Alaska Department of Environmental Conservation

Aboveground Storage Tank Operator Handbook

Third Edition

October 2016

Introduction and Table of Contents

Oil spills are ugly, costly and can damage our health and the environment. Thousands of gallons of oil products are spilled every year from above ground tank facilities in Alaska. The majority of the spills are caused by operator error, poor operational practices, and inadequate or no periodic maintenance and inspections of tanks and piping. In order to reduce the number and size of spills at these facilities, operators should be trained in facility operations and maintenance, safety, spill prevention, spill response, reporting and clean up.

This handbook is designed for Aboveground Storage Tank (AST) operators and should be used as a guidebook as well as a reference manual.

In this handbook you will find:

- Facilities = Tank Farms
- Checklists for easy reference to inspect AST facilities, transfer fuel and prepare for and respond to spills.
- Step by step procedures for maintaining and inspecting AST facilities, preventing oil spills, taking safety precautions, and preparing for and responding to oil spills
- An explanation of government requirements relating to AST facilities
- References and contacts for further information on AST facilities

Introduction and Table of Contents

Section One - Facility Operations and Maintenance **Page**

Aboveground Storage Tank Facilities……..... 8

Aboveground Storage Tanks……... 10

Facility Piping……. 12

Secondary Containment…….. 13

Ancillary Equipment……... 15

Spill Prevention……... 16

Causes of Oil Spills at AST Facilities……. 17

Prevention Measures……... 19

AST Facility Maintenance…….. 20

AST Facility Inspections……. 23

Transfer Procedures……. 32

Inventory Control……. 38

Section Two – Safety

Fire and Explosions…….. 43

General Facility Safety……. 43

Personal Safety……. 44

First Aid…… 45

Introduction and Table of Contents

Section 3 - Spill Preparedness

Facility Analysis and Inspection…….. 49

Spill Response Equipment and Materials…….... 51

Spill Response Equipment Checklist…… 52

Operator Preparedness Training…… 54

Spill Response Plans……. 55

Community Spill Response Program…….…….…. 56

Example of a Response Container Inventory…… 57

Section Four - Spill Response and Reporting

Detecting Oil Spills…….. 61

Where Spills are Likely to Happen…….. 62

Spill Response…….. 63

Spill Reporting……. 69

Spill Response Checklist……. 70

Section Five - Government Requirements

State and Federal Regulatory Overview…….. 73

Environmental Protection Agency……... 75

United States Coast Guard……... 79

Alaska Department of Public Safety Fire Marshall……. 81

Alaska Department of Environmental Conservation……... 82

Introduction and Table of Contents

Appendix A - Industry Standards

Industry Standards General Information…… A-2

Addresses for Industry Standards…… A-3

Industry Standards for Facility Piping…… A-5

Industry Standards for Tank Design and Construction……... A-6

Industry Standards for Tank Operation……... A-8

Industry Standards for AST Inspection and Maintenance……... A-10

Fire Protection……. A-11

AST Related Industry Standards……. A-13

Appendix B - Material Safety Data Sheets

Texaco Diesel #2……. B-2

Chevron Unleaded Gasoline…… B-13

Appendix C - SPCC Plans

SPCC Plan Instructions…… C-2

Sample SPCC Plan……... C-40

Appendix D - Operations Manual

Operations Manual Completion Guidelines……. D-2

U.S. Coast Guard Response Plan Checklist……. D-22

Appendix E - Glossary

SECTION ONE

FACILITY OPERATIONS AND MAINTENANCE

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Section One Table of Contents **Page**

Above ground Storage Tank Facilities…… 8

Above Ground Storage Tanks……. 10

Facility Piping……. 12

Secondary Containment…….. 13

Ancillary Equipment……... 15

Spill Prevention…….. 16

Causes of Oil Spills at AST Facilities……. 17

Prevention Measures……... 19

AST facility Maintenance……... 20

AST Facility Inspections……. 23

Transfer Procedures…… 32

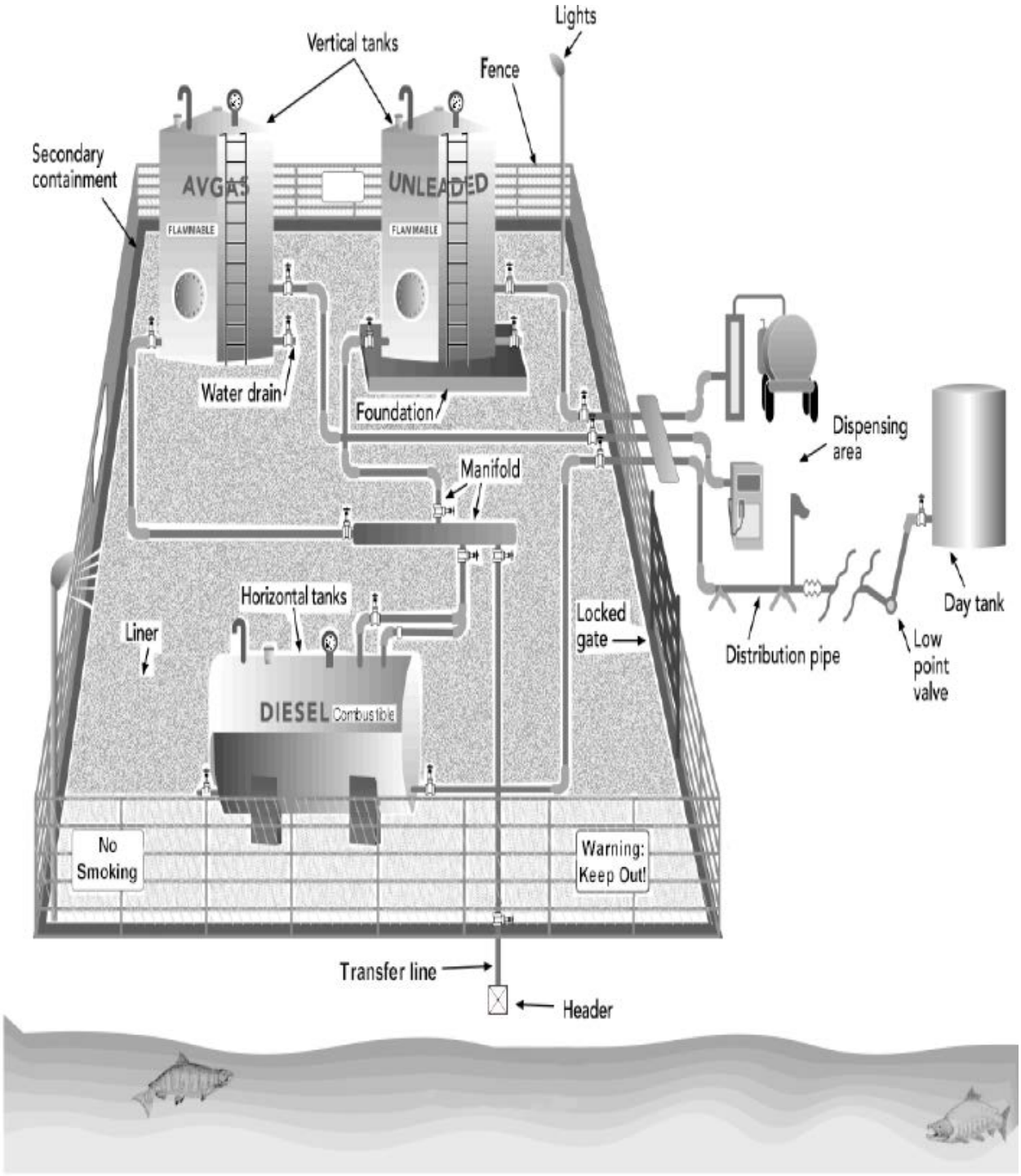
Inventory Control…… 38

SECTION 1-FACILITY OPERATION AND MAINTENANCE

Aboveground Storage Tank Facilities

An Aboveground Storage Tank (AST) facility, or tank farm, consists of all tanks to include day tanks, piping, secondary containment and ancillary equipment. Facilities will have a means to receive and dispense fuel including marine header systems, tank truck loading areas and vehicle fuel dispensing systems. These facilities are used to store fuel that will be dispensed on site, delivered to outside customers or transferred to another location such as day tanks at electric generating facilities. This manual is directed toward AST facilities that are regulated by the Environmental Protection Agency (EPA) but not necessarily by the Alaska Department of Environmental Conservation (ADEC). The EPA regulates any facility that has a storage capacity of 1,320 gallons or more. ADEC regulates facilities that have a total capacity of 210,000 gallons of crude oil or 420,000 gallons of non-crude petroleum products.

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

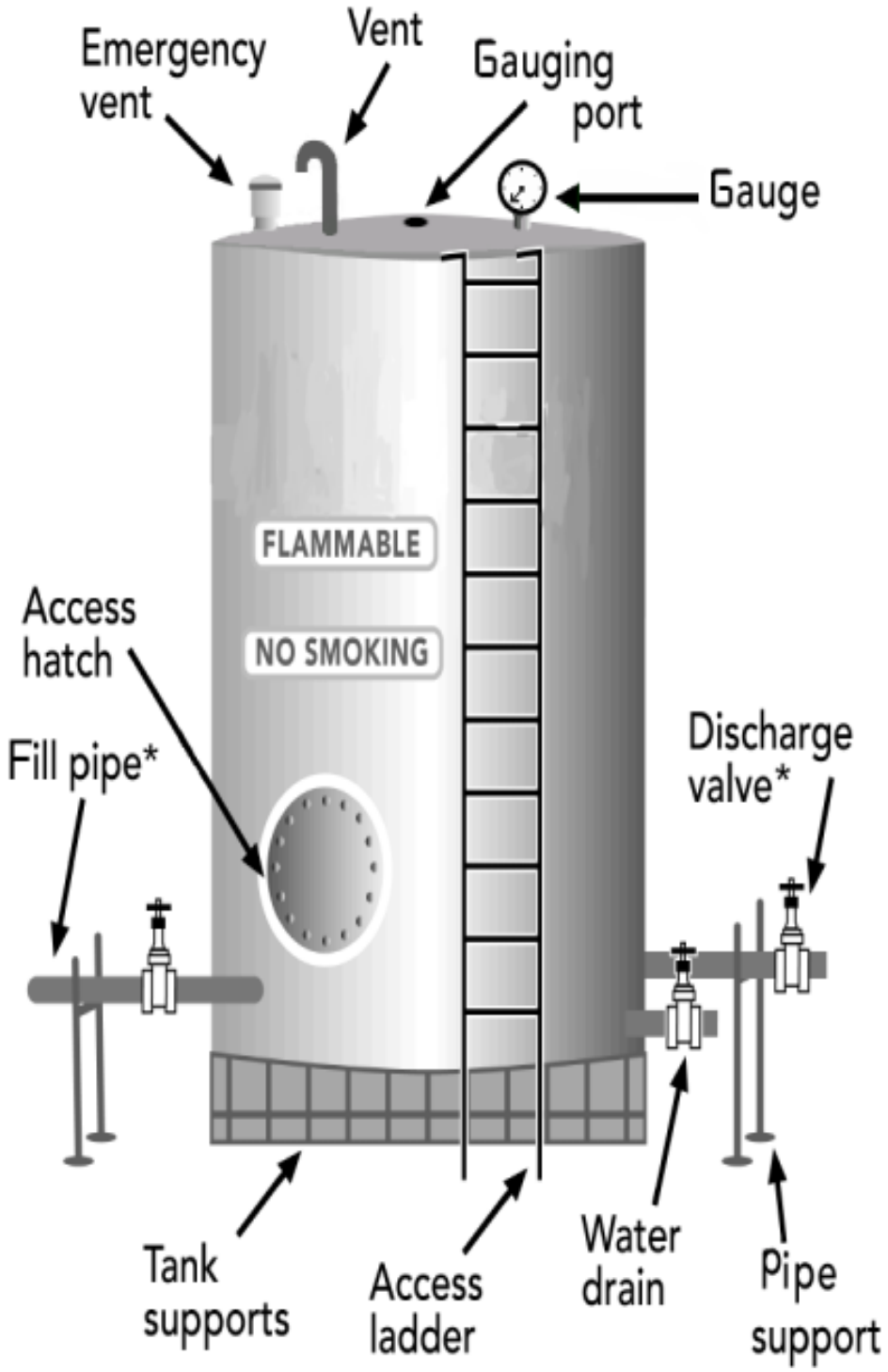


Typical facility lay out and components.

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Aboveground Storage Tanks

- Aboveground Storage Tanks come in many different sizes and shapes
- Most ASTs have cylindrical sides (or shells) and flat tops and bottoms. Tanks will either be set vertically (or on end) or horizontally (on its side).
- Most ASTs are constructed of steel. Older tanks will sometimes have rivets or bolted seams. Newer tanks have welded seams. Some small tanks will be made from fiberglass reinforced plastic.
- Fuel storage tanks must be vented so fumes can escape during deliveries and for air to enter the tanks while dispensing fuels. Proper venting reduces the potential for ruptures and collapse.
- ASTs should have cathodic protection such as sacrificial anodes if the tank bottom is in contact with the soil. Cathodic protection reduces corrosion.
- To reduce the chances of external corrosion, tanks should be placed on a pad, foundation or supports instead of directly on the ground.
- Tanks should be painted with a light colored corrosion inhibitor paint and kept rust free
- Tanks should be labeled as to contents, size, last internal inspection, safe gauge height and year built
- Tanks must have overfill protection, such as direct vision gauges, high level liquid alarms, flow restrictions or high level liquid shut off devices
- See Appendix A for additional technical information



Aboveground Storage Tanks – common features

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

AST Facility Piping

Piping is used to transfer fuel from the delivery source, such as barges or trucks to the ASTs at the facility (transfer or fill piping), between tanks and dispensing pump (manifold piping) and from facility tanks to other associated tanks and other sources (distribution piping). Following is some basic information regarding facility piping:

- Pipes should be constructed of steel and the joints welded.

- Pipes are required to be inspected and maintained according to a recognized industrial standard.

- Pipes are buried or above ground. Above ground piping should be adequately supported off the ground and protected from damage by moving trucks and snowmobiles as well as falling snow and ice from the tanks. Underground pipe should be wrapped or coated to prevent corrosion.

- Valves control the flow of oil between tanks and other tanks, delivery barges and other sources. The most common types of valves are ball valves and gate valves.

- Using a single common transfer piping for different products is a common practice.

- The U.S. Coast Guard requires transfer piping and flexible hosing to be hydro-statically tested annually and marked with the date of the test. Water should be used for this test at 1.5 times the allowable pressure. Since this is not always practical, product or air is often used. If product or air is used, the owner/operator must request in writing permission to do so from the U. S. Coast Guard Captain of the Port.

- Appendix A contains additional technical information

SECTION 1-FACILITY OPERATONS AND MAINTENANCE

Secondary Containment

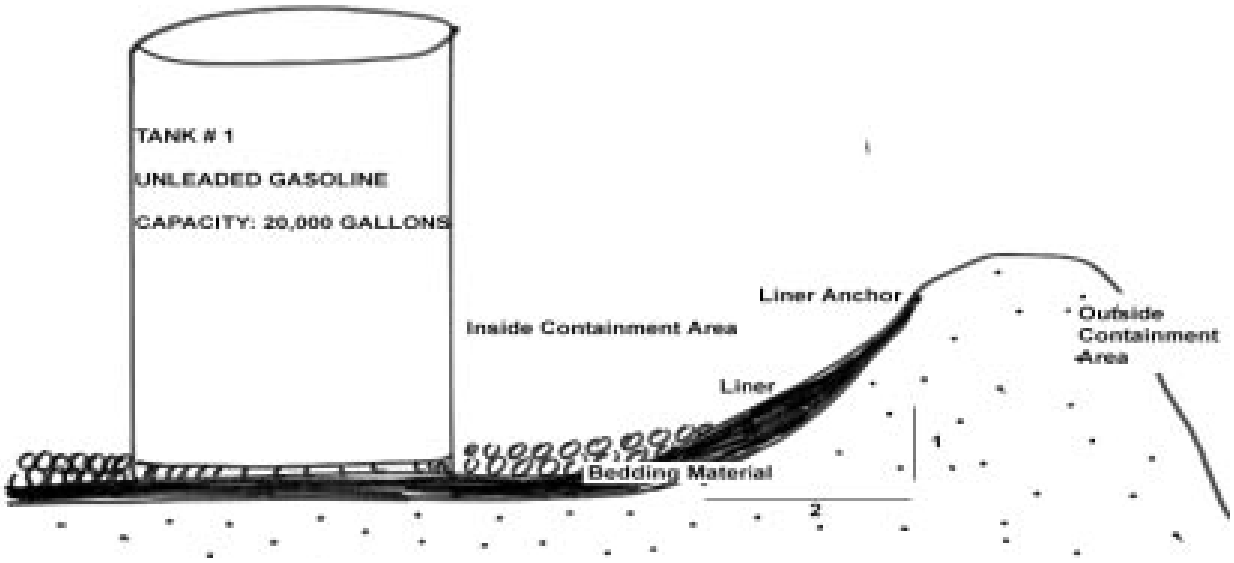
The purpose of secondary containment is to prevent petroleum products from flowing onto the lands or into the water should there be a spill at an AST facility. Spill containment measures, including secondary containment, are required by the Environmental Protection agency (EPA) at AST facilities as well as in areas of fuel transfer from tank trucks. Secondary containment:

- Must be large, high and strong enough to hold the entire contents of the largest tank plus 10% for local precipitation.
- Must be constructed or lined with material that will hold petroleum products and prevent them from seeping into the ground.
- The liner should be covered with sand or gravel to prevent ripping and to provide protection from the weather.
- Double wall and self-diked above ground tanks are not required to be located within a secondary containment area provided they have a high level liquid alarm and a flow restrictor or automatic shut off device.
- References for additional technical information can be found in Appendix A

Self-Diked ASTs

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Secondary Containment



Care should be taken to insure any penetrations of the secondary containment wall because of pipes or any other reasons are sealed to prevent a path for petroleum products to outside the secondary containment area.

