan Approved. September 20, 1998
QMP-02 Reviewed and Approved. March 2006

QMP-03 Reviewed and Approved. August 2011
QMP-04 Reviewed and Approved August 2016
QMP-05 Reviewed and Approved TBD

2 MANAGEMENT AND ORGANIZATION

2.1 Purpose

The purpose of this chapter is to document the mission of the DNR, its quality policy, and describe its organization and the quality assurance responsibilities of its managers.

2.2 Mission

To conserve and enhance our natural resources in cooperation with individuals and organizations to improve the quality of life in Iowa and ensure a legacy for future generations.

2.3 Quality Policy

It is the policy of the ESD that:

- All environmental data generated, compiled, used or reported will be of appropriate quality for its intended use.
- The intended use(s) and of the data will be defined before data collection efforts begin and will account for the needs of secondary data users, as appropriate.
- The appropriate level of quality will be identified before data collection efforts begin.
- Application of managerial controls for data collection efforts will be appropriate for the intended use of and the degree of confidence required in the results.
- Quality information associated with environmental data collection efforts will be available to EPA, other data users, and the public.
- Each bureau or section generating, compiling, using or reporting environmental data will ensure that adequate resources (both monetary and staff) are provided to support the QA effort, and will be responsible for QA activities and requirements applicable to them. It will also be the responsibility of bureaus and sections to ensure that appropriate QA policies and procedures are developed and implemented by any grantees or subgrantees, contractors, or, in some cases, the regulated community, who generate environmental data.
- Each bureau generating, compiling, using or reporting environmental data will designate a QAC.

2.4 ESD Organization

ESD is one of two divisions within DNR and is managed by a Division Administrator (DA). ESD is further divided into four bureaus. Each bureau is managed by a Bureau Chief (BC). The bureaus are subsequently divided into sections, which are managed by Section Supervisors.
https://www.iowadnr.gov/Portals/idnr/uploads/files/orgchart.pdf

2.4.1 Air Quality Bureau

The Air Quality Bureau (AQB) is responsible for monitoring and maintaining air quality within the state of Iowa in accordance with the Federal Clean Air Act and Iowa Code chapter 455B.

General bureau activities include planning, rulemaking, dispersion modeling, issuing construction, and operating permits for sources of air contaminants, developing emission inventories, observing stack tests, monitoring compliance, and monitoring ambient air quality. This responsibility is shared with local programs in Polk and Linn Counties.

AQB enlists the State Hygienic Laboratory (SHL) to collect and report monitoring data for the state outside of the area covered by the local programs, and in addition, to provide biennial laboratory audits of the local programs. AQB also contracts with individuals to operate samplers and enlists SHL for training and oversight of these individuals.

2.4.2 Land Quality Bureau

The Land Quality Bureau (LQB) works to protect Iowa's groundwater, flood plains, and land resources through technical assistance and oversight to industries and organizations. Areas of responsibility include: contaminated sites, underground petroleum storage tanks (USTs) such as those at gas stations, leaking USTs (LUSTs), proper solid waste management at landfills, construction activities in Iowa flood plains, safety of dams on Iowa waterways, geographic information systems (GIS) coordination, and development of sustainable environmental practices through financial and professional assistance. Each individual section in the LQB establishes their own contract with SHL for goods and services.

2.4.3 Field Services and Compliance Bureau

The Field Services and Compliance Bureau (FSCB) is responsible for conducting routine inspections of all facilities permitted by ESD, monitoring compliance, investigating environmental complaints, and recommending many of the compliance actions initiated by ESD. Field work is conducted for water supply, wastewater, water resources, air quality, landfills, UST/LUST inspections, animal feeding operations, manure management plans, storm water, emergency spill response, and complaint investigations of environmental pollution.

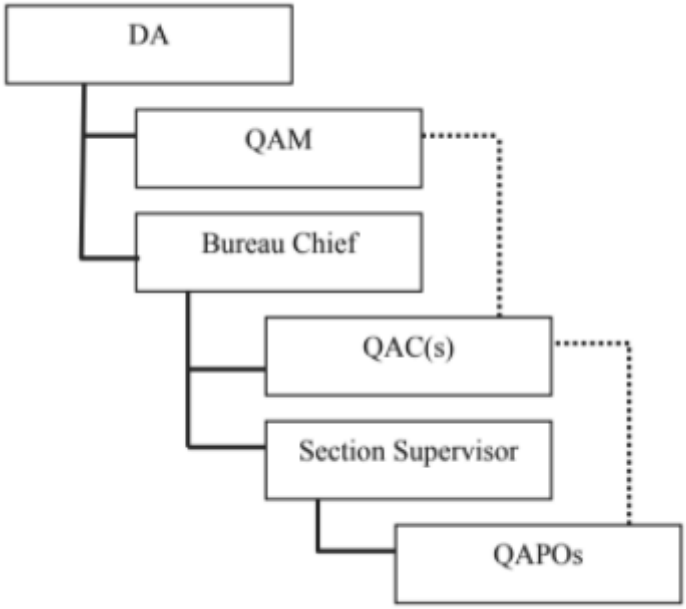
FSCB enlists SHL support for the development of standard operating procedures (SOPs) for field sampling and the analysis of such samples, and cooperates with the DNR Fisheries Bureau in the investigation of fish kills.

2.4.4 Water Quality Bureau

The Water Quality Bureau (WQB) manages water protection programs. Areas of responsibility include: regulating construction and operation of public drinking water supplies in Iowa in accordance with the federal Safe Drinking Water Act; permitting the construction and operation of wastewater treatment and collection systems, wastewater pretreatment programs, storm water discharges, and animal feeding operations in Iowa in accordance with the federal Clean Water Act (CWA) and Iowa Code chapter 455B; developing water quality standards, developing waste load allocations, providing state water quality certification for federal permits and licenses, and administering watershed improvement programs in accordance with the CWA and Iowa Code chapter 455B; and development of the Integrated Report on the status of water quality as required by the CWA.

2.5 Quality Assurance Roles and Responsibilities

The ESD has outlined the specific roles, authorities, and responsibilities of management and staff with respect to QA and quality control (QC) activities. A chart of the ESD QM organization is below.



2.5.1 Division Administrator (DA)
The DA for ESD is the senior management representative responsible for ensuring the ESD QMS, as documented in the QMP, meets all statutory, contractual, and assistance agreement requirements for QA. The DA's main responsibility is ensuring QA is an identifiable activity with adequate resources to fulfill the requirements of the QMP.

