

BEST MANAGEMENT PRACTICE FOR CLEAN MARINAS



Marinas rely on clean waters to keep their businesses thriving. Boaters do not want to swim, fish, ski, or even float in polluted waters and if boaters don't boat, marinas don't have customers. With this in mind, marinas need to be leaders in keeping the waters and shorelines clean.

Learning and using Best Management Practices (BMPs) is a marina operators' best defense against pollution, and is preferable to seeing new required regulations aimed at curbing pollution. This thinking was the impetus for individual states to start voluntary Clean Marina programs. There is no mandate for participation, but marinas that get Clean Marina certifications find they benefit not just from a cleaner, better-run facility, but also from being recognized as environmental stewards by their customers, visitors, and even regulatory agencies. In turn, the marina industry as a whole benefits by broadening the perception that a marina is not a polluting menace but rather a valuable asset to the community in which it sits.

The Association of Marina Industries (AMI) strongly supports Clean Marina and encourages all marinas in states with Clean Marina programs to get certified. AMI believes most marinas meet nearly all the requirements of the Clean Marina program and, where they don't, the Clean Marina program will educate them about the latest regulatory requirements and the newest products and processes to combat pollution. Clean Marina is a way for marina operators to learn, without fear, of the fines or penalties that exist for not being in compliance.

AMI has compiled the common Best Management Practices found in Clean Marina programs across the country, to be used by marinas in states without programs and by marinas that just want to see what being a Clean Marina involves before committing to certification. For specific information on your state's program, visit <http://coastalmanagement.noaa.gov/marinas.html>, which has links to participating state programs. If your state does not have a Clean Marina program, use the below information as guidance and check with your state environmental agencies to ensure you are complying with all state and local rules.

Practices recommended in this Manual represent a consensus position of Clean marina best practices and was developed by environmental and marine industry professionals. The Association of Marina Industries accepts no liability for their specific application in the context of your business. The Association of Marina Industries shall be held harmless in any dispute involving the use of the Clean Marina practices identified in this Manual.

SITING CONSIDERATIONS AND MARINA DESIGN

Redevelop Existing Sites

- Place new facilities in previously developed waterfront sites.
- Expand marinas into previously developed sites.
- Check with your local government for preferred redevelopment activities and locations.

Avoid Rare and Endangered Species

- Rare and endangered species may not be disturbed per the Federal & State Endangered Species Act/Legislation.
- Get a preliminary screening through you state agency that handles endangered species.
- If protected species are identified, you must implement an approved protection plan prior to project approval.

Avoid Submerged Aquatic Vegetation

- Avoid disturbing or shading SAV.
- Avoid creating situations where secondary impacts on SAV by boat traffic (i.e. prop scarring or erosion from wakes) can occur.

Minimize Disturbance to Wetlands

- Avoid disturbance to wetlands and indigenous vegetation in riparian areas.
- Build open piled docks at a height minimizing shading impacts to marshes (build docks at least 1 foot in height above substrate for every 1 foot of dock width).
- Remove foreign materials (trash) from wetlands.

Avoid Shellfish Waters

- Avoid construction that results in the condemnation of shellfish waters. Many states have established policies that require creating buffer zones around boat mooring facilities within which shellfish cannot be harvested for direct marketing during certain months of the year.
- Do not site a marina near active shellfish harvesting or culturing areas.

Avoid Critical Migration, Nesting, and Spawning Areas for Location and Construction

- Disturbance of waterfowl staging areas by marinas and increased boat traffic should be avoided.
- Schedule construction to avoid critical migration, nesting, and spawning periods of important finfish, shellfish, and wildlife.

Consider Bottom Configuration

- Locate marinas on well-flushed, natural waterways; A continuous, gradual downward slope from the berthing area into deeper water is ideal.
- Avoid locating in canals (especially dead-end canals), irregular pockets, and sumps that are deeper than adjacent channels.
- Build docks in areas with water depths greater than 3 feet at mean low water.

Minimize Impervious Areas to Reduce Runoff

- Maintain areas with grass or gravel or other materials that let water percolate-- where water and the pollutants (fertilizer, etc.) it picks up is filtered naturally before reaching the waters of your marina.
- Keep paved areas to an absolute minimum, i.e., just designate work areas and roadways for heavy equipment.

Use Upland and Inland Areas

- Upland and inland work areas should be far enough away from the water to allow for the natural filtering of pollutants.
- Locate buildings, workshops, and waste storage facilities in upland areas, away from fragile shoreside ecosystems, to the greatest extent possible. Upland areas also provide a measure of protection against floods.
- Locate parking and vessel storage areas away from the water, where feasible to reduce runoff.
- Consider inland areas for boat repair activities and winter storage. Use hydraulic trailers to quickly and easily move boats to inland storage locations.

Use Fixed or Floating Piers to Enhance Water Circulation

- Piers, and other structures should not inhibit water circulation.
- Select an open design for new or expanding marinas. Open marina designs have no fabricated or natural barriers to restrict the exchange of ambient water and water within the marina area.
- Install wave attenuators to reduce the force of incoming water, if protection is necessary.
- Design new or expanding marinas with as few segments as possible to promote circulation within the basin.
- Identify options to improve areas with poor water circulation.

Use Environmentally Neutral Material

- For new pilings and other structures that are in or above the water, use materials that will not leach hazardous chemicals into the water and which will not degrade in less than ten years time; i.e., reinforced concrete, coated steel, recycled plastic, plastic reinforced with fiberglass may be preferable.
- Avoid using wood treated with creosote for pilings and similar structures in or above the water
- Purchase floatable foams that have been coated or encapsulated in plastic or wood. As these floats age, degraded foam is contained by the covering.

Minimize the Need for Dredging

- Locate new marinas in areas where access can be obtained with a minimum of excavating, filling, and dredging.
- Existing marinas that require maintenance dredging more frequently than once every four years should investigate practicable options to increase circulation or reduce sediment accumulation.
- Extend piers and docks into naturally deep waters.
- Locate slips for deep draft boats in naturally deep waters.
- Dredge channels to follow the course of the natural channel.
- Co-locate entrance channels with natural channels.
- Avoid locating the entrance channel perpendicular to the natural channel as shoaling and, therefore, dredging is a potential problem.
- Where possible, establish two openings at opposite ends of the marina to promote flow-through currents.
- Provide dry storage for smaller boats.

Minimize the Impacts of Dredging

- Select an appropriate disposal site and containment design. The disposal site must have minimal impact on public safety, adjacent properties, and the environment.
- Do not dredge during critical migration or spawning periods of important species of finfish or shellfish.
- Avoid historic water bird nesting areas and waterfowl staging and concentration areas
- Use dredging methods, like hydraulic dredging, that minimize environmental impacts when large dredge volumes are involved.
- Use turbidity curtains to contain suspended sediments where appropriate.

Employ Nonstructural Shore Erosion Control Measures

Nonstructural measures, such as beach nourishment, marsh creation, and other methods that encourage the preservation of the natural environment, are the preferred methods of shore erosion control. If nonstructural measures alone are not sufficient to control erosion, use revetments, breakwaters, or groins to stabilize and ensure the long-term viability of the nonstructural controls.

MARINA MANAGEMENT

Staff Training

A well-trained staff will routinely minimize pollution, answer patrons questions, and perform their duties more efficiently. The proper training will also contribute to a faster response time during emergencies.

Train Staff on the following:

- Used oil management
- Spent solvent management
- Proper disposal of spent abrasives
- Disposal of vessel wastewater
- Spill prevention and control
- Fueling procedures
- General good housekeeping
- Painting and blasting procedures
- Used battery management

Emergency Response Plans

- Review plans and response procedures with staff at the beginning of each boating season.
- Train employees in the use of containment measures.
- Run emergency response drills at least twice annually.
- Invite the U.S. Coast Guard and local fire department to demonstrate emergency response procedures at your marina.

Maintain Records of Training

- Record training dates, topics, and names of employees and instructors.
- Keep copies of instructional material.

Train Employees to Notice and Halt these Activities

- Colored plumes in the water where a hull is being cleaned
- Bilge water discharge with a sheen
- Uncontained sanding, painting, varnishing, or cleaning
- Maintenance debris being washed into the water
- Sewage discharges within the marina
- The use of environmentally harmful cleaning products

Educate Patrons and Independent Contractors -

- Include language requiring the use of BMPs in all of your contracts: slip holders, live-aboards, transients, charters, workers, contractors, and tenants.
 - Clearly outline consequences for not using BMPs.
 - Include information about BMP requirements.
 - Post Signs Detailing BMPs in visible locations
 - Include: fuel docks, pumpout stations, vessel maintenance areas, dumpsters, recycling stations. Be sure signs are durable, eye catching, and large enough to read easily.

- Distribute Literature to Customers
 - Send tip sheets with monthly mailings.
 - Include BMP articles in newsletters.
 - Contact the U.S. Coast Guard for publications on federal boating requirements.
 - Erect and maintain a marina bulletin board.
 - Post your facility's environmental policy in a conspicuous location.
- If customers/contractors do not follow their contracts you can take the following steps:
 - Talk to the boater or contractor again.
 - Mail a written notice asking that the harmful practice stop. Keep a record of the mailing.
 - Remove the problem from the dock. Charge the boater or contractor for the cost of removal and clean-up.
 - Ask the tenant or contractor to leave your marina.

Business Practices

- Scrape, sand, and paint in-water and landside structures according to the same management principles as for vessels.
- Sell environmental products, especially if you require them for BMPs
- Offer Environmental Audits for Boaters
- Inspect engines, bilges, fuel systems, and marine sanitation devices (the most common cause of water pollution from boats).
- Avoid environmental surcharges by charging for tangible items such as tarps, vacuum sanders, and protective clothing.

EMERGENCY PLANNING

Maintain Material Safety Data Sheets

- Keep a file of Material Safety Data Sheets (MSDS) for all products used at your facility, as required by the Occupational Safety and Health Act of 1970 (29 USC Sec. 657). MSDS can be found online at <http://www.msdssearch.com/msdssearch.htm>. Store the file in an office away from material storage areas.
- Inform the local Emergency Planning office what materials you store and what is released when they burn.

Assess Coastal Hazards

- Designate a conscientious response person for any emergencies involving hazardous materials.
- Consider and plan for these likely threats:
 - Chemical or oil spill
 - Holding or water tank filled with gas
 - Fire
 - Health emergency
 - Hurricane/Nor'easter
 - Tornado
 - Flood

Develop Emergency Response Plans

- Develop written procedures describing actions to be taken under given circumstances. The plans should be clear, concise, and easy to use during an emergency. Include information about what type of equipment is available on site and what its characteristics and capabilities are.
- Keep copies of all Emergency Response Plans in a readily accessible location.

- Place a second copy of the Spill Response Plan in the oil spill response kit.
- Review plans and response procedures with staff at the beginning of each boating season.
- Train employees in the use of containment measures.
- Run emergency response drills at least twice annually.
- Invite the U.S. Coast Guard and local fire departments to demonstrate emergency response procedures at your marina.

Be Prepared for a Fire

- Meet the National Fire Protection Association's standards for marinas: NFPA 303, Fire Protection Standards for Marinas and Boatyards; NFPA 302, Fire Protection Standards for Pleasure and Commercial Motor Craft; NFPA 30A, Automotive and Marine Service Station Code; NFPA 307, Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves; and NFPA 33, Standard for Spray Application Using Flammable and Combustible Materials.
- Be sure hydrants are available to allow for fighting fires throughout your facility. (This can include dry hydrants.)
- Install smoke detectors.
- Provide and maintain adequate, readily accessible, and clearly marked fire extinguishers on each dock and one on the fuel dock within 25' of the head of the gangway to the dock
- Provide metal containers with tight-fitting or self-closing metal lids for the temporary storage of combustible trash
- Post warning signs at the face of each wharf, pier or float at an elevation clearly visible from the decks of boats being fueled. Letters on the signs shall be at least 3 inches in height. NFPA requires signs to include the following:

**WARNING-NO SMOKING.
STOP ENGINE WHILE FUELING,
SHUT OFF ELECTRICITY
DO NOT START ENGINE UNTIL AFTER
BELOW DECK
SPACES ARE VENTILATED**

EPA requires a sign directly on fuel pumps stating:
FOR OFF-ROAD USE ONLY

The IRS also requires signs to be posted on fuel dispensing equipment stating:

**LOW SULFUR NON-HIGHWAY DIESEL FUEL
(NOT TO EXCEED 500 PPM SULFUR)**

WARNING

**FEDERAL LAW PROHIBITS USE IN MODEL YEAR 2007 AND LATER, NON-HIGHWAY
VEHICLES AND ENGINES.**

ITS USE MAY DAMAGE THESE VEHICLES AND ENGINES.

