ENVIRONMENTAL DATA QUALITY MANAGEMENT PLAN

Revision 21
April 1, 2015

Texas State Soil and Water Conservation Board
Temple, Texas

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SIGNATURE APPROVAL

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SIGNATURE APPROVAL

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ACRONYMS

ANSI	American National Standards Institute
ASQC	American Society for Quality Control
BMP	best management practice
BST	bacterial source tracking
CAR	corrective action report
CNMP	comprehensive nutrient management plan
COC	chain of custody
CWA	federal Clean Water Act
CWQMN	TCEQ Continuous Water Quality Monitoring Network
DQO	data quality objective
FOTG	USDA NRCS Field Office Technical Guide
FY	fiscal year
GIS	geographic information system
HR	human resources
HUB	historically underutilized business
NELAP	National Environmental Laboratory Accreditation Program
NPS	nonpoint source
NRCS	USDA Natural Resources Conservation Service
NSIP	USGS National Streamflow Information Program
QA	quality assurance
QAPP	quality assurance project plan
QC	quality control
QMP	quality management plan
SOP	standard operating procedure
SRM	TSSWCB Statewide Resource Management group
SWCD	Soil and Water Conservation District
SWQM	surface water quality monitoring
TCEQ	Texas Commission on Environmental Quality
TMDL	total maximum daily load
TPASS	Texas Procurement and Support Services
TSSWCB	Texas State Soil and Water Conservation Board
TWDB	Texas Water Development Board
USDA	United States Department of Agriculture
USGS	United States Geological Survey
USEPA	United States Environmental Protection Agency
WPP	watershed protection plan
WQMP	TSSWCB-certified water quality management plan
WSE	water supply enhancement

1.0 MANAGEMENT AND ORGANIZATION

Document Title:	Environmental Data Quality Management Plan for the Texas State Soil and Water Conservation Board	
Organization:	Texas State Soil and Water Conservation Board (TSSWCB)	
Address:	Mailing PO Box 658 Temple, TX 76503	Physical 4311 S 31st St, Ste 125 Temple, TX 76502
Website:	http://www.tsswcb.texas.gov/	
Executive Director:	Rex Isom	
QA Officer:	Mitch Conine	
Scope:	TSSWCB nonpoint source (NPS) Pollution Abatement and Prevention. This Quality Management Plan (QMP) authorizes the generation of environmental data through monitoring, measurement, and modeling activities related to agricultural and/or silvicultural NPS water pollution abatement and/or prevention.	

1.1 Agency Authority, Mission and Programs

The TSSWCB, established in 1939, works in partnership with the State's 216 local Soil and Water Conservation Districts (SWCDs) to encourage the wise and productive use of the State's natural resources in a manner that promotes a clean, healthy environment and strong economic growth.

The TSSWCB is the lead agency in Texas responsible for:

- Coordinating the programs and activities of the State's 216 local SWCDs (Texas Agriculture Code §201.022). Responsibility granted by the Texas Legislature in 1939 through agency establishment.

- Planning, implementing and managing programs and practices for preventing and abating agricultural and silvicultural NPS water pollution (Texas Agriculture Code §201.026). Responsibility assumed in 1975 by order of the Governor of Texas and authority granted by the Texas Legislature in 1993.

- Administering a Water Supply Enhancement Program for the selective control, removal or reduction of noxious brush species, such as juniper, mesquite, saltcedar, or other phreatophytes, that consume water to a degree detrimental to water conservation (Texas Agriculture Code §203.011). Responsibility granted by the Texas Legislature in 1985.

- Administering and coordinating the Texas Invasive Species Coordinating Committee (Texas Government Code §776.006). Responsibility granted by the Texas Legislature in 2009.

Headquartered in Temple, Texas, the TSSWCB is governed by a seven-member Board composed of five locally-elected members and two Governor-appointed members, all of whom must be landowners actively engaged in farming or ranching.

The TSSWCB fulfills its water quality mandate through joint administration of the *Texas NPS Management Program* and is committed to funding, through federal grants and State appropriations, projects encompassing water quality monitoring, bacterial source tracking (BST), computer modeling, watershed planning, education and BMP demonstration and implementation. The TSSWCB is actively engaged in mitigating variety of water quality concerns such as bacteria, atrazine, dissolved oxygen, nutrient, and salinity impairments and concerns which may be caused, at least in part, by agricultural and/or silvicultural NPS water pollution.

Various agency programs and initiatives are implemented by different agency organizational units to fulfill statutory responsibilities. Agency organizational duties are described in §1.6.

1.2 Quality Assurance Policy

For projects involving environmental programs, United States Environmental Protection Agency (USEPA) assistance agreement recipients must implement or have implemented a quality system conforming to the national consensus standard ANSI/ASQC E4-1994, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs*. USEPA requirements for QMPs are defined in *EPA Requirements for QMPs (QA/R-2)*. This quality system shall be applied to all environmental data programs within the scope of the assistance agreement. Environmental data programs include direct measurements or data generation, environmental modeling, compilation of data from literature or electronic media, and data supporting the design, construction, and operation of environmental technology.

The TSSWCB, along with its cooperating entities and laboratories, is committed to the application of sound science, appropriate Quality Assurance (QA) standards, and practicality in all environmental data programs supporting agricultural and/or silvicultural NPS water pollution abatement and/or prevention. Cooperating entities shall be bound by requirements delineated in this QMP to the extent these requirements pertain to the goals and objectives of their contracted work. Cooperating entities will be required to carry out contracted work under the auspices of this QMP and specific Quality Assurance Project Plans (QAPPs). This QMP provides the foundation for project-based QAPP development and implementation on the part of this agency and its cooperating entities. These QA policies are designed to facilitate the mechanism of data collection, evaluation, and management.

This QMP establishes consistency both within the TSSWCB and with cooperating entities for the application of individual QA practices. Further, it ensures that all monitoring, measurement and modeling activities funded by USEPA and administered by TSSWCB will be conducted in

accordance with USEPA QA requirements. This QMP clearly delineates the TSSWCB QA policy and management structure which will be used to implement the quality system necessary to document the reliability and validity of all collected environmental data. This QMP shall be updated and revised at least annually.

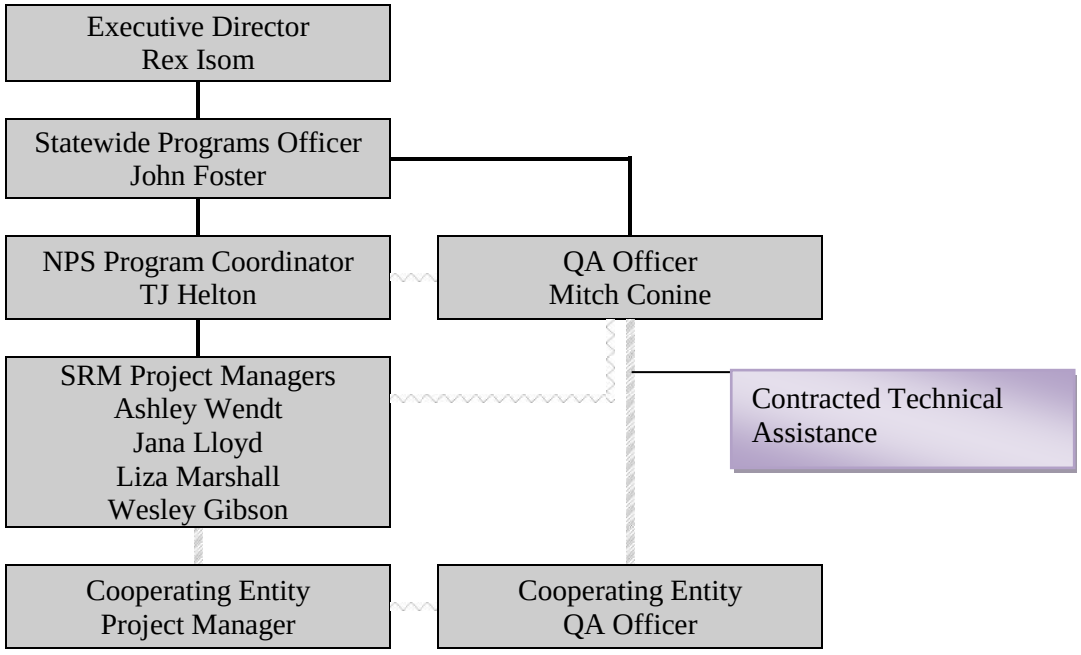
Each project funded by this agency, that involves the collection of environmental data related to agricultural and/or silvicultural NPS water pollution abatement and/or prevention, either directly with State funds or as an agent with federal monies, will have an approved QAPP. This QAPP requirement is applicable to both projects conducted internally by TSSWCB staff and conducted contractually by cooperating entities on behalf of TSSWCB. A QAPP will be completed, approved and in place prior to any environmental data collection. The QA Officer audits field and laboratory procedures described in QAPPs, no less than once over the contractual period of each project. Follow-ups will be conducted as necessary to resolve any deficiencies identified during these audits. This policy ensures that all environmental data collected by the TSSWCB and its cooperating entities, have compatible and quality assured data collection criteria. QAPPs will be forwarded to the QA Officer for review and approval.