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Ancillary Equipment

Aside from major components of an aboveground storage tank facility, additional items and equipment are required. Following is a list of ancillary equipment;

- **Fencing:** AST facilities must have fences and gates that can be locked. The purpose of the fence is to keep unauthorized people and animals out to prevent damage and vandalism.

- **Lighting:** AST facilities must have sufficient lighting to prevent vandalism and to detect spills at night

- **Facility Signs:** "No Smoking" and "No Open Flames" signs must be posted around the facility so they can be seen from every side of the tank farm. "Danger", "Warning", or "Authorized Personnel Only" signs must be posted to warn unauthorized individuals from entering the facility.

- **Tank Signs:** Tanks more than 100 gallons of capacity are required to bear a label and placard identifying the contents of the tank. "Danger – Flammable Liquids" should also be posted on the tank shell.

- **Fire Extinguishers:** Fire extinguishers of the correct type for the product stored in the facility and in sufficient numbers and locations are required within the facility

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Spill Prevention

There are many reasons for preventing oil from leaking or spilling onto the ground or into the waters of the state. Some basic reasons for preventing oil spills are:

- Reduces potential for health problems
- Reduces risks to the environment and contamination of drinking water
- Saves money from lost product, fines and clean-up costs
- Saves reputations

Every drop of oil spilled has an adverse impact on the environment and costs money. The following table illustrates the monetary impact of even a small leak.

OIL LOSS BY DRIPS AND DROPS

RATE	GAL./YEAR	Cost @ $4.00/gal	CONTAMINATED SOIL	CONTAMINATED SOIL
1 Drop/10 Seconds	40	$160.00	150 Tons	270 yd^3
1 Drop/5 Seconds	80	$320.00	300 Tons	540 yd^3
1 Drop/Second	410	$1640.00	1,500 Tons	2,700 yd^3
3 Drops/Second	1,200	$4,800.00	4,500 Tons	8,100 yd^3
Stream that breaks into drops	8,600	$34,400.00	32,000 Tons	57,600 yd^3

1 drop=11/64 inch diameter

1.8 tons per cubic yard of soil

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Causes of Oil Spills at AST Facilities

Spills and leaks happen at Aboveground Storage Tank (AST) facilities for several reasons. Some of these reasons are:

Operator Error

- Tanks overfilled
- Valves left open
- Poor transfer procedures
- Potential problems not recognized
- Poor maintenance practices

Poorly Designed or Improperly Installed Facilities

- Inadequate security – Vehicular traffic, children or vandals accessing the restricted area
- Facility located in flood zone or avalanche zone or another area where natural disasters are likely to effect the facility
- Falling snow and ice from tanks impact the piping

Storage Tank Problems

- Tank design and construction
- Inadequate foundation or tanks sitting directly on the ground
- Tank bottom and seams rusted, shell pitted, weeping or leaking
- Improper venting
- Inadequate inspection and maintenance program

Causes of Oil spills at AST Facilities (continued)

Facility Piping Problems

- Piping installed without considering the traffic area.
- Pipes have threaded joints instead of welded joints.
- Inadequate pipe supports – sagging pipe is prone to cracking, especially at threaded joints.
- Valves are not in good working order or are corroded.
- Pipe is lying directly on the ground – easily damaged.
- Pipe is lying directly on acidic soil which increases corrosion.
- Flex piping
- Pipes are not hydrostatically tested annually

Secondary Containment Problems

- No dikes or secondary containment around the tank farm
- Inadequate secondary containment – should be able to hold the contents of the largest tank plus at least 10% to account for local precipitation.
- Containment is unable to hold the spilled product.
- There are holes or low areas in the dikes
- Water is pooled within the secondary containment area
- There are holes and rips in the liner

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Prevention Measures

Spill Prevention Measures- Oil spills at AST facilities can be prevented. Following are some basic prevention measures:

- ***Note: "There is no such thing as a leak too small to fix"***
- ***Train employees annually in correct operating procedures, transfer procedures and spill prevention, preparedness and response***
- ***Absolutely no alcohol or drugs at the facility***
- Adopt a product inventory program and reconcile product and inventory data on a regular basis
- Establish and adhere to regular maintenance schedules
- Conduct routine standardized inspections, record inspection findings and take follow-up corrective actions
- Plan and design facility to recognized industry standards (Appendix A)
- Take pride and responsibility for your AST facility

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

AST Facility Maintenance

Routine inspections and maintenance are the two most important factors in preventing oil spills and leaks at AST facilities. Inspections are covered on Pages 23-31.

General AST facility maintenance: should include the following:

- **Good housekeeping:** It is essential that the entire AST facility be kept clean and free of unnecessary items. An AST facility is designed to store petroleum products so only items that are directly related to the operation of the facility should be stored there.

- **Safety:** Fire extinguishers must be the correct type for the product stored. Extinguishers must be kept pressurized and should be shaken once a month to insure proper operations. All other safety equipment must be in good working order.

- **Security:** AST facilities must be secured when unattended. Any holes in the fence, missing or inoperable locks on gates or burned out light bulbs should be repaired or replaced as soon as the deficiency is found.

Aboveground storage tanks: Keep ASTs maintained and in good condition.

- Above ground storage tanks must be maintained and inspected to a nationally recognized industrial standard.

- Follow manufacturer instructions and/or industrial standards for maintaining vents, overfill devices, gauges, corrosion protection, water drains and other items associated with the tanks.

- Keep tanks painted in a light color to minimize fuel expansion and to reduce corrosion and tank disintegration.

- Repair tanks as soon as a problem is discovered.

- Make sure signs on tanks are visible and legible.

AST Facility Maintenance (continued)

- Facility piping must be maintained and inspected to a nationally recognized industrial standard.

- Follow manufacturer's instructions and/or industrial standards for maintaining valves and corrosion protection devices.

- Change filters on a regular basis using set procedures.

- Hydrostatically test transfer piping annually. Use water and hold it at 1.5 times the normal operating pressure. If using water is not feasible, approval from the U.S. Coast Guard Captain of the Port is required to use air or product for the test.

- Rewrap or repaint pipes when the coating, wrapping or paint is wearing through or chipping.

- Repair or replace valves and/or pipes as soon as possible after a problem is discovered.

- Replace threaded pipe with welded pipe whenever possible.

- Protect piping from traffic.

Secondary containment: Keep the secondary containment area clear of debris, unnecessary items, snow, ice and standing water.

- Remove snow taking care not to tear the liner. If shoveling the entire area is not feasible, keep the area around the tanks and piping clear.

- Remove water, if a sheen is visible, put water through an oil water separator, or other treatment, not directly into the environment.

- Remove vegetation, keep weeds, willows and other trees out of the secondary containment area; roots will damage the liner.

- If tears or rips in the liners are discovered, repair them as soon as possible.

AST Facility Maintenance (continued)

Spill preparedness and response: Keep response equipment accessible and in good working order.

- If emergency pumps and/or skimmers are kept at the site, start them up at least once a month. Ensure the fittings of the proper type and sizes are readily available

- Response equipment and material must be dedicated for a response and kept readily available, easy to get at and in good condition.

Recordkeeping: Records of all activities pertaining to the facility should be kept on location. These include but are not limited to:

- Copies of inspections
  - Operator inspections
  - Government inspections
  - AST inspection reports

- Maintenance records
  - Any major work done at the facility or on the tanks
  - Annual hydrostatic test results
  - As-built facility plans

- Operator training reports

- Reports of oil spills at the facility
  - Where the spill occurred
  - When the spill occurred
  - Amount spilled
  - Clean up and disposal records

- Fuel inventory records

- Government required records to include:
  - Spill Prevention and Countermeasures (SPCC) Plans (EPA)
  - Facility Response Plans (EPA, USCG)
  - Letter of Intent to Operate (USCG)
  - Operation Manual (USCG)
  - Declaration of Inspection (USCG)
  - Spill Notification Placard (ADEC)

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

AST Facility Inspections

An aboveground storage tank facility inspection is one of the best means of preventing oil spills and leaks from occurring and minimizes the size of a spill or leak should one occur. Inspections should be conducted on a regular basis in a standardized way. At manned facilities, informal inspections should be done on a daily basis (noting overall facility condition) when the operator walks through to open and close the facility. A more formal and thorough inspection should be completed monthly.

Inspectors: Inspectors must be knowledgeable of facility components, operations, spill prevention, preparedness and response, and government regulations.

How to conduct inspections: When conducting the more formal and thorough inspection, the inspector should use the following protocol:

- Use a checklist to make sure all important areas are covered. An AST Facility Inspection Form, which may be copied for your use is included on pages 29-31. This form may be revised to meet the needs of the individual AST facility.

- Complete the inspection form, writing down findings and conditions and be sure to initial, date and sign the form where indicated.

    - Follow up on findings
    - Fix deficiencies
    - Report significant problems to higher management

The inspection: The following is a detailed description of what to look for in routine, monthly AST facility inspections:

- **Housekeeping:** Is the facility clean and clear of unnecessary items? It is important to keep facilities clean and free of unnecessary items because clutter would hinder clean up in the event of a leak or spill; large items such as drums, lumber and other objects can break pipes, dent tanks and provide homes for unwanted animals. Poor housekeeping is a sign of negligence and shows a lack of concern for the facility.

- **Safety:** Is all the safety equipment in place and all safety precautions followed? Safety at AST facilities is of utmost importance and can save lives, prevent injuries and protect property and the environment.

AST Facility Inspections (continued)

- Fire extinguishers: There should be an adequate number of fire extinguishers in logical, appropriate locations. Fire extinguishers must be the proper type for the product stored. Extinguishers should be maintained in top notch condition, meaning they should be pressurized and workable. Occupational Health and Safety Administration (OHSA) requires extinguishers to be inspected monthly for charge. OSHA also requires all facility operators to be trained on their use. Prominent signs showing the locations of the extinguishers should be posted.

- No Smoking signs: "No Smoking" or "No Smoking Permitted" signs should be posted in strategic locations within the facility.

- Danger and Warning signs: Individuals entering the facility should be warned of potential dangers. Signs restricting entry to authorized persons should be posted in visible locations. Other signs such as "Danger Flammable Liquids" should also be posted.

- **Security:** AST facility owners and operators should employ security measures to prevent vandals, unwanted individuals and animals from entering the tank farm. Aside from damage unwanted individuals may cause, there are liability issues to consider.

  - Fencing: Is there a fence around the facility? The fence must be intact and the gates must be locked when unattended.

  - Lighting: Does the facility have a lighting system? Lighting is important so workers can see their way around the facility and to keep intruders out. Lights should provide adequate illumination and be in good working order.

- **Aboveground Storage Tanks:** Aboveground storage tanks are the most important component of an AST facility. They should be maintained in good working condition. This applies to all tanks, including "day tanks" as well as major storage tanks.

  - Soundness: Are there any visible leaks or drips from the tanks? Are there stains on the ground around the base of the tank? Checks seams and welds and around the bottom to shell seams. All leaks must be stopped and repairs made.

AST Facility Inspections (continued)

- Corrosion protection: Are there any signs of rust? Again, look around the tank welds, shell seams and the bottom to shells seams. If using sacrificial metals, make sure there is sufficient metal left. If using impressed current, make sure the proper amount of electricity is flowing.

- Tank signs: Each tank should be labeled with the name of the product stored (diesel, gasoline, etc.) and the storage capacity in gallons. There should also be a sign showing it is a flammable or combustible product.

- Vents: Check to make sure the vents are clear and there is no debris, snow or ice plugging them.

- Paint: Paint protects the tank from exposure to the elements and reduces corrosion. Check for peeling, blistering or chipping.

- Foundation: Is the foundation in good condition? If beams are used, are they cracked or rotten. It the foundation even? Are there signs the foundation is washing out or damaged in other ways?

- Gauges and overfill devices: Check to make sure gauges are working and test overfill alarms and shut-off devices.

- **Piping and hoses:** Many leaks in tank farms come from piping. It is very important to maintain piping in good working order.

  - Soundness: Are there any drips, leaks or visible stains around the pipes or hoses? Look around and under valves, filters and connections.

  - Corrosion protection: Are there signs of rust on the piping? Look around the valves, connections and fittings. If using sacrificial metals make sure there is sufficient metal and if using impressed current, make sure the proper amount of electricity is flowing.

  - Support: Are pipe supports adequate and in good condition? Check for sagging and cracking pipes due to insufficient support and rusting or rotting pipe supports.

AST Facility Inspections (continued)

- Nozzles: Are there any signs of rust or leaks from the nozzles? Can they be turned off completely to stop the flow of product?

- Valves: Are there any signs of leaks from the valves? Can the valves be turned completely on and off to stop product flow? Are the valves protected from falling ice and snow, vehicle and foot traffic?

- Pipes: Are pipes protected from falling ice and snow and from vehicular and foot traffic?

- Coating, wrapping and paint: If the pipes are coated, wrapped or painted, check for wear, tears and chipping.

- **Secondary containment:** The purpose of secondary containment is to hold any product should there be a spill. It is important that this area be of sufficient size and have the ability to hold spilled oil.

  - Size: Is the secondary containment area large enough to hold the shell capacity of the largest tank plus at least 10% for local precipitation?

  - Clear of water, snow, ice and vegetation: Is the secondary containment clear of standing water, ice and snow? If water or ice is in the containment area, there could be run over if a tank failed. Snow could hide leaked or spilled product and vegetation could damage liner material and hamper clean up.

  - Liner soundness: Is the secondary containment area lined with a synthetic liner? Is the liner in good condition or are there any rips, tears or non-essential holes in it? If the liner is not sound, it will not hold spilled product. (Note: if the liner is holding rainwater, it is probably in good condition and needs to be drained.)

- **Spill prevention and response:** It is important to be prepared should a spill occur. Quick response can reduce the amount of oil spill thus reducing health and environmental damage and saving money.

  - Response plan: Does the facility have a response plan and is it located at the facility? Each facility must have plans to deal with emergencies and all the facility operators and workers should be familiar with them.

AST Facility Inspections (continued)

- Response equipment: Is the response equipment located at the site and is it in good working order? Do operators know how to use it? A minimum amount of oil spill response equipment should be located in specific areas of the facility and operators should know where it is located and how to use it.

- **Government requirements:** Various state and federal agencies have requirements pertaining to AST facilities. Owners and operators should be familiar with regulations that apply to their facilities.

  - The Alaska Department of Environmental Conservation (ADEC): Requires that a discharge notification placard be displayed in conspicuous locations. These placards include ADEC phone numbers and where to report spills. The placards are available printed from DEC on request or via download from their website: http://dec.alaska.gov/ When inspecting the facility make sure the signs are posted.

  - The United States Environmental Protection Agency (EPA): Requires AST facilities to have a Spill Prevention Control and Countermeasures (SPCC). Some facilities will also need a Facility Response Plan (FRP). Both plans must contain specific information. In the case of the SPCC, the document is certified by a registered professional engineer and must be signed by facility management indicating acceptance and implementation. When inspecting the facility, check to see if a current copy of the required plan is located there.

  - The United States Coast Guard (USCG): Requires facilities that receive fuel from barges or tankers to submit a Letter of Intent to Operate and have an Operations Manual and Facility Response Plan. When conducting the facility inspection, check for current copies of these documents. The USCG also requires safety equipment such as fire extinguishers, “Smoking Prohibited” signs, and response equipment and material to be located at the facility.

- **Other:** During the inspection, list any other abnormalities or deficiencies noticed. Save the inspection reports and correct any problems as soon as possible.