TAX EXEMPT. DYED. FOR OFF ROAD USE ONLY. PENALTY FOR TAXABLE USE.

- Inspect and test all fire fighting equipment and systems regularly.
- Train personnel on fire safety and response: who to call, location of hydrants, use of portable extinguishers, etc.
- Provide ready access to all piers, floats, and wharves for municipal fire fighting equipment.
- Invite the local fire marshal to visit your marina annually to train employees. These annual visits will also help the fire department to become familiar with your facility.

Emergency Response Equipment

Obtain and store emergency response equipment in an easily accessible location and where the greatest threat of an emergency exists (i.e., oil spill kit on the fuel dock).

Share Your Emergency Response Plans

- Inform your local fire department and harbor master, if applicable, about your emergency response plans and equipment.
- Let neighboring marinas know what resources are available at your marina.

PETROLEUM CONTROL

Protect Petroleum Storage Tanks

Check with your state rules on aboveground or underground storage tanks. Storage tanks holding 1500 gallons of diesel or 1400 gallons of gas must file Emergency Planning & Community Right to Know Act Tier II reports annually. Check with your state for online filing options.

Install double-walled or vaulted fuel tanks with aboveground piping. Tanks should meet the following conditions (NFPA 30):

- The capacity of the tank shall not exceed 12,000 gal (45,420 L).
- All piping connections to the tank shall be made above the normal maximum liquid level.
- Means shall be provided to prevent the release of liquid from the tank by siphon flow.
- Means shall be provided for determining the level of the liquid in the tank. This means shall be accessible to the delivery operator.
- Means shall be provided to prevent overfilling by sounding an alarm when the liquid level in the tank reaches 90 percent of capacity and by automatically stopping delivery of liquid to the tank when the liquid level in the tank reaches 95 percent of capacity. In no case shall these provisions restrict or interfere with the proper functioning of the normal or emergency vent.
- Spacing between adjacent tanks shall be not less than 3 feet (0.9 m).
- The tank shall be capable of resisting the damage from impact of a motor vehicle or suitable collision barriers shall be provided.
- Where the interstitial space is enclosed, it shall be provided with emergency venting.
- Locate above ground fuel tanks within a dike or over an impervious storage area with containment volumes equal to 1.1 times the capacity of the storage tank (s).
- Design containment areas with spigots to drain collected materials.
- Cover the tank with a roof to prevent rainwater from filling the containment area.
- Inspect tanks and piping regularly.

Waves and Wakes

- Locate fuel docks in protected areas. For safety reasons, all fueling stations should be accessible by boat without entering or passing through the main berthing area.
- Provide a stable platform for fueling personal watercraft (PWC):
 - Prefabricated drive-on docks.
 - Modify an existing dock by cutting a v-shaped berth and covering it with outdoor carpeting.
 - Place the PWC fueling area at the end of the fuel pier to reduce conflict with larger boats.

Maintain Fuel Transfer Equipment

- Inspect and maintain transfer equipment and hoses in good working order. Replace hoses, pipes, and tanks before they leak.
- Hard connect delivery nozzles.
- Hang nozzles vertically when not in use so that fuel remaining in hoses does not drain out.

Environmental Controls at the Pump

- Do not install holding clips for gas nozzles.
- Install automatic back-pressure shut-off nozzles on fuel pump discharge hoses to automatically stop the flow of fuel into a boat's fuel tank when sufficient reverse pressure is created.
- Maintain a supply of clearly marked, easily accessible oil absorbent pads and pillows at the fuel dock to mop up spills on the dock and on the water.
- Place plastic or nonferrous drip trays lined with oil absorbent material beneath fuel connections at the dock to prevent fuel leaks from reaching the water.
- Post instructions at the fuel dock directing staff and patrons to immediately remove spilled fuel from the dock and water with oil absorbent material. Indicate the location of the absorbents.
- Install breakaway fittings to prevent drive-offs or accidental/ violent disconnects.
- Consider installing fuel nozzles that redirect blow-back into vessels, fuel tanks or vapor control nozzles to capture fumes.
- Place small gas cans in oil-absorbent lined drip pans when filling.
- Secure oil-absorbent material at the waterline of fuel docks to quickly capture small spills. Look for oil-absorbent booms that are sturdy enough to stand up to regular contact with the dock and boats.
- Offer your services to install fuel/air separators on boats.

Supervise Fueling: Environmental Recommendations

- Train employees to clarify what the boater is asking for—gasoline or diesel
- Attach a container to the external vent fitting to collect overflow. There are products on the market that may be attached to the hull with suction cups. A rubber seal on the container fits over the fuel vent allowing the overflow to enter the container.
- Require boaters to stay with their craft during fueling.
- Instruct fuel dock personnel and boaters to listen to filler pipes to anticipate when tanks are nearly full.
- Instruct boaters to slow down at the beginning and end of fueling.
- Train employees to hand boaters absorbent pads with the fuel nozzles. Request that the boaters use them to capture backsplash and vent line overflow.

Supervise Fueling: Safety Recommendations

- Always have a trained employee at the fuel dock to oversee or assist with fueling.
- Remind boaters that gasoline vapors are heavier than air; they will settle in a boat's lower areas.
- Require all passengers to get off gasoline-powered vessels before fueling.
- Turn down the pressure on the fuel dispenser. Problems with backsplash and vent-line overflow are often due to the high-pressure flow of fuel from the pump.
- Ask your fuel company representative to reduce the pressure to a delivery rate of 10 gallons per minute—especially if you cater to small boats - or use a lower pressure sub-unit to lower pressure.
- Instruct boaters to:
 - Stop all engines and auxiliaries;
 - Shut off all electricity, open flames, and heat sources and cell phones;
 - Extinguish all cigarettes, cigars, and pipes;
 - Close all doors, hatches, and ports;
 - Maintain nozzle contact with the fill pipe to prevent static spark;
 - Inspect bilge after fueling for leakage or fuel odors
ventilate all compartments after fueling until fumes are gone
- Train dock staff to carefully observe fueling practices; make sure fuel is not accidentally put in the \ holding tank, the water tank, or a rod holder.

Provide an Oil/Water Separator

- Invest in a portable or stationary oil/water separator to draw contaminated water from bilges, capture hydrocarbons in a filter, and discharge clean water.

Offer Spill-proof Oil Changes

- Purchase a non-spill pump system to draw crankcase oils out through the dipstick tube. Use the system in the boat shop and rent it to boaters who perform their own oil changes.
- Slip a plastic bag over used oil filters prior to their removal to capture any drips. Hot drain the filter by punching a hole in the dome end and draining for 24 hours. Recycle the oil and the metal canister if possible.

Oil-absorbent Material

- Have basic oil-absorbent materials on-site and consider distributing pads, pillows and booms to tenants and requiring their use in lease agreements.
- Oil-absorbent boom types:
 1. Captures oil from the bilge and solidifies into a hard rubber bumper.
 2. Contains microbes that digest petroleum converting it to carbon dioxide and water. (Because the microbes take 2 to 3 weeks to digest a given input of oil, it is not appropriate to use these types of products for a spill of any significant size).
 3. Constructed out of oil-absorbent polypropylene fabric and filled with dehydrated microbes that digest the petroleum. Threats associated with free-floating petroleum are thereby minimized.
- Disposal methods for used oil-absorbent material (check with your state as some states have stricter disposal guidelines):
 1. Standard absorbents that are saturated with gasoline may be air dried and reused.
 2. Standard absorbents saturated with oil or diesel may be wrung out over oil recycling bins (if they are saturated with oil and diesel only!) and reused or double bagged - one plastic bag sealed inside of another - and tossed in your regular trash.
 3. Bioremediating bilge booms may be disposed in your regular trash as long as they are not dripping any liquid. Because microbes need oxygen to function, do not seal them in plastic bags.
- Encourage the use of spill-proof oil change equipment as a condition of your slip rental agreement.

Minimize Spills and Leaks from Machinery

- Use non-water-soluble grease on travelifts, forklifts, cranes, and winches.
- Place containment berms with containment volumes equal to 1.1 times the capacity of the fuel tank around fixed pieces of machinery that use oil and gas.
- Design containment areas with spigots to drain collected materials and dispose of all collected material appropriately.
- Place leak-proof drip pans beneath machinery. Empty the pans regularly, being conscientious to dispose of the material properly (uncontaminated oil and antifreeze may be recycled).
- Place machinery on an impervious surface. Place oil-absorbent pads under machinery.
- If possible, cover machinery with a roof to prevent rainwater from filling the containment area.

SEWAGE AND GRAY WATER

Sewage pumpouts and waste dump receptacles

- Install a pumpout/waste dump receptacle.
- Dispose of collected waste by direct connect to a public sewer line, personal sewage treatment plant or holding tank
- Select an appropriate system to operate effectively given the conditions at your site:
 - permanently fixed to a dock
 - mobile, hand truck or boat
 - direct slipside connections

- Choose an accessible location that easily accommodates the types of boats at your marina and is in an area that does not block off other pathways such as to fuel
- Post signs around you docks indicating location of pump, cost, hours of operation, where to call for service
- Post signs that are visible from the channel so passing boaters are aware of the facility.
- If you do not yet have a pumpout, post signs directing boaters to the nearest facility.
- Determine if your pump will be staffed or self-service (token operated), what the fee will be and who will pay. *If you use a federal Clean Vessel Act (CVA) grant, no more than \$5 per pumpout (unless specifically requested and justified) may be charged to pump a normal size holding tank.*
- Consider providing a free pumpout with a fuel fillup.
- Apply for CVA Grant for new pumpouts or for maintenance of existing ones
- Maintain the pumpout per manufacturer instruction; inspect regularly and log inspections and use
- Test the efficiency weekly during the boating season by measuring the length of time required for the system to empty a 5-gallon bucket of water.

Shoreside Restrooms

- Provide clean, functional restrooms with showers to encourage people not use their heads while in port.
- Make restrooms available 24 hours a day.
- Install a security system on restroom doors so people will feel safe using them.
- Provide air conditioning and heating.

Prohibit Discharge of Waste Water from Vessels

- Prohibit discharge of head waste and gray water in your marina as a condition of your lease agreements.
- Post signs indicating the prohibition and directing people to use shoreside restrooms.
- Determine means to ensure valves on holding tanks are closed.

Design and Maintain Septic Systems to Protect Water Quality and Public Health

- Be alert for signs of septic system failure such as wet areas or standing water above the absorption field, toilets that run slowly or back up, and odor.
- Post signs in the restrooms informing patrons not to place paper towels, tissues, cigarette butts, disposable diapers, sanitary napkins or tampons in the toilets. These items can clog the sewer lines.
- Provide adequate covered disposal for the above items.
- Post signs in the laundry room encouraging patrons to use minimal amounts of detergents and bleaches.
- Do not dump solvents, toxins or fats down the drain and post signs prohibiting customers from doing the same.
- Use small amounts of drain cleaners, household cleaners, and other similar products.
- Do not compact the soil by driving or parking over the infiltration area.
- Hire a licensed professional to pump the tank every 2-5 years.
- Do not use a garbage disposal. This increases the amount of solids entering the system. Capacity is reached more quickly. As a result, more frequent pumping is necessary.
- Direct downspouts and runoff away from the septic field in order to avoid saturating the area.

Provide Facilities for Live-a-boards

- Provide a portable pumpout system.
- Consider a lease in which vessels used as homes may not discharge any sewage.
- Reserve slips closest to shoreside restrooms for liveaboards. Provide adequate lighting to and from and in the restrooms.
- Install direct sewer hookups for liveaboards.