TSSWCB will submit to USEPA for final approval those QAPPs which are associated with federally funded USEPA assistance agreements.

1.3 Agency Organizational Chart

A current agency organizational chart showing all TSSWCB organizational units can be found in Appendix B.

1.4 Quality System Organizational Chart



1.5 Responsibilities and Authority of the Quality Assurance Officer

In order to properly manage the quality system for environmental data programs within the TSSWCB and among cooperating entities performing duties under TSSWCB administration, all QA management oversight shall be assigned to the QA Officer. The QA Officer will be under the administrative management, direction and support of the Executive Director through the Statewide Programs Officer. The contracted technical assistance will be under the administrative management, direction and support of the QA Officer. The Quality System Organizational Chart shown in §1.4 is designed to ensure that there are no conflicts of interest between the QA Officer's responsibilities and any other assigned tasks.

- The QA Officer will be the official contact for all QA matters involving the TSSWCB.

- The QA Officer will be responsible for identifying and responding to QA needs, problems, and requests from within the TSSWCB and from cooperating entities. The QA Officer will provide technical QA assistance or obtain technical assistance from the USEPA Region 6 QA Management Office as necessary. This will include assistance in preparing detailed QAPPs, contract or other external procurement packages requiring QA measures, and designing QA programs for new studies.

- The QA Officer will review and approve all TSSWCB and/or cooperating entity-prepared QAPPs and all QA-related sections of procurement packages, which include or require QA measures. The QA Officer may also utilize contracted technical assistance to review cooperating entity-prepared QAPPs and all QA-related sections of procurement packages. QAPP signature approval authority resides with the EPA Project Officer for projects funded through EPA and TSSWCB's QA Officer for all other projects.

- The QA Officer will work with the individual project managers, management, and other personnel to take appropriate corrective action as needed.

- The QA Officer will serve as liaison between the USEPA Region 6 QA Management Office, TSSWCB programs and other environmental monitoring entities (including cooperating laboratories) in QA-related matters.

- The QA Officer will prepare and submit QA updates to TSSWCB management and, when requested, to the USEPA Region 6 QA Management Office.

- The QA Officer will coordinate and conduct management and technical systems audits of cooperating entities and laboratories. The QA Officer may also utilize contracted technical assistance to assist with management and technical systems audits of cooperating entities and laboratories. Audits may be conducted at any time during the life of a project and all factors can be considered when scheduling audits.

1.6 Mission of Organizational Components

The TSSWCB is governed by a seven-member Board, all of whom must be landowners that are actively engaged in farming or ranching. Five Board Members are elected in regional conventions of delegates from the 216 local Soil and Water Conservation Districts (SWCDs) across Texas. Two Board Members are appointed by the Governor of Texas with the advice and consent of the Texas Senate. An Executive Director reports directly to the Board and is responsible for day-to-day operations of TSSWCB staff.

TSSWCB staff are divided into 8 organizational units. While each unit has a distinct purpose, they all function collaboratively to fulfill agency mission and statutory responsibilities.

- Executive Administration – led by the Executive Director – directs the administrative affairs of the agency including the execution of rules, guidelines, decisions, and directives of the Board to ensure the efficient and effective operation of the agency.

- Budget and Accounting – led by the Fiscal Officer – oversees the agency's overall budget, revenue and expenditures, strategic planning, performance measures, cost recovery efforts, and proper expenditure of state appropriations and federal grants in order to ensure compliance with the agency's fiduciary responsibility; manages the general ledger, ensures proper processing of cash, communicates and implements state and federal cash management practices, and monitors and processes expenditures in accordance with state and federal statutes and regulations; performs contract management; manages the SWCD Conservation and Technical Assistance Grants Program; administers the Technical Service Provider Program through a federal contribution agreement with the United States Department of Agriculture Natural Resource Conservation Service (USDA NRCS); and executes purchasing efforts for the agency in accordance with state and federal requirements, the Historically Underutilized Business (HUB) Program and vendor recruitment requirements. With respect to information technology, Fiscal Affairs installs and maintains network services; troubleshoots computing hardware and software problems for agency users; works with the Texas Department of Information Resources to ensure agency compliance with state information technology statutes; develops and enforces policies regarding security, acceptable use of infrastructure and disaster recovery; and procures information technology software and hardware.

- Statewide Resource Management (SRM) – led by the Statewide Programs Officer – carries out responsibilities for implementing the agency's agricultural and silvicultural NPS water pollution abatement and prevention mandate; jointly administers the *Texas NPS Management Program*; administers the NPS Grant Program (both Clean Water Act (CWA) §319(h) and Statewide); serves as primary agency liaison with USEPA and the Association of State and Interstate Water Pollution Control Administrators; collaborates on the development and implementation of Total Maximum Daily Loads (TMDLs) and Watershed Protection Plans (WPPs); administers this Environmental Data QMP; represents the agency on the Texas Groundwater Protection Committee and the Coastal Coordination Advisory Committee; coordinates agency representation in the Texas Clean Rivers Program and the National Estuary Program; jointly administers with the Texas

Commission on Environmental Quality the *Texas Coastal NPS Pollution Control Program*; directs agency involvement in agricultural water conservation and irrigation management issues and represents the agency on the Water Conservation Advisory Council and the Texas Drought Preparedness Council; coordinates agency responsibilities associated with flood mitigation and the federal Watershed Protection and Flood Prevention Program administered by USDA NRCS; administers the state general revenue Flood Control O&M Grant and Structural Repair Grant Programs; directs agency involvement in CWA §§305(b) and 303(d) assessment activities; directs agency involvement in the Texas Surface Water Quality Standards revision process; performs GIS functions for the agency; administers the agency's Certified Nutrient Management Plan (CNMP) Program for dairy operations; manages policy and fiscal aspects of the agency's Poultry Water Quality Management Plan (WQMP) Program; and facilitates legislative, industry, and inter-agency communications.

- Special Projects/Public Information and Education – led by the Special Projects Coordinator – plans and coordinates the Annual State Meeting of Texas SWCD Directors; develops various agency reports; coordinates agency rulemaking functions; serves as primary agency liaison with the Association of Texas SWCDs, the National Association of State Conservation Agencies, and the National Association of Conservation Districts; represents the agency on the Texas Invasive Species Coordinating Committee; provides administrative support services for the Wildlife Alliance for Youth; manages the Texas Conservation Awards Program including the public speaking, poster and essay contests; administers a Conservation Education Video Library loan service; provides conservation education demonstration models on NPS water pollution; supports conservation education for teachers through continuing education workshops; plans and coordinates SWCD Program Development Workshops; and represents the agency at numerous trade shows and conferences across the state.

- Human Resources (HR) – led by the HR Coordinator – oversees all personnel matters including benefits administration, payroll, leave accounting, and employment recruitment; administers the agency managerial, developmental and safety training program; and ensures personnel practices are in compliance with state and federal regulations.

- SWCD Program Support – through Field Representatives – serves as the agency liaison with 216 local SWCDs statewide; explains TSSWCB policies, programs, rules and regulations to SWCDs; assists SWCDs with federal conservation programs; assists SWCDs in developing and implementing their local conservation programs; provides guidance on proper expenditure of SWCD funds, bookkeeping and procedures, and audits; trains SWCD employees in proper accounting and fiscal reporting procedures; provides guidance to SWCDs on employment issues, open meetings and open records; assists SWCDs in organizing and conducting youth conservation education activities; serves as agency liaison with city, county, state and federal officials; and represents the agency on the Texas Task Force on Economic Growth and Endangered Species.

- Water Supply Enhancement Program (WSEP) Office – led by the WSE Program Manager – carries out duties and responsibilities associated with administering the Water Supply Enhancement Program as defined in Chapter 203 of the Texas Agriculture Code; manages a financial incentive program supporting the removal of water-depleting brush to enhance water supply and availability; represents the agency on the Texas Prescribed Burning Board; and administers agency responsibilities for managing the Texas Invasive Species Coordinating Committee.

- Regional Offices (5) and Poultry Program Office – each led by a Regional Office Manager and collectively by the Regional Office Coordinator – carry out duties and responsibilities associated with administering the WQMP Program as defined in Chapter 201 of the Texas Agriculture Code; provide technical assistance to SWCDs and cooperators in developing and implementing WQMPs on agricultural or silvicultural operations; certify WQMPs; conduct engineering work associated with implementing WQMPs; manage day-to-day operation of the agency's Poultry WQMP Program in support of Chapter 26, Subchapter H of the Texas Water Code; address the issue of nuisance odors created by poultry farms and land application of poultry litter by implementing provisions of the Texas Water Code enacted by the 81st Texas Legislature through SB1693; investigate water quality complaints involving agricultural and/or silvicultural NPS pollution; and manage a financial incentive program supporting WQMP implementation.

