

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
ON-FARM SECONDARY CONTAINMENT FACILITY

(No.)
CODE 319

DEFINITION

A permanent facility designed to provide secondary containment of oil and petroleum products used on-farm.

PURPOSE

To minimize the risk of accidental release of stored oil and petroleum products used in agricultural operations to support the following purposes:

- Control accidental release of oil and petroleum products to prevent contamination of groundwater and surface waters.
- Provide measures for a safe, effective and timely manner for clean-up of a spill or leak.

CONDITIONS WHERE PRACTICE APPLIES

This practice is applicable to agricultural areas where:

- An oil and petroleum product storage facility will be used for agricultural purposes.
- Spillage of oil and petroleum products would pose a contamination threat to soil, groundwater, or surface water.

On-farm oil products include diesel fuel, gasoline, lube oil, hydraulic oil, adjuvant oil, crop oil, vegetable oil, or animal fat, as identified by U.S. EPA's Oil Spill, Prevention, Control, and Countermeasure

Use double walled tanks, embankment structure, or walled structure and floor for secondary containment.

(SPCC) regulation (40 CFR 112 Oil Pollution Prevention).

This practice does not apply to the removal of existing oil and petroleum storage tanks.

This standard does not apply to underground storage tanks.

This standard does not apply to commercial suppliers or multi-landowner storage facilities.

CRITERIA**Laws and Regulations**

Plan, design, and construct secondary containment facility to meet all federal, tribal state, and local laws and regulations. The owner or operator is responsible for securing all required permits or approvals and for performing in accordance with such laws and regulations.

U.S.EPA's SPCC regulation (40 CFR 112) provides the criteria for farms which require either a self-certified or Professional Engineer prepared and certified SPCC plan. If required by 40 CFR 112, a SPCC plan must be in place to implement this practice.

Follow the Water Resources Reform and Development Act (WRRDA), Section 1049 criteria for requirements for development of a SPCC plan as applicable.

General Containment

Use only containment systems constructed, manufactured or fabricated for the purpose of containing oil, fuel, or other on-farm petroleum products.

- For embankment or walled containment, extend the containment a minimum distance of

two feet beyond all tanks in the facility.

- Elevate all tanks to protect the tank bottom from corrosion and to allow for a visible inspection of all tank surfaces.

The secondary containment embankment or wall and floor may be reinforced concrete, steel, modular block walls or an earthen dike that is lined in accordance with NRCS conservation practice standard Waste Storage Facility, 313, and Pond Sealing or Lining, Flexible Membrane, 521A.

Use tanks meeting the requirements of Underwriters Laboratories standard UL 142 for tanks not required to meet the criteria for Fire Resistant or Protected aboveground storage tanks.

Anchor non-mobile oil and petroleum product storage tanks to the bottom of the secondary containment facility to prevent the tank from floating in the event of a catastrophic leak or accidental spill.

Locate single wall storage tanks in an embankment or walled secondary containment where leaks can be detected, collected and contained.

Install a reinforced concrete slab beneath any pipes and appurtenances in the vehicle filling area.

Extend the reinforced concrete slab a minimum of 12 feet from the storage tanks or 2 feet beyond the vehicle fueling point, whichever is greater. The minimum length of the slab in the direction of vehicle travel is 12 feet.

Use an approved means of overfill protection for tanks. The use of ball float valves is prohibited.

- Tanks ≤ 1,100 gallons: Install an audible or visual alarm to indicate when the tank is at 90 percent capacity.

Release of liquids by gravity flow is not allowed for tanks ≤ 1,100 gallons.

Use locks on tank fill ports or any other tank openings and locks or electrical shutoff devices on the dispensing equipment.

Containment structures exposed to rain will have provisions for removal of accumulated rain water. Types of water removal systems can include sump and pump. Penetrating of secondary containment with an outlet pipe is not allowed. Testing of accumulated rainwater is required prior to the removal from the containment structure. Testing may consist of verifications that no oil sheen is present on the water surface within the secondary containment structure.

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

Location

Locate above the 100-year floodplain elevation. However, if site restrictions require location within a floodplain, design to protect the facility from inundation and damage from the 25-year flood event.

Evaluate the potential risk to water quality associated with petroleum products planned or present on the farm. Locate the secondary containment facility:

- As far as practical from streams, ponds, lakes, wetlands, sinkholes, surface inlets, ditches, and water wells, with a minimum setback distance of 100 feet;
- Remove and cap all perforated drainage pipe within 50 feet of the facility.

