

Amendment #1 Update to the Lower Neches River Basin/Neches Trinity Coastal Basin Clean Rivers Program FY 2024/2025 QAPP

***Prepared by the Lower Neches Valley
Authority in Cooperation with the Texas
Commission on Environmental Quality
(TCEQ)***

Effective: Immediately upon approval by all parties

Questions concerning this QAPP Amendment should be directed to:

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Justification

This document details the changes made to the basin wide QAPP to update language regarding limits of quantitation (LOQs) in sections A7 and B5, reflect staffing changes at LNVA, and update Appendix B for fiscal year 2025.

Red font = change by TCEQ CRP Project QA Specialist

Green highlighting = change by Lower Neches Valley Authority

Strikethrough font = deletion of text from previous QAPP document (highlighted **green** for change by partner/**red text** for change by TCEQ CRP Project QA Specialist)

Summary of Changes

Section	Sub-section/ Figure/Table	Page(s) in Basin- wide QAPP	Change	Justification	Affected Entity	Page(s) in this Amendment
A1	Approval Page Lower Neches Valley Authority (LNVA)	3	Removed Brielle Patronella as Quality Assurance Officer from the distribution list and signature page. Added Jeannie Mahan as Acting Quality Assurance Officer.	Brielle has resigned from LNVA and her last day was June 24.	LNVA	5
A3	Distribution List	8	Brielle's name and contact information removed and Jeannie's added.	Brielle no longer employed at LNVA.	LNVA	8
A4	Project/Task Organization	10	Jeannie added as acting QAO and Brielle removed as QAO.	Brielle no longer employed at LNVA.	LNVA	10
A4	Figure A4.1	12	Jeannie added as acting QAO and Brielle removed as QAO.	Brielle no longer employed at LNVA.	LNVA	12
A7	Ambient Water Reporting Limits (AWRLs)	14-15	Modified language concerning allowable LOQs.	To adjust language used in current CRP QAPPs that does not align with TCEQ CRP's stance on allowable LOQs.	LNVA SRA EEL	13

B5	Quality Control or Acceptability Requirements, Deficiencies, and Corrective Actions	27	Modified language concerning allowable LOQs.	To adjust language used in current CRP QAPPs that does not align with TCEQ CRP's stance on allowable LOQs.	LNVA SRA EEL	14
Appendix A	Table A7.7	44-45	Updated Table A7.7 to reflect lower LOQs for Chromium and Nickel	Data has been submitted in the past that went below the previous LOQ. LOQs have been updated to be accurate.	LNVA SRA	21-22
Appendix A	Table A7.7	44-45	Updated Table A7.7 to reflect lower LOQs for Silver and Selenium	Data has been submitted in the past that went below the previous LOQ. LOQs have been updated to be accurate.	LNVA SRA Eurofins	21-22
Appendix A	Table 7.7	44-45	Updated Table A7.7 to include parameter 00530, Total nonfiltrable, residue.	Metals in water sampling location on Beech Creek not a routine station so a companion sample for parameter 00530 will also be collected.	SRA	21-22
Appendix B	Sample Design Rationale FY 2025	47	Updated fiscal year throughout from 2024 to 2025.	Changes to Appendix B in this amendment are to reflect FY 2025 monitoring, not FY 2024 monitoring.	LNVA	23
Appendix B	Table B1.1	49-51	Updated Table B1.1 to reflect sampling design for the new fiscal year (2025).	Sampling design has changed from FY 2024 to FY 2025	LNVA	24-26

Distribution

This QAPP amendment will be distributed by the Lower Neches Valley Authority via email to all personnel on the distribution list (section A3 of the QAPP).

These changes will be incorporated into the QAPP document and TCEQ and the Lower Neches Valley Authority will acknowledge and accept these changes by approving the final amendment draft electronically via email.

Texas Commission on Environmental Quality

Water Quality Planning Division

Electronically Approved	8/27/2024
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Sarah Whitley, Team Leader Water Quality Standards and Clean Rivers Program	Date

Electronically Approved	8/27/2024
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Lawrence Grant Bassett Project Quality Assurance Specialist Clean Rivers Program	Date

Electronically Approved	8/27/2024
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Katrina Smith, Project Manager Clean Rivers Program	Date

Electronically Approved	8/27/2024
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Cathy Anderson, Team Leader Data Management and Analysis	Date

Monitoring Division

Electronically Approved	8/27/2024
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Jason Natho Acting Lead CRP Quality Assurance Specialist	Date

Lower Neches Valley Authority (LNVA)

Electronically Approved 8/22/2024

Jeannie Mahan Date
LNVA Project Manager

Electronically Approved 8/22/2024

Jeannie Mahan Brielle Patronella Date
Acting LNVA Quality Assurance Officer

Electronically Approved 8/22/2024

Bethany Stanton Date
LNVA Data Manager

Eastex Environmental Laboratory (EEL) - Coldspring

Electronically Approved 8/25/2024

Tiffany Harrison Date
EEL Technical Director

Electronically Approved 8/25/2024

Tiffany Harrison Date
Acting EEL Quality Assurance Manager

Sabine River Authority

Electronically Approved	8/27/2024
<hr/>	
Pollie Holtham	Date
SRA Technical Director	

Electronically Approved	8/27/2024
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Jennifer Claybar	Date
SRA Quality Assurance Officer	

A3 Distribution List

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Jennifer Claybar, Quality Assurance Officer
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The LNVA will provide copies of this project plan and any amendments or appendices of this plan to each person on this list and to each sub-tier project participant, e.g., subcontractors, subparticipants, or other units of government. The LNVA will document distribution of the plan and any amendments and appendices, maintain this documentation as part of the project's quality assurance records, and ensure the documentation is available for review.