1.7 Methods for Assuring that Elements of Quality System are Understood and Implemented

The QA Officer has direct access to the SRM Project Managers and appropriate cooperating laboratory directors on specific QA matters as problems arise. The QA Officer will keep responsible management informed at all times of the performance of data production systems and of any project problems and needs. The QA Officer may also utilize contracted technical assistance in order to assist in resolving particular project problems and needs associated with laboratory and/or compliance issues. Responsible management will in turn adequately respond to identified problems and needs (including resource aspects) and ensure their resolution.

The QA Officer shall distribute this QMP, and subsequent revisions, to quality system staff, as identified in §1.4, as well as, cooperating entities that are contractually conducting quality assurance and environmental data operations on behalf of the TSSWCB.

The QA Officer will report annually to TSSWCB management and, when appropriate, the USEPA Project Officer the following information:

- Status of QAPPs
- Relevant QA problems, corrective actions, progress, plans, and recommendations
- Results of management and technical systems audits
- Summary of QA-related training

The quality system will include periodic reviews and audits to ensure achievement of expressed QA objectives. The nature and frequency of these reviews/audits will be determined on a project-specific basis. Generally, they will include the following:

1.7.1 Review of Program and Project Plans

As part of the QA Officer's responsibility for quality system oversight, all existing programs, future management plans, study/project plans, experimental designs, and external procurement will be reviewed for adequacy by the QA Officer, and be modified as necessary.

These reviews will ensure that acceptable QA/QC activities and requirements are included, that proper QA was considered at the project's inception, and that the project will be able to produce data of required quality in a reliable and cost-effective manner. The TSSWCB and/or cooperating entities produce a QAPP for each project under the scope of this QMP. QAPP signature approval authority resides with the EPA Project Officer for projects funded through EPA and TSSWCB's QA Officer for all other projects.

1.7.2 External Reviews/Audits of Performance

Management and technical systems audits are conducted on each external (contractor or laboratory) environmental data program within the TSSWCB's purview by the QA Officer, or designee. The requirements established herein deem a technical systems audit to each laboratory, for adherence to QAPP procedures, necessary a minimum of once during each project contractual period, with follow-ups performed when necessary to resolve deficiencies. A site visit will be conducted for each project during active monitoring or sampling to the extent possible to coordinate QA. Overall, these audits will assess the adequacy of, and adherence to, the respective QAPPs by each contractor or laboratory. TSSWCB will conduct technical systems audits consistent with USEPA procedures detailed in *Guidance on Technical Audits and Related Assessments for Environmental Data Operations (QA/G-7)* and will utilize a standard checklist for technical systems audits for laboratories (Appendix C).

2.0 QUALITY SYSTEM DESCRIPTION

2.1 Quality System Components

QA activities are conducted by the TSSWCB and designed in the most cost-effective manner possible without compromising DQOs, in order to ensure that all environmental data generated and processed are scientifically valid; of known precision and accuracy and acceptable completeness, representativeness and comparability; and legally defensible regarding methodology. This is achieved by ensuring that adequate QA tools are used throughout the entire data collection and assessment process (from initial planning through data usage).

The tools used in the quality system include this QMP, management systems reviews, readiness reviews, the data quality objective (DQO) process, QAPPs, surveillance, standard operating procedures (SOPs), technical systems audits, reviews, and data quality assessments. The QA Officer and appropriate management and technical staff participate in and are responsible for the creation and implementation of each of these tools. Individual QAPPs include a schedule for required reviews, assessments, and audits as determined by the QA Officer. Cooperating Entities may also include, within the QAPP, their internal reviews, assessments, and audits.

Quality system components shall be applied to specific projects using a graded approach. This is a process of basing the level of application of quality system controls applied to environmental data programs according to the intended use of the results and the degree of confidence needed in the quality of the results.

Specifically, it is the responsibility of the QA Officer working with SRM Project Managers and cooperating entities to ensure that the following objectives are achieved.

- All environmental data generated are of known and acceptable quality. The data quality information developed with all environmental data is documented and available.

- The intended uses of the data are defined before the data collection effort begins, so that appropriate QA measures can be applied to ensure a level of data quality commensurate with the project data objectives. The determination of this level of data quality takes into account the prospective data needs of secondary users. The assigned level of data quality, specific QA activities and data acceptance criteria are explicitly described in each individual QAPP.

- Audits are conducted by the TSSWCB to ensure data validation. General audit procedures are stated in QAPPs generated by the TSSWCB and cooperating entities.

- Each entity that generates environmental data is required to develop a QAPP, and will be responsible for ensuring that adequate resources (both monetary and staff) are provided to support the QA effort, and that the QAPP is implemented. QAPPs are to comprehensively describe detailed quality assurance/quality control (QA/QC) procedures that must be implemented for a particular project to ensure the quality of the data generated satisfy DQOs,

and to specify mechanisms by which timely corrective action can be taken in the event that DQOs are not met.

- Until environmental data operations are completed, QAPPs shall be revised, at least annually, throughout the contractual period of the project. More frequent revisions may be necessary if substantive changes are needed to incorporate modifications in project goals or DQOs or to incorporate corrective action as characterized in §10.2. If non-substantive amendments are needed, they may be approved in writing by the QA Officer without an actual revision to the QAPP itself; however, approved non-substantive amendments must be incorporated into the next revision of the QAPP.

- All applicable projects will adhere to the requirements and specifications stated in this QMP and the associated QAPP.

2.2 Technical Programs

All TSSWCB QAPPs (regardless of funding source) approved under the auspices of this QMP will meet USEPA requirements published in *EPA Requirements for QAPPs (QA/R-5)* and will be consistent with USEPA *Guidance for QAPPs (QA/G-5)*. TSSWCB water quality data is used to understand the fate and transport of environmental pollutants, to evaluate effectiveness of BMPs, and to assess the State's water resources for the CWA §305(b) Assessment and §303(d) List of Impaired Waters (i.e., Integrated Report). Projects may be generally classified as one of five types or a combination thereof. Specific guidance on the development of QAPPs for categorical project types is provided below.

2.2.1 Sampling (S)

QAPPs for the purpose of sampling, document QA/QC procedures for field sampling and laboratory analysis for measurements or information that describe environmental processes, location, or conditions and/or ecological or health effects consequences. Sampling QAPPs will be consistent with USEPA *Guidance on Choosing a Sampling Design for Environmental Data Collection (QA/G-5S)*. For those projects with an identified objective of submitting data to the TCEQ for use in satisfying State requirements of CWA §§305(b) and 303(d), consistency with *TCEQ SWQM Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment and Tissue (RG-415), TCEQ SWQM Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416)*, and *TCEQ SWQM Data Management Reference Guide* is required. Additionally, consistency with Title 30, Chapter 25 of the Texas Administrative Code, *Environmental Testing Laboratory Accreditation and Certification*, which describes Texas' approach to implementing the NELAP standards, may be required. Examples include:

- Ambient and targeted SWQM
- Groundwater monitoring
- Biological assemblage and habitat assessment
- Bacterial Source Tracking

- BMP effectiveness monitoring
- Edge-of-field monitoring
- Use Attainability Analyses (UAAs)

2.2.2 Modeling (M)

Modeling QAPPs document QA/QC procedures for modeling, including model development, calibration, and application. A model is software that creates a prediction of environmental processes, location, or conditions based on secondary data inputs. Modeling QAPPs will be consistent with USEPA *Guidance for QAPPs for Modeling (QA/G-5M)*. Examples include:

- Modeling for TMDLs or WPPs
- Modeling for BMP effectiveness

2.2.3 Secondary Data (D)

QAPPs for the purpose of secondary data document QA/QC procedures for manipulating existing environmental data for purposes other than those for which they were originally collected. These secondary data may be obtained from many sources, including literature, industry surveys, compilations from computerized databases and information systems, and computerized or mathematical models of environmental processes. Secondary Data QAPPs will be consistent with USEPA *Guidance on QAPPs for Secondary Research Data*. Examples include:

- Supports modeling projects
- Supports geospatial projects
- Supports TMDLs or WPPs

2.2.4 Geospatial (G)

Geospatial QAPPs document QA/QC procedures for the generation of information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the earth. This geospatial data may be derived from, among other things, remote-sensing, mapping, and surveying technologies. Geospatial projects frequently use a Geographic Information System – a collection of computer hardware, software, and geographic data designed to capture, store, update, manipulate, analyze, and display geographically referenced data. Geospatial QAPPs will be consistent with USEPA *Guidance for Geospatial Data QAPPs (QA/G-5G)*. Examples include:

- Generating new land use/land cover classifications and analyses
- GIS to support modeling
- Surveying to support engineered BMP construction (see §2.3)

2.2.5 Environmental Technology (T)

QAPPS for the purpose of environmental technology document QA/QC procedures for planning, implementing, and assessing the design, construction, and operation of environmental technologies, an all-inclusive term used to describe pollution control devices and systems, waste

treatment processes and storage facilities, and site remediation technologies and their components that may be utilized to remove pollutants or contaminants from or prevent them from entering the environment. Environmental Technology QAPPs will be consistent with USEPA *Guidance on QA for Environmental Technology Design, Construction and Operation (QA/G-11)*. Examples include:

- Evaluation of new technology/BMPs
- Design and construction of engineered BMPs (see §2.3)

2.3 Policy on QA for Engineered BMPs Prescribed in a WQMP

A WQMP is a site-specific plan developed through and approved by SWCDs for agricultural or silvicultural operations. The WQMP includes appropriate land treatment practices, production practices, management measures, technologies or combinations thereof. The purpose of a WQMP is to achieve a level of pollution prevention or abatement determined by the TSSWCB, in consultation with local SWCDs, to be consistent with Texas Surface Water Quality Standards. Cooperators (individual farmers and ranchers) implementing WQMPs are critical to TSSWCB's mission. For more information on the TSSWCB WQMP Program, refer to http://www.tsswcb.texas.gov/wqmp. For more information on BMPs, refer to *TSSWCB Water Quality BMP Manual* or to *TSSWCB/TWDB Water Conservation BMP Guide for Agriculture in Texas*, both available at http://www.tsswcb.texas.gov/reports.