AST Facility Inspections (continued)

Tank inspections: Aside from routine facility inspections, it is a good practice to inspect ASTs on a regular basis. ASTs must be maintained and inspected to a recognized national standard. There are two primary inspection standards depending on the tank. For horizontal tanks that were built in a shop and then transported to the facility, the Steel Tank Institute Standard SP-001 is the primary standard to use. For conventional vertical tanks built on site, the American Petroleum Institute Standard, API 653, may be the best choice. These standards are designed for certified inspectors to follow for comprehensive AST periodic internal and external inspections. Each standard has set inspection intervals based on the size, configuration of the tank and the prior inspection results. These intervals should be followed. More frequent or additional inspections should be considered if there is evidence of a leak, changes in the tank are evident or any other reason why the operator believes an internal inspection is needed. Facility operators are not expected to conduct such rigorous inspections. Many problems or potential problems can be identified with the simple AST inspection outlined in the inspection checklist on page 29-31. However with training and certification for "HAZWOPER" and "confined space entry", operators can conduct cursory internal inspections. For these inspections, tanks should be emptied and cleaned and the inside examined for holes and corrosion. ***Only trained and experienced persons should conduct internal inspections. Under no circumstances should anyone else enter the tank.***

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

AST Facility Inspection Form

Facility Name:						
Inspector:				**Date:**		
No.	**Item**	**Good**	**Fair**	**Poor**	**Comments**	**Initials**
1	Housekeeping: facility clean, free of unnecessary items					
2	Safety					
2a	Fire Extinguishers: adequate, accessible, charged					
2b	No Smoking Signs: posted and visible					
2c	Danger and Warning signs: posted and visible					
3	Security					
3a	Fencing: fencing intact and gates are locked					
3b	Lighting: adequate and functioning properly					
4	Aboveground Tanks: bulk fuel and day tanks					
4a	Soundness: no visible leaks, weeping or drips from seams or bottom					
4b	Corrosion Protection: sacrificial metal sufficient, impressed current functioning.					
4c	Tank Signs: product stored, capacity, fire hazard rating					
4d	Vent: clear					
4e	Paint: no peeling, cracking or bare metal					
4f	Foundation: even, solid, no cracks or rotting					
4g	Gauges and Overfill Devices: gauges work and test overfill and automatic shutoff tested					

AST Facility Inspection Form (cont.)

No.	Item	Good	Fair	Poor	Comments	Initials
5	Piping and Hoses					
5a	Soundness: no visible leaks, drips or cracks especially at supports, joints, elbows or fittings					
5b	Corrosion Protection: rust or corrosion visible, sacrificial metal sufficient, impressed current functional					
5c	Supports: adequate, even, no damage or rot					
5d	Nozzles: no visible leaks and in good working order					
5e	Valves: no visible leaks and in good working order					
5f	Protection: from falling snow, ice and traffic					
5g	Coating, Wrapping and Paint: wear, tear and chipping					
6	Secondary Containment					
6a	Size: sufficient to hold contents of largest tank plus 10%					
6b	Clear: no standing water, snow, ice build-up or vegetation					
6c	Liner Soundness: free or rips, tears and non-essential penetrations					
7	Spill Prevention and Response					
7a	Response plan: located at facility and up to date					

AST Facility Inspection Form (cont.)

No.	Item	Good	Fair	Poor	Comments	Initials
7b	Response Equipment: adequate, located at the facility					
8	Government Requirements					
8a	ADEC: spill notification placards posted conspicuously					
8b	USEPA: current SPCC plan on site					
8c	USCG: letter of intent to operate, operations manual, and response plan on site					

Transfer Procedures

Transfer procedures are to be used when transferring fuel from a barge to an AST facility, from one tank to another or from a tank to a vehicle, vessel or something else. Spill often occur during transfers, especially if procedures are either not clear or not being followed. Although some transfer procedures are unique to each facility, there are some general procedures that should be followed.

1. Before beginning a transfer:

a. Check the fuel level of the receiving tank to determine how much product it can take. It is important to determine a Safe Gauge Height (SGH), that is, how much fuel the tank can safely hold allowing for expansion due to temperature variations. A rule of thumb the SGH should not be over 90% in the summer and not over 95% in the winter. In order to determine the SGH one must know the tank's storage, or shell, capacity and how to properly gauge the tank. These topics are discussed in the inventory control section.

b. Walk the pipeline or hose to check for visible leaks, cracks, or damage to the pipe or hose. Put drip pans under hose connections and under any drips or leaks along the transfer system.

c. Check valve position at the manifold and at the tank. Make sure valves that should be closed are closed and valves that should be open are open. It is important to make sure valves are in the proper position so that product will only go to the targeted tank.

d. Have a pre-transfer meeting with the barge operators and facility operators. The USCG requires this meeting and for the parties to go over and sign a Declaration of Inspection (DOI). Procedures that will be used during the transfer are included in the DOI. An example DOI is included in this section (Page 35-36).

e. Determine how much fuel is above the receiving pipe inside the tank. If there is less than a foot of fuel above the receiving pipe, transfer fuel at a reduced rate until at least one foot of fuel is covering the pipe. This will reduce the potential for explosions caused by static electricity that may be generated when fuel is pumped into the tank at a high rate.

Transfer Procedures (continued)

2. During the transfer:

a. Begin the transfer at a reduced rate until you are sure the product is going into the correct tanks and that are no major problems or leaks.

b. DO NOT WALK AWAY DURING A TRANSFER. Make sure an operator is at the site during the entire transfer. Several spills have occurred at AST facilities because the operator did not follow this rule. Since transfers occur at various rates depending on equipment, operators must be patient.

c. At all times keep communications open between the barge operators and the facility operators. Use intrinsically safe hand held radios for communications.

d. Check tank levels at regular intervals. Increase the frequency of the check as the tank fills.

e. Reduce the transfer rates when nearing the SGH to avoid overfilling the tank.

f. Notify the barge tanker man when the transfer procedure is almost complete. That way the barge pumps can be shut down before the shore facilities are. If tank valves are closed first, high pressure in the lines may cause a “hydraulic hammer” to occur which could cause a spill to happen.

3. When the transfer is complete:

a. Close the correct valves at the manifold and tank.

b. Conduct a post-transfer meeting between the barge and the facility operators and sign off on the DOI.

c. Dip tanks: Wait 6-24 hours then dip the tanks and check for water levels at the bottom of the tanks. The reason for waiting to dip the tanks is so the fuel will have a chance to settle down and any water will settle to the bottom of the tanks. The reading will be more accurate.

Transfer Procedure Checklist

BEFORE THE TRANSFER BEGINS

- ☐ Determine the Safe Gauge Height (SGH) and check product level in receiving tanks.
- ☐ Walk pipeline checking for damage or drips and leaks.
- ☐ Put drip pans under hose connections.
- ☐ Check valve positions.
- ☐ Meet with the barge operator and go over the DOI.
- ☐ Insure communication methods between shore and the barge are functional.

DURING TRANSFER

- ☐ Begin transfer at a reduced rate.
- ☐ Remain at site during the entire transfer and walk the transfer line.
- ☐ Keep communications between operators on the barge and at the facility, use a hand held intrinsically safe radio or similar device.
- ☐ Periodically check the product level in the tank.
- ☐ Let the barge operator know when the transfer is almost complete.
- ☐ Turn off barge pumps before closing tanks valves.

AFTER TRANSFER

- ☐ Make sure the valves are closed.
- ☐ Meet with the barge operator and sign off on the DOI.
- ☐ Wait 6-24 hours then dip tanks and check for water at the bottom of the tanks.

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Declaration of Inspection Form

Date:	Time:	Location:				
RECEIVING UNIT						
DELIVERING UNIT						
Federal regulations require the following inspections and activities to be executed by the person in charge (PIC) of a fuel transfer.						
			Deliverer		Receiver	
1. RED WARNING SIGNS AND SIGNALS must be displayed and visible from all points around the vessel. At night, when transferring at anchor a red light will not be displayed.						
2. FIRES, FLAMES, SMOKING AND MATCHES, if permitted, must be managed so vapors do not reach cargo. Smoking areas must be designated, inspected and safe.						
3. REPAIR WORK – in the way of any cargo spaces must be approved by the PIC.						
4. VESSELS COMING AND/OR REMAINING ALONGSIDE must have the approval of the PICs during transfers.						
5. THE MOORING must ensure the safety of the vessel and transfer device through all conditions of tide and weather.						
6. THE TRANSFER DEVICE must, when connected, be under no strain with the vessel at the limits of its moor, be properly supported, be blanked when not in use and be connected to fixed piping or equipment with an automatic back pressure nozzle.						
7. THE TRANSFER SYSTEMS must be aligned to permit the flow of fuel and closed or blanked off when not in use.						
8. THE OVERBOARD DISCHARGES/SEA SUCTIONS must be closed, lashed and sealed during transfer.						
9. SCUPPERS AND DRAINS must be mechanically closed.						
10. THE CONNECTIONS must be leak free, except packing glands providing the leakage does not exceed containment.						
11. DISCHARGE CONTAINMENT must be available or deployed, if applicable and drip pans or drain tubs be placed appropriately.						
12. MONITORING DEVICES must be in place and operable.						
13. COMMUNICATIONS must be maintained throughout the transfer						
14. THE EMERGENCY SHUTDOWN must be tested and operable prior to starting the transfer.						
15. THE PICS of both units must be at the transfer site, immediately available to oil transfer personnel, have readily available operations or procedures manuals and conduct the operations in a manner consistent with the documents.						
16. SUFFICIENT PERSONNEL must be on duty and conduct the operation as instructed in the operations manual or transfer procedures.						

SECTION 1-FACILITY OPERATIONS AND MAINTENANCE

Declaration of Inspection Form (continued)

17. LANGUAGE USED must be common to both PICs, or an interpreter who is fluent in both languages, available at the transfer site.					
18. AGREEMENT TO BEGIN TRANSFER must be reached by the PICs and both of them must sign both DOIs prior to beginning the transfer					
19. LIGHTING must be available between sunset and sunrise.					
20. PRETRANSFER CONFERENCE must take place prior to the transfer and include discussion of:					
a.	The product to be transferred				
b.	Sequence of transfer operations				
c.	Name, title, location of persons taking part in the transfer				
d.	Critical details of each system				
e.	Critical stages of transfer operation				
f.	Federal, state and local regulations that apply to transfer				
g.	Emergency procedures for each system				
h.	Discharge containment procedures				
i.	Discharge reporting procedures				
j.	Watch and shift change procedures				
k.	Transfer shutdown procedures				

PRODUCT TRANSFER SEQUENCE

	PRODUCT			QUANTITY		PSI			
First									
Second									
Third									

	Signature	Title	Time/Date
Delivering PIC			
Receiving PIC			

SIGNATURES UPON COMPLETION OF TRANSFER OPERATION

Delivering PIC			
Receiving PIC			

Transfer Procedures (continued)

When transferring fuel from an aircraft to a tank, from a tank to a truck or from one tank to another the same basic procedures used to transfer fuel from a barge to a tank farm are followed. This includes:

- ☐ Dip the receiving tank or tanker truck before beginning the transfer.
- ☐ Check all fittings and hose connections, putting drip pans or absorbent pads at hose connections.
- ☐ Use grounding cable when appropriate.
- ☐ Begin the transfer at a reduced rate.
- ☐ Stay at the site during the entire transfer.
- ☐ Measure the receiving tank when the transfer is complete.

Inventory Control

Safe Gauge Height – Safe Gauge Height (SGH), once the tank's total storage (shell) capacity has been determined, the SGH should be determined and stenciled on the tank, usually near the gauging port and the side of the tank.

- In summer the SGH is usually 90% of the tanks total storage capacity. This allows room for expansion due to heat and space for fuel that is blown through the lines when clearing them.

- In winter the SGH is usually 95% of the tanks total storage capacity to allow fuel that is blown through the lines when clearing them as well as room for expansion.

- Tanks should NOT be filled over the SGH.

Tank Gauging – Gauging product levels in the tank is critical for keeping accurate material inventory.

- Each tank should be equipped with a roof mounted gauge hatch which should be vapor tight.

- Manual gauge readings are taken with a tape and plumb bob.

    - Use dark tapes to measure clear liquids such as diesel and light colored tapes to measure heavy fuels and crude oil.

    - Before taking measurements, check the tape for cracks and make sure the printing is legible

    - Be sure to ground the tape before dropping the bob into the tank and drop the bob slowly.

    - Always dip the tank until you get the same reading twice.

    - When dipping the tank, check the water level at the bottom of the tank.

Inventory Control (continued)

Inventory control is important to make sure you are not losing any fuel from leaks in the system, to make sure you are getting the fuel you are purchasing and to make sure your customers are getting the fuel they purchase. Inventory figures that do not reconcile indicate a problem somewhere in the system. In large facilities inventory data is recorded daily and reconciled monthly. In smaller facilities this isn't always practical but inventory data should be recorded and reconciled on a very regular basis. Always check tank levels before filling a tank to prevent overfill.

In order to monitor product inventory, you must know the storage capacity of your tanks and how many gallons per inch the tank can hold. When a tank is purchased from a manufacturer, you will be told the storage capacity. However, often the storage capacity of older tanks is not known and must be calculated. Following are the formulas for determining the storage capacity of cylindrical storage tanks and an example of determining the capacity using the formulas shown.

Calculating volume and storage capacities

r = radius (ft)

D = diameter (ft)

H = Height (ft)

C = Circumference (ft)

A = Area or base (ft^2)

V = Volume (ft^3)

ft = feet

ft^2 = square feet

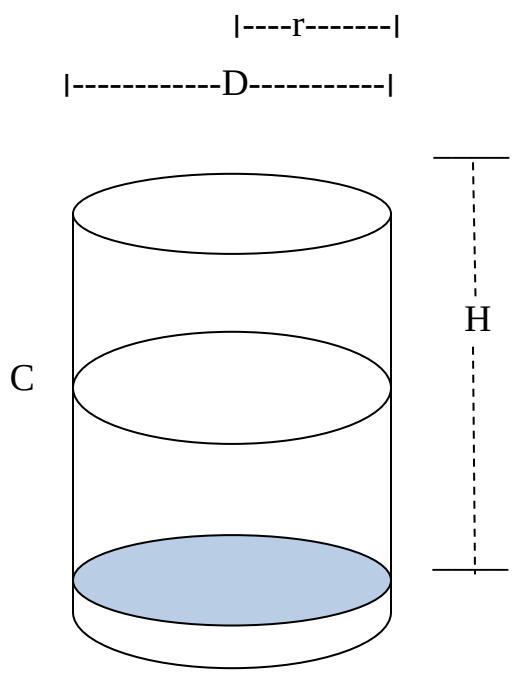
ft^3 = cubic feet

pi (π) = 3.14

$r = C/2\pi$

$A = \pi \times r^2$

$V = H \times A$



Tank Capacity = Tank volume x 7.48 gallons/per ft^3 (Conversion factor: 7.48 gallons/ft^3)

Inventory Control Calculation Example

Example: You have an AST and want to determine the **storage capacity** as well as how many gallons of **fuel per inch** the tank can hold.