2.5.2 Quality Assurance Manager (QAM)

2.5.2.1 Designee
The DA shall appoint an individual to serve as QAM. This individual must have organizational independence from groups generating, compiling and evaluating environmental data, and have access to the DA and BCs in order to plan, assess, and improve ESD's QMS. The QAM reports directly to the DA on quality assurance issues. The appointed designee shall be indicated within the QMP.

2.5.2.2 Responsibilities
The QAM establishes and maintains division-wide QA policies and procedures as necessary. Specific responsibilities of the QAM include:

A. ensures the QMP is prepared, maintained, and updated according to EPA QA/R-2 every 5 years before the due date;
B. serves as the liaison between DNR and the RQAM;
C. reviews the QMS, QMP, and division and bureau QAPPs and coordinates and communicates management system reviews (MSRs) with the DA, BC, and QACs to ensure compliance with QA requirements on an annual basis or as necessary;
D. maintains a list of designated QACs in cooperation with the BC, and meets with QACs periodically to discuss and address identified QA issues
E. coordinates QA training of ESD staff in cooperation with the BC, Supervisors, and RQAM;

F. ensures procedures are in place so that corrective actions identified in MSRs, project assessments, data quality assessments (DQAs), or other ESD assessments of ESD environmental data are implemented in a timely manner, and monitors implementation of corrective actions as necessary;
G. maintains a list of ESD- and EPA-approved external QMPs that collect environmental data for the DNR, reviews external QMPs, and provides the external organizations with EPA deadline reminders

2.5.2.3 Authority
The authorities of the QAM include those necessary to perform the tasks needed to carry out the responsibilities. The QAM has the authority to:

- monitor, review, and assess QA/QC activities performed by ESD, contractors, and recipients of financial assistance, with support and assistance from ESD staff, as required; and
- formally approve or disprove QA-related documents.

2.5.3 Quality Assurance Coordinators (QAC)

2.5.3.1 Designee
Each bureau generating, compiling, using or reporting environmental data will have at least one individual designated as a QAC. If multiple QACs are designated within a bureau, each will be assigned an area of responsibility. QACs shall be individuals that are not directly involved in generating, compiling, or evaluating environmental data. BCs shall designate QACs and inform the QAM. The QAM will maintain a list of designated QACs, which will be available on the DNR Employee Intranet.

2.5.3.2 Responsibilities
The responsibilities of the QACs include:

A. coordinating QA activities including the planning and development of quality assurance documents within their areas of responsibility;
B. certifying internal and external QA documents except those for which the QAC is the Quality Assurance Project Officers (QAPOs);
C. reviewing and certifying internal QA documents from outside their area of responsibility, as requested by the QAM or BC;
D. participating in MSRs;
E. collecting, analyzing and evaluating technical information on the QA requirements needed for particular projects and planning for data collection methods to meet those requirements;
F. assisting QAPOs in the development and implementation of Data Quality Objectives (DQOs);
G. assisting BCs, Section Supervisors, and Legal Bureau to ensure that any contracts, agreements, grants and administrative rules involving environmental data collection activities adequately address QA requirements specified in the QMP; and
H. keeping the QAM informed of QA activities, needs, problems, and overall status.

Each field office supervisor shall be designated as a QAC and may designate a staff member to act as an additional QA contact for the purpose of coordinating data generation and/or sampling equipment management within their respective regions.

2.5.4 Quality Assurance Project Officers (QAPOs)

2.5.4.1 Designee
A QAPO(s) is (are) identified for each QAPP, and shall be designated by the BC or Section Supervisor responsible for the project.

2.5.4.2 Responsibilities

The responsibilities of the QAPO include:

A. ensuring that work assignments, work plans, and contract deliverables include appropriate QA documents,
B. preparing the draft QAPP and any addenda or amendments for all intramural projects,
C. conducting project assessments to ensure that all QA/QC requirements of the QAPP are met,
D. ensuring that approved QAPPs are developed for and implemented in extramural projects, and
E. identifying, resolving, and implementing project-specific QA and QC issues.

2.5.5 BCs and Section Supervisors

2.5.5.1 Designee

BCs and Section Supervisors, as line managers, have overall responsibility for the implementation of all QA requirements within their areas of responsibility. They shall ensure staff have sufficient time and resources to plan, implement, assess, and improve the ESD's QMS.

2.5.5.2 Responsibilities

The responsibilities of a BC and Section Supervisor include:

A. assessing staff members' QA training needs and arranging for such training;
B. ensuring that QAPPs are in place before projects begin;
C. ensuring that all sampling, analytical, and data-handling procedures performed within the ESD are consistent with accepted scientific principles and EPA guidance, and are documented and adequately reviewed;
D. ensuring that all QAPP, QAPP addendums, SOPs, protocols, and work products are controlled and filed in accordance with the records procedures;
E. ensuring that they, their staff, and any and all documents and records within their area of responsibility are made available for reviews conducted under the QMP; and
F. ensuring that corrective actions are implemented.

2.6 Understanding QA Requirements

Each BC and Section Supervisor within ESD will have a copy of or access to the QMP and will be familiar with the requirements of the document. All QA documents will be in conformance with the QMP, and those approving such documents will have a copy of and be familiar with the requirements outlined in the QMP. Additionally, in cooperation with EPA Region 7, periodic training courses and management sessions on QA will be offered for management and technical staff. ESD may further develop training that is specific to its needs. As part of technical staff's annual evaluation, training needs and goals are assessed and set by each staff person and their supervisor. QM training needs are addressed in this process.

3 QUALITY SYSTEM COMPONENTS

3.1 Purpose

The purpose of this chapter is to document how ESD manages its QMS and defines the primary responsibilities for managing and implementing each component of the system.

3.2 ESD Quality Management Plan (QMP)

General information pertaining to the ESD QMP is discussed in Chapter 1 of this document.

3.3 External Quality Management Plans (QMPs)

The QMP documents and describes the QMS utilized by organizations in support of environmental data collection efforts. It provides the framework for planning, implementing, documenting, and assessing work performed by the organization in fulfillment of its mission. It outlines QA policies and procedures in place to ensure that the data generated and compiled are of known and documented quality; specifies the programs and environmental data collection activities covered by the QMS; and describes the general QA roles and responsibilities for staff involved in environmental data operations.

