



Natural Resources Conservation Service
CONSERVATION PRACTICE STANDARD
ON-FARM SECONDARY CONTAINMENT FACILITY

CODE 319

(no)

DEFINITION

A permanent facility designed to provide secondary containment of oil and oil products used onfarm.

PURPOSE

This practice is used to accomplish the following purposes:

- Reduce the risk of contamination of ground water and surface waters, including downstream drinking water sources.

CONDITIONS WHERE PRACTICE APPLIES

This practice is applicable to onfarm agricultural areas where—

- An oil and oil product storage facility will be used for agricultural purposes such as dispensing fuel for farming activities.
- Spillage of oil and oil products would pose a contamination threat to ground or surface water, including downstream drinking water sources.

Onfarm oil or oil products include diesel fuel, gasoline, lube oil, hydraulic oil, adjuvant oil, crop oil, vegetable oil, or animal fat, as identified by the U.S. Environmental Protection Agency (EPA) Spill Prevention, Control, and Countermeasure (SPCC) regulation (40 CFR Part 112, “Oil Pollution Prevention”).

This practice does not apply to—

- The removal of existing oil or oil products storage tanks.
- Underground storage tanks.
- Commercial suppliers or multilandowner storage facilities.

CRITERIA

General Criteria Applicable to All Purposes

Laws and regulations

Plan, design, and construct the secondary containment facility to meet all Federal, State, Tribal, and local laws and regulations. The owner or operator is responsible for securing all required permits or approvals and for operating the facility in accordance with such laws and regulations. Notify landowner and/or contractor of their responsibility to locate all buried utilities in the project area, including drainage tile and other structural measures.

EPA SPCC regulation (40 CFR Part 112) provides the criteria for farms that require either a self-certified or professional engineer prepared and certified SPCC plan. If required by 40 CFR Part 112, an SPCC plan must be in place to implement this practice.

General containment

Use only containment systems constructed, manufactured, or fabricated for the purpose of containing oil, fuel, or other onfarm oil products. Design dikes, berms, or retaining walls sufficiently impervious to contain oil until cleanup can occur.

Prevent runoff water from storms less than or equal to the 25-year, 24-hour storm event from entering the secondary containment facility.

Follow State requirements for storage of flammable and combustible liquids or the current edition of the National Fire Protection Association (NFPA) 30 or NFPA 30A codes, as appropriate, utilizing whichever is more restrictive.

Location

Locate above the 100-year floodplain elevation. If site restrictions require location within a floodplain, follow the policy found in the NRCS General Manual (GM) (Title 190), Part 410, Subpart B, Section 410.25, "Flood Plain Management."

Locate the secondary containment facility as far as practical from streams, ponds, lakes, wetlands, sinkholes, and water wells, with a minimum setback distance of 25 feet. Secondary containment facilities closer than 100 feet to streams, ponds, lakes, wetlands, sinkholes, and water wells need to have an audible or visual high liquid level alarm to indicate when the tank is nearing capacity or use of other types of automatic shutoff devices during filling.

Locate secondary containment facilities a minimum of 25 feet away from traffic flow unless a protective barrier is provided to prevent damage from vehicles and farm equipment. Acceptable barriers include reinforced concrete containment walls over 15 inches in height and guard posts installed according to NFPA 30A, Section 4.3.7, "Physical Protection for All Outside Aboveground Tanks."

Sized containment

Use a double-walled tank, a covered impermeable structural barrier sized to contain 100 percent of the capacity of the largest storage tank, or an uncovered containment sized to hold 100-percent capacity of the largest container plus the volume of the 25-year, 24-hour rainfall event.

Structural design

Design the secondary containment facility using sound engineering principles in accordance with the requirements in NRCS National Engineering Manual (NEM) (Title 210), Part 536, "Structural Engineering." Address all factors that will influence the performance of the structure, including expected loading, storage tank sizes, material properties, and construction quality. Base the structural design of the containment facility, including earthen dikes and roofed structures (if applicable) on the criteria contained in NRCS Conservation Practice Standard (CPS) Pond (Code 378) and Roofs and Covers (Code 367).