First you measure the circumference (C) and the Height (H) and find that:
C = 42ft and H = 12ft

Next determine the radius (r): C/2π or 42 ft/(2x3.14) = 6.69 ft

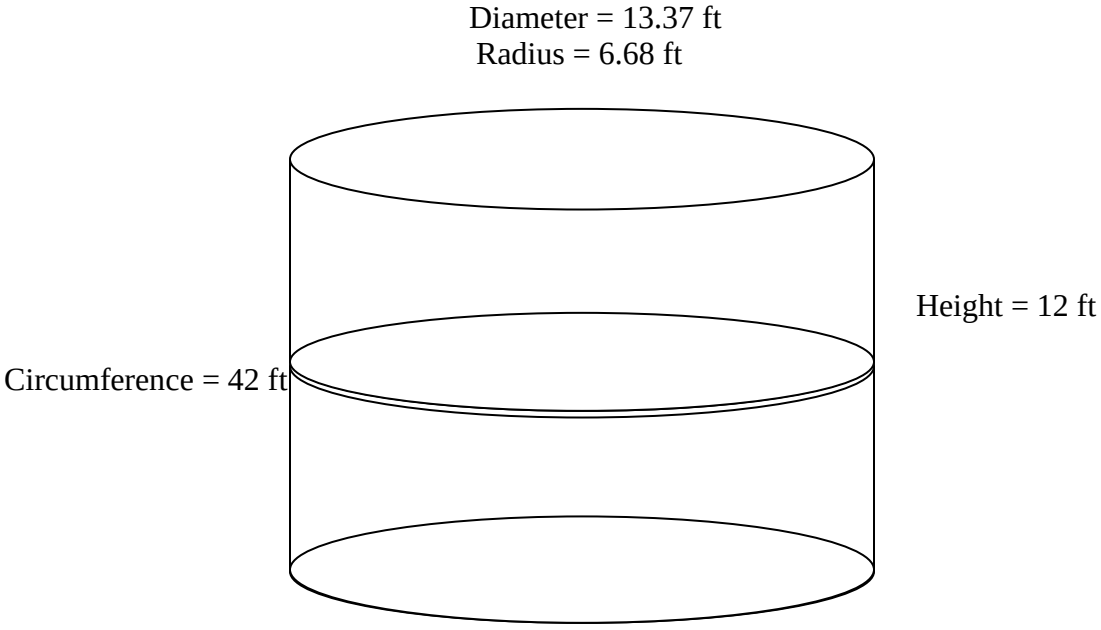
Find the base area (A): $A=\pi r^2$ or 3.14 x (6.69ft) = 140.5 ft^2

Next find the tank volume (V): V=A x H or 140.5 ft^2 x 12ft = 1686 ft^3

Convert cubic feet to gallons: V x gal/ft^3 or 1686 ft^3 x 7.48 gal/ft^3= 12611.28 gal

Find the gallons per foot: Capacity/H or 12611.28/12ft = 1050.94 gal/ft

Find the gallons per inch: $\frac{\text{Gallons/ft}}{\text{12 in/ft}}$ or $\frac{\text{1050.94 gal/ft}}{\text{12 in/ft}}$ = 87.58 gal/in



Capacity = 12611.28 gallons
Area of base = 140.5 ft^2

SECTION TWO

SAFETY

SECTION 2-SAFETY

Section Two Table of Contents Page

Fire and Explosions……. 44

General Facility Safety…… 44

Personal Safety…… 45

First Aid……... 46

SECTION 2-SAFETY

AST facilities have several potential hazards. Operators should know what safety measures to take to avoid accidents and injuries from these hazards. Examples of hazards and safety measures follow.

1. **Fire and Explosions –** petroleum products are flammable and some are explosives. Extra care should be taken when transferring products due to potential vapors.

a. Fire Protection

- **Design and build facilities** with safety in mind and in compliance with applicable fire and building codes. Facility plans should be reviewed and approved by the State Fire Marshall.

- Make sure **fire extinguishers** are the proper type and located in strategic places. Keep them in good working order and inspect them monthly for charge and pressure. Document the inspection.

- **No Smoking in AST facilities.** Post signs stating this rule throughout the facility in conspicuous places.

- **No Open Flames or potential spark sources** at AST facilities.

- **Do not store nonessential items and material** such as empty gas cans, jerry jugs, rags and other items that can start or spread a fire.

b. Hazard Communication Safety Data Sheets

- **Hazard Communication Safety Data Sheets (SDS)** (formally known as Material Safety Data Sheets (or MSDS) are kept on site for each product stored at the facility. Employees should know their locations and the hazards of each product. (See Appendix B)

2. **General Facility Safety**

a. Clearly spell out **operating and safety procedures.**

b. Maintain open communications within the facility and with local emergency services.

c. Maintain safety equipment in good working order

- Tank overfill devices and warning devices.

- Emergency shutoff switches and their locations clearly marked.
- Shutoff valves and their locations clearly marked

d. Keep all unauthorized people out of the facility unless escorted by facility employees

3. Personal Safety

- Wear safety toed shoes.
- Wear eye protection when appropriate.
- Wear hearing protection when appropriate.
- Wear gloves when working in cold temperatures or when handling materials or objects that may cause injury.
- Keep walkways and stairs free of ice and debris to avoid trips and falls.
- Do NOT enter storage tanks unless you have had the proper training.
- Do not drink alcohol when on duty

4. **First Aid –** quick response to accidents can save lives and prevent serious injuries. It is a good idea for AST facility operators to have basic first aid training.

a. First aid training should include basic emergency response and cardiopulmonary resuscitation (CPR).

- Facility personnel should know the location of first aid kits and be familiar with their contents

b. Some basic first aid response for fuel incidents include:

- Vapor inhalation – move to fresh air immediately
- Skin contact with fuel – remove effected clothing and wash skin with clean water
- Eye contact with fuel – flush with clean water and seek medical help
- Ingestion of fuel – do NOT induce vomiting, seek immediate medical help
- SDSs for gasoline and diesel are in Appendix B

SECTION 2 - SAFETY

SECTION THREE

SPILL PREPAREDNESS

SECTION 3 – SPILL PREPAREDNESS

Section Three Table of Contents

Facility Analysis and Inspection……. 50

Spill Response Equipment and Materials……... 52

Spill Response Equipment Checklist…….. 53

Spill Response Materials Checklist……. 54

Operator Preparedness Training…….. 55

Spill Response Plans…… 56

Community Spill Response Program…..…… 57

Example Response Container Inventory…….. 58

SECTION 3 – SPILL PREPAREDNESS

Facility Analysis and Inspection

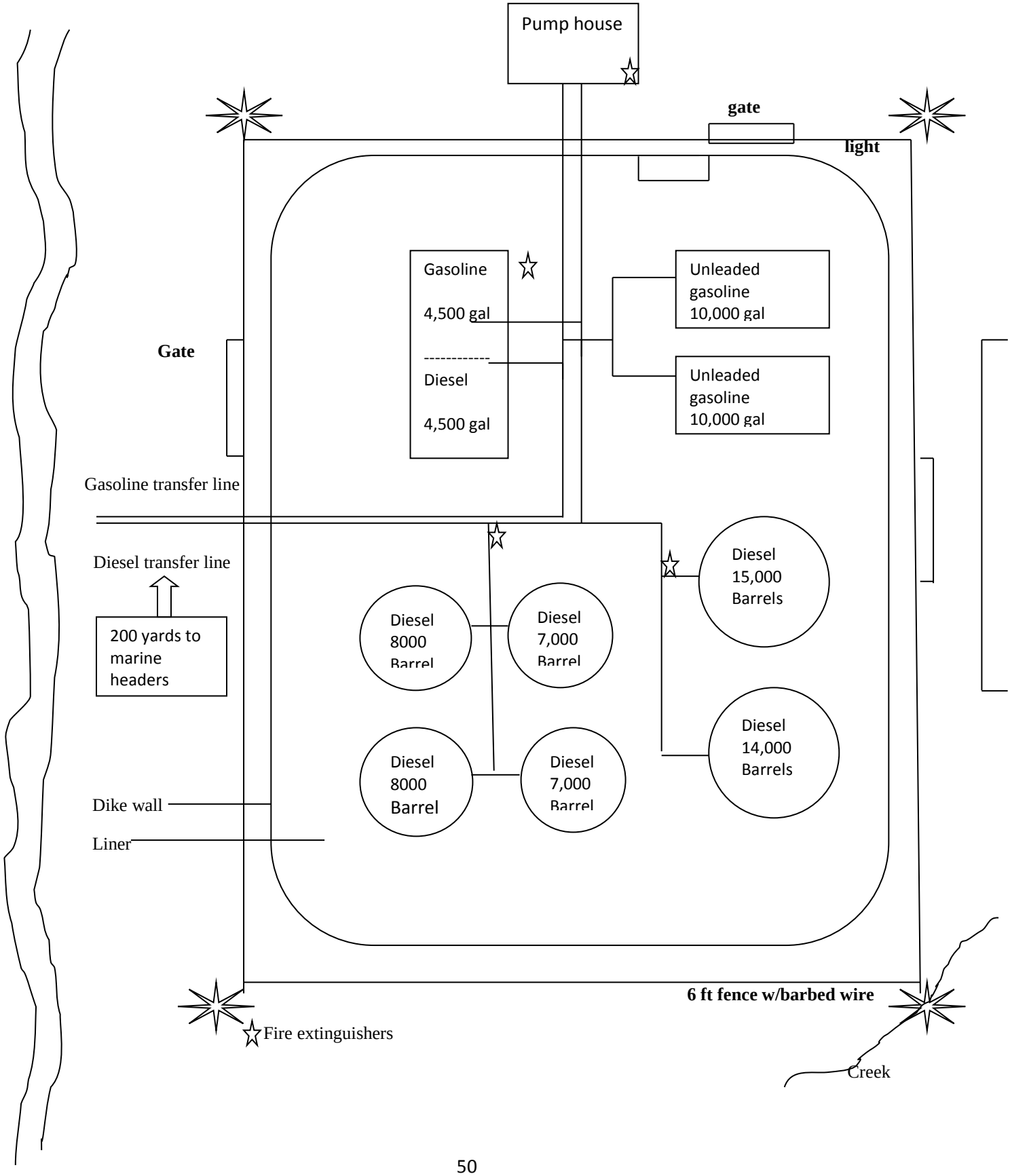
Review your facility to identify areas and activities most likely to have a spill. Consider:

- Amount and type of product stored.
- Normal patterns of fuel usage such as distribution, transfers, etc.
- Direction spilled oil would flow.
- Sensitive areas to protect in the case of a spill.

Make a detailed labeled diagram identifying high risk locations and areas where activities such as fuel transfer and distribution occur. Also mark areas most susceptible to damage. The diagram should include but is not limited to:

- All tanks to include bulk and day tanks
- Piping including valves and headers
- Secondary containment area
- All buildings, fences, lights and location of fire extinguishers
- Dispensing areas
- Environmentally sensitive areas
- Emergency shut-off switches
- Spill flow paths

SECTION 3 – SPILL PREPAREDNESS



SECTION – 3 SPILL PREPARDNESS

Spill Response Equipment and Materials

Your facility review will help you to prepare for spills. The size, location, type of spill, and whether a spill is to land or water will determine the response equipment you should have on hand as well as the spill response training necessary to respond to spills at the facility.

The following are examples of materials to have on hand and measures to take to reduce the impact in the event a spill occurs. Spill response materials and equipment should be placed in secure but readily accessible locations near potential spill areas.

Spill type	Preparedness materials and measures
Spills to land	sorbent pads, sorbent boom, picks, shovels, heavy-duty large trash bags
Spills to water	skirted boom, boats, anchors and rope, skimmers, sorbent boom
Spills during fuel transfer	catchment basins, booms and sorbent pads
Spills from leaks in the system	sorbent pads, drip pans, catchment basins, repair and patch materials

Spill Response Equipment and Materials Checklist

- Below are lists of basic equipment and materials that should be kept on hand and readily available to respond to spills.
- These lists are basic and should be modified for each individual facility

All employees should know the location of all spill response equipment and materials and know how to use the equipment and materials in the case of a spill.

SECTION 3 –SPILL PREPAREDNESS

Spill Response Equipment Checklist

Item	Number needed	Have	Order	Comments
Hand crank sorbent wringer				
Transfer pump				
Hand held radios (w/spare batteries and charger				
Shovels (none sparking aluminum or brass)				
Picks				
Rakes				
Brooms				
Hand tools				
Safety glasses or face shields				
Hard hats				
Rope				
First aid kit				
Plastic buckets				
Boat/motor				
Life preservers				
Anchors, chain, rope				
Buoys				
Portable generator				
Smart ash burner				
Tank or bladder for recovered product				
Rubber boots				
Rain gear				
Respirators				
Other				

SECTION 3 – SPILL PREPAREDNESS

Spill Response Materials Checklist

Items	Number needed	Have	Order	Comments
Sorbent Pads				
Sorbent Boom/Sweep				
Absorbent pom string				
Skirted containment boom w anchors and rope				
Visqueen (16 mil)				
Overpack drums (85 gal.)				
Garbage bags (6 mil.)				
Neoprene gloves				
Warm gloves				
Duct tape				
Color-kut water paste				
Disposable coveralls (i.e. Kaplar)				
Disposable masks				
Plugs				
Scrub brushes				
Pans for cleaning				
Boot covers				
Other				

SECTION 3 – SPILL PREPAREDNESS

Operator Preparedness Training

The severity of spills can be minimized if operators are properly trained in facility operations and spill response, including proper use of spill response equipment and materials. It is recommended that facilities develop written training plans for each of their operators.

Areas of spill preparedness training include:

- **Operations:** Operators must be qualified and competent for conducting normal routine operations.

- **Inspections:** Operators must be familiar with the facility and its operations. This will enable him/her to conduct regular inspections and be able to recognize problems.

- **Maintenance:** Operators must be qualified to perform regular preventive maintenance. When necessary, a specialist should be called in.

- **Spill preparedness:** Operators must be trained in procedures for storage, maintenance, inspection and periodic testing of oil spill response equipment and materials.

- **Spill Response:** Operators must be trained in deployment of spill response equipment and materials, safety, first aid, spill reporting, and response actions. They should participate in, at a minimum, annual drills.

- **Hazardous Material Handling (HAZMAT):** Operators must be trained in safety, be aware of potential hazards and proper fuel handling procedures.

- **First Aid/Cardiopulmonary resuscitation (CPR):** Operators should have basic first aid training with emphasis on identifying and responding to health emergencies due to fuel exposure. It is a good idea for operators to know CPR.

SECTION 3 – SPILL PREPAREDNESS

Spill Response Plans

Facility spill response plans should be working documents. Operators and responders should be familiar with their location and contents. These plans should:

- List who, along with telephone numbers, to notify of a spill or call for help.
- Describe the actions to be taken in the event of a spill.
- Deployment strategies for spill response equipment and materials.
- Discuss the protection of critical and sensitive areas.
- Describe the recovery of spilled product.
- Describe the proper management of recovered product and contaminated soil and other materials such as sorbents.
- Discuss safety considerations.

See Appendix D for an example of a Spill Response Plan.

SECTION 3 – SPILL PREPAREDNESS

Community Spill Response Program

The Alaska Department of Environmental Conservation (ADEC) provides immediate response capability in many villages and communities in Alaska. This service is available because of partnership agreements with local communities, spill response cooperatives and response action contractors. The intent of the agreements is to give local communities and villages the ability for immediate spill response. This is necessary to immediately contain and control releases to reduce the impact on public health and the environment as other responders or resources are traveling to the site. These agreements include stationing response packages in specified areas and providing training to local responders in equipment use.

Each response package is under the control of the State On-Scene Coordinator for the area in which it is located. Packages include spill response material and equipment for the types of hazards that exist in the area. An example of a spill response container inventory is included at the end of this section. In the event of a spill, the situation will be assessed and the response managed by ADEC area staff or by personnel responsible under a "Local Response Agreement." More information concerning the Community Spill Response Program can be found here: http://dec.alaska.gov/spar/ppr/local_resp.htm

For more information contact:

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SECTION 3 – SPILL PREPAREDNESS

Response Container Inventory Example – KAKE

QTY	UNIT	DESCRIPTION	USED DATE	QTY
		SECURITY/LIGHTING		
1	ea	American padlock, heavy duty w/ 2 keys		
		CONTAINMENT		
900	ft	8" X 12" Harbor boom, yellow, 100' lengths, marked ADEC		
2	ea	Tow bridles with floats, marked ADEC		
10	ea	22 lb. Danforth anchors		
10	ea	10' X 3/8" Galvanized chain		
32	ea	5/8" X 100' Anchor and /or tow ropes		
20	ea	A-1 Flo. Orange buoys, with 10' of 5/8" rope thru eye		
1	roll	3/8" line, 600' length		
6	ea	1 & 1/4" O.D. X 5' Galvanized ground stakes		
		RECOVERY		
25	bags	sorbent boom, (4 each 5" X 10' lengths per bag)		
30	bags	sorbent pads, type 56 HP, 17" X 19", (100 count)		
2	rolls	Sorbent roll, Type 100, 36" X 100'		
1	ea	Sorbent pad hand wringer		
10	bags	Oil snares, (Pom-poms on a rope), 50' length		
		STORAGE		
4	ea	85 gallon over-pack drums, yellow		
2	ea	85 gallon over-pack drums, packed with response supplies		
1	roll	Over-pack drum liners, 6-mil		
		TREATMENT/DISPOSAL		
3	boxes	Oily waste clean-up bags, 4-mil		
2	rolls	Poly sheeting, 6-mil, 12' X 100' (Visqueen)		
4	ea	Bulk lift bags (Super sacks)		
2	box	Lift bag liners, 50 bags/ box		
		SMALL TOOLS		
1	ea	Sledge hammer, 8 lb., 36" fiberglass handle		
1	ea	Tool box, 20" yellow poly		
1	ea	Socket wrench breaker bar, flex head, 1/2" drive		
1	ea	Socket wrench ratchet, 1/2" drive		
1	ea	15/16" - 1/2" drive, 12 point deep socket		
1	ea	15/16" - 1/2" drive, 12 point shallow drive socket		
1	ea	8" slip joint adjustable pliers, HD, rubber grip		
1	ea	15/16" open end wrench		
1	ea	Channel lock pliers		
1	ea	16 oz. steel claw hammer		
1	ea	16 oz. steel ball peen hammer		
1	ea	10" rubber grip hacksaw		
1	ea	10" hacksaw blades, 10 pack		

