SPILL PREVENTION, CONTROL & COUNTERMEASURES (SPCC) PLAN

University of California, Irvine
Campus-wide

Prepared for:
Environmental Health and Safety
University of California, Irvine
Irvine, California 92697

Prepared by:
Ramboll US Corporation
5 Park Plaza, Suite 500
Irvine, California 92614

June 25, 2018
EMERGENCY CONTACTS AND PROCEDURES

In the event of a spill emergency the following should be contacted:

1. Fire Department - 911
2. U.C. Irvine Police Department (949) 824-5223
3. U.C. Irvine Environmental, Health & Safety (EH&S) Personnel

<table>
<thead>
<tr>
<th>Primary Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dick Sun</td>
</tr>
<tr>
<td>Associate Deputy Director</td>
</tr>
<tr>
<td>Environmental Health &amp; Safety</td>
</tr>
<tr>
<td>Business Phone: (949) 824-2188</td>
</tr>
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<table>
<thead>
<tr>
<th>Secondary Contact:</th>
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<tbody>
<tr>
<td>Kirk Matin</td>
</tr>
<tr>
<td>Environ / Hazardous Waste Manager</td>
</tr>
<tr>
<td>Environmental Health &amp; Safety</td>
</tr>
<tr>
<td>Business Phone: (949) 824-4578</td>
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</tbody>
</table>

4. Oil Spill Clean-up Contractor

<table>
<thead>
<tr>
<th>Clean Harbors</th>
</tr>
</thead>
<tbody>
<tr>
<td>(800) 645-8265</td>
</tr>
<tr>
<td>Estimated Response Time is 2 Hour</td>
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</table>

In the event of a spill, the following procedures should be followed:

1. If there is a fire or injury immediately call 911.
2. If there is a spill to the storm drain, immediately call EH&S personnel.
3. If possible, stop the flow of fuel/oil by shutting a valve or turning off a pump.
4. Isolate and contain the spilled material by creating an earthen berm with a shovel or other available equipment (beware of fire danger).
5. Estimate the amount of spilled material.
6. Make the above notifications.
7. Use available cleanup equipment and/or spill contractors to cleanup the spilled material and contaminated soil.
8. Document all spill response and cleanup efforts, including notification calls following UCI – EH&S Response Plan and procedures list in Section 5.7 of this SPCC Plan.
CERTIFICATION PAGE

I hereby certify that I and an engineer working under my direction have examined the University of California, Irvine Campus Facilities. Being familiar with the provisions of 40 CFR, Part 112, I attest that this SPCC Plan has been prepared in accordance with good engineering practices and the requirements of 40 CFR 112; that this SPCC Plan establishes procedures for required inspections and testing, and is adequate for the facility. As the UCI Campus is large and complex, Ramboll’s inspection of the facility was limited only to oil storage areas identified and brought to its attention by the UCI EH&S Department, as provided in this plan. In performing its assignment, Ramboll relied upon publicly available information, information provided by UCI and information provided by third parties. Accordingly, the information in this plan is valid only to the extent that the information provided to Ramboll was accurate and complete.

______________________________
Jeffrey Forde
Signature

______________________________
June 25, 2018
Date

Registration No.: 31864    State: California

MANAGEMENT APPROVAL

This SPCC Plan will be implemented as herein described.

______________________________
Dick Sun
SPCC Designated Person
# Spill Prevention, Control, and Countermeasures Plan

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<td>Clarify engineer’s certification statement; add spill notification and reporting procedures; add additional release predictions; add new 120-gallon portable refueling tank; include state regulatory citations; include secondary containment calculations for Social Science Lab and Rowland</td>
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## UC Irvine

**SPCC Plan Revision / Annual Review**

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<td>Updated Central Plant portable diesel fuel trailer to single walled. Updated elevator and transformer list.</td>
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<td>Updated the generator portable diesel fuel trailer secondary containment storage area.</td>
<td>Section 2.4 Appendix B and C</td>
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1.0 Introduction and Plan Content

1.1 Introduction
This Spill Prevention, Control, and Countermeasures (SPCC) Plan has been prepared for the University of California, Irvine Central Campus (UCI) located in the City of Irvine, California. This Plan has been developed in accordance with the regulatory requirements of Title 40 of the Code of Federal Regulations, Part 112 (40 CFR Part 112). This Plan has specifically been created to address potential spills from oil storage containers at UCI that are specified in this Plan. This Plan does not include operations conducted at off-site locations, such as the UCI Medical Center in Orange, California.

1.2 Plan Purpose and Objectives
The objectives of this Plan are to define the spill prevention, control, and countermeasures implemented by UCI Environmental Health & Safety (EH&S) Department for the UCI facility. The Plan is an integral part in establishing an efficient and effective spill prevention program. The SPCC Plan addresses the following topics:

- Bulk Storage Containers;
- Personnel Training and Spill Prevention Procedures;
- Bulk Liquid Transfer Operations;
- Facility Drainage;
- Inspections and Records; and
- Security.

1.3 Plan Review and Update Requirements
This Plan shall be reviewed and updated on an annual basis to ensure all the requirements within this Plan are achieved. The SPCC “Designated Person” shall be responsible for all reviews and updates made to this Plan. (The Designated Person is identified on the front emergency contact page.) The Plan will be reviewed and updated when necessary under the following circumstances:

- Annual review;
- Subsequent to the commission or decommission of any aboveground storage tanks (ASTs);
- Subsequent to the replacement, reconstruction, or movement of ASTs;
- Subsequent to any construction or demolition that could alter secondary containment systems of the ASTs; and
- Subsequent to any revisions of standard operation or maintenance procedures at the facility.
The SPCC Plan must be reviewed and certified by a professional engineer every five years and whenever a Plan amendment is performed.

1.4 Applicable Regulations

Federal regulations regarding SPCC Plan development and implementation are attached in Appendix A, which is 40 CFR Part 112. Additionally, the California Aboveground Petroleum Storage Act (APSA) “tank facility” requirements apply to the UCI Campus as it stores more than 1,320 gallons of petroleum-based oils on-site. The APSA tank facility requirements are found in California Health and Safety Code, Chapter 6.67, Section 25270.3, and mirror requirements for an SPCC facility under 40 CFR Part 112, except for administrative requirements of notification and fees to the local Unified Program Agency (UPA).
2.0 Facility Information

2.1 Facility Description
The UC Irvine Central Campus is located on 1,470 acres in the City of Irvine, County of Orange, California. The campus is situated south of Interstate 405 freeway and north of State Route 73. (Refer to Figure 1 for a topographic vicinity map.) The facility is bound by Jamboree Road to the north, Campus Drive to the northeast, Culver Drive to the east, Bonita Canyon Road to the south and State Route 73 to the west.

2.2 Vicinity Map
Figure 1 provides a vicinity map that shows the campus location with reference to local area streets.

2.3 Campus Map
Figure 2 shows the general layout and buildings located on the UC Irvine Campus. This figure is updated several times a year by UCI Student Affairs.

2.4 Standby Generators
In many areas around UCI, diesel-fired internal combustion engines are used as standby generators of electricity in case of a power failure. These standby generators are primarily located adjacent to the buildings to which they provide power. All of the standby generators have either a nearby external fuel storage tank or a fuel tank that is installed directly beneath and attached to its standby generator. For standby generators with an external fuel storage tank, these tanks are defined as “bulk storage containers” and are described in Section 3.0 of this Plan. For the standby generators with an integrated fuel tank, the reservoir at the bottom of tank is also considered bulk storage container; however the engine above that tank is defined as “oil-filled operating equipment,” which is not a “bulk storage container” pursuant to the SPCC regulation. All fuel tanks are required to have some means of secondary containment; however, oil-filled operating equipment (i.e., the engines) are not subject to the requirements of 40 CFR 112.8(c). All standby generators with attached storage tanks meet the secondary containment control requirements by having double wall or reservoir basins in the fuel holding tanks. All standby generators with fuel-holding tanks are included in Appendix B.

UCI Facilities Management periodically operates all emergency generators for testing and replenishes storage tanks with diesel fuel. UCI Facilities Management personnel perform filling of the generator fuel tanks by using a truck trailer-mounted single-walled tank. When not in use, the portable refueling tank is stored in a concrete berm secondary containment area at the UCI Electrical Substation.
2.5 Hazardous Waste Storage

Hazardous waste generated at the main campus is collected in 30-gallon poly drums and transported to the Environmental Health & Safety Building (Campus Building 41) where containers are stored inside a locked storage room until the waste is picked up by an offsite hazardous waste management contractor. The storage room has grated trenches that are designed to capture spills and drain liquid to an underground containment tank.
3.0 **Bulk Storage Containers**

Detailed information regarding the campus’ storage tanks and containers including tank specifications and secondary containment is provided in Appendix B and Appendix C.

3.1 Stationary Storage Tanks

Appendix B lists the stationary storage tanks at UCI including campus map building number, locations, tank capacity, contents, tank type, equipment type, and details regarding secondary containment.

3.2 Portable Storage Containers

Portable containers of oil-based materials are kept throughout the UCI campus. Although the containers are portable, they typically remain located in their respective areas and generally are not transported around the facility. Appendix B lists the portable storage tanks at UCI including campus map building number, locations, tank capacity, contents, tank type, equipment type, and details regarding secondary containment.

3.3 Integrated Fuel Reservoirs on Standby Generators

A list of all standby generators with integrated fuel-holding tanks is included in Appendix B. All standby generators store diesel fuel and the listing includes the capacity of each reservoir.

3.4 Material Compatibility

The steel used for storing diesel fuel, used cooking oil and motor oil are constructed using acceptable compatible materials.

3.5 Secondary Containment

The secondary containment method for the tanks is listed under “Comments” in Appendix B. Tanks indicated as double-walled are constructed with an integrated containment system. Tanks indicated as single wall have secondary containment (e.g. in most cases, a concrete containment berm) as described in the comments. 55-gallon drums are placed on secondary containment pallets.

3.6 Rainwater Drainage

Many containment areas are located outside and will collect rainwater within the containment area in the event of a storm. Containment areas are designed with a plug that may be manually opened to remove accumulated rainwater, or manually pumped out. Before any rainwater is removed from the containment areas, the operator must follow best management practice (BMP) procedures that are described in UCI’s storm water management plan (SWMP). After the accumulated rainwater is drained off from the containment area, the plug must be inserted and secured back in position to prevent discharge.
3.7 Integrity Testing

In accordance with the Steel Tank Institute SP-001 standard, integrity testing for all tanks and containers no larger than 5,000 gallons is achieved by performing visual inspections. Each aboveground bulk storage container, including tanks and drums, must be inspected for integrity on a monthly basis and whenever material repairs are performed on a tank or container. Section 7.2 provides details for monthly inspections. In addition, liquid level sensors should be tested annually, as described in Section 3.8. For tanks larger than 5,000 gallons, a formal external inspection by a certified inspector must be performed every 20 years. For the UCI campus, this includes only the 10,000-gallon tank, with 7,000-gallon gasoline fuel compartment at the UCI Facilities Fueling area (Building #91). The certified inspector must follow the SP-001 standard, including review of previous formal inspection reports, determination of original shell thickness, measurement of current shell thickness, and ultrasonic thickness testing. The ultrasonic thickness testing may lead to ultrasonic testing scan, if determined by the certified inspector. Records of the integrity testing should be kept in the SPCC Plan copy held by the SPCC Designated Person.

3.8 Liquid Level Sensors

The two outdoor aboveground storage containers storing fuels at North Campus are each equipped with a liquid level sensor that automatically cuts off the pump at a predetermined container content level to prevent overfilling the container. No other containers are equipped with high liquid level sensors, which is an exception to the requirements of 40 CFR §112.8(c)(8). However, all other tanks are filled manually with a nozzle inserted directly into the tank and the tank operator visually observes when the liquid level reaches capacity, at which point the operator disengages fuel flow to the tank. The liquid level sensors must be tested annually for proper operation.

3.9 Visible Discharges

In the event that operators observe discharges that result in a loss of oil from any storage container, the operator must promptly remove any accumulation of oil within the containment area.

3.10 Oil-filled Equipment

UCI operates a variety of oil-filled electrical and operating equipment such as transformers, research equipment, and elevators. In accordance with the SPCC regulation, these types of equipment are not subject to the requirements for bulk storage containers set forth in Section 3.0 of this Plan. All elevators are routinely maintained by contracted elevator service companies that are required to inspect hydraulic reservoirs for signs of leaks or deterioration. Elevator service contractors must have a procedure in place to adequately contain and clean up any discovered spills from hydraulic
reservoirs and follow UCI’s hazardous waste management procedures for proper disposal. Elevator hydraulic reservoirs are located inside buildings, which provide discharge prevention in the event of a leak or spill. UCI-owned transformers are maintained by UCI Facilities and utility-owned transformers are maintained by Southern California Edison.

3.11 Piping

Piping from storage tanks to operating equipment must also be contained to prevent discharge. All piping from storage tanks to external equipment (generators, fire pump, and fuel dispensers) is either buried or inside containment berms to prevent discharge. Per SPCC regulation requirements for process transfer [40 CFR 112.8(d)(3)], piping must have supports that minimize abrasion and corrosion and allow for expansion and contraction. All aboveground piping has been constructed with adequate supports aboveground that do not accumulate moisture, thereby minimizing corrosion. Aboveground piping is situated in places that are generally free from sources of abrasion (e.g., no moving parts or significant vibration). Further, all piping is comparatively small in diameter and not prone to significant effects from expansion and contraction. Piping is either constructed of galvanized materials, located indoors, and/or painted to further reduce the potential for corrosion. Lastly, monthly inspections will identify any signs of corrosions where repainting or piping replace is needed, all piping is routinely inspected for signs of corrosion and abrasion.

---

1 Elevators and transformers throughout the facility were not inspected by Ramboll; rather, this plan provides general SPCC approaches for such areas.
4.0 Procedures for Operations and Discharge Prevention

4.1 Tank Filling Procedures

4.1.1 North Campus Fueling Area
An outside service provider performs tank filling of the fuel tanks storing gasoline, diesel, diesel B20, and biodiesel B99 at North Campus, and on-site personnel who are trained in SPCC procedures provide oversight. The filling procedures consist of the following:

- The delivery person initially gauges the AST to determine amount of fuel or oil to be delivered. The order is compared with the available tank capacity.
- The delivery person makes a connection to electrically ground the delivery truck and system before off-loading begins.
- The delivery person constantly monitors the off-loading activity.

Additional guidelines include:

- The fuel tanks are equipped with a ground-level loading system and a “dry-break” adapter check valve which prevents spills or riser pipe drainback when the loading hose is disconnected.
- The loading point also has a spill containment pan with 16-gallon capacity and a hand pump to collect and manage any accidental spills or leaks.
- The system has automatic shutoff valves as well as an emergency shutoff valve.

4.1.2 Standby Generator and Diesel Off Road Equipment Fuel Tank Loading
UCI Anteater Recreation Center personnel perform filling of diesel off road equipment by using a truck trailer-mounted double-walled tank. When not in use, the portable refueling tank is stored at Anteater Recreation Center.

UCI personnel perform tank loading. The filling procedures consist of the following:

- The portable double-walled tank is transported by trailer and parked on a level and flat surface in the vicinity of the equipment.
- The trailer remains attached to the parked vehicle with the emergency brake engaged.
- All tanks are filled through a fill port located on or near the top of the tank.
- A hose and nozzle is connected to the portable tank.
- After removing the fill cap, the operator inserts the filling nozzle into the fill port.
- The operator activates the fill pump and begins to fill the tank.
• The operator watches the filling operations to ensure the tank is not over-filled.
• Once the operator recognizes that the liquid level reaches near full, the operator disengages the filling nozzle to stop fuel flow.
• The cap is replaced on the tank and secured shut.
• The operator returns the hose and nozzle to the trailer and secures the equipment for transport.

4.2 Product Dispensing Procedures
Equipment and vehicles are refueled in the following manner:
• A dispenser key is provided for fueling.
• The person fueling follows the instructions posted at dispenser.
• The person fueling continuously monitors the entire fueling process.

4.3 Loading Dock Operations
When receiving or shipping an oil product or waste. The following procedures are followed:
• Oil products are only accepted and/or shipped in approved Department of Transportation (DOT) containers.
• Oil containers are stored away from the edge of the loading dock.
• To the extent possible, oil containers are kept sheltered from rain.
• Oil drums are moved by using drum dollies or by forklift using a drum tote or other method of securing the drum during transport.
• When not in use, containers are kept securely closed.

4.4 Used Cooking Oil Disposal
At Campus Kitchen facilities, used cooking oil is collected in small containers\(^2\) and poured into storage containers that are approximately 40 gallons.

At the Student Center, used cooking oil is pumped into a port that is plumbed to a 353-gallon used oil storage tank. The tank has a level gauge that prevents the pump from operating (under suction) when the tank is full. A red light alerts the operator that the tank is full and needs to be emptied.

4.5 Used Cooking Oil Disposal Pickup
At Campus Kitchen facilities, a contractor (e.g., Baker Commodities) provides removal of used cooking oil for disposal at an off-site facility. The contractor uses a 3,000-gallon tank truck to unload and empty the 40-gallon drums and Student Center storage tank via vacuum pump. The Kitchen Area supervisor is responsible for scheduling and oversight of the contractor’s activities. Alternatively, the 40-gallon drums may be hauled off-site on a flatbed truck.

\(^2\) Generally 5 gallons or less
5.0 Spill Response

5.1 Designated Person
Dick Sun is the Designated Person responsible for SPCC management. The Alternate Designated Persons are Kirk Matin and Ricardo Cruz. Emergency contact information for the Designated Persons is included on page 2 and in the following section.

5.2 Emergency Contacts

<table>
<thead>
<tr>
<th>Primary Contact</th>
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<tbody>
<tr>
<td>Dick Sun</td>
</tr>
<tr>
<td>Associate Deputy Director, Environmental Health &amp; Safety</td>
</tr>
<tr>
<td>Business Phone: (949) 824-2188</td>
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</table>

5.3 Spill Response Procedures
In all areas of oil storage, a posted sign provides the following steps for a person who responds to a spilled material. These steps are also stated on page 2 of the Plan:

In the event of a spill, the following procedures should be followed:

1. If there is a fire or injury immediately call 911.
2. If there is a spill to the storm drain, immediately call EH&S personnel.
3. If possible, stop the flow of fuel/oil by shutting a valve or turning off a pump.
4. Isolate and contain the spilled material by creating an earthen berm with a shovel or other available equipment (beware of fire danger).
5. Estimate the amount of spilled material.
6. Make the above notifications.
7. Use available cleanup equipment and/or spill contractors to clean up the spilled material and contaminated soil.

8. Document all spill response and cleanup efforts, including notification calls following UCI – EH&S Response Plan and steps identified in Section 5.7 below.

5.4 Available Spill Cleanup Equipment

EH&S has developed a Response Plan, on file in the EH&S Department, that addresses countermeasures for response and cleanup of spilled hazardous materials. The EH&S building maintains an emergency hazardous material response truck. This vehicle is equipped with hazardous material storage receptacles, absorbent booms, pads, and an absorbent powder. The truck also contains appropriate personal protective equipment (PPE). Larger quantities of the above listed supplies are stored in the EH&S Building.

5.5 Spilled Material Disposition

All spilled material included in a cleanup shall be managed as hazardous waste, except for any portion of material that is recovered and deemed usable by the area manager. UCI EH&S is responsible for managing the disposition of the materials cleaned up.

5.6 Spill History

There have been no spills of oil in harmful quantities at the UCI campus.

5.7 Spill Notification and Reporting

The UCI – EH&S Response Plan includes an emergency notification regulatory call list. In any emergency event, UCI EH&S will primarily follow those procedures. Below are the notifications that are applicable to oil discharges.

Notification to the Orange County Health Care Agency (OCHCA) and California Emergency Management Agency (CalEMA) are required for any spill or event that results in a significant or threatened release of oil. UCI EH&S is responsible to provide the initial notification immediately upon discovery via telephone to OCHCA at (714) 433-6000 and CalEMA at (800) 852-7550 and subsequently prepare follow-up written reports. Information regarding initial notification information and reporting information are provided later in this section.

Notification to the National Response Center is required for any spill event that discharged more than 1,000 U.S. gallons of oil in a single discharge, or discharged more than 42 gallons of oil in each of two discharges, occurring within any twelve month period. UCI EH&S is responsible to provide the
initial notification via telephone (800) 424-8802 and prepare a follow-up report either written or online³.

The initial notification telephone calls should include the following information, at a minimum, to the extent known:

- Identity of caller, including telephone number and facility address
- Location, date and time of spill, release, or threatened release
- Location of threatened or involved waterway or storm drains.
- Material/Chemical name (e.g., motor oil, diesel fuel, etc.)
- Estimated quantity involved
- Description of what happened, including source and cause of spill, all potentially affected media
- Damages or injuries caused by spill
- Actions being used to stop, remove, and mitigate the effects of the spill
- Whether an evacuation may be needed

The follow-up written reports must include at least the following information and should be provided as soon as possible, not to exceed 60 days from the date of the spill event or 7 days, if the spill is Reportable Quantity⁴:

- Name and location of the facility
- Owner/operator name
- Name of person preparing the report
- Maximum storage/handling capacity of the facility and normal daily throughput
- Corrective actions and countermeasures taken, including descriptions of equipment repairs and replacements
- Adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary
- Cause of the discharge to navigable waters, including a failure analysis
- Failure analysis of the system where the discharge occurred
- Additional preventive measures taken or planned to take to minimize discharge reoccurrence

³ [http://www.nrc.uscg.mil/](http://www.nrc.uscg.mil/)
⁴ Section 304 of the Emergency Planning and Community Right-to-Know Act
6.0 Security

6.1 Locked Storage Locations
The security measures for the storage locations are as follows:

- All diesel fuel tanks for standby generators are located within locked gates or inside locked buildings.
- The gasoline/diesel AST at North Campus is accessible during business hours and non-accessible (locked gate) during non-operational hours (i.e., when the facility is unattended).
- The hazardous waste storage area in the EH&S Building is inside the building that remains locked during non-operational hours (i.e., when the facility is unattended).
- The trailer-mounted diesel-refueling tank is stored outside within a locked gated area during non-operational hours (i.e., when the facility is unattended).

6.2 Lighting
Lighting at the University is provided with several different styles of fixtures mounted on buildings adjacent to the AST’s or on lighting posts. All outdoor AST’s and drum containment shelters have lighting above or directed towards the storage location. All ASTs and drums stored indoors are provided with indoor lighting. Any person in the area must maintain the lighting in storage areas in a manner that would allow visual discovery of liquid discharges occurring during hours of darkness.

6.3 Interlocked Warning System
During loading and unloading operations of the North Campus Fueling AST, tanker truck drivers are required to be out of the trucks monitoring the operations. Drivers are also responsible for making and breaking connections of transfer lines. As such, an interlocked warning system is not necessary to prevent vehicular departure before complete disconnection of transfer lines.

6.4 Protection from Vehicles
Crash posts and cinder blocks are installed around all the large tanks that are near vehicle access ways.

6.5 Campus Security
The UCI Police Department provides general campus security 24 hours a day, 7 days a week by patrolling the North and Central Campuses. Storage tanks have signs that instruct persons observing any spill or problem to call campus security at (949) 824-5223. UCI Police will then inform the EH&S emergency contact.
7.0 Training, Inspections, and Records

7.1 Personnel Training

7.1.1 Proper Tank Filling and Product Dispensing
All new personnel are trained on proper fuel dispensing protocol by a trained supervisor. Training records regarding operating procedures are kept in personnel files.

7.1.2 Training for the SPCC Plan
Personnel who are involved with handling of oil materials must be trained on the SPCC Plan. Training will focus on personnel becoming familiar with the Plan to assure adequate understanding of the provisions stated in the Plan. Training will be provided at least once per year. Training for spill response and cleanup will be provided under the EH&S Department training program for Emergency Response. UCI will manage and maintain training records through its internal training records database.

7.2 Inspections
The inspection frequency of all aboveground storage containers and associated piping are described in Appendix B. These inspections are intended to identify any visible signs of discharge, material corrosion, unusual activity, or other potential problems, including integrity. Any visible signs of discharge should be immediately reported to the EH&S Department who will coordinate a prompt cleanup of oil. Any and all other recognized abnormalities should be corrected immediately; otherwise the problem must be reported to area manager and the SPCC Designated Person. The area manager and SPCC Designated Person or designee will coordinate a corrective action schedule that will focus on correcting the problem as soon as practicable.

Inspection records shall be obtained for each inspection and kept in logs that are maintained by the SPCC Designated Person. There will be a separate log for each of the following areas: standby generator tanks, North Campus operations, and EH&S Services. An example copy of a log form is included in Appendix D.

7.2.1 Tank Inspections
UCI Facilities Management performs the mechanical and electrical inspections of all standby generators and storage tanks. These inspections are conducted during the routine operational testing of the standby generators and the firewater pump on a set schedule, which occurs at least monthly. Additionally, Facilities Management performs inspections on the diesel/gasoline tank at North Campus. Visual observations of the storage tanks and the associated
containment area are conducted during the inspections. For double-wall tanks, when possible the interstitial space must be checked for signs of liquid leaks.

7.2.2 Drum Storage Inspections
The inspection frequency of all drum storage areas are described in Appendix B. A designee of the SPCC Coordinator conducts inspections of drum storage areas.

7.3 Annual SPCC Plan Compliance Inspection
The Designated Person for each tank location is responsible for an annual SPCC Plan compliance inspection to ensure that all requirements identified with this Plan are being fulfilled.

7.4 Plan Review
Review of the SPCC Plan will be performed by EH&S every 5 years (as required in 40 CFR 112.5(b)), see Appendix A. A Professional Engineer will certify any technical amendments to the Plan as required in 40 CFR 112.5(c).

7.5 Record Retention
Tank information, facility diagrams, SPCC Plan updates, and any other information that is a part of this Plan are regularly updated and maintained in the UCI EH&S Department by the SPCC Coordinator.