A4 PROJECT/TASK ORGANIZATION

Description of Responsibilities

TCEQ

Sarah Whitley

Team Leader, Water Quality Standards and Clean Rivers Program

Responsible for Texas Commission on Environmental Quality (TCEQ) activities supporting the development and implementation of the Texas Clean Rivers Program (CRP). Responsible for verifying that the TCEQ Quality Management Plan (QMP) is followed by CRP staff. Supervises TCEQ CRP staff. Reviews and responds to any deficiencies, corrective actions, or findings related to the area of responsibility. Oversees the development of Quality Assurance (QA) guidance for the CRP. Reviews and approves all QA audits, corrective actions, reports, work plans, contracts, QAPPs, and TCEQ QMP. Enforces corrective action, as required, where QA protocols are not met. Ensures CRP personnel are fully trained.

Jason Natho

Acting CRP Lead Quality Assurance Specialist

Participates in the development, approval, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP). Assists program and project manager in developing and implementing quality system. Prepares and distributes annual audit plans. Conducts monitoring systems audits of Planning Agencies. Concurs with corrective actions. Conveys QA problems to appropriate management. Recommends that work be stopped in order to safeguard programmatic objectives, worker safety, public health, or environmental protection. Ensures maintenance of audit records for the CRP.

Katrina Smith

CRP Project Manager

Responsible for the development, implementation, and maintenance of CRP contracts. Tracks, reviews, and approves deliverables. Participates in the development, approval, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP). Coordinates the review and approval of CRP QAPPs in coordination with the CRP Project Quality Assurance Specialist. Ensures maintenance of QAPPs. Assists CRP Lead QA Specialist in conducting LNVA audits. Verifies QAPPs are being followed by contractors and that projects are producing data of known quality. Coordinates project planning with the LNVA Project Manager. Reviews and approves data and reports produced by contractors. Notifies QA Specialists of circumstances which may adversely affect the quality of data derived from the collection and analysis of samples. Develops, enforces, and monitors corrective action measures to ensure contractors meet deadlines and scheduled commitments.

Cathy Anderson

Team Leader, Data Management and Analysis (DM&A) Team

Participates in the development, approval, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP). Ensures DM&A staff perform data management-related tasks.

Scott Delgado

CRP Data Manager, DM&A Team

Responsible for coordination and tracking of CRP data sets from initial submittal through CRP Project Manager review and approval. Ensures that data are reported following instructions in the Data Management Reference Guide, July 2019 or most current version (DMRG). Runs automated data validation checks in the Surface Water Quality Management Information System (SWQMIS) and coordinates data verification and error correction with CRP Project Managers. Generates SWQMIS summary reports to assist CRP Project Managers' data review. Identifies data anomalies and inconsistencies. Provides training and guidance to CRP and Planning Agencies on technical data issues to ensure that data are submitted according to documented procedures. Reviews QAPPs for valid stream monitoring stations. Checks validity of parameter codes, submitting entity code(s), collecting entity code(s), and monitoring type code(s). Develops and maintains data management-related SOPs for CRP data management. Coordinates and processes data correction requests. Participates in the development, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP).

Grant Bassett

CRP Project Quality Assurance Specialist

Serves as liaison between CRP management and TCEQ QA management. Participates in the development, approval, implementation, and maintenance of written QA standards (e.g., Program Guidance, SOPs, QAPPs, QMP). Serves on planning team for CRP special projects. Reviews and approves CRP QAPPs in coordination with other CRP staff. Coordinates documentation and monitors implementation of corrective actions for the CRP.

Lower Neches Valley Authority

Jeannie Mahan

LNVA Project Manager

Responsible for implementing and monitoring CRP requirements in contracts, QAPPs, and QAPP amendments and appendices. Coordinates basin planning activities and work of basin partners. Ensures monitoring systems audits are conducted to ensure QAPPs are followed by LNVA participants and that projects are producing data of known quality. Ensures that subparticipants are qualified to perform contracted work. Ensures CRP project managers and/or QA Specialists are notified of deficiencies and corrective actions, and that issues are resolved. Responsible for validating that data collected are acceptable for reporting to the TCEQ.