The TSSWCB selected requirements for WQMPs based on criteria outlined in the Field Office Technical Guide (FOTG), which is a publication of the USDA NRCS. The FOTG contains technical information, specific to a geographic area, about the conservation of soil, water, air, and related plant and animal resources. The FOTG contains the NRCS Conservation Practice Standards and Specifications. Practice Standards define the BMP and where it applies. Practice Specifications are detailed requirements for installing the practice. The electronic FOTG can be accessed at http://www.nrcs.usda.gov/technical/efotg/.

Technical assistance for WQMP development and implementation is provided by TSSWCB Regional Offices and NRCS Field Offices. This technical assistance includes planning and assessing the design and construction of engineered BMPs, or environmental technologies as defined in §2.2.5. Financial assistance for WQMP implementation is provided by TSSWCB through various financial incentive programs sourced from State appropriations and federal grants. Therefore, §2.2.5 should be applicable when technical or financial assistance from TSSWCB is provided.

However, the QA Officer concludes that 1) the wide range of operating systems on agricultural and silvicultural lands in Texas necessitates a flexible WQMP Program, 2) the volume of WQMPs certified each fiscal year (FY) is prohibitive to developing a QAPP for each project that provides technical or financial assistance to cooperators, 3) NRCS Conservation Practice Standards and Specifications represent the best available technology for use on agricultural or silvicultural lands and describe appropriate design and construction requirements, and 4) Good Engineering Practices, employed by staff in both the TSSWCB Regional Offices and the NRCS Field Offices, provide more than adequate QA/QC mechanisms to satisfy §2.2.5. As such, a

QAPP is not required when technical or financial assistance is provided for the design and construction of engineered BMPs prescribed in a WQMP.

2.4 Policy on QA for Continuous Water Data Collected Through the TCEQ CWQMN or the USGS NSIP

The Texas Commission on Environmental Quality (TCEQ) Continuous Water Quality Monitoring Network (CWQMN) is administered by the Monitoring and Assessment Section of the Water Quality Planning Division of the Office of Water of the TCEQ. CWQMN stations are operated by TCEQ regional staff, cooperators, and/or contractors. The TCEQ CWQMN measures water quality parameters in various waterbodies of interest around the state at greater frequency than is possible with grab samples or short-term deployments of monitoring instrumentation. Continuous water data is measured automatically (365 days a year) at CWQMN stations and the data are telemetered to the TCEQ headquarters in Austin. Some TCEQ CWQMN stations are funded in whole or in part by non-TCEQ funds (i.e., a cooperating sponsor). All TCEQ CWQMN stations, regardless of funding source, are covered under the TCEQ CWQMN QAPP available at http://www.tceq.texas.gov/compliance/monitoring/water/quality/data/wqm/swqm_realtime.html#quality. This QAPP describes and documents policies, procedures, infrastructure requirements, assessments and response actions, and data management, needed to satisfy identified data quality objectives for CWQMN stations. Activities such as deployment, operation, maintenance, and data validation are described in the QAPP.

The United States Geological Survey (USGS) National Streamflow Information Program (NSIP) provides for a unified network of gages to provide streamflow information required to meet local, State, regional, and national needs. To provide streamflow information to meet national needs, the information obtained from these stream gages is consistent, obtained using standard techniques and technology, and subject to the same QA/QC. Nationally, the USGS operates and maintains approximately 7,500 stream gages which provide long-term, accurate, and unbiased information on streamflow. The USGS stream gaging network is currently funded in partnership with over 800 federal, State, and local agencies. Information on the USGS NSIP is available at http://water.usgs.gov/nsip/.

The TSSWCB collaborates with TCEQ and USGS by providing funding sourced from State appropriations and federal grants for the establishment, operation, and/or maintenance of CWQMN stations and NSIP gages, as well as, the management of continuous water data collected at these stations and gages, i.e., sampling activities as described in §2.2.1. Therefore, §2.2.1 should be applicable when TSSWCB funding for TCEQ CWQMN stations or USGS NSIP gages is provided.

However, the QA Officer concludes that, for continuous water data collected through the TCEQ CWQMN or the USGS NSIP, more than adequate QA/QC mechanisms to satisfy §2.2.1 are employed by staff at TCEQ and USGS. Additionally, the QA Officer concludes that due to the frequency at which individual data points are recorded for continuous water data collected through the TCEQ CWQMN or the USGS NSIP, the management of such continuous water data is beyond the institutional capacity of TSSWCB, but that more than adequate institutional

capacity to satisfy §2.2.1 exists at TCEQ and USGS. As such, a QAPP authorized under the auspices of this QMP is not required when TSSWCB funds the collection of continuous water data through the TCEQ CWQMN or the USGS NSIP.

3.0 PERSONNEL QUALIFICATIONS AND TRAINING

3.1 Certifications Required and Qualifications

TSSWCB and cooperating entity personnel who have received training on QA procedures are considered qualified to perform assigned duties. Although no official certifications are required, the checks and balances built into this QMP ensure that scientifically sound data results from all environmental data operations that are performed by the TSSWCB and cooperating entities performing activities on behalf of the TSSWCB. The QA Officer shall, at a minimum, have satisfactorily completed QA training conducted by the USEPA Region 6 QA Management Office.

3.2 Establishing Training Requirements for Personnel

Training requirements for TSSWCB staff have been set to assure compliance with established QA parameters. Personnel involved with the quality system are required to attend USEPA approved training courses as needed to remain current with all accepted QA activities. Cooperating entities are expected by the TSSWCB to remain current with all accepted QA activities as a condition of cooperation.

3.3 Identifying Training Needs

The needs of SRM Project Managers will determine the amount and type of training on a regular and continuing basis. These needs will be satisfied for all personnel involved in QA activities through training programs described in this QMP and in specific QAPPs.

3.4 Introductory and Continuing Training

Training programs will be administered when necessary to TSSWCB personnel. This training includes attendance at job-related training courses, seminars, workshops, or professional meetings. This training can include instruction, which is produced, either by the TSSWCB, USEPA, other governmental entities, is contract-supplied, or is promoted by professional associations. On-the-job training activities for all staff will be documented and the records retained. At a minimum, technical personnel will receive on-the-job training when first hired and periodically thereafter. TSSWCB quality system personnel should regularly attend the USEPA Region 6 Annual QA Conference.

3.5 Professional Development

It is the goal of the TSSWCB to encourage professional development beyond the minimum requirements listed in this QMP and individual QAPPs.

3.6 Training Records

Training will be documented and records maintained by SRM Project Managers and immediate supervisors of participating staff. Additionally, TSSWCB HR may maintain certain records for training completed by TSSWCB staff.

3.7 Identifying Instructors

The QA Officer will identify qualified instructors and cooperating entities as appropriate, based on instructor's training and experience in agricultural and/or silvicultural NPS water pollution abatement and/or prevention. The minimum qualification for instructors is that they have a degree from a four-year institution of higher learning with at least five years practical experience in environmental data programs focused on water quality.

3.8 Assessing Effectiveness of Training

The QA Officer, in collaboration with appropriate cooperating entities, will complete an assessment for effectiveness of training through discussions and review, as needed. USEPA *Guidance for Developing a Training Program for Quality Systems (QA/G-10)* may be utilized to further assess adequacy of training.

4.0 PROCUREMENT OF ITEMS AND SERVICES

4.1 Requirements

All procured items and services will meet established requirements and perform as specified in individual QAPPs. Suppliers shall have a quality system consistent with USEPA QA requirements. Procurement documents or financial assistance agreements shall include this requirement. This requirement applies only to those suppliers who provide services or items that directly affect the quality of results or products from environmental programs. Contractors, suppliers, and financial assistance recipients are responsible for the quality of work performed, including items or services provided by subcontractors and secondary suppliers.

The quality system requires that all applicable laboratory facilities, equipment, and services be capable of producing acceptable quality data in an efficient manner with minimum risk to personnel. Cooperating laboratories will ensure:

- acceptable environmental conditions (lighting, ventilation, temperature, noise levels);
- acceptable utility services (electricity and voltage control; purity, pressure, and supply of water and air);
- acceptable general laboratory equipment (analytical instrumentation support, air conditioners, furnaces, generators, refrigerators, incubators, laboratory hoods, sinks, counters); and
- routine inspection and preventive maintenance for all facilities and equipment.