The department in charge of the tank maintains tank inspections records in their main office. Additionally, electronic records of inspections for standby generators are maintained in preventative maintenance software program accessible to various UCI departments via its online intranet.

All records must be maintained for a period of at least three years.

---

5 Campus Map, as updated regularly by UCI Student Affairs
## 8.0 Conformance with Applicable Requirements

<table>
<thead>
<tr>
<th>Regulatory Section (40 CFR)</th>
<th>Description</th>
<th>SPCC Plan Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>112.7(a)(1)</td>
<td>Provide conformance with applicable requirements</td>
<td>(all sections)</td>
</tr>
<tr>
<td>112.7(a)(2)</td>
<td>Deviations from Standard, except secondary containment</td>
<td>§8.1</td>
</tr>
<tr>
<td>112.7(a)(3)</td>
<td>Physical layout and diagram</td>
<td>§2.1 and Figures 1, 2 &amp; 3</td>
</tr>
<tr>
<td>112.7(a)(3)(i)</td>
<td>Type and quantity of oil storage</td>
<td>§3.1, §3.2, §3.3</td>
</tr>
<tr>
<td>112.7(a)(3)(ii)</td>
<td>Discharge prevention measures</td>
<td>§4.0 - §4.5</td>
</tr>
<tr>
<td>112.7(a)(3)(iii)</td>
<td>Drainage Controls and Secondary Containment</td>
<td>§3.1, §3.2 App. B &amp; App. C</td>
</tr>
<tr>
<td>112.7(a)(3)(iv)</td>
<td>Countermeasures for discharge discovery, response, and cleanup</td>
<td>§5.0 - §5.6</td>
</tr>
<tr>
<td>112.7(a)(3)(v)</td>
<td>Methods of disposal of recovered material</td>
<td>§5.5</td>
</tr>
<tr>
<td>112.7(a)(3)(vi)</td>
<td>Contact list and phone numbers</td>
<td>§5.2</td>
</tr>
<tr>
<td>112.7(a)(4)</td>
<td>Procedures for reporting discharge</td>
<td>§5.3</td>
</tr>
<tr>
<td>112.7(a)(5)</td>
<td>Making procedures readily available</td>
<td>§5.3</td>
</tr>
<tr>
<td>112.7(b)</td>
<td>Prediction of Major Equipment Failure</td>
<td>§8.4</td>
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<tr>
<td>112.7(c)</td>
<td>Provide secondary containment</td>
<td>§3.1, §3.2 App. B &amp; App. C</td>
</tr>
<tr>
<td>112.7(d)</td>
<td>Deviations from secondary containment requirement</td>
<td>§8.2</td>
</tr>
<tr>
<td>112.7(e)</td>
<td>Inspections, tests, and records</td>
<td>§7.0 - §7.5</td>
</tr>
<tr>
<td>112.7(f)</td>
<td>Personnel, training, and discharge prevention procedures</td>
<td>§4.0 - §4.5, §7.1</td>
</tr>
<tr>
<td>112.7(g)</td>
<td>Security</td>
<td>§6.0 - §6.5</td>
</tr>
<tr>
<td>112.7(h)</td>
<td>Tank truck loading/unloading</td>
<td>§4.1.1</td>
</tr>
<tr>
<td>112.7(i)</td>
<td>Field-constructed AST repair, alteration, reconstruction, or change in service.</td>
<td>Not applicable</td>
</tr>
<tr>
<td>112.7(j)</td>
<td>Additional prevention standards</td>
<td>§1.4</td>
</tr>
<tr>
<td>112.8(b)</td>
<td>Facility drainage</td>
<td>Not applicable; no diked storage areas</td>
</tr>
<tr>
<td>112.8(c)(1)</td>
<td>Material compatibility</td>
<td>§3.4</td>
</tr>
<tr>
<td>112.8(c)(2)</td>
<td>Secondary containment</td>
<td>§3.5</td>
</tr>
<tr>
<td>112.8(c)(3)</td>
<td>Discharge of rainwater</td>
<td>§3.6</td>
</tr>
<tr>
<td>112.8(c)(4)</td>
<td>Complete buried metallic storage tanks</td>
<td>Not applicable</td>
</tr>
<tr>
<td>112.8(c)(5)</td>
<td>Partially buried or bunkered metallic tanks</td>
<td>Not applicable</td>
</tr>
<tr>
<td>112.8(c)(6)</td>
<td>Integrity testing</td>
<td>§3.7</td>
</tr>
<tr>
<td>112.8(c)(7)</td>
<td>Internal heating coils</td>
<td>Not applicable</td>
</tr>
<tr>
<td>112.8(c)(8)</td>
<td>Liquid level sensors</td>
<td>§3.8</td>
</tr>
<tr>
<td>112.8(c)(9)</td>
<td>Effluent treatment facilities</td>
<td>Not applicable</td>
</tr>
<tr>
<td>112.8(c)(10)</td>
<td>Correct visible discharges</td>
<td>Not applicable</td>
</tr>
<tr>
<td>112.8(c)(11)</td>
<td>Portable and mobile oil storage containers</td>
<td>§3.2</td>
</tr>
<tr>
<td>112.8(d)</td>
<td>Piping</td>
<td>§3.11</td>
</tr>
</tbody>
</table>
8.1 Deviations from General Requirements

With the exception of the aboveground storage containers storing vehicle fuels at North Campus and several other tanks with liquid level gauges, no other bulk storage containers are equipped with high liquid level sensors, which is an exception to the requirements of 40 CFR §112.8(c)(8). However, all other tanks are filled manually with a nozzle inserted directly into the tank and the tank operator visually observes when the liquid level reaches capacity, at which point the operator disengages fuel flow to the tank.

Per §112.7 (a)(3), a diagram “must mark the location and contents of each fixed oil storage container and the storage area where mobile or portable containers are located.” Given the campus’s size, numerous oil storage locations in and among buildings of complex configurations, a single or series of marked up diagrams would not provide the user an effective tool for locating oil storage throughout the campus. Rather, the diagram used for SPCC purposes is the “Campus Map” used in conjunction with the storage tank listing in Appendix B that specifies each storage location building number. Since the “Campus Map” is updated by UCI Student Affairs several times a year, it is impractical to modify the SPCC storage diagram every time the main campus map is updated. Using this approach provides for consistency in UCI’s management systems.

A complete listing of oil-filled operating equipment (elevators and electrical transformers) for units containing 55 gallons or more is included in this Plan in Appendix B. Numerous elevators and transformers are located throughout the campus. Elevator service contractors are required to provide oil spill prevention and cleanup services according to their company policies. Many electrical transformers of various sizes are scattered throughout the campus. UCI Facilities is responsible for maintenance of electrical transformers. Further, this plan was developed without the certifying engineer’s inspection of oil-filled operating equipment; except where specifically provided herein, conformance to the SPCC Rule per oil associated with elevators and electrical transformers is not provided under the engineer’s certification.

Other than the requirements listed above, no other deviations from the general SPCC requirements are present at the facility.

8.2 Deviations from Secondary Containment Requirement

No deviations from secondary containment requirements are present at the facility.

8.3 Drainage Requirements for Potential Discharge Areas

There are no areas of potential discharge of oil from storage locations since containment (i.e., berms, walls, or double-wall construction) is provided for all storage tanks and portable containers.
To mitigate potential discharge from the onsite loading rack at North Campus during fueling operations, a berm is constructed around the area. The containment capacity of the area is designed to store up to 4,200 gallons, which is the largest storage compartment of a fueling truck.

All piping is constructed within secondary containment areas, buried, or constructed to flow into secondary containment areas in order to prevent potential discharges.

8.4 Major Equipment Failure Scenarios

Several types of oil-containing equipment are present at the UCI campus, each with a relatively low degree of potential for major equipment failure. The table below provides the types of major equipment failure for each type of equipment.

<table>
<thead>
<tr>
<th>Area</th>
<th>Type of failure (discharge scenario)</th>
<th>Potential discharge volume (gallons)</th>
<th>Direction of flow for uncontained off-site discharge</th>
<th>Secondary containment method</th>
<th>Secondary containment capacity (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Storage Containers and Mobile Portable Containers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stationary tanks outdoors</td>
<td>Leaking tank or fitting</td>
<td>0</td>
<td>None</td>
<td>Double wall or containment berm</td>
<td>Sufficient to hold 100% plus storm freeboard</td>
</tr>
<tr>
<td>Stationary tanks indoors or in buried bunkers</td>
<td>Leaking tank or fitting</td>
<td>0</td>
<td>None</td>
<td>Double wall, containment berm, or building walls</td>
<td>Sufficient to hold 100%</td>
</tr>
<tr>
<td>Drum storage areas</td>
<td>Leaking drum; tip over</td>
<td>≤55</td>
<td>North to San Diego Creek (via storm drain outfall)</td>
<td>Pallets, shelters, drains to underground tank (EH&amp;S Dept.)</td>
<td>&gt;55</td>
</tr>
<tr>
<td>Portable, trailer-mounted tanks</td>
<td>Leaking tank or fitting; tip over</td>
<td>≤120</td>
<td>North to San Diego Creek (via storm drain outfall)</td>
<td>Containment plate</td>
<td>&gt;120</td>
</tr>
<tr>
<td>Oil-filled Operational Equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevators inside buildings</td>
<td>Reservoir leak; hose break</td>
<td>0</td>
<td>None</td>
<td>Building floors; elevator rooms; pits</td>
<td>(not verified)</td>
</tr>
<tr>
<td>Electrical transformers</td>
<td>Leak, corrosion, fire</td>
<td>&lt;597</td>
<td>North to San Diego Creek (via storm drain outfall)</td>
<td>Active containment (response)</td>
<td>(not required)</td>
</tr>
</tbody>
</table>

*Piping, Valves, etc.*
<table>
<thead>
<tr>
<th>Area</th>
<th>Type of failure (discharge scenario)</th>
<th>Potential discharge volume (gallons)</th>
<th>Direction of flow for uncontained off-site discharge</th>
<th>Secondary containment method</th>
<th>Secondary containment capacity (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk storage containers piped to equipment, dispensers, etc.</td>
<td>Leak, faulty pump, automatic shut-off failure</td>
<td>&lt;7,000 (North Campus)</td>
<td>South to San Diego Creek (via duck ponds)</td>
<td>Active containment (response)</td>
<td>Varies; some have no permanent fixtures</td>
</tr>
<tr>
<td><strong>Product Transfer Areas (location where oil is loaded to or from a container or dispenser)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filling diesel fuel reservoirs for emergency generators</td>
<td>Operator error, dispenser failure</td>
<td>≤120</td>
<td>North to San Diego Creek (via storm drain outfall)</td>
<td>Active containment (response)</td>
<td>Worst-case none; varies by location of incident</td>
</tr>
<tr>
<td>Facilities Management Fueling</td>
<td>Tank truck failure, operator error</td>
<td>≤4,200</td>
<td>North to San Diego Creek (via storm drain outfall)</td>
<td>Two underground interceptors</td>
<td>2,400 (interceptors); 4,400 temporary berm</td>
</tr>
<tr>
<td>Used Cooking Oil bulk truck pick-up from tank or portable containers</td>
<td>Tank truck leak</td>
<td>≤3,000</td>
<td>North to San Diego Creek (via storm drain outfall)</td>
<td>Active containment (response)</td>
<td>Worst-case none; varies by location of incident</td>
</tr>
</tbody>
</table>

The worst-case scenario would be a spill that could happen at the Facilities Management Fueling Area during tank loading. A 4,200-gallon tank truck is used to fill either the diesel fuel or gasoline fuel tank compartment. A spill of the tank truck vessel could possibly discharge 100 or more gallons per minute. This area is sloped to collect liquids in nearby drain that leads to a series of two interceptors. The combined capacity of the interceptors is about 1,200 gallons. The area is bermed with a storage capacity of approximately 4,400 gallons. Loading of the tanks in this area is not conducted during storm events.
FIGURES

- Figure 1  Vicinity Map
- Figure 2  Campus Map
APPENDIX A

SPCC Regulation 40 CFR Part 112
Subpart A. Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils
§1. General applicability
§2. Definitions
§3. Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan
§4. Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator
§5. Amendment of Spill Prevention, Control, and Countermeasure Plan by owners or operators
§6. Qualified Facilities Plan Requirements
§7. General requirements for Spill Prevention, Control, and Countermeasure Plans

Subpart B. Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)
§8. Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities)
§9. Spill Prevention, Control, and Countermeasure Plan Requirements for onshore oil production facilities (excluding drilling and workover facilities)
§10. Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil drilling and workover facilities
§11. Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities

Subpart C. Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and for Vegetable Oils, Including Oils from Seeds, Nuts, Fruits, and Kernels
§12. Spill Prevention, Control, and Countermeasure Plan requirements
§13-15. [Reserved]

Subpart D. Response Requirements
§20. Facility response plans
§21. Facility response training and drills/exercises

Appendix A. Memorandum of Understanding Between the Secretary of Transportation and the Administrator of the Environmental Protection Agency

Appendix B. Memorandum of Understanding Among the Secretary of the Interior, Secretary of Transportation, and Administrator of the Environmental Protection Agency

Appendix C. Substantial Harm Criteria

Appendix D. Determination of a Worst Case Discharge Planning Volume

Appendix E. Determination and Evaluation of Required Response Resources for Facility Response Plans (NOT INCLUDED)

Appendix F. Facility-Specific Response Plan (NOT INCLUDED)

Appendix G. Tier I Qualified Facility Spcc Plan (NOT INCLUDED)
Subpart A - Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils

Source:
67 FR 47140, July 17, 2002, unless otherwise noted.

§112.1 General applicability

(a)

(1) This part establishes procedures, methods, equipment, and other requirements to prevent the discharge of oil from non-transportation-related onshore and offshore facilities into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act).

(2) As used in this part, words in the singular also include the plural and words in the masculine gender also include the feminine and vice versa, as the case may require.

(b) Except as provided in paragraph (d) of this section, this part applies to any owner or operator of a non-transportation-related onshore or offshore facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which due to its location, could reasonably be expected to discharge oil in quantities that may be harmful, as described in part 110 of this chapter, into or upon the navigable waters of the United States or adjoining shorelines, or into or upon the waters of the contiguous zone, or in connection with activities under the Outer Continental Shelf Lands Act or the Deepwater Port Act of 1974, or that may affect natural resources belonging to, appertaining to, or under the exclusive management authority of the United States (including resources under the Magnuson Fishery Conservation and Management Act) that has oil in:

(1) Any aboveground container;

(2) Any completely buried tank as defined in §112.2;

(3) Any container that is used for standby storage, for seasonal storage, or for temporary storage, or not otherwise “permanently closed” as defined in §112.2;

(4) Any “bunkered tank” or “partially buried tank” as defined in §112.2, or any container in a vault, each of which is considered an aboveground storage container for purposes of this part.
(c) As provided in section 313 of the Clean Water Act (CWA), departments, agencies, and instrumentalities of the Federal government are subject to this part to the same extent as any person.

(d) Except as provided in paragraph (f) of this section, this part does not apply to:

(1) The owner or operator of any facility, equipment, or operation that is not subject to the jurisdiction of the Environmental Protection Agency (EPA) under section 311(j)(1)(C) of the CWA, as follows:

   (i) Any onshore or offshore facility, that due to its location, could not reasonably be expected to have a discharge as described in paragraph (b) of this section. This determination must be based solely upon consideration of the geographical and location aspects of the facility (such as proximity to navigable waters or adjoining shorelines, land contour, drainage, etc.) and must exclude consideration of manmade features such as dikes, equipment or other structures, which may serve to restrain, hinder, contain, or otherwise prevent a discharge as described in paragraph (b) of this section.

   (ii) Any equipment, or operation of a vessel or transportation-related onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation, as defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of EPA, dated November 24, 1971 (Appendix A of this part).

   (iii) Any equipment, or operation of a vessel or onshore or offshore facility which is subject to the authority and control of the U.S. Department of Transportation or the U.S. Department of the Interior, as defined in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of EPA, dated November 8, 1993 (Appendix B of this part).

(2) Any facility which, although otherwise subject to the jurisdiction of EPA, meets both of the following requirements:

   (i) The completely buried storage capacity of the facility is 42,000 U.S. gallons or less of oil. For purposes of this exemption, the completely buried storage capacity of a facility excludes the capacity of a completely buried tank, as defined in §112.2, and connected underground piping, underground ancillary equipment, and containment systems, that is currently subject to all of the technical requirements of part 280 of this chapter or all of the technical requirements of a State program approved under part 281 of this chapter, or the capacity of any underground oil storage tanks deferred under 40 CFR part 280 that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission and subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR part 50. The completely buried storage capacity of a facility also excludes the capacity of a container that is “permanently closed,” as defined in §112.2 and the capacity of intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195.

   (ii) The aggregate aboveground storage capacity of the facility is 1,320 U.S. gallons or less of oil. For the purposes of this exemption, only containers with a capacity of 55 U.S. gallons or greater are counted. The aggregate aboveground storage capacity of a facility excludes:

      (A) The capacity of a container that is “permanently closed” as defined in §112.2;
(B) The capacity of a “motive power container” as defined in §112.2;

(C) The capacity of hot-mix asphalt or any hot-mix asphalt container;

(D) The capacity of a container for heating oil used solely at a single-family residence;

(E) The capacity of pesticide application equipment and related mix containers.

(F) The capacity of any milk and milk product container and associated piping and appurtenances.

(3) Any offshore oil drilling, production, or workover facility that is subject to the notices and regulations of the Minerals Management Service, as specified in the Memorandum of Understanding between the Secretary of Transportation, the Secretary of the Interior, and the Administrator of EPA, dated November 8, 1993 (Appendix B of this part).

(4) Any completely buried storage tank, as defined in §112.2, and connected underground piping, underground ancillary equipment, and containment systems, at any facility, that is subject to all of the technical requirements of part 280 of this chapter or a State program approved under part 281 of this chapter, or any underground oil storage tanks including below-grade vaulted tanks, deferred under 40 CFR part 280, as originally promulgated, that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission, provided that such a tank is subject to any Nuclear Regulatory Commission provision regarding design and quality criteria, including, but not limited to, 10 CFR part 50. Such emergency generator tanks must be marked on the facility diagram as provided in §112.7(a)(3), if the facility is otherwise subject to this part.

(5) Any container with a storage capacity of less than 55 gallons of oil.

(6) 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.

(7) Any “motive power container,” as defined in §112.2. The transfer of fuel or other oil into a motive power container at an otherwise regulated facility is not eligible for this exemption.

(8) Hot-mix asphalt, or any hot-mix asphalt container.

(9) Any container for heating oil used solely at a single-family residence.

(10) Any pesticide application equipment or related mix containers.

(11) Intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195, except that such a line's location must be identified and marked as “exempt” on the facility diagram as provided in §112.7(a)(3), if the facility is otherwise subject to this part.

(12) Any milk and milk product container and associated piping and appurtenances.
(e) This part establishes requirements for the preparation and implementation of Spill Prevention, Control, and Countermeasure (SPCC) Plans. SPCC Plans are designed to complement existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards, fire prevention, and pollution prevention rules. The purpose of an SPCC Plan is to form a comprehensive Federal/State spill prevention program that minimizes the potential for discharges. The SPCC Plan must address all relevant spill prevention, control, and countermeasures necessary at the specific facility. Compliance with this part does not in any way relieve the owner or operator of an onshore or an offshore facility from compliance with other Federal, State, or local laws.

(f) Notwithstanding paragraph (d) of this section, the Regional Administrator may require that the owner or operator of any facility subject to the jurisdiction of EPA under section 311(j) of the CWA prepare and implement an SPCC Plan, or any applicable part, to carry out the purposes of the CWA.

1) Following a preliminary determination, the Regional Administrator must provide a written notice to the owner or operator stating the reasons why he must prepare an SPCC Plan, or applicable part. The Regional Administrator must send such notice to the owner or operator by certified mail or by personal delivery. If the owner or operator is a corporation, the Regional Administrator must also mail a copy of such notice to the registered agent, if any and if known, of the corporation in the State where the facility is located.

2) Within 30 days of receipt of such written notice, the owner or operator may provide information and data and may consult with the Agency about the need to prepare an SPCC Plan, or applicable part.

3) Within 30 days following the time under paragraph (b)(2) of this section within which the owner or operator may provide information and data and consult with the Agency about the need to prepare an SPCC Plan, or applicable part, the Regional Administrator must make a final determination regarding whether the owner or operator is required to prepare and implement an SPCC Plan, or applicable part. The Regional Administrator must send the final determination to the owner or operator by certified mail or by personal delivery. If the owner or operator is a corporation, the Regional Administrator must also mail a copy of the final determination to the registered agent, if any and if known, of the corporation in the State where the facility is located.

4) If the Regional Administrator makes a final determination that an SPCC Plan, or applicable part, is necessary, the owner or operator must prepare the Plan, or applicable part, within six months of that final determination and implement the Plan, or applicable part, as soon as possible, but not later than one year after the Regional Administrator has made a final determination.

5) The owner or operator may appeal a final determination made by the Regional Administrator requiring preparation and implementation of an SPCC Plan, or applicable part, under this paragraph. The owner or operator must make the appeal to the Administrator of EPA within 30 days of receipt of the final determination under paragraph (b)(3) of this section from the Regional Administrator requiring preparation and/or implementation of an SPCC Plan, or applicable part. The owner or operator must send a complete copy of the appeal to the Regional Administrator at the time he makes the appeal to the Administrator. The appeal must contain a clear and concise statement of the issues and points of fact in the case. In the appeal, the owner or operator may also provide additional information. The additional information may be from any person. The Administrator may request additional information from the owner or operator. The Administrator must render a decision within 60 days of receiving the appeal or additional information submitted by the owner or operator and must serve the owner or operator with the decision made in the appeal in the manner described in paragraph (f)(1) of this section.
§112.2 Definitions

For the purposes of this part:

Adverse weather means weather conditions that make it difficult for response equipment and personnel to clean up or remove spilled oil, and that must be considered when identifying response systems and equipment in a response plan for the applicable operating environment. Factors to consider include significant wave height as specified in appendix E to this part (as appropriate), ice conditions, temperatures, weather-related visibility, and currents within the area in which the systems or equipment is intended to function.

Alteration means any work on a container involving cutting, burning, welding, or heating operations that changes the physical dimensions or configuration of the container.

Animal fat means a non-petroleum oil, fat, or grease of animal, fish, or marine mammal origin.

Breakout tank means a container used to relieve surges in an oil pipeline system or to receive and store oil transported by a pipeline for reinjection and continued transportation by pipeline.

Bulk storage container means any container used to store oil. These containers are used for purposes including, but not limited to, the storage of oil prior to use, while being used, or prior to further distribution in commerce. Oil-filled electrical, operating, or manufacturing equipment is not a bulk storage container.

Bunkered tank means a container constructed or placed in the ground by cutting the earth and re-covering the container in a manner that breaks the surrounding natural grade, or that lies above grade, and is covered with earth, sand, gravel, asphalt, or other material. A bunkered tank is considered an aboveground storage container for purposes of this part.

Completely buried tank means any container completely below grade and covered with earth, sand, gravel, asphalt, or other material. Containers in vaults, bunkered tanks, or partially buried tanks are considered aboveground storage containers for purposes of this part.

Complex means a facility possessing a combination of transportation-related and non-transportation-related components that is subject to the jurisdiction of more than one Federal agency under section 311(j) of the CWA.

Contiguous zone means the zone established by the United States under Article 24 of the Convention of the Territorial Sea and Contiguous Zone, that is contiguous to the territorial sea and that extends nine miles seaward from the outer limit of the territorial area.
Contract or other approved means means:

(1) A written contractual agreement with an oil spill removal organization that identifies and ensures the availability of the necessary personnel and equipment within appropriate response times; and/or

(2) A written certification by the owner or operator that the necessary personnel and equipment resources, owned or operated by the facility owner or operator, are available to respond to a discharge within appropriate response times; and/or

(3) Active membership in a local or regional oil spill removal organization that has identified and ensures adequate access through such membership to necessary personnel and equipment to respond to a discharge within appropriate response times in the specified geographic area; and/or

(4) Any other specific arrangement approved by the Regional Administrator upon request of the owner or operator.

Discharge includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping of oil, but excludes discharges in compliance with a permit under section 402 of the CWA; discharges resulting from circumstances identified, reviewed, and made a part of the public record with respect to a permit issued or modified under section 402 of the CWA, and subject to a condition in such permit; or continuous or anticipated intermittent discharges from a point source, identified in a permit or permit application under section 402 of the CWA, that are caused by events occurring within the scope of relevant operating or treatment systems. For purposes of this part, the term discharge shall not include any discharge of oil that is authorized by a permit issued under section 13 of the River and Harbor Act of 1899 (33 U.S.C. 407).

Facility means any mobile or fixed, onshore or offshore building, property, parcel, lease, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) used in oil well drilling operations, oil production, oil refining, oil storage, oil gathering, oil processing, oil transfer, oil distribution, and oil waste treatment, or in which oil is used, as described in appendix A to this part. The boundaries of a facility depend on several site-specific factors, including but not limited to, the ownership or operation of buildings, structures, and equipment on the same site and types of activity at the site. Contiguous or non-contiguous buildings, properties, parcels, leases, structures, installations, pipes, or pipelines under the ownership or operation of the same person may be considered separate facilities. Only this definition governs whether a facility is subject to this part.

Farm means a facility on a tract of land devoted to the production of crops or raising of animals, including fish, which produced and sold, or normally would have produced and sold, $1,000 or more of agricultural products during a year.

Fish and wildlife and sensitive environments means areas that may be identified by their legal designation or by evaluations of Area Committees (for planning) or members of the Federal On-Scene Coordinator's spill response structure (during responses). These areas may include wetlands, National and State parks, critical habitats for endangered or threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife areas, wildlife refuges, wild and scenic rivers, recreational areas, national forests, Federal and State lands that are research national areas, heritage program areas, land trust areas, and historical and archaeological sites and parks. These areas may also include unique habitats such as aquaculture sites and agricultural surface water intakes, bird nesting areas, critical biological resource areas, designated migratory routes, and designated seasonal habitats.