WASTE CONTAINMENT AND DISPOSAL

Reduce Waste

- Encourage boaters to exchange excess paints, thinners, varnishes, etc. To facilitate this type of activity, provide a visible location where boaters can post notices that they are seeking or have an excess of particular materials.
- Avoid having leftover materials by sizing up a job, evaluating what your actual needs are, and buying just enough product for the job. Encourage boaters to do the same.
- Minimize office waste: make double-sided copies; use scrap paper for notes and messages; purchase recycled office paper; and reuse polystyrene peanuts or give them to companies that will reuse them like small scale packing and shipping companies.
- Request alternative packing material from vendors, i.e., paper, potato starch peanuts, popcorn, etc.
- Discourage the use of plastic and styrofoam cups, food containers, utensils, and other non-biodegradable products.
- Post the names of local schools, churches, volunteer home renovation groups, theater groups, and others that are willing to accept excess, non-toxic paints.

Non-Hazardous Waste

Solid Waste

- Provide accessible, well-marked, well-lit and lidded trash and recycling receptacles. Empty and clean the receptacles at least weekly.
- Select containers that are large enough to hold the expected volume of trash. On average, 4 to 6 gallons capacity is needed per person per vessel per day. A cubic yard of dumpster space holds 216 gallons of trash.
- Contact a waste hauler or your local solid waste recycling coordinator to learn what materials are collected in your area.
- Post information about local recycling services if you are not able to provide all of the desired services at your facility.
- Do not place trashcans or recycling containers on docks, as waste may inadvertently blow into the water. Also, training boaters to bring their own trash to a central garbage area means less work for you and your staff.
- Require all employees to be involved in policing the facility for trash and vessel maintenance wastes. Do not allow litter to collect on the ground or near shore
- Use a pool skimmer or crab net to collect floating debris that collects along bulkheads or elsewhere within your marina.
- Plant or construct a windscreen around the dumpster to make the area more attractive and to prevent trash from blowing away. Use native shrubs.

Fish Waste

Large amounts of fish guts deposited in an enclosed area can produce foul odors and impair water quality through decreased dissolved oxygen and increased bacteria levels.

- Provide facilities for fish cleaning and carcass disposal.
- Provide a stainless steel sink equipped with a garbage disposal that is connected to a sanitary sewer. (Note: fish heads, large carcasses, and fish skin will clog up the disposal.)
- Provide garbage containers for fish carcasses and empty garbage containers regularly.
- Prohibit fish cleaning outside of designated areas.
- Implement fish composting where appropriate.
- Use a grinder to make chum out of fish carcasses. Sell the chum at your marina store.
- Arrange for crabbers to take fish carcasses.
- Prohibit fish cleaning at your marina.
- Educate people on the water quality problems associated with excess fish waste in marina waters.

Hazardous Waste

Hazardous Waste Generators are those companies that produce greater than 100 kilograms (about 220 pounds or 30 gallons) of hazardous waste during one calendar month or who store more than 100 kilograms at any one time. These businesses must register with EPA.

How Do You Know if a Substance is Hazardous?

All waste generators must determine whether or not their refuse is hazardous. The waste is hazardous if it exhibits one or more of the characteristics of hazardous materials: ignitability, corrosivity, reactivity, or toxicity. A generator may either have the waste tested in an industrial laboratory to determine if it exhibits a hazardous characteristic or use knowledge of the waste, i.e., first hand experience or information gathering from a Material Safety Data Sheet.

Recycle Liquid Wastes

- Do not allow patrons to pour gasoline, solvents, paints, varnishes, or pesticides into the oil or antifreeze recycling containers. The introduction of these materials creates a hazardous waste, where the whole tank must be disposed of as hazardous waste: a very expensive undertaking.
- Provide separate containers to collect oil and antifreeze. Also, collect solvents from your boatyard according to hazardous waste regulations.
- Surround tanks with impervious, secondary containment that is capable of holding 110 percent of the volume of each tank.
- Try to shelter tanks from wind and rain.
- Attach funnels to tanks to reduce chances of spills. Funnels should be large enough to drain portable containers and oil filters. Use funnels with locking lids that screw into the bungs of 55-gallon drums.
- Post signs indicating what may and may not be placed in each tank.
- Check with your recycler to learn what materials may be mixed. In some cases, engine oil, transmission fluid, hydraulic fluid, and gear oil may all be placed in a waste oil container. Some haulers will also take diesel and kerosene. Ethylene glycol and propylene glycol antifreeze are often collected in the same used antifreeze tank.
- Consider locking intakes to oil and antifreeze recycling containers to prevent contamination. Instruct your patrons to get the key from the appropriate staff person or to leave their oil or antifreeze next to the collection tank. Assign a staff member to inspect the collection site daily for any material that may have been dropped off.
- Investigate waste haulers to insure that they actually recycle the collected material.
- Maintain shipping manifests for solvents and other hazardous wastes for a minimum of 3 years (manifests are not required for used oil and antifreeze that is being recycled).

Management-marinas

- Minimize the use of hazardous products to reduce health and safety risks to your staff, tenants and contractors; lower disposal costs; decrease liability; and limit chances that you will be liable for costly clean-up of inappropriately disposed material.
- Do not store large amounts of hazardous materials. Purchase these materials in quantities that you will use up quickly.
- Establish a first-in first-out policy to reduce storage time. Dispose of excess material every 6 months.
- Label wastes properly, especially when different types of wastes are stored in the same area.
- Avoid using, to the greatest extent possible, products that are corrosive, reactive, toxic, or ignitable.
- Adopt an inventory control plan to minimize the amount of hazardous material you purchase, store, and dispose.

Management-patrons

- Provide convenient, well-marked disposal sites.
- Put language in contract requiring proper disposal.
- Post signs by solid waste receptacles that prohibit disposal of hazardous waste.
- If your marina does not collect and dispose of hazardous waste on site, direct marina patrons about proper disposal of hazardous waste.
- Use signs, mailings, postings on bulletin boards, etc. Post collection center locations near the waste receptacles.

Storage

- Store solvents and other hazardous materials in closed, fire safe containers that are UL listed or Factory Mutual approved and meet U.S. Department of Transportation standards. Approved containers will carry specification markings (i.e., DOT 4B240ET).
- Plainly label all stored and containerized material. Mark the date accumulation begins and ends.

If you are a hazardous waste generator you will need to designate Satellite Accumulation Areas and/or Accumulation Areas; containers must be labeled as Hazardous Waste and only the container full date needs to be on the drum.

- Store containers on pallets in a protected, secure location away from drains and sources of ignition.
- Routinely inspect the storage area for leaks. Generators must inspect their containers weekly and document the inspections.
- Assign control of hazardous supplies to a limited number of people who have been trained to handle hazardous materials and understand the first-in, first-out policy.
- Routinely check the date of the materials to prevent them from outliving their shelf life.

Disposal and Recycling Methods

Antifreeze:propylene glycol or ethylene glycol	Recycle: Hire a waste hauler to collect and dispose Confirm your waste hauler will accept mixed antifreeze Purchase on-site recovery unit. Distillation systems are more expensive than filtration, but are more efficient
Waste Oil: engine oil, transmission fluid, hydraulic oil, gear oil, #2 diesel, kerosene	Recycle with a licensed waste management contractor Confirm your waste hauler will accept mixed oil Use waste oil for space heating
Quart oil cans	Drain completely and dispose in regular trash. They cannot be recycled
Non-terne plated oil filters	Puncture and completely hot drain for at least 24 hours. Recycle the oil and the metal canister, or double-bag it in plastic and place it in your regular trash

Terne plated oil filter (used in heavy equipment and heavy duty trucks)	Dispose of as hazardous waste (contains lead)
Stale Gasoline	Add stabilizer in winter to prevent gasoline from becoming stale or add octane booster in the spring to rejuvenate and then use the fuel. Mix with fresh fuel and use Hire a hazardous waste hauler to collect and dispose.
Kerosene	Filter and reuse for as long as possible, then recycle
Mineral Spirits	Filter and reuse. DO NOT add to used oil to be burned in heaters
Solvents: paint and engine cleaners such as acetone and methylene chloride	Reuse as long as possible and then recycle. Use less toxic alternatives to avoid disposal issues. Dispose of as hazardous waste. DO NOT add to used oil to be burned in heaters.
Sludge recovered from hazardous solvent	Dispose of as hazardous waste
Sludge recovered from non-hazardous solvent	Let sludge dry in a well-ventilated area, wrap in newspaper, and dispose in garbage
Paints and varnishes: latex, water-based, oil-based	Water based: Allow to dry completely. Dispose of in regular trash. Oil/Solvent based: Dispose of as hazardous waste Water based and Oil based: Use leftover material for other projects and Encourage tenants to swap unused material
Paint Brushes	Allow to dry completely prior to disposal. Treat as hazardous waste if paint contains heavy metals above regulatory levels.
Rags soaked with hazardous substances	Keep in covered container until ready to discard. Dispose of the solvent that collects in the bottom of the container as hazardous waste. Wring rags out over a waste solvent collection container and have laundered by an industrial laundry. If rags fail TCLP test, dispose of as hazardous waste.
Used oil-absorbent material	If oil and diesel is adequately absorbed, double bag it in plastic and discard in trash (no petroleum can be leaking). If it is saturated with gasoline and is a small amount, allow it to air dry and reuse or double bag and dispose of in trash.

Epoxy and polyester resins	Catalyze and dispose of as a solid waste as long as it dries hard and has no free liquids
Glue and liquid adhesives	Catalyze and dispose of as a solid waste
Containers: paint cans, buckets, spent caulking tubes, aerosol cans	Aerosol cans: if there is residue they are hazardous wastes. If they are empty they can be recycled under the scrap metal exemption (if the scrap metal recycler takes them) All other containers: All material that can be removed has been. Containers that held compressed gas are at atmospheric pressure. Containers that held acute hazardous waste have been triple rinsed with the appropriate solvent. Properly dispose of solvent
Residue from sanding, scraping, and blasting	Document that the residue is not hazardous (no metals). Dispose of as a solid waste. If it contains metals, it is a hazardous waste and must be disposed of properly.
Pressure washing residue	Dispose of as solid waste
Lead Batteries	Recycle or sell to scrap dealers. Store on an impervious surface, under cover. Protect from freezing. Check frequently for leakage. Inform boaters that if they bring their old battery to a dealer, they will receive a partial refund on a new battery.
Expired distress signal flares	Encourage boaters to keep on board as extras. Store in a marked, fire safe container. Use expired flares to demonstrate to boaters how they are used. Notify the Coast Guard and fire department of demonstrations. Bring flares to a local fire department or household hazardous waste collection program.
Scrap metal	Recycle
Light bulbs: fluorescent, mercury vapor, high & low pressure sodium, metal halide	Recycle if you have more than a few. Treat as a solid waste if you have less than two and they're mixed with other solid waste. If you segregate from solid waste they must be treated as a hazardous or universal waste.

Refrigerants	Recycle. If you deal with AC, you must be certified and use EPA approved CFC recovery and recycling equipment. Use alternative refrigerants: HCFC-22, HCFC-123, HFH 134A NOTE: do not mix refrigerant oil with used engine oil and do not mix it with engine oil to be burned in space heaters.
Monofilament Fishing Line	Recycle through a manufacturer or tackle shop. Dispose in sealed trash can.
Scrap tires	Recycle—legally you can't store tires without a permit- over 500 is Class 6 felony
Pesticides	Dispose of as hazardous waste
Plastic Shrink Wrap	Recycle
Fish Waste	Prohibit disposal of fish waste into confined marina waters. Establish a fish cleaning station with one of the following disposal methods: Implement fish composting where appropriate Use a grinder to make chum at your marina store Arrange for crabbers to take fish carcasses
Abandoned and derelict vessels	Ensure holding tanks, fuel tanks and bilges are not leaking and haul out sunk boats Contact your local state agency that handles boat registrations to find out how to take ownership and dispose of the boat

VESSEL MAINTENANCE AND REPAIR

In the water

- Educate employees/boaters/contractors about cleaning methods that prevent the release of pollutants to waters. Post signs and hand out educational materials describing boat cleaning methods.
- Prohibit pressure washing over or in the water.
- Avoid in-the-water hull scraping and any abrasive process that occurs underwater that may remove anti-fouling paint from the boat.
- Wash the boat hull above the waterline by hand. Detergents and cleaning compounds used for washing boats should be phosphate-free and biodegradable and amounts used should be kept to a minimum.
- Sell environmentally sensitive cleaning products in your marina store.
- Discourage the use of traditional sudsing cleaners that must be rinsed off and discourage the use of detergents containing ammonia, sodium hypochlorite, chlorinated solvents, petroleum distillates or lye.