When the secondary containment facility is within 100 feet of streams, ponds, lakes, wetlands, sinkholes, or water wells, use a double-walled tank or an impoundment that includes an impervious liner such as a geomembrane meeting the requirements contained in NRCS CPS Pond Sealing or Lining - Geomembrane or Geosynthetic Clay Liner (Code 521) or a reinforced concrete hydraulic or environmental structure according to 210-NEM-536.

Safety

Provide the storage facility with appropriately marked signs. Ensure that all fill ports are painted with the appropriate paint code according to American Petroleum Institute Recommended Practice 1637. Provide a spill control kit that is adequate for the type and amount of products being stored and dispensed. Locate spill kit within 100 feet of the facility.

Provide adequate ventilation in roofed structures to prevent the buildup of excess fumes.

CONSIDERATIONS

Consider providing security measures to limit unauthorized access to the storage tanks and secondary containment structures such as security lighting, fencing, and locks on fill ports and fuel dispensers. These types of security measures will be required in some locations.

Consider roofing, siding, or otherwise covering a secondary containment facility to prevent rain, snow, and debris from accumulating in the outside barrier of the containment.

Consider installing a level gauge for tanks. Pipe connections to the tanks should be at the top of the tanks to prevent a spill from a leaky connection. Locate piping and controls to all valves aboveground and within the secondary containment structure.

Consider elevating horizontal tanks to facilitate inspection for leaks.

Consider that small amounts of oil or oil products can be removed from accumulated rainwater by pouring the water through an oil absorbing pad. Larger amounts of oil or oil products should be allowed to separate from the water and then removed to the extent possible. Any small amounts of oil remaining after separation and removal can be removed as above using an oil absorbing pad.

Consider installing automatic shutoff nozzles on electrically operated dispensers.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for the onfarm secondary containment facility that describe the requirements for applying the practice to achieve its intended purpose.

As a minimum, provide the following in the plans and specifications:

- Plan view of system layout
- The distance and direction to the nearest stream, pond, lake, wetland, sinkhole, or well likely to be impacted by spillage of oil and oil products
- Structural and material details of all components including drawings and specifications with requirements for foundation preparation and treatment
- Locations, sizes, and type of tanks, pipelines, and appurtenances
- Safety features, fencing, and signage
- Location of utilities and notification requirements

OPERATION AND MAINTENANCE

Prepare an operation and maintenance plan that is specific to the components used on the site. Provide instructions for operating and maintaining components to ensure proper function.

For all tanks protected by the secondary containment facility, maintain a list of the storage tank capacities and the products the tanks contain.

Inspect storage tanks regularly according to the schedule outlined in the facility SPCC plan. As a minimum, tanks should be inspected monthly and repairs conducted promptly for—

- Leaks,
- Rust or corrosion,
- Accumulation of trash or weeds,
- Proper labeling and signage,
- Condition of ventilation systems, valves, fittings, and hoses, and

- Collected precipitation in any uncovered containment.

Remove accumulated rainwater from the secondary containment facility at least monthly. Provide instructions for testing all accumulated rainwater for contamination before removal from the containment structure. Typical contamination testing may involve onsite analysis of rainwater including a visual observation to determine a discoloration or sheen on the water surface or the presence of an odor of oil or oil products in the water. Separate waste oil or oil products if practical. Dispose of waste oil or oil products according to local regulations.

Perform maintenance as needed. Keep records of inspection and repair.

REFERENCES

American Petroleum Institute. 2020. API Recommended Practice 1637, Using the API Color-Symbol System to Identify Equipment, Vehicles, and Transfer Points for Petroleum Fuels and Related Products at Dispensing and Storage Facilities and Distribution Terminals, Fourth Edition, April 2020. Washington, D.C.

National Fire Protection Association. 2018. NFPA 30, Flammable and Combustible Liquids Code. Quincy, MA.

National Fire Protection Association. 2008. NFPA 30A, Code for Motor Fuel Dispensing Facilities and Repair Garages. Quincy, MA.

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Underwriters Laboratories. 2019. UL 142, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids. Washington, D.C.

U.S. Environmental Protection Agency. 2021. "Oil Spills Prevention and Preparedness Regulations." Accessed June 11, 2021. <https://www.epa.gov/oil-spills-prevention-and-preparedness-regulations>