3.3.1 QMP Required

Organizations collecting environmental data on behalf of the ESD, through contract, assistance agreement, or grant, shall have an ESD- or EPA-approved QMP – unless work conducted by the organization is fully addressed under a single QAPP, or the work conducted by the organization is adequately addressed under an ESD QAPP, see section 3.6.

3.3.2 Specification

QMPs must meet all applicable requirements as outlined in EPA QA/R-2.

3.3.3 Revisions

The QMP shall be revised as needed to clarify roles and responsibilities, correct problems, and institutionalize improvements. Revisions to the QMP shall be initiated by the organization's QAM. Conditions requiring revisions of an approved QMP include:

- Expiration of the document;
- Changes or clarifications in mission, responsibilities, standards, processes, or procedures;
- Re-organization of existing functions that affect programs covered by the QMS; or
- Assessment findings requiring corrective actions and response.

3.3.4 Approval

The organization's QAM and responsible officials shall approve revisions to an approved QMP.
The approval of a QMP is effective for five years unless significant changes are needed. On or before the five-year anniversary date, the organization must resubmit the QMP for the same approval as the original document; otherwise, the QMP could be considered out-of-date and no longer applicable. If the anniversary date cannot be met, the organization can request a one-time extension from approving authority QAM, not to exceed six months beyond the anniversary date.

3.3.5 ESD Approval

ESD approval of the QMP and subsequent revisions are required initially, upon expiration of the external QMP, and if revisions result in significant changes that affect the performance of work. The organization's QAM shall submit necessary documentation to the ESD QAM in electronic format. Minor revisions shall be reported to the ESD QAM as they occur. Ordinarily, EPA approved QMPs will be accepted as approved by the ESD. However, in the event that the ESD QAM finds any external QMP to be deficient, the ESD QAM will notify the RQAM, and the QMP will be subject to the same approval procedures as an external QMP without EPA approval. Those external QMPs without EPA approval must be approved by the appropriate QAC(s) and BC, unless its scope spans multiple bureaus. In such cases, the external QMP must be reviewed by the appropriate QAC(s) and approved by the ESD QAM and DA. The level of review and approval is set by the ESD QAM upon receipt of an external QMP.

With EPA or ESD approval of the QMP, the external organization may also be granted the authority, by the ESD QAM, to approve QAPPs they develop, except for those developed in support of a Superfund Cooperative Agreement.

The ESD QAM will maintain a list of ESD and EPA-approved external QMPs that collect environmental data for the DNR, which will be available on the DNR Employee Intranet. The official record will be filed in accordance with the records procedures.

3.3.6 Annual Review
The QAM shall review QMPs on an annual basis.

3.3.7 Expiration
QMPs shall be valid for a period of no more than five years from the time of ESD or EPA approval, at which time they need to be reviewed and re-approved.

3.4 Management System Reviews (MSRs)

3.4.1 Internal Assessments
MSR is the main method used by ESD to assess our QMS. MSRs are a qualitative assessment of an organization's data collection operations to establish whether the organization's QMS, including its structure, policies, practices, procedures, and records, is adequate to ensure that the type and quality of data needed are obtained. The focus of the assessment is on the system and its processes rather than quality of data from specific projects. The assessment process includes planning, implementation, and reporting phases. ESD shall use EPA *Guidance on Assessing Quality Systems*, March 2003 (EPA QA/G-3) as guidance for planning and implementing assessments, and reporting its findings. Generally, the QAM and QACs have the responsibility for conducting MSRs and preparing a report of their findings. The general make-up of the assessment team will be the following:

A. Team Leader and Assessor – QAM;
B. Assessor(s) – one or more QACs from outside area being reviewed;
C. Technical Expert(s) – QAC from the area being reviewed and other technical staff as necessary.

Specific team selection will follow EPA QA/G-3 Subsection 2.6.1 to ensure team size and composition is appropriate for the scope of the assessment, and prevents conflicts of interest. The QAM will be responsible for providing managers with review findings and recommendations.

BCs and Section Supervisors will have an opportunity to review and discuss the findings. They have the responsibility to make necessary corrections identified within the assessment findings for all but changes to the QMP. The QAM will make any corrective action changes to the QMP.

The QAM will monitor implementation of corrective actions to ensure that the actions are taken.

A report outlining findings and planned corrective actions will be submitted to the RQAM annually.

3.4.2 External Assessments
Effective implementation of ESD's QMS requires periodic external MSR and performance audits to assess its effectiveness. The results of these reviews and audit will be used to revise the QMP as appropriate. Therefore, all programs will allow their internal and external environmental data collection activities to be subject to external reviews and/or audits of performance.

3.4.3 MSR of Approved External QMPs
A report developed upon conclusion of an MSR outlining findings and planned corrective actions must be submitted to the ESD QAM annually. The ESD QAM will distribute the report to appropriate QACs.

3.5 Data Quality Objectives (DQOs)
DQOs are qualitative and quantitative statements that clarify technical and quality objectives, define the appropriate type of data, and specify tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions. As described in the quality policy, section 2.3, intended use of the data will be defined before the data collection effort begins. DQOs will be identified before any new data collection efforts are initiated. QAPOs have the responsibility for developing DQOs, with assistance from QACs. ESD shall use EPA *Guidance on Systematic. Planning Using the Data Quality Objectives Process* (EPA QA/G-4) as guidance for developing DQOs. This helps ensure that the level of detail in planning is commensurate with the importance and intended use of the work and the available resources.

3.6 Quality Assurance Project Plans (QAPPs)
A QAPP is a formal document describing the necessary QA/QC and other technical activities that must be implemented to ensure the results obtained from data collection or analysis activities are of the type, quantity and quality needed and expected.

3.6.1 QAPP Required
Any environmental data collection effort conducted by or for the ESD, to include acquisition of environmental data generated from direct measurement activities, collected from other sources, or compiled from computer models, databases, and information systems shall be conducted in accordance with an approved QAPP.

3.6.2 Specification
QAPPs must meet all applicable requirements as outlined in EPA *Requirements for Quality Assurance Project Plans* (EPA QA/R-5).

3.6.3 Generic QAPPs
A generic QAPP may be developed to cover common attributes of projects with similar objectives. Addendums must be provided for individual projects or sites covered by the generic QAPP, see section 3.7, to address unique details that specific project or site may have.