- Plug scuppers to contain dust and debris.
- Incorporate guidelines for boat maintenance into slip leasing agreements.
- Encourage the owner to remove the boat from the water for maintenance.
- Encourage the use of sponges or soft towels to clean the boat hull on a regular basis.

Out of the water

- Collect all maintenance debris. Clean work areas after completing each operation or at the end of the day - whichever comes first. Segregate debris if possible and dispose of properly.
- Contain and properly dispose of rinse water/paint chips from boats washed on upland areas.
- Designate work area so marina has a sense of order and staff can monitor the area for potential environmental problems
- Perform all major repairs - such as stripping, fiberglassing, and spray painting - in designated areas.
- Locate maintenance areas as far from the water as possible so stormwater runoff will have the maximum amount of time and distance to be filtered
- Vessel maintenance areas should have an impervious surface (i.e. asphalt or cement) and, where practical, a roof. Sheltering the area from rain will prevent stormwater from carrying debris into surface waters.
- If asphalt or cement is not practical, perform work over filter fabric or over canvas or plastic tarps. Filter fabric will retain paint chips and other debris while allowing water to pass through. Tarps may be potentially re-used multiple times.
- Establish a schedule for inspecting and cleaning stormwater systems. Remove paint chips, dust, sediment, and other debris. Clean oil/water separators.
- Prohibit major maintenance or repair work outside the designated maintenance areas.
- Clearly mark work areas with signs, i.e., Maintenance Area for Painting
- Post signs and distribute materials describing best management practices that boat owners and contractors must follow, i.e., Use Tarps to Collect Debris.
- Develop, initiate and maintain procedures for managing requests to use the workspace, to move boats to and from the site, and to insure the use of BMPs.
- Surround the maintenance area with a berm or retaining wall.

Minimize Impacts of Painting

- Recommend to your customers antifouling paints containing the minimum amount of toxin necessary for the expected conditions.
- Avoid soft ablative paints.
- Use water-based paints whenever practical.
- Stay informed about antifouling products, like Teflon, silicone, polyurethane, and wax that have limited negative impacts.
- Store boats out of the water, where feasible, to eliminate the need for antifouling paints.

Pressure Washing

Laws for pressure wash wastewater treatment vary by state. See below information on stormwater and contact your state to determine what plans, permits, and treatment options are required.

- By law (Clean Water Act) all pollutants must be removed from wash water before it may be discharged. At a minimum, allow large particles to settle out. More thorough treatment involves filtration or chemical or physical techniques to treat the rinse water:
- Use filtration devices such as screens, filter fabrics, oil/water separators, sand filters, and hay bales to remove particles;
- Chemical treatment relies upon the addition of some type of catalyst to cause the heavy metals and paint solids to settle out of the water
- Discharge treated wash water to surface water if it contains no pollutants. If detergents were used, the waste water must be directed into a sewer system.

- Collect debris. Have your waste hauler characterize the waste and bring it to a facility authorized to manage municipal or industrial solid waste, provided that, if the waste is hazardous, the amount generated is less than 220 pounds per month or less than this amount is accumulated at any time.
- Pressure wash over a bermed, impermeable surface that allows the waste water to be contained and filtered to remove particulates and solids.
- Where practical, use a regular garden-type hose and a soft cloth.
- Reuse the wash water. For example, recycle it through the power washing system (a closed water recycling operation) or use it to irrigate landscaped portions of the marina. The recycled water may be treated with an ozone generator to reduce odors.

Painting Operations

- Use brushes and rollers whenever possible.
- Reduce paint overspray and solvent emissions by minimizing the use of spray equipment and only spraying in an enclosed area.
- Prohibit spray painting on or near the water.
- Use spray equipment with a high transfer efficiency. Tools such as high-volume, low-pressure (HVLV) spray guns direct more paint onto the work surface than conventional spray guns. Air-atomizer and gravity-feed guns are other types of highly efficient spray equipment.
- Limit in-water painting jobs to small jobs. Any substantial painting should be done on land, in the vessel maintenance area, and/or over ground cloth.
- Mix paints, solvents, and reducers in a designated area. It should be indoors or under a shed and should be far from the shore.
- Keep records of paint use to show where too much paint was mixed for a job. Use the information to prevent over mixing in the future.
- Handle Solvents Carefully: Store open containers of usable solvents as well as waste solvents, rags, and paints in covered, UL-listed, or Factory approved containers.
- Hire a licensed waste hauler to recycle or dispose of used solvents.
- Use soy-based solvents and other similar products with no or low volatility.
- Order your spray-painting jobs to minimize coating changes. Fewer changes mean less frequent purging of the spray system. Order your work light to dark.
- Allow solids to settle out of used strippers and thinners so you can reuse solvents.
- Do not let dust from sanding fall onto the ground or water or become airborne.
- Conduct shoreside sanding in the hull maintenance area or over a drop cloth.
- Collect debris. Have your waste hauler characterize the waste and bring it to a facility authorized to manage municipal or industrial solid waste, provided that, if the waste is hazardous, the amount generated is 220 pounds per month or less.
- Invest in vacuum sanders and grinders and require tenants and contractors to use vacuum sanders. Rent or loan the equipment to them.
- Restrict or prohibit sanding on the water to the greatest extent practical. When unavoidable, use a vacuum sander and keep the dust out of the water.
- Prohibit uncontained blasting. Perform abrasive blasting in the vessel maintenance area within a structure or under a plastic tarp enclosure. Do not allow debris to escape from the enclosure.
- Avoid dust entirely by using a stripper that allows the paint to be peeled off. These products are applied like large bandages, allowed to set, and are then stripped off. When the strips are removed, the paint is lifted from the hull. Dust and toxic fumes are eliminated.
- Investigate alternatives to traditional media blasting. Hydroblasting and mechanical peeling essentially eliminate air quality problems. Debris must still be collected, however. Consider using a filter cloth ground cover.

Engine Repair/Maintenance

- Perform all engine repair/maintenance in the designated work area NOT over bare ground or water
- Store engines and engine parts under cover on an impervious surface like asphalt or concrete.
- Use drip pans when handling any type of liquid. Use separate drip pans for each fluid to avoid mixing. Recycle the collected fluid.
- Use funnels to transfer fluids prior to disposal.
- Clean engine repair areas regularly using dry cleanup methods, i.e., capture petroleum spills with oil absorbent pads.
- Use dry pre-cleaning methods, such as wire brushing.
- Adopt alternatives to solvent-based parts washers such as aqueous- based or bioremediating systems that take advantage of microbes to digest petroleum. Bioremediating systems are self contained; there is no effluent. The cleaning fluid is a mixture of detergent and water. Microbes are added periodically to eat the hydrocarbons.
- Prohibit the practice of hosing down the shop floor.

Winterize Safely

- Use propylene glycol antifreeze for all systems. It is much less toxic than ethylene glycol antifreeze. Sell this item in your store.
- Add stabilizers to fuel to prevent degradation. Stabilizers are available for gasoline and diesel fuels and for crankcase oil. These products protect engines by preventing corrosion and the formation of sludge, gum, and varnish. Also, the problem of disposing of stale fuel in spring is eliminated.
- Be sure fuel tanks are 85-90 percent full to prevent flammable fumes from accumulating and to minimize the possibility of condensation leading to corrosion. Do not fill the tank more than 90% full if you have an external overflow vent. The fuel will expand as it warms in the springtime; fuel will spill out the vent line of a full inboard tank.
- Use the highest rated octane recommended by the engine manufacturer; premium fuels are more stable than regular.
- Be sure the gas cap seals tightly.
- Promote reusable canvas or recyclable plastic covers. Some manufacturers will clean and store canvas covers during the boating season.
- Recycle used plastic covers.

STORMWATER

Best Management Practices (BMPs) can be categorized into two general groups: Structural and Non-structural. The selection of an appropriate BMP for a site depends upon several factors, such as the size of the drainage area to be served, the activity or specific land use and associated pollutants (fuel storage, transfer, vehicle parking, plaza pedestrian area, roof top, etc.), the topography, the proximity to building foundations or water supply wells, ease of access for maintenance, etc. In some cases a site can be split up into several smaller drainage areas and served by multiple BMPs. This allows BMPs to be selected based on a specific pollutant related to the activity, or other appropriate factor. Consult your state to determine stormwater permit rules and requirements and a qualified professional to assist in selecting and designing a structural BMP strategy for any project.

Structural BMP's

Structural BMPs include any constructed or maintained feature on a site with specific multiple functions of providing a water quality benefit.

Retention Basins: A retention basin is a stormwater facility that includes a permanent impoundment, or pool of water, and therefore, is normally wet, even during dry periods. Inflows from stormwater runoff may be temporarily stored above this permanent pool.

Extended Detention Basin: An extended-detention basin is an impoundment that temporarily stores runoff for a specified period and discharges it through a hydraulic outlet structure to a downstream conveyance system. An extended-detention basin is usually dry during non-rainfall periods. An Enhanced Extended Detention Basin includes a shallow marsh with emergent vegetation in the basin bottom, which increases the potential pollutant uptake.

Constructed Stormwater Wetlands: Constructed stormwater wetlands are manmade shallow pools that create growing conditions suitable for both emergent and aquatic vegetation. **Infiltration Practices:** Infiltration facilities temporarily impound stormwater runoff and discharge it via infiltration into the surrounding soil. Infiltration facilities include Infiltration Basins, Infiltration Trenches, Roof Downspout Systems, and Porous Pavement. **Bioretention Practices:** Bioretention Practices are shallow pockets or depressions underlain by an engineered soil mixture to facilitate filtration and exfiltration into the underlying natural soils. When the natural soil horizon below the facility is not suitable for infiltration, an under drain system is used to de-water the facility. Also referred to as rain gardens, bioretention practices include a landscaping plan of specific plant species which results in an aesthetic site feature, as well as a water quality BMP.

Sand Filters: Intermittent sand filter facilities are underground vault-like facilities that capture, pre-treat, and filter the first flush of stormwater runoff. In some cases these facilities can include an above ground storage facility to store the excess volume of runoff from larger storms.

Grassed Swale: A grassed swale is a broad and shallow earthen channel vegetated with erosion resistant and flood-tolerant grasses. Check dams are strategically placed in the swale to encourage ponding behind them. A Water Quality Swale is a broad and shallow earthen channel vegetated with erosion resistant and flood tolerant grasses, and underlain by an engineered soil mixture to facilitate filtration and exfiltration into the underlying natural soils. When the natural soil horizon below the swale is not suitable for infiltration, an under drain system is used to dewater the swale.

Vegetated Filter Strip: A vegetated filter strip is a densely vegetated strip of land engineered to accept runoff from upstream development as overland sheet flow. It may adopt any naturally vegetated form, from grassy meadow to small forest. All stormwater management structures must be maintained to remain effective.