Jeannie Mahan

Acting LNVA Quality Assurance Officer

Responsible for coordinating the implementation of the QA program. Responsible for writing and maintaining the QAPP and monitoring its implementation. Responsible for maintaining records of QAPP distribution, including appendices and amendments. Responsible for maintaining written records of sub-tier commitment to requirements specified in this QAPP. Responsible for identifying, receiving, and maintaining project QA records. Responsible for coordinating with the TCEQ CRP PM. to resolve QA-related issues. Notifies the LNVA Project Manager of particular circumstances which may adversely affect the quality of data. Coordinates and monitors deficiencies and corrective action. Coordinates and maintains records of data verification and validation. Coordinates the research and review of technical QA material and data related to water quality monitoring system design and analytical techniques. Conducts monitoring systems audits on project participants to determine compliance with project and program specifications, issues written reports, and follows through on findings. Ensures that field staff is properly trained and that training records are maintained.

Bethany Stanton

LNVA Data Manager

Responsible for ensuring that field data are properly reviewed and verified. Responsible for the transfer of basin quality-assured water quality data to the TCEQ in a format compatible with SWQMIS.

Maintains quality-assured data on LNVA internet sites.

LNVA Environmental Analysts

Responsible for collecting data and water quality samples in the field in accordance with the TCEQ SWQM Manual and maintaining credible chain-of-custody records. Environmental Analysts must report any quality assurance issues to the LNVA Project Manager and/or LNVA QAO immediately. Reports to LNVA Project Manager.

Eastex Environmental Laboratory (EEL) –Coldspring

Tiffany Harrison Technical Director

Responsible for ensuring all analytical and operational activities are documented. Supervises all personnel. Ensures that all sample acceptance criteria are verified and that samples are logged into the sample tracking system and properly labeled and stored. Performs annual Management System Reviews. Ensures that the laboratory has the appropriate resources and facilities to perform requested work. Ensures that corrective actions relating to findings from internal audits are completed. Ensures that outside support services and supplies are of adequate quality to perform laboratory testing. Ensures all QC requirements and performance specifications are followed per this QAPP, and coordinates with the LNVA Project Manager on any deficiencies or corrective actions.

Tiffany Harrison Acting Quality Assurance Manager

Responsible for the oversight and/or review of quality control data. Responsible for auditing the implementation of the Quality System. Ensures that EEL staff are properly trained and that training records are maintained. Responsible for documenting the quality of all data reported by the laboratory and monitoring standards of performance in quality control and quality assurance. Responsible for QC requirements and performance specifications per this QAPP. Coordinates and monitors deficiencies and corrective actions, and maintains records of data verification and validation.

Sabine River Authority (SRA)

Pollie Holtham SRA Technical Manager

Responsible for overall performance, administration, and reporting of analyses performed by SRA Environmental Services Division Laboratory. Responsible for supervision of laboratory personnel involved in generating analytical data for the Clean Rivers Program. Ensures that laboratory personnel have adequate training and thorough knowledge of the QAPP and related SOPs. Responsible for oversight of all laboratory operations ensuring that all requirements are met, documentation is complete and adequately maintained, and results are reported accurately.

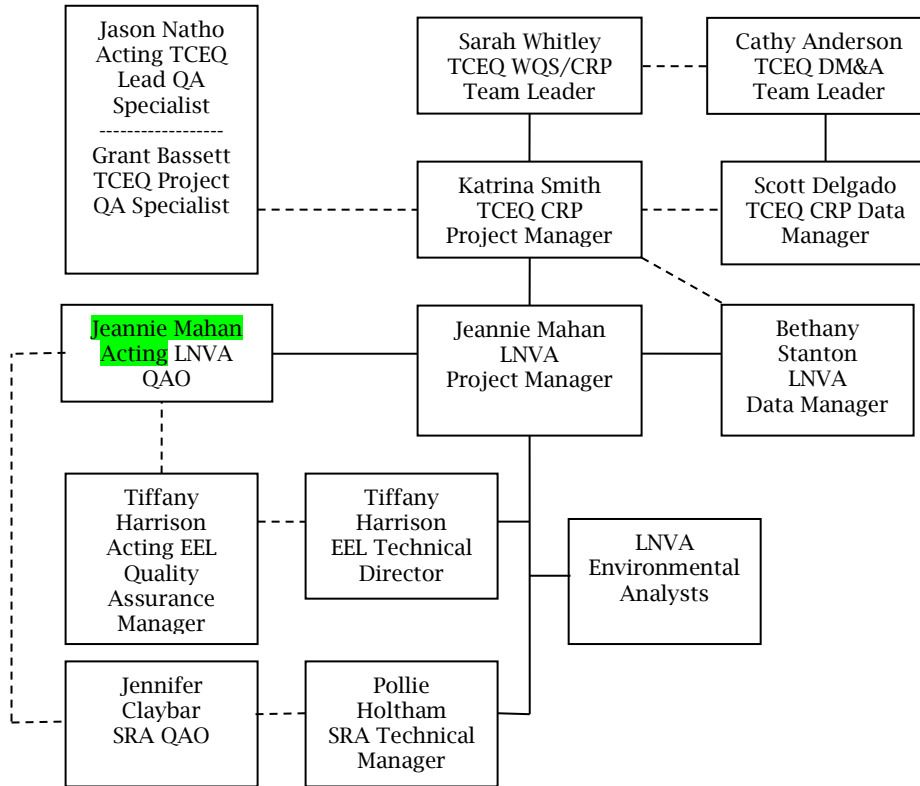
Jennifer Claybar SRA Quality Assurance Officer

Responsible for the overall quality control and quality assurance performed by the SRA Environmental Services Division Laboratory. Monitors the implementation of the QAPP to ensure complete compliance with QA data quality objectives, as defined in this QAPP. Conducts in house audits in accordance with NELAP requirements to ensure compliance with written SOPs and to

identify potential problems. Responsible for supervising and verifying all aspects of the QA/QC in the laboratory. Notifies the SRA Technical Manager of particular circumstances which may adversely affect the quality of data.