3.6.4 QAPP Development and Peer Review
QAPOs are responsible for developing the QAPPs. With external QAPPs, an individual with the external organization would serve as the QAPO. *Guidance on Quality Assurance Project Plans* (EPA QA/G-5) will serve as a reference for QAPOs in the development of QAPPs. QAPPs must be supportive of DQOs, as specified in section 3.5. Once drafted, the QAPP will be reviewed by technical experts for the area in which it was developed.

3.6.5 Quality Assurance Certification
The QAC responsible for the area in which the QAPP was developed, or developed for, will review and certify the QAPP. This certification attests that the QAPP contains the required elements as prescribed by EPA QA/R-5 and that the QA/QC provisions are commensurate with:

- the purpose of the environmental data operation (e.g., enforcement, research and development, rulemaking),
- the type of work to be done (e.g., pollutant monitoring, site characterization, risk characterization), and

- the intended use of the results (e.g., compliance determinations, selection of remedial technology and/or approach, development of environmental regulation, impairment status determination).

If the QAC serves as the QAPO, the draft QAPP shall be submitted to the QAM or another designated QAC for review and approval. For external organizations with an ESD-approved QMP, this review and approval is conducted by the QAM of the external organization, unless otherwise specified in their QMP.

3.6.6 Management Approval
The Section Supervisor – whose staff will carry out the provisions outlined in the QAPP – will review and approve the QAPP and any subsequent amendments. This approval attests that adequate resources and expertise are available to adequately implement the QAPP as drafted. If the QAPP spans multiple sections within the same bureau, then each Section Supervisor and BC shall review and approve the QAPP. In cases where the QAPP spans multiple bureaus, then each BC and the DA shall review and approve the QAPP and any subsequent amendments. For external organizations with an ESD-approved QMP, this review and approval is conducted as designated in their QMP.

3.6.7 EPA Approval
With the approval of this QMP, the EPA is also approving the ESD to certify all QAPPs both intramural and extramural, including those QAPPs supporting Brownfield and State Response Program activities and QAPPs prepared by non-state EPA grantees supporting Brownfield activities, with the exception of those developed in support of a Superfund Cooperative Agreement. Such QAPPs will require EPA approval, and will be submitted to the EPA for approval in accordance with 40 CFR Part 35, Subpart O. Copies of the QAPPs for federally funded activities will be available for inspection as part of EPA's on-site program evaluation activities or upon request.

3.6.8 Annual Review
All QAPPs shall be reviewed on an annual basis by the QAPO and reported to the QAM.

3.6.9 Expiration
QAPPs shall be valid until the conclusion of the data collection or analysis effort for which they were developed, or for five years, whichever is less. Prior to expiration, the QAPP must be re-approved by appropriate management if still required.

3.7 QAPP Addendums
QAPP addendums are required for individual projects or sites covered by the generic QAPP, see subsection 3.6.3, to address unique details that specific project or site may have. Generally, QAPP addendums should be provided in template or checklist form and be included as part of Generic QAPP it is intended to support. A site sampling plan is an example of a QAPP addendum – where the specific locations of samples to be collected and the specific analyses to be performed on those samples are defined. Other addendums may be a completed checklist which highlights elements to be conducted with the specific project or at the specific site. Addendums will be prepared by the QAPO and approved by the QAC.

3.8 Standard Operating Procedures (SOP)
SOPs document routine or repetitive administrative and technical activities to facilitate consistency in the quality and integrity of the product or end-result.

3.8.1 SOP Required.

SOPs will be developed and implemented for all routine procedures related to: monitoring and measurement; sample collection, handling, and preservation; data analysis; data management; and inspection and maintenance of equipment. The appropriate SOPs are either included or referenced in each QAPP.

3.8.2 Specification
SOPs should contain the main elements from the EPA *Guidance for Preparing Standard Operating Procedures*, April 2007 (EPA QA/G-6):

- Scope and applicability;
- Procedures to use;
- QC activities; and
- References.

3.8.3 Development
SOPs are prepared by the appropriate staff member, and are peer reviewed. The SOP should be validated by one or more individuals with appropriate training and experience in the process. Overall management of SOPs is the responsibility of the QAPO for the project where the SOP is used, unless it is used for multiple projects with different QAPOs – then it will be managed by the appropriate QAC.

3.8.4 Quality Assurance Certification and Management Approval
Certification and approval are conducted in the same manner as outlined in subsections 3.6.5 and 3.6.6.

3.8.5 Annual Review and Revisions
SOPs need to remain current, and as such will be reviewed on an annual basis. Whenever procedures are changed, SOPs should be updated and re-approved. This review shall be conducted by the QAPO utilizing such SOPs. If multiple QAPOs are utilizing the SOP, a joint review will be initiated by the QAC for the given area.

3.8.6 Expiration
SOPs shall not be valid for a period of more than five years unless re-approved by appropriate management.

3.9 Project Assessments
Project assessment is the main method used by ESD to assess technical and QA/QC activities for a project. The intent of the project assessment is to provide a systematic and objective examination of a project to determine whether environmental data collection activities and related results conform to QA/QC requirements outlined in the applicable internal or external QAPP, and can include DQAs, as specified in section 3.10. It can also identify necessary changes to the project schedule, the QAPP itself, and any supporting quality assurance documents or procedures. These assessments are conducted upon key project milestones, on a set frequency, when problems occur, or as otherwise specified in the QAPP. The QAPO is responsible for conducting project assessments for internal QAPP. EPA *Guidance on Technical Audits and Related Assessments for Environmental Data Operations* (EPA QA/G-7) will be used as a guide for designing and conducting project assessments. Assessment findings will be shared with the appropriate QAC, and will be included as part of the MSR where appropriate, as specified in section 3.4.

Outside entities without an approved QMP will submit project assessments to the appropriate QAC for review. Those with an approved QMP will conduct project assessments as set forth in their QMP and will include findings as part of their MSR findings submitted to ESD, see subsection 3.4.3.

