



Conservation Evaluation and Monitoring Activity

Aquifer Flow Test

CEMA 224

Definition

Quantitative measurements to determine water well performance.

Applicable Land Uses

Crop, Forest, Range, Pasture, Farmstead, Associated Agriculture Land, Other Rural Land, and Developed Land.

REQUIREMENTS

Qualified Individual Requirements

The Natural Resources Conservation Service (NRCS) strongly encourages participants to know the following Qualified Individual (QI) Requirements to ensure the person they hire is a good match for their needs and objectives.

The Aquifer Flow Test Conservation Evaluation and Monitoring Activity (CEMA) is conducted under the guidance or management of a NRCS geologist as defined in Title 210, National Engineering Manual, Part 531, Section 531.2D(3), or as further specified in state specific conservation practice specifications.

A QI for this CEMA is an energy auditor defined as someone who has at least one of these qualifications:

- Licensed or Certified Professional Geologist (PF, LPG, CPG), licensed Professional Engineer (PE), Certified Water Well Driller (CWD), or licensed Monitoring Well Installer (MWI).
- Certified Pump Installer (CPI).
- Technical Service Provider (TSP) certified for Conservation Practice Standards (CPSs) Water Well (Code 642) or Pumping Plant (Code 533).
- Local, state or territory approved or permitted water business.
- Included on the state's approved list of vendors for CEMA 224.

State law may require a professional engineers or geologist license for this activity.

Non-qualified individuals are permitted to conduct an Aquifer Flow Test CEMA under the guidance and oversight of a QI.

General Requirements

- 1) This CEMA includes the performance of work and documentation of the tasks, results, interpretations, and other activities described herein by or under the guidance and oversight of a QI.
- 2) Prior to initiation of the CEMA, the QI shall arrange a pre-work conference to ensure all parties understand the participant's objectives, required deliverables, and characteristics of the CEMA tasks.
 - a) The parties in the pre-work conference must include the participant, the QI, and the NRCS field office staff. The parties should agree whether they will join in-person or join via phone, web-meeting, etc.
 - b) If the participant will employ a TSP to implement a Conservation Planning Activity (CPA) or Design and Implementation Activity (DIA) that will be supported by results of this CEMA, it is recommended to invite them to the pre-work conference too.
- 3) A QI may use any reference information, resource concerns, conservation practice standards and related documents served in the NRCS Field Office Technical Guide (FOTG) for the state where this CEMA is performed. The FOTG home page hyperlink is: <https://efotg.sc.egov.usda.gov/#/>

Technical Requirements

The NRCS will specify the type of aquifer flow test (e.g., step drawdown or constant rate), pumping rate(s), and testing duration. Title 210, National Engineering Handbook, Part 631, Chapter 31, Section 631.3112C outlines aquifer flow and associated recovery test procedures.

DELIVERABLES

The QI must provide documentation showing completion of all the tasks indicated in the following sections:

Cover Page

Cover page(s) reporting the technical services provided by the QI must include the following:

- 1) CEMA name and number.
- 2) Participant information: Name, farm bill program name, contract number (QI obtains contract number from participant), and land identification (e.g., state, county, farm, and tract number).
- 3) QI name, address, phone number, and email.
- 4) A statement by the QI explaining how they currently meet the Qualified Individual Requirements for this CEMA. Attaching or enclosing a copy of documentation for how the QI requirements are met is encouraged. Examples include:
 - Certification Name and Number,
 - License Name and Number, or
 - Other brief written statement indicating how the requirements of a QI for this CEMA are met.
- 5) A statement by the QI that services provided meet NRCS requirements, such as:

I certify the work completed and delivered for this CEMA:

- *Complies with all applicable Federal, State, Tribal, and local laws and regulations.*
- *Meets the general requirements, technical requirements and deliverables for this CEMA.*
- *Is consistent with and meets the conservation objectives for which the program contract was entered into by the participant.*
- *Addresses the participant's conservation objectives for this CEMA.*

QI Signature: _____ Date: _____

6) A Participant's acceptance statement, such as:

I accept the completed CEMA deliverables as thorough and satisfying my objectives.

Participant Signature: _____ Date: _____

7) A space for an NRCS reviewer to certify the agency's acceptance of the completed CEMA and, such as:

NRCS administrative review completion by:

Signature: _____ Title: _____ Date: _____

Notes and Correspondence

- 1) Document each site visit, its participants, the activity completed in the field, and results of each site visit.
- 2) Copies of correspondence between the QI and the participant relating to decision-making and completion of this CEMA.
- 3) Copies of observations, data, technology tool output, or test results prepared during completion of this CEMA.

Maps

All maps developed for this CEMA must include information needed to locate the water well being tested, such as a vicinity map with labeled roads, map scale, north arrow, geographic coordinates, public land survey coordinates, or a conservation plan map developed by the NRCS.

Evaluation Results

Use data recoding templates to document testing measurements and results as provided by the NRCS field office. As a minimum, include water levels and flow rate measurements on aquifer flow test data sheets as described in the Technical Requirements section of this document.

Deliver Completed Work

- 1) The QI must prepare and provide the participant two sets of all of the items listed in the **Deliverables** sections of this document.
- 2) One set is for the participant to keep.
- 3) The other set is for the local NRCS Office.
- 4) The QI may transmit a set of the completed work to the local NRCS Office, if their participant has authorized it.

It is recommended to provide the NRCS field office an opportunity to review the CEMA deliverables, prior to asking for their acceptance.

References

USDA Natural Resources Conservation Service. Field Office Technical Guide.

<https://efotg.sc.egov.usda.gov/#/>

USDA Natural Resources Conservation Service. National TSP Resources.

<https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/technical/tsp/?cid=nrcseprd1417414>

USDA Natural Resources Conservation Service. National TSP Website.

<https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/technical/tsp/>