Project Organization Chart

Figure A4.1. Organization Chart - Lines of Communication



A7 Quality Objectives and Criteria

Ambient Water Reporting Limits (AWRLs)

For surface water to be evaluated for compliance with Texas Surface Water Quality Standards (“TSWQS”) and screening levels, data must be reported at or below specified reporting limits. To ensure data are collected at or below these reporting limits, required ambient water reporting limits (“AWRL”) have been established. A full listing of AWRLs can be found at

<https://www.tceq.texas.gov/assets/public/waterquality/crp/QA/awrlmaster.pdf>.

The limit of quantitation (LOQ) is the minimum reporting limit, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence by the laboratory analyzing the sample. Analytical results shall be reported down to the laboratory’s LOQ (i.e., the laboratory’s LOQ for a given parameter is its reporting limit) as specified in Appendix A.

The following requirements must be met in order to report results to the CRP:

- The laboratory’s LOQ for each analyte must be set at or below the AWRL.
- Once the LOQ is established in the QAPP, that is the reporting limit for that parameter until such time as the laboratory amends the QAPP and lists an updated LOQ.
- The laboratory must demonstrate its ability to quantitate at its LOQ for each analyte by running an LOQ check sample for each analytical batch of CRP samples analyzed.
- ~~When reporting data, no results~~ Under reasonable circumstances (e.g., the use of a subcontracted lab), data may be reported above or below the LOQ stated in this QAPP, so long as the LOQ remains at or below the AWRL stated in this QAPP.
- Measurement performance specifications for LOQ check samples are found in Appendix A.

Laboratory Measurement Quality Control Requirements and Acceptability Criteria are provided in Section B5.

Replaces “Quality Control or Acceptability Requirements, Deficiencies, and Corrected Actions” section in B5 on page 27 of the FY 2024–2025 CRP QAPP.

B5 Quality Control

Quality Control or Acceptability Requirements, Deficiencies, and Corrective Actions

Sampling QC excursions are evaluated by the LNVA Project Manager, in consultation with the LNVA QAO. In that differences in sample results are used to assess the entire sampling process, including environmental variability, the arbitrary rejection of results based on pre-determined limits is not practical. Therefore, the professional judgment of the LNVA Project Manager and QAO will be relied upon in evaluating results.

Field blanks for trace elements and trace organics are scrutinized very closely. Field blank values exceeding the acceptability criteria will automatically invalidate the sample. Notations of blank contamination are noted in the data summaries that accompany data deliverables. Equipment blanks for metals analysis are also scrutinized very closely.

Laboratory measurement quality control failures are evaluated by the laboratory staff. The disposition of such failures and the nature and disposition of the failure is reported to the Laboratory QAO. The Laboratory QAO will discuss the failure with the LNVA Project Manager. If applicable, the LNVA Project Manager will include this information in a CAP and submit with the Progress Report which is sent to the TCEQ CRP Project Manager.

The definition of and process for handling deficiencies and corrective action are defined in Section C1.

Additionally, in accordance with CRP requirements and the TNI Standard (Volume 1, Module 2, Section 4.5, Subcontracting of Environmental Tests) when a laboratory that is a signatory of this QAPP finds it necessary and/or advantageous to subcontract analyses, the laboratory that is the signatory on this QAPP must ensure that the subcontracting laboratory is NELAP-accredited (when required) and understands and follows the QA/QC requirements included in this QAPP. This includes confirming that the sub-contracting laboratory has LOQs at or below TCEQ AWRLs utilize the same reporting limits as the signatory laboratory and performs all required quality control analysis outlined in this QAPP. The signatory laboratory is also responsible for quality assurance of the data prior to delivering it to the LNVA, including review of all applicable QC samples related to CRP data. As stated in section 4.5.5 of the TNI Standard, the laboratory performing the subcontracted work shall be indicated in the final report and the signatory laboratory shall make a copy of the subcontractor’s report available to the client (LNVA) when requested.

Replaces Appendix A tables on pages 38–45 of the FY 2024–2025 CRP QAPP.