Non-Structural BMP's

Nonstructural BMPs include any efforts to minimize the impact of the activities on, and the improvements to, the land surface on the aquatic environment

- In most states a Stormwater Pollution Prevention Plan (SWPPP) must be written and updated and include the following requirements:
 - Used oil management
 - Spent solvent management
 - Proper disposal of spent abrasives
 - Disposal of vessel wastewater
 - Spill prevention and control
 - Safe fueling procedures
 - General good housekeeping
 - Appropriate painting and blasting procedures
 - Used battery management

A sample SWPPP is attached at the end of this document, Appendix A

- General good housekeeping can be an effective management tool for accumulated dust and dirt, litter and trash.
- Keep cleaning and maintenance material tidy and stored in covered areas.
- Store used oil containers, spent solvents, used engines and parts, discharged batteries, opened or punctured fertilizer bags, insecticide/herbicide containers, detergents, etc., under cover.
- Regularly inspect the stormwater system to ensure it is in working order.
- Create a compost area for yard debris and fish waste. This material is a good alternative to chemical fertilizers and it is free.
- Practice Low Impact Development to develop a site without altering the existing hydrologic cycle. Take advantage of a site's natural features, including vegetation, to minimize the need to build traditional stormwater control devices. Traditional structures such as curbs, gutter, and storm drains cause unnatural volumes of runoff to move into receiving waters at high velocity.
- Cultivate Vegetated Areas. Healthy soil and vegetation capture, treat, and slowly release stormwater. Plant environmentally-sensitive landscapes at the edge of parking lots and within islands in parking lots. Plant vegetated buffers between your upland property and the water's edge.
- Position downspouts so that they drain to vegetated areas. Avoid draining to concrete or asphalt.
- Minimize the Amount of Impervious Area paving only those areas that are absolutely necessary.
- Minimize the length of new roadway required to serve new or expanding marinas.
- Plan roads so they do not cross sensitive areas such as tidal wetlands.
- Consider alternatives to asphalt for parking lots and vessel storage areas such as dirt, gravel, seashells, engineered porous pavement.
- Control Sediment from Construction Sites: Use devices such as hay bales, silt fences, storm drain filters, sediment traps, and earth dikes to prevent sediments from leaving construction areas.

HABITAT AND SPECIES

Practice Water-wise Landscaping

The use of native plants, selective landscaping and the timing of watering all reduce the amount of water needed at

- Water only when plants indicate that they are thirsty: shrubs will wilt and grass will lie flat and show footprints. Water in the early morning or early evening as temperatures generally are cooler. Plants will not be shocked and water loss to evaporation will be minimized.
- Select plants that are suited to the existing conditions. (i.e., soil, moisture, and sunlight) so that they will require little care in terms of water, fertilizer, and pesticides.
- Water deeply and infrequently rather than lightly and often. Deep watering promotes stronger root systems which enable plants to draw on subsurface water during hot spells and droughts.
- Select equipment that delivers water prudently. Sprinklers work well for lawns. Soaker hoses or drip irrigation systems deliver water directly to the roots of shrubs, flowers, and vegetables with minimal loss to evaporation.
- Place mulch (wood chips, bark, grass clippings, nut shells, etc.) to a depth of 3-4 inches around plants to keep water in the soil, prevent weeds, and reduce the amount of sediment picked up by storm water. Planting groundcovers at the base of trees serves the same function.
- Group plants with similar water needs together. This practice will ease your maintenance burden, conserve water, and benefit the plants.
- Replace lawn areas with wildflowers, groundcover, shrubs, and trees.
- Collect rainwater by directing downspouts into covered containers. Use to water your landscaped areas.

Adopt Integrated Pest Management Practices (IPM)

IPM minimizes the use of conventional pesticide products. Examples of safer solutions for landscape pests include insecticidal soap (2 ½ tbsp. of dish soap per gallon of water); horticultural oil (add 2 ½tbsp of vegetable oil to the insecticidal soap); Bacillus thuringiensis (BT)-a bacterium which controls caterpillars (available at nurseries); coffee grounds and tea bags prevent mosquito larvae from hatching; shallow pans of beer help control slugs.

- Try using the least toxic alternatives before taking more drastic measures.
- Purchase the least toxic chemical in the smallest amount practical.
- Do not use pesticides just before a rainfall or on a windy day.
- Apply insecticides during the evening when honeybees and other beneficial insects are less active.
- Do not apply pesticides near water, i.e., shore, wells, streams, ponds, bird baths, swimming pools, etc.
- Select plants that are disease and insect resistant, that will outcompete common weeds, and that can thrive on your property and consider the degree of sun exposure, slope, drainage, amount of shade, wind, volume of foot traffic, soil type, temperature variations, and other environmental factors.
- Mow lawn areas properly to suppress weeds. Varieties of grass that grow better in cooler weather should be mowed to no less than 2.5 inches in height. Grasses that grow better in warm weather should be mowed to no more than 1.5 inches
- Foster natural predators such as spiders, praying mantis, dragonflies, lacewings, soldier beetles, birds, bats, frogs, lizards, and certain snakes and toads.
- Use pesticides only after all other options have been exhausted and apply them directly to problem areas. Treat only serious or threatening intolerable pest infestations.

Maintain vegetated buffers between all impervious areas and the water.

- Plant vegetated areas with plants that require minimal care in terms of trimming, watering, and applications of fertilizer and pesticides. Native, or indigenous, plants demand little care
- Select perennial plants instead of annuals.
- Compost leaves, branches, grass trimmings, and other organic matter.
- Plant vegetation filters to slow the flow of surface water runoff, stabilize shorelines, and provides wild life habitat, flood protection, and visual diversity.

Appendix A

Stormwater Pollution Prevention Plan

Appendix A

1. POLLUTION PREVENTION TEAM AND RESPONSIBILITIES

The SWPPP coordinator for the facility is _____

SWPPP coordinator duties include the following:

- Create a SWPPP team to aid in the implementation of the SWPPP plan
- Implement the SWPPP plan
- Oversee maintenance practices identified as BMPs in the SWPPP
- Implement and oversee employee training
- Conduct or provide for inspection or monitoring activities
- Identify other potential pollutant sources and make sure they are added to the plan
- Identify any deficiencies in the SWPPP and make sure they are corrected
- Prepare and submit reports

Ensure that any changes in facility operation are addressed in the SWPPP

Following is a list of SWPPP team members and duties:

Person	Duties
<i>Eg. FN, LN</i>	<i>Implement housekeeping & monitoring procedures</i>

2. FACILITY DESCRIPTION

Facility Name: _____

Mailing Address: _____

Physical address if different: _____

_____ Lat _____ Long

The facility is bound to the east by _____, to the south by _____,
to the north by _____, and to the west by _____.

Owner Name: _____

Owner Address: _____

Appendix A

Primary Contact Name: _____

Work Phone: _____ Home Phone: _____

Mobile Phone: _____

Secondary Contact Name: _____

Work Phone: _____ Home Phone: _____

Mobile Phone: _____

Property sits on _____ acres of land

The facility is open _____ months of the year, typically operating _____ hours per day, _____ days per week, and maintains a staff of approximately _____ people.

Facilities and Equipment: *Place an X beside all that apply.*

- | | | |
|--|--|--|
| <input type="checkbox"/> wet slips
____ how many? | <input type="checkbox"/> dry slips
____ how many? | <input type="checkbox"/> maintenance buildings
____ how many? |
| <input type="checkbox"/> fork lift | <input type="checkbox"/> travel lift | <input type="checkbox"/> ships store |
| <input type="checkbox"/> picnic area | <input type="checkbox"/> non-commercial
fuel pump | <input type="checkbox"/> commercial fuel dock |
| <input type="checkbox"/> restrooms | <input type="checkbox"/> laundry facilities | <input type="checkbox"/> pumpout station |
| <input type="checkbox"/> offices | <input type="checkbox"/> hydraulic trailer | <input type="checkbox"/> pavilion |
| <input type="checkbox"/> other structures and
equipment | | |

Services: *Place an X beside all that apply*

- | | | |
|---|---|--|
| <input type="checkbox"/> general maintenance | <input type="checkbox"/> sanding | <input type="checkbox"/> commissioning |
| <input type="checkbox"/> plumbing | <input type="checkbox"/> winterization | <input type="checkbox"/> electrical |
| <input type="checkbox"/> pressure washing | <input type="checkbox"/> refrigeration | <input type="checkbox"/> cleaning and waxing |
| <input type="checkbox"/> air conditioning repair
and service | <input type="checkbox"/> engine repair/tuning | <input type="checkbox"/> carpentry |
| <input type="checkbox"/> propeller repairs | <input type="checkbox"/> blister repair | <input type="checkbox"/> oil changes |
| <input type="checkbox"/> fiberglass | <input type="checkbox"/> parts cleaning | <input type="checkbox"/> rigging |
| <input type="checkbox"/> painting | <input type="checkbox"/> canvas | <input type="checkbox"/> blasting |
| <input type="checkbox"/> other services: _____ | | |

Appendix A

IMPERVIOUS SITE CHARACTERISTICS AS THEY RELATE TO STORMWATER

Area	Surface type	Acres
Parking lot		
Boat storage		
Undeveloped		
Roads		
Dry stack		

INSERT YOUR FACILITY'S LAYOUT HERE showing the major site features, areas of significant activity (related to stormwater) and the locations of the storm drains.

Appendix A

3. IDENTIFICATION OF POTENTIAL STORMWATER CONTAMINANT

Inventory of Potentially Exposed Materials

Trade Name	Material	Chemical/Physical Description*	Stormwater Pollutants*
	Paint thinner	Colorless to light-colored liquid	Xylenes, ethyl benzene, Stoddard solvent, petroleum distillates
	Paint	Various colored liquid	Metal oxides, Stoddard solvent, talc, calcium carbonate, arsenic
	Paint removers	Colorless to light-colored liquid	Methylene chloride, tetrachloroethane, trichloroethene, trichloroethylene
	Pesticides (insecticides, fungicides, herbicides, rodenticides)	Various colored to colorless liquid, powder, pellets, or grains	Chlorinated hydrocarbons, organophosphates, carbamates, arsenic
	Fertilizer	Liquid or solid grains	Nitrogen, phosphorus
	Degreasing Solvents	Colorless or white liquid	Trichloroethylene, trichloroethane, perchloroethylene, methylene chloride, tetrachloroethane
	Chemical strippers	Clear, colorless liquid	Methylene chloride
	Cleaning solutions	Clear, various colored liquid	Chlorine, ammonia, phosphates, petroleum distillates
	Wood preservatives	Clear amber or dark brown liquid	Stoddard solvent, petroleum, distillates, arsenic, copper, chromium
	Antifreeze	Clear, green, yellow, red liquid	Ethylene glycol, propylene glycol, heavy metals
	Hydraulic oil/fluids	Brown, red, oily liquid	Petroleum distillates
	Gasoline	Colorless, pale brown or pink liquid	Benzene, ethyl benzene, toluene, xylene, MTBE
	Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes
	Lubricants	Amber liquid, brown paste	Kerosene, mineral oil, petroleum distillates
	Wash water	Clear liquid containing solids	Oil and grease, heavy metals
	Batteries	Clear to yellow liquid	Acid, heavy metals
	Switches	Silver metallic liquid	Mercury

Appendix A

4. HISTORIC SPILL AND LEAK RECORD *Place an X on the appropriate line*

There has never been a significant spill at the above named facility.

There have been one or more significant spills at the above named facility.

Describe: _____

For each spill record the following:

SPILL Number: _____	Date:
Type of oil spilled	
Amount spilled	
Watercourse affected	
Description of physical damage	
Cost of damage	
Cost of clean-up	
Cause of spill	
Action taken to prevent recurrence	

Appendix A

5. SUMMARY OF AVAILABLE STORMWATER SAMPLING DATA *check one*

- No sampling has not been conducted to date.
- A data summary of existing discharge sampling, describing pollutants in stormwater discharges from the facility and other required information, is included as Appendix. This summary is updated as additional information is obtained.

6. RISK IDENTIFICATION AND SUMMARY OF POTENTIAL POLLUTANT SOURCES

Locations of Potential Sources of Stormwater Contamination

Potential Stormwater Contamination Point	Potential Pollutant	Potential Problem
Boat and Trailer Storage Area	Pesticides, fertilizer, antifreeze, crankcase oil, hydraulic oil/fluids, gasoline, diesel fuel	Leaking fluids from boats and trailers as they await maintenance or use. Soil erosion.
Parking Lot and Launch Ramp	Pesticides, fertilizer, antifreeze, crankcase oil, hydraulic oil/fluids, gasoline, diesel fuel.	Leaking fluids from parked vehicles in the parking lot. Leaking fluids from boats as they enter and exit the river. Soil erosion. Litter and fish waste accumulated by boaters.
Boat Maintenance and Cleaning Area	All contaminants listed in previous table	Fluid spills during maintenance activities, fuel leaks during fueling, and wastewater from cleaning operations.