All QA/QC for laboratory equipment and services is to be conducted by laboratory personnel in accordance with USEPA QA and certification requirements.

The following procurement processes are identified in this QMP and described in individual QAPPs:

- planning of procurement needs and activities, to be carried out as part of each project;
- identification, documentation, review, and approval of technical specifications;
- the provision of technical specifications for equipment to allow evaluation of performance limits of the equipment;
- selection and documentation of evaluation criteria and necessary certifications;
- the qualification of contractors and subcontractors;
- evaluation of TSSWCB and cooperating entities' QAPPs to ensure compliance with this QMP (to be performed by the QA Officer);
- identification of procedures for review and approval of negotiations, compromises, or changes regarding technical issues;
- documentation of the procurement process; and
- verification that final project environmental data is consistent with established DQOs.

Field and laboratory equipment used to conduct environmental data operations will be calibrated prior to work, following work, and at intervals according to specifications in the manufacturers' instructions. These procedures are addressed in each QAPP and documented for future audits in accordance with SOPs. SRM Project Managers will assure that acceptable equipment is used in

the field and the laboratory, and that it is maintained in good working order. Backup equipment and/or parts should also be available so as not to interrupt ongoing sampling.

4.2 Changes to Procurement Documents

Changes to procurement documents will receive the same review and approvals as the original procurement documents.

4.3 Contracted and Subcontracted Activities

The procurement process will ensure that contracted and subcontracted activities produce results of acceptable quality. The process for ensuring this level of quality will include procurement source evaluation and selection, evaluation of objective evidence of quality furnished by the supplier, source inspections, and examination of deliverables.

5.0 DOCUMENTS AND RECORDS

5.1 Document Control

The Fiscal Officer maintains and is responsible for official records at the TSSWCB headquarters office. A records retention and disposition plan is produced and maintained by the Texas State Library and Archives Commission. The *Texas State Records Retention Schedule, 4th Edition* is available at http://www.tsl.state.tx.us/slrm/recordspubs/state.html#RRS4. SRM Project Managers are responsible for ensuring that all documents and records produced by a project are handled appropriately in the QAPP. QA records are items that furnish objective evidence of the quality of environmental data that have been verified and authenticated as technically complete and correct. QA records may include photographs, drawings, forms, reports and electronically recorded data.

5.2 Handling of Documents

Documents and records related to environmental data programs are handled in accordance with internal SRM SOPs. These are considered to be copies of the official records of the agency and are under the delegated control of SRM Project Managers.

5.3 Document Requirements

Quality system documents, including revisions, must be prepared and reviewed for conformance with the quality system requirements and approved for release by the QA Officer. All technical guidance documents such as SOPs or QAPPs are acquired, produced, or revised as needed by appropriate staff within the TSSWCB and cooperating entities. The QA Officer assures appropriate QA/QC. Guidance documents are disseminated to each SRM Project Manager. SRM Project Managers and the QA Officer are responsible for the proper use of these documents, which is ensured through the training and audit process.

5.4 Records Requirements

Compliance with all statutory and USEPA requirements for records from environmental data programs is assured by strict adherence to SOPs and QAPPs. Retention schedules are used to assure adequate preservation of all key records necessary to support the mission of each project.

Maintenance of records will entail transmittal, distribution, retention, access, protection, preservation, traceability, retrieval, and disposition. Records will accurately reflect completed work and fulfill statutory and USEPA requirements. Record maintenance will be more fully described in QAPPs. Generally, project QA/QC documents, including the approved QAPP and revisions, chain of custody (COC) forms, corrective action reports (CARs), sample collection forms, and audit reports will be maintained for 5 years after the conclusion of the project (i.e., end of contractual period) by TSSWCB or the cooperating entity.

6.0 COMPUTER HARDWARE AND SOFTWARE

6.1 Hardware Requirements

SRM Project Managers and cooperating entities will ensure that hardware used for recording and maintaining data from environmental data operations meets program requirements. The State purchasing policy for information systems is a stepwise process. Qualified information systems vendors supply catalogs of their merchandise to agencies through Texas Procurement and Support Services (TPASS) which is a division of the Office of the Texas Comptroller of Public Accounts. If a needed item is not available through the catalogs, the items may be bought through a State Term Contract, in which the contracted items are listed and are supplied by TPASS. If an item does not appear in the catalogs on the term contract lists, that item may be let for bids.

6.2 Hardware Changes

SRM Project Managers and cooperating entities evaluate the impact of hardware changes on program performance as part of the implementation/installation process.

6.3 Software Development

The process for producing, developing, validating, verifying, and documenting software is conducted via pre-approved joint cooperative activities between project technical personnel and the cooperating entity. Final decisions, with regard to the degree that software does or does not meet user needs, rest with the SRM Project Manager.

6.4 Software Purchases

Agency users, under the joint supervision of SRM Project Managers and cooperating entities, evaluate all purchased software. The evaluation process is conducted by direct observation of software performance in relation to predefined project criteria.

7.0 PLANNING

7.1 Participants

Parties who perform environmental data operations are identified in project workplans. All parties participate in identifying the work product through a pre-project planning process. The following list identifies those entities that have historically been cooperators with the TSSWCB on agricultural and/or silvicultural NPS water pollution abatement and/or prevention activities, as specified in the *Texas NPS Management Program*.

- Baylor University
- Councils of Governments
- Counties
- Groundwater Conservation Districts
- Municipal Water Districts
- Private consulting firms and laboratories
- Resource Conservation and Development Councils
- River Authorities
- Soil and Water Conservation Districts
- Stephen F. Austin State University
- Texas A&M University
- Texas A&M University-Corpus Christi
- Texas A&M University-Kingsville
- Texas A&M AgriLife Research
- Texas A&M AgriLife Extension Service
- Texas Cattle Feeders Association
- Texas Farm Bureau
- Texas A&M Forest Service
- Texas Institute for Applied Environmental Research
- Texas Pork Producers Association
- Texas Tech University
- Texas Water Resources Institute
- U.S. Environmental Protection Agency
- U.S. Geological Survey
- University of Texas at Austin
- USDA – Agricultural Research Service
- USDA – Natural Resources Conservation Service

This list is by no means exhaustive. Other entities wishing to participate in programs administered at the state level (specifically, projects requiring data collection) through the TSSWCB are not precluded from doing so based on this listing.

7.2 Development and Documentation of Quality Needs

The needs and expectations of each party are communicated and defined during the planning process and during project implementation, through meetings and written documents relating to workplan objectives. SRM Project Managers are responsible for maintaining communication with involved parties. Communication is necessary to ensure that personnel are aware of their responsibilities and roles in the project.

Documentation is required to implement and validate sampling and analytical efforts, detect problems, and explain unexpected phenomena. Health and safety issues are of utmost importance in any project. All project activities are reviewed by the QA Officer for impact on the health and safety of personnel, prior to initiation of activities.

7.3 Specifications for Producing Desired Results

Specifications for producing desired results are defined from needs identified. These specifications are incorporated into QAPPs. Schedules are defined in project workplans to lay out the sequence of activities. Data quality objectives (DQOs) are developed and documented in QAPPs, and approved for implementation by the SRM Project Manager and QA Officer. The needed level of QC for each project will be defined by selecting data quality requirements through the DQO process; that is, through the graded approach. The process for each project is unique but shall be consistent with USEPA *Guidance on Systematic Planning Using the DQO Process (QA/G-4)*.

7.4 Cost and Schedule Constraints

The TSSWCB budget is established by the Texas Legislature on a biennial basis. Additionally, funding is acquired by federal cooperative agreements. Expenditure of these funds is allocated on an objective by objective basis as established in the *TSSWCB Agency Strategic Plan for FYs 2011-2015* available at http://www.tsswcb.texas.gov/reports. For FYs 2014 and 2015, the TSSWCB is legislatively capped at 72.1 FTEs and is appropriated approximately $52.5M for the biennium. This appropriation includes both State general revenue and anticipated federal monies. Annually, the Board approves an operating budget for the agency based on the biennial appropriation.

Under the objective pertaining to the *Texas NPS Management Program*, federal cooperative agreements are administered to address agricultural and/or silvicultural NPS water pollution abatement and/or prevention activities. The TSSWCB will carry out this responsibility by ensuring the most efficient use of local, state and federal dollars in conducting and/or coordinating environmental data programs. A number of current projects involve environmental data operations. Appendix A lists status of QAPPs for current projects with environmental data.

7.5 Quality Acceptance Criteria

Acceptance criteria for results, including measures of performance, are defined in approved workplans and/or QAPPs which are available at
http://www.tsswcb.texas.gov/managementprogram/browseactive.