Appendix A: Measurement Performance Specifications (Table A7.1-7)

TABLE A7.1 Measurement Performance Specifications for the Lower Neches Valley Authority					
Field Parameters					
Parameter	Units	Matrix	Method	Parameter Code	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE)	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	Field
TRANSPARENCY, SECCHI DISC (METERS)	meters	water	TCEQ SOP V1	00078	Field
SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C)	us/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	Field
OXYGEN, DISSOLVED (MG/L)	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	Field
PH (STANDARD UNITS)	s. u	water	EPA 150.1 and TCEQ SOP V1	00400	Field
SALINITY - PARTS PER THOUSAND	PPT	water	SM 2520 and TCEQ SOP V1	00480	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	Field
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE	meters	water	TCEQ SOP V2	82903	Field
RESERVOIR STAGE (FEET ABOVE MEAN SEA LEVEL) ***	FT ABOVE MSL	water	TWDB	00052	Field
RESERVOIR PERCENT FULL ***	% RESERVOIR CAPACITY	water	TWDB	00053	Field
RESERVOIR ACCESS NOT POSSIBLE LEVEL TOO LOW ENTER 1 IF REPORTING	NS	other	TCEQ Drought Guidance	00051	Field
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)**	meters	other	TCEQ SOP V2	89864	Field
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)**	meters	other	TCEQ SOP V2	89865	Field
POOL LENGTH, METERS**	meters	other	TCEQ SOP V2	89869	Field
% POOL COVERAGE IN 500 METER REACH**	%	other	TCEQ SOP V2	89870	Field
WIND INTENSITY (1=CALM,2=SLIGHT,3=MOD.,4=STRONG)	NU	other	NA	89965	Field
PRESENT WEATHER (1=CLEAR,2=PTCLDY,3=CLDY,4=RAIN,5=OTHER)	NU	other	NA	89966	Field

* Reporting to be consistent with SWQM guidance and based on measurement capability.
 ** To be routinely reported when collecting data from perennial pools.
 *** As published by the Texas Water Development Board on their website
<https://www.waterdatafortexas.org/reservoirs/statewide>

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 24th Edition, 2022.
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

TABLE A7.2 Measurement Performance Specifications for the Lower Neches Valley Authority

Flow Parameters					
Parameter	Units	Matrix	Method	Parameter Code	Lab
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SEC)	cfs	water	TCEQ SOP V1	00061	Field
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry	NU	water	TCEQ SOP V1	01351	Field
STREAM FLOW ESTIMATE (CFS)	cfs	Water	TCEQ SOP V1	74069	Field
FLOW MTH 1=GAGE 2=ELEC 3=MECH 4=WEIR/FLU 5=DOPPLER	NU	other	TCEQ SOP V1	89835	Field

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 24th Edition, 2022.
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

TABLE A7.3 Measurement Performance Specifications for LNVA Contract Laboratory-Eastex Environmental Laboratory

Conventional Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD)	Bias %Rec. of LCS	Lab
ALKALINITY, TOTAL (MG/L AS CaCO3)	mg/L	water	SM 2320B	00410	20	20	NA	20	NA	EEL
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540D	00530	5	1	NA	NA	NA	EEL
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	SM 4500-NH3 G	00610	0.1	0.1	70-130	20	80-120	EEL
NITRITE PLUS NITRATE, TOTAL ONE LAB DETERMINED VALUE (MG/L AS N)	mg/L	water	SM 4500-NO3 F	00630	0.05	0.02	70-130	20	80-120	EEL
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	SM 4500- P E or EPA 200.7	00665	0.06	0.06	70-130	20	80-120	EEL
HARDNESS, TOTAL (MG/L AS CaCO3) *	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	EEL
CHLORIDE (MG/L AS CL)	mg/L	water	SM 4500-Cl-C or EPA 300.0	00940	5	5	70-130	20	80-120	EEL
SULFATE (MG/L AS SO4)	mg/L	water	ASTM D516 or EPA 300.0	00945	5	4	70-130	20	80-120	EEL
TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	NTU	water	SM 2130B	82079	0.5	0.5	NA	NA	NA	EEL

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 24th Edition, 2022.
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

TABLE A7.4 Measurement Performance Specifications for LNVA Contract Laboratory-Sabine River Authority Laboratory

Conventional Parameters in Water

Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD)	Bias %Rec. of LCS	Lab
ALKALINITY, TOTAL (MG/L AS CaCO3)	mg/L	water	SM 2320B	00410	20	20	NA	20	NA	SRA
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540D	00530	5	3	NA	NA	NA	SRA
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	EPA 350.1	00610	0.1	0.1	70-130	20	80-120	SRA
NITRITE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0	00615	0.05	0.05	70-130	20	80-120	SRA
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0	00620	0.05	0.05	70-130	20	80-120	SRA
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.4	00665	0.06	0.06	70-130	20	80-120	SRA
HARDNESS, TOTAL (MG/L AS CaCO3) *	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	SRA
CHLORIDE (MG/L AS CL)	mg/L	water	EPA 300.0	00940	5	5	70-130	20	80-120	SRA
SULFATE (MG/L AS SO4)	mg/L	water	EPA 300.0	00945	5	5	70-130	20	80-120	SRA
TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	NTU	water	SM 2130B	82079	0.5	0.5	NA	NA	NA	SRA

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

References:

- United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
- U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136
- American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 24th Edition, 2022.
- TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
- TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

TABLE A7.5 Measurement Performance Specifications for LNVA Contract Laboratories-EEL and SRA

Bacteriological Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Log Difference of Duplicates	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	IDEXX Laboratories Colilert**	31699	1	1	NA	0.50*	NA	EEL/SRA
ENTEROCOCCI, ENTEROLERT, IDEXX, (MPN/100 ML)	MPN/100 mL	water	IDEXX Laboratories Enterolert	31701	10***	10***	NA	0.50*	NA	EEL/SRA
E. COLI, COLILERT, IDEXX, HOLDING TIME	hours	water	NA	31704	NA	NA	NA	NA	NA	EEL/SRA

* This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.