SECTION 3 – SPILL PREPAREDNESS

Response Container Inventory Sample (continued) - KAKE

QTY	UNIT	DESCRIPTION	USED DATE	QTY
CONEX CARGO STORAGE				
1	ea	20' X 8' X 8' steel container, painted outside "marine highway blue," painted inside light gray or white		
2	ea	8" X 8" X 8' AWW treated timbers for blocking		

SECTION FOUR

SPILL RESPONSE

AND REPORTING

SECTION 4 – SPILL RESPONSE, REPORTING

Section Four Table of Contents

Detecting Oil Spills……. 62

Where Spills Are Likely to Happen…… 63

Spill Response……. 64

Spill Reporting…… 70

Spill Response Checklist……. 71

SECTION 4 – SPILL RESPONSE, REPORTING

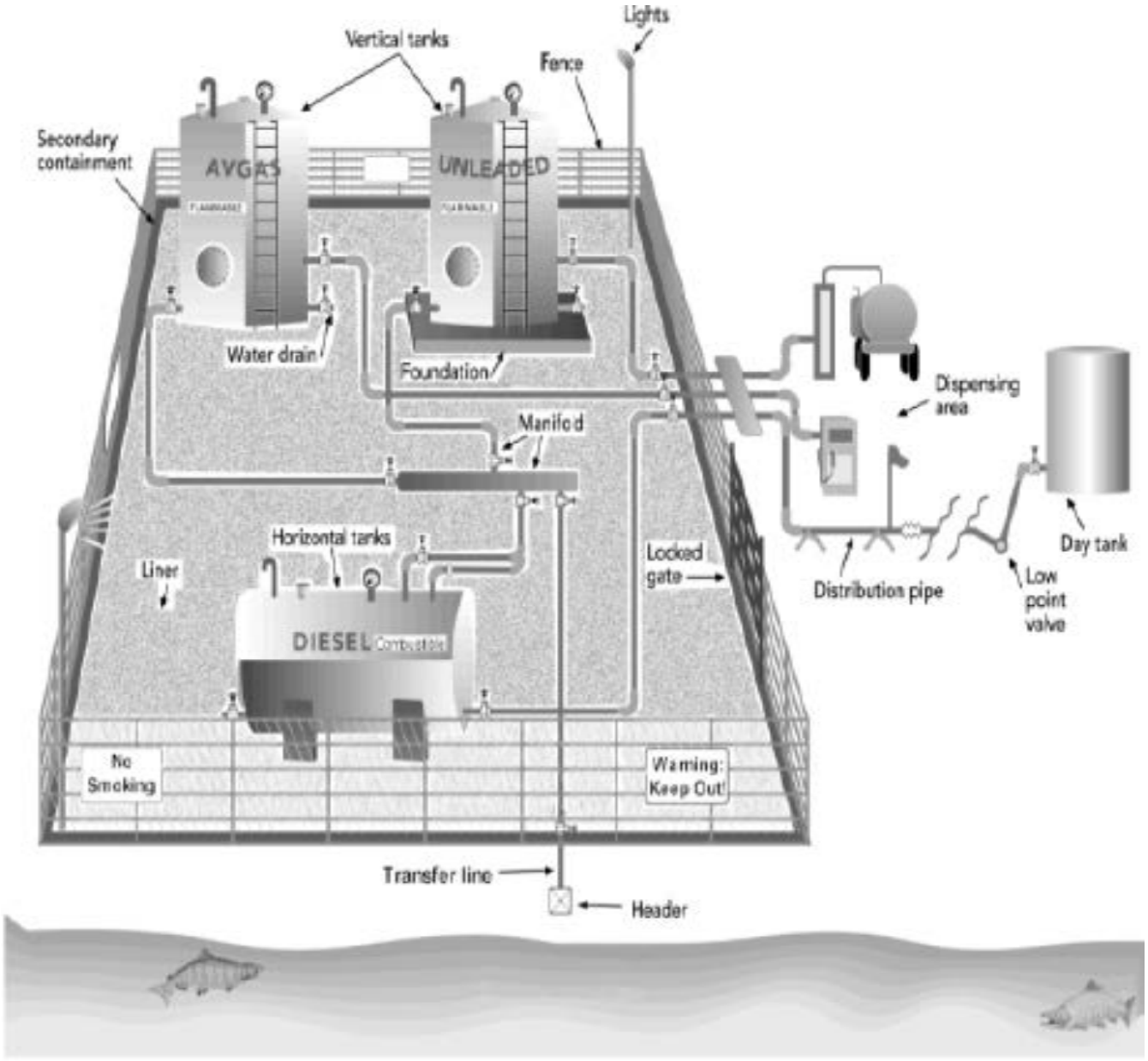
Detecting Oil Spills

Sometimes oil spills are not as easy to detect as one would think. The following are some tips to help determine if you have spills or leaks at your facility:

- Visible spilled product on the ground
- Sheen on water
- There is a smell of fuel in the air
- The inventory does not reconcile
- Dead or oiled fish, birds or small mammals
- Dead vegetation around the facility
- There is a smell or taste in the drinking water
- Sounds such as spraying liquids, a high pitch release from a pressure vessel, etc.
- Staining on the outside of tanks or pipes, especially at seams or joints

SECTION 4 – SPILL RESPONSE, REPORTING

Where Spills Are Likely to Happen:



Spills can happen anywhere but most often from tops of tanks during overfills, at bottom of tanks due to corrosion, and from any connection to the tank from pipes. Pipes can leak from any connection or valve. Dispensing areas and fuel transfer points require additional attention due to the risk of operator error.

SECTION 4 – SPILL RESPONSE, REPORTING

Spill Response

When you determine that you have a spill at your facility, immediate action must be taken. This section is a description of recommended steps to take and whom to notify. At the end of this section there is a **"Spill Response Checklist"** which is an abbreviated version of this section. The checklist may be copied, modified for your facility and used as you see fit.

Note: The procedures outlined should be considered recommendations. Every spill is different and your response should be guided by your capabilities and equipment limitations.

Initial Defense Actions

1. Survey Incident – from a safe distance. Using senses of sight, hearing and smell, take note of:

- Source of release (tank, pipe, valve, drum, etc.)
- Product spilled, look at labels and markings (gasoline, diesel, etc.)
- Occupied buildings that may be threatened
- Public areas and environmentally sensitive areas that may be threatened

2. Safety first – human lives and safety are the most important.

- Call for help. Let others know where you are, what you are doing and what they can do to help. This may save your life as well as reduce the impact from the spill. Call:
    - Facility owner or Manager
    - Local Fire Department
    - Local Responders
    - Local Law Enforcement
    - Local Medical Personnel

Spill Response (continued)

3. Analyze the incident

- Collect hazard information on product spilled (refer to SDS sheets)
- Predict the likely behavior of the spilled product (flow direction, etc.) as well as what may have happened to the source container
- Estimate the extent of the spill and the potential for harm to humans and the environment

4. Protect the public

- Keep non-emergency and unauthorized personnel away from the facility and the spill area
- Evacuate areas downwind and stay upwind of the spill – fumes can cause safety and health problems
- Control the scene and ribbon off the spill area to keep the public away from the spill
- Know when to stay away (explosive hazard, etc.)
- Have public service announcements made to ask others to avoid the facility and spill area

5. Plan a response

- Identify response objectives based on the analysis
- Determine initial responder and equipment needs
- If needed, contact ADEC for access to additional response equipment located in "Local Response Containers."
- Conduct a safety briefing with all responders

Spill Response (continued)

6. Protect yourself with appropriate personal protective gear

- Hardhat
- Rubber and/or safety toed boots
- Respirator
- Disposable suit or rain gear
- Eye protection
- Neoprene gloves

- Watch out for symptoms of heat and cold stress
- Establish personnel decontamination station prior to entry

7. Verify spill source – determine and verify where the spill is coming from

- Tanks
  - Check vents for evidence of spill product from overfill or heat expansion
  - Look at tank shell seams for rupture, leaking welds, missing bolts or rivets, or any other damage or flaws
  - Check the shell to bottom seam for corrosion, leaking welds or other damage
  - Check tell-tale pipes or other leak detection devices
  - Check man-way covers and other tank penetrations for leaks
- Piping
  - Check to see if any pipes are cracked or broken
  - See if the valves are in the correct position – open or closed

Spill Response (continued)

- Look for broken or leaky joints
- Check connections with the tank

Other sources – Look around to see if the spilled oil could be coming from another source such as a vehicle parked on the premises, or drums stored near or in the facility.

Planned Response Actions – Use the "BUDDY SYSTEM"

8. CONTROL the spill:

- Stop transferring fuel immediately if the spill occurs during a transfer
- Know the location of all emergency shut off equipment, both electrical and mechanical
- Close the valves upstream of the leak to stop the flow of product
- Place buckets or basins under a leak from a pipe or valve
- Apply a temporary patch over a leaky pipe or tank
- If a spill is from a damaged tank, transfer fuel to another tank

9. CONTAIN the spill as soon as possible – the quicker the spill is contained, the less potential for danger to humans and less impact to the environment

- Use spill response tool kits – shovels, absorbents, etc.
- Follow deployment strategies outlined in the Spill Response Plan
- For winter spills
  - Pile snow to form a dike around the spilled product
  - Dig ditches in ice and line with plastic to contain the spill

- For summer spills
  - Use dirt and mud to form a dike around the spilled product
  - Dig a ditch and line with plastic to divert product way from streams or other bodies of water and to collect fuel
- Pay particular attention to sensitive areas
  - Drinking water sources
  - Residential areas
  - Commercial areas
  - Fish and wildlife habitat
  - Culturally sensitive areas

9. Recover and CLEAN up spilled product

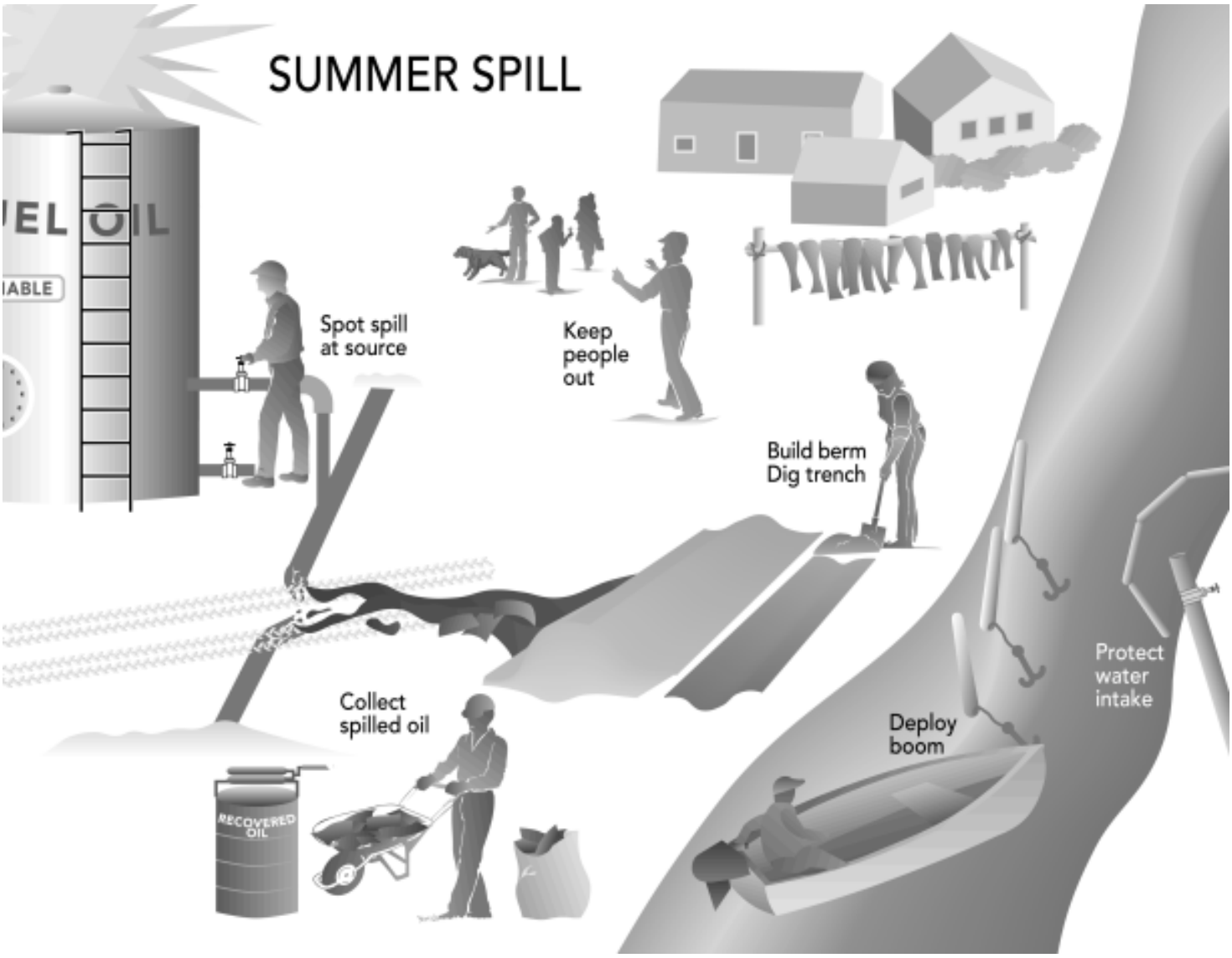
Recover: Recover captured product before it hits the water by pumping to or picking it up with skimmers, vac-trucks or absorbent materials. Put the recovered product into tanks, drums or bladders.

Clean: Clean contaminated equipment, tanks, pipes or other objects in a way that controls run off from the cleaning operation

Remove: Removed contaminated grasses, brush and other debris and place in large trash bags for proper disposal

SECTION 4 – SPILL RESPONSE, REPORTING

Spill Response (continued)

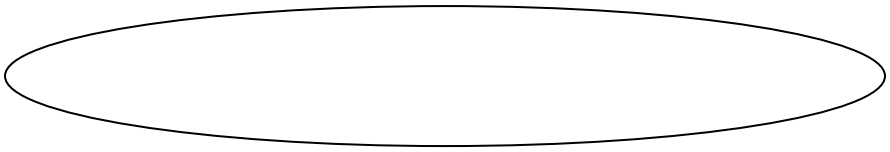


SECTION 4 – SPILL RESPONSE AND REPORTING

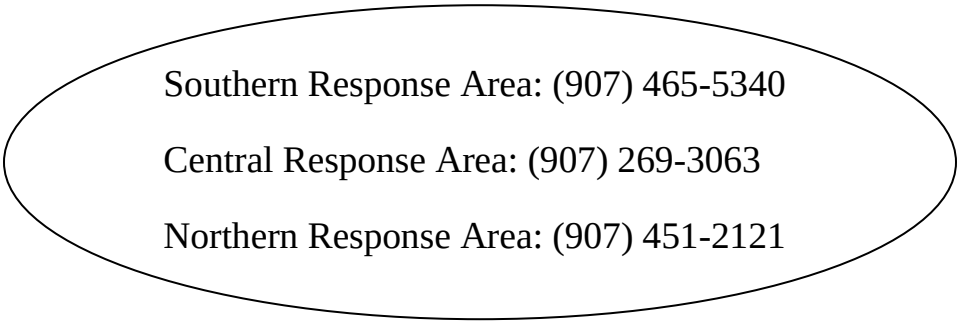
Spill Reporting

9. Notify Owners and Authorities – When a spill is noticed, call the following individuals and agencies immediately (Fill in the correct numbers below):

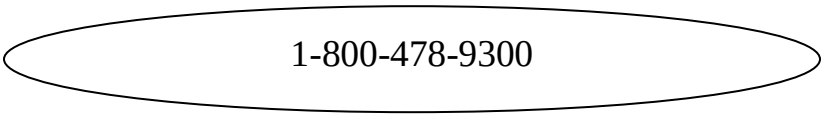
- Facility Owner or manager



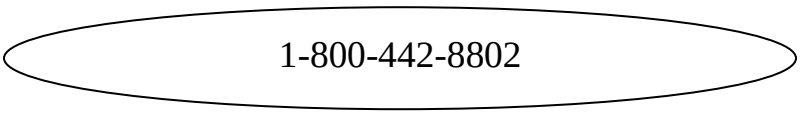
- The Alaska Department of Environmental Conservation
  - During normal business hours:



  - Outside normal business hours:



- The National Response Center (EPA and USCG)



Make sure signs with appropriate contact numbers are visibly posted in the facility. Also make sure notification signs are visible so others can see them in the event of a spill when the facility is closed. Notifications signs are available from ADEC free of charge.