Injury means a measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource
resulting either directly or indirectly from exposure to a discharge, or exposure to a product of reactions resulting from a discharge.

*Loading/unloading rack* means a fixed structure (such as a platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to the requirements of this part. A loading/unloading rack includes a loading or unloading arm, and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices.

*Maximum extent practicable* means within the limitations used to determine oil spill planning resources and response times for on-water recovery, shoreline protection, and cleanup for worst case discharges from onshore non-transportation-related facilities in adverse weather. It includes the planned capability to respond to a worst case discharge in adverse weather, as contained in a response plan that meets the requirements in §112.20 or in a specific plan approved by the Regional Administrator.

*Mobile refueler* means a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container.

*Motive power container* means any onboard bulk storage container used primarily to power the movement of a motor vehicle, or ancillary onboard oil-filled operational equipment. An onboard bulk storage container which is used to store or transfer oil for further distribution is not a motive power container. The definition of motive power container does not include oil drilling or workover equipment, including rigs.

*Navigable waters* of the United States means “navigable waters” as defined in section 502(7) of the FWPCA, and includes:

1. All navigable waters of the United States, as defined in judicial decisions prior to passage of the 1972 Amendments to the FWPCA (Pub. L. 92-500), and tributaries of such waters;
2. Interstate waters;
3. Intrastate lakes, rivers, and streams which are utilized by interstate travelers for recreational or other purposes; and
4. Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

*Non-petroleum oil* means oil of any kind that is not petroleum-based, including but not limited to: Fats, oils, and greases of animal, fish, or marine mammal origin; and vegetable oils, including oils from seeds, nuts, fruits, and kernels.

*Offshore facility* means any facility of any kind (other than a vessel or public vessel) located in, on, or under any of the navigable waters of the United States, and any facility of any kind that is subject to the jurisdiction of the United States and is located in, on, or under any other waters.

*Oil* means oil of any kind or in any form, including, but not limited to: fats, oils, or greases of animal, fish, or marine mammal origin; vegetable oils, including oils from seeds, nuts, fruits, or kernels; and, other oils and greases, including petroleum, fuel oil, sludge, synthetic oils, mineral oils, oil refuse, or oil mixed with wastes other than dredged spoil.

*Oil-filled operational equipment* means equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to
support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (e.g., those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil solely to enable the operation of the device.

*Oil Spill Removal Organization* means an entity that provides oil spill response resources, and includes any for-profit or not-for-profit contractor, cooperative, or in-house response resources that have been established in a geographic area to provide required response resources.

*Onshore facility* means any facility of any kind located in, on, or under any land within the United States, other than submerged lands.

*Owner or operator* means any person owning or operating an onshore facility or an offshore facility, and in the case of any abandoned offshore facility, the person who owned or operated or maintained the facility immediately prior to such abandonment.

*Partially buried tank* means a storage container that is partially inserted or constructed in the ground, but not entirely below grade, and not completely covered with earth, sand, gravel, asphalt, or other material. A partially buried tank is considered an aboveground storage container for purposes of this part.

*Permanently closed* means any container or facility for which:

1. All liquid and sludge has been removed from each container and connecting line; and
2. All connecting lines and piping have been disconnected from the container and blanked off, all valves (except for ventilation valves) have been closed and locked, and conspicuous signs have been posted on each container stating that it is a permanently closed container and noting the date of closure.

*Person* includes an individual, firm, corporation, association, or partnership.

*Petroleum oil* means petroleum in any form, including but not limited to crude oil, fuel oil, mineral oil, sludge, oil refuse, and refined products.

*Produced water container* means a storage container at an oil production facility used to store the produced water after initial oil/water separation, and prior to reinjection, beneficial reuse, discharge, or transfer for disposal.

*Production facility* means all structures (including but not limited to wells, platforms, or storage facilities), piping (including but not limited to flowlines or intra-facility gathering lines), or equipment (including but not limited to workover equipment, separation equipment, or auxiliary non-transportation-related equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of oil (including condensate), or associated storage or measurement, and is located in an oil or gas field, at a facility. This definition governs whether such structures, piping, or equipment are subject to a specific section of this part.

*Regional Administrator* means the Regional Administrator of the Environmental Protection Agency, in and for the Region in which the facility is
Repair means any work necessary to maintain or restore a container to a condition suitable for safe operation, other than that necessary for ordinary, day-to-day maintenance to maintain the functional integrity of the container and that does not weaken the container.

Spill Prevention, Control, and Countermeasure Plan; SPCC Plan, or Plan means the document required by §112.3 that details the equipment, workforce, procedures, and steps to prevent, control, and provide adequate countermeasures to a discharge.

Storage capacity of a container means the shell capacity of the container.

Transportation-related and non-transportation-related, as applied to an onshore or offshore facility, are defined in the Memorandum of Understanding between the Secretary of Transportation and the Administrator of the Environmental Protection Agency, dated November 24, 1971, (appendix A of this part).

United States means the States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, the U.S. Virgin Islands, and the Pacific Island Governments.

Vegetable oil means a non-petroleum oil or fat of vegetable origin, including but not limited to oils and fats derived from plant seeds, nuts, fruits, and kernels.

Vessel means every description of watercraft or other artificial contrivance used, or capable of being used, as a means of transportation on water, other than a public vessel.

Wetlands means those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include playa lakes, swamps, marshes, bogs, and similar areas such as sloughs, prairie potholes, wet meadows, prairie river overflows, mudflats, and natural ponds.

Worst case discharge for an onshore non-transportation-related facility means the largest foreseeable discharge in adverse weather conditions as determined using the worksheets in appendix D to this part.


§112.3 Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan

The owner or operator or an onshore or offshore facility subject to this section must prepare in writing and implement a Spill Prevention Control and Countermeasure Plan (hereafter “SPCC Plan” or “Plan”), in accordance with §112.7 and any other applicable section of this part.
(a)

(1) Except as otherwise provided in this section, if your facility, or mobile or portable facility, was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan no later than November 10, 2011. If such a facility becomes operational after August 16, 2002, through November 10, 2011, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan on or before November 10, 2011. If such a facility (excluding oil production facilities) becomes operational after November 10, 2011, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan before you begin operations. You are not required to prepare a new Plan each time you move a mobile or portable facility to a new site; the Plan may be general. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.

(b) If your drilling, production or workover facility, including a mobile or portable facility, is offshore or has an offshore component; or your onshore facility is required to have and submit a Facility Response Plan pursuant to 40 CFR 112.20(a), and was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, and implement the amended Plan no later than November 10, 2010. If such a facility becomes operational after August 16, 2002, through November 10, 2010, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan on or before November 10, 2010. If such a facility (excluding oil production facilities) becomes operational after November 10, 2010, and could reasonably be expected to have a discharge as described in §112.1(b), you must prepare and implement a Plan before you begin operations. You are not required to prepare a new Plan each time you move a mobile or portable facility to a new site; the Plan may be general. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. The Plan is applicable only while the mobile or portable facility is in a fixed (non-transportation) operating mode.

(c) [Reserved]

(d) Except as provided in §112.6, a licensed Professional Engineer must review and certify a Plan for it to be effective to satisfy the requirements of this part.

(1) By means of this certification the Professional Engineer attests:
(i) That he is familiar with the requirements of this part;

(ii) That he or his agent has visited and examined the facility;

(iii) That the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part;

(iv) That procedures for required inspections and testing have been established; and

(v) That the Plan is adequate for the facility.

(vi) That, if applicable, for a produced water container subject to §112.9(c)(6), any procedure to minimize the amount of free-phase oil is designed to reduce the accumulation of free-phase oil and the procedures and frequency for required inspections, maintenance and testing have been established and are described in the Plan.

(2) Such certification shall in no way relieve the owner or operator of a facility of his duty to prepare and fully implement such Plan in accordance with the requirements of this part.

(e) If you are the owner or operator of a facility for which a Plan is required under this section, you must:

(1) Maintain a complete copy of the Plan at the facility if the facility is normally attended at least four hours per day, or at the nearest field office if the facility is not so attended, and

(2) Have the Plan available to the Regional Administrator for on-site review during normal working hours.

(f) Extension of time.

(1) The Regional Administrator may authorize an extension of time for the preparation and full implementation of a Plan, or any amendment thereto, beyond the time permitted for the preparation, implementation, or amendment of a Plan under this part, when he finds that the owner or operator of a facility subject to this section, cannot fully comply with the requirements as a result of either nonavailability of qualified personnel, or delays in construction or equipment delivery beyond the control and without the fault of such owner or operator or his agents or employees.

(2) If you are an owner or operator seeking an extension of time under paragraph (f)(1) of this section, you may submit a written extension request to the Regional Administrator. Your request must include:

(i) A full explanation of the cause for any such delay and the specific aspects of the Plan affected by the delay;

(ii) A full discussion of actions being taken or contemplated to minimize or mitigate such delay; and
(iii) A proposed time schedule for the implementation of any corrective actions being taken or contemplated, including interim dates for completion of tests or studies, installation and operation of any necessary equipment, or other preventive measures. In addition you may present additional oral or written statements in support of your extension request.

(3) The submission of a written extension request under paragraph (f)(2) of this section does not relieve you of your obligation to comply with the requirements of this part. The Regional Administrator may request a copy of your Plan to evaluate the extension request. When the Regional Administrator authorizes an extension of time for particular equipment or other specific aspects of the Plan, such extension does not affect your obligation to comply with the requirements related to other equipment or other specific aspects of the Plan for which the Regional Administrator has not expressly authorized an extension.

(g) **Qualified Facilities.** The owner or operator of a qualified facility as defined in this subparagraph may self-certify his facility's Plan, as provided in §112.6. A qualified facility is one that meets the following Tier I or Tier II qualified facility criteria:

1. A Tier I qualified facility meets the qualification criteria in paragraph (g)(2) of this section and has no individual aboveground oil storage container with a capacity greater than 5,000 U.S. gallons.

2. A Tier II qualified facility is one that has had no single discharge as described in §112.1(b) exceeding 1,000 U.S. gallons or no two discharges as described in §112.1(b) each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan self-certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than discharges as described in §112.1(b) that are the result of natural disasters, acts of war, or terrorism), and has an aggregate aboveground oil storage capacity of 10,000 U.S. gallons or less.


**§112.4 Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator**

If you are the owner or operator of a facility subject to this part, you must:

(a) Notwithstanding compliance with §112.3, whenever your facility has discharged more than 1,000 U.S. gallons of oil in a single discharge as described in §112.1(b), or discharged more than 42 U.S. gallons of oil in each of two discharges as described in §112.1(b), occurring within any twelve month period, submit the following information to the Regional Administrator within 60 days from the time the facility becomes subject to this section:

1. Name of the facility;

2. Your name;
(3) Location of the facility;

(4) Maximum storage or handling capacity of the facility and normal daily throughput;

(5) Corrective action and countermeasures you have taken, including a description of equipment repairs and replacements;

(6) An adequate description of the facility, including maps, flow diagrams, and topographical maps, as necessary;

(7) The cause of such discharge as described in §112.1(b), including a failure analysis of the system or subsystem in which the failure occurred;

(8) Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence; and

(9) Such other information as the Regional Administrator may reasonably require pertinent to the Plan or discharge.

(b) Take no action under this section until it applies to your facility. This section does not apply until the expiration of the time permitted for the initial preparation and implementation of the Plan under §112.3, but not including any amendments to the Plan.

(c) Send to the appropriate agency or agencies in charge of oil pollution control activities in the State in which the facility is located a complete copy of all information you provided to the Regional Administrator under paragraph (a) of this section. Upon receipt of the information such State agency or agencies may conduct a review and make recommendations to the Regional Administrator as to further procedures, methods, equipment, and other requirements necessary to prevent and to contain discharges from your facility.

(d) Amend your Plan, if after review by the Regional Administrator of the information you submit under paragraph (a) of this section, or submission of information to EPA by the State agency under paragraph (c) of this section, or after on-site review of your Plan, the Regional Administrator requires that you do so. The Regional Administrator may require you to amend your Plan if he finds that it does not meet the requirements of this part or that amendment is necessary to prevent and contain discharges from your facility.

(e) Act in accordance with this paragraph when the Regional Administrator proposes by certified mail or by personal delivery that you amend your SPCC Plan. If the owner or operator is a corporation, he must also notify by mail the registered agent of such corporation, if any and if known, in the State in which the facility is located. The Regional Administrator must specify the terms of such proposed amendment. Within 30 days from receipt of such notice, you may submit written information, views, and arguments on the proposed amendment. After considering all relevant material presented, the Regional Administrator must either notify you of any amendment required or rescind the notice. You must amend your Plan as required within 30 days after such notice, unless the Regional Administrator, for good cause, specifies another effective date. You must implement the amended Plan as soon as possible, but not later than six months after you amend your Plan, unless the Regional Administrator specifies another date.

(f) If you appeal a decision made by the Regional Administrator requiring an amendment to an SPCC Plan, send the appeal to the EPA Administrator in writing within 30 days of receipt of the notice from the Regional Administrator requiring the amendment under paragraph (e) of this section. You must send a complete copy of the appeal to the Regional Administrator at the time you make the appeal. The appeal must contain a clear and concise
statement of the issues and points of fact in the case. It may also contain additional information from you, or from any other person. The EPA Administrator may request additional information from you, or from any other person. The EPA Administrator must render a decision within 60 days of receiving the appeal and must notify you of his decision.

§112.5 Amendment of Spill Prevention, Control, and Countermeasure Plan by owners or operators

If you are the owner or operator of a facility subject to this part, you must:

(a) Amend the SPCC Plan for your facility in accordance with the general requirements in §112.7, and with any specific section of this part applicable to your facility, when there is a change in the facility design, construction, operation, or maintenance that materially affects its potential for a discharge as described in §112.1(b). Examples of changes that may require amendment of the Plan include, but are not limited to: commissioning or decommissioning containers; replacement, reconstruction, or movement of containers; reconstruction, replacement, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operation or maintenance procedures at a facility. An amendment made under this section must be prepared within six months, and implemented as soon as possible, but not later than six months following preparation of the amendment.

(b) Notwithstanding compliance with paragraph (a) of this section, complete a review and evaluation of the SPCC Plan at least once every five years from the date your facility becomes subject to this part; or, if your facility was in operation on or before August 16, 2002, five years from the date your last review was required under this part. As a result of this review and evaluation, you must amend your SPCC Plan within six months of the review to include more effective prevention and control technology if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in §112.1(b) from the facility. You must implement any amendment as soon as possible, but not later than six months following preparation of any amendment. You must document your completion of the review and evaluation, and must sign a statement as to whether you will amend the Plan, either at the beginning or end of the Plan or in a log or an appendix to the Plan. The following words will suffice, “I have completed review and evaluation of the SPCC Plan for (name of facility) on (date), and will (will not) amend the Plan as a result.”

(c) Except as provided in §112.6, have a Professional Engineer certify any technical amendments to your Plan in accordance with §112.3(d).


§112.6 Qualified Facilities Plan Requirements

Qualified facilities meeting the Tier I applicability criteria in §112.3(g)(1) are subject to the requirements in paragraph (a) of this section. Qualified facilities meeting the Tier II applicability criteria in §112.3(g)(2) are subject to the requirements in paragraph (b) of this section.
(a) *Tier I Qualified Facilities* -

1) **Preparation and Self-Certification of the Plan.** If you are an owner or operator of a facility that meets the Tier I qualified facility criteria in §112.3(g)(1), you must either: comply with the requirements of paragraph (a)(3) of this section; or prepare and implement a Plan meeting requirements of paragraph (b) of this section; or prepare and implement a Plan meeting the general Plan requirements in §112.7 and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer as required under §112.3(d). If you do not follow the Appendix G template, you must prepare an equivalent Plan that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. To complete the template in Appendix G, you must certify that:

   (i) You are familiar with the applicable requirements of 40 CFR part 112;

   (ii) You have visited and examined the facility;

   (iii) You prepared the Plan in accordance with accepted and sound industry practices and standards;

   (iv) You have established procedures for required inspections and testing in accordance with industry inspection and testing standards or recommended practices;

   (v) You will fully implement the Plan;

   (vi) The facility meets the qualification criteria in §112.3(g)(1);

   (vii) The Plan does not deviate from any requirement of this part as allowed by §112.7(a)(2) and 112.7(d) or include measures pursuant to §112.9(c)(6) for produced water containers and any associated piping; and

   (viii) The Plan and individual(s) responsible for implementing this Plan have the approval of management, and the facility owner or operator has committed the necessary resources to fully implement this Plan.

2) **Technical Amendments.** You must certify any technical amendments to your Plan in accordance with paragraph (a)(1) of this section when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge as described in §112.1(b). If the facility change results in the facility no longer meeting the Tier I qualifying criteria in §112.3(g)(1) because an individual oil storage container capacity exceeds 5,000 U.S. gallons or the facility capacity exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity, within six months following preparation of the amendment, you must either:

   (i) Prepare and implement a Plan in accordance with §112.6(b) if you meet the Tier II qualified facility criteria in §112.3(g)(2); or

   (ii) Prepare and implement a Plan in accordance with the general Plan requirements in §112.7, and applicable requirements in subparts B and C, including having the Plan certified by a Professional Engineer as required under §112.3(d).
(3) **Plan Template and Applicable Requirements.** Prepare and implement an SPCC Plan that meets the following requirements under §112.7 and in subparts B and C of this part: introductory paragraph of §§112.7, 112.7(a)(3)(i), 112.7(a)(3)(iv), 112.7(a)(3)(vi), 112.7(a)(4), 112.7(a)(5), 112.7(c), 112.7(e), 112.7(f), 112.7(g), 112.7(k), 112.8(b)(1), 112.8(b)(2), 112.8(c)(1), 112.8(c)(3), 112.8(c)(4), 112.8(c)(5), 112.8(c)(6), 112.8(c)(10), 112.8(d)(4), 112.9(b), 112.9(c)(1), 112.9(c)(2), 112.9(c)(3), 112.9(c)(4), 112.9(c)(5), 112.9(d)(1), 112.9(d)(3), 112.9(d)(4), 112.10(b), 112.10(c), 112.10(d), 112.12(b)(1), 112.12(b)(2), 112.12(c)(1), 112.12(c)(3), 112.12(c)(4), 112.12(c)(5), 112.12(c)(6), 112.12(c)(10), and 112.12(d)(4). The template in Appendix G to this part has been developed to meet the requirements of 40 CFR part 112 and, when completed and signed by the owner or operator, may be used as the SPCC Plan. Additionally, you must meet the following requirements:

(i) **Failure analysis, in lieu of the requirements in §112.7(b).** Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of discharge), include in your Plan a prediction of the direction and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.

(ii) **Bulk storage container secondary containment, in lieu of the requirements in §§112.8(c)(2) and (c)(11) and 112.12(c)(2) and (c)(11).** Construct all bulk storage container installations (except mobile refuelers and other non-transportation-related tank trucks), including mobile or portable oil storage containers, so that you provide a secondary means of containment for the entire capacity of the largest single container plus additional capacity to contain precipitation. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a catchment basin or holding pond. Position or locate mobile or portable oil storage containers to prevent a discharge as described in §112.1(b).

(iii) **Overfill prevention, in lieu of the requirements in §§112.8(c)(8) and 112.12(c)(8).** Ensure that each container is provided with a system or documented procedure to prevent overfills of the container, describe the system or procedure in the SPCC Plan and regularly test to ensure proper operation or efficacy.

(b) **Tier II Qualified Facilities -**

(1) **Preparation and Self-Certification of Plan.** If you are the owner or operator of a facility that meets the Tier II qualified facility criteria in §112.3(g)(2), you may choose to self-certify your Plan. You must certify in the Plan that:

(i) You are familiar with the requirements of this part;

(ii) You have visited and examined the facility;

(iii) The Plan has been prepared in accordance with accepted and sound industry practices and standards, and with the requirements of this part;

(iv) Procedures for required inspections and testing have been established;

(v) You will fully implement the Plan;
(vi) The facility meets the qualification criteria set forth under §112.3(g)(2);

(vii) The Plan does not deviate from any requirement of this part as allowed by §112.7(a) and 112.7(d) or include measures pursuant to §112.9(c)(6) for produced water containers and any associated piping, except as provided in paragraph (b)(3) of this section; and

(viii) The Plan and individual(s) responsible for implementing the Plan have the full approval of management and the facility owner or operator has committed the necessary resources to fully implement the Plan.

(2) Technical Amendments. If you self-certify your Plan pursuant to paragraph (b)(1) of this section, you must certify any technical amendments to your Plan in accordance with paragraph (b)(1) of this section when there is a change in the facility design, construction, operation, or maintenance that affects its potential for a discharge as described in §112.1(b), except:

(i) If a Professional Engineer certified a portion of your Plan in accordance with paragraph (b)(4) of this section, and the technical amendment affects this portion of the Plan, you must have the amended provisions of your Plan certified by a Professional Engineer in accordance with paragraph (b)(4)(ii) of this section.

(ii) If the change is such that the facility no longer meets the Tier II qualifying criteria in §112.3(g)(2) because it exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity you must, within six months following the change, prepare and implement a Plan in accordance with the general Plan requirements in §112.7 and the applicable requirements in subparts B and C of this part, including having the Plan certified by a Professional Engineer as required under §112.3(d).

(3) Applicable Requirements. Except as provided in this paragraph, your self-certified SPCC Plan must comply with §112.7 and the applicable requirements in subparts B and C of this part:

(i) Environmental Equivalence. Your Plan may not include alternate methods which provide environmental equivalence pursuant to §112.7(a)(2), unless each alternate method has been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(ii) Impracticability. Your Plan may not include any determinations that secondary containment is impracticable and provisions in lieu of secondary containment pursuant to §112.7(d), unless each such determination and alternate measure has been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(iii) Produced Water Containers. Your Plan may not include any alternative procedures for skimming produced water containers in lieu of sized secondary containment pursuant to §112.9(c)(6), unless they have been reviewed and certified in writing by a Professional Engineer, as provided in paragraph (b)(4) of this section.

(4) Professional Engineer Certification of Portions of a Qualified Facility's Self-Certified Plan.

(i) As described in paragraph (b)(3) of this section, the facility owner or operator may not self-certify alternative measures allowed under §112.7(a)(2) or (d), that are included in the facility's Plan. Such measures must be reviewed and certified, in writing, by a licensed
Professional Engineer. For each alternative measure allowed under §112.7(a)(2), the Plan must be accompanied by a written statement by a Professional Engineer that states the reason for nonconformance and describes the alternative method and how it provides equivalent environmental protection in accordance with §112.7(a)(2). For each determination of impracticability of secondary containment pursuant to §112.7(d), the Plan must clearly explain why secondary containment measures are not practicable at this facility and provide the alternative measures required in §112.7(d) in lieu of secondary containment. By certifying each measure allowed under §112.7(a)(2) and (d), the Professional Engineer attests:

(A) That he is familiar with the requirements of this part;

(B) That he or his agent has visited and examined the facility; and

(C) That the alternative method of environmental equivalence in accordance with §112.7(a)(2) or the determination of impracticability and alternative measures in accordance with §112.7(d) is consistent with good engineering practice, including consideration of applicable industry standards, and with the requirements of this part.

(ii) As described in paragraph (b)(3) of this section, the facility owner or operator may not self-certify measures as described in §112.9(c)(6) for produced water containers and any associated piping. Such measures must be reviewed and certified, in writing, by a licensed Professional Engineer, in accordance with §112.3(d)(1)(vi).

(iii) The review and certification by the Professional Engineer under this paragraph is limited to the alternative method which achieves equivalent environmental protection pursuant to §112.7(a)(2); to the impracticability determination and measures in lieu of secondary containment pursuant to §112.7(d); or the measures pursuant to §112.9(c)(6) for produced water containers and any associated piping and appurtenances downstream from the container.


§112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans

If you are the owner or operator of a facility subject to this part you must prepare a Plan in accordance with good engineering practices. The Plan must have the full approval of management at a level of authority to commit the necessary resources to fully implement the Plan. You must prepare the Plan in writing. If you do not follow the sequence specified in this section for the Plan, you must prepare an equivalent Plan acceptable to the Regional Administrator that meets all of the applicable requirements listed in this part, and you must supplement it with a section cross-referencing the location of requirements listed in this part and the equivalent requirements in the other prevention plan. If the Plan calls for additional facilities or procedures, methods, or equipment not yet fully operational, you must discuss these items in separate paragraphs, and must explain separately the details of installation and operational start-up. As detailed elsewhere in this section, you must also:

(a)
(1) Include a discussion of your facility's conformance with the requirements listed in this part.

(2) Comply with all applicable requirements listed in this part. Except as provided in §112.6, your Plan may deviate from the requirements in paragraphs (g), (h)(2) and (3), and (i) of this section and the requirements in subparts B and C of this part, except the secondary containment requirements in paragraphs (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.9(d)(3), 112.10(c), 112.12(c)(2), and 112.12(c)(11), where applicable to a specific facility, if you provide equivalent environmental protection by some other means of spill prevention, control, or countermeasure. Where your Plan does not conform to the applicable requirements in paragraphs (g), (h)(2) and (3), and (i) of this section, or the requirements of subparts B and C of this part, except the secondary containment requirements in paragraph (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11), you must state the reasons for nonconformance in your Plan and describe in detail alternate methods and how you will achieve equivalent environmental protection. If the Regional Administrator determines that the measures described in your Plan do not provide equivalent environmental protection, he may require that you amend your Plan, following the procedures in §112.4(d) and (e).

