CONSERVATION EVALUATION AND MONITORING ACTIVITY (CEMA)

Waste Facility Site Suitability and Feasibility Assessment

CEMA 226

Definition

Soil data collection, investigation and interpretation of the properties and characteristics to determine the appropriateness of the site for a planned storage facility.

The suitability will be determined by the characteristics of the site that allow, limit, or prevent various types of storage facilities. The site characteristics that determine suitability will vary depending on the type of storage facility. Volume capacity, type of storage facility and physical size indicate it is at least feasible to install the planned storage facility at the location selected.

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 Individuals. A QI for this CEMA has credentials that meet at least one of these qualifications:

- Professional Engineer's license or registration and three years of relevant soils experience.
- Certified Professional Soil Scientist (CPSS) through the Soil Science Society of America and three years of relevant soils experience.
- Associate Professional Soil Scientist (APSS) or Certified Professional Soil Classifier (CPSC) through the Soil Science Society of America and three years of relevant soils experience.
- Bachelor's Degree in Soils with eight years of relevant soils experience.

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

1) For planned storage facilities, the QI only needs to gather enough information about the site to indicate that it is at least "feasible" to install the planned storage facility at the location selected. Document all of the following:

2) Document the volumetric capacity needed for the manure generated plus other wastes that can be stored in the facility and must be removed to empty the facility. Calculations are based on:

   i) Operating level of storage needed based on quantity of manure, bedding, process water, runoff, and direct precipitation, and

   ii) Emergency volume 25 year, 24-hour precipitation on the surface of liquid or slurry storage facility and the 25 year, 24-hour runoff from the facility's drainage area.

   iii) Freeboard volume for liquid or slurry waste storages exposed to precipitation.

   iv) Proposed dimensions of the storage facility. Compare the width and length dimensions of the planned storage facility with the available area at the proposed location. If the planned storage facility can fit in the available area, proceed with the assessment of soils.

   v) If the planned storage facility will not fit in the available area, explore the possibility of another location with the participant.

   b) Soils Investigation for in-ground storage facility.

      i) Minimum of at least one subsurface test hole, pit, or boring at the proposed site showing the soil material encountered, location of any seeps, depth-to-high-water table, depth to bedrock, and presence of sink holes in karst topography.

         (1) Use the unified soil classification system to identify soils.

         (2) Provide two distance measurements from one identified point so that the location of the soil investigation can be located at a later date. Document on the site map. GPS coordinates may be recorded on the site map also.

         (3) Supporting evidence that site drainage is possible to allow the installation of the planned storage facility.

   c) Soils investigation for an above ground storage facility.

      i) Conduct a soils investigation a minimum of 2 feet deep below the planned storage bottom elevation. Document the soil material encountered, and depth to any perched or seasonal high-water table or indicators.

         (1) Use the unified soil classification system to identify soils.

         (2) Provide two distance measurements from one identified point so that the location of

the soil investigation can be located at a later date. Document on the site map. GPS coordinates may be recorded on the site map also.

d) Well isolation distance documented on the site map. Public and private water wells may have state regulations. Actual well location distance away from the planned storage must be greater than the minimum well isolation distance from major sources of contamination as defined by state law or regulation.

Definitions

1) Perched water table is an accumulation of groundwater located above and separated from an underlying water table. Perched water tables form above impermeable or relatively impermeable layers which occur above the main groundwater table.
2) Seasonal high-water table occurs when groundwater rises near the soil surface and restricts the capability of the land to support its intended use. Elevated groundwater occurs seasonally.
3) Unified soil classification system (USCS) is a combination of physical and behavioral soil properties to describe earth materials for engineering purposes. Refer to the National Engineering Handbook (NEH) part 631, Chapter 3 Engineering Classification of Earth Materials for more information.

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, all 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 planned storage facility at the proposed site.
   a) Show distance measurements as described in the Technical Requirements section.
   b) The map should include a title and show the scale used.
   c) Include a North arrow.
   d) Include legends for any map symbols or markings.
   e) Mark the soils investigation site. Geospatial coordinates may be shown on the map to designate the soil investigation point.

Evaluation Results

A report of the assessment of volume and site suitability for a planned storage facility, treatment facility or treatment system will have the following:

1) Concluding statement that the planned storage facility dimensions can fit at the proposed location shown on site map. Include the distance measurements needed to document well isolation and any physical boundary setback.
2) Concluding statement that the site characteristics are suitable to allow installation of the planned storage facility.
   a) When the planned storage facility is in the ground, statement includes depth to seasonal

high-water table, type of seasonal high-water table, and depth to bedrock.

i) Document method or structures needed to drain the water table to allow for the installation of the planned storage facility.

ii) Document that the planned storage facilities actual distance from a well is greater than the minimum isolation distance set by the state. Include any specific or corrective design requirements for the planned storage facility necessary to allow installation.

b) When the planned storage facility is above ground, the concluding statement ensures that the soil characteristics at the proposed location are buildable.

i) Document results of the soils investigation.

ii) Document any perched or seasonal high-water table indicators encountered below the planned storage bottom elevation and at what depth.

3) Final statement that the proposed site is suitable to allow the installation of the planned storage facility. 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 of the items listed in the **General Requirements**, 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.
5) 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 Planning Procedures Handbook. https://directives.sc.egov.usda.gov/viewerFS.aspx?hid=44407