The following setbacks are minimums required beyond those listed in NFPA 30A:

- 25 feet away from on-farm traffic. This distance can be reduced to 10 feet where guard posts are used meeting all of the following requirements as a minimum;
 - 4" steel posts filled with concrete,
 - buried a minimum of 3 feet in a concrete footing not less than 15" diameter,
 - spaced a maximum of 4 feet on center between posts,

- located a minimum of 2 feet away from the storage tanks,
- install posts on all sides of the facility that have on-farm traffic.
- 75 feet away from major off-farm traffic flow;
- 10 feet away from any building to limit the spread of a fire.

Well isolation distance may be reduced based on [Well Isolation Distance Worksheets](#) for Major Sources of Contamination (petroleum products) for public wells with identified well protection factors. **The minimum well reduction to any well is 100 feet.** Maximize the well isolation distance to the extent practicable.

Sized Containment

Use a double walled tank, a covered impermeable structural barrier sized to contain 100% of the capacity of the largest storage tank, or an uncovered containment sized to hold 110% capacity of the largest container plus the volume of the 25-year 24-hour rainfall event plus 6 inch depth for freeboard.

Structural Design

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 the NRCS Conservation Practice Standard (CPS) *Waste Storage Facility* (Code 313) and *Roofs and Covers* (Code 367).

Steel wall containments must be of a commercial manufacturer for the purpose of fuel containment. Steel wall containments must be installed to meet the manufacturer's recommendations.

Safety

Ensure that all fill ports are painted with the appropriate paint code according to API Standard 1637.

Provide security measures to limit unauthorized access to the storage tanks and secondary containment structures such as security lighting, fencing, and locks on fuel dispensers and fill points.

Protect storage tanks from damage by vehicles, tractors, and other farm equipment by using guard posts meeting the minimum requirements as specified under the "Location" section of this standard.

Locate fire extinguishers within 100 feet of the dispensing and storage area. Minimum capability of the fire extinguisher is 40 B:C.

Provide a spill 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 and development of vacuum or pressure exceeding the design pressure as a result of filling, emptying, or atmospheric temperature changes.

CONSIDERATIONS

A secondary containment facility may be roofed, sided or otherwise covered to prevent rain, snow, and debris from accumulating in the outside barrier of the containment.

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 above ground and within the secondary containment structure.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for on-farm 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:

1. Plan view of system layout.
2. Structural and material details of all components including drawings and specifications.
3. Locations, sizes, and type of pipelines and appurtenances.

4. Requirements for foundation preparation and treatment.
5. Safety features, fencing, and signage.
6. 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.

Maintain a list of all the storage tank capacities and products the tanks contain for each secondary containment facility.

Provide for inspection of storage tanks regularly according to the schedule outlined in the facility SPCC plan. As a minimum, tanks should be inspected weekly and repairs conducted promptly for:

- Leaks.
- Rust or corrosion.
- Accumulation of trash or weeds.
- Proper labeling and signage.
- Condition of valves, fittings and hoses.
- Collected precipitation.

Provide instructions for testing all accumulated rain water for contamination before removal from the containment structure. Typical contamination testing may involve on-site analysis of rainwater including a visual observation to determine a discoloration or sheen on water surface or the presence of an odor of petroleum products in the water.

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

REFERENCES

American Petroleum Institute (API), Standard 1637, "Using the API Color-Symbol System to Mark Equipment and Vehicles for Product Identification at Gasoline Dispensing Facilities and Distribution Terminals."

Underwriters Laboratories, Standard No. 142, "Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids."

Environmental Protection Agency, The Spill Prevention, Control, and Countermeasure (SPCC) rule.

<http://www.epa.gov/emergencies/content/spcc/index.htm>

National Fire Protection Association, NFPA 30A; Code for Motor Fuel Dispensing Facilities and Repair Garages, 2012 Edition.

National Fire Protection Association, NFPA 30, Flammable and Combustible Liquids Code, 2012 Edition

Storage and Handling of Flammable and Combustible Liquids (FL/CL) Rules, promulgated under the authority of the Michigan Fire Prevention Code, 1941 PA 207, as amended, R 29.5601 et seq., of the Michigan Administrative Code

Safe Drinking Water Act, 1976 PA 399, as amended (Act 399)

Part 127, Water Supply and Sewer Systems, of the Public Health Code, 1978 PA 368, as amended (Act 368), and R325.1613 of the Groundwater Quality Control Rules promulgated pursuant to Part 127