3.10 Data Quality Assessments (DQAs)

The quality of all data must be assessed after it is generated and before it is used in order to ensure that it is satisfying the intended data user's needs and QA requirements. The level of effort for the DQA will be commensurate with project objectives and intended use of the data. This assessment will be conducted by the QAC or other staff who have the expertise to conduct these statistical analyses. This assessment should focus on five basic data quality indicators:

- Accuracy - Can the data's accuracy be determined, how was it determined, and is it acceptable for the planned use?
- Precision - Can the data's precision be determined, how was it determined, and is it acceptable for the planned use?
- Completeness - Is a sufficient amount of data available for the planned use? · Representativeness - Generally, how well does the data represent actual conditions at the sampling location, considering the original study design, sampling methods, analytical methods, etc., which were used?
- Comparability - Generally, how comparable is the group of data with respect to several factors, including: consistency of reporting units; standardized siting, sampling, and methods of analysis; and standardized data format relative to applicable criteria and standards.

All of these factors will initially be considered when designing a study, and will be addressed in all QAPPs. Where applicable the EPA G9-R Data Quality Assessment: A Reviewer's Guide (QA/G-9R) and G-9S Data Quality Assessment: Statistical Tools for Practitioners (QA/G-9S) can be used in evaluating the data to determine if the data is of the right type, quality, and quantity to support the intended use.

The results of the DQA will be documented and provided to the QAPO. The QAPO will then be responsible for reviewing the results, determining if and what corrective actions are needed, and for confirming implementation and effectiveness of corrective actions.

3.11 Certification Programs

Certifications programs help the ESD ensure data collected by outside organizations will be of the type and quality required for its intended use.

3.11.1 Environmental Laboratories

The environmental laboratory certification ensures analytical data results submitted to DNR for the UST, CWA, Solid Waste, Contaminated Sites, and Safe Drinking Water Act programs are accurate and legally defensible. The certification program ensures laboratories are utilizing promulgated methods.

3.11.2 Operators/Professionals

Certification programs for operators and professionals help ensure such individuals have sufficient knowledge, education and experience to fulfill regulatory requirements, and that the information and data submitted by such individuals is of high quality. Certification is awarded upon successful completion of an examination; and maintained through continuing education.

3.12 Administrative Rules and Supporting Guidelines

The Administrative Procedures Act, Iowa Code chapter 17A, requires all state agencies to promulgate rules for the operation of their programs. The rulemaking process increases agencies' accountability to the public, allows public participation in the formulation of rules, and provides legislative oversight for program operations. Administrative rules and supporting guidelines will be established to specify analytical methods and assessment requirements to be used by regulated entities or their representatives. 567 Iowa Administrative Code (IAC) Chapters 1 – 12 outline the procedural requirements of the DNR, including rule making.

3.13 Protocols

Protocols are written agreements developed for regulated entities or their representatives to establish a common understanding between ESD and a regulated entity regarding: procedures to follow, data to be collected, assessment approach, analytical method or model used, and source of data utilized as part of a data collection and analysis effort. Such protocol should be developed prior to the initiation of the specific project. Such protocols should be supportive of an approved QAPP. Approval of protocols is left to the QAPO.

4 PERSONNEL QUALIFICATION AND TRAINING

4.1 Purpose

The purpose of this chapter is to document the procedures for assuring that all personnel performing work for ESD have the necessary knowledge and skills to effectively accomplish their work.

4.2 Personnel Qualifications

It is the policy of the ESD that all personnel performing tasks and functions related to data collection will possess adequate knowledge, skills, and experience to satisfactorily perform all technical tasks assigned. Assessment of quality assurance knowledge and skills is part of the annual employee performance process conducted by each supervisor. These knowledge and skill requirements will be incorporated into the individual performance plans. This document defines the level of expertise necessary for the particular staff position and establishes individual position objectives for a given year including training needed.

4.3 Quality Assurance (QA) Training Requirements

To the extent practicable, recognizing limitations on training availability, budget constraints, and staff turnover, personnel identified by leadership or QAM involved in quality assurance work shall receive appropriate training for their specific roles. Training could include use of EPA's online courses for EPA state staff. These courses were previously offered in a classroom setting but the Region has transitioned to online sessions to accommodate an increased need for remote training opportunities for budgeting efficiencies

.

Section Supervisors are responsible for assessing staff members' QA training needs and arranging for such training or retraining working with the appropriate QAC and the QAM.

4.4 Quality Assurance (QA) Training Implementation

The planning and accomplishment of this training will be included in operation plans and individual performance planning and appraisal. Adequate training for DNR staff will be a high priority. The DNR QA staff may assist in providing training for DNR staff, recognizing that EPA may remain the primary source of training and that EPA provides appropriate models for quality training.

The DNR will encourage both its line staff and managers to participate in EPA's QA training programs offered through Region 7. The RQAM will advise the QAM of available QA training opportunities for the divisions' staff. The effectiveness of QA training received by staff will be evaluated through field evaluations and other means.

The QAM will work with RQAM to coordinate QA/QC training with periodic manager and program meetings to improve the cost effective delivery of training.

On-the-Job training will also be utilized to ensure new staff are familiar with SOPs and QAPPs relevant to their job duties. Such training will be provided by the individual's supervisor and/or technical lead. It is each supervisor's responsibility to ensure that staff complete the required QA training.

4.5 Quality Assurance Training Documentation

QAM will keep an official record of ESD staff attending QA training, which will be made available on the DNR Employee Intranet. Section Supervisors are responsible for informing the QAM of staff training. The Iowa DNR's Learning Management System (LMS) is an on-line system that will be used to track QA training for DNR staff.

5 PROCUREMENT OF ITEMS AND SERVICES

5.1 Purpose

The purpose of this chapter is to document the procedures for purchased items and services that directly affect the quality of ESD's environmental programs.

5.2 Procurement of Items and Services

The procurement of items and services shall be done in accordance with the DNR's established guidelines. These are available on the DNR Employee Intranet and are updated as needed. Email notification to staff of changes in guidelines are provided. Notification or approval of purchases will be provided to Region 7 as indicated in applicable EPA agreements.

The following description of DNR responsibilities is excerpted from the guidelines:

DNR Responsibilities

1. **Program Staff:** Prepare Scope of Services statement, review proposals, and make recommendations to the Director, monitor contract execution, approve contract payments, and negotiate amendments.
2. **Budget and Accounting:** Provide budget information. Obtain necessary federal program approvals, encumber funds, maintain fiscal status information for each contract, and process payments upon approval by program staff. **Procurement Manager**: Maintain vendor database. Arrange for solicitation of quotations or bids. Coordinate proposal review and selection process. Assist staff with contract form, terms, and conditions. Review for compliance with State and federal regulations. Coordinate required approvals.
3. **Legal Review:** Review all university and non-competitive contracts and contract amendments.

