



# OIL WATER SEPARATORS IN THE SPCC WORLD

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# Session Agenda

1. Introduction
2. Overview of Provisions Applicable to OWS
3. OWS Used for Wastewater Treatment
4. OWS Quiz, Round 1
5. 10 Minute Break
6. OWS Used in Oil Recovery or Recycling Facilities
7. Documentation Requirements and Role of EPA Inspector
8. OWS Quiz, Round 2

# DISCLAIMER

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This presentation is meant to provide an overview to EPA inspectors, owners and operators of regulated facilities, and the general public on the implementation of the Spill Prevention, Control, and Countermeasure (SPCC) rule (40 CFR Part 112). This presentation seeks to promote nationally-consistent implementation of the SPCC rule. The statutory provisions and EPA regulations described in this presentation contain legally binding requirements. This presentation does not substitute for those provisions or regulations, nor is it a regulation itself. In the event of a conflict between the discussion in this presentation and any statute or regulation, this presentation is not controlling. This presentation does not impose legally binding requirements on EPA or the regulated community, and might not apply to a particular situation based upon the circumstances. The word “should” as used in this presentation is intended solely to recommend or suggest an action, and is not intended to be viewed as controlling. Examples in this presentation are provided as suggestions and illustrations only. While this presentation indicates possible approaches to assure effective implementation of the applicable statute and regulations, EPA retains the discretion to adopt approaches on a case-by-case basis that differ from this presentation where appropriate. Any decisions regarding compliance at a particular facility will be made based on the application of the statute and regulations. References or links to information cited throughout this presentation are subject to change. Rule provisions and internet addresses provided in this guidance are current as of March 2023. This presentation may be revised periodically without public notice.

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# How Does an Oil Water Separator Work?

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Oil and water is passed through the OWS chambers, and as oil particulates are tumbled over the surface, they collect and combine to form larger globules, increasing the buoyancy. This facilitates phase separation and the oil rises to the top of the water.

Oil is typically skimmed off from the unit and stored in a separate container, and then managed, re-refined or disposed in accordance with appropriate jurisdictional Laws, Rules or Regulations.

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# Oil/Water Separator Applicability

<b>Wastewater Treatment</b>	<b>Secondary Containment</b>	<b>Oil Recovery and/or Recycling</b>
<p>Separators are exempt from all SPCC requirements in accordance with §112.1(d)(6) and do not count toward facility storage capacity</p>	<p>Separators that are used as part of a secondary containment system and are not intended for oil storage or use do not themselves require secondary containment, and do not count toward facility storage capacity. <i>However</i>, they are subject (e.g., capacity) for the secondary containment requirements with which they are designed to comply</p>	<p>Separators are not exempt and count toward the facility storage capacity. Separators are oil-filled manufacturing equipment subject to the provisions of §112.7 and §§112.8(b) and (d) or 112.12(b) and (d), as applicable.</p>

