

DESIGN AND CHECK DATA REQUIREMENTS

WASTE TREATMENT LAGOON

The following items must be addressed in the design folder for the Waste Treatment Lagoon.

1. Table of Contents
2. Design Data Summary
3. Soils and Foundation Data
4. Construction Specifications
5. Engineering Drawings
6. Erosion and Sediment Control Plan
7. Construction Check Data
8. Documentation
9. Operation and Maintenance Plan

Listed below are specific items that are required in the design:

TABLE OF CONTENTS

Lists key pages found in the design.

DESIGN DATA

Important data recorded and consistent with the CNMP, including but not limited to:

- Design data including waste volumes, rates, unloading times
- Type of system applicable
- Grade, alignment, head, distance requirements
- Access and delivery requirements
- Operational requirements including power, capacity, head, solids content, labor, time
- Installation requirements
- Associated structures
- Computations for size
- Quantity computations as needed

SOILS AND FOUNDATION DATA

- PA One Call documentation
- Testpit locations & logs if needed
- Document the need for rock excavation, drainage, isolation from porous foundation rock, depth limitations, etc.

CONSTRUCTION SPECIFICATIONS

Enclose specification 359 and others (e.g. 313P, 342, 382, 606, and 634) as applicable.

Include any "additional conditions" or items that are site specific or must be defined to supplement the standard specification. (See instructions for use of Specification 359.)

Add any special or "by-others" specifications.

ENGINEERING DRAWINGS

GENERAL

On each drawing sheet, the title block should show the operator's name, type of operation, county and the persons involved in drawing and designing the storage facility.

All treatment lagoon designs require approval by a registered Professional Engineer or an Engineer with NRCS job approval authority for the type, dimensions and capacity of the designed facility. If a DEP permit is required, additional details may be needed. If the structure is for a dairy operation, the drawings and specification must be submitted to the local dairy inspector prior to construction.

PLAN VIEW SHEET(S)

North arrow
 Utilities/roads
 Bench mark(s)
 Scale, Legend
 Access
 Existing structures
 X-section locations
 Construction limits
 Foundation drainage & outlet locations
 Component locations
 Borrow area
 Spoil area

SITE CONTOUR SHEET

(Preferably same as Plan View Sheet)
 North arrow
 Bench mark(s)
 Scale, legend
 Soils test pit location
 Existing structures

Contour lines
Property lines
Water well and spring location(s)
Water courses
Known sinkhole locations

CROSS-SECTION SHEET(S)

Two sections, minimum
Scale(s)
Soil test pit profile(s)
Loading structure/pipe
Unloading structure/pipe
Access ramp
Pipe profile(s)
Earth fill zones
Concrete & reinforcement
Slopes
Drainage configuration
Reference to detail drawings

OTHER DRAWING ITEMS:

E&S control
Spoil and borrow areas
Required overbuild of fill
Special considerations
 Water level control
 Lining
 Special equipment
 Special joints
Vegetative requirements
Fencing
Safety features
PA Utilities Act statement

SEQUENCING STATEMENT WITH:

Detail special order of critical construction elements, if applicable.

EROSION & SEDIMENT CONTROL PLAN

See DEP's Erosion and Sediment Pollution Control Program Manual and local Conservation District.

CONSTRUCTION CHECK DATA

QUALITY ASSURANCE PLAN (QAP) Detail specific items that need inspection. Specify who will do the actual inspection and the required testing equipment. Detail the required shop drawings.

ONSITE VISITS: The QAP must include, at a minimum, as applicable to the specific job, onsite visits prior to:

- Start of construction
- During excavations to observe and record the conditions encountered and compare with the conditions assumed in the design.
- Installing of drainage, bedding, etc.
- During placement of the structures.
- During the placement of fill and backfill.

DOCUMENTATION

The following documents need to be assembled and maintained in the office for the life of the facility:

1. A full set of as-built drawings with:
 - a. Items installed as designed; changes shall be recorded in a manner that the As-Built information is obvious, such as in bold and red.
 - b. Notes describing the changes will be recorded on all sheets where changes occurred, including initials.
 - c. Document the actual foundation and ground water conditions encountered if they differ from the site investigation and design assumptions.
 - d. The name of the installer/manufacturer and date of completion on the cover sheet.
 - e. The certification statement, signature and date by a person with construction job approval.
2. Design Folder.
3. Survey check notes with final elevations shown in red.
4. Material certifications, catalog cuts, etc.
5. Contractor's certification of conformance
6. Photographs, if applicable
7. Records of site visits and significant discussions
8. Other applicable construction records.

OPERATION & MAINTENANCE PLAN

- Routine operational requirements
- Unloading requirements
- Inspections of drain outlet
- Safety precautions
- Other special situations, practices, conditions, and requirements for the individual operation.