(3) Describe in your Plan the physical layout of the facility and include a facility diagram, which must mark the location and contents of each fixed oil storage container and the storage area where mobile or portable containers are located. The facility diagram must identify the location of and mark as “exempt” underground tanks that are otherwise exempted from the requirements of this part under §112.1(d)(4). The facility diagram must also include all transfer stations and connecting pipes, including intra-facility gathering lines that are otherwise exempted from the requirements of this part under §112.1(d)(11). You must also address in your Plan:

   (i) The type of oil in each fixed container and its storage capacity. For mobile or portable containers, either provide the type of oil and storage capacity for each container or provide an estimate of the potential number of mobile or portable containers, the types of oil, and anticipated storage capacities;

   (ii) Discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers, etc.);

   (iii) Discharge or drainage controls such as secondary containment around containers and other structures, equipment, and procedures for the control of a discharge;

   (iv) Countermeasures for discharge discovery, response, and cleanup (both the facility's capability and those that might be required of a contractor);

   (v) Methods of disposal of recovered materials in accordance with applicable legal requirements; and

   (vi) Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with whom you have an agreement for response, and all appropriate Federal, State, and local agencies who must be contacted in case of a discharge as described in §112.1(b).

(4) Unless you have submitted a response plan under §112.20, provide information and procedures in your Plan to enable a person reporting a discharge as described in §112.1(b) to relate information on the exact address or location and phone number of the facility; the date and time of
the discharge, the type of material discharged; estimates of the total quantity discharged; estimates of the quantity discharged as described in §112.1(b); the source of the discharge; a description of all affected media; the cause of the discharge; any damages or injuries caused by the discharge; actions being used to stop, remove, and mitigate the effects of the discharge; whether an evacuation may be needed; and, the names of individuals and/or organizations who have also been contacted.

(5) Unless you have submitted a response plan under §112.20, organize portions of the Plan describing procedures you will use when a discharge occurs in a way that will make them readily usable in an emergency, and include appropriate supporting material as appendices.

(b) Where experience indicates a reasonable potential for equipment failure (such as loading or unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of a discharge), include in your Plan a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.

(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in §112.1(b), except as provided in paragraph (k) of this section for qualified oil-filled operational equipment, and except as provided in §112.9(d)(3) for flowlines and intra-facility gathering lines at an oil production facility. The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank, will not escape the containment system before cleanup occurs. In determining the method, design, and capacity for secondary containment, you need only to address the typical failure mode, and the most likely quantity of oil that would be discharged. Secondary containment may be either active or passive in design. At a minimum, you must use one of the following prevention systems or its equivalent:

(1) For onshore facilities:

   (i) Dikes, berms, or retaining walls sufficiently impervious to contain oil;

   (ii) Curbing or drip pans;

   (iii) Sumps and collection systems;

   (iv) Culverting, gutters, or other drainage systems;

   (v) Weirs, booms, or other barriers;

   (vi) Spill diversion ponds;

   (vii) Retention ponds; or

   (viii) Sorbent materials.

(2) For offshore facilities:
(i) Curbing or drip pans; or

(ii) Sumps and collection systems.

(d) Provided your Plan is certified by a licensed Professional Engineer under §112.3(d), or, in the case of a qualified facility that meets the criteria in §112.3(g), the relevant sections of your Plan are certified by a licensed Professional Engineer under §112.6(d), if you determine that the installation of any of the structures or pieces of equipment listed in paragraphs (c) and (h)(1) of this section, and §§112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), and 112.12(c)(11) to prevent a discharge as described in §112.1(b) from any onshore or offshore facility is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under §112.20, provide in your Plan the following:

1. An oil spill contingency plan following the provisions of part 109 of this chapter.
2. A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

(e) Inspections, tests, and records. Conduct inspections and tests required by this part in accordance with written procedures that you or the certifying engineer develop for the facility. You must keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph.

(f) Personnel, training, and discharge prevention procedures.

1. At a minimum, train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan.
2. Designate a person at each applicable facility who is accountable for discharge prevention and who reports to facility management.
3. Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges as described in §112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures.

(g) Security (excluding oil production facilities). Describe in your Plan how you secure and control access to the oil handling, processing and storage areas; secure master flow and drain valves; prevent unauthorized access to starter controls on oil pumps; secure out-of-service and loading/unloading connections of oil pipelines; and address the appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges.

(h) Facility tank car and tank truck loading/unloading rack (excluding offshore facilities).
(1) Where loading/unloading rack drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system for tank car or tank truck loading/unloading racks. You must design any containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.

(2) Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks or vehicle brake interlock system in the area adjacent to a loading/unloading rack, to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.

(3) Prior to filling and departure of any tank car or tank truck, closely inspect for discharges the lowermost drain and all outlets of such vehicles, and if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.

(i) If a field-constructed aboveground container undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of a discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, evaluate the container for risk of discharge or failure due to brittle fracture or other catastrophe, and as necessary, take appropriate action.

(j) In addition to the minimal prevention standards listed under this section, include in your Plan a complete discussion of conformance with the applicable requirements and other effective discharge prevention and containment procedures listed in this part or any applicable more stringent State rules, regulations, and guidelines.

(k) Qualified Oil-filled Operational Equipment. The owner or operator of a facility with oil-filled operational equipment that meets the qualification criteria in paragraph (k)(1) of this sub-section may choose to implement for this qualified oil-filled operational equipment the alternate requirements as described in paragraph (k)(2) of this sub-section in lieu of general secondary containment required in paragraph (c) of this section.

(1) Qualification Criteria-Reportable Discharge History: The owner or operator of a facility that has had no single discharge as described in §112.1(b) from any oil-filled operational equipment exceeding 1,000 U.S. gallons or no two discharges as described in §112.1(b) from any oil-filled operational equipment each exceeding 42 U.S. gallons within any twelve month period in the three years prior to the SPCC Plan certification date, or since becoming subject to this part if the facility has been in operation for less than three years (other than oil discharges as described in §112.1(b) that are the result of natural disasters, acts of war or terrorism); and

(2) Alternative Requirements to General Secondary Containment. If secondary containment is not provided for qualified oil-filled operational equipment pursuant to paragraph (c) of this section, the owner or operator of a facility with qualified oil-filled operational equipment must:

(i) Establish and document the facility procedures for inspections or a monitoring program to detect equipment failure and/or a discharge; and

(ii) Unless you have submitted a response plan under §112.20, provide in your Plan the following:

   (A) An oil spill contingency plan following the provisions of part 109 of this chapter.

   (B) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.
Subpart B - Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)

Source: 67 FR 47146, July 17, 2002, unless otherwise noted.

§112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities)

If you are the owner or operator of an onshore facility (excluding a production facility), you must:

(a) Meet the general requirements for the Plan listed under §112.7, and the specific discharge prevention and containment procedures listed in this section.

(b) Facility drainage.

(1) Restrain drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged.

(2) Use valves of manual, open-and-closed design, for the drainage of diked areas. You may not use flapper-type drain valves to drain diked areas. If your facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, you must inspect and may drain uncontaminated retained stormwater, as provided in paragraphs (c)(3)(ii), (iii), and (iv) of this section.

(3) Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.

(4) If facility drainage is not engineered as in paragraph (b)(3) of this section, equip the final discharge of all ditches inside the facility with a
diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility.

(5) Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two “lift” pumps and permanently install at least one of the pumps. Whatever techniques you use, you must engineer facility drainage systems to prevent a discharge as described in §112.1(b) in case there is an equipment failure or human error at the facility.

(c) Bulk storage containers.

(1) Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature.

(2) Construct all bulk storage tank installations (except mobile refuelers and other non-transportation-related tank trucks) so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a facility catchment basin or holding pond.

(3) Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:

   (i) Normally keep the bypass valve sealed closed.

   (ii) Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in §112.1(b).

   (iii) Open the bypass valve and reseal it following drainage under responsible supervision; and

   (iv) Keep adequate records of such events, for example, any records required under permits issued in accordance with §§122.41(j)(2) and 122.41(m)(3) of this chapter.

(4) Protect any completely buried metallic storage tank installed on or after January 10, 1974 from corrosion by coatings or cathodic protection compatible with local soil conditions. You must regularly leak test such completely buried metallic storage tanks.

(5) Not use partially buried or bunkered metallic tanks for the storage of oil, unless you protect the buried section of the tank from corrosion. You must protect partially buried and bunkered tanks from corrosion by coatings or cathodic protection compatible with local soil conditions.

(6) Test or inspect each aboveground container for integrity on a regular schedule and whenever you make material repairs. You must determine, in accordance with industry standards, the appropriate qualifications for personnel performing tests and inspections, the frequency and type of testing and inspections, which take into account container size, configuration, and design (such as containers that are: shop-built, field-erected, skid-mounted, elevated, equipped with a liner, double-walled, or partially buried). Examples of these integrity tests include, but are not limited to: visual inspection, hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other systems of
non-destructive testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices satisfy the recordkeeping requirements of this paragraph.

(7) Control leakage through defective internal heating coils by monitoring the steam return and exhaust lines for contamination from internal heating coils that discharge into an open watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system.

(8) Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:

   (i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.

   (ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.

   (iii) Direct audible or code signal communication between the container gauger and the pumping station.

   (iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges. If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.

   (v) You must regularly test liquid level sensing devices to ensure proper operation.

(9) Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in §112.1(b).

(10) Promptly correct visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts. You must promptly remove any accumulations of oil in diked areas.

(11) Position or locate mobile or portable oil storage containers to prevent a discharge as described in §112.1(b). Except for mobile refuelers and other non-transportation-related tank trucks, you must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

(d) Facility transfer operations, pumping, and facility process.

(1) Provide buried piping that is installed or replaced on or after August 16, 2002, with a protective wrapping and coating. You must also cathodically protect such buried piping installations or otherwise satisfy the corrosion protection standards for piping in part 280 of this chapter or a State program approved under part 281 of this chapter. If a section of buried line is exposed for any reason, you must carefully inspect it for deterioration. If you find corrosion damage, you must undertake additional examination and corrective action as indicated by the magnitude of the damage.
(2) Cap or blank-flange the terminal connection at the transfer point and mark it as to origin when piping is not in service or is in standby service for an extended time.

(3) Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.

(4) Regularly inspect all aboveground valves, piping, and appurtenances. During the inspection you must assess the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. You must also conduct integrity and leak testing of buried piping at the time of installation, modification, construction, relocation, or replacement.

(5) Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.


§112.9 Spill Prevention, Control, and Countermeasure Plan Requirements for onshore oil production facilities (excluding drilling and workover facilities)

If you are the owner or operator of an onshore oil production facility (excluding a drilling or workover facility), you must:

(a) Meet the general requirements for the Plan listed under §112.7, and the specific discharge prevention and containment procedures listed under this section.

(b) Oil production facility drainage.

(1) At tank batteries and separation and treating areas where there is a reasonable possibility of a discharge as described in §112.1(b), close and seal at all times drains of dikes or drains of equivalent measures required under §112.7(c)(1), except when draining uncontaminated rainwater. Prior to drainage, you must inspect the diked area and take action as provided in §112.8(c)(3)(ii), (iii), and (iv). You must remove accumulated oil on the rainwater and return it to storage or dispose of it in accordance with legally approved methods.

(2) Inspect at regularly scheduled intervals field drainage systems (such as drainage ditches or road ditches), and oil traps, sumps, or skimmers, for an accumulation of oil that may have resulted from any small discharge. You must promptly remove any accumulations of oil.

(c) Oil production facility bulk storage containers.

(1) Not use a container for the storage of oil unless its material and construction are compatible with the material stored and the conditions of storage.

(2) Except as described in paragraph (c)(5) of this section for flow-through process vessels and paragraph (c)(6) of this section for produced
water containers and any associated piping and appurtenances downstream from the container, construct all tank battery, separation, and treating facility installations, so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must safely confine drainage from undiked areas in a catchment basin or holding pond.

(3) Except as described in paragraph (c)(5) of this section for flow-through process vessels and paragraph (c)(6) of this section for produced water containers and any associated piping and appurtenances downstream from the container, periodically and upon a regular schedule visually inspect each container of oil for deterioration and maintenance needs, including the foundation and support of each container that is on or above the surface of the ground.

(4) Engineer or update new and old tank battery installations in accordance with good engineering practice to prevent discharges. You must provide at least one of the following:

   (i) Container capacity adequate to assure that a container will not overfill if a pumper/gauger is delayed in making regularly scheduled rounds.

   (ii) Overflow equalizing lines between containers so that a full container can overflow to an adjacent container.

   (iii) Vacuum protection adequate to prevent container collapse during a pipeline run or other transfer of oil from the container.

   (iv) High level sensors to generate and transmit an alarm signal to the computer where the facility is subject to a computer production control system.

(5) **Flow-through process vessels.** The owner or operator of a facility with flow-through process vessels may choose to implement the alternate requirements as described below in lieu of sized secondary containment required in paragraphs (c)(2) and (c)(3) of this section.

   (i) Periodically and on a regular schedule visually inspect and/or test flow-through process vessels and associated components (such as dump valves) for leaks, corrosion, or other conditions that could lead to a discharge as described in §112.1(b).

   (ii) Take corrective action or make repairs to flow-through process vessels and any associated components as indicated by regularly scheduled visual inspections, tests, or evidence of an oil discharge.

   (iii) Promptly remove or initiate actions to stabilize and remediate any accumulations of oil discharges associated with flow-through process vessels.

   (iv) If your facility discharges more than 1,000 U.S. gallons of oil in a single discharge as described in §112.1(b), or discharges more than 42 U.S. gallons of oil in each of two discharges as described in §112.1(b) within any twelve month period, from flow-through process vessels (excluding discharges that are the result of natural disasters, acts of war, or terrorism) then you must, within six months from the time the facility becomes subject to this paragraph, ensure that all flow-through process vessels subject to this subpart comply with §112.9(c)(2) and (c)(3).
(6) Produced water containers. For each produced water container, comply with §112.9(c)(1) and (c)(4); and §112.9(c)(2) and (c)(3), or comply with the provisions of the following paragraphs (c)(6)(i) through (v):

(i) Implement, on a regular schedule, a procedure for each produced water container that is designed to separate the free-phase oil that accumulates on the surface of the produced water. Include in the Plan a description of the procedures, frequency, amount of free-phase oil expected to be maintained inside the container, and a Professional Engineer certification in accordance with §112.3(d)(1)(vi). Maintain records of such events in accordance with §112.7(e). Records kept under usual and customary business practices will suffice for purposes of this paragraph. If this procedure is not implemented as described in the Plan or no records are maintained, then you must comply with §112.9(c)(2) and (c)(3).

(ii) On a regular schedule, visually inspect and/or test the produced water container and associated piping for leaks, corrosion, or other conditions that could lead to a discharge as described in §112.1(b) in accordance with good engineering practice.

(iii) Take corrective action or make repairs to the produced water container and any associated piping as indicated by regularly scheduled visual inspections, tests, or evidence of an oil discharge.

(iv) Promptly remove or initiate actions to stabilize and remediate any accumulations of oil discharges associated with the produced water container.

(v) If your facility discharges more than 1,000 U.S. gallons of oil in a single discharge as described in §112.1(b), or discharges more than 42 U.S. gallons of oil in each of two discharges as described in §112.1(b) within any twelve month period from a produced water container subject to this subpart (excluding discharges that are the result of natural disasters, acts of war, or terrorism) then you must, within six months from the time the facility becomes subject to this paragraph, ensure that all produced water containers subject to this subpart comply with §112.9(c)(2) and (c)(3).

(d) Facility transfer operations, oil production facility.

(1) Periodically and upon a regular schedule inspect all aboveground valves and piping associated with transfer operations for the general condition of flange joints, valve glands and bodies, drip pans, pipe supports, pumping well polish rod stuffing boxes, bleeder and gauge valves, and other such items.

(2) Inspect saltwater (oil field brine) disposal facilities often, particularly following a sudden change in atmospheric temperature, to detect possible system upsets capable of causing a discharge.

(3) For flowlines and intra-facility gathering lines that are not provided with secondary containment in accordance with §112.7(c), unless you have submitted a response plan under §112.20, provide in your Plan the following:

(i) An oil spill contingency plan following the provisions of part 109 of this chapter.

(ii) A written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil
discharged that might be harmful.

(4) Prepare and implement a written program of flowline/intra-facility gathering line maintenance. The maintenance program must address your procedures to:

(i) Ensure that flowlines and intra-facility gathering lines and associated valves and equipment are compatible with the type of production fluids, their potential corrosivity, volume, and pressure, and other conditions expected in the operational environment.

(ii) Visually inspect and/or test flowlines and intra-facility gathering lines and associated appurtenances on a periodic and regular schedule for leaks, oil discharges, corrosion, or other conditions that could lead to a discharge as described in §112.1(b). For flowlines and intra-facility gathering lines that are not provided with secondary containment in accordance with §112.7(c), the frequency and type of testing must allow for the implementation of a contingency plan as described under part 109 of this chapter.

(iii) Take corrective action or make repairs to any flowlines and intra-facility gathering lines and associated appurtenances as indicated by regularly scheduled visual inspections, tests, or evidence of a discharge.

(iv) Promptly remove or initiate actions to stabilize and remediate any accumulations of oil discharges associated with flowlines, intra-facility gathering lines, and associated appurtenances.


§112.10  Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil drilling and workover facilities

If you are the owner or operator of an onshore oil drilling and workover facility, you must:

(a) Meet the general requirements listed under §112.7, and also meet the specific discharge prevention and containment procedures listed under this section.

(b) Position or locate mobile drilling or workover equipment so as to prevent a discharge as described in §112.1(b).

(c) Provide catchment basins or diversion structures to intercept and contain discharges of fuel, crude oil, or oily drilling fluids.

(d) Install a blowout prevention (BOP) assembly and well control system before drilling below any casing string or during workover operations. The BOP assembly and well control system must be capable of controlling any well-head pressure that may be encountered while that BOP assembly and well control system are on the well.
§112.11 Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities

If you are the owner or operator of an offshore oil drilling, production, or workover facility, you must:

(a) Meet the general requirements listed under §112.7, and also meet the specific discharge prevention and containment procedures listed under this section.

(b) Use oil drainage collection equipment to prevent and control small oil discharges around pumps, glands, valves, flanges, expansion joints, hoses, drain lines, separators, treaters, tanks, and associated equipment. You must control and direct facility drains toward a central collection sump to prevent the facility from having a discharge as described in §112.1(b). Where drains and sumps are not practicable, you must remove oil contained in collection equipment as often as necessary to prevent overflow.

(c) For facilities employing a sump system, provide adequately sized sump and drains and make available a spare pump to remove liquid from the sump and assure that oil does not escape. You must employ a regularly scheduled preventive maintenance inspection and testing program to assure reliable operation of the liquid removal system and pump start-up device. Redundant automatic sump pumps and control devices may be required on some installations.

(d) At facilities with areas where separators and treaters are equipped with dump valves which predominantly fail in the closed position and where pollution risk is high, specially equip the facility to prevent the discharge of oil. You must prevent the discharge of oil by:

   (1) Extending the flare line to a diked area if the separator is near shore;

   (2) Equipping the separator with a high liquid level sensor that will automatically shut in wells producing to the separator; or

   (3) Installing parallel redundant dump valves.

(e) Equip atmospheric storage or surge containers with high liquid level sensing devices that activate an alarm or control the flow, or otherwise prevent discharges.

(f) Equip pressure containers with high and low pressure sensing devices that activate an alarm or control the flow.

(g) Equip containers with suitable corrosion protection.

(h) Prepare and maintain at the facility a written procedure within the Plan for inspecting and testing pollution prevention equipment and systems.

(i) Conduct testing and inspection of the pollution prevention equipment and systems at the facility on a scheduled periodic basis, commensurate with the complexity, conditions, and circumstances of the facility and any other appropriate regulations. You must use simulated discharges for testing and inspecting human and equipment pollution control and countermeasure systems.
(j) Describe in detailed records surface and subsurface well shut-in valves and devices in use at the facility for each well sufficiently to determine their method of activation or control, such as pressure differential, change in fluid or flow conditions, combination of pressure and flow, manual or remote control mechanisms.

(k) Install a BOP assembly and well control system during workover operations and before drilling below any casing string. The BOP assembly and well control system must be capable of controlling any well-head pressure that may be encountered while the BOP assembly and well control system are on the well.

(l) Equip all manifolds (headers) with check valves on individual flowlines.

(m) Equip the flowline with a high pressure sensing device and shut-in valve at the wellhead if the shut-in well pressure is greater than the working pressure of the flowline and manifold valves up to and including the header valves. Alternatively you may provide a pressure relief system for flowlines.

(n) Protect all piping appurtenant to the facility from corrosion, such as with protective coatings or cathodic protection.

(o) Adequately protect sub-marine piping appurtenant to the facility against environmental stresses and other activities such as fishing operations.

(p) Maintain sub-marine piping appurtenant to the facility in good operating condition at all times. You must periodically and according to a schedule inspect or test such piping for failures. You must document and keep a record of such inspections or tests at the facility.

**Subpart C - Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and for Vegetable Oils, Including Oils from Seeds, Nuts, Fruits, and Kernels.**

Source: 67 FR 57149, July 17, 2002, unless otherwise noted.

§112.12 Spill Prevention, Control, and Countermeasure Plan requirements

If you are the owner or operator of an onshore facility, you must:

(a) Meet the general requirements for the Plan listed under §112.7, and the specific discharge prevention and containment procedures listed in this section.
(b) Facility drainage.

(1) Restrain drainage from diked storage areas by valves to prevent a discharge into the drainage system or facility effluent treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged.

(2) Use valves of manual, open-and-closed design, for the drainage of diked areas. You may not use flapper-type drain valves to drain diked areas. If your facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, you must inspect and may drain uncontaminated retained stormwater, subject to the requirements of paragraphs (c)(3)(ii), (iii), and (iv) of this section.

(3) Design facility drainage systems from undiked areas with a potential for a discharge (such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.

(4) If facility drainage is not engineered as in paragraph (b)(3) of this section, equip the final discharge of all ditches inside the facility with a diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility.

(5) Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two “lift” pumps and permanently install at least one of the pumps. Whatever techniques you use, you must engineer facility drainage systems to prevent a discharge as described in §112.1(b) in case there is an equipment failure or human error at the facility.

(c) Bulk storage containers.

(1) Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature.

(2) Construct all bulk storage tank installations (except mobile refuelers and other non-transportation-related tank trucks) so that you provide a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must ensure that diked areas are sufficiently impervious to contain discharged oil. Dikes, containment curbs, and pits are commonly employed for this purpose. You may also use an alternative system consisting of a drainage trench enclosure that must be arranged so that any discharge will terminate and be safely confined in a facility catchment basin or holding pond.

(3) Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open watercourse, lake, or pond, bypassing the facility treatment system unless you:

   (i) Normally keep the bypass valve sealed closed.

   (ii) Inspect the retained rainwater to ensure that its presence will not cause a discharge as described in §112.1(b).
(iii) Open the bypass valve and reseal it following drainage under responsible supervision; and

(iv) Keep adequate records of such events, for example, any records required under permits issued in accordance with §§122.41(j)(2) and 122.41(m)(3) of this chapter.

(4) Protect any completely buried metallic storage tank installed on or after January 10, 1974 from corrosion by coatings or cathodic protection compatible with local soil conditions. You must regularly leak test such completely buried metallic storage tanks.

(5) Not use partially buried or bunkered metallic tanks for the storage of oil, unless you protect the buried section of the tank from corrosion. You must protect partially buried and bunkered tanks from corrosion by coatings or cathodic protection compatible with local soil conditions.

(6) **Bulk storage container inspections.**

(i) Except for containers that meet the criteria provided in paragraph (c)(6)(ii) of this section, test or inspect each aboveground container for integrity on a regular schedule and whenever you make material repairs. You must determine, in accordance with industry standards, the appropriate qualifications for personnel performing tests and inspections, the frequency and type of testing and inspections, which take into account container size, configuration, and design (such as containers that are: shop-built, field-erected, skid-mounted, elevated, equipped with a liner, double-walled, or partially buried). Examples of these integrity tests include, but are not limited to: Visual inspection, hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other systems of non-destructive testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices satisfy the recordkeeping requirements of this paragraph.

(ii) For bulk storage containers that are subject to 21 CFR part 110, are elevated, constructed of austenitic stainless steel, have no external insulation, and are shop-fabricated, conduct formal visual inspection on a regular schedule. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. You must determine and document in the Plan the appropriate qualifications for personnel performing tests and inspections. Records of inspections and tests kept under usual and customary business practices satisfy the recordkeeping requirements of this paragraph (c)(6).

(7) Control leakage through defective internal heating coils by monitoring the steam return and exhaust lines for contamination from internal heating coils that discharge into an open watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system.

(8) Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:

(i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.

(ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.
(iii) Direct audible or code signal communication between the container gauger and the pumping station.

(iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges. If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.

(v) You must regularly test liquid level sensing devices to ensure proper operation.

(9) Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in §112.1(b).

(10) Promptly correct visible discharges which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, rivets, and bolts. You must promptly remove any accumulations of oil in diked areas.

(11) Position or locate mobile or portable oil storage containers to prevent a discharge as described in §112.1(b). Except for mobile refuelers and other non-transportation-related tank trucks, you must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

(d) Facility transfer operations, pumping, and facility process.

(1) Provide buried piping that is installed or replaced on or after August 16, 2002, with a protective wrapping and coating. You must also cathodically protect such buried piping installations or otherwise satisfy the corrosion protection standards for piping in part 280 of this chapter or a State program approved under part 281 of this chapter. If a section of buried line is exposed for any reason, you must carefully inspect it for deterioration. If you find corrosion damage, you must undertake additional examination and corrective action as indicated by the magnitude of the damage.

(2) Cap or blank-flange the terminal connection at the transfer point and mark it as to origin when piping is not in service or is in standby service for an extended time.

(3) Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.

(4) Regularly inspect all aboveground valves, piping, and appurtenances. During the inspection you must assess the general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. You must also conduct integrity and leak testing of buried piping at the time of installation, modification, construction, relocation, or replacement.

(5) Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.

Subpart D - Response Requirements

§112.20 Facility response plans

(a) The owner or operator of any non-transportation-related onshore facility that, because of its location, could reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines shall prepare and submit a facility response plan to the Regional Administrator, according to the following provisions:

(1) For the owner or operator of a facility in operation on or before February 18, 1993 who is required to prepare and submit a response plan under 33 U.S.C. 1321(j)(5), the Oil Pollution Act of 1990 (Pub. L. 101-380, 33 U.S.C. 2701 et seq.) requires the submission of a response plan that satisfies the requirements of 33 U.S.C. 1321(j)(5) no later than February 18, 1993.