# 112.1(d)(6)

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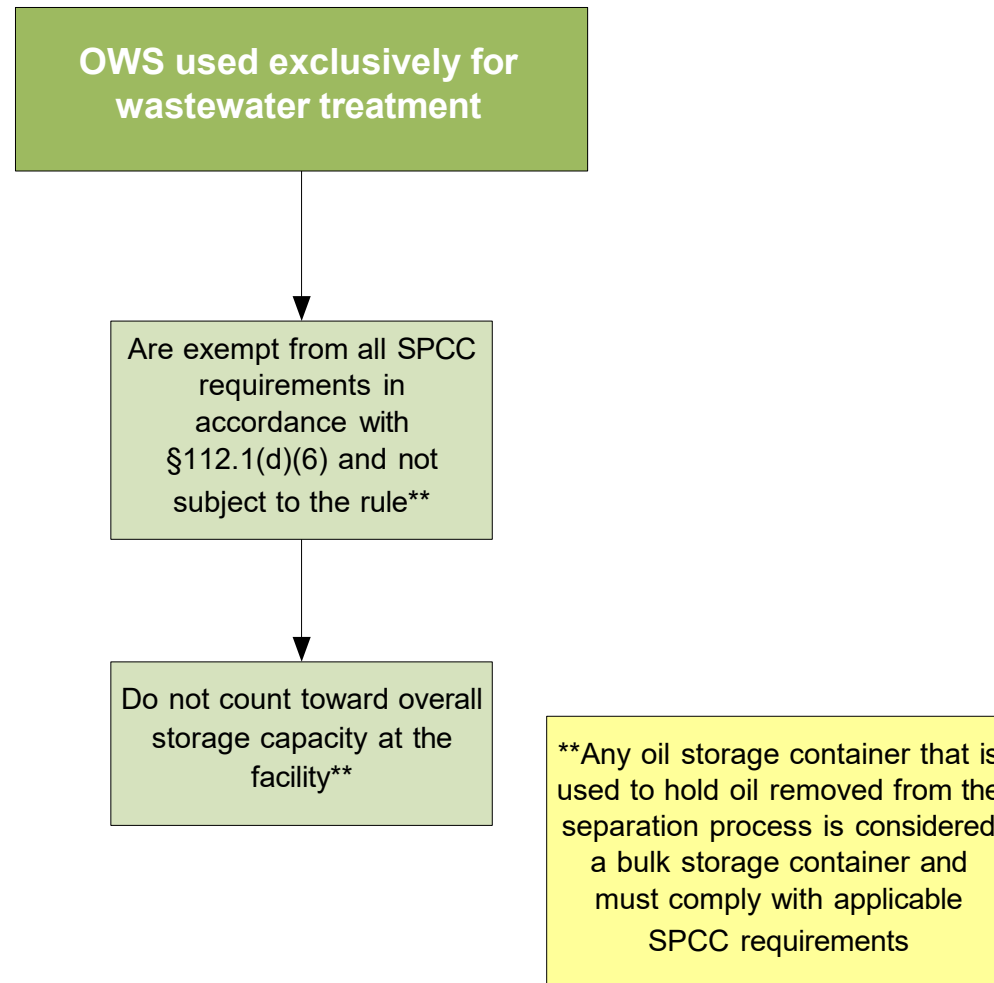
Any facility or part thereof used exclusively for wastewater treatment and not used to satisfy any requirement of this part. The production, recovery, or recycling of oil is not wastewater treatment for purposes of this paragraph.

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# 5.2 Overview of Provisions Applicable to OWS

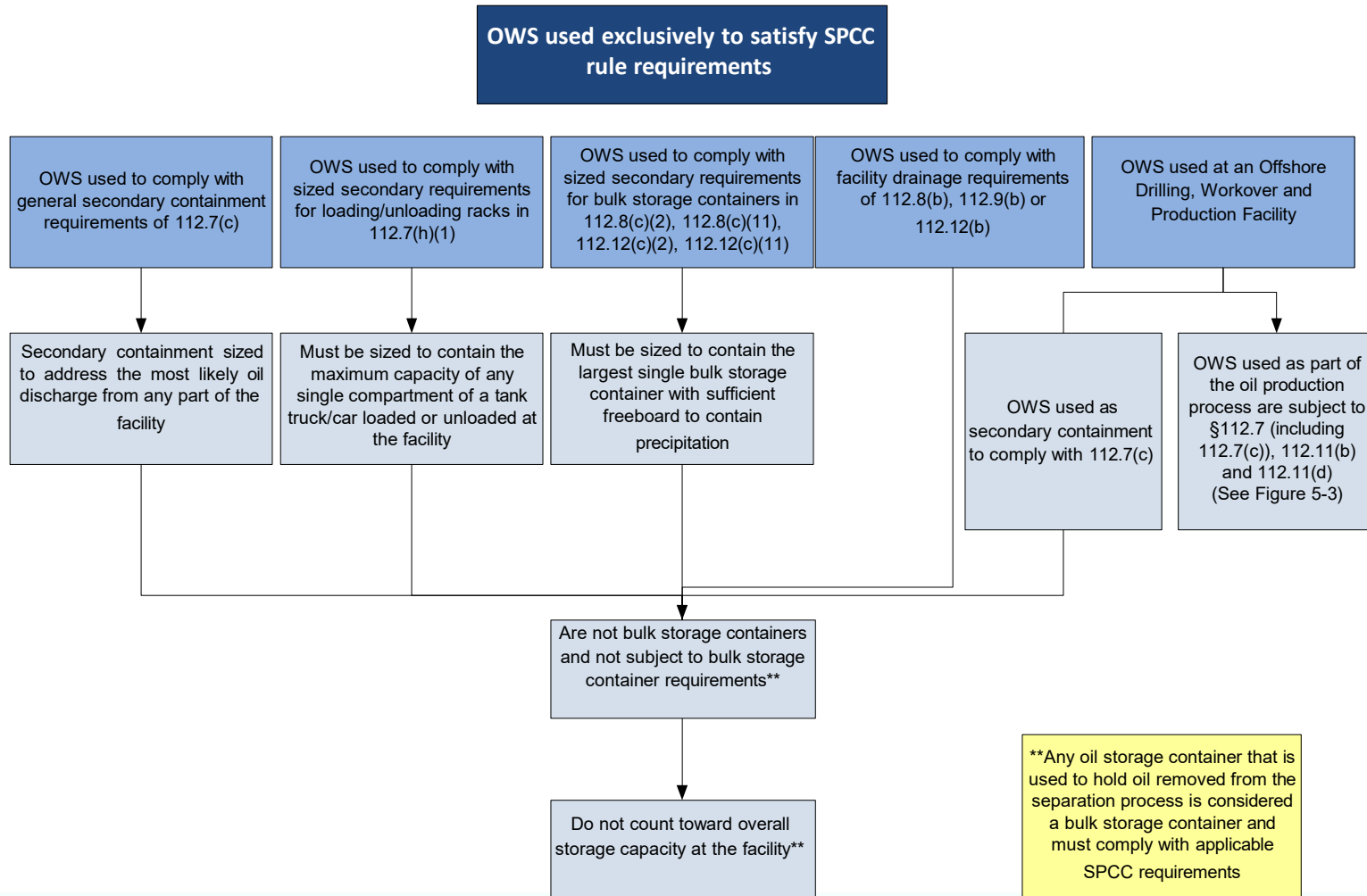
**Figure 5-1: OWS subject to wastewater treatment exemption**

