

ONATURAL RESOURCES CONSERVATION SERVICE
INTERIM MONTANA CONSERVATION PRACTICE STANDARD

AGRICULTURAL SECONDARY CONTAINMENT FACILITY (NUMBER)

CODE 710

DEFINITION

Permanently located above ground facilities designed to provide secondary containment of on-farm oil products.

PURPOSE

To minimize the risk of accidental release of stored oil products used in agricultural operations to support one or more of the following purposes:

- Control excessive release of organics into groundwater and surface waters
- Control excessive suspended sediment and turbidity into surface water.

CONDITIONS WHERE PRACTICE APPLIES

This practice is applicable to agricultural areas where:

- Oil product storage facilities are used or will be used for agricultural purposes
- Spillage of liquid would pose a threat to soil contamination; and excessive organics into groundwater and surface water
- Soils and topography are suitable for construction.

On-farm oil products, such as 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 (SPCC) regulation (40 CFR 112 Oil Pollution Prevention).

This practice does not apply to the removal of existing tanks.

CRITERIA

Design, construction, and siting shall comply with all federal, state, **tribal**, and local laws and regulations. The owner or operator shall be responsible for securing all required permits or approvals and for performing in accordance with such laws and regulations.

Farms with storage capacity of more than 10,000 gallons, or that have had an oil spill, need a Spill Prevention, Control, and Counter-Measure (SPCC) Conservation Activity Plan (CAP) (Code 150) certified by a licensed Professional Engineer as required by EPA.

An Agricultural Secondary Containment Facility (Code 710) shall be designed by a licensed Professional Engineer who is registered as a NRCS Technical Service Provider in the State of Montana.

Prevent outside runoff water from entering the facility.

General Containment

Containment systems shall be manufactured or fabricated for the purpose of containing oil, fuel, or other regulated liquid.

Secondary containment shall be a double-walled tank or an impermeable structural barrier.

Secondary containment facilities shall protect both surface water and groundwater for the life of the tank. They shall incorporate an impermeable liner of reinforced concrete, flexible membrane, coated steel, or bentonite treatment. They shall be designed in accordance with the following conservation practice standards (if applicable):

NRCS, MT
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Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard contact the Natural Resources Conservation Service.

NOTE: This type of font (**AaBbCcDdEe 123..**) indicates NRCS National Standards.
This type of font (AaBbCcDdEe 123..) indicates Montana Supplement.

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**Waste Storage Facility (Code 313)
Pond Sealing or Lining, Flexible Membrane (Code 521A)
Pond Sealing or Lining, Bentonite Treatment (Code 521C).**

In-situ clay soil, compacted clay soil, or asphalt shall not be used as impermeable liners.

The minimum top width of earthen berms shall be 3 feet. The minimum combination of inside and outside slopes shall be 5 horizontal to 1 vertical.

Non-mobile tanks shall be anchored to the bottom of the secondary containment facility to prevent the tank from floating in the event of a catastrophic leak or accidental spill or accumulation of rain water. Anchorage shall also secure empty tanks from wind in accordance with the criteria in Roofs and Covers (Code 367).

Tanks shall be located on a clean hard surface where leaks can be detected and the surface shall extend a minimum distance of two feet beyond the outside dimensions of the tank. A similar surface shall be beneath the vehicle filling area. Tanks shall be located at least 3 feet away from walls to allow visual inspections.

If possible, orient tank weld seams toward the interior of the containment area and orient tank outlet valves toward the center of the containment area in case there is a plumbing or weld failure.

Containment structures exposed to rain will have provisions for accumulated rain water removal. **Secondary containment floors should be sloped to a single sump or low point at a 1% minimum grade so precipitation can be easily removed.** Types of water removal systems can be sump and pump, or a valve and sealed outlet pipe, or evaporation. **Provide lockable shutoff valves on outlets of all tanks for security.** All accumulated rain water will be tested for contamination before removal from the containment structure.