   (i) The owner or operator of an existing facility that was in operation on or before February 18, 1993 who submitted a response plan by February 18, 1993 shall revise the response plan to satisfy the requirements of this section and resubmit the response plan or updated portions of the response plan to the Regional Administrator by February 18, 1995.

   (ii) The owner or operator of an existing facility in operation on or before February 18, 1993 who failed to submit a response plan by February 18, 1993 shall prepare and submit a response plan that satisfies the requirements of this section to the Regional Administrator before August 30, 1994.

(2) The owner or operator of a facility in operation on or after August 30, 1994 that satisfies the criteria in paragraph (f)(1) of this section or that is notified by the Regional Administrator pursuant to paragraph (b) of this section shall prepare and submit a facility response plan that satisfies the requirements of this section to the Regional Administrator.

   (i) For a facility that commenced operations after February 18, 1993 but prior to August 30, 1994, and is required to prepare and submit a response plan based on the criteria in paragraph (f)(1) of this section, the owner or operator shall submit the response plan or updated portions of the response plan, along with a completed version of the response plan cover sheet contained in appendix F to this part, to the Regional Administrator prior to August 30, 1994.

   (ii) For a newly constructed facility that commences operation after August 30, 1994, and is required to prepare and submit a response plan based on the criteria in paragraph (f)(1) of this section, the owner or operator shall submit the response plan, along with a completed
version of the response plan cover sheet contained in appendix F to this part, to the Regional Administrator prior to the start of operations (adjustments to the response plan to reflect changes that occur at the facility during the start-up phase of operations must be submitted to the Regional Administrator after an operational trial period of 60 days).

(iii) For a facility required to prepare and submit a response plan after August 30, 1994, as a result of a planned change in design, construction, operation, or maintenance that renders the facility subject to the criteria in paragraph (f)(1) of this section, the owner or operator shall submit the response plan, along with a completed version of the response plan cover sheet contained in appendix F to this part, to the Regional Administrator before the portion of the facility undergoing change commences operations (adjustments to the response plan to reflect changes that occur at the facility during the start-up phase of operations must be submitted to the Regional Administrator after an operational trial period of 60 days).

(iv) For a facility required to prepare and submit a response plan after August 30, 1994, as a result of an unplanned event or change in facility characteristics that renders the facility subject to the criteria in paragraph (f)(1) of this section, the owner or operator shall submit the response plan, along with a completed version of the response plan cover sheet contained in appendix F to this part, to the Regional Administrator within six months of the unplanned event or change.

(3) In the event the owner or operator of a facility that is required to prepare and submit a response plan uses an alternative formula that is comparable to one contained in appendix C to this part to evaluate the criterion in paragraph (f)(1)(ii)(B) or (f)(1)(ii)(C) of this section, the owner or operator shall attach documentation to the response plan cover sheet contained in appendix F to this part that demonstrates the reliability and analytical soundness of the alternative formula.

(4) Preparation and submission of response plans - Animal fat and vegetable oil facilities. The owner or operator of any non-transportation-related facility that handles, stores, or transports animal fats and vegetable oils must prepare and submit a facility response plan as follows:

(i) Facilities with approved plans. The owner or operator of a facility with a facility response plan that has been approved under paragraph (c) of this section by July 31, 2000 need not prepare or submit a revised plan except as otherwise required by paragraphs (b), (c), or (d) of this section.

(ii) Facilities with plans that have been submitted to the Regional Administrator. Except for facilities with approved plans as provided in paragraph (a)(4)(i) of this section, the owner or operator of a facility that has submitted a response plan to the Regional Administrator prior to July 31, 2000 must review the plan to determine if it meets or exceeds the applicable provisions of this part. An owner or operator need not prepare or submit a new plan if the existing plan meets or exceeds the applicable provisions of this part. If the plan does not meet or exceed the applicable provisions of this part, the owner or operator must prepare and submit a new plan by September 28, 2000.

(iii) Newly regulated facilities. The owner or operator of a newly constructed facility that commences operation after July 31, 2000 must prepare and submit a plan to the Regional Administrator in accordance with paragraph (a)(2)(ii) of this section. The plan must meet or exceed the applicable provisions of this part. The owner or operator of an existing facility that must prepare and submit a plan after July 31, 2000 as a result of a planned or unplanned change in facility characteristics that causes the facility to become regulated under paragraph (f)(1) of this section, must prepare and submit a plan to the Regional Administrator in accordance with paragraph (a)(2)(iii) or
(iv) of this section, as appropriate. The plan must meet or exceed the applicable provisions of this part.

(iv) **Facilities amending existing plans.** The owner or operator of a facility submitting an amended plan in accordance with paragraph (d) of this section after July 31, 2000, including plans that had been previously approved, must also review the plan to determine if it meets or exceeds the applicable provisions of this part. If the plan does not meet or exceed the applicable provisions of this part, the owner or operator must revise and resubmit revised portions of an amended plan to the Regional Administrator in accordance with paragraph (d) of this section, as appropriate. The plan must meet or exceed the applicable provisions of this part.

(b)

(1) The Regional Administrator may at any time require the owner or operator of any non-transportation-related onshore facility to prepare and submit a facility response plan under this section after considering the factors in paragraph (f)(2) of this section. If such a determination is made, the Regional Administrator shall notify the facility owner or operator in writing and shall provide a basis for the determination. If the Regional Administrator notifies the owner or operator in writing of the requirement to prepare and submit a response plan under this section, the owner or operator of the facility shall submit the response plan to the Regional Administrator within six months of receipt of such written notification.

(2) The Regional Administrator shall review plans submitted by such facilities to determine whether the facility could, because of its location, reasonably be expected to cause significant and substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines.

c The Regional Administrator shall determine whether a facility could, because of its location, reasonably be expected to cause significant and substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines, based on the factors in paragraph (f) (3) of this section. If such a determination is made, the Regional Administrator shall notify the owner or operator of the facility in writing and:

(1) Promptly review the facility response plan;

(2) Require amendments to any response plan that does not meet the requirements of this section;

(3) Approve any response plan that meets the requirements of this section; and

(4) Review each response plan periodically thereafter on a schedule established by the Regional Administrator provided that the period between plan reviews does not exceed five years.

(d)

(1) The owner or operator of a facility for which a response plan is required under this part shall revise and resubmit revised portions of the response plan within 60 days of each facility change that materially may affect the response to a worst case discharge, including:

   (i) A change in the facility's configuration that materially alters the information included in the response plan;
(ii) A change in the type of oil handled, stored, or transferred that materially alters the required response resources;

(iii) A material change in capabilities of the oil spill removal organization(s) that provide equipment and personnel to respond to discharges of oil described in paragraph (h)(5) of this section;

(iv) A material change in the facility's spill prevention and response equipment or emergency response procedures; and

(v) Any other changes that materially affect the implementation of the response plan.

(2) Except as provided in paragraph (d)(1) of this section, amendments to personnel and telephone number lists included in the response plan and a change in the oil spill removal organization(s) that does not result in a material change in support capabilities do not require approval by the Regional Administrator. Facility owners or operators shall provide a copy of such changes to the Regional Administrator as the revisions occur.

(3) The owner or operator of a facility that submits changes to a response plan as provided in paragraph (d)(1) or (d)(2) of this section shall provide the EPA-issued facility identification number (where one has been assigned) with the changes.

(4) The Regional Administrator shall review for approval changes to a response plan submitted pursuant to paragraph (d)(1) of this section for a facility determined pursuant to paragraph (f)(3) of this section to have the potential to cause significant and substantial harm to the environment.

(e) If the owner or operator of a facility determines pursuant to paragraph (a)(2) of this section that the facility could not, because of its location, reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines, the owner or operator shall complete and maintain at the facility the certification form contained in appendix C to this part and, in the event an alternative formula that is comparable to one contained in appendix C to this part is used to evaluate the criterion in paragraph (f)(1)(ii)(B) or (f)(1)(ii)(C) of this section, the owner or operator shall attach documentation to the certification form that demonstrates the reliability and analytical soundness of the comparable formula and shall notify the Regional Administrator in writing that an alternative formula was used.

(f)

(1) A facility could, because of its location, reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines pursuant to paragraph (a)(2) of this section, if it meets any of the following criteria applied in accordance with the flowchart contained in attachment C-I to appendix C to this part:

(i) The facility transfers oil over water to or from vessels and has a total oil storage capacity greater than or equal to 42,000 gallons; or

(ii) The facility's total oil storage capacity is greater than or equal to 1 million gallons, and one of the following is true:

(A) The facility does not have secondary containment for each aboveground storage area sufficiently large to contain the capacity of the largest aboveground oil storage tank within each storage area plus sufficient freeboard to allow for precipitation;
(B) The facility is located at a distance (as calculated using the appropriate formula in appendix C to this part or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments. For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III of the “Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments” (see Appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan prepared pursuant to section 311(j)(4) of the Clean Water Act;

(C) The facility is located at a distance (as calculated using the appropriate formula in appendix C to this part or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake; or

(D) The facility has had a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years.

(2) To determine whether a facility could, because of its location, reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines pursuant to paragraph (b) of this section, the Regional Administrator shall consider the following:

(A) Type of transfer operation;

(B) Oil storage capacity;

(C) Lack of secondary containment;

(D) Proximity to fish and wildlife and sensitive environments and other areas determined by the Regional Administrator to possess ecological value;

(E) Proximity to drinking water intakes;

(F) Spill history; and

(G) Other site-specific characteristics and environmental factors that the Regional Administrator determines to be relevant to protecting the environment from harm by discharges of oil into or on navigable waters or adjoining shorelines.

(ii) Any person, including a member of the public or any representative from a Federal, State, or local agency who believes that a facility subject to this section could, because of its location, reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines may petition the Regional Administrator to determine whether the facility meets the criteria in paragraph (f)(2)(i) of this section. Such petition shall include a discussion of how the factors in paragraph (f)(2)(i) of this section apply to the facility in question. The RA shall consider such petitions and respond in an appropriate amount of time.

(3) To determine whether a facility could, because of its location, reasonably be expected to cause significant and substantial harm to the
environment by discharging oil into or on the navigable waters or adjoining shorelines, the Regional Administrator may consider the factors in paragraph (f)(2) of this section as well as the following:

(i) Frequency of past discharges;

(ii) Proximity to navigable waters;

(iii) Age of oil storage tanks; and

(iv) Other facility-specific and Region-specific information, including local impacts on public health.

(g)

(1) All facility response plans shall be consistent with the requirements of the National Oil and Hazardous Substance Pollution Contingency Plan (40 CFR part 300) and applicable Area Contingency Plans prepared pursuant to section 311(j)(4) of the Clean Water Act. The facility response plan should be coordinated with the local emergency response plan developed by the local emergency planning committee under section 303 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 11001 et seq.). Upon request, the owner or operator should provide a copy of the facility response plan to the local emergency planning committee or State emergency response commission.

(2) The owner or operator shall review relevant portions of the National Oil and Hazardous Substances Pollution Contingency Plan and applicable Area Contingency Plan annually and, if necessary, revise the facility response plan to ensure consistency with these plans.

(3) The owner or operator shall review and update the facility response plan periodically to reflect changes at the facility.

(h) A response plan shall follow the format of the model facility-specific response plan included in appendix F to this part, unless you have prepared an equivalent response plan acceptable to the Regional Administrator to meet State or other Federal requirements. A response plan that does not follow the specified format in appendix F to this part shall have an emergency response action plan as specified in paragraphs (h)(1) of this section and be supplemented with a cross-reference section to identify the location of the elements listed in paragraphs (h)(2) through (h)(10) of this section. To meet the requirements of this part, a response plan shall address the following elements, as further described in appendix F to this part:

(1) Emergency response action plan. The response plan shall include an emergency response action plan in the format specified in paragraphs (h)(1)(i) through (viii) of this section that is maintained in the front of the response plan, or as a separate document accompanying the response plan, and that includes the following information:

(i) The identity and telephone number of a qualified individual having full authority, including contracting authority, to implement removal actions;

(ii) The identity of individuals or organizations to be contacted in the event of a discharge so that immediate communications between the qualified individual identified in paragraph (h)(1) of this section and the appropriate Federal officials and the persons providing
response personnel and equipment can be ensured;

(iii) A description of information to pass to response personnel in the event of a reportable discharge;

(iv) A description of the facility's response equipment and its location;

(v) A description of response personnel capabilities, including the duties of persons at the facility during a response action and their response times and qualifications;

(vi) Plans for evacuation of the facility and a reference to community evacuation plans, as appropriate;

(vii) A description of immediate measures to secure the source of the discharge, and to provide adequate containment and drainage of discharged oil; and

(viii) A diagram of the facility.

(2) Facility information. The response plan shall identify and discuss the location and type of the facility, the identity and tenure of the present owner and operator, and the identity of the qualified individual identified in paragraph (h)(1) of this section.

(3) Information about emergency response. The response plan shall include:

(i) The identity of private personnel and equipment necessary to remove to the maximum extent practicable a worst case discharge and other discharges of oil described in paragraph (h)(5) of this section, and to mitigate or prevent a substantial threat of a worst case discharge (To identify response resources to meet the facility response plan requirements of this section, owners or operators shall follow Appendix E to this part or, where not appropriate, shall clearly demonstrate in the response plan why use of Appendix E of this part is not appropriate at the facility and make comparable arrangements for response resources);

(ii) Evidence of contracts or other approved means for ensuring the availability of such personnel and equipment;

(iii) The identity and the telephone number of individuals or organizations to be contacted in the event of a discharge so that immediate communications between the qualified individual identified in paragraph (h)(1) of this section and the appropriate Federal official and the persons providing response personnel and equipment can be ensured;

(iv) A description of information to pass to response personnel in the event of a reportable discharge;

(v) A description of response personnel capabilities, including the duties of persons at the facility during a response action and their response times and qualifications;

(vi) A description of the facility's response equipment, the location of the equipment, and equipment testing;
(vii) Plans for evacuation of the facility and a reference to community evacuation plans, as appropriate;

(viii) A diagram of evacuation routes; and

(ix) A description of the duties of the qualified individual identified in paragraph (h)(1) of this section, that include:

(A) Activate internal alarms and hazard communication systems to notify all facility personnel;

(B) Notify all response personnel, as needed;

(C) Identify the character, exact source, amount, and extent of the release, as well as the other items needed for notification;

(D) Notify and provide necessary information to the appropriate Federal, State, and local authorities with designated response roles, including the National Response Center, State Emergency Response Commission, and Local Emergency Planning Committee;

(E) Assess the interaction of the discharged substance with water and/or other substances stored at the facility and notify response personnel at the scene of that assessment;

(F) Assess the possible hazards to human health and the environment due to the release. This assessment must consider both the direct and indirect effects of the release (i.e., the effects of any toxic, irritating, or asphyxiating gases that may be generated, or the effects of any hazardous surface water runoffs from water or chemical agents used to control fire and heat-induced explosion);

(G) Assess and implement prompt removal actions to contain and remove the substance released;

(H) Coordinate rescue and response actions as previously arranged with all response personnel;

(I) Use authority to immediately access company funding to initiate cleanup activities; and

(J) Direct cleanup activities until properly relieved of this responsibility.

(4) Hazard evaluation. The response plan shall discuss the facility's known or reasonably identifiable history of discharges reportable under 40 CFR part 110 for the entire life of the facility and shall identify areas within the facility where discharges could occur and what the potential effects of the discharges would be on the affected environment. To assess the range of areas potentially affected, owners or operators shall, where appropriate, consider the distance calculated in paragraph (f)(1)(ii) of this section to determine whether a facility could, because of its location, reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines.

(5) Response planning levels. The response plan shall include discussion of specific planning scenarios for:
(i) A worst case discharge, as calculated using the appropriate worksheet in appendix D to this part. In cases where the Regional Administrator determines that the worst case discharge volume calculated by the facility is not appropriate, the Regional Administrator may specify the worst case discharge amount to be used for response planning at the facility. For complexes, the worst case planning quantity shall be the larger of the amounts calculated for each component of the facility;

(ii) A discharge of 2,100 gallons or less, provided that this amount is less than the worst case discharge amount. For complexes, this planning quantity shall be the larger of the amounts calculated for each component of the facility; and

(iii) A discharge greater than 2,100 gallons and less than or equal to 36,000 gallons or 10 percent of the capacity of the largest tank at the facility, whichever is less, provided that this amount is less than the worst case discharge amount. For complexes, this planning quantity shall be the larger of the amounts calculated for each component of the facility.

(6) **Discharge detection systems.** The response plan shall describe the procedures and equipment used to detect discharges.

(7) **Plan implementation.** The response plan shall describe:

   (i) Response actions to be carried out by facility personnel or contracted personnel under the response plan to ensure the safety of the facility and to mitigate or prevent discharges described in paragraph (h)(5) of this section or the substantial threat of such discharges;

   (ii) A description of the equipment to be used for each scenario;

   (iii) Plans to dispose of contaminated cleanup materials; and

   (iv) Measures to provide adequate containment and drainage of discharged oil.

(8) **Self-inspection, drills/exercises, and response training.** The response plan shall include:

   (i) A checklist and record of inspections for tanks, secondary containment, and response equipment;

   (ii) A description of the drill/exercise program to be carried out under the response plan as described in §112.21;

   (iii) A description of the training program to be carried out under the response plan as described in §112.21; and

   (iv) Logs of discharge prevention meetings, training sessions, and drills/exercises. These logs may be maintained as an annex to the response plan.

(9) **Diagrams.** The response plan shall include site plan and drainage plan diagrams.

(10) **Security systems.** The response plan shall include a description of facility security systems.
(11) **Response plan cover sheet.** The response plan shall include a completed response plan cover sheet provided in section 2.0 of appendix F to this part.

(i)

(1) In the event the owner or operator of a facility does not agree with the Regional Administrator's determination that the facility could, because of its location, reasonably be expected to cause substantial harm or significant and substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines, or that amendments to the facility response plan are necessary prior to approval, such as changes to the worst case discharge planning volume, the owner or operator may submit a request for reconsideration to the Regional Administrator and provide additional information and data in writing to support the request. The request and accompanying information must be submitted to the Regional Administrator within 60 days of receipt of notice of the Regional Administrator's original decision. The Regional Administrator shall consider the request and render a decision as rapidly as practicable.

(2) In the event the owner or operator of a facility believes a change in the facility's classification status is warranted because of an unplanned event or change in the facility's characteristics (i.e., substantial harm or significant and substantial harm), the owner or operator may submit a request for reconsideration to the Regional Administrator and provide additional information and data in writing to support the request. The Regional Administrator shall consider the request and render a decision as rapidly as practicable.

(3) After a request for reconsideration under paragraph (i)(1) or (i)(2) of this section has been denied by the Regional Administrator, an owner or operator may appeal a determination made by the Regional Administrator. The appeal shall be made to the EPA Administrator and shall be made in writing within 60 days of receipt of the decision from the Regional Administrator that the request for reconsideration was denied. A complete copy of the appeal must be sent to the Regional Administrator at the time the appeal is made. The appeal shall contain a clear and concise statement of the issues and points of fact in the case. It also may contain additional information from the owner or operator, or from any other person. The EPA Administrator may request additional information from the owner or operator, or from any other person. The EPA Administrator shall render a decision as rapidly as practicable and shall notify the owner or operator of the decision.


### §112.21 Facility response training and drills/exercises

(a) The owner or operator of any facility required to prepare a facility response plan under §112.20 shall develop and implement a facility response training program and a drill/exercise program that satisfy the requirements of this section. The owner or operator shall describe the programs in the response plan as provided in §112.20(h)(8).

(b) The facility owner or operator shall develop a facility response training program to train those personnel involved in oil spill response activities. It is recommended that the training program be based on the USCG's Training Elements for Oil Spill Response, as applicable to facility operations. An alternative program can also be acceptable subject to approval by the Regional Administrator.
(1) The owner or operator shall be responsible for the proper instruction of facility personnel in the procedures to respond to discharges of oil and in applicable oil spill response laws, rules, and regulations.

(2) Training shall be functional in nature according to job tasks for both supervisory and non-supervisory operational personnel.

(3) Trainers shall develop specific lesson plans on subject areas relevant to facility personnel involved in oil spill response and cleanup.

c) The facility owner or operator shall develop a program of facility response drills/exercises, including evaluation procedures. A program that follows the National Preparedness for Response Exercise Program (PREP) (see appendix E to this part, section 13, for availability) will be deemed satisfactory for purposes of this section. An alternative program can also be acceptable subject to approval by the Regional Administrator.

[59 FR 34101, July 1, 1994, as amended at 65 FR 40798, June 30, 2000]

Appendix A - Memorandum of Understanding Between the Secretary of Transportation and the Administrator of the Environmental Protection Agency

section ii-definitions

The Environmental Protection Agency and the Department of Transportation agree that for the purposes of Executive Order 11548, the term:

(1) Non-transportation-related onshore and offshore facilities means:

(A) Fixed onshore and offshore oil well drilling facilities including all equipment and appurtenances related thereto used in drilling operations for exploratory or development wells, but excluding any terminal facility, unit or process integrally associated with the handling or transferring of oil in bulk to or from a vessel.

(B) Mobile onshore and offshore oil well drilling platforms, barges, trucks, or other mobile facilities including all equipment and appurtenances related thereto when such mobile facilities are fixed in position for the purpose of drilling operations for exploratory or development wells, but excluding any terminal facility, unit or process integrally associated with the handling or transferring of oil in bulk to or from a vessel.

(C) Fixed onshore and offshore oil production structures, platforms, derricks, and rigs including all equipment and appurtenances related thereto, as well as completed wells and the wellhead separators, oil separators, and storage facilities used in the production of oil, but excluding any terminal facility, unit or process integrally associated with the handling or transferring of oil in bulk to or from a vessel.

(D) Mobile onshore and offshore oil production facilities including all equipment and appurtenances related thereto as well as completed wells and
wellhead equipment, piping from wellheads to oil separators, oil separators, and storage facilities used in the production of oil when such mobile facilities are fixed in position for the purpose of oil production operations, but excluding any terminal facility, unit or process integrally associated with the handling or transferring of oil in bulk to or from a vessel.

(E) Oil refining facilities including all equipment and appurtenances related thereto as well as in-plant processing units, storage units, piping, drainage systems and waste treatment units used in the refining of oil, but excluding any terminal facility, unit or process integrally associated with the handling or transferring of oil in bulk to or from a vessel.

(F) Oil storage facilities including all equipment and appurtenances related thereto as well as fixed bulk plant storage, terminal oil storage facilities, consumer storage, pumps and drainage systems used in the storage of oil, but excluding inline or breakout storage tanks needed for the continuous operation of a pipeline system and any terminal facility, unit or process integrally associated with the handling or transferring of oil in bulk to or from a vessel.

(G) Industrial, commercial, agricultural or public facilities which use and store oil, but excluding any terminal facility, unit or process integrally associated with the handling or transferring of oil in bulk to or from a vessel.

(H) Waste treatment facilities including in-plant pipelines, effluent discharge lines, and storage tanks, but excluding waste treatment facilities located on vessels and terminal storage tanks and appurtenances for the reception of oily ballast water or tank washings from vessels and associated systems used for off-loading vessels.

(I) Loading racks, transfer hoses, loading arms and other equipment which are appurtenant to a nontransportation-related facility or terminal facility and which are used to transfer oil in bulk to or from highway vehicles or railroad cars.

(J) Highway vehicles and railroad cars which are used for the transport of oil exclusively within the confines of a nontransportation-related facility and which are not intended to transport oil in interstate or intrastate commerce.

(K) Pipeline systems which are used for the transport of oil exclusively within the confines of a nontransportation-related facility and which are not intended to transport oil in interstate or intrastate commerce, but excluding pipeline systems used to transfer oil in bulk to or from a vessel.

(2) Transportation-related onshore and offshore facilities means:

(A) Onshore and offshore terminal facilities including transfer hoses, loading arms and other equipment and appurtenances used for the purpose of handling or transferring oil in bulk to or from a vessel as well as storage tanks and appurtenances for the reception of oily ballast water or tank washings from vessels, but excluding terminal waste treatment facilities and terminal oil storage facilities.

(B) Transfer hoses, loading arms and other equipment appurtenant to a non-transportation-related facility which is used to transfer oil in bulk to or from a vessel.

(C) Interstate and intrastate onshore and offshore pipeline systems including pumps and appurtenances related thereto as well as in-line or breakout
storage tanks needed for the continuous operation of a pipeline system, and pipelines from onshore and offshore oil production facilities, but excluding onshore and offshore piping from wellheads to oil separators and pipelines which are used for the transport of oil exclusively within the confines of a nontransportation-related facility or terminal facility and which are not intended to transport oil in interstate or intrastate commerce or to transfer oil in bulk to or from a vessel.

(D) Highway vehicles and railroad cars which are used for the transport of oil in interstate or intrastate commerce and the equipment and appurtenances related thereto, and equipment used for the fueling of locomotive units, as well as the rights-of-way on which they operate. Excluded are highway vehicles and railroad cars and motive power used exclusively within the confines of a nontransportation-related facility or terminal facility and which are not intended for use in interstate or intrastate commerce.

**Appendix B - Memorandum of Understanding Among the Secretary of the Interior, Secretary of Transportation, and Administrator of the Environmental Protection Agency**

**Purpose**

This Memorandum of Understanding (MOU) establishes the jurisdictional responsibilities for offshore facilities, including pipelines, pursuant to section 311(j)(1)(c), (j)(5), and (j)(6)(A) of the Clean Water Act (CWA), as amended by the Oil Pollution Act of 1990 (Public Law 101-380). The Secretary of the Department of the Interior (DOI), Secretary of the Department of Transportation (DOT), and Administrator of the Environmental Protection Agency (EPA) agree to the division of responsibilities set forth below for spill prevention and control, response planning, and equipment inspection activities pursuant to those provisions.