Appendix A

Likely Flow of Stormwater (storm inlets identified on attached facility layout)

Drainage Area, size (sq') and surface type	Stormwater Flow Description	Impervious Surface Area (sq')	Adjacent water body
Boat and Trailer Storage Area	Overland flow across the compacted gravel area to storm inlets SS-01 and SS-02.		
Parking and Launch Ramp Area	Sheet flow across the paved area to storm inlets SS-03 and SS-04. All roof drains from the office building and boating supply store discharge to storm inlet SS-04.		
Boat Maintenance and Cleaning Area	Sheet flow across the compacted gravel area to storm inlets SS-05 and SS-06. Sheet flow across the paved gas station to storm inlet SS-05. All roof drains from the maintenance warehouse and parts storage warehouse discharge to storm inlet SS-06.		
Vegetated Area	All vegetated areas located north of the boat maintenance and cleaning area. Flow from this area does not leave the site as stormwater run off.		

7. COMPLIANCE WITH OTHER PROGRAMS

- Storage of waste petroleum products and spent cleaning solvents complies with Resource Conservation and Recovery Act (RCRA) requirements.
- Weekly inspections of fluid storage areas are conducted to verify placarding, storage times, and the integrity of storage containers.
- Underground storage tanks (USTs) located on site comply with all UST regulations.
- Have a Spill Prevention and Control Countermeasure (SPCC) Plan.

Appendix A

8. STORMWATER BEST MANAGEMENT PRACTICE *Check all that apply.*

To prevent stormwater impacts the following BMPs have been implemented:

- entering boats and trailers are inspected for leaks, and drip pans are placed under detected leaks.
- boats and trailers stored in this area awaiting maintenance are not stored for more than two weeks.
- storm sewer inlets have oil absorbent socks
- the boat and trailer storage area is paved with curbing along the perimeter
- Recycling bins are located next to launch ramp to minimize solid wastes.
- a fish cleaning facility that provides for the proper disposal of fish waste is available
- oil and battery recycling bins are available
- cleaning operations are prohibited or in the water. All operations take place in the boat cleaning and maintenance area.
- Facility has a fuel spill prevention plan
- Facilities parts washer and solvents have been supplied by a local vendor who will remove accumulated oily sludge and solvent from the parts washer and transport the material off-site to comply with the RCRA standards for a Conditionally Exempt Small Quantity Generator (CESQG). All parts washers will be stationed inside the maintenance warehouse.
- mechanical sanders equipped with vacuums are used to prevent the migration of debris and residue.
- during the handling of drums, adjacent storm sewers are covered to contain possible spills during clean up.
- fuel pump nozzles at the gas dock are equipped with automatic back pressure shut-off to prevent overfilling of fuel tanks.
- the underground storage tank (UST) storing fuel is equipped with an overfill protection valve which restricts flow when the tank capacity reaches ninety percent.
- the UST fill port is equipped with a containment bucket with a minimum capacity of five gallons.
- All fluid storage tanks are stored under a cover and on a raised pallet with secondary spill/leak prevention

Appendix A

- no 55-gallon drum handling will take place during rain events to prevent any spills from combining with stormwater and discharging from the site.
- weekly inspections of the fluid storage building will be conducted to look for leaks or deterioration of fluid storage containers. Any leaks identified during the inspection will be immediately cleaned using a dry absorbent.
- An emergency spill kit and telephone are located near the fluid storage area and on the loading dock.
- For spills that cannot be managed by the emergency spill kit, the local fire department will be immediately telephoned. All spills that reach the storm sewer will be reported to the National Response Center at 1-800-424-8802.

9. PREVENTIVE MAINTENANCE

_____ maintains all drains on the site to minimize sources of contaminated runoff. The facility regularly inspects and tests all on site equipment and systems to uncover conditions that could cause breakdowns or failures that would result in discharges of pollutants to surface waters.

10. EMPLOYEE TRAINING

All new employees will be trained within one week of their start date. All employees will be required to participate in an annual refresher training course. The training program will be reviewed annually by the SWPPP coordinator to determine its effectiveness and to make any necessary changes to the program. Training will include background on the components and goals of the SWPPP and the following:

- hands-on training in spill prevention and response
- good housekeeping and proper material handling
- disposal and control of liquid and solid waste
- container filling and transfer
- proper storage, washing, and inspection procedures
- used oil, spent solvent and abrasives, and used battery management
- proper disposal procedures for vessel wastewater
- fueling procedures
- proper paint application and removal methods

Appendix A

11. SEDIMENT AND EROSION CONTROL

Describe areas that have a high potential for significant soil erosion (primarily the shoreline) and the methods used to limit erosion (vegetation, restricted access, bulkhead, riprap, etc.).

12. COMPREHENSIVE SITE COMPLIANCE EVALUATION

Non Stormwater Discharges

Visual inspections of all storm sewer inlets will be made quarterly during dry weather conditions for evidence of non-stormwater discharges. Visual inspections will be completed by an employee under the direction of the SWPPP Coordinator. The dry weather inspections will verify the site is not discharging sanitary or process water to storm sewers. Information recorded on the quarterly dry-weather inspection log shall include: date of inspection, storm sewer inlet location, inspection results, and potential significant sources of non-stormwater discovered through testing. If non stormwater discharges are identified, MARINA NAME will notify the DEQ as required in Part III D 3 g (3) of the Stormwater General Permit.

Quarterly Visual Inspections

_____ will perform quarterly visual inspections of all storm sewer inlets during rain events to look for evidence of stormwater contamination. Inspections will be conducted within the first thirty minutes of discharge or soon thereafter, but not exceeding 60 minutes. The visual inspection shall include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or other obvious indicators of stormwater pollution. Information recorded during the quarterly inspection shall include: date of inspection, storm sewer inlet location, inspection results, and potential significant sources of stormwater contaminants if discovered.

Annual Compliance Inspections

An annual stormwater compliance inspection will be conducted approximately one year following implementation of this SWPPP and annually thereafter. The inspection will determine if the BMPs have been implemented and will assess their effectiveness. The inspection will also determine if site operations have changed since development of this SWPPP. If operational changes have been made, the SWPPP Coordinator will determine if those changes will impact stormwater quality and develop new BMPs to address the change. All operational changes and new BMPs will be recorded in this SWPPP. Additionally, the inspection date, the inspection personnel, the scope of the inspection, major observations, and any needed revisions will be recorded. Revisions to the plan will occur within fourteen days after the annual inspection.

Blank inspection forms can be found on the next pages.

Appendix A

Inspection form templates

Quarterly Non-Stormwater Discharge Assessment Log

Outfall Number or Description: _____

Flow¹ (Y/N): _____

If Flow is Yes, Complete This Section: _____

Possible Source: Leaking fluids from boats and trailers as they await maintenance or use. Soil erosion.

Observations²: _____

Corrective Action: _____

Outfall Number or Description: _____

Flow¹ (Y/N): _____

If Flow is Yes, Complete This Section: _____

Possible Source: Leaking fluids from parked vehicles in the parking lot. Leaking fluids from boats as they enter and exit the river. Soil erosion. Litter and fish waste accumulated by boaters.

Observations²: _____

Corrective Action: _____

Outfall Number or Description: _____

Flow¹ (Y/N): _____

If Flow is Yes, Complete This Section: _____

Possible Source: Fluid spills during maintenance activities, fuel leaks during fueling, and wastewater from cleaning operations.

Observations²: _____

Corrective Action: _____

Inspector's Name: _____

Date: _____

¹ *Evaluation shall take place during dry periods*

² *Observations include flow, stains, sludge, color, odor, or other indications of a non-stormwater discharge*

Appendix A

Quarterly Visual Monitoring Inspection Log

Outfall Number or Description: _____

Weather Conditions: _____

Observations²: _____

Probable Source of Any Observed Contamination: Leaking fluids from boats and trailers as they await maintenance or use. Soil erosion

Outfall Number or Description: _____

Weather Conditions: _____

Observations²: _____

Probable Source of Any Observed Contamination: Leaking fluids from parked vehicles in the parking lot. Leaking fluids from boats as they enter and exit the river. Soil erosion. Litter and fish waste accumulated by boaters.

Outfall Number or Description: _____

Weather Conditions: _____

Observations²: _____

Probable Source of Any Observed Contamination: Fluid spills during maintenance activities, fuel leaks during fueling, and wastewater from cleaning operations.

Inspector's Name: _____

Date: _____

Time¹: _____

¹ *Inspections shall be conducted within the first thirty minutes of discharge or as soon thereafter as practical, but not exceeding sixty minutes*

² *Observations include color, odor, turbidity, floating solids, foam, oil sheer, etc.*

Appendix A

Annual Facility Site Compliance Inspection Log¹

Drainage Area: _____

Potential Pollutants and Source: _____

Changes in Drainage Conditions or Operations Since Last Inspection²: _____

BMP Effective (Y/N): _____

Current and Proposed BMPs: _____

Implementation Schedule for proposed BMPs: _____

Drainage Area: _____

Potential Pollutants and Source: _____

Changes in Drainage Conditions or Operations Since Last Inspection²: _____

BMP Effective (Y/N): _____

Current and Proposed BMPs: _____

Implementation Schedule for proposed BMPs: _____

Drainage Area: _____

Potential Pollutants and Source: _____

Changes in Drainage Conditions or Operations Since Last Inspection²: _____

BMP Effective (Y/N): _____

Current and Proposed BMPs: _____

Implementation Schedule for proposed BMPs: _____

Inspector's Name: _____

Date: _____

Time¹: _____

¹ Scope of this inspection is to verify that BMPs are properly operated and are adjusted if operational or site changes require new BMPs to prevent stormwater contamination.

² Changes in drainage conditions or operations require revisions to the SWPPP.

Appendix A

13. RECORD RETENTION REQUIREMENTS

Records described in the SWPPP must be retained on site for a period of at least three years from the date of the sample, measurement, report or request for coverage under a stormwater permit, and shall be made available to the state or federal compliance inspection officer upon request. Additionally, employee training records and waste and recycling receipts or vouchers shall also be maintained.

14. PROVISIONS FOR AMENDMENT OF THE PLAN

If the facility expands, experiences any significant production increases or process modifications, or changes any significant material handling or storage practices which could impact stormwater, the SWPPP will be amended appropriately. The SWPPP will also be amended if the state or federal compliance inspection officer determines that it is ineffective in controlling stormwater pollutants discharged to waters.

15. CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manages the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name: _____

Title: _____

Date: _____



U.S. ENVIRONMENTAL PROTECTION AGENCY TIER I QUALIFIED FACILITY SPCC PLAN TEMPLATE

Instructions to Complete this Template

This template is intended to help the owner or operator of a Tier I qualified facility develop a self-certified Spill Prevention, Control, and Countermeasure (SPCC) Plan. To use this template, your facility must meet all of the applicability criteria of a Tier I qualified facility listed under §112.3(g)(1) of the SPCC rule. This template provides every SPCC rule requirement necessary for a Tier I qualified facility, which you must address and implement.

You may use this template to comply with the SPCC regulation or use it as a model and modify it as necessary to meet your facility-specific needs. If you modify the template, your Plan must include a section cross-referencing the location of each applicable requirement of the SPCC rule and you must ensure that your Plan is an equivalent Plan that meets all applicable rule requirements of 40 CFR 112.6(a)(3).

You may complete this template either electronically or by hand on a printed copy. This document is a reformatted version of the template found in Appendix G of 40 CFR part 112.^a No substantive changes have been made. Please note that a "Not Applicable" ("N/A") column has been added to both Table G-10 (General Rule Requirements for Onshore Facilities) and Table G-11 (General Rule Requirements for Onshore Oil Production Facilities). The "N/A" column should help you complete your self-certification when a required rule element does not apply to your facility. Use of the "N/A" column is optional and is not required by rule.

All Tier I qualified facility self-certifiers must complete Sections I, II, and III. Additionally, the owner or operator of an:

- Onshore facility (excluding production) must complete Section A.
- Onshore oil production facility (excluding drilling and workover facilities) must complete Section B.
- Onshore oil drilling and workover facility must complete Section C.

