

The Agricultural Producers' Comprehensive Guide to Federal Oil Pollution Prevention Regulations



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INTRODUCTION

Crop and livestock farms use fuel and oil storage tanks to supply diesel fuel for on-farm equipment and to store used oil. Many agricultural producers don't realize that a Spill Prevention, Control and Countermeasure (SPCC) plan is a regulatory requirement if certain conditions are met on their farm. This requirement is part of the Clean Water Act and falls under the "Oil Pollution Prevention" regulations found in 40 Code of Federal Regulations Part 112. These rules are designed to prevent oil discharges into waters of the United States. In addition to the SPCC plan, these regulations will likely require farms to upgrade their storage facilities to prevent and control oil spills and to have a cleanup plan ready in case a spill occurs. This University of Tennessee Extension publication explains how these regulations apply to your farm and how you can develop and implement a SPCC plan.

QUESTIONS AND ANSWERS

Q1. WHICH SUBSTANCES ARE COVERED BY THESE REGULATIONS?

The Oil Pollution Prevention regulations mainly apply to oil storage structures and dictate how to prevent, prepare for and respond to spills that could cause environmental damage. "Oil" is very broadly defined to include any flowable new or used petroleum product, such as:

- Gasoline and diesel fuel.
- Heating oil and kerosene.
- Motor oil, lubricating greases and mineral oils.
- Hydraulic and transmission fluids.
- Mineral spirits, paint thinners and solvents.

Oils derived from animals and plants are also covered by these regulations (e.g., soybean oil) but are less likely to be stored on farms.

These regulations do **NOT** apply to:

- Residential heating fuel stored in tanks for use by a single family home.
- Milk in bulk tanks on dairies (this exemption is pending as of 2010).
- Animal waste in impoundments.
- Truck and tractor fuel in the vehicle tanks.
- Pesticides and herbicides in on-farm mix and application tanks.
- Fuel or oil in buried tanks subject to Underground Storage Tank (UST) regulations.

Q2. WHICH TYPE OF STORAGE STRUCTURES DO THESE REGULATIONS APPLY TO?

These regulations potentially apply to **ANY** above-ground oil storage container (other than those noted above) with a capacity of at least 55 gallons, including:

- Containers in a building or that are normally empty and temporarily staged in a field (e.g., diesel fuel nurse tanks).
- Partially buried tanks or above-grade tanks in bunkers covered by soil, asphalt, etc.
- Vaulted tanks that are underground (e.g., used oil tanks in a farm garage pit).

The rules also apply to **ANY** buried storage tank but only if the tank is **NOT** covered by UST regulations. **If you have buried oil storage tanks with a capacity of 1,110 gallons or more, the tanks and associated underground piping are likely covered by the Tennessee UST regulations.** UST regulations are not covered in this publication, but you can contact the Tennessee Department of Environment and Conservation for assistance at 615-532-0945.

The rules **DO NOT** apply to storage tanks that have been **permanently closed** by: (1) removing all stored materials, (2) closing all filling and emptying ports and valves, for example with blind flanges (leave the ventilation ports open), and (3) labeling the tanks with dated signs indicating the tank is closed.

Q3. HOW DO I DETERMINE WHETHER THESE REGULATIONS APPLY TO MY FARM?

All farms are covered by these regulations, but most agricultural producers are either unaware of the rules or are confused by how they apply to their farm. **Figure 1** illustrates how to determine if these rules apply using simple questions that are discussed in more detail on the following page.