SECTION 4 – SPILL RESPONSE, REPORTING

Spill Response Checklist

	ACTION	FINDINGS
	1. SURVEY INCIDENT o Identify release source and product spilled o Threatened buildings, public and sensitive areas	
	2. SAFETY FIRST – GET HELP o Facility owner or manager o Local Fire Department and Law Enforcement o Local responders o Local medical personnel	
	3. ANALYSE THE INCIDENT o Review the SDS o Predict spill behavior o Estimate the extent of the spill	
INITIAL DEFENSE ACTION	**4. PROTECT THE PUBLIC** o Authorized personnel only/Ribbon off the area o Evacuate areas downwind and stay upwind o Know when to stay away	
	5. PLAN A RESPONSE o Identify response objectives o Get additional response material o Conduct a safety briefing	
	6. PUT ON PERSONAL PROTECTION GEAR o Disposable suit or rain gear o Hardhat and eye protection o Neoprene gloves and rubber and/or safety toed boots	
	7. VERIFY SPILL SOURCE o Tanks o Piping o Other sources	
PLANNING ACTION	**8. CONTROL THE SPILL** o Stop the transfer and close valves upstream o Place catch bucket or basin under leak o Apply temporary patch	
	9. CONTAIN THE SPILL o Use response tool kit following deployment strategies o Pay attention to sensitive areas	
	10. RECOVER, CLEAN AND REPORT o Capture and recover product before it hits the water o Clean up product o Call the nearest ADEC office and report spill	

Section Five

Government

Requirements

SECTION 5 – GOVERNMENT REQUIREMENTS

Section Five Table of Contents

State and Federal Regulatory Overview……. 74

Environmental Protection Agency…….. 76

United States Coast Guard…….. 80

Alaska Department of Public Safety, Fire Marshall……..... 82

Alaska Department of Environmental Conservation…….. 83

SECTION 5 – GOVERNMENT REQUIREMENTS

State and Federal Regulatory Agency Overview

U.S. Environmental Protection Agency (EPA) Requirements

- Spill Prevention Control and Countermeasure (SPCC) and/or Facility Response Plans
- Personnel training in the prevention, containment, removal and disposal of spilled oil
- Inspection and maintenance program to a recognized industrial standard
- Proper selection and construction of spill prevention systems which include dikes, liners, pumps, absorbent boom, etc.

United States Coast Guard (USCG) Requirements

- Submission of a “Letter of Intent to Operate”
- Submission and approval of a “Facility Operations Manual” and a “Facility Response Plan”
- Facility operations must include procedures and equipment for fuel delivery from a vessel (Barge) including:
    - Designated qualified person in charge of the fuel transfer operation
    - Personnel training and response drills
    - Safety requirements
    - Record keeping

SECTION 5 – GOVERNMENT REQUIREMENTS

State and Federal Regulatory Agency Overview (continued)

Alaska Department of Public Safety (Fire Marshal) Requirements

Facility plans are to be submitted for review and approval by the Fire Marshall prior to building a new facility, any repairs, alterations or changes that may affect the fire safety of the storage tank facility

Alaska Department of Environmental Conservation

- Spill Reporting
- Posting of spill notification information
- Cleanup and disposal of spilled product and contaminated materials

SECTION 5 – GOVERNMENT REQUIREMENTS

Environmental Protection Agency

Law: Clean Water Act

Regulation: 40 CFR 112: Oil Pollution Prevention

Applicability: Owners or operators of facilities engaged in drilling, producing, gathering, storing, processing, transferring or consuming oil or oil products, providing:

- The facility is non-transportation related
- Aggregate aboveground storage capacity is 1,320 gallons and the minimum container size is 55 gallons
- Facilities, which due to their location, could reasonably expect spilled oil to reach waters of the United States

A. Spill Prevention, Control and Countermeasures (SPCC) Requirements:
The SPCC regulation specifies several major oil spill control requirements

- **Secondary Containment:** diking or other structural containment or their equivalent must be provided. It must be large enough to hold the contents of the largest tank plus allowance for precipitation (usually 10% of the largest tank). Diked areas must be sufficiently impermeable to contain spilled oil.
- **Tank Installations:** must be fail-safe engineered to prevent spills. Tanks must have at least one of the following:
    - High level liquid level alarms, audio or visual
    - High level liquid cutoff device
    - Direct audible or code signal communication between gauger and pump station
    - Fast response system for determining fuel level, this would be a computerized system or direct visual gauges
- **Tank Material and Construction** must be compatible with stored product and local conditions such as temperature.

Environmental Protection Agency (continued)

- **Fencing, locks and lighting** - Oil storage facilities must be fenced and the gate locked or guarded when the facility is unattended. Facility type and location must be considered when selecting and installing lighting. It should prevent vandalism and help detect spills at night.

- **Operations and maintenance** - Aboveground tanks, foundations, and supports must have periodic integrity tests, using methods such as hydrostatic testing, visual inspection or non-destructive shell thickness testing. Records of test results must be kept so they may be compared and variances identified.

- **Piping requirements** - Buried piping must have a protective coating or wrapping and must be cathodically protected. All aboveground valves and piping must be examined regularly and assessments made. Underground piping that becomes exposed must be inspected.

- **Training requirements** - AST facility owners and operators are responsible for training oil handling personnel in operations and maintenance of equipment to prevent discharges, discharge procedures, protocol and Spill Prevention, Control and Countermeasure Plans.

- Facility owners and operators are liable for civil penalties for SPCC violations

B. SPCC Plan Requirements: AST facilities are required to prepare SPCC Plans. These ae procedural and contingency plans that play an important safety role for facility owners and operators. In case of a spill, it is necessary to have a well thought out and systematic response and cleanup plan that can be implemented immediately.

- SPCC plans must be written and implemented before beginning operations

- Plans must be kept at the facility if it is in operation at least four hours a day and must be available for EPA inspection

- Plans must be prepared in accordance with good engineering practice and certified by a registered professional engineer

Environmental Protection Agency (continued)

- Plans must be reviewed and updated every five years

- Plans must discuss spill prevention, staff training, inspections, security, spill reporting, equipment and operations.

- SPCC plans must describe training, equipment testing, and periodic unannounced drills. They must also describe facility personnel response actions to be carried out under the plan to ensure facility safety and to mitigate or prevent a discharge or the substantial threat of a discharge.

- Plans must provide for appropriate containment, drainage control structures or equipment at the facility to prevent discharged oil from reaching navigable waterways.

A copy of the checklist that the EPA uses when reviewing SPCC plans is included in Appendix C of this handbook.

C. Facility Response Plan: In addition to a SPCC plan, certain facilities need to prepare a Facility Response Plan (FRP).

Applicability: Facility Response Plans must be prepared by owners or operators of non-transportation related facilities that, because of their location, could reasonably cause "substantial" harm to the environment by discharging oil into or on navigable waters or adjoining shorelines. EPA considers a facility to pose a potential for causing substantial harm if it *transfers oil over water to or from vessels and has a total storage capacity greater than or equal to 42,000 gallons.*

EPA has the authority to require a facility to prepare or revise a Facility Response Plan at their discretion. Factors that the EPA considers when evaluating a facility include:

- Oil storage capacity

- Type of transfer operation

- Secondary containment

Environmental Protection Agency (continued)

- Proximity of fish and wildlife and sensitive environments
- Proximity of drinking water intakes
- Spill history
- Age of oil storage tanks
- Other site specific considerations determined relevant by the EPA
- Petition from any person, including the general public, who believes your facility has the potential to cause substantial harm to the environment according to the above listed considerations.

Plan Requirements: A Facility Response Plan (FRP) describes preparations, procedures, training and actions for responding to oil discharges at a facility. FRP's must:

- Be submitted to the EPA for review and approval
- Include an emergency action plan that describes personnel and procedures in place to respond to spills.
- Describe external response resources and arrangements for responding to a worst case discharge
- Plan for the worst case scenario
- Provide details of plan implementation
- Provide training, drill exercises and self-inspections to support Facility Response Plan implementation.

D. **Training:** The facility owner or operator must develop and implement a training program. This must include evaluation procedures and drills and exercises for those personnel involved with oil spill response and clean-up activities

SECTION 5 – GOVERNMENT REQUIREMENTS

United States Coast Guard

Law: Clean Water Act and Oil Pollution Act

Regulation: 33 CFR 154 Facilities Transferring Oil or Hazardous Material in Bulk

33 CFR 156 Oil and Hazardous Material Transfer Operations

General Applicability: This law requires fixed or mobile marine transportation related (MTR) facilities that are capable of transferring oil to or from vessels with a capacity of 10,500 gallons (250 barrels) or more.

These United States Coast Guard (USCG) regulations apply to marine transportation related (MTR) facilities that:

- Are fixed facilities capable of transferring oil or hazardous material in bulk to or from a vessel with a capacity of 250 barrels (10,500 gallons) or more.

- Are mobile facilities and are used or intended to be used to transfer oil or hazardous material in bulk to or from a vessel with a capacity of 250 barrels (10,500 gallons) or more.

- Have been notified in writing by the Captain of the Port that all or portions of 33 CFR 154.735 (Safety requirements) may apply to each facility that is capable of transferring oil or hazardous material in bulk, only to or from a vessel with a capacity of less than 250 barrels (10,500 gallons).

Requirements: These bulk fuel transfer regulations require certain facilities to notify the USCG of their fuel related activities and to prepare Operations Manuals and Facility Response Plans. The following is a summary of the USCG requirements:

- **Submit a "Letter of Intent to Operate"** to the Captain of the Port. The letter must include the name, address and telephone number of the operator as well as the name, address and geographic location of the facility.

- **Submit for review a "Facility Operations Manual":** This manual must describe how operating rules and equipment requirements will be met as well as the responsibilities of personnel who conduct the transfers.

- **Test and maintain transfer hosing and piping:** Transfer pipes and hoses must be hydrostatically tested at least once a year. Test records are to be kept at the facility.

United States Coast Guard (continued)

Owners or operators are liable for oil spill removal costs as well as civil and potentially criminal penalties.

Inspections: USCG personnel conduct periodic inspections of MTR's. During these inspections they will look for:

- **Required documents** including a Letter of Intent to Operate, Facility Operations Manual, Facility Response Plans, copies of the Declaration of Inspection and results from hydrostatic tests done on transfer pipes and records for exercises (QI Notification, Spill Management Team Tabletop Exercise, and equipment deployment).

- **Safety Equipment** such as fire extinguishers, lighting, fencing and "No Smoking" Signs.

- **Spill response material and equipment** making sure there is an adequate amount and noting where it is located.

SECTION 5 – GOVERNMENT REQUIREMENTS

Alaska Department of Public Safety
Division of Fire and Life Safety (Fire Marshal)

Law: Alaska Statute 18.70.080

Regulation: 13 AAC 50 Fire Prevention Codes and Standards from the International Fire Code (IFC) and International Building Code (IBC)

Applicability: The IFC and IBC apply to all persons without restriction unless they are specifically excluded, that store, use, dispense, mix and/or handle flammable and combustible liquids.

Requirements: The state has adopted the National Fire Protection Agency standards to regulate all building types according to their use and occupancy. The IFC has been adopted to safeguard life and property from the hazards of fire and explosion arising from storing, handling and using hazardous substances, materials and devices and from other conditions hazardous to life and property.

Before beginning construction, alterations or repairs to a facility, specifications and plans must be submitted to the state Department of Public Safety, Division of Fire and Life Safety (Fire Marshal), Plan Review Bureau for review and approval.

SECTION 5 – GOVERNMENT REQUIREMENTS

Alaska Department of Environmental Conservation

Law: Alaska Statute 46 Water, Air, Energy and Environmental Conservation

Regulation: 18 AAC 75 Article 3, Oil and Hazardous Substances Pollution Control, Discharge Reporting, Cleanup and Disposal

Applicability: The Alaska Department of Environmental Conservation (ADEC) regulations apply to all persons, without restriction, in charge of a facility or operation that has a discharge of a hazardous substance

A. **Posting of Information** - A facility that has a total storage capacity of more than 1,000 gallons, either aboveground or underground, must post an ADEC approved discharge notification placard.

B. **Reporting Requirements** – Persons in charge of a facility or operation that has a release of a hazardous substance (including petroleum products) must report it to ADEC according to the following criteria:

- A discharge of a hazardous substance other than oil, a discharge of any amount to water, or a discharge of oil to land in excess of 55 gallons must be reported as soon as the person as knowledge of the discharge.
- A discharge is less than 55 gallons but more than 10 gallons, or it is more than 55 gallons but into impermeable secondary containment, it must be reported within 48 hours of the time the person has knowledge of the discharge.

C. **Clean-up:** Immediately upon becoming aware of a hazardous substance discharge to the lands or waters of the state, any person responsible for that discharge shall contain, clean-up and dispose of the material collected using methods that have been approved by ADEC.

IT'S THE LAW!

AS 46.03.755 and 18 AAC 75.300

REPORT OIL AND HAZARDOUS SUBSTANCE SPILLS

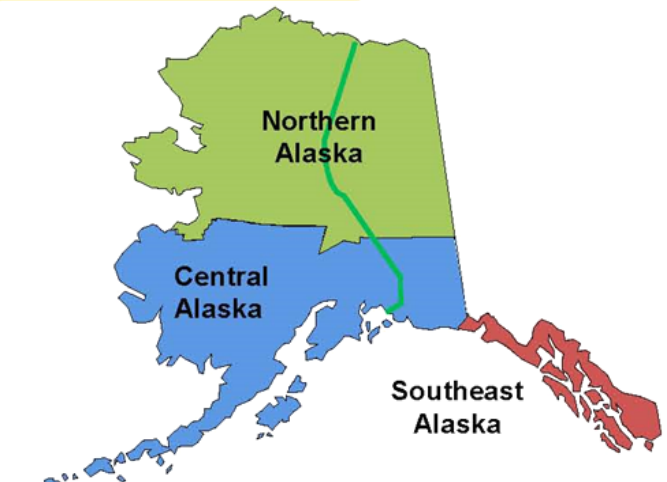
During Normal Business Hours

call the nearest response team office:

Central Alaska: Anchorage	**(907) 269-3063** Fax: (907) 269-7648
Northern Alaska: Fairbanks	**(907) 451-2121** Fax: (907) 451-2362
Southeast Alaska: Juneau	**(907) 465-5340** Fax: (907) 465-5245
Alaska Pipeline: Fairbanks	**(907) 451-2121** Fax: (907) 451-2362

Outside Normal Business Hours

Toll Free	**1-800-478-9300**
International	**1-907-269-0667**



Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
www.dec.alaska.gov/spar/spillreport.htm

Hazardous Substance

Any hazardous substance spill, other than oil, must be reported immediately.

Oil – Petroleum Products

To Water

- Any amount spilled to water must be reported immediately.

To Land

- Spills in ***excess of 55 gallons*** must be reported immediately.
- Spills in ***excess of 10 gallons, but 55 gallons or less***, must be reported within 48 hours after the person has knowledge of the spill.
- Spills of ***1 to 10 gallons*** must be recorded in a spill reporting log submitted to ADEC each month.

To Impermeable Secondary Containment Areas

- Any spills in ***excess of 55 gallons*** must be reported within 48 hours.

Additional Requirements for Regulated Underground Storage Tank Facilities

Regulated Underground Storage Tank (UST) facilities are defined at 18 AAC 78.005 and do not include heating oil tanks.

If your release detection system indicates a possible discharge, or if you notice unusual operating conditions that might indicate a release, you must notify the ADEC UST Program within 7 days.

UST Program: (907) 269-3055 or 269-7679

APPENDIX A

INDUSTRY STANDARDS

APPENDIX A – INDUSTRY STANDARDS

Appendix A – Table of Contents

Industry Standards – General Information……. A-2

Address for Industry Standards…….. A-3

Facility Piping…… A-5

Tank Design and Construction……... A-6

Tank Operation……... A-8

Tank Inspection and Maintenance..…….…… A-10

Fire Protection……. A-11

AST Related Industry Standards……. A-13

APPENDIX A – INDUSTRY STANDARDS

Industry Standards

Industry has developed and published many standards that deal with above ground storage tank (AST) facilities. Standards are developed by organizations consisting of people who work in and are familiar with various aspects of industry. Through research, experience, and general knowledge standards are written. Their purpose is to provide guidelines for designing, operation and maintaining facilities in a safe, organized and functional manner.
If you want copies of any of the standards, you can call or write to the appropriate organization and order them. Address, phone numbers and websites are included in this section.

APPENDIX A – INDUSTRY STANDARDS

Addresses for Industry Standards

If you want to order copies of any of the standards, you can call, write to the appropriate organization or order from some web pages. The prices of these documents vary. The following are addresses, phone numbers, fax numbers and websites.