Purchase orders must be signed by a supervisor and each contract shall have a technical program project officer. The project officer monitors contract performance to ensure that work products are satisfactory.

General contract conditions for various types of goods and services are available on the DNR webpage at: http://www.iowadnr.gov/About-DNR/RFP-Bid-Lettings. Conditions are included in any DNR contract and have been written to be compliant with EPA contract requirements.

5.3 Contracts, Subgrants, and Agreements

Any contracts for services, subgrants, or agreements entered into by the ESD which involve the collection of environmental data will ensure that all appropriate QA requirements are met. External QMPs may be required as specified in subsection 3.3.1. Required QAPPs, subsection 3.6.1, will be developed using the graded approach as appropriate for the use of the data. Review and approval of such QA documents will be conducted in accordance with sections 3.3 and 3.6.

5.4 Acquired Data

The varied responsibilities of the ESD necessitate the use of data acquired by the DNR that were independently managed, collected, and analyzed. To the extent possible, the ESD will involve itself in these activities so that these external sources produce quality data.

The QAPP of environmental data projects (whether internal or external) which include acquired data will address the use and evaluation of the acquired data exclusively.

The DNR may use the following or additional ways of ensuring that data it uses from acquired sources meet appropriate criteria for those uses:

- External QAPPs may be developed for routinely generated and reported data.
- Training and protocols may be developed and established for those collecting and reporting data.
- Acquired data may be classified for specific uses according to its age, quantity, accuracy, precision, completeness, representativeness, or comparability.

6 DOCUMENTS AND RECORDS

6.1 Purpose

The purpose of this chapter is to document appropriate controls for quality-related documents and records determined to be important to the mission of ESD.

6.2 Controlled Documents

The QMP, QAPP, QAPP addendums, SOPs and protocols shall be controlled documents under the ESD QMS.

6.2.1 Record Series and Official Document

The QMP shall be filed under ADM 01-05.G “Policies and Procedures” Record Series. Project-level quality assurance documents, QAPP, QAPP addendums, SOPs, and protocols shall be filed under the appropriate CON Record Series, which accommodates conservation and environmental programs. Documents stored within these record series shall be the “official” QA document. Each of these series has established retention schedules.

6.2.2 Intranet Availability

Controlled documents, except for QAPP addendums and protocols, shall be made available on the DNR Employee Intranet, so that they are more easily accessible by staff.

6.2.3 Document Manager

A document manager will be assigned to each controlled document. The QAM is the document manager for the QMP. Document managers for other controlled documents are assigned by the appropriate Section Supervisor or BC and may be QACs or QAPOs. The document manager is responsible for updating and maintaining the controlled document.

6.2.4 Change Management & Distribution

Revisions will be incorporated into the document by the document manager – once approved, and the date and version number on the controlled document will be revised accordingly. Notification of change will be e-mailed by the document manager to a distribution list provided therein. Notification will provide a description of the change and either a link to obtain revised version or the revised document as an attachment.

6.2.5 Alpha-Numeric Identifier

Each controlled document shall have a unique alpha-numeric identifier. The system for assigning unique identifiers shall be maintained by the QAM.

6.3 Controlled Project Documents and Records

Records generated as part of a data collection effort outlined in a QAPP or as part of implementing an SOP shall be addressed in the applicable QAPP or SOP.

6.4 Document and Records Management

The State of Iowa Records Management Manual includes records series retention and disposition schedules. These schedules direct state agencies in the maintenance and final disposition (permanent preservation in the State Archives or destruction) of records. Records of state agencies may not be destroyed unless prior approval of the State Records Commission is obtained and if a records retention schedule in the State Records Management Manual provides for destruction of the records in question. Record retention schedules are created, updated, or removed by requesting the change with the DNR Records Team who will submit a *Records Inventory and Retention & Deposition Schedule* form to the State Records Commission.

The DNR Records Officer assists ESD personnel in determining the correct record series schedules to apply to DNR records, and updating record retention schedules. The Records Officer also facilitates ESD efforts to inventory, evaluate and schedule records, and develop methods to control the creation, maintenance, and disposition of records.

BCs and Section Supervisors are responsible for following applicable retention and archival procedures, and should work closely with the Records Officer to ensure consistency. They should also notify the Records Officer as new programs emerge to ensure the preservation of new public records, and ensure that documents of record are transferred to the DNR Records Center. The assigned document manager is responsible for ensuring updated and/or revised controlled documents, section 6.2, are filed under appropriate record series.

The DNR Records Center and satellites (air quality, field services, and water supply record centers) are responsible for access, maintenance, inventory control, and retention of transferred files.

Each document manager will submit requests to the intranet webmaster to remove and add documents to the intranet to ensure that only the most current version of controlled documents, section 6.2, are made available in accordance with subsection 6.2.2.

6.5 Evidentiary Records

Where evidentiary records are involved, the applicable QAPP shall establish appropriate chain of custody and confidentiality procedures for the affected records.

7 COMPUTER HARDWARE AND SOFTWARE

7.1 Purpose

The purpose of this chapter is to document how the organization will ensure that computer hardware and software satisfies the ESD’s requirements.

7.2 Standard Desktop Requirements

The State of Iowa’s Office of the Chief Information Officer (OCIO) is responsible for assuring that computer hardware and software for standard desktop applications are compatible, perform, and are maintained as required for the ESD. Enterprise IT Standards for Desktop Management are maintained and available at: https://ocio.iowa.gov/standard/desktop-management and for Operating Systems at: https://ocio.iowa.gov/standard/enterprise-personal-pc-operating-system-standard . OCIO works in a collaborative manner with ESD and other state agencies to develop, implement, and update enterprise-wide IT standards. Compliance with the applicable standards will ensure that all hardware and software configurations are tested prior to use, to guarantee they perform as expected and meet user requirements.

Desktops are setup and tested by OCIO prior to use by individual staff.

7.3 Systems and Applications

7.3.1 Database Management Systems

Future procurements, upgrades and application development of database management systems shall conform to Enterprise IT Standards, which are available at: https://ocio.iowa.gov/standards.