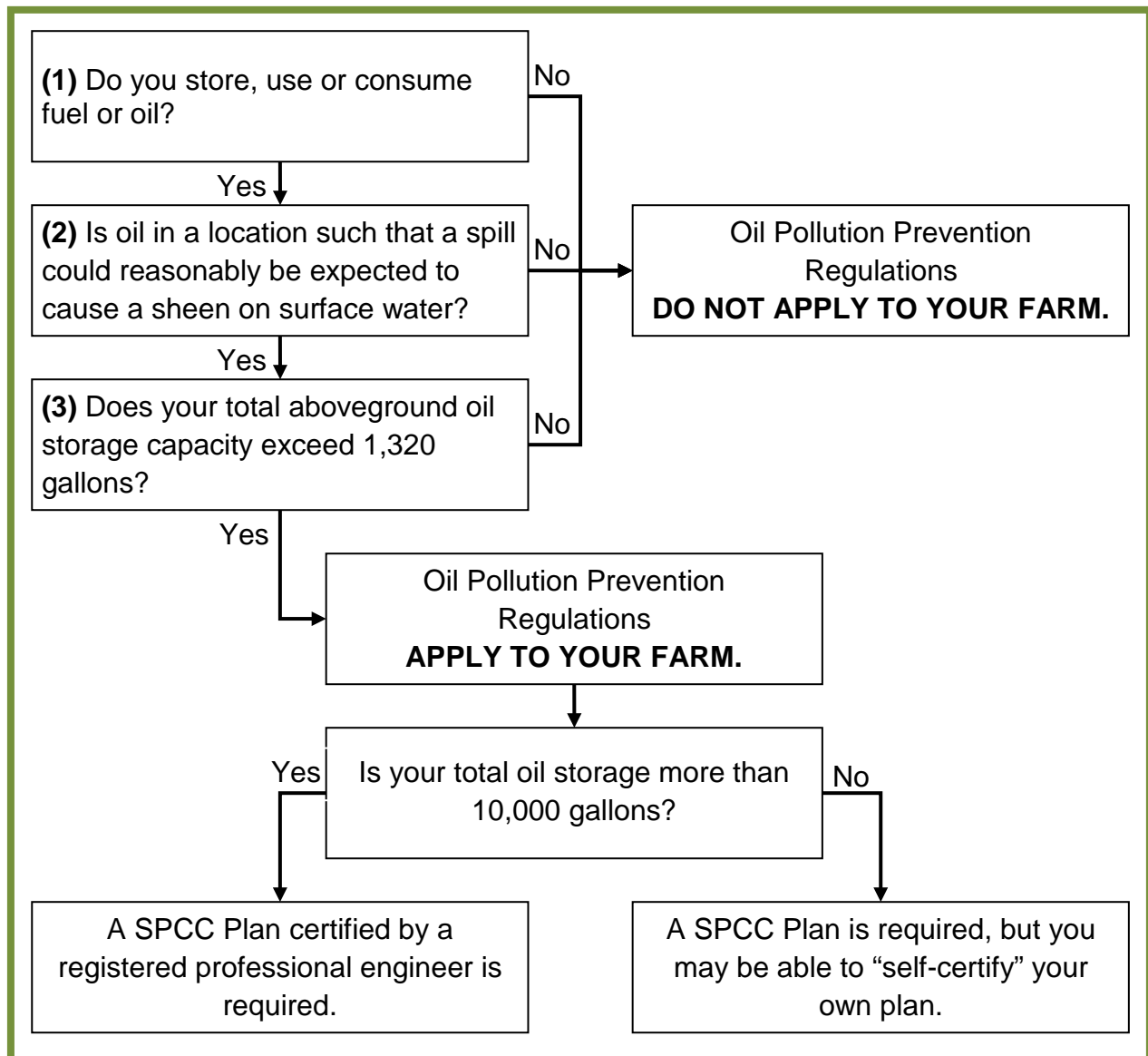


Figure 1. A diagram to help determine whether your farm is covered by the Clean Water Act Oil Pollution Prevention regulations.

Virtually every farm meets the first requirement of storing, using and/or consuming oil. However, the Oil Pollution Prevention regulations only apply if you are storing, using and consuming oil in an area that:

“due to its location, could reasonably be expected to discharge oil in quantities that may be harmful ... into or upon the navigable waters of the United States ...”

This language is liberally interpreted by regulators and some folks would argue that Tennessee has such a high density of surface waters that it’s inevitable there is a reasonable expectation that any spill may cause harm. Thus, two fine parts of this language are important:

- **“Harmful quantities”** are any amount that can cause a sheen to appear.
- **“Navigable waters”** generally means all surface waters including creeks, streams and rivers; or water impounded in wetlands, ponds, reservoirs and lakes.