8.0 IMPLEMENTATION OF WORK PROCESSES

8.1 Development of Standard Operating Procedures

SOPs are described in QAPPs that are approved by the EPA Project Officer for projects funded through EPA and TSSWCB's QA Officer for all other projects. Implementation of SOPs ensures that a project is conducted according to a defined workplan. QA methods are described in each QAPP, with the appropriate SRM Project Manager responsible for their implementation. SOPs shall be consistent with *USEPA Guidance for Preparing SOPs (QA/G-6)*. TSSWCB may develop SOPs for activities expected to span multiple projects and that need uniformity across multiple cooperating laboratories. Specific cooperating entities may have developed and implemented specific SOPs for their field operations and/or laboratory and, by inclusion in a QAPP, are approved de facto by TSSWCB.

8.1.1 SOPs for Bacterial Source Tracking

The QA Officer concludes that, for bacterial source tracking (BST), 1) activities are expected to span multiple projects, and 2) uniformity across multiple cooperating laboratories is needed. As such, SOPs for certain analytical processes associated with BST shall be included in the QAPPs that are approved by the EPA Project Officer for projects funded through EPA and TSSWCB's QA Officer for all other projects.

8.2 Mechanisms for Implementation

Mechanisms for implementation are the responsibility of each SRM Project Manager. These include oversight, monitoring, and inspection. Monitoring includes the use of analytical and QC samples. Oversight and inspection are carried out by QA personnel identified in this QMP and specific QAPPs, as well as by SRM Project Managers, to check performance against technical and quality specifications.

8.3 Documentation of Operating Procedures

Operational procedures are devised and implemented through workplans, QAPPs, and SOPs. Qualified technical personnel will review SOPs for adequacy. Standard formats are used for these documents. Review, approval, distribution, and overall control of SOPs are the responsibility of the QA Officer. Exceptions to plans and activities, which are documented by project staff, are jointly implemented and controlled by each SRM Project Manager and appropriate cooperating entities.

9.0 ASSESSMENT AND RESPONSE

9.1 Assessment Development

Periodic assessments of the TSSWCB quality system should be performed, at least annually, utilizing USEPA *Guidance on Assessing Quality Systems (QA/G-3)*. Necessary changes to the quality system critical for improvement will be incorporated into revisions of this QMP as described in §1.2. This guidance shall also be used in assessing cooperating entities' quality systems. The QA Officer plans, conducts, and evaluates assessments of environmental data operations in order to measure the effectiveness of the implemented quality system. Scheduling of assessments and allocation of resources are based on the status, risk, and complexity of sampling and analytical activities. Assessments include an evaluation to determine whether the technical requirements of activities are being effectively met. Written procedures are included in QAPPs, and describe the scope of the assessment and information needed.

The development of quality assessment procedures and scheduling of assessment activities are conducted by the QA Officer. The QA Officer has sufficient authority, access, and organizational freedom to identify quality system problems; identify and cite noteworthy practices that may be shared with others to improve the quality of their operations and products; propose recommendations for resolving quality system problems; independently confirm implementation and effectiveness of solutions; and provide documented assurance to SRM Project Managers that, when problems are identified, future work will be carefully monitored until problems are suitably resolved.

9.2 Assessment Tools

The type of assessment activity appropriate for particular projects will be determined during the planning process. Assessment tools include management and technical systems audits, surveillance, performance evaluations, peer reviews, readiness reviews, and data quality assessments. For evaluating particular activities, the QA Officer determines the appropriate assessment tool and identifies personnel responsibilities.

Data quality verification, validation and assessment shall be consistent with USEPA *Guidance on Environmental Data Verification and Data Validation (QA/G-8)*, *Data Quality Assessment: A Reviewer's Guide (QA/G-9R)*, and *Data Quality Assessment: Statistical Tools for Practitioners (QA/G-9S)*.

The QA Officer and each SRM Project Manager have the authority to suspend or stop work upon detection and identification of an adverse condition affecting the quality of results or the health and safety of personnel. Stop work authority extends to projects conducted internally by TSSWCB staff and conducted contractually by cooperating entities on behalf of TSSWCB.

9.3 Assessment Response

The QA Officer determines appropriate actions in response to assessments. The QA Officer, in a timely manner, determines the effectiveness of responses to assessments, and maintains all

documentation and correspondence relating to assessments and actions. Following any assessment event, a written summation of needed changes is prepared by the QA Officer and presented in a timely manner to the SRM Project Manager.

Project reports containing data or reporting the results of environmental data operations are reviewed independently to confirm that the data or results are correctly presented. This is accomplished through peer review. Approval of project reports by the SRM Project Manager is required prior to publication or distribution.

9.4 Management Roles

Among the staff of the TSSWCB, the Executive Director bears responsibilities for the staff as a whole. The Executive Director also serves in an advisory capacity on matters regarding QA, as well as, overall authority for the variety of agency obligations as set forth by State statute. The Executive Director also is responsible to the Board, and thereby the State, in matters related to authorities vested in the Board.

The Statewide Programs Officer is responsible to the Executive Director, and has authorities pertaining to agricultural and silvicultural NPS water pollution abatement and prevention programs. The Statewide Programs Officer oversees the QA Officer and has a high level of participation in the process, carrying out or overseeing the assessments and QA activities of the agency.

9.5 Assessment and Response Actions

The QA Officer will take action as problems arise through the assessment process by correcting the acknowledged problems and all data directly linked to the malfeasance. The effectiveness of the assessment itself will be evaluated through a monitoring process, and at the next assessment, by how any prior acknowledged problem was rectified.

9.6 Personnel Capabilities

The level of competence, experience and training necessary to ensure the capability of personnel conducting quality system assessments is determined de facto based on the requirements for being employed within the SRM hierarchy and as held by the QA Officer.

9.7 Assessment Conductor Prerogatives

Persons conducting quality system assessments will be free to access and/or identify quality problems and noteworthy practices; make recommendations for resolving quality problems; assess implementation and effectiveness of solutions; and to assure management that work is monitored until problems are resolved by the appropriate staff.

10.0 QUALITY IMPROVEMENT

The TSSWCB has a management system for detecting and preventing problems concerning QA/QC and for ensuring continual improvement of its quality system. Personnel responsible for sampling and analytical activities make every attempt to prevent the occurrence of problems that can affect the quality of environmental data.

Periodic assessments of the TSSWCB quality system should be performed, at least annually, utilizing USEPA *Guidance on Assessing Quality Systems (QA/G-3)*. Necessary changes to the quality system critical for improvement will be incorporated into revisions of this QMP as described in §1.2. This guidance shall also be used in assessing cooperating entities' quality systems.

10.1 Responsibility

The QA Officer is responsible for identifying, planning, implementing, and evaluating the effectiveness of quality improvement activities.

10.2 Corrective Actions

Whenever the procedures and guidelines established in this QMP or specific QAPPs are not successful, corrective action is required to ensure that conditions adverse to QA/QC are identified promptly and corrected as soon as possible. Corrective actions include identification of root causes of problems, determination of whether the problem is unique or has more widespread implications, and recommendations for preventing recurrence of the problem. Training will address the problem so that others do not repeat.

Corrective actions must be initiated if variances from proper protocols are noted. Reporting to the QA Officer ensures that early and effective corrective actions will be taken when data quality fails to meet acceptable limits. The responsibility to oversee and implement necessary corrective actions rests with each SRM Project Manager. The QA Officer is informed of any corrective actions that are taken. Follow-up evaluations are conducted by the QA Officer to ensure effectiveness of the implemented corrective actions.

APPENDIX A

STATUS OF QAPPs FOR CURRENT PROJECTS WITH ENVIRONMENTAL DATA OPERATIONS

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Project	QA Type	Project Description	QA Lead Entity	Status	Funding Source	Date of QAPP Approval	Approved Version	QAPP Expires
10-07	S	Surface Water Quality Monitoring to Support Implementation of the Plum Creek Watershed Protection Plan	GBRA	Approved	Federal	06-10-2014	4	09-30-2015
10-08	S	Development of a WPP for Cedar Bayou (Sampling)	HGAC	Approved	Federal	03-03-2015	2	08-31-2015
10-08	M	Development of a WPP for Cedar Bayou (Modeling)	HGAC	Approved	Federal	12-17-2014	1	08-30-2015
11-04	S	Development of the Upper Llano River WPP (Sampling)	AgriLife TWRI	Approved	Federal	04-29-2014	2	10-31-2015
11-04	GM	Development of the Upper Llano River WPP	AgriLife TWRI	Approved	Federal	08-01-2013	2	02-29-2016
11-06	S	Water Quality Monitoring in the Geronimo Creek Watershed and Facilitation of the Geronimo and Alligator Creeks Watershed Partnership	GBRA	Approved	Federal	09-08-2014	1	09-21-2015
11-08	M	Development of a WPP for Double Bayou (Modeling)	HARC	Signature pages for the Annual Revision are being routed	Federal	10-24-2013	0	03-31-2016
11-08	S	Development of a WPP for Double Bayou (Sampling)	HARC	Approved	Federal	02-04-2015	2	03-31-2016
12-05	GM	Development of the Lower Nueces River Watershed Protection Plan-Large Debris	NRA	Approved	Federal	02-20-2014	1	09-30-2015
12-05	GM	Development of the Lower Nueces River Watershed Protection Plan-OSSF	NRA	Approved	Federal	04-30-2014	1	09-30-2015
12-05	GM	Development of the Lower Nueces River Watershed Protection Plan Water Hyacinth Infestation Evaluation	NRA	Approved	Federal	12-17-2014	0	09-30-2015