Complete and include with your Plan the appropriate attachments. You should consider printing copies of the attachments for use in implementing the SPCC Plan (e.g. Attachment 3.1 - Inspection Log & Schedule; Attachment 4 - Discharge Notification Form).

To complete the template, check the box next to the requirement to indicate that it has been adequately addressed. Either write "N/A" in the column or check the box under the "N/A" column to indicate those requirements that are not applicable to the facility. Where a section requires a description or listing, write in the spaces provided (or attach additional descriptions if more space is needed).

Below is a key for the colors used in the section headers:

Sections I, II, and III: Required for all Tier I qualified facilities
Section A: Onshore facilities (excluding production)
Section B: Onshore oil production facilities (excluding drilling and workover facilities)
Section C: Onshore oil drilling and workover facilities
Attachments: 1 - Five Year Review and Technical Amendment Logs 2 - Oil Spill Contingency Plan and Checklist 3 - Inspections, Dike Drainage and Personnel Training Logs 4 - Discharge Notification Form

After you have completed all appropriate sections, certify and date your Plan, and then implement it by the compliance date. If your facility was in operation before August 16, 2002, and you do not already have a Plan, then implement this template immediately. Conduct inspections and tests in accordance with the written procedures that you have developed for your facility. You must keep with the SPCC Plan a record of these inspections and tests, signed by the appropriate supervisor or inspector, for a period of three years.

Do not forget to periodically review your Plan (at least once every five years) or to update it when you make changes to your facility. You must prepare amendments within six months of the facility change, and implement them as soon as possible, but not later than six months following preparation of any amendment.

In the event that your facility releases oil to navigable waters or adjoining shorelines, immediately call the National Response Center (NRC) at 1-800-424-8802. The NRC is the federal government's centralized reporting center, which is staffed 24 hours per day by U.S. Coast Guard personnel.

^a Please note that the use of this template is not mandatory for a Tier I qualified facility. You may also meet the SPCC Plan requirement by preparing a satisfactory Tier II qualified facility Plan, preparing a satisfactory Plan that is certified by a Professional Engineer, or by developing an equivalent Plan for a Tier I qualified facility. Further information on the requirements of these methods can be found in 40 CFR part 112.6(a)(1). If you use any of these alternative methods you must include a cross reference in your Plan that shows how the equivalent Plan meets all applicable 40 CFR part 112 requirements.

Tier I Qualified Facility SPCC Plan

This template constitutes the SPCC Plan for the facility, when completed and signed by the owner or operator of a facility that meets the applicability criteria in §112.3(g)(1). This template addresses the requirements of 40 CFR part 112. Maintain a complete copy of the Plan at the facility if the facility is normally attended at least four hours per day, or for a facility attended fewer than four hours per day, at the nearest field office. When making operational changes at a facility that are necessary to comply with the rule requirements, the owner/operator should follow state and local requirements (such as for permitting, design and construction) and obtain professional assistance, as appropriate.

Facility Description

Facility Name _____

Facility Address _____

City _____ State _____ ZIP _____

County _____ Tel. Number () - _____

Owner or Operator Name _____

Owner or Operator Address _____

City _____ State _____ ZIP _____

County _____ Tel. Number () - _____

I. Self-Certification Statement (§112.6(a)(1))

The owner or operator of a facility certifies that each of the following is true in order to utilize this template to comply with the SPCC requirements:

I _____ certify that the following is accurate:

1. I am familiar with the applicable requirements of 40 CFR part 112;
2. I have visited and examined the facility;
3. This Plan was prepared in accordance with accepted and sound industry practices and standards;
4. Procedures for required inspections and testing have been established in accordance with industry inspection and testing standards or recommended practices;
5. I will fully implement the Plan;
6. This facility meets the following qualification criteria (under §112.3(g)(1)):
 - a. The aggregate aboveground oil storage capacity of the facility is 10,000 U.S. gallons or less; and
 - b. The facility has had no single discharge as described in §112.1(b) exceeding 1,000 U.S. gallons and 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 40 CFR part 112 if the facility has been in operation for less than three years (not including oil discharges as described in §112.1(b) that are the result of natural disasters, acts of war, or terrorism); and
 - c. There is no individual oil storage container at the facility with an aboveground capacity greater than 5,000 U.S. gallons.
7. This Plan does not deviate from any requirement of 40 CFR part 112 as allowed by §112.7(a)(2) (environmental equivalence) and §112.7(d) (impracticability of secondary containment) or include any measures pursuant to §112.9(c)(6) for produced water containers and any associated piping;
8. This Plan and individual(s) responsible for implementing this Plan have the full approval of management and I have committed the necessary resources to fully implement this Plan.

I also understand my other obligations relating to the storage of oil at this facility, including, among others:

1. To report any oil discharge to navigable waters or adjoining shorelines to the appropriate authorities. Notification information is included in this Plan.
2. To review and amend this Plan whenever there is a material change at the facility that affects the potential for an oil discharge, and at least once every five years. Reviews and amendments are recorded in an attached log [See Five Year Review Log and Technical Amendment Log in Attachments 1.1 and 1.2.]
3. Optional use of a contingency plan. A contingency plan:
 - a. May be used in lieu of secondary containment for qualified oil-filled operational equipment, in accordance with the requirements under §112.7(k), and;
 - b. Must be prepared for flowlines and/or intra-facility gathering lines which do not have secondary containment at an oil production facility, and;
 - c. Must include an established and documented inspection or monitoring program; must follow the provisions of 40 CFR part 109; and must include a written commitment of manpower, equipment and materials to expeditiously remove any quantity of oil discharged that may be harmful. If applicable, a copy of the contingency plan and any additional documentation will be attached to this Plan as Attachment 2.

I certify that I have satisfied the requirement to prepare and implement a Plan under §112.3 and all of the requirements under §112.6(a). I certify that the information contained in this Plan is true.

Signature _____

Title: _____

Name _____

Date: ____ / ____ / 20____

II. Record of Plan Review and Amendments

Five Year Review (§112.5(b)):

Complete a review and evaluation of this SPCC Plan at least once every five years. As a result of the review, amend this Plan within six months to include more effective prevention and control measures for the facility, if applicable. Implement any SPCC Plan amendment as soon as possible, but no later than six months following Plan amendment. Document completion of the review and evaluation, and complete the Five Year Review Log in Attachment 1.1. If the facility no longer meets Tier I qualified facility eligibility, the owner or operator must revise the Plan to meet Tier II qualified facility requirements, or complete a full PE certified Plan.

Table G-1 Technical Amendments (§§112.5(a), (c) and 112.6(a)(2))	
This SPCC Plan will be amended when there is a change in the facility design, construction, operation, or maintenance that materially affects the potential for a discharge to navigable waters or adjoining shorelines. Examples include adding or removing containers, reconstruction, replacement, or installation of piping systems, changes to secondary containment systems, changes in product stored at this facility, or revisions to standard operating procedures.	<input type="checkbox"/>
Any technical amendments to this Plan will be re-certified in accordance with Section I of this Plan template. [§112.6(a)(2)] [See Technical Amendment Log in Attachment 1.2]	<input type="checkbox"/>

Table G-4 below identifies the tanks and containers at the facility with the potential for an oil discharge; the mode of failure; the flow direction and potential quantity of the discharge; and the secondary containment method and containment capacity that is provided.

Table G-4 Containers with Potential for an Oil Discharge					
Area	Type of failure (discharge scenario)	Potential discharge volume (gallons)	Direction of flow for uncontained discharge	Secondary containment method ^a	Secondary containment capacity (gallons)
<i>Bulk Storage Containers and Mobile/Portable Containers^b</i>					
<i>Oil-filled Operational Equipment (e.g., hydraulic equipment, transformers)^c</i>					
<i>Piping, Valves, etc.</i>					
<i>Product Transfer Areas (location where oil is loaded to or from a container, pipe or other piece of equipment.)</i>					
<i>Other Oil-Handling Areas or Oil-Filled Equipment (e.g. flow-through process vessels at an oil production facility)</i>					

^a Use one of the following methods of secondary containment or its equivalent: (1) Dikes, berms, or retaining walls sufficiently impervious to contain oil; (2) Curbing; (3) Culverting, gutters, or other drainage systems; (4) Weirs, booms, or other barriers; (5) Spill diversion ponds; (6) Retention ponds; or (7) Sorbent materials.

^b For storage tanks and bulk storage containers, the secondary containment capacity must be at least the capacity of the largest container plus additional capacity to contain rainfall or other precipitation.

^c For oil-filled operational equipment: Document in the table above if alternative measures to secondary containment (as described in §112.7(k)) are implemented at the facility.

3. Inspections, Testing, Recordkeeping and Personnel Training (§§112.7(e) and (f), 112.8(c)(6) and (d)(4), 112.9(c)(3), 112.12(c)(6) and (d)(4)):

Table G-5 Inspections, Testing, Recordkeeping and Personnel Training	
An inspection and/or testing program is implemented for all aboveground bulk storage containers and piping at this facility. [§§112.8(c)(6) and (d)(4), 112.9(c)(3), 112.12(c)(6) and (d)(4)]	<input type="checkbox"/>
The following is a description of the inspection and/or testing program (e.g. reference to industry standard utilized, scope, frequency, method of inspection or test, and person conducting the inspection) for all aboveground bulk storage containers and piping at this facility:	
Inspections, tests, and records are conducted in accordance with written procedures developed for the facility. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph. [§112.7(e)]	<input type="checkbox"/>
A record of the inspections and tests are kept at the facility or with the SPCC Plan for a period of three years. [§112.7(e)] [See Inspection Log and Schedule in Attachment 3.1]	<input type="checkbox"/>
Inspections and tests are signed by the appropriate supervisor or inspector. [§112.7(e)]	<input type="checkbox"/>
Personnel, training, and discharge prevention procedures [§112.7(f)]	
Oil-handling personnel are trained 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. [§112.7(f)]	<input type="checkbox"/>
A person who reports to facility management is designated and accountable for discharge prevention. [§112.7(f)] Name/Title: _____	<input type="checkbox"/>
Discharge prevention briefings are conducted for oil-handling personnel annually to assure adequate understanding of the SPCC Plan for that facility. Such briefings highlight and describe past reportable discharges or failures, malfunctioning components, and any recently developed precautionary measures. [§112.7(f)] [See Oil-handling Personnel Training and Briefing Log in Attachment 3.4]	<input type="checkbox"/>

6. Contact List (§112.7(a)(3)(vi)):

Table G-8 Contact List	
Contact Organization / Person	Telephone Number
National Response Center (NRC)	1-800-424-8802
Cleanup Contractor(s)	
Key Facility Personnel	
Designated Person Accountable for Discharge Prevention:	Office:
	Emergency:
	Office:
	Emergency:
	Office:
	Emergency:
	Office:
	Emergency:
	Office:
	Emergency:
State Oil Pollution Control Agencies	
Other State, Federal, and Local Agencies	
Local Fire Department	
Local Police Department	
Hospital	
Other Contact References (e.g., downstream water intakes or neighboring facilities)	

7. NRC Notification Procedure (§112.7(a)(4) and (a)(5)):

Table G-9 NRC Notification Procedure	
In the event of a discharge of oil to navigable waters or adjoining shorelines, the following information identified in Attachment 4 will be provided to the National Response Center immediately following identification of a discharge to navigable waters or adjoining shorelines [See Discharge Notification Form in Attachment 4]: <i>[§112.7(a)(4)]</i>	<input type="checkbox"/>
<ul style="list-style-type: none"> • The exact address or location and phone number of the facility; • Date and time of the discharge; • Type of material discharged; • Estimate of the total quantity discharged; • Estimate of the quantity discharged to navigable waters; • Source of the discharge; 	<ul style="list-style-type: none"> • Description of all affected media; • 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 • Names of individuals and/or organizations who have also been contacted.