Agricultural producers considering whether the regulations are applicable to their farm must realize that **the potential for environmental harm is based solely on the LOCATION of stored oil.** Also, **you CANNOT consider the impact of man-made spill prevention and control devices, including secondary containment structures.** Rather, the regulations are in place to ensure that these spill-prevention devices and control structures are present and adequate. **The proximity to surface waters, the local land contour, and the presence of ditches and floor drains are factors that SHOULD be considered.** Scenarios including **accidental tank overfills and ruptures should be considered,** along with the fact that spills from large tanks can easily travel hundreds of feet to surface waters through ditches. **Figures 2 and 3** present photographs of oil stored in locations that could **obviously** be expected to result in a discharge to surface waters.

Lastly, these regulations only apply if your **storage capacity exceeds:**

- 1,320 gallons in above-ground storage tanks, **OR**
- 42,000 gallons in buried storage tanks not regulated as USTs.

The regulations consider total storage capacity and not actual gallons of stored fuel or oil. It **MAY** be possible to reduce total capacity if storages are on separate parcels of land.



Figure 2. Outdoor (A) and indoor (B) oil storage tanks located near drains. The locations would obviously (rather than “reasonably”) be expected to direct spills to surface waters in harmful quantities.



Figure 3. Outdoor oil storage tanks in locations that would obviously (rather than “reasonably”) be expected to direct spills to surface waters in harmful quantities. (A) Diesel tanks on a hill above a lake and (B) a farm diesel tank on a hill above a creek.

Q4. WHAT SHOULD I DO IF THESE REGULATIONS APPLY TO MY FARM?

- (1) Write or hire someone to write a Spill Prevention, Control and Countermeasure (SPCC) plan.
- (2) Self-certify or as necessary have a Professional Engineer (PE) certify the SPCC plan.
- (3) Implement the SPCC plan on your farm. **This will necessitate that you upgrade your oil storage facilities to include spill controls such as secondary containment and overflow prevention procedures and/or devices (see Question 11).**
- (4) Revise and update the SPCC plan as needed, or at a minimum every five years. This process will require documentation and may also require plan re-certification as changes occur that affect the potential for an oil spill on your farm (e.g., installing a new tank or moving an old tank). If you do have a reportable spill, the Environmental Protection Agency (EPA) may dictate changes to your SPCC plan.

Q5. IS THERE A COMPLIANCE DATE FOR THESE REGULATIONS?

The regulations are not new and **in many cases farms should already have SPCC plans in place:**

- For regulated farms in existence on or before August 16, 2002, you must upgrade your SPCC plan by November 10, 2010. If you don't have a SPCC plan, you should prepare and implement (i.e., install spill preventative measures and controls) a SPCC plan immediately.
- For regulated farms placed in operation after August 16, 2002, you must prepare your SPCC plan by November 10, 2010 and you have six months to implement the plan.
- Regulated farms starting up after November 10, 2010 must prepare and implement a SPCC before beginning their farming operations.

Q6. DO I HAVE TO REGISTER THE SPCC PLAN AND DO I NEED A PERMIT OF ANY TYPE?

There is no requirement to give federal or state regulatory authorities a copy of the plan, notify regulatory authorities that your farm is covered by a SPCC plan or apply for a permit.

Q7. HOW DO I OBTAIN A SPCC PLAN?

The requirements for writing and certifying the SPCC plan depend on whether your farm has a “qualified” small aboveground storage capacity (buried tanks have a lower potential to cause a spill to surface waters and so are not considered in this determination).

(1) Farms with a qualified small aboveground fuel and oil storage capacity. Agricultural producers can write and/or certify their own SPCC plans if two conditions are met:

- There has not been a single oil spill on your farm greater than 1,000 gallons, or two oil spills each greater than 42 gallons, in any 12-month period during the preceding three years. The spill(s) must reach surface waters and cause a visible sheen; this could occur due to rainfall runoff from a spill that soaked into the ground over a large area.
- Your total fuel and oil storage capacity in containers greater than or equal to 55 gallons does not exceed 10,000 gallons.