Project	QA Type	Project Description	QA Lead Entity	Status	Funding Source	Date of QAPP Approval	Approved Version	QAPP Expires
12-10	S	BST to Support Adaptive Management of the Arroyo Colorado WPP	TWRI	Approved	Federal	06-06-2014	0	10-31-2015
12-12	S	Implementation of Intensive Water Quality Monitoring and Evaluation to Support the Lake O' the Pines National Water Quality Initiative (NWQI) – Phase I	TWRI	Addressing EPA comments	Federal			
13-07	S	Investigation into Contributions of Nitrate-Nitrogen to Plum Creek, Geronimo Creek and the Underlying Leona Aquifer	GBRA	Approved	Federal	02-04-2014	0	09-30-2016
13-09	S	Surface Water Quality Monitoring to Support the Implementation of the Lampasas River Watershed Protection Plan	Texas A&M AgriLife Research	Approved	Federal	06-24-2014	0	09-30-2016
13-50	S	Statewide Bacterial Source Tracking Program for FYs 2013-2014	TWRI	Approved	State	08-21-2014	0	08-21-2015
13-56	S	Bacteria Growth, Persistence, and Source Assessment in Rural Texas Landscapes and Streams	TWRI	Approved	State	12-09-2014	1	11-05-2015
14-09	S	Surface Water Quality Monitoring to Support the Implementation of the Geronimo and Alligator Creeks Watershed Protection Plan	GBRA	Approved	Federal	02-18-2015	0	09-30-2016
14-11	S	Surface Water Quality Monitoring to Support Implementation of the Plum Creek Watershed Protection Plan	GBRA	Approved	Federal	02-18-2015	0	09-30-2016

Project	QA Type	Project Description	QA Lead Entity	Status	Funding Source	Date of QAPP Approval	Approved Version	QAPP Expires
14-50	S	Evaluation and demonstration of VTA effectiveness to protect runoff water quality on small pork production facilities in Texas	USDA-ARS and TWRI	Approved	State	01-23-2015	1	08-31-2015
14-51	S	Recreational Use Attainability Analysis for San Miguel Creek	NRA	Approved	State	03-09-2015	0	10-31-2015
14-52	S	Recreational Use Attainability Analysis for Ten Creeks in the Red River and Neches River Basins	TIAER	Approved	State	05-16-2014	0	10-31-2015
14-56	GM	Distribution of E. coli levels and recreation use as factor of stream order in the Central Great Plains, Central Oklahoma/Texas Plains and South Central Plains Ecoregions	TWRI	Approved	State	07-28-2014	0	05-31-2015
14-57	M	Phase 1: Data Collection and Development of Essential Components for the Mill Creek Watershed Protection Plan	TWRI	Approved	State	09-08-2014	0	05-31-2016
14-57	S	Surface Water Quality Monitoring to Support Phase 1: Data Collection and Development of Essential Components for the Mill Creek Watershed Protection Plan	Texas A&M AgriLife Research/ TWRI	Approved	State	10-06-2014	1	05-31-2016
15-50	S/M	Watershed protection plan development for the Navasota River below Lake Limestone	TWRI	Approved	State	02-03-2015	0	09-30-2016

S = Sampling
M = Modeling
2nd = Secondary
GM = Geospatial/Modeling

APPENDIX B

AGENCY ORGANIZATIONAL CHART

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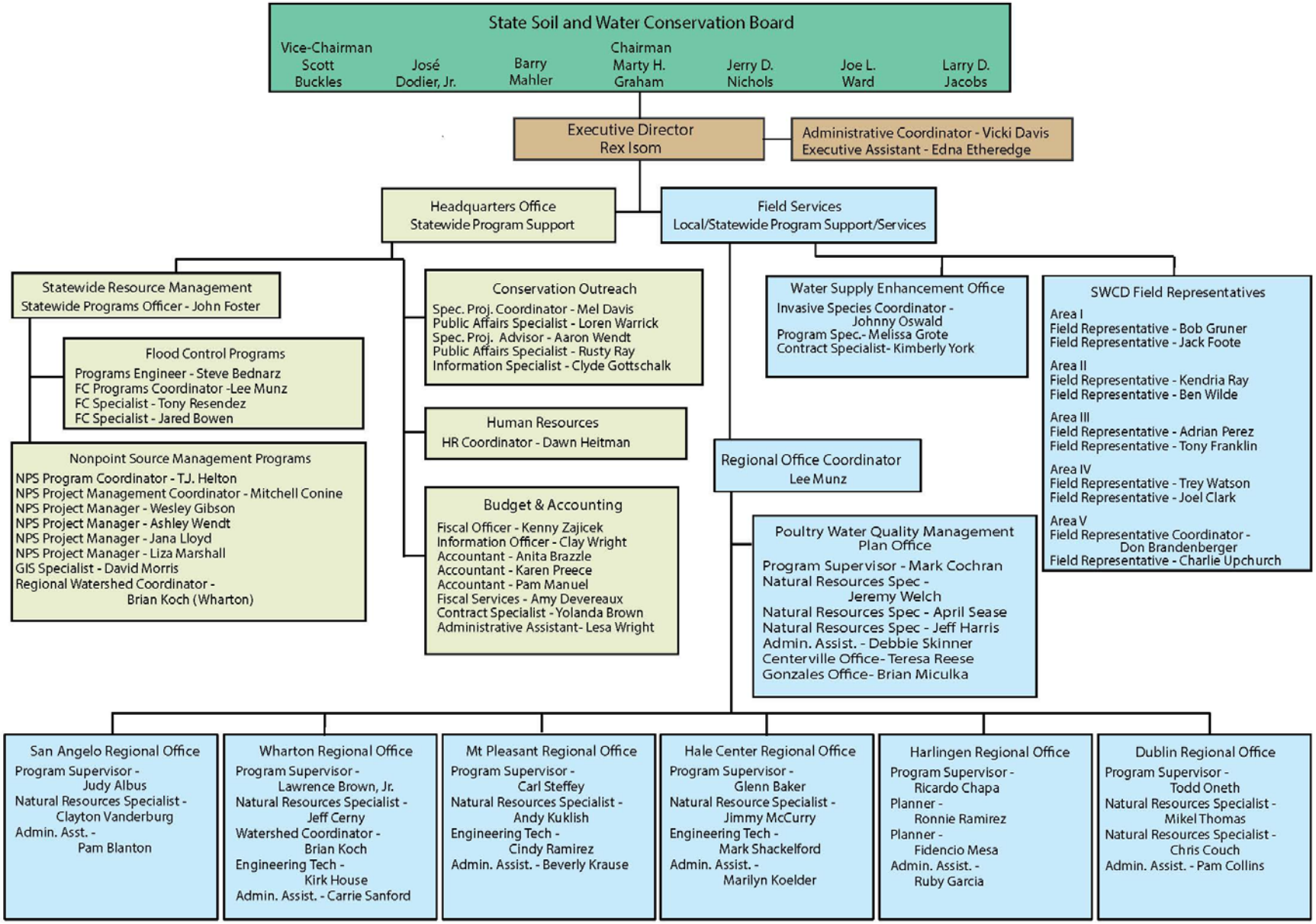
State Soil and Water Conservation Board
Vice-Chairman Scott Buckles
José Dodier, Jr.
Barry Mahler
Chairman Marty H. Graham
Jerry D. Nichols
Joe L. Ward
Larry D. Jacobs
Executive Director Rex Isom
Administrative Coordinator - Vicki Davis
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Statewide Program Support
Field Services
Local/Statewide Program Support/Services
Statewide Resource Management
Statewide Programs Officer - John Foster
Flood Control Programs
Programs Engineer - Steve Bednarz
FC Programs Coordinator -Lee Munz
FC Specialist - Tony Resendez
FC Specialist - Jared Bowen
Nonpoint Source Management Programs
NPS Program Coordinator - T.J. Helton
NPS Project Management Coordinator - Mitchell Conine
NPS Project Manager - Wesley Gibson
NPS Project Manager - Ashley Wendt
NPS Project Manager - Jana Lloyd
NPS Project Manager - Liza Marshall
GIS Specialist - David Morris
Regional Watershed Coordinator - Brian Koch (Wharton)
Conservation Outreach
Spec. Proj. Coordinator - Mel Davis
Public Affairs Specialist - Loren Warrick
Spec. Proj. Advisor - Aaron Wendt
Public Affairs Specialist - Rusty Ray
Information Specialist - Clyde Gottschalk
Human Resources
HR Coordinator - Dawn Heitman
Budget & Accounting
Fiscal Officer - Kenny Zajicek
Information Officer - Clay Wright
Accountant - Anita Brazzle
Accountant - Karen Preece
Accountant - Pam Manuel
Fiscal Services - Amy Devereaux
Contract Specialist - Yolanda Brown
Administrative Assistant- Lesa Wright
Water Supply Enhancement Office
Invasive Species Coordinator - Johnny Oswald
Program Spec.- Melissa Grote
Contract Specialist- Kimberly York
SWCD Field Representatives
Area I
Field Representative - Bob Gruner
Field Representative - Jack Foote
Area II
Field Representative - Kendria Ray
Field Representative - Ben Wilde
Area III
Field Representative - Adrian Perez
Field Representative - Tony Franklin
Area IV
Field Representative - Trey Watson
Field Representative - Joel Clark
Area V
Field Representative Coordinator - Don Brandenberger
Field Representative - Charlie Upchurch
Regional Office Coordinator
Lee Munz
Poultry Water Quality Management Plan Office
Program Supervisor - Mark Cochran
Natural Resources Spec - Jeremy Welch
Natural Resources Spec - April Sease
Natural Resources Spec - Jeff Harris
Admin. Assist. - Debbie Skinner
Centerville Office- Teresa Reese
Gonzales Office- Brian Miculka
San Angelo Regional Office
Program Supervisor - Judy Albus
Natural Resources Specialist - Clayton Vanderburg
Admin. Asst. - Pam Blanton
Wharton Regional Office
Program Supervisor - Lawrence Brown, Jr.
Natural Resources Specialist - Jeff Cerny
Watershed Coordinator - Brian Koch
Engineering Tech - Kirk House
Admin. Assist. - Carrie Sanford
Mt Pleasant Regional Office
Program Supervisor - Carl Steffey
Natural Resources Specialist - Andy Kuklish
Engineering Tech - Cindy Ramirez
Admin. Assist. - Beverly Krause
Hale Center Regional Office
Program Supervisor - Glenn Baker
Natural Resource Specialist - Jimmy McCurry
Engineering Tech - Mark Shackelford
Admin. Assist. - Marilyn Koelder
Harlingen Regional Office
Program Supervisor - Ricardo Chapa
Planner - Ronnie Ramirez
Planner - Fidencio Mesa
Admin. Assist. - Ruby Garcia
Dublin Regional Office
Program Supervisor - Todd Oneth
Natural Resources Specialist - Mikel Thomas
Natural Resources Specialist - Chris Couch
Admin. Assist. - Pam Collins
15 February 15