American National Standards Institute (ANSI)
25 West 43rd St.
New York, NY 10036
Phone: (212) 642-4980 FAX: (212) 392-1286
Website: http://www.ansi.org/

American Petroleum Institute (API)
Publications Department
1220 L St. N.W.
Washington, D.C. 20005
Phone: (202) 682-8375 FAX: (202) 962-4776
Website: http://www.api.org/ publications: http://www.techstreet.com/api

American Society of Mechanical Engineers (ASME)
P.O. Box 2300
Fairfield, NJ 07007-2300
Phone: (800) 843-2763 FAX: (201) 882-1717
Website: http://www.asme.org/

National Association of Corrosion Engineers (NACE)
Publications Dept.
1440 South Creek Dr.
Houston, TX 77218-8340
Phone: (281) 228-6200 or (800) 797-6223 FAX: (281) 228-6300
Website: http://www.nace.org/

International Code Council (ICC)
4501 West Flossmoor Road
Country Club Hills, IL 60478
Phone: (800) 786-4452 FAX: (866) 891-1695
Website: http://iccsafe.org/

APPENDIX A – INDUSTRY STANDARDS

National Fire Protection Association, Inc. (NFPA)
Publications Dept
1 Batterymarch Park
Quincy, MA 02169-7471
Phone: (800) 344-3555 FAX: (800) 770-0700
Website: http://www.nfpa.org/

Petroleum Equipment Institute (PEI)
Publications Dept
PO Box 2380
Tulsa, OK 74101
Phone: (918) 494-9696 FAX: (918) 491-9895
Website: http://www.pei.org/

Steel Tank Institute (STI)
944 Donata Court
Lake Zurich, IL 60047
Phone: (847) 438-8265 FAX: (847) 438-8766
Website: http://www.steeltank.com/

Underwriters Laboratory
COMM 2000
151 Eastern Ave.
Bensenville, IL 60106
Phone: (888) 853-3503
Website: http://ul.com/

International Conference of Building Code Officials
Ordering Dept
5360 S. Workman Mill Rd
Whittier, CA 90601
Phone: (800) 423-6587 FAX: (562) 699-0541
Website: http://www.icbo.org/

APPENDIX A – INDUSTRY STANDARDS

Facility Piping

ASME B31.3: *Process Piping* describes use, design, fabrication, examination and testing for piping typically found in petroleum refineries, petroleum storage facilities and terminals

ASME B31.4: *Pipeline Transportation Systems for Liquid Hydrocarbons and other Liquids* describes use, design, fabrication, examination and testing for piping used for transporting products which are predominately liquid between plants and terminals and within terminals

API 570: *Piping Inspection Code: Inspection, Repair, Alteration, and Rerating In-service Piping Systems* provides guidelines for maintaining the safety and integrity of in service piping systems.

STI R892: *Recommended Practice for Corrosion Protection of Underground Piping Networks Associated with Liquid Storage and Dispensing* outlines the steps for designing, installing and monitoring corrosion control systems for underground metallic piping.

APPENDIX A – INDUSTRY STANDARDS

Tank Design and Construction

API Standard 620: *Design and Construction of Large, Welded, Low Pressure Storage Tanks* covers the design and construction of large, field assembled storage tanks that contain petroleum intermediates (gases or vapors) and finished products.

API Standard 650: *Welded Steel Tanks for Oil Storage* covers the material, design, fabrication, erection and testing of vertical, cylindrical aboveground welded steel storage tanks in various sizes and capacities.

API Standard 2610: *Design, Construction, Operation, Maintenance, and Inspection of Terminals and Tank Facilities:* covers the design, construction, operation, inspection, and maintenance of petroleum terminal and tank facilities associated with marketing, refining, pipeline, and other similar activities. This standard covers the issues of site selection and spacing, pollution prevention and waste management, safe operation, fire prevention and protection, tanks, dikes and berms, mechanical systems, product transfer, corrosion protection, structures, utilities and yard, and removals and decommissioning.

NACE RP0193: *Standard Recommended Practice – External Cathodic Protection of On-Grade Metallic Storage Tank Bottoms* outlines practices and procedures for providing cathodic protection to the soil side of bottoms of on-grade carbon steel storage tanks that are in contact with an electrolyte. Recommendations for both galvanic anode systems and impressed current systems are included. Design criteria for the upgrade of existing tanks as well as for newly constructed tanks are included. This standard is intended for use by personnel planning to install new on-grade carbon steel storage tanks, upgrade cathodic protection on existing storage tanks, or install new cathodic protection on existing storage tanks.

PEI RP200: *Recommended Practices for Installation of Aboveground Storage Systems for Motor Vehicle Fueling* provides a concise reference to preferred practices and procedures for the installation of aboveground storage systems at service stations, marinas and other fueling sites. This recommended practice contains chapters and drawings on all phases of proper aboveground tank installation, including site planning, foundations, support and anchorage; dikes; vaults and special enclosures; tanks; pumps and valves; fills, gauges and vents; piping and fittings; corrosion protection; environmental protection; electrical installation; testing and inspection; and documentation, maintenance, and training. Three appendices describe size calculations for dikes, venting, and fire code requirements. An appendix of documents used for reference is also included.

Tank Design and Construction (continued)

STI F081: *Standard for Aboveground Tanks* addresses the manufacturing, inspection and testing of single wall aboveground storage tanks prior to shipment.

STI R893: *Recommended Practice for External Protection of Shop Fabricated Aboveground Storage Tank Floors* covers an external corrosion control system for aboveground shop fabricated steel tank floors. The system is a practical and economical means of extending the life of aboveground storage tanks for a minimum of thirty years on corrosive soil conditions, to an indefinite term in less severe environments.

STI R912: *Installation Instructions for Shop Fabricated Aboveground Storage tanks for Flammable, Combustible Liquids* covers foundation preparation, air testing, handling, labeling and secondary containment for aboveground tanks for flammable or combustible fuel storage.

STI F921: *Standard for Aboveground Tanks with Integral Secondary Containment* addresses the manufacturing, inspection and testing of secondary containment tanks prior to shipment.

UL 142: *Steel Aboveground Storage Tanks for Flammable and Combustible Liquids* covers the manufacturing, inspecting and testing of steel primary, secondary and diked storage tanks intended for flammable and combustible liquids storage.

UL 2085 *Standard for Protected Aboveground Tanks for Flammable and Combustible Liquids* covers the manufacture, testing and inspection requirements for shop fabricated, aboveground atmospheric Protected Tanks intended for storage of stable flammable, or combustible liquids that have a specific gravity not greater than 1.0 and that are compatible with the material and construction of the tank.

APPENDIX A – INDUSTRY STANDARDS

Tank Operation

API MPMS Chapter 3.1A: *Standard Practice for the Manual Gauging of Petroleum and Petroleum Products* describes the procedures for manually gauging the liquid level of petroleum and petroleum products in non-pressure fixed-roof, floating-roof tanks and marine tank vessels and procedures for manually gauging the level of free water that may be found with the petroleum or petroleum products.

API MPMS Chapter 3.1B: *Standard Practice for Level Measurement of Liquid Hydrocarbons in Stationary Tanks by Automatic Tank Gauging* covers level measurement of liquid hydrocarbons in stationary, aboveground, atmospheric storage tanks using automatic tank gauges (ATGs). This publication discusses automatic tank gauging in general, calibration of ATGs for custody transfer and inventory control, and the requirements for data collection, transmission, and receiving. The appendices discuss the operation and installation of the most commonly used ATG equipment and of the less commonly used, electronically ATGs.

API MPMS Chapter 16.2: *Mass Measurement of Liquid Hydrocarbons in Vertical Cylindrical Storage Tanks by Hydrostatic Tank Gauging* Provides guidance on the installation, commissioning, maintenance, validation, and calibration of hydrostatic tank gauging (HTG) systems for the direct measurement of static mass of liquid hydrocarbons in storage tanks.

API Publ 306: *An Engineering Assessment of Volumetric Methods of Leak Detection in Aboveground Storage Tanks* provides the results of a leak detection project in aboveground storage tanks which utilizes volumetric methods to detect leaks.

API Publ 307: *An Engineering Assessment of Acoustic Methods of Leak Detection in Aboveground Storage Tanks* provides the results of a leak detection project n aboveground storage tanks which utilize acoustic methods of leak detection.

API RP 651: *Cathodic Protection of Aboveground Petroleum Storage Tanks* presents procedures and practices for achieving effective corrosion control on aboveground steel storage tank bottoms through the use of cathodic protection. It is the intent of this recommended practice to provide information and guidance for the application of cathodic protection to existing and new storage tanks in hydrocarbon service.

Tank Operation (continued)

API RP 652: *Lining of Aboveground Petroleum Storage Tank Bottoms* provides guidance on achieving effective corrosion control in aboveground storage tanks by application of tank bottom linings. It contains information pertinent to the selection of lining materials, surface preparation, lining application, cure, and inspection of tank bottom linings for existing and new storage tanks.

API RP 1626: *Storing and Handling Ethanol and Gasoline Ethanol Blends at Distribution Terminals and Filling Stations* describes recommended practices for storing, handling, and fire protection of ethanol and gasoline-ethanol blends from E1 to E10 and from E70 to E100 (used for E85) at distribution terminals and filling stations.

API PR 1627: *Storage and Handling of Gasoline-Methanol/Cosolvent Blends at Distribution Terminals and Service Stations* describes recommended practices for the storage, handling, and fire protection of gasoline-methanol/cosolvent blends.

API Standard 2000: *Venting Atmospheric and Low-pressure Storage Tanks* covers the normal and emergency vapor venting requirements for aboveground liquid petroleum or petroleum products storage tanks and aboveground and underground refrigerated storage tanks. Discussed in this standard are the causes of overpressure and vacuum; determination of venting requirements; means of venting; selection and installation of venting devices; and testing and marking of relief devices.

API Standard 2350: *Overfill Protection for Storage Tanks in Petroleum Facilities* addresses overfill protection for petroleum storage tanks. It recognized that prevention provides the most basic level of protection, thus while using both terms "protection" and "prevention", the document emphasizes prevention. The standard’s scope covers minimum overfill (and damage) prevention practices for aboveground storage tanks in petroleum facilities, including refineries, marketing terminals, bulk plants, and pipeline terminals that receive flammable and combustible liquids.

APPENDIX A – INDUSTRY STANDARDS

Tank Inspection and Maintenance

API Standard 653: *Tank Inspection, Repair, Alteration and Reconstruction* covers the inspection, repair, alteration, and reconstruction of steel aboveground storage tanks used in the petroleum and chemical industries. Provides the minimum requirements for maintaining the integrity of welded or riveted, non-refrigerated, atmospheric pressure, aboveground storage tanks after they have been placed in service.

API Standard 2015: *Safe Entry and Cleaning of Petroleum Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning* provides safety practices for preparing, emptying, isolating, ventilating, atmospheric testing, cleaning ,entry, hotwork and recommissioning activities in, on and around atmospheric and low-pressure (up to and including 15 psig) above ground storage tank that have contained flammable, combustible or toxic materials. This standard directs the user from decommissioning (removal from service) through recommissioning (return to service). This standard applies to stationary tanks used in all sectors of the petroleum and petrochemical plants, and terminals.

API Standard 2217A: *Guidelines for Safe Work in Inert Confined Spaces in the Petroleum and Petrochemical Industries* provides guidelines for safely entering and working in and near confined spaces that have inert atmospheres and can aid employers in preparing specific procedures for working safely in inert confined spaces, recognizing that because of its unique nature, the hazards and requirements for inert entry are generally greater than for "normal" permit-required confined space (PRCS) entry.

STI SP001: *Standard for the Inspection of Above Ground Storage Tanks* applies to the inspection of aboveground storage tanks, fabricated tanks, field erected tanks, and portable containers as defined in this standard, as well as their containment systems. This standard applies to AST's storing stable, flammable and combustible liquids at atmospheric pressure with a specific gravity less than approximately 1.0, and at operating temperatures between ambient temperature and 200 degrees F (93.3C).

APPENDIX A – INDUSTRY STANDARDS

Fire Protection

API RP 2207: *Preparing Tank bottoms for Hot Work* addresses the safety aspects of hot work on petroleum storage tank bottoms. It discusses safety precautions for preventing fires, explosions and associated injuries. The term hot work, as used in this publication, is defined as an operation that can produce a spark or flame hot enough to ignite flammable vapors.

API RP 2021: *Management of Atmospheric Storage Tank Fires* provides experience-based information to enhance the understanding of fires in atmospheric storage tanks containing flammable and combustible materials. It presents a systematic management approach which can assist tank fire prevention. If fires do occur, this information can help responders optimize fire suppression techniques to reduce the severity of an incident and reduce the potential for escalation.

API 2021A: *Interim Study Prevention and Suppression of fires in Large Aboveground Atmospheric Storage Tanks* provides an understanding of the fire prevention and suppression issues relating to the storage of flammable and combustible liquids in large aboveground atmospheric storage tanks.

API RP 2027: *Ignition Hazards Involved in Abrasive Blasting of Atmospheric Storage Tanks in Hydrocarbon Service* identifies the ignition hazards involved in abrasive blasting of the exteriors of hydrocarbon storage tanks containing a mixture that is flammable or that can become flammable when air is added. It provides operational guidelines for procedures that significantly reduce ignition risks during abrasive blasting of hydrocarbon tanks that may contain a flammable vapor space.

NFPA 1: *Uniform Fire Code* gives supplemental provisions to laws relating to fire safety and includes specific information on aboveground storage tanks.

NFPA 30: *Flammable and Combustible Liquids Code* covers fire and explosion prevention and risk control, storage of liquids in containers, storage of liquids in tanks, piping systems, processing facilities, bulk loading and unloading, and wharves

Fire Protection (continued)

NFPA 30A: *Code for Motor Fuel Dispensing Facilities and Repair Garages* applies to motor fuel dispensing facilities, both retail and fleet; marine motor fuel dispensing facilities; and motor fuel dispensing facilities located inside buildings and at farms and isolated construction sites. Coverage includes storage of liquids; piping for liquids; fuel dispensing systems; building construction requirements; electrical installations; operational requirements; vapor processing and recovery systems for liquid motor fuels.

NFPA 31: *Standard of Installation of Oil-Burning Equipment* provides requirements for the correct installation of liquid fuel-burning appliances in industrial, commercial, and residential occupancies.

International Fire Code establishes minimum regulations for fire prevention and fire protection systems using prescriptive and performance-related provisions. It is founded on broad-based principles that make possible the use of new materials and new system designs. It is fully compatible with all of the *International Codes*® (I-Codes®) published by the International Code Council (ICC)®, including the *International Building Code*®, *International Existing Building Code*® and *International Fuel Gas Code.*

APPENDIX A – INDUSTRY STANDARDS

AST Related Industry Standards

API Publ 328: *Laboratory Evaluation of Candidate Liners for Secondary Containment of Petroleum Products* provides data on the physical properties of liner materials as a function of their controlled exposure to fuels and additives.

API Publ 422: *Groundwater Protection Programs for Petroleum Refining and Storage Facilities: A guidance document* provides guidance to help petroleum facilities identify the types of issues that may need to be addressed in a groundwater protection plan.

API Publ 1638: *Waste Management Practices for Petroleum Marketing Facilities* provides specific guidance for managing typical waste streams at petroleum marketing facilities. This publication covers petroleum marketing facilities ranging from retail fuel convenience stores to terminals and lube plants.

API Publ 2202: *Dismantling and Disposing of Steel from Aboveground Storage Leaded Gasoline Storage Tanks* outlines precautions to prevent hazardous exposure of personnel to lead antiknock compounds when dismantling tanks that have contained leaded gasoline and when disposing of the steel.

APPENDIX B

SAFETY DATA SHEETS

APPENDIX B –SAFETY DATA SHEETS

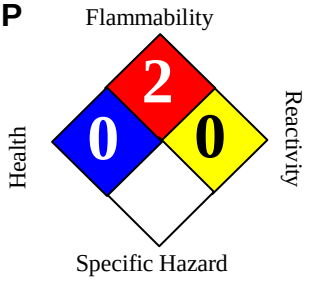
Appendix B – Table of Contents Page

Diesel Low Sulfur and Ultra Low Sulfur Diesel…… B-2

Unleaded Gasoline……. B-13

Safety Data Sheet
Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD)

NFPA:



SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Diesel Low Sulfur (LSD) and Ultra Low Sulfur Diesel (ULSD)		
Synonyms	:	CARB Diesel, 888100004478		
MSDS Number		888100004478	**Version**	2.31
Product Use Description				
Company		For: Tesoro Refining & Marketing Co. 19100 Ridgewood Parkway, San Antonio, TX 78259		
Tesoro Call Center		(877) 783-7676	**Chemtrec (Emergency Contact)**	(800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classifications

Flammable Liquid – Category 3
Skin Irritation – Category 2
Eye Irritation – Category 2B
Aspiration Hazard – Category 1
Carcinogenicity – Category 2
Acute Toxicity - Inhalation – Category 4
Chronic Aquatic Toxicity – Category 2

Pictograms

Signal Word **Danger**

Hazard Statements

Flammable liquid and vapor.
May be fatal if swallowed and enters airways – do not siphon diesel by mouth.
Causes skin irritation.
Causes eye irritation.
Suspected of causing skin cancer if repeated and prolonged skin contact occurs.
Suspected of causing cancer in the respiratory system if repeated and prolonged over-exposure by inhalation occurs.
May cause damage to liver, kidneys and nervous system by repeated and prolonged inhalation.