If these two conditions are met, two tiers of farms are defined by the regulations:

- **Tier I farms.** DO NOT have an oil storage tank exceeding a 5,000-gallon capacity.
- **Tier II farms.** DO have an oil storage tank exceeding a 5,000-gallon capacity.

Specific details on how to prepare SPCC plans for Tier I and Tier II farms are included in the answers to Questions 8 and 9, respectively. Note that at any time if your oil storage capacity changes so that you go from being a Tier I to a Tier II qualified farm, or from a qualified Tier II farm to an unqualified farm, you must upgrade your SPCC plan as needed within six months.

(2) Farms with large aboveground fuel and oil storage capacity. Many large row-crop farms in Tennessee have a fuel and oil storage capacity that easily exceeds 10,000 gallons. In fact, individual fuel tanks sometimes exceed the 10,000-gallon threshold. These farms should hire a Professional Engineer to write their SPCC plan. Two companies that may offer this service are listed in the answer to Question 10 and more may be listed on a University of Tennessee Extension website: <http://wastemgmt.ag.utk.edu/>.

Q8. I HAVE A TIER I FARM. HOW DO I WRITE AND/OR SELF-CERTIFY A SPCC PLAN?

You have the **OPTION** of preparing your own farm SPCC plan using a form that the EPA provides, but **you should still consider hiring a professional to write and certify the plan**. The Tier I form is designed to make compliance easier and can be obtained from the following University of Tennessee Extension website: <http://wastemgmt.ag.utk.edu/>.

A sample Tier 1 plan is also available at this website that includes examples and explanations of what is expected for different sections of the form. The following information should be gathered for all oil storage tanks with at least a 55-gallon capacity before attempting to write your own SPCC plan or contacting an engineering firm for assistance (see Question 10):

- Type of oil stored, total container capacity and construction materials.
- Preliminary evaluation of container failure (e.g., due to an accidental puncture):
 - Potential discharge volume.
 - Direction of discharge flow (determined by drain outlets and/or topography – photos showing the surrounding land contours would be helpful).
- Secondary containment method and capacity (see Questions 10 and 11). You probably won't have secondary containment but design assistance can be obtained from a professional engineering company.

You will certify the following on the form:

- Your farm qualifies as a Tier 1 facility.
- You understand the rules (reading this publication should help with this requirement).
- You will implement the plan and have the authority and resources to do so.
- You have or will provide secondary containment and overfill protection for all tanks.
- You will review and amend the plan as required.
- You have a tank inspection, recordkeeping and personnel training program (see Questions 10 and 11). You may seek compliance assistance and advice from a professional engineering firm to meet these requirements.

Q9. I HAVE A TIER II FARM. HOW DO I WRITE AND/OR SELF-CERTIFY MY SPCC PLAN?

Although Tier II farms are allowed to write and certify their own SPCC plans, the EPA form discussed in the answer to Question 8 can't be used. In effect, the plan must be structured and contain the same information as if the farm were an "unqualified" farm (one with a storage capacity exceeding 10,000 gallons). Sample Tier II SPCC plans are available at the following University of Tennessee Extension website: <http://wastemgmt.ag.utk.edu/>. However, **it will probably be best for Tier II farms to hire an engineering company to both write and certify the plan** (see Question 10).

Note that without a PE's review, you have no ability with a self-certified Tier II plan of having secondary containment judged to be "impractical," as well as the ability to provide "environmental equivalence" for certain other spill prevention and control requirements. It is unlikely that a PE would be willing to provide these allowed deviations from the standard facility requirements without the PE writing the plan. However, by writing your own plan you don't receive the guidance and compliance experience and expertise that an engineer can provide (e.g., for secondary containment designs).

Q10. MY FARM HAS A LARGE STORAGE CAPACITY. HOW DO I PREPARE MY SPCC PLAN?

If your oil storage capacity exceeds 10,000 gallons in aboveground tanks, you **MUST have the SPCC plan prepared and certified by a registered professional engineer**. You can expect the cost to be approximately \$1,000 to \$3,000.

A representative of the engineering company will visit your farm so that the plan can be properly developed and the certification can be given. If you don't have secondary containment or spill prevention measures in place, guidelines will be provided within the SPCC plan and you will need to implement those recommendations as soon as possible, or at most six months after the SPCC plan is certified. Make sure that the engineering company provides you with an opportunity to participate in plan development; for example, in evaluating your options for secondary containment and tank spill prevention practices.