**Background**

Executive Order (E.O.) 12777 (56 FR 54757) delegates to DOI, DOT, and EPA various responsibilities identified in section 311(j) of the CWA. Sections 2(b)(3), 2(d)(3), and 2(e)(3) of E.O. 12777 assigned to DOI spill prevention and control, contingency planning, and equipment inspection activities associated with offshore facilities. Section 311(a)(11) defines the term “offshore facility” to include facilities of any kind located in, on, or under navigable waters of the United States. By using this definition, the traditional DOI role of regulating facilities on the Outer Continental Shelf is expanded by E.O. 12777 to include inland lakes, rivers, streams, and any other inland waters.

**Responsibilities**

Pursuant to section 2(i) of E.O. 12777, DOI redelegates, and EPA and DOT agree to assume, the functions vested in DOI by sections 2(b)(3), 2(d)(3), and 2(e)(3) of E.O. 12777 as set forth below. For purposes of this MOU, the term “coast line” shall be defined as in the Submerged Lands Act (43 U.S.C. 1301(c)) to mean “the line of ordinary low water along that portion of the coast which is in direct contact with the open sea and the line marking the seaward limit of inland waters.”
1. To EPA, DOI redelegates responsibility for non-transportation-related offshore facilities located landward of the coast line.

2. To DOT, DOI redelegates responsibility for transportation-related facilities, including pipelines, located landward of the coast line. The DOT retains jurisdiction for deepwater ports and their associated seaward pipelines, as delegated by E.O. 12777.

3. The DOI retains jurisdiction over facilities, including pipelines, located seaward of the coast line, except for deepwater ports and associated seaward pipelines delegated by E.O. 12777 to DOT.

Effective Date

This MOU is effective on the date of the final execution by the indicated signatories.

Limitations

1. The DOI, DOT, and EPA may agree in writing to exceptions to this MOU on a facility-specific basis. Affected parties will receive notification of the exceptions.

2. Nothing in this MOU is intended to replace, supersede, or modify any existing agreements between or among DOI, DOT, or EPA.

Modification and Termination

Any party to this agreement may propose modifications by submitting them in writing to the heads of the other agency/department. No modification may be adopted except with the consent of all parties. All parties shall indicate their consent to or disagreement with any proposed modification within 60 days of receipt. Upon the request of any party, representatives of all parties shall meet for the purpose of considering exceptions or modifications to this agreement. This MOU may be terminated only with the mutual consent of all parties.

Dated: November 8, 1993.
Bruce Babbitt,

Secretary of the Interior.

Federico Peña,

Secretary of Transportation.

Appendix C - Substantial Harm Criteria

1.0 Introduction

The flowchart provided in Attachment C-I to this appendix shows the decision tree with the criteria to identify whether a facility “could reasonably be expected to cause substantial harm to the environment by discharging into or on the navigable waters or adjoining shorelines.” In addition, the Regional Administrator has the discretion to identify facilities that must prepare and submit facility-specific response plans to EPA.

1.1 Definitions

1.1.1 Great Lakes means Lakes Superior, Michigan, Huron, Erie, and Ontario, their connecting and tributary waters, the Saint Lawrence River as far as Saint Regis, and adjacent port areas.

1.1.2 Higher Volume Port Areas include

(1) Boston, MA;

(2) New York, NY;

(3) Delaware Bay and River to Philadelphia, PA;

(4) St. Croix, VI;

(5) Pascagoula, MS;

(6) Mississippi River from Southwest Pass, LA to Baton Rouge, LA;

(7) Louisiana Offshore Oil Port (LOOP), LA;
(8) Lake Charles, LA;
(9) Sabine-Neches River, TX;
(10) Galveston Bay and Houston Ship Channel, TX;
(11) Corpus Christi, TX;
(12) Los Angeles/Long Beach Harbor, CA;
(13) San Francisco Bay, San Pablo Bay, Carquinez Strait, and Suisun Bay to Antioch, CA;
(14) Straits of Juan de Fuca from Port Angeles, WA to and including Puget Sound, WA;
(15) Prince William Sound, AK; and
(16) Others as specified by the Regional Administrator for any EPA Region.

1.1.3 *Inland Area* means the area shoreward of the boundary lines defined in 46 CFR part 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area shoreward of the lines of demarcation (COLREG lines as defined in 33 CFR 80.740-80.850). The inland area does not include the Great Lakes.

1.1.4 *Rivers and Canals* means a body of water confined within the inland area, including the Intracoastal Waterways and other waterways artificially created for navigating that have project depths of 12 feet or less.

2.0 Description of Screening Criteria for the Substantial Harm Flowchart

A facility that has the potential to cause substantial harm to the environment in the event of a discharge must prepare and submit a facility-specific response plan to EPA in accordance with Appendix F to this part. A description of the screening criteria for the substantial harm flowchart is provided below:

2.1 *Non-Transportation-Related Facilities With a Total Oil Storage Capacity Greater Than or Equal to 42,000 Gallons Where Operations Include Over-Water Transfers of Oil.* A non-transportation-related facility with a total oil storage capacity greater than or equal to 42,000 gallons that transfers oil over water to or from vessels must submit a response plan to EPA. Daily oil transfer operations at these types of facilities occur between barges and vessels and onshore bulk storage tanks over open water. These facilities are located adjacent to navigable water.

2.2 *Lack of Adequate Secondary Containment at Facilities With a Total Oil Storage Capacity Greater Than or Equal to 1 Million Gallons.* Any facility with a total oil storage capacity greater than or equal to 1 million gallons without secondary containment sufficiently large to contain the capacity of the largest aboveground oil storage tank within each area plus sufficient freeboard to allow for precipitation must submit a response plan to EPA. Secondary containment structures that meet the standard of good engineering practice for the purposes of this part include berms, dikes,
retaining walls, curbing, culverts, gutters, or other drainage systems.

2.3 **Proximity to Fish and Wildlife and Sensitive Environments at Facilities With a Total Oil Storage Capacity Greater Than or Equal to 1 Million Gallons.** A facility with a total oil storage capacity greater than or equal to 1 million gallons must submit its response plan if it is located at a distance such that a discharge from the facility could cause injury (as defined at 40 CFR 112.2) to fish and wildlife and sensitive environments. For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's “Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments” (see Appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan. Facility owners or operators must determine the distance at which an oil discharge could cause injury to fish and wildlife and sensitive environments using the appropriate formula presented in Attachment C-III to this appendix or a comparable formula.

2.4 **Proximity to Public Drinking Water Intakes at Facilities with a Total Oil Storage Capacity Greater than or Equal to 1 Million Gallons** A facility with a total oil storage capacity greater than or equal to 1 million gallons must submit its response plan if it is located at a distance such that a discharge from the facility would shut down a public drinking water intake, which is analogous to a public water system as described at 40 CFR 143.2(c). The distance at which an oil discharge from an SPCC-regulated facility would shut down a public drinking water intake shall be calculated using the appropriate formula presented in Attachment C-III to this appendix or a comparable formula.

2.5 **Facilities That Have Experienced Reportable Oil Discharges in an Amount Greater Than or Equal to 10,000 Gallons Within the Past 5 Years and That Have a Total Oil Storage Capacity Greater Than or Equal to 1 Million Gallons.** A facility's oil spill history within the past 5 years shall be considered in the evaluation for substantial harm. Any facility with a total oil storage capacity greater than or equal to 1 million gallons that has experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the past 5 years must submit a response plan to EPA.

3.0 **Certification for Facilities That Do Not Pose Substantial Harm**

If the facility does not meet the substantial harm criteria listed in Attachment C-I to this appendix, the owner or operator shall complete and maintain at the facility the certification form contained in Attachment C-II to this appendix. In the event an alternative formula that is comparable to the one in this appendix is used to evaluate the substantial harm criteria, the owner or operator shall attach documentation to the certification form that demonstrates the reliability and analytical soundness of the comparable formula and shall notify the Regional Administrator in writing that an alternative formula was used.

4.0 **References**


USCG IFR (58 FR 7353, February 5, 1993). This document is available through EPA's rulemaking docket as noted in Appendix E to this part, section 13.
Flowchart of Criteria for Substantial Harm

1 Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
   Yes → Submit Response Plan
   No

2 Does the facility have a total oil storage capacity greater than or equal to 1 million gallons?
   Yes →
   No

3 Within any aboveground storage tank area, does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?
   Yes
   No

4 Is the facility located at a distance such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
   Yes
   No

5 Is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake?
   Yes
   No

6 Has the facility experienced a reportable oil spill in an amount greater than or equal to 30,000 gallons within the last five years?
   Yes
   No

No Submittal of Response Plan Except at RA Discretion

1 Calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula.
2 For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and vessel response Plans: Fish and Wildlife and Sensitive Environments" (59 FR 1471, March 29, 1994) and the applicable Area Contingency Plan.
Attachment C-II-Certification of the Applicability of the Substantial Harm Criteria

Facility Name: ______________________
Facility Address: ______________________

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
Yes ___ No ___

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?
Yes ___ No ___

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula¹ ) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's “Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments” (see Appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan.
Yes ___ No ___

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula¹ ) such that a discharge from the facility would shut down a public drinking water intake²?
Yes ___  No ___

¹ If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

² For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).
5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes ___  No ___

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

____________________
Signature

____________________
Name (please type or print)

____________________
Title

____________________
Date

Attachment C-III-Calculation of the Planning Distance

1.0 Introduction

1.1 The facility owner or operator must evaluate whether the facility is located at a distance such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments or disrupt operations at a public drinking water intake. To quantify that distance, EPA considered oil transport mechanisms over land and on still, tidal influence, and moving navigable waters. EPA has determined that the primary concern for calculation of a planning distance is the transport of oil in navigable waters during adverse weather conditions. Therefore, two formulas have been developed to determine distances for planning purposes from the point of discharge at the facility to the potential site of impact on moving and still waters, respectively. The formula for oil transport on moving navigable water is based on the velocity of the water body and the time interval for
arrival of response resources. The still water formula accounts for the spread of discharged oil over the surface of the water. The method to determine oil transport on tidal influence areas is based on the type of oil discharged and the distance down current during ebb tide and up current during flood tide to the point of maximum tidal influence.

1.2 EPA's formulas were designed to be simple to use. However, facility owners or operators may calculate planning distances using more sophisticated formulas, which take into account broader scientific or engineering principles, or local conditions. Such comparable formulas may result in different planning distances than EPA's formulas. In the event that an alternative formula that is comparable to one contained in this appendix is used to evaluate the criterion in 40 CFR 112.20(f)(1)(ii)(B) or (f)(1)(ii)(C), the owner or operator shall attach documentation to the response plan cover sheet contained in Appendix F to this part that demonstrates the reliability and analytical soundness of the alternative formula and shall notify the Regional Administrator in writing that an alternative formula was used.¹

¹ For persistent oils or non-persistent oils, a worst case trajectory model (i.e., an alternative formula) may be substituted for the distance formulas described in still, moving, and tidal waters, subject to Regional Administrator's review of the model. An example of an alternative formula that is comparable to the one contained in this appendix would be a worst case trajectory calculation based on credible adverse winds, currents, and/or river stages, over a range of seasons, weather conditions, and river stages. Based on historical information or a spill trajectory model, the Agency may require that additional fish and wildlife and sensitive environments or public drinking water intakes also be protected.

1.3 A regulated facility may meet the criteria for the potential to cause substantial harm to the environment without having to perform a planning distance calculation. For facilities that meet the substantial harm criteria because of inadequate secondary containment or oil spill history, as listed in the flowchart in Attachment C-I to this appendix, calculation of the planning distance is unnecessary. For facilities that do not meet the substantial harm criteria for secondary containment or oil spill history as listed in the flowchart, calculation of a planning distance for proximity to fish and wildlife and sensitive environments and public drinking water intakes is required, unless it is clear without performing the calculation (e.g., the facility is located in a wetland) that these areas would be impacted.

1.4 A facility owner or operator who must perform a planning distance calculation on navigable water is only required to do so for the type of navigable water conditions (i.e., moving water, still water, or tidal-influenced water) applicable to the facility. If a facility owner or operator determines that more than one type of navigable water condition applies, then the facility owner or operator is required to perform a planning distance calculation for each navigable water type to determine the greatest single distance that oil may be transported. As a result, the final planning distance for oil transport on water shall be the greatest individual distance rather than a summation of each calculated planning distance.

1.5 The planning distance formula for transport on moving waterways contains three variables: the velocity of the navigable water (v), the response time interval (t), and a conversion factor (c). The velocity, v, is determined by using the Chezy-Manning equation, which, in this case, models the flood flow rate of water in open channels. The Chezy-Manning equation contains three variables which must be determined by facility owners or operators. Manning’s Roughness Coefficient (for flood flow rates), n, can be determined from Table 1 of this attachment. The hydraulic radius, r, can be estimated using the average mid-channel depth from charts provided by the sources listed in Table 2 of this attachment. The average slope of the river, s, can be determined using topographic maps that can be ordered from the U.S. Geological Survey, as listed in Table 2 of this attachment.

1.6 Table 3 of this attachment contains specified time intervals for estimating the arrival of response resources at the scene of a discharge. Assuming no prior planning, response resources should be able to arrive at the discharge site within 12 hours of the discovery of any oil discharge in Higher
Volume Port Areas and within 24 hours in Great Lakes and all other river, canal, inland, and nearshore areas. The specified time intervals in Table 3 of Appendix C are to be used only to aid in the identification of whether a facility could cause substantial harm to the environment. Once it is determined that a plan must be developed for the facility, the owner or operator shall reference Appendix E to this part to determine appropriate resource levels and response times. The specified time intervals of this appendix include a 3-hour time period for deployment of boom and other response equipment. The Regional Administrator may identify additional areas as appropriate.

2.0 Oil Transport on Moving Navigable Waters

2.1 The facility owner or operator must use the following formula or a comparable formula as described in §112.20(a)(3) to calculate the planning distance for oil transport on moving navigable water:

\[ d = v \times t \times c; \text{ where} \]

\( d \): the distance downstream from a facility within which fish and wildlife and sensitive environments could be injured or a public drinking water intake would be shut down in the event of an oil discharge (in miles);

\( v \): the velocity of the river/navigable water of concern (in ft/sec) as determined by Chezy-Manning's equation (see below and Tables 1 and 2 of this attachment);

\( t \): the time interval specified in Table 3 based upon the type of water body and location (in hours); and

\( c \): constant conversion factor \( 0.68 \text{ sec} \omega \text{ mile/hr} \omega \text{ ft} \) (3600 sec/hr ÷ 5280 ft/mile).

2.2 Chezy-Manning's equation is used to determine velocity:

\[ v = 1.5/n \times r^{2/3} \times s^{1/2}; \text{ where} \]

\( v \): the velocity of the river of concern (in ft/sec);

\( n \): Manning's Roughness Coefficient from Table 1 of this attachment;

\( r \): the hydraulic radius; the hydraulic radius can be approximated for parabolic channels by multiplying the average mid-channel depth of the river (in feet) by 0.667 (sources for obtaining the mid-channel depth are listed in Table 2 of this attachment); and

\( s \): the average slope of the river (unitless) obtained from U.S. Geological Survey topographic maps at the address listed in Table 2 of this attachment.

Table 1-Manning's Roughness Coefficient for Natural Streams

[Note: Coefficients are presented for high flow rates at or near flood stage.]
<table>
<thead>
<tr>
<th>Stream description</th>
<th>Roughness coefficient (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minor Streams (Top Width &lt;100 ft.)</td>
<td></td>
</tr>
<tr>
<td>Clean:</td>
<td></td>
</tr>
<tr>
<td>Straight</td>
<td>0.03</td>
</tr>
<tr>
<td>Winding</td>
<td>0.04</td>
</tr>
<tr>
<td>Sluggish (Weedy, deep pools):</td>
<td></td>
</tr>
<tr>
<td>No trees or brush</td>
<td>0.06</td>
</tr>
<tr>
<td>Trees and/or brush</td>
<td>0.10</td>
</tr>
<tr>
<td>Major Streams (Top Width &gt;100 ft.)</td>
<td></td>
</tr>
<tr>
<td>Regular section:</td>
<td></td>
</tr>
<tr>
<td>(No boulders/brush)</td>
<td>0.035</td>
</tr>
<tr>
<td>Irregular section:</td>
<td></td>
</tr>
<tr>
<td>(Brush)</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Table 2-Sources of r and s for the Chezy-Manning Equation

All of the charts and related publications for navigational waters may be ordered from:

Distribution Branch
(N/C333)
National Ocean Service
Riverdale, Maryland 20737-1199

Phone: (301) 436-6990

There will be a charge for materials ordered and a VISA or Mastercard will be accepted.
The mid-channel depth to be used in the calculation of the hydraulic radius (r) can be obtained directly from the following sources:

Charts of Canadian Coastal and Great Lakes Waters:

Canadian Hydrographic Service
Department of Fisheries and Oceans Institute
P.O. Box 8080
1675 Russell Road
Ottawa, Ontario K1G 3H6
Canada
Phone: (613) 998-4931

Charts and Maps of Lower Mississippi River
(Gulf of Mexico to Ohio River and St. Francis, White, Big Sunflower, Atchafalaya, and other rivers):

U.S. Army Corps of Engineers
Vicksburg District
P.O. Box 60
Vicksburg, Mississippi 39180
Phone: (601) 634-5000

Charts of Upper Mississippi River and Illinois Waterway to Lake Michigan:

U.S. Army Corps of Engineers
Rock Island District
P.O. Box 2004
Charts of Missouri River:
U.S. Army Corps of Engineers
Omaha District
6014 U.S. Post Office and Courthouse
Omaha, Nebraska 68102
Phone: (402) 221-3900

Charts of Ohio River:
U.S. Army Corps of Engineers
Ohio River Division
P.O. Box 1159
Cincinnati, Ohio 45201
Phone: (513) 684-3002

Charts of Tennessee Valley Authority Reservoirs, Tennessee River and Tributaries:
Tennessee Valley Authority
Maps and Engineering Section
416 Union Avenue
Knoxville, Tennessee 37902
Phone: (615) 632-2921
Charts of Black Warrior River, Alabama River, Tombigbee River, Apalachicola River and Pearl River:

U.S. Army Corps of Engineers
Mobile District
P.O. Box 2288
Mobile, Alabama 36628-0001
Phone: (205) 690-2511

The average slope of the river (s) may be obtained from topographic maps:

U.S. Geological Survey
Map Distribution
Federal Center
Bldg. 41
Box 25286
Denver, Colorado 80225

Additional information can be obtained from the following sources:

1. The State's Department of Natural Resources (DNR) or the State's Aids to Navigation office;

2. A knowledgeable local marina operator; or

3. A knowledgeable local water authority (e.g., State water commission)

2.3 The average slope of the river (s) can be determined from the topographic maps using the following steps:

(1) Locate the facility on the map.

(2) Find the Normal Pool Elevation at the point of discharge from the facility into the water (A).
(3) Find the Normal Pool Elevation of the public drinking water intake or fish and wildlife and sensitive environment located downstream (B) (Note: The owner or operator should use a minimum of 20 miles downstream as a cutoff to obtain the average slope if the location of a specific public drinking water intake or fish and wildlife and sensitive environment is unknown).

(4) If the Normal Pool Elevation is not available, the elevation contours can be used to find the slope. Determine elevation of the water at the point of discharge from the facility (A). Determine the elevation of the water at the appropriate distance downstream (B). The formula presented below can be used to calculate the slope.

(5) Determine the distance (in miles) between the facility and the public drinking water intake or fish and wildlife and sensitive environments (C).

(6) Use the following formula to find the slope, which will be a unitless value: 

\[ \text{Average Slope} = \frac{(A-B) \text{ (ft)}}{C \text{ (miles)}} \times \left[ \frac{1 \text{ mile}}{5280 \text{ feet}} \right] \]

2.4 If it is not feasible to determine the slope and mid-channel depth by the Chezy-Manning equation, then the river velocity can be approximated on-site. A specific length, such as 100 feet, can be marked off along the shoreline. A float can be dropped into the stream above the mark, and the time required for the float to travel the distance can be used to determine the velocity in feet per second. However, this method will not yield an average velocity for the length of the stream, but a velocity only for the specific location of measurement. In addition, the flow rate will vary depending on weather conditions such as wind and rainfall. It is recommended that facility owners or operators repeat the measurement under a variety of conditions to obtain the most accurate estimate of the surface water velocity under adverse weather conditions.

2.5 The planning distance calculations for moving and still navigable waters are based on worst case discharges of persistent oils. Persistent oils are of concern because they can remain in the water for significant periods of time and can potentially exist in large quantities downstream. Owners or operators of facilities that store persistent as well as non-persistent oils may use a comparable formula. The volume of oil discharged is not included as part of the planning distance calculation for moving navigable waters. Facilities that will meet this substantial harm criterion are those with capacity greater than or equal to 1 million gallons. It is assumed that these facilities are capable of having an oil discharge of sufficient quantity to cause injury to fish and wildlife and sensitive environments or shut down a public drinking water intake. While owners or operators of transfer facilities that store greater than or equal to 42,000 gallons are not required to use a planning distance formula for purposes of the substantial harm criteria, they should use a planning distance calculation in the development of facility-specific response plans.

Table 3-Specified Time Intervals

<table>
<thead>
<tr>
<th>Operating areas</th>
<th>Substantial harm planning time (hrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Higher volume port area</td>
<td>12 hour arrival+3 hour deployment=15 hours.</td>
</tr>
<tr>
<td>Great Lakes</td>
<td>24 hour arrival+3 hour deployment=27 hours.</td>
</tr>
<tr>
<td>All other rivers and canals, inland, and nearshore areas</td>
<td>24 hour arrival+3 hour deployment=27 hours.</td>
</tr>
</tbody>
</table>

2.6 Example of the Planning Distance Calculation for Oil Transport on Moving Navigable Waters. The following example provides a sample calculation using the planning distance formula for a facility discharging oil into the Monongahela River:
(1) Solve for \( v \) by evaluating \( n \), \( r \), and \( s \) for the Chezy-Manning equation:

Find the roughness coefficient, \( n \), on Table 1 of this attachment for a regular section of a major stream with a top width greater than 100 feet. The top width of the river can be found from the topographic map.

\( n = 0.035 \).

Find slope, \( s \), where \( A=727 \text{ feet} \), \( B=710 \text{ feet} \), and \( C=25 \text{ miles} \).

Solving:

\[
s = \frac{(727 \text{ ft} - 1710 \text{ ft})}{25 \text{ miles}} \times \frac{1 \text{ mile}}{5280 \text{ feet}} = 1.3 \times 10^{-4}
\]

The average mid-channel depth is found by averaging the mid-channel depth for each mile along the length of the river between the facility and the public drinking water intake or the fish or wildlife or sensitive environment (or 20 miles downstream if applicable). This value is multiplied by 0.667 to obtain the hydraulic radius. The mid-channel depth is found by obtaining values for \( r \) and \( s \) from the sources shown in Table 2 for the Monongahela River.

Solving:

\[
r = 0.667 \times 20 \text{ feet} = 13.33 \text{ feet}
\]

Solve for \( v \) using:

\[
v = \frac{1.5}{n} \times r^{2/3} \times s^{1/2}:
\]

\[
v = \frac{1.5}{0.035} \times (13.33)^{2/3} \times (1.3 \times 10^{-4})^{1/2}
\]

\[
v = 2.73 \text{ feet/second}
\]

(2) Find \( t \) from Table 3 of this attachment. The Monongahela River's resource response time is 27 hours.

(3) Solve for planning distance, \( d \):

\[
d = v \times t \times c
\]

\[
d = (2.73 \text{ ft/sec}) \times (27 \text{ hours}) \times (0.68 \text{ sec} \times \text{mile/hr} \times \text{ft})
\]

\[
d = 50 \text{ miles}
\]
Therefore, 50 miles downstream is the appropriate planning distance for this facility.

3.0 Oil Transport on Still Water

3.1 For bodies of water including lakes or ponds that do not have a measurable velocity, the spreading of the oil over the surface must be considered. Owners or operators of facilities located next to still water bodies may use a comparable means of calculating the planning distance. If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable calculation must be attached to the response plan cover sheet.

3.2 Example of the Planning Distance Calculation for Oil Transport on Still Water. To assist those facilities which could potentially discharge into a still body of water, the following analysis was performed to provide an example of the type of formula that may be used to calculate the planning distance. For this example, a worst case discharge of 2,000,000 gallons is used.

(1) The surface area in square feet covered by an oil discharge on still water, A₁, can be determined by the following formula,² where V is the volume of the discharge in gallons and C is a constant conversion factor:

\[
A₁ = 10^5 \times V^{3/4} \times C
\]


\[
C = 0.1643
\]

\[
A₁ = 10^5 \times (2,000,000 \text{ gallons})^{3/4} \times (0.1643)
\]

\[
A₁ = 8.74 \times 10^8 \text{ ft}^2
\]

(2) The spreading formula is based on the theoretical condition that the oil will spread uniformly in all directions forming a circle. In reality, the outfall of the discharge will direct the oil to the surface of the water where it intersects the shoreline. Although the oil will not spread uniformly in all directions, it is assumed that the discharge will spread from the shoreline into a semi-circle (this assumption does not account for winds or wave action).

(3) The area of a circle=π r²

(4) To account for the assumption that oil will spread in a semi-circular shape, the area of a circle is divided by 2 and is designated as A₂.
\[ A_2 = \left( \frac{\pi r^2}{2} \right) \]

Solving for the radius, \( r \), using the relationship \( A_1 = A_2 \):

\[ 8.74 \times 10^8 \text{ ft}^2 = \left( \frac{\pi r^2}{2} \right) \]

Therefore, \( r = 23,586 \text{ ft} \)

\[ r = 23,586 \text{ ft} \div 5,280 \text{ ft/mile} = 4.5 \text{ miles} \]

Assuming a 20 knot wind under storm conditions:

1 knot = 1.15 miles/hour

20 knots \( \times \) 1.15 miles/hour/knot = 23 miles/hr

Assuming that the oil slick moves at 3 percent of the wind's speed:

\[ 23 \text{ miles/hour} \times 0.03 = 0.69 \text{ miles/hour} \]

(5) To estimate the distance that the oil will travel, use the times required for response resources to arrive at different geographic locations as shown in Table 3 of this attachment.