8. SPCC Spill Reporting Requirements (Report within 60 days) (§112.4):

Submit information to the EPA Regional Administrator (RA) and the appropriate agency or agencies in charge of oil pollution control activities in the State in which the facility is located within 60 days from one of the following discharge events:

- A single discharge of more than 1,000 U.S. gallons of oil to navigable waters or adjoining shorelines or
- Two discharges to navigable waters or adjoining shorelines each more than 42 U.S. gallons of oil occurring within any twelve month period

You must submit the following information to the RA:

- (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 the reportable discharge, including a failure analysis of the system or subsystem in which the failure occurred; and
- (8) Additional preventive measures you have taken or contemplated to minimize the possibility of recurrence
- (9) Such other information as the Regional Administrator may reasonably require pertinent to the Plan or discharge

* * * * *

A. Onshore Facilities (excluding production) (§§112.8(b) through (d), 112.12(b) through (d)):

The owner or operator must meet the general rule requirements as well as requirements under this section. Note that not all provisions may be applicable to all owners/operators. For example, a facility may not maintain completely buried metallic storage tanks installed after January 10, 1974, and thus would not have to abide by requirements in §§112.8(c)(4) and 112.12(c)(4), listed below. **In cases where a provision is not applicable, write "N/A".**

Table G-10 General Rule Requirements for Onshore Facilities	N/A
Drainage from diked storage areas is restrained 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. Diked areas may be emptied by pumps or ejectors that must be manually activated after inspecting the condition of the accumulation to ensure no oil will be discharged. [§§112.8(b)(1) and 112.12(b)(1)]	<input type="checkbox"/>
Valves of manual, open-and-closed design are used for the drainage of diked areas. [§§112.8(b)(2) and 112.12(b)(2)]	<input type="checkbox"/>
The containers at the facility are compatible with materials stored and conditions of storage such as pressure and temperature. [§§112.8(c)(1) and 112.12(c)(1)]	<input type="checkbox"/>
Secondary containment for the bulk storage containers (including mobile/portable oil storage containers) holds the capacity of the largest container plus additional capacity to contain precipitation. Mobile or portable oil storage containers are positioned to prevent a discharge as described in §112.1(b). [§112.6(a)(3)(ii)]	<input type="checkbox"/>
If uncontaminated rainwater from diked areas drains into a storm drain or open watercourse the following procedures will be implemented at the facility: [§§112.8(c)(3) and 112.12(c)(3)] <ul style="list-style-type: none"> • Bypass valve is normally sealed closed • Retained rainwater is inspected to ensure that its presence will not cause a discharge to navigable waters or adjoining shorelines • Bypass valve is opened and resealed under responsible supervision • Adequate records of drainage are kept [See Dike Drainage Log in Attachment 3.3] 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
For completely buried metallic tanks installed on or after January 10, 1974 at this facility [§§112.8(c)(4) and 112.12(c)(4)]: <ul style="list-style-type: none"> • Tanks have corrosion protection with coatings or cathodic protection compatible with local soil conditions. • Regular leak testing is conducted. 	<input type="checkbox"/> <input type="checkbox"/>
For partially buried or bunkered metallic tanks [§112.8(c)(5) and §112.12(c)(5)]: <ul style="list-style-type: none"> • Tanks have corrosion protection with coatings or cathodic protection compatible with local soil conditions. 	<input type="checkbox"/>
Each aboveground bulk container is tested or inspected for integrity on a regular schedule and whenever material repairs are made. Scope and frequency of the inspections and inspector qualifications are in accordance with industry standards. Container supports and foundations are regularly inspected. [See Inspection Log and Schedule and Bulk Storage Container Inspection Schedule in Attachments 3.1 and 3.2] [§112.8(c)(6) and §112.12(c)(6)(i)]	<input type="checkbox"/>
Outsides of bulk storage containers are frequently inspected for signs of deterioration, discharges, or accumulation of oil inside diked areas. [See Inspection Log and Schedule in Attachment 3.1] [§§112.8(c)(6) and 112.12(c)(6)]	<input type="checkbox"/>
For bulk storage containers that are subject to 21 CFR part 110 which are shop-fabricated, constructed of austenitic stainless steel, elevated and have no external insulation, formal visual inspection is conducted on a regular schedule. Appropriate qualifications for personnel performing tests and inspections are documented. [See Inspection Log and Schedule and Bulk Storage Container Inspection Schedule in Attachments 3.1 and 3.2] [§112.12(c)(6)(ii)]	<input type="checkbox"/>

Table G-10 General Rule Requirements for Onshore Facilities		N/A
Each container is provided with a system or documented procedure to prevent overfills for the container. Describe:	<input type="checkbox"/>	<input type="checkbox"/>
Liquid level sensing devices are regularly tested to ensure proper operation [See Inspection Log and Schedule in Attachment 3.1] . <i>[\$112.6(a)(3)(iii)]</i>	<input type="checkbox"/>	<input type="checkbox"/>
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 are promptly corrected and oil in diked areas is promptly removed. <i>[\$112.8(c)(10) and 112.12(c)(10)]</i>	<input type="checkbox"/>	<input type="checkbox"/>
Aboveground valves, piping, and appurtenances such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces are inspected regularly. [See Inspection Log and Schedule in Attachment 3.1] <i>[\$112.8(d)(4) and 112.12(d)(4)]</i>	<input type="checkbox"/>	<input type="checkbox"/>
Integrity and leak testing are conducted on buried piping at the time of installation, modification, construction, relocation, or replacement. [See Inspection Log and Schedule in Attachment 3.1] <i>[\$112.8(d)(4) and 112.12(d)(4)]</i>	<input type="checkbox"/>	<input type="checkbox"/>

ATTACHMENT 2 – Oil Spill Contingency Plan and Checklist

An oil spill contingency plan and written commitment of resources is required for:

- Flowlines and intra-facility gathering lines at oil production facilities and
- Qualified oil-filled operational equipment which has no secondary containment.

An oil spill contingency plan meeting the provisions of 40 CFR part 109, as described below, and a written commitment of manpower, equipment and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful is attached to this Plan.	<input type="checkbox"/>
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Complete the checklist below to verify that the necessary operations outlined in 40 CFR part 109 - Criteria for State, Local and Regional Oil Removal Contingency Plans - have been included.

Table G-15 Checklist of Development and Implementation Criteria for State, Local and Regional Oil Removal Contingency Plans (§109.5)^a

(a) Definition of the authorities, responsibilities and duties of all persons, organizations or agencies which are to be involved in planning or directing oil removal operations.	<input type="checkbox"/>
(b) Establishment of notification procedures for the purpose of early detection and timely notification of an oil discharge including: <ul style="list-style-type: none"> (1) The identification of critical water use areas to facilitate the reporting of and response to oil discharges. (2) A current list of names, telephone numbers and addresses of the responsible persons (with alternates) and organizations to be notified when an oil discharge is discovered. (3) Provisions for access to a reliable communications system for timely notification of an oil discharge, and the capability of interconnection with the communications systems established under related oil removal contingency plans, particularly State and National plans (e.g., NCP). (4) An established, prearranged procedure for requesting assistance during a major disaster or when the situation exceeds the response capability of the State, local or regional authority. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(c) Provisions to assure that full resource capability is known and can be committed during an oil discharge situation including: <ul style="list-style-type: none"> (1) The identification and inventory of applicable equipment, materials and supplies which are available locally and regionally. (2) An estimate of the equipment, materials and supplies which would be required to remove the maximum oil discharge to be anticipated. (3) Development of agreements and arrangements in advance of an oil discharge for the acquisition of equipment, materials and supplies to be used in responding to such a discharge. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(d) Provisions for well defined and specific actions to be taken after discovery and notification of an oil discharge including: <ul style="list-style-type: none"> (1) Specification of an oil discharge response operating team consisting of trained, prepared and available operating personnel. (2) Predesignation of a properly qualified oil discharge response coordinator who is charged with the responsibility and delegated commensurate authority for directing and coordinating response operations and who knows how to request assistance from Federal authorities operating under existing national and regional contingency plans. (3) A preplanned location for an oil discharge response operations center and a reliable communications system for directing the coordinated overall response operations. (4) Provisions for varying degrees of response effort depending on the severity of the oil discharge. (5) Specification of the order of priority in which the various water uses are to be protected where more than one water use may be adversely affected as a result of an oil discharge and where response operations may not be adequate to protect all uses. (6) Specific and well defined procedures to facilitate recovery of damages and enforcement measures as provided for by State and local statutes and ordinances. 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

^a The contingency plan must be consistent with all applicable state and local plans, Area Contingency Plans, and the National Contingency Plan (NCP)

ATTACHMENT 3 – Inspections, Dike Drainage and Personnel Training Logs

ATTACHMENT 3.1 – Inspection Log and Schedule

Table G-16 Inspection Log and Schedule
 This log is intended to document compliance with §§112.6(a)(3)(iii), 112.8(c)(6), 112.8(d)(4), 112.9(b)(2), 112.9(c)(3), 112.9(d)(1), 112.9(d)(4), 112.12.(c)(6), and 112.12(d)(4), as applicable.

Date of Inspection	Container / Piping / Equipment	Describe Scope (or cite Industry Standard)	Observations	Name/ Signature of Inspector	Records maintained separately ^a
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>
					<input type="checkbox"/>

^a Indicate in the table above if records of facility inspections are maintained separately at this facility.

ATTACHMENT 3.2 – Bulk Storage Container Inspection Schedule – onshore facilities (excluding production):

To comply with integrity inspection requirement for bulk storage containers, inspect/test each shop-built aboveground bulk storage container on a regular schedule in accordance with a recognized container inspection standard based on the minimum requirements in the following table.

Table G-17 Bulk Storage Container Inspection Schedule	
Container Size and Design Specification	Inspection requirement
Portable containers (including drums, totes, and intermodal bulk containers (IBC))	Visually inspect monthly for signs of deterioration, discharges or accumulation of oil inside diked areas
55 to 1,100 gallons with sized secondary containment	Visually inspect monthly for signs of deterioration, discharges or accumulation of oil inside diked areas plus any annual inspection elements per industry inspection standards
1,101 to 5,000 gallons with sized secondary containment and a means of leak detection ^a	
1,101 to 5,000 gallons with sized secondary containment and no method of leak detection ^a	Visually inspect monthly for signs of deterioration, discharges or accumulation of oil inside diked areas, plus any annual inspection elements and other specific integrity tests that may be required per industry inspection standards

^a Examples of leak detection include, but are not limited to, double-walled tanks and elevated containers where a leak can be visually identified.

ATTACHMENT 3.3 – Dike Drainage Log

Table G-18 Dike Drainage Log

Date	Bypass valve sealed closed	Rainwater inspected to be sure no oil (or sheen) is visible	Open bypass valve and reseal it following drainage	Drainage activity supervised	Observations	Signature of Inspector
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

ATTACHMENT 3.4 – Oil-handling Personnel Training and Briefing Log

Table G-19 Oil-Handling Personnel Training and Briefing Log

Date	Description / Scope	Attendees

ATTACHMENT 4 – Discharge Notification Form

In the event of a discharge of oil to navigable waters or adjoining shorelines, the following information will be provided to the National Response Center [also see the notification information provided in Section 7 of the Plan]:

Table G-20 Information provided to the National Response Center in the Event of a Discharge			
Discharge/Discovery Date		Time	
Facility Name			
Facility Location (Address/Lat-Long/Section Township Range)			
Name of reporting individual		Telephone #	
Type of material discharged		Estimated total quantity discharged	Gallons/Barrels
Source of the discharge		Media affected	<input type="checkbox"/> Soil
			<input type="checkbox"/> Water (specify)
			<input type="checkbox"/> Other (specify)
Actions taken			
Damage or injuries	<input type="checkbox"/> No <input type="checkbox"/> Yes (specify)	Evacuation needed?	<input type="checkbox"/> No <input type="checkbox"/> Yes (specify)
Organizations and individuals contacted	<input type="checkbox"/> National Response Center 800-424-8802 Time		
	<input type="checkbox"/> Cleanup contractor (Specify) Time		
	<input type="checkbox"/> Facility personnel (Specify) Time		
	<input type="checkbox"/> State Agency (Specify) Time		
	<input type="checkbox"/> Other (Specify) Time		