One challenge that agricultural producers face is finding an engineering company to prepare their SPCC plan (most professional engineering companies serve industrial and commercial clients). The two companies listed below have expertise and experience preparing SPCC plans and have expressed interest in providing this service to farms. This listing is for convenience only and is not an endorsement of either company.

- Quantum Environmental and Engineering Services, LLC.
Contact: Helen S. Hennon, P.E. (Vice President)
126 Dante Road
Knoxville, TN 37918
Phone: 865-689-1395
- Premier Environmental Services, Inc.
Contact: Joe Ricker, P.E. (Senior Engineer)
8700 Trail Lake Drive West, Suite 101
Memphis, TN 38125
Phone: 901-850-5404

An expanded list of engineering companies providing this service to Tennessee farms will be maintained on a University of Tennessee website: <http://wastemgmt.ag.utk.edu/>. This website is maintained by an Extension specialist interested in summarizing cost and creative techniques for farm compliance with the Oil Pollution Prevention regulations:

- Shawn Hawkins, Ph.D., P.E. (Assistant Professor)
University of Tennessee
Biosystems Engineering and Soil Science Department
2506 E. J. Chapman Drive
Knoxville, TN 37996
Phone: 865-974-7722

One suggestion to reduce SPCC plan preparation cost is to group several neighboring farms together so that the engineering company's travel expenses can be minimized.

Q11. WHAT WILL BE REQUIRED TO IMPLEMENT A SPCC PLAN ON MY FARM?

This is where the “rubber meets the road” in terms of the added management burden and expense for a farm, because **the SPCC plan will require that you put in place spill prevention, controls and countermeasures.**

(1) Spill Prevention. The best way to prevent oil pollution is to put in place a series of management practices and physical controls that reduce the possibility of a spill occurring.

- **Overfill protection.** Oil spills commonly occur due to overfilling. It’s probably best to post a sign stating a requirement that someone be present at all times while a fuel or oil tank is being filled. This allows simpler and less expensive means of preventing overfills, including **audible vents and visible fill volume gauges.**
- **Aboveground tank testing/inspections.** Neglected aboveground storage tanks can fail, which may result in devastating spills. **Visual leak/tank support inspections** should occur when the tank is used. **Documentation is required, but this documentation can be as simple as a check mark beside the fill quantity.**
- **Personnel training.** On-farm signs can be used for spill prevention training.
- **Container materials and corrosion protection.** Oil must be stored in containers made with compatible materials. Partially buried and bunkered tanks and pipe must have **corrosion-resistant coatings or cathodic protection.** Tank compatibility will rarely be a problem and partially buried/bunkered tanks are rarely found on farms.
- **Security.** Oil spills have resulted from attempted theft and vandalism, so the SPCC plan will require that you address security. Farm security may already be met by the farm’s remote location on private property; however, in certain instances, **fences and storage inlet/outlet locking caps may be required.** You can expect that some SPCC plans will call for **fill hose breakaway valves and tank bollards.**
- **Container repairs/modifications.** Tank failures and large spills have occurred after modifications and repairs (e.g., installing a new port). The SPCC plan will require that modified and repaired tanks be tested before storing fuel or oil. Leak testing with water is probably less expensive and more practical than tank wall integrity tests.

(2) Spill Control. The SPCC plan will require you to build **structures** that, should a spill occur, prevent a corresponding discharge. These structures are referred to as **sized secondary containment** and are either passive (simple holding structures) or active (e.g., sumps with automated pumps to transfer a spill to another storage unit). A variety of secondary containment options are listed in the regulations, but they are typically practical for either (1) large outdoor tanks or (2) smaller indoor containers such as drums.

Examples of passive structures, which are more likely to be employed on farms for large oil storage tanks, include:

- Compacted clay base under the tank with clay dikes and berms (preferred).
- A reinforced concrete or steel tank base and sidewalls (preferred – see **Figure 4-A**).
- Spill diversion ditches and culverts that lead to a retention pond or concrete catchment (may not be impractical on a farm).