For example:

For Higher Volume Port Areas: 15 hrs \( \times \) 0.69 miles/hr = 10.4 miles

For Great Lakes and all other areas: 27 hrs \( \times \) 0.69 miles/hr = 18.6 miles

(6) The total distance that the oil will travel from the point of discharge, including the distance due to spreading, is calculated as follows:

Higher Volume Port Areas: \( d = 10.4 + 4.5 \) miles or approximately 15 miles

Great Lakes and all other areas: \( d = 18.6 + 4.5 \) miles or approximately 23 miles

4.0 Oil Transport on Tidal-Influence Areas
4.1 The planning distance method for tidal influence navigable water is based on worst case discharges of persistent and non-persistent oils. Persistent oils are of primary concern because they can potentially cause harm over a greater distance. For persistent oils discharged into tidal waters, the planning distance is 15 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 15 miles, whichever is less, during flood tide.

4.2 For non-persistent oils discharged into tidal waters, the planning distance is 5 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 5 miles, whichever is less, during flood tide.

4.3 Example of Determining the Planning Distance for Two Types of Navigable Water Conditions. Below is an example of how to determine the proper planning distance when a facility could impact two types of navigable water conditions: moving water and tidal water.

(1) Facility X stores persistent oil and is located downstream from locks along a slow moving river which is affected by tides. The river velocity, \( v \), is determined to be 0.5 feet/second from the Chezy-Manning equation used to calculate oil transport on moving navigable waters. The specified time interval, \( t \), obtained from Table 3 of this attachment for river areas is 27 hours. Therefore, solving for the planning distance, \( d \):

\[
d = v \times t \times c
\]

\[
d = (0.5 \text{ ft/sec}) \times (27 \text{ hours}) \times (0.68 \text{ secmile/hrft})
\]

\[
d = 9.18 \text{ miles}.
\]

(2) However, the planning distance for maximum tidal influence down current during ebb tide is 15 miles, which is greater than the calculated 9.18 miles. Therefore, 15 miles downstream is the appropriate planning distance for this facility.

5.0 Oil Transport Over Land

5.1 Facility owners or operators must evaluate the potential for oil to be transported over land to navigable waters of the United States. The owner or operator must evaluate the likelihood that portions of a worst case discharge would reach navigable waters via open channel flow or from sheet flow across the land, or be prevented from reaching navigable waters when trapped in natural or man-made depressions excluding secondary containment structures.

5.2 As discharged oil travels over land, it may enter a storm drain or open concrete channel intended for drainage. It is assumed that once oil reaches such an inlet, it will flow into the receiving navigable water. During a storm event, it is highly probable that the oil will either flow into the drainage structures or follow the natural contours of the land and flow into the navigable water. Expected minimum and maximum velocities are provided as examples of open concrete channel and pipe flow. The ranges listed below reflect minimum and maximum velocities used as design criteria. The calculation below demonstrates that the time required for oil to travel through a storm drain or open concrete channel to navigable water is negligible and can be considered instantaneous. The velocities are:
4 The design velocities were obtained from Howard County, Maryland Department of Public Works' Storm Drainage Design Manual.

For open concrete channels:
maximum velocity=25 feet per second
minimum velocity=3 feet per second

For storm drains:
maximum velocity=25 feet per second
minimum velocity=2 feet per second

5.3 Assuming a length of 0.5 mile from the point of discharge through an open concrete channel or concrete storm drain to a navigable water, the travel times (distance/velocity) are:

1.8 minutes at a velocity of 25 feet per second
14.7 minutes at a velocity of 3 feet per second
22.0 minutes for at a velocity of 2 feet per second

5.4 The distances that shall be considered to determine the planning distance are illustrated in Figure C-I of this attachment. The relevant distances can be described as follows:

D1=Distance from the nearest opportunity for discharge, X₁, to a storm drain or an open concrete channel leading to navigable water.

D2=Distance through the storm drain or open concrete channel to navigable water.

D3=Distance downstream from the outfall within which fish and wildlife and sensitive environments could be injured or a public drinking water intake would be shut down as determined by the planning distance formula.

D4=Distance from the nearest opportunity for discharge, X₂, to fish and wildlife and sensitive environments not bordering navigable water.

5.5 A facility owner or operator whose nearest opportunity for discharge is located within 0.5 mile of a navigable water must complete the planning distance calculation (D3) for the type of navigable water near the facility or use a comparable formula.
5.6 A facility that is located at a distance greater than 0.5 mile from a navigable water must also calculate a planning distance (D3) if it is in close proximity (i.e., D1 is less than 0.5 mile and other factors are conducive to oil travel over land) to storm drains that flow to navigable waters. Factors to be considered in assessing oil transport over land to storm drains shall include the topography of the surrounding area, drainage patterns, man-made barriers (excluding secondary containment structures), and soil distribution and porosity. Storm drains or concrete drainage channels that are located in close proximity to the facility can provide a direct pathway to navigable waters, regardless of the length of the drainage pipe. If D1 is less than or equal to 0.5 mile, a discharge from the facility could pose substantial harm because the time to travel the distance from the storm drain to the navigable water (D2) is virtually instantaneous.

5.7 A facility's proximity to fish and wildlife and sensitive environments not bordering a navigable water, as depicted as D4 in Figure C-I of this attachment, must also be considered, regardless of the distance from the facility to navigable waters. Factors to be considered in assessing oil transport over land to fish and wildlife and sensitive environments should include the topography of the surrounding area, drainage patterns, man-made barriers (excluding secondary containment structures), and soil distribution and porosity.

5.8 If a facility is not found to pose substantial harm to fish and wildlife and sensitive environments not bordering navigable waters via oil transport on land, then supporting documentation should be maintained at the facility. However, such documentation should be submitted with the response plan if a facility is found to pose substantial harm.
Appendix D - Determination of a Worst Case Discharge Planning Volume

1.0 Instructions
1.1 An owner or operator is required to complete this worksheet if the facility meets the criteria, as presented in Appendix C to this part, or it is determined by the RA that the facility could cause substantial harm to the environment. The calculation of a worst case discharge planning volume is used for emergency planning purposes, and is required in 40 CFR 112.20 for facility owners or operators who must prepare a response plan. When planning for the amount of resources and equipment necessary to respond to the worst case discharge planning volume, adverse weather conditions must be taken into consideration. An owner or operator is required to determine the facility’s worst case discharge planning volume from either part A of this appendix for an onshore storage facility, or part B of this appendix for an onshore production facility. The worksheet considers the provision of adequate secondary containment at a facility.

1.2 For onshore storage facilities and production facilities, permanently manifolded oil storage tanks are defined as tanks that are designed, installed, and/or operated in such a manner that the multiple tanks function as one storage unit (i.e., multiple tank volumes are equalized). In a worst case discharge scenario, a single failure could cause the discharge of the contents of more than one tank. The owner or operator must provide evidence in the response plan that tanks with common piping or piping systems are not operated as one unit. If such evidence is provided and is acceptable to the RA, the worst case discharge planning volume would be based on the capacity of the largest oil storage tank within a common secondary containment area or the largest oil storage tank within a single secondary containment area, whichever is greater. For permanently manifolded tanks that function as one oil storage unit, the worst case discharge planning volume would be based on the combined oil storage capacity of all manifolded tanks or the capacity of the largest single oil storage tank within a secondary containment area, whichever is greater. For purposes of this rule, permanently manifolded tanks that are separated by internal divisions for each tank are considered to be single tanks and individual manifolded tank volumes are not combined.

1.3 For production facilities, the presence of exploratory wells, production wells, and oil storage tanks must be considered in the calculation. Part B of this appendix takes these additional factors into consideration and provides steps for their inclusion in the total worst case discharge planning volume. Onshore oil production facilities may include all wells, flowlines, separation equipment, storage facilities, gathering lines, and auxiliary non-transportation-related equipment and facilities in a single geographical oil or gas field operated by a single operator. Although a potential worst case discharge planning volume is calculated within each section of the worksheet, the final worst case amount depends on the risk parameter that results in the greatest volume.

1.4 Marine transportation-related transfer facilities that contain fixed aboveground onshore structures used for bulk oil storage are jointly regulated by EPA and the U.S. Coast Guard (USCG), and are termed “complexes.” Because the USCG also requires response plans from transportation-related facilities to address a worst case discharge of oil, a separate calculation for the worst case discharge planning volume for USCG-related facilities is included in the USCG IFR (see Appendix E to this part, section 13, for availability). All complexes that are jointly regulated by EPA and the USCG must compare both calculations for worst case discharge planning volume derived by using the EPA and USCG methodologies and plan for whichever volume is greater.

PART A: WORST CASE DISCHARGE PLANNING VOLUME CALCULATION FOR ONSHORE STORAGE FACILITIES

1 “Storage facilities” represent all facilities subject to this part, excluding oil production facilities.

Part A of this worksheet is to be completed by the owner or operator of an SPCC-regulated facility (excluding oil production facilities) if the facility
meets the criteria as presented in Appendix C to this part, or if it is determined by the RA that the facility could cause substantial harm to the environment. If you are the owner or operator of a production facility, please proceed to part B of this worksheet.

A.1 SINGLE-TANK FACILITIES

For facilities containing only one aboveground oil storage tank, the worst case discharge planning volume equals the capacity of the oil storage tank. If adequate secondary containment (sufficiently large to contain the capacity of the aboveground oil storage tank plus sufficient freeboard to allow for precipitation) exists for the oil storage tank, multiply the capacity of the tank by 0.8.

(1) FINAL WORST CASE VOLUME: ____ GAL
(2) Do not proceed further.

A.2 SECONDARY CONTAINMENT-MULTIPLE-TANK FACILITIES

Are all aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility without adequate secondary containment?2

___ (Y/N)

A.2.1 If the answer is yes, the final worst case discharge planning volume equals the total aboveground oil storage capacity at the facility.

(1) FINAL WORST CASE VOLUME: ____ GAL
(2) Do not proceed further.

A.2.2 If the answer is no, calculate the total aboveground oil storage capacity of tanks without adequate secondary containment. If all aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility have adequate secondary containment, ENTER “0” (zero).

___ GAL

A.2.3 Calculate the capacity of the largest single aboveground oil storage tank within an adequate secondary containment area or the combined capacity of a group of aboveground oil storage tanks permanently manifolded together, whichever is greater, PLUS THE VOLUME FROM QUESTION A.2.2.

FINAL WORST CASE VOLUME:3 ___ GAL
All complexes that are jointly regulated by EPA and the USCG must also calculate the worst case discharge planning volume for the transportation-related portions of the facility and plan for whichever volume is greater.

**PART B: WORST CASE DISCHARGE PLANNING VOLUME CALCULATION FOR ONSHORE PRODUCTION FACILITIES**

Part B of this worksheet is to be completed by the owner or operator of an SPCC-regulated oil production facility if the facility meets the criteria presented in Appendix C to this part, or if it is determined by the RA that the facility could cause substantial harm. A production facility consists of all wells (producing and exploratory) and related equipment in a single geographical oil or gas field operated by a single operator.

**B.1 SINGLE-TANK FACILITIES**

B.1.1 For facilities containing only one aboveground oil storage tank, the worst case discharge planning volume equals the capacity of the aboveground oil storage tank plus the production volume of the well with the highest output at the facility. If adequate secondary containment (sufficiently large to contain the capacity of the aboveground oil storage tank plus sufficient freeboard to allow for precipitation) exists for the storage tank, multiply the capacity of the tank by 0.8.

B.1.2 For facilities with production wells producing by pumping, if the rate of the well with the highest output is known and the number of days the facility is unattended can be predicted, then the production volume is equal to the pumping rate of the well multiplied by the greatest number of days the facility is unattended.

B.1.3 If the pumping rate of the well with the highest output is estimated or the maximum number of days the facility is unattended is estimated, then the production volume is determined from the pumping rate of the well multiplied by 1.5 times the greatest number of days that the facility has been or is expected to be unattended.

B.1.4 Attachment D-1 to this appendix provides methods for calculating the production volume for exploratory wells and production wells producing under pressure.

(1) FINAL WORST CASE VOLUME: ____ GAL

(2) Do not proceed further.

**B.2 SECONDARY CONTAINMENT-MULTIPLE-TANK FACILITIES**

Are all aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility without adequate secondary containment?

___ (Y/N)

B.2.1 If the answer is yes, the final worst case volume equals the total aboveground oil storage capacity without adequate secondary containment
plus the production volume of the well with the highest output at the facility.

(1) For facilities with production wells producing by pumping, if the rate of the well with the highest output is known and the number of days the facility is unattended can be predicted, then the production volume is equal to the pumping rate of the well multiplied by the greatest number of days the facility is unattended.

(2) If the pumping rate of the well with the highest output is estimated or the maximum number of days the facility is unattended is estimated, then the production volume is determined from the pumping rate of the well multiplied by 1.5 times the greatest number of days that the facility has been or is expected to be unattended.

(3) Attachment D-1 to this appendix provides methods for calculating the production volumes for exploratory wells and production wells producing under pressure.

(A) FINAL WORST CASE VOLUME: ____ GAL

(B) Do not proceed further.

B.2.2 If the answer is no, calculate the total aboveground oil storage capacity of tanks without adequate secondary containment. If all aboveground oil storage tanks or groups of aboveground oil storage tanks at the facility have adequate secondary containment, ENTER “0” (zero).

____ GAL

B.2.3 Calculate the capacity of the largest single aboveground oil storage tank within an adequate secondary containment area or the combined capacity of a group of aboveground oil storage tanks permanently manifolded together, whichever is greater, plus the production volume of the well with the highest output, PLUS THE VOLUME FROM QUESTION B.2.2. Attachment D-1 provides methods for calculating the production volumes for exploratory wells and production wells producing under pressure.

(1) FINAL WORST CASE VOLUME:____ GAL

4 All complexes that are jointly regulated by EPA and the USCG must also calculate the worst case discharge planning volume for the transportation-related portions of the facility and plan for whichever volume is greater.

(2) Do not proceed further.

Attachments to Appendix D

Attachment D-I-Methods To Calculate Production Volumes for Production Facilities With Exploratory Wells or Production Wells Producing Under Pressure
1.0 Introduction

The owner or operator of a production facility with exploratory wells or production wells producing under pressure shall compare the well rate of the highest output well (rate of well), in barrels per day, to the ability of response equipment and personnel to recover the volume of oil that could be discharged (rate of recovery), in barrels per day. The result of this comparison will determine the method used to calculate the production volume for the production facility. This production volume is to be used to calculate the worst case discharge planning volume in part B of this appendix.

2.0 Description of Methods

2.1 Method A

If the well rate would overwhelm the response efforts (i.e., rate of well/rate of recovery ≥1), then the production volume would be the 30-day forecasted well rate for a well 10,000 feet deep or less, or the 45-day forecasted well rate for a well deeper than 10,000 feet.

(1) For wells 10,000 feet deep or less:

Production volume = 30 days × rate of well.

(2) For wells deeper than 10,000 feet:

Production volume = 45 days × rate of well.

2.2 Method B

2.2.1 If the rate of recovery would be greater than the well rate (i.e., rate of well/rate of recovery <1), then the production volume would equal the sum of two terms:

Production volume = discharge volume₁ + discharge volume₂

2.2.2 The first term represents the volume of the oil discharged from the well between the time of the blowout and the time the response resources are on scene and recovering oil (discharge volume₁).

Discharge volume₁ = (days unattended + days to respond) × (rate of well)

2.2.3 The second term represents the volume of oil discharged from the well after the response resources begin operating until the discharge is stopped, adjusted for the recovery rate of the response resources (discharge volume₂).

(1) For wells 10,000 feet deep or less:
Discharge volume$_2$=[30 days-(days unattended + days to respond)] × (rate of well) × (rate of well/rate of recovery)

(2) For wells deeper than 10,000 feet:

Discharge volume$_2$=[45 days-(days unattended + days to respond)] × (rate of well) × (rate of well/rate of recovery)

3.0 Example

3.1 A facility consists of two production wells producing under pressure, which are both less than 10,000 feet deep. The well rate of well A is 5 barrels per day, and the well rate of well B is 10 barrels per day. The facility is unattended for a maximum of 7 days. The facility operator estimates that it will take 2 days to have response equipment and personnel on scene and responding to a blowout, and that the projected rate of recovery will be 20 barrels per day.

(1) First, the facility operator determines that the highest output well is well B. The facility operator calculates the ratio of the rate of well to the rate of recovery:

$\frac{10 \text{ barrels per day}}{20 \text{ barrels per day}} = 0.5$

Because the ratio is less than one, the facility operator will use Method B to calculate the production volume.

(2) The first term of the equation is:

Discharge volume$_1$=(7 days + 2 days) × (10 barrels per day)=90 barrels

(3) The second term of the equation is:

Discharge volume$_2$=[30 days-(7 days + 2 days)] × (10 barrels per day) × (0.5)=105 barrels

(4) Therefore, the production volume is:

Production volume=90 barrels + 105 barrels=195 barrels

3.2 If the recovery rate was 5 barrels per day, the ratio of rate of well to rate of recovery would be 2, so the facility operator would use Method A. The production volume would have been:

30 days × 10 barrels per day=300 barrels

APPENDIX B

Table of Storage Tanks
### Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>Aldrich Hall</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-14</td>
<td>During Routine Operational Maintenance</td>
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<td>Anteater Ballpark</td>
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<td>Transformer</td>
<td>Transformer</td>
<td>T-139</td>
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<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>653</td>
<td>Anteater Instruction and Research Building</td>
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<td>Elevator</td>
<td>5 Stop</td>
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</tr>
<tr>
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<tr>
<td></td>
<td>Anteater Learning Pavillion</td>
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<td>Transformer</td>
<td>Transformer</td>
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</tr>
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<td>Elevator</td>
<td>2 Stop</td>
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</tr>
<tr>
<td>680</td>
<td>Anteater Recreation Center</td>
<td>109</td>
<td>Diesel</td>
<td>Portable Fuel Dispensing</td>
<td>Double-walled tank on trailer used to fill off road diesel equipment.</td>
<td>Inspect Monthly</td>
<td></td>
</tr>
<tr>
<td>680</td>
<td>Anteater Recreation Center</td>
<td>120</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>680</td>
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<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
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<td>Transformer</td>
<td>Transformer</td>
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<td>During Routine Operational Maintenance</td>
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<tr>
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<td>Arroyo Vista Housing #1000</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
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<td>AV (C10)</td>
<td>Arroyo Vista Housing #1014</td>
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<td>Hydraulic Oil</td>
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<td>Elevator</td>
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<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>AV (C10)</td>
<td>Arroyo Vista Housing #1020</td>
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<td>Hydraulic Oil</td>
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</tr>
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<td>AV (C10)</td>
<td>Arroyo Vista Housing #1024</td>
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<td>Hydraulic Oil</td>
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<td>2 Stop</td>
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<td>Arroyo Vista Housing #1028</td>
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</tr>
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<td>Elevator</td>
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</tr>
<tr>
<td>AV (C10)</td>
<td>Arroyo Vista Housing #1036</td>
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<td>Hydraulic Oil</td>
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<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
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<td>AV (C10)</td>
<td>Arroyo Vista Housing #1040</td>
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<td>Hydraulic Oil</td>
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</tr>
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<td>AV (C10)</td>
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<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
</tbody>
</table>
### Appendix B: Table of Storage Tanks