** *E. coli* samples analyzed by these methods should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery longer than 6 hours, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

*** *Enterococcus* Samples should be diluted 1:10 for all waters.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 24th Edition, 2022.

TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).

TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

TABLE A7.6 Measurement Performance Specifications for Lower Neches Valley Authority					
24 Hour Parameters in Water					
Parameter	Units	Matrix	Method	Parameter Code	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE), 24HR AVG	DEG C	Water	TCEQ SOP V1	00209	field
WATER TEMPERATURE, DEGREES CENTIGRADE, 24HR MAX	DEG C	Water	TCEQ SOP V1	00210	field
TEMPERATURE, WATER (DEGREES CENTIGRADE) 24HR MIN	DEG C	Water	TCEQ SOP V1	00211	field
SPECIFIC CONDUCTANCE, US/CM, FIELD, 24HR AVG	uS/cm	Water	TCEQ SOP V1	00212	field
SPECIFIC CONDUCTANCE, US/CM, FIELD, 24HR MAX	uS/cm	Water	TCEQ SOP V1	00213	field
SPECIFIC CONDUCTANCE, US/CM, FIELD, 24HR MIN	uS/cm	Water	TCEQ SOP V1	00214	field
PH, S.U., 24HR MAXIMUM VALUE	std. units	Water	TCEQ SOP V1	00215	field
PH, S.U., 24HR, MINIMUM VALUE	std. units	Water	TCEQ SOP V1	00216	field
WATER TEMPERATURE, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	00221	field
SPECIFIC CONDUCTANCE, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	00222	field
pH, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	00223	field
DISSOLVED OXYGEN, 24-HOUR MIN. (MG/L) MIN. 4 MEA	mg/l	Water	TCEQ SOP V1	89855	field
DISSOLVED OXYGEN, 24-HOUR MAX. (MG/L) MIN. 4 MEA	mg/l	Water	TCEQ SOP V1	89856	field
DISSOLVED OXYGEN, 24-HOUR AVG. (MG/L) MIN. 4 MEA	mg/l	Water	TCEQ SOP V1	89857	field
DISSOLVED OXYGEN, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	89858	field
References: United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020 U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 24th Edition, 2022. TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415). TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).					

TABLE A7.7 Measurement Performance Specifications for LNVA Contract Laboratory-Sabine River Authority

Metals in Water										
Parameter	Units	Matrix	Method	Parameter Code	TCEQ AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD)	Bias %Rec. of LCS	Lab
HARDNESS, TOTAL (MG/L AS CaCO3)*	mg/L	water	SM 2340 B or C	00900	5	5	NA	20	80–120	SRA
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540D	00530	5	3	NA	NA	NA	SRA
CALCIUM, DISSOLVED (MG/L AS Ca)**	mg/L	water	EPA 200.7	00915	NA	NA	70–130	20	80–120	Eurofins Xenco – Houston
SODIUM, DISSOLVED (MG/L AS Na)**	mg/L	water	EPA 200.7	00930	NA	NA	70–130	20	80–120	Eurofins Xenco – Houston
POTASSIUM, DISSOLVED (MG/L AS K)**	mg/L	water	EPA 200.7	00935	NA	NA	70–130	20	80–120	Eurofins Xenco – Houston
ARSENIC, DISSOLVED (µG/L AS As)	µg/L	water	EPA 200.8	01000	5	5	70–130	20	80–120	SRA
CADMIUM, DISSOLVED (µG/L AS Cd)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01025	0.1 for waters <50mg/L hardness ----- 0.3 for waters >50mg/L hardness	0.1 for waters <50mg/L hardness ----- 0.3 for waters >50mg/L hardness	70–130	20	80–120	SRA
CHROMIUM, DISSOLVED (µG/L AS Cr)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01030	10	10	70–130	20	80–120	SRA
COPPER, DISSOLVED (µG/L AS Cu)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01040	1 for waters < 50mg/L hardness ----- 3 for waters >= 50mg/L hardness	1 for waters < 50mg/L hardness ----- 3 for waters >= 50mg/L hardness	70–130	20	80–120	SRA
IRON, DISSOLVED (µG/L)**	µg/L	water	EPA 200.7	01046	NA	NA	70–130	20	80–120	Eurofins Xenco – Houston