Careful consideration should be given to the design of secondary containment for large storage tanks and an engineer or Extension specialist should probably be consulted. Keep in mind that for any passive structure or catchment area, **the entire tank must be within the containment, including associated pipes and loading/unloading ports.**

Examples of secondary containment that is more practical and effective for smaller indoor containers like 55-gallon drums include:

- Commercial tank stands or prefabricated secondary structures (see **Figure 4-B**)
- Weirs, booms and other sorbent barriers such as Oil-Dri® products can prevent small spills from entering indoor drains (**Figure 2-B**).
- Curbing or drip pans.

One way to reduce your total storage capacity is to purchase new and store used hydraulic and motor oil in drums smaller than 55 gallons. The smaller drums can be nested inside a 55-gallon drum for secondary containment (**Figure 4-B**).



Figure 4. Examples of an outdoor (A) and indoor (B) oil storage tanks with oil spill secondary containment structures.

(3) Spill Countermeasures. The SPCC plan will spell out how to respond to a spill, clean up the mess, dispose of wastes and report the spill. **For this reason, the SPCC plan must be on-farm at all times for ready use in an emergency.** It will be necessary to give some thought to and list local contractors who could assist with a spill cleanup. It will probably be necessary to have oil spill response equipment (weirs, booms and other sorbent barriers) on the farm and ready for use in case a spill occurs.

Q12. WHAT ARE THE DESIGN GUIDELINES FOR SECONDARY CONTAINMENT STRUCTURES?

Good engineering practice is to provide 110 percent of the container capacity if it's indoors. For secondary containment located outdoors without a roof, a 6-inch freeboard capacity should be provided in addition to the capacity necessary to hold the entire tank contents. **Note that if tanks or containers are grouped close enough, the containment can surround all the tanks and the design capacity will only need to be based on the largest single tank.**

Q13. ARE THERE EXCEPTIONS TO THE SECONDARY CONTAINMENT REQUIREMENT?

There are only two exceptions to the sized secondary containment requirement:

- Mobile refuelers (nurse tanks).
- Non-commercial tanker trucks.

Farm nurse tanks (**Figure 5**) do not require dedicated secondary containment but must be positioned to prevent a discharge (e.g., away from ditches).



Figure 5. An on-farm diesel fuel nurse tank.

Although it's possible to obtain a determination of "impracticability" in regard to providing tank secondary containment, meaning that an engineer determines that a secondary containment can't reasonably be provided given the site circumstances, it is very unlikely that this determination will be granted on a farm.

Q14. HOW DO I DEAL WITH RAINFALL INTO SECONDARY CONTAINMENT STRUCTURES?

Where practical, place a roof over the tank and secondary containment so that rainfall does not accumulate within the structure (**Figure 6**). Although a roof will represent an expense and something else to maintain on your farm, it will eliminate the hassle of managing accumulated water that could otherwise corrode the tank and tank supports. If your secondary containment is equipped with a drain, the



Figure 6. Gas and diesel tanks (1,000 gallons) with a roofed concrete secondary containment.

drain valve must normally be closed. If a pump is used to remove water, it must be manually operated. **Any time water is removed, you must document that the water was clean by verifying the absence of an oil sheen or suspended/settled oil (testing is not required).**

Q15. WHAT ARE MY RESPONSIBILITIES AFTER THE SPCC PLAN IS CERTIFIED?

You must implement the plan. Hiring someone to prepare and certify the plan **does not** relieve you of the responsibility to fully implement the plan, including all required spill prevention and control measures and recordkeeping. If you do hire a professional engineer to write the SPCC plan, keep in mind that this person's main task will be to ensure the secondary containment and spill prevention measures you put in place are adequate. Finally, be aware that **implementing a SPCC plan does NOT relieve liability associated with an oil spill.**

SUMMARY

Many agricultural producers will justifiably consider the Oil Pollution Prevention regulations as intrusive and burdensome. However, the requirements can be understood relatively easily and the process of complying will certainly help to prevent oil spills and provide protection from the potentially catastrophic liability associated with a large fuel or oil spill.

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