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>AV (C10)</td>
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</tr>
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</tr>
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</tr>
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<td>AV (C10)</td>
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<td>Hydraulic Oil</td>
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</tr>
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<td>Arroyo Vista Housing #1082</td>
<td>110</td>
<td>Hydraulic Oil</td>
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<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
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<td>AV (C10)</td>
<td>Arroyo Vista Housing #1090</td>
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<td>Hydraulic Oil</td>
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<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
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<td>AV (C10)</td>
<td>Arroyo Vista Housing #1094</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>727</td>
<td>Art, Culture &amp; Technology</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>3 Stop</td>
<td>During Routine Operational Maintenance</td>
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<tr>
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<td>Storage Tank</td>
<td>Elevator</td>
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<tr>
<td>817</td>
<td>Beckman Laser Institute</td>
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<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
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<tr>
<td>817</td>
<td>Beckman Laser Institute</td>
<td>200</td>
<td>Diesel</td>
<td>Bulk Storage Tank</td>
<td>Standby Generator</td>
<td>Just north of the Beckman Laser Institute, one steel double-walled 200-gallon external diesel fuel tank is situated on a concrete pad inside a covered brick enclosure. The storage tank is rectangular in shape and is piped to an adjacent standby generator also inside the enclosure.</td>
<td>Inspect Monthly</td>
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<tr>
<td>817</td>
<td>Beckman Laser Institute</td>
<td>266</td>
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<td>T-67</td>
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<td>4</td>
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<td>T-96</td>
<td>During Routine Operational Maintenance</td>
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</table>
## Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>515</td>
<td>Bio. Sci 2 Admin. (Bison Modular)</td>
<td>266</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-72</td>
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<tr>
<td>519</td>
<td>Biological Science 3</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
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<td>Biological Science 3</td>
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<td>Hydraulic Oil</td>
<td>Storage Tank Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
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<tr>
<td>519</td>
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<td>Hydraulic Oil</td>
<td>Storage Tank Elevator</td>
<td>4 Stop</td>
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<tr>
<td>325</td>
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<td>4 Stop</td>
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<td>Storage Tank Elevator</td>
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<td>5 Stop</td>
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<td>325</td>
<td>Cal-IT2</td>
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<td>Storage Tank Standby Generator</td>
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<td>Transformer</td>
<td>T-70</td>
<td>During Routine Operational Maintenance</td>
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<tr>
<td>CV (F4)</td>
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<td>266</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-69</td>
<td>During Routine Operational Maintenance</td>
<td></td>
</tr>
<tr>
<td>CV (F4)</td>
<td>Campus Village Community Center</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
<td></td>
</tr>
<tr>
<td>902</td>
<td>Central Plant</td>
<td>4 @ 10,000</td>
<td>Amber 356</td>
<td>UST Fuel Storage</td>
<td>Regulated UST (California Tile 23)</td>
<td>Veeder-Root Monitoring System</td>
<td></td>
</tr>
<tr>
<td>902</td>
<td>Central Plant</td>
<td>2 @ 55</td>
<td>Motor Oil</td>
<td>Portable Oil Storage</td>
<td>Steel drums placed inside containment shelter.</td>
<td>Inspect Monthly</td>
<td></td>
</tr>
</tbody>
</table>
### Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>Electrical Substation</td>
<td>110</td>
<td>Diesel</td>
<td>Portable</td>
<td>Portable Fuel Dispensing</td>
<td>Single-walled tank on trailer used to fill standby generator fuel tanks. The unit is stored in concrete berm secondary containment area when not in use. A diagram displaying the berm dimensions and secondary containment calculations are provided in Appendix C.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant</td>
<td>300</td>
<td>Diesel</td>
<td>Bulk Storage Tank</td>
<td>Standby Generator</td>
<td>One steel double-walled 200-gallon external diesel fuel tank is located within a locked chain-link cage on the southeast side of Central Plant. The tank is piped to an adjacent standby generator. All equipment is unprotected from rainfall. The storage tank is rectangular in shape and sits flat upon a concrete pad. A concrete berm is situated around the storage tank as secondary containment. A diagram displaying the berm dimensions and secondary containment calculations are provided in Appendix C.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-128</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-136</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant 1</td>
<td>280</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-1</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant 2</td>
<td>200</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-2</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant 3</td>
<td>160</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-3</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant Chiller #6 4160 VAC</td>
<td>280</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-136</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant Chiller #6 480 VAC control voltage</td>
<td>160</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-128</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant Chiller 1</td>
<td>196</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-86</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant Ther. Sto. Switchgear Rm.</td>
<td>390</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-114</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>902</td>
<td>Central Plant Thermal Storage Mezzanine</td>
<td>390</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-113</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>317</td>
<td>Civil Engineering Trailer (Engineering and Computing Trailer)</td>
<td>174</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-77</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>302</td>
<td>Computer Science</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>302</td>
<td>Computer Science</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
</tbody>
</table>
## Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>302</td>
<td>Computer Science</td>
<td>300</td>
<td>Diesel</td>
<td>Bulk Storage Tank</td>
<td>Standby Generator</td>
<td>One steel single-walled 300-gallon external diesel fuel tank is located to the south of the building. The outdoor tank is piped to a standby generator inside the adjacent building. The tank is unprotected from rainfall and is contained within a locked, chain-link fence. The storage tank is cylindrical in shape and sits on metal legs above a concrete pad. A concrete berm is situated around the storage tank and piping, which provides sufficient secondary containment. A diagram displaying the berm dimensions and secondary containment calculations are provided in Appendix C.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>302</td>
<td>Computer Science</td>
<td>285</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-18</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>304</td>
<td>Computer Science</td>
<td>280</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-19</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>710</td>
<td>Concert Hall Lower Level (Smith Hall)</td>
<td>240</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-8</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>903</td>
<td>Crawford Hall</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>3 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>903</td>
<td>Crawford Hall</td>
<td>20</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>903</td>
<td>Crawford Hall Stage</td>
<td>198</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-4</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>103</td>
<td>Cross Cultural Center</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>3 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>417</td>
<td>Croul Hall</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>417</td>
<td>Croul Hall</td>
<td>275</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>5 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>417</td>
<td>Croul Hall</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-34</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>715</td>
<td>Drama Building</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>3</td>
<td>Education Building</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>321</td>
<td>Engineering Gateway</td>
<td>200</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>321</td>
<td>Engineering Gateway</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>321</td>
<td>Engineering Gateway</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>321</td>
<td>Engineering Gateway</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>321</td>
<td>Engineering Gateway</td>
<td>685</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
</tbody>
</table>
Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>308</td>
<td>Engineering Hall</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-132</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>323</td>
<td>Engineering Lab Facility</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>323</td>
<td>Engineering Lab Facility</td>
<td>2 @ 250, 10 @ 55</td>
<td>Jet A / Kerosene Gasoline / Diesel</td>
<td>Portable Fuel Storage</td>
<td>Fuel Storage</td>
<td>Double walled tanks, steel and poly drums placed inside room with concrete containment berm.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>323</td>
<td>Engineering Lab Facility</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-78</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>305</td>
<td>Engineering Lecture Hall</td>
<td>198</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-54</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>303</td>
<td>Engineering Tower</td>
<td>200</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>303</td>
<td>Engineering Tower</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-17</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>41</td>
<td>Environmental Health &amp; Safety</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>41</td>
<td>Environmental Health &amp; Safety</td>
<td>10 @ 30</td>
<td>Hazardous Waste</td>
<td>Portable Oil Storage</td>
<td>Poly drums placed inside room that drains spills to underground containment tank.</td>
<td>Inspect Monthly</td>
<td></td>
</tr>
<tr>
<td>41</td>
<td>Environmental Health &amp; Safety</td>
<td>700</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>41</td>
<td>Environmental Health &amp; Safety</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td>T-111</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>91</td>
<td>Facilities Fueling</td>
<td>5,000 / 5,000</td>
<td>Diesel B20 / Bio diesel B99</td>
<td>Bulk Storage Tank</td>
<td>Fuel Dispensing Station</td>
<td>One steel double-walled, dual compartment 10,000 gallon aboveground storage tank (AST) with 6-inch insulation is used to store 5,000 gallons of bio-diesel B99 and 5,000 gallons of diesel B20. The AST is located within a berm area that is approximately 40 feet by 60 feet with a berm minimum height of 3 inches at the vehicle bump. These dimensions confirm that secondary containment capacity of the berm area is sufficient for a tank truck with no more than 4,200 gallons of liquid in its largest storage compartment. The bermed area slopes from all sides towards the center where a drain leads to a below ground interceptor. Additionally, an administrative measure is implemented to prohibit AST loading during storm events. Installed in 2006.</td>
<td>Inspect Monthly</td>
</tr>
</tbody>
</table>
Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>91</td>
<td>Facilities Fueling</td>
<td>7,000 / 3,000</td>
<td>Gasoline / Diesel</td>
<td>Bulk Storage Tank</td>
<td>Fuel Dispensing Station</td>
<td>One steel double-walled dual compartment 10,000 gallon aboveground storage tank (AST) with 6-inch insulation is used to store 3,000 gallons of diesel and 7,000 gallons of gasoline. The AST is located within a berm area that is approximately 40 feet by 60 feet with a berm minimum height of 3 inches at the vehicle bump. These dimensions confirm that secondary containment capacity of the berm area is sufficient for a tank truck with no more than 4,200 gallons of liquid in its largest storage compartment. The berm area slopes from all sides towards the center where a drain leads to a below ground interceptor. Additionally, an administrative measure is implemented to prohibit AST loading during storm events. Installed in 1996.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>713</td>
<td>Fine Arts 1 Custom Shop</td>
<td>340</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-5</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>714</td>
<td>Fine Arts Admin. Above Mens Rest Room. (AIRT)</td>
<td>180</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-6</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>711</td>
<td>Fine Arts Mesa Ext. Bldg.</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-133</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>726</td>
<td>Fine Arts Music Media</td>
<td>160</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-115</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>725</td>
<td>Fine Arts Studio 4</td>
<td>198</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-88</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>97</td>
<td>Fleet Services</td>
<td>2 @ 55</td>
<td>Automatic Transmission Fluid</td>
<td>Portable Oil Storage</td>
<td>Steel drums placed inside containment shelter.</td>
<td></td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>97</td>
<td>Fleet Services</td>
<td>120</td>
<td>Motor Oil / Used Motor Oil</td>
<td>Storage Tank Oil Storage</td>
<td>One steel double-walled 120 gallon storage tank is used to store new motor oil.</td>
<td></td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>97</td>
<td>FM Portable Generator</td>
<td>69</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Double-walled tank on trailer.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>101</td>
<td>Gateway Commons</td>
<td>190</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-13</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>101</td>
<td>Gateway Study Ctr</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator 3 Stop</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>850</td>
<td>Gavin Eye Institute</td>
<td>850</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>850</td>
<td>Gavin Eye Institute</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-80</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>837</td>
<td>Gillespie Neurosciences</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator 4 Stop</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>837</td>
<td>Gillespie Neurosciences</td>
<td>275</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator 5 Stop</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>837</td>
<td>Gillespie Neurosciences</td>
<td>300</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>837</td>
<td>Gillespie Neurosciences</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer T-61</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
</tbody>
</table>
## Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>820</td>
<td>Gottschalk Medical Plaza</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>3 Stop</td>
</tr>
<tr>
<td>845</td>
<td>Gross Hall</td>
<td>1200</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>845</td>
<td>Gross Hall</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>T-137</td>
</tr>
<tr>
<td>897</td>
<td>Grounds Maintenance</td>
<td>6 @ 55</td>
<td>Motor Oil</td>
<td>Portable Oil</td>
<td>Oil Storage</td>
<td>Steel drums placed inside building with containment drums/pallets.</td>
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<tr>
<td>843</td>
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<td>Storage Tank</td>
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<tr>
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<td>Elevator</td>
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<td>Integrated Tank / Double Walled</td>
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<td></td>
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<td>Inspect Monthly</td>
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</table>
## Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
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<tbody>
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<td>Storage Tank</td>
<td>Standby Generator</td>
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<td>Krieger Hall</td>
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<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-9</td>
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<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>5 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>102</td>
<td>Langson Library</td>
<td>275</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>5 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>102</td>
<td>Langson Library</td>
<td>120</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>One steel single-walled 120-gallon external diesel fuel tank is located in the building basement. The tank is piped to an adjacent standby generator. All equipment is contained indoors. The storage tank is rectangular in shape and sits flat upon a concrete pad. A concrete berm is situated around the storage tank and piping to provide secondary containment. A diagram displaying the berm dimensions and secondary containment calculations are provided in Appendix C.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>102</td>
<td>Langson Library</td>
<td>266</td>
<td>Transformer Oil</td>
<td>Transformer Oil</td>
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<td>T-11</td>
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<td>Langson Library</td>
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<td>Transformer Oil</td>
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<td>Transformer</td>
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<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
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<td>Law Building</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>4</td>
<td>Law Building</td>
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<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>3 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>4</td>
<td>Law Building</td>
<td>560</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
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<td>503</td>
<td>McGaugh Hall</td>
<td>500</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>One steel single-walled 500-gallon external diesel fuel tank is located inside the basement. The tank is piped to an adjacent standby generator. The storage tank is rectangular in shape and sits on concrete legs above a concrete pad. A concrete berm and concrete walls are situated around the storage tank as secondary containment.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>MESA (C3)</td>
<td>MCH- Cascada #4061</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>MESA (C3)</td>
<td>MCH- Community Ctr #4057</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>MESA (C3)</td>
<td>MCH- Lluvia #4047</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>MESA (C3)</td>
<td>MCH- Middle Plaza</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
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<tr>
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<td>MCH- Niebla #4059</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
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</table>
### Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
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<td>Elevator</td>
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<td>MCH- Palo #4043</td>
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<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
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<td>Transformer</td>
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<td>Elevator</td>
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<td>Merage School of Business</td>
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<td>Transformer Oil</td>
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<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
</tbody>
</table>
Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
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<td>Elevator</td>
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<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>2</td>
<td>MPAAB</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>2</td>
<td>MPAAB</td>
<td>600</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator Integrated Tank / Double Walled</td>
<td></td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>2</td>
<td>MPAAB</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-120</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>415</td>
<td>Multi-Purpose Science &amp; Technology</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>415</td>
<td>Multi-Purpose Science &amp; Technology</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-117</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>726</td>
<td>Music &amp; Media Building</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
</tbody>
</table>
Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>517</td>
<td>Natural Science 1</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>517</td>
<td>Natural Science 1</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>517</td>
<td>Natural Science 1</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-126</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>402</td>
<td>Natural Science 2</td>
<td>275</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>5 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>402</td>
<td>Natural Science 2</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>402</td>
<td>Natural Science 2</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-127</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>517</td>
<td>Natural Sciences 1</td>
<td>400</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>402</td>
<td>Natural Sciences 2</td>
<td>1200</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>721</td>
<td>New Media Arts Center</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>721</td>
<td>New Media Arts Center</td>
<td>70</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>233</td>
<td>Newkirk Alumni House</td>
<td>266</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-66</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>CV (F4)</td>
<td>North Area Parking Lot - Campus Village</td>
<td>140</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-68</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>PV (E8)</td>
<td>Palo Verde Housing -Com Ctr # 7000</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>413</td>
<td>Physical Science Classroom</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>411</td>
<td>Physical Science Lecture Hall</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>3 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>829</td>
<td>Plumwood House</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>3 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>829</td>
<td>Plumwood House</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>7</td>
<td>Public Service</td>
<td>350</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>7</td>
<td>Public Service</td>
<td>190</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>T-98</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>7</td>
<td>Public Services</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>401</td>
<td>Reines Hall</td>
<td>150</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td></td>
<td>Inspect Monthly</td>
</tr>
</tbody>
</table>

One steel double-walled 150-gallon external diesel fuel tank is located within a locked fenced area east of the building. The tank is piped to an adjacent standby generator. The storage tank is rectangular in shape and sits flat upon a concrete pad. A concrete berm is situated around the storage tank, generator, and piping to provide secondary containment.
## Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>311</td>
<td>Rockwell Engineering</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>311</td>
<td>Rockwell Engineering</td>
<td>190</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>400</td>
<td>Rowland Hall</td>
<td>240</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>One steel single-walled 240-gallon external diesel fuel tank is located within a locked covered brick enclosure to the west of the building at the loading dock. The tank is piped underground to a standby generator inside of the building. A bunker constructed of brick surrounds the tank with a locked metal cover. The interior of the brick walls are coated with a watertight sealant and the tank sits upon a concrete floor. Since the bunker completely surrounds the tank, the bunker itself provides secondary containment. The secondary containment calculations are provided in Appendix C.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>400</td>
<td>Rowland Hall</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>400</td>
<td>Rowland Hall</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>400</td>
<td>Rowland Hall</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>400</td>
<td>Rowland Hall</td>
<td>297</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>501</td>
<td>Schneideman Lecture Hall</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>520</td>
<td>Science Library</td>
<td>240</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>One steel double-walled 240-gallon external diesel fuel tank is located inside of the southwest end of the building. The storage tank is rectangular in shape and sits flat upon a concrete floor and is piped to an adjacent standby generator also inside the building.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>720</td>
<td>Sculpt. Studio Lower Level</td>
<td>180</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>720</td>
<td>Sculpture &amp; Ceramic Studio</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>214</td>
<td>Social &amp; Behavioral Sciences Gateway</td>
<td>300</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>210</td>
<td>Social Ecology 1</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>Just west of the Social Ecology 1, one steel double-walled 240-gallon external diesel fuel tank is situated on a concrete pad inside a covered brick enclosure. The storage tank is rectangular in shape and is piped to an adjacent standby generator also inside the enclosure.</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>210</td>
<td>Social Ecology 1</td>
<td>240</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td></td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>210</td>
<td>Social Ecology 1</td>
<td>266</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>211</td>
<td>Social Science 2 Pod A</td>
<td>390</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
</tbody>
</table>
### Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>202</td>
<td>Social Science Lab</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>One steel single-walled 240-gallon external diesel fuel tank is located within a locked covered brick enclosure to the south of the building at the loading dock. The tank is piped to an adjacent standby generator. A bunker constructed of brick surrounds the tank with a locked metal cover. The interior of the brick walls are coated with a watertight sealant and the tank sits upon a concrete floor. Since the bunker completely surrounds the tank, the bunker itself provides secondary containment. The secondary containment calculations are provided in Appendix C.</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>202</td>
<td>Social Science Lab</td>
<td>240</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td></td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>202</td>
<td>Social Science Lab</td>
<td>266</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>SSPS</td>
<td>Social Science Parking Structure</td>
<td>385</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>SSPS</td>
<td>Social Science Parking Structure</td>
<td>385</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>211</td>
<td>Social Science Plaza A</td>
<td>200</td>
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<td>Storage Tank</td>
<td>Standby Generator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>211</td>
<td>Social Science Plaza A</td>
<td>330</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>213</td>
<td>Social Science Plaza B</td>
<td>330</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>215</td>
<td>Social Science Plaza C</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>201</td>
<td>Social Science Tower</td>
<td>153</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>839</td>
<td>Sprague Hall</td>
<td>660</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>839</td>
<td>Sprague Hall</td>
<td>597</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>839</td>
<td>Sprague Hall</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>839</td>
<td>Sprague Hall</td>
<td>275</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>502</td>
<td>Steinhaus Hall</td>
<td>240</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator</td>
<td>Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>502</td>
<td>Steinhaus Hall</td>
<td>266</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>502</td>
<td>Steinhaus Hall</td>
<td>153</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>113</td>
<td>Student Center</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>113</td>
<td>Student Center</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td></td>
<td>During Routine Operational Maintenance</td>
</tr>
</tbody>
</table>
## Appendix B: Table of Storage Tank

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>113</td>
<td>Student Center</td>
<td>165</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>3 Stop During Routine Operational Maintenance</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Student Center</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop During Routine Operational Maintenance</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Student Center</td>
<td>110</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>2 Stop During Routine Operational Maintenance</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Student Center Parking</td>
<td>353</td>
<td>Used Cooking Oil</td>
<td>Bulk Storage Tank</td>
<td>Food Oil Storage</td>
<td>Aluminum double-walled 353 gallon storage tank located in the shipping dock area of the Student Center. Used cooking oil is manually transferred into tank.</td>
<td>Inspect Monthly</td>
</tr>
<tr>
<td>113</td>
<td>Student Center</td>
<td>100</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Student Center</td>
<td>153</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer Generator</td>
<td>T-35</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>113</td>
<td>Student Center</td>
<td>153</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer Generator</td>
<td>T-42</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>113</td>
<td>Student Center Parking</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop During Routine Operational Maintenance</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Student Center Parking</td>
<td>220</td>
<td>Hydraulic Oil</td>
<td>Storage Tank</td>
<td>Elevator</td>
<td>4 Stop During Routine Operational Maintenance</td>
<td></td>
</tr>
<tr>
<td>113</td>
<td>Student Center Parking</td>
<td>266</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer Generator</td>
<td>T-107</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>6</td>
<td>Student Health</td>
<td>191</td>
<td>Transformer Oil</td>
<td>Transformer</td>
<td>Transformer Generator</td>
<td>T-29</td>
<td>During Routine Operational Maintenance</td>
</tr>
<tr>
<td>5</td>
<td>Student Health Center</td>
<td>120</td>
<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Student Health Services 2</td>
<td>174</td>
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<td>Student Services 1</td>
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<td>Elevator</td>
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<td>711</td>
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<td>Diesel</td>
<td>Storage Tank</td>
<td>Standby Generator Integrated Tank / Double Walled</td>
<td>Inspect Monthly</td>
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## Appendix B: Table of Storage Tanks

The location of all tanks and equipment correspond to the building number on the campus map.

<table>
<thead>
<tr>
<th>Campus Map Bldg #</th>
<th>Location</th>
<th>Capacity (gallons)</th>
<th>Contents</th>
<th>Tank Type</th>
<th>Equipment Type</th>
<th>Comments</th>
<th>Inspection Frequency</th>
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<tr>
<td>36</td>
<td>UCI Bus Charging Lot</td>
<td>266</td>
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<td>UNEX</td>
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<td>Integrated Tank / Double Walled</td>
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<tr>
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<td>Transformer</td>
<td>Transformer</td>
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</tbody>
</table>
APPENDIX C

Tank and Secondary Containment Specifications
Secondary Containment Calculations for ASTs

Social Science Plaza A:

Description: One 220-gallon horizontal cylindrical tank within a bermed area; tank sits on legs several feet above the ground. Tank located outdoors.
Single-Tank Dimensions: 72-in length x 30-in diameter

Secondary Containment Specifications:
Length: 84 inches
Width: 60 inches
Area: 5,040 in²
Height of wall: 16 inches

Required Containment Volume = Maximum Tank Volume: 220 gallons

Freeboard for Storm Water: 25-year, 24-hour storm event; 4 inches

Available Containment Height: Height of wall – Freeboard for storm water = 12 inches

Available Capacity: (Total Area 5,040 in²) x 12 in = 60,480 in³ = 261 gallons

Displaced Capacity: negligible

Available Containment Volume: 261 gallons

The available containment volume (261 gallons) is more than the required containment volume (220 gallons).
Secondary Containment Calculations for ASTs

McGaugh Hall:

Description: One 550-gallon horizontal cylindrical tank in bermed area; sits on legs; tank bottom several inches above ground. Tank located indoors.

Secondary Containment Specifications:
- L-shaped
- Overall Length: 155 inches
- Overall Width: 127 inches
- Overall Area: 19,685 in²
- Notch Short Length: 78 inches
- Notch Width: 54 inches
- Notch Area: 4,212 in²
- Notch Area: Overall Area – Notch Area = 15,473 in²
- Height of wall: 12 inches

Required Containment Volume = Maximum Tank Volume: 550 gallons

Freeboard for Storm Water: (not applicable)

Available Containment Height: Height of wall = 12 inches

Available Capacity: (Containment Area 15,473 in²) x 12 in = 185,676 in³ = 800 gallons

Displaced Capacity: (not applicable)

Available Containment Volume: **800 gallons**

The available containment volume (800 gallons) is greater than the required containment volume (550 gallons).
Secondary Containment Calculations for ASTs

**Main Library:**

**Description:** One 120-gallon rectangular tank in bermed area resting on floor. Tank located indoors.

**Secondary Containment Specifications:**
L-shaped
Overall Length: 265 inches
Overall Width: 164 inches
Overall Area: 43,460 in²
Notch Short Length: 190 inches
Notch Width: 48 inches
Notch Area: 9,120 in²
Containment Area: Overall Area – Notch Area = 34,340 in²
Height of wall: 6 inches

**Required Containment Volume = Maximum Tank Volume:** 120 gallons

**Freeboard for Storm Water:** (not applicable)

**Available Containment Height:** Height of wall = 6 inches

**Available Capacity:** (Containment Area 34,340 in²) x 6 in = 206,040 in³ = 890 gallons

**Displaced Capacity:** (not applicable)

**Available Containment Volume:** **890 gallons**

The available containment volume (890 gallons) is greater than the required containment volume (120 gallons).
Secondary Containment Calculations for ASTs

Computer Science:

Description: Single 300-gallon horizontal cylindrical tank in bermed area; sits on legs; tank bottom several inches above ground. Tank located outdoors. A portion of the containment area is situated underneath a roof, and therefore, freeboard for storm water is not required for covered portion.

Secondary Containment Specifications:
L-shaped
Overall Length: 357 inches
Overall Width: 120 inches
Overall Area: 42,840 in²
Notch Short Length: 261 inches
Notch Width: 107 inches
Notch Area: 27,927 in²
Containment Area: Overall Area – Notch Area = 14,913 in²
Covered Length: 144 inches
Covered Width: 13 inches
Covered Area: 1,872 in²
Uncovered Area: Containment Area – Covered Area = 13,041 in²
Height of wall: 10 inches

Required Containment Volume = Maximum Tank Volume: 300 gallons
Freeboard for Storm Water: 25-year, 24-hour storm event: 4 inches

Available Containment Height:
(covered area): Height of wall = 10 inches
(uncovered area): Height of wall – Freeboard for storm water = 6 inches

Available Capacity (Covered Area): (Covered Area 1,872 in²) x 10 in = 18,720 in³ = 81 gallons
Available Capacity (Uncovered Area): (Uncovered Area 13,041 in²) x 6 in = 78,246 in³ = 338 gallons
Total Available Capacity: 419 gallons
Displaced Capacity: (negligible)
Available Containment Volume: 419 gallons

The available containment volume (419 gallons) is greater than the required containment volume (300 gallons).
Secondary Containment Calculations for ASTs

Central Plant:

Description: 200 gallon double walled tank in bermed area; tank bottom resting on concrete pad. Tank located outdoors.

Secondary Containment Specifications:
Length: 281 inches
Width: 135 inches
Area: 37,935 in²
Height of wall: 11 inches

Required Containment Volume = Maximum Tank Volume: 200 gallons

Freeboard for Storm Water: 25-year, 24-hour storm event: 4 inches

Available Containment Height: Height of wall – Freeboard for storm water = 7 inches

Available Capacity: (Total Area 37,935 in²) x 7 in = 265,545 in³ = 1,149 gallons

Displaced Capacity: (negligible)

Available Containment Volume: 1,149 gallons

The available containment volume (1,149 gallons) is greater than the required containment volume (425 gallons).
Secondary Containment Calculations for ASTs

Engineering Laboratory Facility:

**Description:** Two 250-gallon double walled rectangular tanks, 10 55-gallons drums inside a bermed area resting on the floor. The tanks and drums are located indoors.

**Secondary Containment Specifications:**
Length: 106 inches  
Width: 153 inches  
Area: 16,218 in²  
Height of wall: 6 inches

**Required Containment Volume = Maximum Tank Volume:** 55 gallons

**Freeboard for Storm Water:** N/A

**Available Containment Height:** Height of wall – 6 inches

**Available Capacity:** (Total Area 16,218 in²) x 6 in = 97,308 in³ = 421 gallons

**Displaced Capacity:** negligible

**Available Containment Volume: 421 gallons**
The available containment volume (421 gallons) is exceeds the required containment volume (55 gallons).
Secondary Containment Calculations for ASTs

Rowland Hall:

**Description:** One steel single-walled 240-gallon external diesel fuel tank is located within a locked covered brick enclosure to the west of the building at the loading dock. The tank is piped underground to a standby generator inside of the building. A bunker constructed of brick surrounds the tank with a locked metal cover. The interior of the brick walls are coated with a watertight sealant and the tank sits upon a concrete floor. Since the bunker completely surrounds the tank, the bunker itself provides secondary containment.

**Secondary Containment Specifications:**
- Length: 57 inches
- Width: 57 inches
- Area: 3,249 in²
- Height of wall: 47 inches

**Required Containment Volume = Maximum Tank Volume:** 240 gallons

**Freeboard for Storm Water:** N/A

**Available Containment Height:** Height of wall – 47 inches

**Available Capacity:** (Total Area 3,249 in²) x 47 in = 152,703 in³ = 661 gallons

**Displaced Capacity:** negligible

**Available Containment Volume: 661 gallons**
The available containment volume (661 gallons) is exceeds the required containment volume (240 gallons).
Secondary Containment Calculations for ASTs

Social Science Lab:

Description: One steel single-walled 240-gallon external diesel fuel tank is located within a locked covered brick enclosure to the south of the building at the loading dock. The tank is piped to an adjacent standby generator. A bunker constructed of brick surrounds the tank with a locked metal cover. The interior of the brick walls are coated with a watertight sealant and the tank sits upon a concrete floor. Since the bunker completely surrounds the tank, the bunker itself provides secondary containment.

Secondary Containment Specifications:
Length: 57 inches
Width: 57 inches
Area: 3,249 in²
Height of wall: 55 inches

Required Containment Volume = Maximum Tank Volume: 240 gallons

Freeboard for Storm Water: N/A

Available Containment Height: Height of wall – 55 inches

Available Capacity: (Total Area 3,249 in²) x 55 in = 178,695 in³ = 773 gallons

Displaced Capacity: negligible

Available Containment Volume: 773 gallons
The available containment volume (773 gallons) is exceeds the required containment volume (240 gallons).
Portable Fuel Dispensing Tank on Trailer:

**Description:** 110 gallon single-walled tank on a trailer used to fill standby generator fuel tanks. When not in use, the portable refueling tank is stored in a concrete berm secondary containment area at the UCI Electrical Substation. The tank and containment area are located outdoors.

**Secondary Containment Specifications:**
- Length: 125 inches
- Width: 117 inches
- Area: 14,625 in²
- Height of wall: 6 inches

**Required Containment Volume = Maximum Tank Volume:** 110 gallons

**Freeboard for Storm Water:** 25-year, 24-hour storm event: 4 inches

**Available Containment Height:** Height of wall – Freeboard for storm water = 2 inches

**Available Capacity:** (Total Area 14,625 in²) x 2 in = 29,250 in³ = 126 gallons

**Displaced Capacity:** negligible

**Available Containment Volume: 126 gallons**
The available containment volume (126 gallons) is greater than the required containment volume (110 gallons).
APPENDIX D

SPCC Monthly Inspection Form
UCI Monthly SPCC Inspection Form (Example*)

GENERAL FACILITY INSPECTIONS:
1. Security devices in place and operable?
2. Safety and emergency equipment in adequate supply, accessible locations, and good working condition?
3. Surface water free of oil sheen and waste presence?
4. Surface water free of odors?

TANKS, PIPING, AND CONTAINMENT STRUCTURES:
5. Locks on tanks and pumps?
6. Adequate supply of absorbent?
7. Containment of structures of adequate capacity and in good condition?
8. Tank auxiliary equipment (valves, piping, and pumps) free of deterioration and in good working condition?
9. Site free from evidence of leaks or spills?
10. Tank and piping free of corrosion and deterioration?
11. Tank foundation free of deterioration?

Monthly SPCC Inspection Log

Inspector’s Name: Date:

Inspector’s Signature:

<table>
<thead>
<tr>
<th>Location</th>
<th>Deficiencies</th>
<th>Corrective Actions</th>
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<tr>
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<tr>
<td>Grounds (Oil Drums)</td>
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<tr>
<td>Central Plant (Oil Drums)</td>
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<tr>
<td>Central Plant (Portable Fuel Tank)</td>
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<td>Engineering Lab Facility (Tanks And Drums)</td>
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<td>North Campus Fleet Services Garage (Oil Tank And Drums)</td>
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<td>North Campus Facilities Fueling (Tanks)</td>
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<tr>
<td>EH&amp;S (Oil Drums)</td>
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* Inspections are documented using an intranet form, which includes, but is not limited to, the required information in this example form.