



CONSERVATION EVALUATION AND MONITORING ACTIVITY (CEMA)

Evaluation of Existing Waste Storage Facility Components

CEMA 227

Definition

An on-site investigation shall be made to determine whether or not an existing component of a waste storage facility is in good operating condition. Existing components are the manure and wastewater handling and storage structures and equipment at the facilities where the livestock are housed.

Applicable Land Uses

Farmstead, Associated Agricultural Land

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.

This CEMA will be completed by a Qualified Individual. A QI for this CEMA has credentials that meet at least one of these qualifications:

- Professional Engineer's license in the same state as the project.
- Professional Engineer's license or registration and three years of relevant manure storage facility installation, inspection or evaluation experience.
- When allowed by the state, completed bachelor's degree or higher in Engineering, or Engineering Technology with at least three years of relevant manure storage facility installation, inspection or evaluation experience and is apprenticed to a Professional Engineer.

General Requirements

- 1) This CEMA includes the performance of work and documentation of the tasks, results, interpretations, and other activities described herein by a QI.
- 2) Prior to initiation of the CEMA, the QI must 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 Technical Service Provider (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

Evaluation Of Existing Waste Handling/Storage Structures for Integrity and Capacity

The thoroughness of inspection should be in proportion to the risk associated with failure of the waste facility component.

- 1) Reference the implementation requirements (IR) or engineering plans for practices already implemented or installed. Documents for structures installed with NRCS assistance are found in the client's case file. An evaluation report will reference the capacity and integrity of the structure as built.
- 2) For structures installed without NRCS assistance, the structures should be shown on the appropriate plan map and noted in the evaluation report that the structures were installed without NRCS technical or financial assistance.
- 3) Assess the storage capacity:
 - a) Determine the storage capacity volume of the existing storage facility using measured dimensions.
 - b) Determine daily waste production volume that is going into the storage facility. Include precipitation that lands on the storage facility and runoff water directed to the storage facility. Include bedding and wash water in the production volume as appropriate. Include freeboard.
 - c) Divide storage capacity volume by the daily waste production volume to determine the storage capacity longevity.
- 4) Compare the longevity of the existing storage facility and the number of days when land application is not possible on the farm.
 - a) If the longevity is greater than the number of consecutive days when land application is not possible on the farm, then report that the storage capacity is suitable.
 - b) If the longevity is less than the number of consecutive days when land application is not possible on the farm, then report that the storage capacity is not suitable to meet all storage needs.
- 5) Document well isolation distance on the site map. Public and private water wells may have State regulations. Assess the existing storage facility as a major source of contamination. Compare the minimum well isolation distance from major sources of contamination as defined by State law or regulation to the actual well isolation distance.
 - a) When the actual well isolation distance from an existing waste storage facility is not adequate, the report will state: *The isolation distance for well _____ from existing source of contamination _____ does not appear to meet minimum State of _____ isolation distance requirements.*

- b) Include any waste storage facility design parameters that may reduce the distance requirements. Include documentation of the structural design showing use of liners that the State recognizes as isolation distance reduction factors.
 - c) Reference local health department permits and deviations. Include documents when available.
- 6) Assess the waste storage facility integrity by making an on-site investigation to determine whether or not an existing component is in good operating condition. Determine which key components of the waste storage facility should be inspected. Refer to the State requirements for the NRCS Waste Storage Facility 313 conservation practice criteria for the type of storage facility being inspected.
- a) As-built engineering drawings or designs or construction inspection documentation when available should be referenced in the report as verification of the structure liner.
 - b) On-site liner inspection should document the physical presence of the liner and its composition.
 - c) When the compacted clay and natural clay liners are present and there is no as-built documentation, the State may require a sample to be taken for analysis. Use the State required protocol to collect subsurface liner samples for permeability testing.
 - d) Include the on-site investigation verifying that the bottom of the waste storage facility is at least 2 feet above a seasonal high water table.
- 7) Visual inspection of exterior and interior facility includes documentation that walls show no bowing, concrete has no significant vertical cracking and no horizontal cracking, concrete floors have no significant cracking, and slatted floors are not cracked or loose.
- 8) Visual inspection shows timber elements are not rotting or damaged to compromise the structural integrity of the facility, inlets, agitation points, pump-out location show normal wear and tear, valves or other outlets are operable and not corroded or plugged.
- 9) Appropriate safety features are in place and in good condition.

Deliverables

The QI must provide documentation showing all the tasks indicated in the **General Requirements** section, the **Technical Requirements** section, and the following sections.

Cover Page

Cover page reporting the technical services provided by the QI. Cover page(s) 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), land identification (e.g., state, county, farm, and tract number).
- 3) QI name, address, phone number, 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,

- Agricultural Retailer Business Name, 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 as referenced in the Technical Requirements section for site investigation measurement and assessment.

Maps, Diagrams, Plan Views

- 1) Develop the location map showing the existing storage facility/facilities evaluated.
 - a) Show distance measurements as described in the Technical Requirements section.
 - b) The map should include a Map title and show the scale used.
 - c) Include a North arrow.
 - d) Include legends for any map symbols or markings.

Evaluation Report

A report of the evaluation of existing components of the waste storage facility with references and documents noted in the Technical Requirements section.

- 1) Concluding statement that the investigation/inspection of the existing component indicates that it is in good operating condition, based on observable and/or measurable features and conditions.
- 2) Concluding statement that the results of any subsurface liner permeability testing meet the State criteria in the Waste Storage Facility 313 conservation practice standard.
- 3) If the evaluation shows the storage is not acceptable, develop plans for taking corrective action to repair, decommission, and/or replace the storage. Date for the corrective action completion will be noted in the report.
- 4) Statement that the structural integrity or operation of new components will not be impaired should an existing component fail.
- 5) Existing components are operating with guidance for safety.
- 6) Sign and date the statement. Affix any stamp or certificate information.

Deliver Completed Work

- 1) The QI must prepare and provide the participant two sets of all items listed in the **Technical Requirements** and 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 Engineering Handbook Part 651 Agricultural Waste Management Field Handbook (AWMFH).

<https://directives.sc.egov.usda.gov/viewerFS.aspx?hid=21430>