[Figure was updated]



# 5.2 Overview of Provisions Applicable to OWS

Figure 5-2: OWS used to satisfy SPCC rule requirements.



# OWS Used to Meet SPCC Secondary Containment Requirements

- OWS used to meet the SPCC requirements for general secondary containment, sized secondary containment, or facility drainage are subject to applicable rule requirements, but they do not count toward storage capacity. These include OWS that are used to meet the secondary containment requirements of §§112.7(c), 112.7(h)(1), 112.8(c)(2), 112.8(c)(11), 112.12(c)(2), and/or 112.12(c)(11).

# SPCC Guidance for Reg. Inspectors

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From the Sample SPCC Plan in the Guidance:

The capacity of the oil/water separator is not included in the total storage capacity for the facility since it is used to treat storm water and as a means of secondary containment for areas of the facility with potential for an oil discharge outside dikes or berms.

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# SPCC Guidance Sample Plan, Continued

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The separator provides environmental protection equivalent to the requirements under 112.8(b)(3) to use ponds, lagoons, or catchment basins to retain oil at the facility in the event of an uncontrolled discharge. As described in Section 3.5 of this Plan, the operational and emergency oil storage capacity of the oil/water separator is sufficient to handle the quantity of oil expected to be discharged in undiked areas from tank overfills or transfer operations.

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**Table 3-1: Potential Discharge Volumes and Direction of Flow**

Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
<b>Bulk Storage Area (Aboveground Storage Tanks #1, 2, 3, or 7)</b>				
Failure of aboveground tank (collapse or puncture below product level)	20,000	Gradual to instantaneous	SW to Silver Creek	Concrete dike
Tank overfill	1 to 120	60 gal/min	SW to Silver Creek	Concrete dike
Pipe failure	20,000	240 gal/min	SW to Silver Creek	Concrete dike
Leaking pipe or valve packing	600	1 gal/min	SW to Silver Creek	Concrete dike
Leaking heating coil (Tank #7)	10,000	1 gal/min	SW to Silver Creek	Concrete dike
<b>Loading Rack/Unloading Area</b>				
Tank truck leak or failure inside the rollover berm	1 to 2,000	Gradual to instantaneous	SW to Silver Creek	Rollover berm, on to oil/water separator
Tank truck leak or failure outside the rollover berm	1 to 2,000	Gradual to instantaneous	SW to Silver Creek	Rollover berm, on to oil/water separator
Hose leak during truck loading	1 to 300	60 gal/min	SW to Silver Creek	Rollover berm
<b>Fuel Dispensing Areas</b>				
Tank #4 and diesel dispenser hose/connections leak	1 to 150	30 gal/minute	SW to Silver Creek.	Land-based spill response capability (spill kit) and oil/water separator
<b>Maintenance Building</b>				
Leak or failure of drum	1 to 55	Gradual to instantaneous	SW to Silver Creek.	Spill pallets, oil/water separator
<b>Other Areas</b>				
Complete failure of portable tank (Tank #4)	500	Gradual to instantaneous	SW to Silver Creek.	Secondary shell, oil/water separator
Leaking portable tank or overfills (Tank #4)	1 to 100	3 gal/min	SW to Silver Creek.	Secondary shell, oil/water separator