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APPENDIX C

QA AUDIT CHECKLIST

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TSSWCB LABORATORY AUDIT
(Auditor's Summation)

Laboratory:_____ Date:_____

Address:_____

Laboratory Contact:_____ Title:_____

Auditor(s): _____

1. Do responses to the evaluation indicate that laboratory personnel are aware of QA/QC and its potential impact on the data?

2. Is a positive impact placed on QA/QC by laboratory management?

3. Have the responses been open and direct?

4. Has the attitude been cooperative?

5. Is the proper emphasis placed on quality assurance?

ORGANIZATION

Question	Y	N	Comments
Is an organizational chart available?			
Is there a designated QA/QC Officer? *(To whom does the QA Officer report?)*			
Was the QA Officer available during the audit?			
Does the lab have a quality assurance plan or manual? *(Ask for a brief overview of the lab/facility QA/QC system.)*			
Are the lab's quality systems based on meeting the requirements of any particular standards? (e.g., ISO Guide 25, ISO Standard 17025, NELAC standard (Chapter 5), EPA Drinking Water Manual)			
Is the lab accredited or certified by any organizations? *(When do the accreditations or certifications expire?)*			
Does the lab participate in Proficiency Testing (PT) studies? *(How frequently are PT samples analyzed?)*			
Does the lab have policies which ensure that lab staff are free from commercial, financial, and other pressures which may adversely affect the quality of work? (i.e., ethics policy)			
Does the lab's report clearly identify results from other labs? *(if applicable)*			

Additional Comments

QUALITY ISSUES

Question	Y	N	Comments
Is there a formal training program for personnel?			
Is an up-to-date file maintained describing the relevant qualifications (e.g., educational background), training, skills and work-related experience of all lab personnel? *(Do records include documentation that each analyst has read lab QAP and pertinent SOPs?)*			
Are employees required to demonstrate proficiency with instrumentation, methods, or techniques prior to analyzing samples?			
Is proficiency testing documented? *(if applicable)*			
Are SOPs and other written instructions available at the bench or at an easily accessible place within the lab/facility?			
Is a system in place for reviewing and approving revised SOPs and other documents reviewed and revised periodically to ensure they accurately represent current implementation of each method and lab activity? *(If so, how frequently; who is responsible for reviewing and approving the documents; and are retired SOPs kept of file at the lab/facility?)*			
Are internal audits conducted at the lab? *(If so, who conducts the audits and are records available documenting internal audits?)*			
Does the lab have a corrective action system?			
Are specific persons responsible for overseeing the lab's corrective action system and ensuring it is effective and ongoing? *(If so, who is responsible?)*			
Are records available which document the corrective action system is in place and effective?			
Are maintenance procedures for equipment and reference materials documented?			
Are defective equipment taken out of service, clearly identified, and when possible, sequestered until repaired?			
Is each item of equipment including reference materials labeled, marked, or otherwise identified to indicate calibration status?			
Are records maintained for each item of equipment and all reference materials and include: The name of the item of equipment? Manufacturer's name, type identification, and serial number or another			

unique identification? Date received and date placed into service? Current location, where appropriate? Condition when received (e.g., new, used, reconditioned)? Copy of manufacturer's instructions, where available? Dates and results of calibrations/verifications and date of next calibration/verification? Details of maintenance performed to date and planned for the future? History of any damage, malfunction, modification, or repair?		

Additional Comments

GENERAL CHEMISTRY LABORATORY

Question	Y	N	Comments
Does the laboratory have a source of distilled/deionized water and is the water quality routinely checked and documented? (acceptable conductivity is 2.0-5.0 µmhos/cm at 25°C)			
Are laboratory thermometers (including mercury-in-glass) calibrated at least yearly against an NIST traceable thermometer and documented? *(Are calibration certificates available?)*			
Are analytical balances located away from draft and other areas subject to rapid temperature fluctuations?			
Are the balances protected from excessive vibrations?			
Is the balance calibrated annually by a certified technician? *(Is there documentation available for the calibration?)*			
Is the balance routinely checked with the appropriate range of weights daily before use and are the results recorded in a logbook?			
How often are the Class S weights certified? *(Is there a calibration certificate available for the weights?)*			
Are reagents dated upon receipt by labeling each container with the date received?			
Is there a complete log of reagent and solvent supply giving the quantity, batch number, receipt date, percent activity, or purity?			
Are reagents and standards checked prior to use?			
Is each standard /reagent logbook entry signed and dated by the individual who prepared the solution?			
Are logbooks periodically reviewed and signed by a manager/supervisor?			
Are logbooks maintained in a manner which allows complete traceability?			
Are standards and reagents stored separately from samples?			

Additional Comments

DATA HANDLING AND REVIEW

Question	Y	N	Comments
Are computer programs validated prior to use?			
Are records of the validation maintained?			
Are user instructions complete and available to all users?			
Do analysts/technicians record data in a neat and accurate manner?			
Are all handwritten data recorded in non-erasable ink?			
Have entries been obliterated (e.g., through cross-outs or "whiteout")?			
Has a system been implemented to perform and document review of data prior to reporting? *(QA review by the QA Officer or QA Branch? **Typical reviews involve at least ten percent of the data produced from randomly selected data packages**.)*			
Are these checks documented on the hard-copy data record, and dated and initialed by the reviewer?			
Are raw data being identified with project name, project number, date, and other pertinent tracking information?			
Are raw data (notebooks, data sheets, computer files, strip chart recordings) being retained for 5 years?			
Is there a system for report, record, or data retrieval?			
Do records indicate that appropriate corrective action has been taken when analytical results fail to meet the QC criteria?			

Additional Comments

SAMPLE RECEIPT AND STORAGE AREA

Question	Y	N	Comments
Are there written instructions available which describe the sample log-in procedure?			
Are written instructions available which describe sample storage? *(and are they being followed?)*			
Is the chain-of-custody unbroken including tracking records from shipping?			
Are the following conditions recorded on the COC: • Condition of the cooler? • Condition of the samples? • Temperature of the cooler? • Proper containers and preservatives?			
Are procedures in place to notify client if samples are not received in the proper condition?			
Is there an inspection checklist for sample receiving?			
Is a computerized system used to track samples?			
How is sample identification maintained?			
Does the log-in record document: • Field and laboratory ID? • Analysis requested? • Storage location? • Signature of custodian? • Collection date? • Receipt date? • Analysis due date? • Sample holding time?			

• Special instructions?		
If appropriate, is the pH of the sample measured and recorded to verify that it is preserved?		
Are log-in records filed and readily available?		
How far back in time can records be retrieved?		
Are adequate facilities available for sample storage, including cold storage?		
Are procedures in place to notify analysts of sample holding times?		
Is the temperature of the cold storage area recorded daily?		
Is the sample storage area secure?		
Are sample security and custody demonstrated from receiving through depletion or disposal?		

Additional Comments