Electrical items (motors, wiring, controls, etc.) shall be elevated above the containment wall so they do not become submerged during precipitation events or failure events.

Storage tanks shall be protected from accidental contact by vehicles, tractors, and other farm equipment.

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. **The structural design of roofs shall be in accordance with Roofs and Covers (Code 367).**

Sized Containment

Covered secondary containment shall hold 110% capacity of the largest storage tank. Uncovered containment shall hold 110% capacity of the largest storage tank plus the 25-year 24-hour rainfall event.

Safety

Storage facilities shall be properly marked with signs. A 'No Smoking' sign shall be placed near the fueling area. Fill ports shall be painted with the proper paint code; 'Gasoline-Red', 'Diesel-Yellow', and 'Kerosene-Brown'.

Provide security measures to limit unauthorized access to the storage tanks and secondary containment structure(s).

CONSIDERATIONS

Evaluate the potential risk to water quality associated with agricultural oil, fuel, and/or liquid storage planned or present on the farm. Avoid areas:

- Closer than 300 feet from a well
- Closer than 25 feet to on-farm traffic and 75 feet to major off-farm traffic patterns
- Closer than 10 feet to any building.

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

Consider elevating metal storage tanks a few inches above the secondary containment floor to keep the tank bottom dry, to prevent corrosion, and to allow visual inspection for leaks. One method of elevating tanks is to place them on a bed of smooth, rounded stones. This method allows the tank to be leveled on containment floors that slope to a sump.

Tanks should have a level gauge and all piping and connections to tanks should be at the top centerline of the tanks to avoid leaks. Locate piping and controls aboveground and within the secondary containment structure.

Install automatic shutoff valves on electrically operated dispensers.

PLANS AND SPECIFICATIONS

Plans and specifications shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended use. As a minimum, include in the engineering plans, specification and reports the following:

1. Plan view of system layout
2. Structural details of all components
3. Locations, sizes, and type of pipelines and appurtenances
4. Requirements for foundation and preparation and treatment
5. Safety features, roof covers, fencing ladders, and safety signs
6. Location of utilities and notification requirements.

OPERATION AND MAINTENANCE PLAN

Agricultural Secondary Containment Facilities require an Operation and Maintenance Plan.

The Operation and Maintenance Plan shall identify containment locations, capacities, and planned contents.

The Operation and Maintenance Plan should include routine inspections and a response to damage or deterioration.

Storage tanks shall be inspected monthly. Look for:

- Leaks
- Rust or corrosion
- Accumulation of trash or weeds

- Proper labeling and signage
- Condition of valves, fittings and hoses
- Collected precipitation.

Secondary containment shall be inspected monthly. Look for:

- Concrete cracks, deterioration, joint movement
- Puncture, tears, anchorage problems in flexible membranes
- Plumbing leaks or failures
- Drainage blocks
- Safety features.

All accumulated rain water shall be tested for contamination before removal from secondary containment facilities. Visual observation of an oil sheen on the water surface is an acceptable test for rain water contamination unless a higher standard is required by federal, state, tribal, and local laws.

Specific instructions shall be included in the Operation and Maintenance Plan on how to dispose of oil leakage or contaminated rain water. The instructions shall comply with all federal, state, tribal, and local laws and regulations.

An Emergency Response Plan shall be included as part of the Operation and Maintenance Plan or SPCC CAP. The plan is a set of guidelines and information used by personnel at a facility to help make decisions during an emergency situation such as a fire or spill.

Perform maintenance as needed. Records of inspection and repair will be kept.

REFERENCES

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

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Environmental Protection Agency, The Spill Prevention, Control, and Countermeasure (SPCC) rule –
<http://www.epa.gov/emergencies/content/spcc/index.htm>

Designing Facilities for Pesticide and Fertilizer Containment. MWPS-37. Revised First Edition, 1995.