LEAD, DISSOLVED (µG/L AS PB)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01049	0.1 for waters < 85 mg/L hardness ----- 1 for waters >= 85 mg/L hardness	0.1 for waters < 85 mg/L hardness ----- 1 for waters >= 85 mg/L hardness	70– 130	20	80– 120	SRA
NICKEL, DISSOLVED (µG/L AS NI)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01065	10	10	70– 130	20	80– 120	SRA
SILVER, DISSOLVED (µG/L AS AG)**	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01075	0.5	0.5 0.12	70– 130	20	80– 120	Eurofins Xenco – Houston
ZINC, DISSOLVED (µG/L AS ZN)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01090	5	5	70– 130	20	80– 120	SRA
ALUMINUM, DISSOLVED (µG/L AS AL)**	µg/L	water	EPA 200.7 Rev 4.4 (1994)	01106	200	200	70– 130	20	80– 120	Eurofins Xenco – Houston
SELENIUM, TOTAL (µG/L AS SE)	µg/L	water	EPA 200.8 Rev 5.4 (1998)	01147	2	2 1	70– 130	20	80– 120	SRA
MERCURY, TOTAL, WATER, METHOD 1631 µg/L**	µg/L	water	EPA 1631	71960	0.006	0.006	70– 130	20	80– 120	Eurofins Xenco – Pensacola, FL

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

**Total mercury and dissolved silver, calcium, sodium, potassium, iron, and aluminum are sub-contracted by SRA to Eurofins Xenco, whose adherence letter is on file.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

U.S. Code of Federal Regulations (CFR). Title 40: Protection of Environment, Part 136

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 24th Edition, 2022.

TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).

TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2014 (RG-416).

Replaces Sample Design Rationale section on page 47 of the FY 2024-2025 CRP QAPP

Appendix B: Task 3 Work Plan & Sampling Process Design and Monitoring Schedule (Plan)

Sample Design Rationale FY 2025

The sample design is based on the legislative intent of CRP. Under the legislation, the Basin Planning Agencies have been tasked with providing data to characterize water quality conditions in support of the Texas Water Quality Integrated Report, and to identify significant long-term water quality trends. Based on Steering Committee input, achievable water quality objectives and priorities, and the identification of water quality issues are used to develop work plans which are in accord with available resources. As part of the Steering Committee process, the Lower Neches Valley Authority coordinates closely with the TCEQ and other participants to ensure a comprehensive water monitoring strategy within the watershed.

Monitoring aims to continue providing current data for historical CRP sites in the basin as well as targeting sites and parameters listed as impaired in the 2022 Texas Integrated Report. This monitoring schedule has come about as a result of requests made by steering committee members and monitoring entities.

24 Hour DO monitoring events will continue at stations 15367 (Pine Island Bayou at SH 105 0.65 KM Southwest of FM 770/SH 105 intersection near Batson, on segment 0607), 16127 (Boggy Creek at FM 421 1.75 KM Southwest of FM 421/ US 69 intersection near Lumberton on segment 0607A), and 16126 (Mill Creek at FM 418, 4.5 KM Northwest of Silsbee on segment 0608) in FY 2025 in order to provide data to TCEQ in the event of a standard change approval by EPA. 24 Hour DO will also continue at station 10602 (Pine Island Bayou at US 69/US 96/US287 at Voth Rd) and station 15345 (Willow Creek at unnamed road 4.87 KM North Northwest of Nome 6.78 KM Upstream of Pine Island Bayou confluence/SH 326) for the same reason.

Metals in water sampling will continue on Station 15355 (Beech Creek AT FM 1943 7 KM West of FM 1943/FM 92 Intersection 7.3 KM West- Southwest of the city of Fred). This station is included at the request of monitoring entities in order to accumulate recent data for assessment purposes.

Replaces Table B.1 on pages 49-51 in the FY 2024-2025 CRP QAPP

Monitoring Sites for FY 2025

Table B1.1 Sample Design and Schedule, FY 2025

Site Description	Station ID	Waterbody ID	Region	SE	CE	MT	24 hr DO	Metals Water	Bacteria	Conv	Flow	Field	Comments
NECHES RIVER 217 METERS EAST AND 2.11 KILOMETERS NORTH TO THE INTERSECTION OF COLEMAN STREET AND EAST LUCAS DRIVE AT LNVA SALINITY STATION Y 1.8 KILOMETERS DOWNSTREAM OF NECHES RIVER SALTWATER BARRIER	20774	0601	10	LV	LV	RT			4	4	4	4	USGS Station 08041780
NECHES RIVER AT FM 1013 IN THE BIG THICKET NATIONAL PRESERVE EAST OF SPURGER IN JASPER COUNTY	10581	0602	10	LV	LV	RT			4	4	4	4	USGS Station 08040600
NECHES RIVER AT HIGH LINE CROSSING 0.55 KM DOWNSTREAM OF PINE ISLAND BAYOU 5.85 KM EAST NORTHEAST OF SH 105/US 69 INTERSECTION	10579	0602	10	LV	LV	RT			4	4	4	4	USGS Station 08041780
NECHES RIVER NEAR LAKEVIEW 1 KM WEST OF FM 1131 12.24 KM UPSTREAM OF PINE ISLAND BAYOU CONFLUENCE	15343	0602	10	LV	LV	RT			4	4	4	4	USGS Station 08041000 and 08041500
SANDY CREEK AT FM 777 2.15 KM SOUTHWEST OF FM 777/US 190 INTERSECTION 14.7 KM SOUTHWEST OF JASPER	10484	0603A	10	LV	LV	RT			4	4	4	4	
WOLF CREEK AT FM 256 5.6 KM UPSTREAM OF BA. STEINHAGEN RESERVOIR 2.3 KM NNW OF US 190/FM 256 INTERSECTION 16.8 KM NE OF WOODVILLE	15344	0603B	10	LV	LV	RT			4	4	4	4	
PINE ISLAND BAYOU AT LNVA LOWER PUMP STATION 6.62 KM UPSTREAM OF NECHES RIVER CONFLUENCE 2.86 KM EAST OF US 69	10599	0607	10	LV	LV	RT			4	4	4	4	USGS Station 08041780