# Use of OWS to satisfy SPCC Rule Reqs.

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- OWS may be used to comply with the general requirements of 112.7(c):
  - 112.7(c) applies to oil filled electrical, operational and manufacturing equipment
  - Aboveground, single-wall transfer piping outside of diked areas
  - Fuel transfer areas between tanks and trucks taking place through a flexible hose (note: Not loading/unloading Racks)
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# 112.7(c):General Containment requirements and OWS

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In order to meet the general secondary Containment requirements of 112.7(c), the system must be sized to account for the “most-likely” discharge scenario/volume that could be expected from any part of a Facility.

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## OWS and Loading/Unloading Racks (112.7(h))

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The OWS system must be sized to account for the entire contents of the single largest tank or compartment loaded or unloaded at a Loading/Unloading Rack. Also applies to Rail-Car Loading/Unloading Racks.

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# OWS Quiz, Round 1

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1. Oily contact water, generated at a SPCC-regulated Facility is passed through a OWS system, and the oil is skimmed off from the unit and bulked into a 55-gallon drum. The drum is subject to the SPCC Rule Requirements:

True or False?

2. Is secondary containment for the OWS required?

Yes or No?

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# OWS Quiz, Round 1 Cont.

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3. OWSs can be used to meet SPCC Rule requirements for general secondary containment (112.7(c)) for the following Facility operations. Select the correct response:
- A. Single-wall, aboveground transfer piping?
  - B. Tank to Truck Transfer operations via flexible hose?
  - C. Oil-Filled Equipment?
  - D. All of the above?
-

# OWS Quiz, Round 1, Cont.

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4. The City's Publicly Owned Treatment Works receives a stream of wastewater for treatment and the wastewater occasionally has some oil in it.

Is the wastewater treatment system subject to SPCC:

Yes or No?

5. Following the wastewater treatment, the system skims the oil and bulks into a storage container.

Is the container subject to the SPCC Rule?

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# OWS Quiz, Round 1, Cont.

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Please select the correct answer:

- A. Yes?
  - B. No?
  - C. Maybe?
-

# OWS Quiz, Round 1, Cont.

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Correct Answer:

Maybe!

6. If the container receiving oil is 55 gallons or greater in capacity, then the facility and the container subject to SPCC, Right?

Yes?

No?

Maybe?

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# OWS Quiz, Round 1, Cont.

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Yes: if the container is greater than 1,320 gallons (or multiple containers 55-gallons or greater and exceeds 1,320 gallons), then that component(s) of a Wastewater Treatment Facility, and the Facility itself are subject to the SPCC Rule (assuming the other applicability criteria are met).

No: If the container receiving the oil is less than 55 gallons and no other SPCC applicability criteria is met.

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1221  
HAZARDOUS WASTE

1205

KNAACK

2 CON



**BREAK!**





# OWS and Sized 2<sup>nd</sup>. Containment

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OWS may also be used to comply with sized secondary requirements for bulk storage containers in 112.8(c)(2), 112.8(c)(11), 112.12(c)(2), 112.12(c)(11). However, the sizing requirement is based on the entire “Shell” Capacity of the single largest tank, plus freeboard for precipitation.