7.3.2 Non-standard Applications

Program and OCIO staff will work together in developing design specifications to ensure customized software applications or those outside standard desktop applications meet programmatic requirements, and where applicable federal requirements. Such applications will be adequately tested to ensure they meet required specifications and work properly prior to being put into production.

7.4 Data Management

ESD environmental data operations shall have SOPs, as specified in section 3.8, developed for the entry, upload, verification and retrieval of environmental data into or from databases.

7.5 Data Backup

ESD environmental data operations shall conform to OCIO Enterprise IT Standards, available at: https://ocio.iowa.gov/standard/data-backup, to ensure backup copies of electronic data are created so that data availability and retention objectives are satisfied.

7.6 Security

Information security pertaining to environmental data operations will conform to OCIO Information System Security standards, available at: https://ocio.iowa.gov/standards .

8 PLANNING

8.1 Purpose

The purpose of this chapter is to document how individual data operations will be planned within ESD to ensure that data or information collected are of the needed and expected quality for their desired use.

8.2 Planning Environmental Data Operations

The primary planning documents utilized by the ESD are: budget documents; annual operational plans prepared by ESD programs and sections; annual regulatory plan; Performance Partnership Grant work plan; work plans associated with other federal grants and cooperative agreements; and individual performance plans. Work relative to data collection activities will be highlighted, and environmental data needs will be identified in these documents. This would include discussions regarding ongoing environmental operations, and the review and update of QAPPs for such operations. They will also highlight the development of QAPPs for new environmental data needs, and planned improvements or corrective actions identified through MSRs, project assessments, and program and performance audits.

8.3 Project Planning

When an environmental data need has been identified, the DQO process will be used to ensure that the level of detail in planning is commensurate with the importance and intended use of the work and available resources, as noted in section 3.5. Such a process will be implemented by the appropriate QAPO with assistance from the QAC. Once technical and quality objectives have been developed, the appropriate QAPO and technical staff begin the planning process and development of a QAPP. Once drafted, it will undergo required review and approval, as discussed in section 3.6.

8.4 Evaluating Quality of Data Collected

At times, it may be necessary or prudent to use data collected for some other purpose and/or by some other organization. The procedure for evaluating and qualifying data collected from other sources is dependent on the specific applications. Generally for data collected for other purposes, a DQA, as noted in section 3.10, will be conducted before the data is utilized to ensure that it satisfies the intended data user's needs and QA requirements.

9 IMPLEMENTATION OF WORK PROCESSES

9.1 Purpose

The purpose of this chapter is to document how work processes will be implemented within the organization to ensure that data or information collected are of the needed and expected quality for their desired use.

9.2 Work Performed

Ultimately, the BCs and Section Supervisors are responsible for ensuring that the work is performed in accordance with appropriate quality assurance requirements. The QMP provides the framework for defining the procedures to ensure that environmental data operations are implemented in accordance with an approved QAPP. The QAPP describes in detail the necessary QA, QC, and other technical activities that must be implemented to ensure results of work performed will meet the stated performance criteria. Sections 3.6 and 3.7 discuss implementation of QAPPs.

Routine technical and administrative activities will be documented in SOPs to ensure consistency in the quality of the products and/or processes. Implementation of SOPs is outlined in section 3.8.

10 ASSESSMENT AND RESPONSE

10.1 Purpose

The purpose of this chapter is to document how ESD will determine the suitability and effectiveness of the implemented quality system and the quality performance of the environmental systems to which the quality systems apply.

10.2 Management System Reviews

The overall ESD QMS for the ESD will be reviewed annually by the QAM in cooperation with the BCs and QACs. The intent of the review is to determine if QA requirements are being implemented as described in the ESD QMP. The level of experience and training needed by the assessment team is addressed in section 4.3 and subsection 2.6 of "EPA Guidance on Assessing Quality Systems, March 2003 (EPA QA/G-3)". It is the responsibility of the QAM to ensure that the QACs performing the assessment have no conflict of interest and no direct involvement for the work being assessed. The assessment will be carried out as specified in section 3.4.

10.3 Project Assessments

Project assessments will be carried out on a routine basis, in accordance with section 3.9.

10.4 Assessment Dispute Resolution

Disputes pertaining to assessment findings will be resolved promptly and at the lowest possible level. Any disputes that may occur that cannot be resolved in a reasonable time period will be raised to the next level of authority.

10.5 Corrective Actions

QAPOs are responsible for ensuring the corrective actions pertaining to projects are carried out in a prompt manner. However, Section Supervisors and BCs may also become involved in the corrective actions process based on the severity of the problem. QAM is responsible for corrective actions pertaining to the ESD QMS.

Generally, corrective actions will be implemented immediately. Where scope and/or severity of corrective action is such that it will require more time and resources than currently available, it will be addressed through the annual planning process, as specified in 8.2.

11 QUALITY IMPROVEMENT

11.1 Purpose

The purpose of this chapter is to document how ESD will improve its quality system.

11.2 Implementing Corrective Actions

ESD QMS will be improved through the implementation of corrective actions identified through reviews and assessments discussed in Chapter 10.

11.3 Quality Improvement Responsibilities

ESD staff, at all levels, are accountable for continuous quality improvement. The process of continuous quality improvement leads to a better and more responsive quality system. Because the technical staff and Section Supervisors are directly involved in the day-to-day operations, they are encouraged to identify ESD QA related problems or issues and opportunities for improvement, and to become involved in their resolution and implementation. They are encouraged to contact the QAM directly or through discussion with their management or QAC. During interviews conducted by the assessment team in the MSR process, questions are included regarding the support received by management, QACs and QAM in an effort to encourage open dialogue on how the quality system can be improved. The QAM will periodically meet with the QACs to discuss and address QA issues which have been identified by the QACs.

Iowa Department of Natural Resources (DNR)

Quality Assurance Project Plan (QAPP) Amendment
to include the Solid Waste Infrastructure for Recycling (SWIFR) Grant Activities

Approvals:

Position	Name	Signature/Date
DNR Land Quality Bureau Chief	Amie Davidson	
DNR Financial & Business Assistance Section Supervisor	Jennifer Wright	
DNR Quality Assurance Manager	Tim Hall	
DNR Quality Assurance Project Officer	Laurie Rasmus	

This amendment shall be effective upon the date of the last signature. The purpose of this amendment is to include SWIFR grant activities in the Environmental Services Department's (ESD) existing Quality Management Plan (QMP).