Site Description	Station ID	Waterbody ID	Region	SE	CE	MT	24 hr DO	Metals in Water	Bacteria	Conv	Flow	Field	Comments
PINE ISLAND BAYOU AT SOUR LAKE ROAD 7.5 KM SOUTHEAST OF INTERSECTION OF SH 326/SH 105 IN CITY OF SOUR LAKE	10607	0607	10	LV	LV	RT			4	4	4	4	USGS Station 08041700
PINE ISLAND BAYOU AT US 69 /US 96/US 287 AT VOTH	10602	0607	10	LV	LV	RT	4		4	4	4	4	USGS Station 08041749
PINE ISLAND BAYOU AT SH 105 0.65 KM SOUTHWEST OF FM 770/SH 105 INTERSECTION NEAR CITY OF BATSON	15367	0607	10	LV	LV	RT	4		4	4	4	4	
BOGGY CREEK AT FM 421 1.75 KM SOUTHWEST OF FM 421/US 69 INTERSECTION NEAR LUMBERTON	16127	0607A	10				4				4		TCEQ Region 10 CRP Site
LITTLE PINE ISLAND BAYOU AT SH 326 5.68 KM NORTH OF CITY OF SOUR LAKE	15346	0607B	10	LV	LV	RT			4	4	4	4	
WILLOW CREEK AT UNNAMED ROAD 4.87 KM NORTH NORTHWEST OF NOME 6.78 KM UPSTREAM OF PINE ISLAND BAYOU CONFLUENCE/SH 326	15345	0607C	10	LV	LV	RT	4		4	4	4	4	
VILLAGE CREEK AT 418 5.04 KM NORTHEAST OF KOUNTZE	13625	0608	10	LV	LV	RT			4	4	4	4	
BEECH CREEK AT FM 1013 1.13 KM WEST OF SPURGER	10529	0608A	10	LV	LV	RT			4	4	4	4	
BEECH CREEK AT FM 1943 7 KM WEST OF FM 1943/ FM 92 INTERSECTION 7.3 KM WEST-SOUTHWEST OF CITY OF FRED	15355	0608A	10	LV	LV	RT		4					
BIG SANDY CREEK AT FM 942 2.07 KM SOUTHWEST OF FM 942/FM 2500 INTERSECTION 10.47 KM SOUTHEAST OF LEGGETT	15354	0608B	10	LV	LV	RT			4	4	4	4	
CYPRESS CREEK AT US 69/US 287 3.4 KM SOUTHEAST OF KOUNTZE	15352	0608C	10	LV	LV	RT			4	4	4	4	

Site Description	Station ID	Waterbody ID	Region	SE	CE	MT	24 hr DO	Metals in Water	Bacteria	Conv	Flow	Field	Comments
HICKORY CREEK AT US 69 0.73 KM NORTH OF FM 2827/US 69 INTERSECTION 5.8 KM SOUTH OF WARREN	15349	0608D	10	LV	LV	RT			4	4	4	4	
MILL CREEK AT FM 418 4.5 KM NORTHWEST OF SILSBEE	16126	0608E	10	LV	LV	RT	4				4		
TURKEY CREEK AT FM 1013 3.57 KM EAST NORTHEAST OF US 287/FM 1013 INTERSECTION 3.17 KM EAST NORTHEAST OF HILLISTER	15356	0608F	10	LV	LV	RT			4	4	4	4	
TURKEY CREEK AT GORE STORE ROAD 6.3 KM SOUTHEAST OF FM 2827/US 69 INTERSECTION 11.7 KM SOUTHEAST OF WARREN	15350	0608F	10	LV	LV	RT			4	4	4	4	
ANGELINA RIVER AT SH 63 2.10 KM SOUTHEAST OF SH 63/REC RD 255 INTERSECTION 19.56 KM NORTH OF JASPER	10610	0609	10	LV	LV	RT			4	4	4	4	
SAM RAYBURN RESERVOIR USGS SITE AC 2.5 KM EAST NORTHEAST OF FM 705/FM 3127 INTERSECTION	15673	0610	10	LV	LV	RT			4	4		4	
SAM RAYBURN RESERVOIR USGS SITE FC 7.21 KM SOUTHWEST OF FM 3173/FM 705 INTERSECTION	15671	0610	10	LV	LV	RT			4	4		4	
SAM RAYBURN RESERVOIR USGS SITE LC 1.7 KM NORTHWEST OF MILL CREEK PARK SWIMMING AREA 3.96 KM NW OF ST LOOP 149/ US 96 INTERSECTION	15674	0610	10	LV	LV	RT			4	4		4	