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JET A  
2022

18

JET A

JET A

JET A

JET A

JET A

S-10

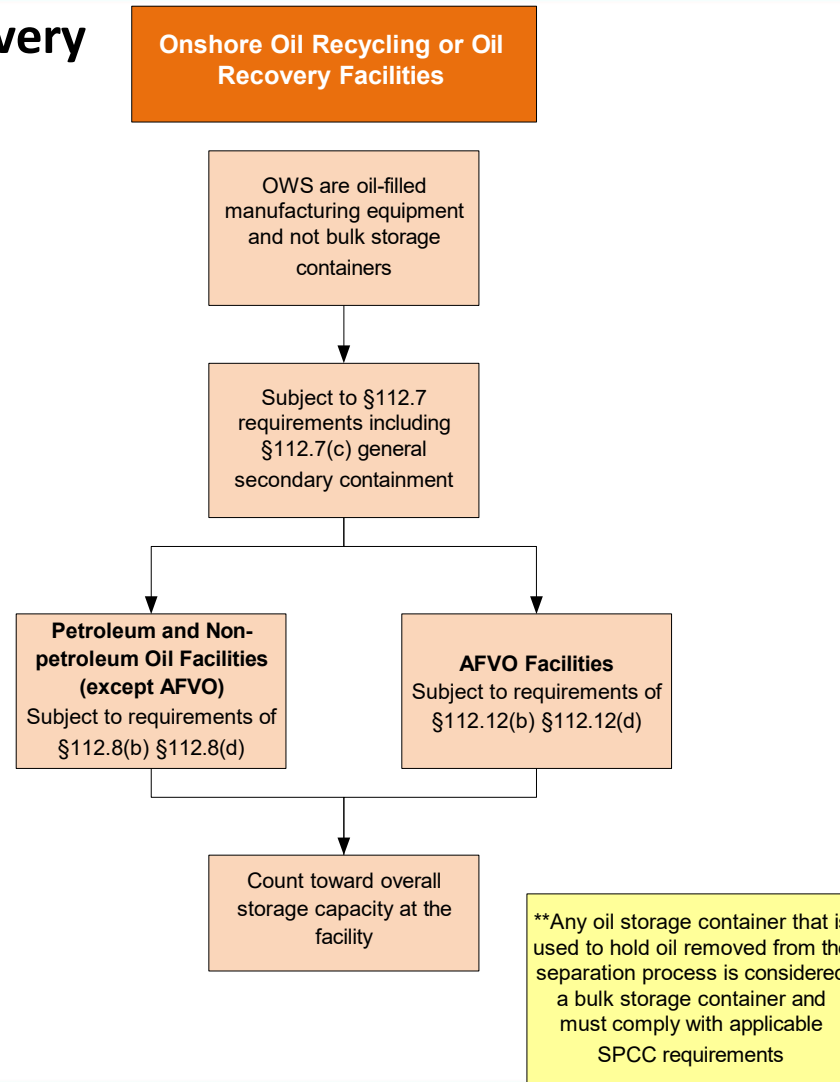
S-12

479

# 5.2 Overview of Provisions Applicable to OWS

**Figure 5-4: OWS at oil recovery and/or recycling facilities**

[Figure was updated]



## 5.3.2 Applicability of the Rule to OWS Used for Wastewater Treatment

### **Example of SPCC Rule Applicability & Secondary Containment Requirements: Kitchen Grease Trap**

- A kitchen grease trap at a facility used solely for the pretreatment of wastewater:
  - Eligible for wastewater treatment exemption
- Transfer of oily wastewater and sludge from this exempt grease trap, using a vacuum truck:
  - Subject to the general containment requirements of §112.7(c)

## 5.4.1 OWS Used to Meet SPCC Secondary Containment Requirements

- Separators used as secondary containment would typically be located in ***undiked areas***, to supplement drainage systems.
- Use of OWS as a method of containment may be risky
  - Particularly when meeting sized secondary containment requirements for large bulk storage containers.
- Inspectors noting this containment configuration should:
  - closely inspect the device
  - review records associated with design criteria
  - review records associated with routine maintenance performed



# OWS Used to Meet SPCC Secondary Containment Requirements, Cont.

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Drainage systems that satisfy the secondary containment requirements may use OWS to recover oil and return it to the facility (see Chapter 4: Secondary Containment and Impracticability for a description of secondary containment requirements). Additionally, the drainage provisions in §§112.8(b) and 112.9(b) set forth design specifications for secondary containment at a facility.