Introduction: This Quality Assurance Project Plan (QAPP) amendment describes the activities of the Iowa Department of Natural Resources Financial and Business Assistance (FABA) Section and its acquisition of environmental data whether generated from direct measurements activities, collected from other sources, or compiled from computerized databases and information systems as part of SWIFR grant project activities.

Section 1: Project Management

1.1 Project/Task Organization

The responsibility for carrying out the State's waste reduction goals is largely the responsibility of the Financial and Business Assistance (FABA) Section of the Land Quality Bureau, within the Environmental Services Division of the Department of Natural Resources (DNR). The DNR Quality Assurance Manager is Tim Hall and DNR Quality Assurance Coordinator for the SWIFR Grant program is Laurie Rasmus. The FABA Section Manager is Jennifer Wright, the Land Quality Bureau (LQB) Chief is Amie Davidson, the Environmental Services Division (ESD) Administrator is Ed Tormey, and the DNR Director is Kayla Lyon.

The distribution list for those for the approved QAPP amendment and subsequent revisions includes all those listed on the cover page. Additionally, project managers under contract with DNR for this project will also receive copies.

1.2 Problem Definition/Background

The purpose of this QAPP amendment is to describe quality system policies and management guidelines for activities under the SWIFR grant. Grant projects funded by the Environmental Protection Agency (EPA) that include the generation of environmental data or the use of existing data are required to submit a QAPP. Environmental programs are further required to document their quality system in a Quality Management Plan (QMP). The DNR has quality system and management guidelines for the agency outlined in the DNR's QMP, which was approved in July 2021, with an anniversary date for the QMP of July 2026.

This QAPP fits under the DNR-wide QMP and provides guidance to ensure that data collected and/or used are defensible and of known quality and origin. The goal of this QAPP is to describe the quality system to ensure that minimum data quality objectives are met and that data is available for multiple uses, including the development of sustainable environmental practices through financial and professional assistance. The data collected by this program are intended to be used to support the following objectives.

- Advance the State's efforts to minimize upstream food loss and increase diversion of food waste from Iowa landfills.
- Advance the State's efforts to progress towards a circular economy with a sustainable materials management approach by using and reusing materials more productively.
- Improve the State's recycling efforts for deposit eligible, single-use beverage containers.

This QAPP amendment broadly describes the data quality requirements that apply to the SWIFR grant project. It is the policy of the ESD that:

- All environmental data generated, compiled, used or reported will be of appropriate quality for its intended use.
- The intended use(s) and of the data will be defined before data collection efforts begin and will

account for the needs of secondary data users, as appropriate.

- The appropriate level of quality will be identified before data collection efforts begin.
- Application of managerial controls for data collection efforts will be appropriate for the intended use of and the degree of confidence required in the results.
- Quality information associated with environmental data collection efforts will be available to EPA, other data users, and the public.
- Each bureau or section generating, compiling, using or reporting environmental data will ensure that adequate resources (both monetary and staff) are provided to support the QA effort, and will be responsible for QA activities and requirements applicable to them. It will also be the responsibility of bureaus and sections to ensure that appropriate QA policies and procedures are developed and implemented by any grantees or subgrantees, contractors, or, in some cases, the regulated community, who generate environmental data.
- Each bureau generating, compiling, using or reporting environmental data will designate a QAC.

1.3 Project/Task Description

The primary program activities of the project are listed below.

- Develop a statewide food waste minimization and management study (Food Waste Study).
- Determine and analyze the life cycle impacts of select materials and processes (Life Cycle Assessments Study).
- Conduct an analysis of the State's recovery, redemption and recycling rates for deposit eligible beverage containers sold in the State and associated economic and environmental impacts (Deposit Container Recovery Analysis).

These activities will qualitatively and quantitively describe food waste, beverage containers and other select materials along with associated processing/management systems and environmental impacts.

The project strategy includes the tasks listed below.

- Develop a QAPP and submit the Title Page with signatures to EPA.
- Seek qualified consultants and execute contractual agreements for assistance with carrying out each of the three primary program activities within the parameters of the QAPP.
- Gather existing data and collect new data specific to each of the three activities.
- Calculate/determine desired results such as quantities/rates for material generation, material recovery, population served and associated environmental impacts such as greenhouse gas avoidance.
- Report on data, calculations, findings, methodologies and recommended actions to achieve project goals.

1.4 Data Quality Objectives and Criteria

A tiered system for data accuracy will be utilized as described below.

Tier 1: High-quality direct measures

- Shipping and receiving documents, such as scale tickets, bills of lading
- Invoices and records for receivables and payables
- Measurements consistently recorded over time by facility personnel/contractors, such as operating logs
- Initial estimate based on meter/measurement by qualified personnel

- Equipment data from nameplate
- Assessment/report of Tier 1 data collected previously

Tier 2: Moderate-quality indirect measures
- Estimates by qualified personnel
- Estimates based on a combination of measured data, widely accepted conversion factors, data provided by qualified personnel and/or basic principles
- Assessment/report of Tier 2 data collected previously

Tier 3: Low-quality indirect measures
- Equipment data from vendor specifications used to make usage estimates
- Estimated data based on published industry standards, an external calculation tool, or outside expert opinion
- Assessment/report of Tier 3 data collected previously

Tier 4: Non-peer reviewed low-quality indirect measures
- Estimated data based on non-peer reviewed published industry standards, external calculation tool, or outside expert opinion

1.5 Documents and Records

Documents and records, which may include the documents listed above as well as in final reports, are to be digitally retained for a minimum of three years as required by the grant. Final reports for each activity will be made available on the DNR website.

Section 2: Data Generation and Acquisition

Data will be acquired from a variety of reliable sources, such as those listed below.
- Professional and trade organizations
- Reports from business, industry and government organizations
- Facilities that collect, sort or process materials
- Facilities that produce or manufacture products or packaging

This project will use normal statistical methodology with standard proven analysis techniques that are widely accepted by industry. Data sources and analysis methods are to be described in reports for each of the three project activities.

Section 3: Assessment/Oversight

Performance audits may be conducted periodically by DNR staff to evaluate whether data is being collected and/or used appropriately. Analytical results meeting data quality objectives (DQOs) will be accepted. QC data that is outside acceptance criteria will be further evaluated. Analytical data will be reviewed by DNR staff and/or designated contractor.