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## 5.6 OWS Used in Oil Recovery or Recycling Facilities

- Subject to the provisions of
  - §112.7
  - §112.8(b) and (d) or §112.12(b) and (d)
- §§112.8(c) and 112.12(c) provisions (such as sized containment, integrity testing and overfill prevention) do not apply.
  - OWS at these facilities function as oil-filled **manufacturing equipment** and are not bulk storage containers.





512A  
HAZARDOUS WASTE  
USED OIL

6512  
HAZARDOUS WASTE  
USED OIL

CAUTION: BREAK ALL  
CONNECTIONS AND SECURE  
ALL CLOSURES BEFORE  
WINDING YOUR TRUCK

VAPOR RECOVERY

USED OIL

5086

5086

5086

5086

5086

512

HAZARDOUS WASTE  
USED OIL

USED OIL

USED OIL

USED OIL

USED OIL

5086

5086

5086

5086

5086

5086

5086







# 503C RECYCLED OIL

HAZARDOUS WASTE

VAPOR RECOVERY

OVER

503-C FEED

T503-C FEED





50  
USED HAZARDOUS WASTE

50  
USED HAZARDOUS WASTE

50  
USED HAZARDOUS WASTE

50  
USED HAZARDOUS WASTE

50  
USED HAZARDOUS WASTE

HOT PUMP

CBTX 740194

DANGER

## 5.7.2 Role of the EPA Inspector

- Particularly large drainage areas served by an OWS to meet secondary containment requirements may raise a “red flag”
- Inspector should verify that the Plan adequately addresses the ability of the OWS to handle
  - Expected precipitation (considering expected rainfall intensity)
  - Discharge volume given the design treatment flow rate and OWS capacity.





NO SMOKING

IN-PLACE OPERATOR ONLY  
DANGER - HAZARDOUS PROCESSES  
1. Do not enter the tank without proper training and authorization.  
2. Do not enter the tank if there is a possibility of gas accumulation.  
3. Do not enter the tank if there is a possibility of oxygen deficiency.  
4. Do not enter the tank if there is a possibility of toxic gas accumulation.  
5. Do not enter the tank if there is a possibility of fire or explosion.  
6. Do not enter the tank if there is a possibility of structural failure.  
7. Do not enter the tank if there is a possibility of falling objects.  
8. Do not enter the tank if there is a possibility of electrical shock.  
9. Do not enter the tank if there is a possibility of other hazards.  
10. Do not enter the tank if there is a possibility of any other hazard.  
11. Do not enter the tank if there is a possibility of any other hazard.  
12. Do not enter the tank if there is a possibility of any other hazard.  
13. Do not enter the tank if there is a possibility of any other hazard.  
14. Do not enter the tank if there is a possibility of any other hazard.  
15. Do not enter the tank if there is a possibility of any other hazard.



120

L6

H1

H2









**OWS**  
OPEN VALVE WITH  
SUPERVISION ONLY

FOAM LINE

WATER LINE



MAERSK LINE

MAERSK



# OWS Quiz, Round 2

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1. Uncle Steve's Back Woods Tank Farm and BBQ Joint has a 100,000 gallon Used Vegetable Oil Tank and a 55-gallon drum to collect Grease from the BBQ operation (wastewater treatment). It is our understanding that the operation was featured on The Ozarks. Uncle Steve was visited by the Regional EPA Inspector, who informed Uncle Steve of the requirement need to develop, certify and implement a SPCC Plan.

Is the drum subject to the SPCC Rule? Does the Plan require P.E. Certification?

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# OWS Quiz, Round 2

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An OWS is used to provide containment and drainage controls for a SPCC regulated Facility. The operating capacity of the OWS is 1,500 gallons. The Truck transfer area (flex hose, most likely discharge volume 800 gallons) and aboveground undiked piping to the fuel dispenser island, and a 2,000 gallon aboveground fuel storage tank are described in the Plan as being provided with containment by the OWS.

Is this acceptable according to the information available?

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Is a 5,000 gallon capacity OWS subject to Integrity Testing according to applicable industry standards?

A P.E. has developed a maintenance and cleaning schedule for a OWS at a Facility with over 100,000 gallons in total capacity?


Is this requirement enforceable under the SPCC Rule?







QUESTIONS?





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