Toxic if inhaled.
May cause drowsiness or dizziness by inhalation.
Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, sparks, open flames, welding and hot surfaces.
No smoking.
Keep container tightly closed.
Ground and/or bond container and receiving equipment.
Use explosion-proof electrical equipment.
Use only non-sparking tools if tools are used in flammable atmosphere.
Take precautionary measures against static discharge.
Wear gloves, eye protection and face protection as needed to prevent skin and eye contact with liquid.
Wash hands or liquid-contacted skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid breathing vapors or mists.
Use only outdoors or in a well-ventilated area.

Response

In case of fire: Use dry chemical, CO2, water spray or fire fighting foam to extinguish.
If swallowed: Immediately call a poison center, doctor, hospital emergency room, medical clinic or 911. Do NOT induce vomiting. Rinse mouth.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
If in eye: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin or eye irritation persists, get medical attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing.
Immediately call or doctor or emergency medical provider. See Section 4 and Section 11 for medical treatment information.

Storage

Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed . Use only approved containers.

Disposal

Dispose of contents/containers to approved disposal site in accordance with local, regional, national, and/or international regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6	100%
Nonane	111-84-2	0 - 5%
Naphthalene	91-20-3	0 - 1%

1,2,4-Trimethylbenzene	95-63-6	0 - 2%
Xylene	1330-20-7	0 - 2%
Sulfur	7704-34-9	15 ppm maximum

SECTION 4. FIRST AID MEASURES

Inhalation : Move to fresh air. Give oxygen. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.

Skin contact : Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Wash contaminated clothing before re-use. If skin irritation persists, seek medical attention immediately.

Eye contact : Remove contact lenses. Rinse thoroughly with plenty of water for at least 15 minutes. If symptoms persist, seek medical attention.

Ingestion : Do not induce vomiting without medical advice. If a person vomits when lying on his back, place him in the recovery position. Seek medical attention immediately.

Notes to physician : Symptoms: Dizziness, Discomfort, Headache, Nausea, Disorder, Vomiting, Lung edema, Liver disorders, Kidney disorders. Aspiration may cause pulmonary edema and pneumonitis.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray or fire fighting foam. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers. Keep containers and surroundings cool with water spray.

Specific hazards during fire fighting : Fire Hazard Do not use a solid water stream as it may scatter and spread fire. Cool closed containers exposed to fire with water spray.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit. Use personal protective equipment.

Further information : Exposure to decomposition products may be a hazard to health. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions : Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to contain spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact. Ensure adequate ventilation. Use personal protective equipment.

Environmental precautions : Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection. Discharge into the environment must be avoided. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up : Take up with sand or oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal - caution, flammable vapors may accumulate in closed containers. Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling : Keep away from fire, sparks and heated surfaces. No smoking near areas where material is stored or handled. The product should only be stored and handled in areas with intrinsically safe electrical classification.

: Hydrocarbon liquids including this product can act as a non-conductive flammable liquid (or static accumulators), and may form ignitable vapor-air mixtures in storage tanks or other containers. Precautions to prevent static-initated fire or explosion during transfer, storage or handling, include but are not limited to these examples:

(1) Ground and bond containers during product transfers. Grounding and bonding may not be adequate protection to prevent ignition or explosion of hydrocarbon liquids and vapors that are static accumulators.

(2) Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil or diesel) is loaded into tanks previously containing low flash point products (such gasoline or naphtha).

(3) Storage tank level floats must be effectively bonded.

For more information on precautions to prevent static-initated fire or explosion, see NFPA 77, Recommended Practice on Static Electricity (2007), and API Recommended Practice 2003, Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents (2008).

Conditions for safe storage, including incompatibilities : Keep away from flame, sparks, excessive temperatures and open flame. Use approved containers. Keep containers closed and clearly labeled. Empty or partially full product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose containers to sources of ignition. Store in a well-ventilated area. The storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

: Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure.

Keep away from food, drink and animal feed. Incompatible with oxidizing agents. Incompatible with acids.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA Z1	Xylene	1330-20-7	PEL	100 ppm 435 mg/m3
	Naphthalene	91-20-3	PEL	10 ppm 50 mg/m3
ACGIH	Diesel Fuel	68476-30-2	TWA	100 mg/m3
	Xylene	1330-20-7	TWA	100 ppm
		1330-20-7	STEL	150 ppm
	Naphthalene	91-20-3	TWA	10 ppm
		91-20-3	STEL	15 ppm
	Nonane	111-84-2	TWA	200 ppm

Engineering measures : Use adequate ventilation to keep gas and vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces. Use only intrinsically safe electrical equipment approved for use in classified areas.

Eye protection : Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Hand protection : Gloves constructed of nitrile, neoprene, or PVC are recommended. Consult manufacturer specifications for further information.

Skin and body protection : If needed to prevent skin contact, chemical protective clothing such as of DuPont TyChem®, Saranex or equivalent recommended based on degree of exposure. The resistance of specific material may vary from product to product as well as with degree of exposure.

Respiratory protection : A NIOSH/ MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection. Use a NIOSH/ MSHA-approved positive-pressure supplied-air respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Work / Hygiene practices : Emergency eye wash capability should be available in the near proximity to operations presenting a potential splash exposure. Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Do not use as a cleaning solvent on the skin. Do not use solvents or harsh abrasive skin cleaners for washing this product from exposed skin areas. Waterless hand cleaners are effective. Promptly remove contaminated clothing and launder before reuse. Use care when laundering to prevent the formation of flammable vapors which could ignite via washer or dryer. Consider the need to discard contaminated leather shoes and gloves.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear to straw colored liquid
Odor	Characteristic petroleum or kerosene-like odor
Odor threshold	0.1 - 1 ppm typically reported
pH	Not applicable
Melting point/freezing point	Gel point can be about -15°F; freezing requires laboratory conditions
Initial boiling point & range	154 - 372 °C (310° - 702 °F)
Flash point	38°C Minimum for #1 Diesel, 52°C Minimum for #2 Diesel
Evaporation rate	Higher initially and declining as lighter components evaporate
Flammability (solid, gas)	Flammable vapor released by liquid
Upper explosive limit	6.5 %(V)
Lower explosive limit	0.6 %(V)
Vapor pressure	< 2 mm Hg at 20 °C
Vapor density (air = 1)	> 4.5
Relative density (water = 1)	0.86 g/mL
Solubility (in water)	0.0005 g/100 mL
Partition coefficient (n-octanol/water)	> 3.3 as log Pow
Auto-ignition temperature	257 °C (495 °F)
Decomposition temperature	Will evaporate or boil and possibly ignite before decomposition occurs.
Kinematic viscosity	1 to 6 mm²/s range reported for No.1 or No.2 diesel at ambient temperatures
Conductivity (conductivity can be reduced by environmental factors such as a decrease in temperature	Diesel Fuel Oils at terminal load rack: At least 25 pS/m Ultra Low Sulfur Diesel (ULSD) without conductivity additive: 0 pS/m to 5 pS/m ULSD at terminal load rack with conductivity additive: At least 50 pS/m JP-8 at terminal load rack: 150 pS/m to 600 pS/m

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Vapors may form explosive mixture with air. Hazardous polymerization does not occur.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	Can react with strong oxidizing agents, peroxides, acids and alkalies. Do not use with Viton or Fluorel gaskets or seals.
Conditions to avoid	Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Avoid static charge accumulation and discharge (see Section 7).
Hazardous decomposition products	Ignition and burning can release carbon monoxide, carbon dioxide, non-combusted hydrocarbons (smoke) and, depending on formulation, trace amounts

of sulfur dioxide. Diesel exhaust particals may be a lung hazard (see Section 11).

SECTION 11. TOXICOLOGICAL INFORMATION

Inhalation : Vapors or mists from this material can irritate the nose, throat, and lungs, and can cause signs and symptoms of central nervous system depression, depending on the concentration and duration of exposure.

Skin contact Skin irritation leading to dermatitis may occur upon prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed. Long-term, repeated skin contact may cause skin cancer.

Eye contact Eye irritation may result from contact with liquid, mists, and/or vapors.

Ingestion Harmful or fatal if swallowed. Do NOT induce vomiting. This material can irritate the mouth, throat, stomach, and cause nausea, vomiting, diarrhea and restlessness Aspiration hazard if liquid is inhaled into lungs, particularly from vomiting after ingestion. Aspiration may result in chemical pneumonia, severe lung damage, respiratory failure and even death.

Target organs Central nervous system, Eyes, Skin, Kidney, Liver

Further information Studies have shown that similar products produce skin cancer or skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.
Repeated over-exposure may cause liver and kidney injury
IARC classifies whole diesel fuel exhaust particulates as carcinogenic to humans (Group 1). NIOSH regards whole diesel fuel exhaust particulates as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

Component:

Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6	Acute oral toxicity: LD50 rat Dose: 5,001 mg/kg Acute dermal toxicity: LD50 rabbit Dose: 2,001 mg/kg Acute inhalation toxicity: LC50 rat Dose: 7.64 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Severe skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation
Nonane	111-84-2	Acute oral toxicity: LD50 mouse Dose: 218 mg/kg Acute inhalation toxicity: LC50 rat Exposure time: 4 h
Naphthalene	91-20-3	Acute oral toxicity: LD50 rat Dose: 2,001 mg/kg Acute dermal toxicity: LD50 rat Dose: 2,501 mg/kg

		Acute inhalation toxicity: LC50 rat Dose: 101 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation Carcinogenicity: N11.00422130
1,2,4-Trimethylbenzene	95-63-6	Acute inhalation toxicity: LC50 rat Dose: 18 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Skin irritation Eye irritation: Classification: Irritating to eyes. Result: Eye irritation
Xylene	1330-20-7	Acute oral toxicity: LD50 rat Dose: 2,840 mg/kg Acute dermal toxicity: LD50 rabbit Dose: ca. 4,500 mg/kg Acute inhalation toxicity: LC50 rat Dose: 6,350 mg/l Exposure time: 4 h Skin irritation: Classification: Irritating to skin. Result: Mild skin irritation Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product. Eye irritation: Classification: Irritating to eyes. Result: Mild eye irritation

Carcinogenicity

NTP	Naphthalene	(CAS-No.: 91-20-3)
IARC	Naphthalene	(CAS-No.: 91-20-3)

OSHA No component of this product which is present at levels greater than or equal to 0.1 % is identified as a carcinogen or potential carcinogen by OSHA.

CA Prop 65 WARNING! This product contains a chemical known to the State of California to cause cancer.
naphthalene (CAS-No.: 91-20-3)

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

Component:

Diesel	68476-34-6	Toxicity to fish: LC50 Species: Jordanella floridae Dose: 54 mg/l

Exposure time: 96 h

Toxicity to crustacia:
Species: Palaemonetes pugio
TLm (48 hour) = 3.4 mg/l

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name	: DIESEL FUEL
UN-No.	: UN1202 (NA 1993)
Class	: 3
Packing group	: III

TDG

Proper shipping name	: DIESEL FUEL
UN-No.	: UN1202 (NA 1993)
Class	: 3
Packing group	: III

IATA Cargo Transport

UN UN-No.	: UN1202 (NA 1993)
Description of the goods	: DIESEL FUEL
Class	: 3
Packaging group ICAO-Labels Packing instruction (cargo aircraft)	: III : 3 : 366
Packing instruction (cargo aircraft)	: Y344

IATA Passenger Transport

UN UN-No.	: UN1202 (NA 1993)
Description of the goods	: DIESEL FUEL
Class	: 3
Packaging group	: III
ICAO-Labels	: 3
Packing instruction (passenger aircraft)	: 355
Packing instruction (passenger aircraft)	: Y344

IMDG-Code

UN-No.	: UN 1202 (NA 1993)
Description of the goods	: DIESEL FUEL
Class	: 3
Packaging group	: III
IMDG-Labels	: 3

EmS Number : F-E S-E
Marine pollutant : No

SECTION 15. REGULATORY INFORMATION

: **CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIROMENT)**
The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply**.**

TSCA Status : On TSCA Inventory

DSL Status : All components of this product are on the Canadian DSL list.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA III US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

Components	CAS-No.
Xylene	1330-20-7
1,2,4-Trimethylbenzene	95-63-6
Naphthalene	91-20-3

PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components	CAS-No.
Nonane	111-84-2
Naphthalene	91-20-3
1,2,4-Trimethylbenzene	95-63-6
xylene	1330-20-7
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6

MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Components	CAS-No.
Xylene	1330-20-7
1,2,4-Trimethylbenzene	95-63-6
Naphthalene	91-20-3
Nonane	111-84-2

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Components	CAS-No.
Nonane	111-84-2

Naphthalene	91-20-3
1,2,4-Trimethylbenzene	95-63-6
Xylene	1330-20-7
Fuels, diesel, No 2; Gasoil - unspecified	68476-34-6

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.

Naphthalene 91-20-3

SECTION 16. OTHER INFORMATION

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

10/29/2012

1153, 1250, 1443, 1454, 1814, 1815, 1866, 1925

Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

CHEVRON and TEXACO REGULAR UNLEADED GASOLINES

Product Use: Fuel
Product Number(s): 201000, 204039, 204054, 204067, 204086, 204139, 204153, 204585, 204750, 204751 [See Section 16 for Additional Product Numbers]
Synonyms: Calco Regular Unleaded Gasoline, Chevron Regular Unleaded Gasoline, Chevron UL/CQ Gasoline, Gasolines, Automotive, Texaco Unleaded Gasoline
Company Identification
Chevron Products Company
6001 Bollinger Canyon Rd.
San Ramon, CA 94583 United States of America

Transportation Emergency Response CHEMTREC:
(800) 424-9300 or (703) 527-3887
Health Emergency
Chevron Emergency Information Center: Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623
Product Information
Product Information: (800) 582-3835
SDS Requests: (800) 414-6737

SPECIAL NOTES: This MSDS applies to: all motor gasoline.

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable liquid: Category 1. Aspiration toxicant: Category 1. Carcinogen: Category 1A. Target organ toxicant (repeated exposure): Category 1. Eye irritation: Category 2A. Germ Cell Mutagen: Category 1B. Skin irritation: Category 2. Reproductive toxicant (developmental): Category 2. Target organ toxicant (central nervous system): Category 3. Acute aquatic toxicant: Category 2. Chronic aquatic toxicant: Category 2.

Signal Word: Danger

Physical Hazards: Extremely flammable liquid and vapor.

Health Hazards: May be fatal if swallowed and enters airways. May cause genetic defects. May cause cancer. Causes skin irritation. Causes serious eye irritation. Suspected of damaging the unborn child. May cause drowsiness or dizziness.

Target Organs: Causes damage to organs (Blood/Blood Forming Organs) through prolonged or repeated exposure.

Environmental Hazards: Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:
General: Keep out of reach of children. Read label before use.
Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting/equipment. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.
Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. IF SWALLOWED: Immediately call a poison center or doctor/physician. Do NOT induce vomiting. Call a poison center or doctor/physician if you feel unwell. Get medical advice/attention if you feel unwell. IF exposed or concerned: Get medical advice/attention. In case of fire: Use media specified in the SDS to extinguish. Specific treatment (see Notes to Physician on this label). Collect spillage.
Storage: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.
Disposal: Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

HAZARDS NOT OTHERWISE CLASSIFIED: Not Applicable

SECTION 3 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Gasoline	86290-81-5	100 %vol/vol
Toluene (methylbenzene)	108-88-3	1 - 35 %vol/vol
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	1330-20-7	1 - 15 %vol/vol
Pentane, 2,2,4-trimethyl- (Isooctane)	540-84-1	1 - 13 %vol/vol
Butane	106-97-8	1 - 12 %vol/vol
Ethanol	64-17-5	0 - 10 %vol/vol
Benzene	71-43-2	0.1 - 4.9 %vol/vol
Hexane	110-54-3	1 - 5 %vol/vol
Heptane	142-82-5	1 - 4 %vol/vol
Ethyl benzene	100-41-4	0.1 - 3 %vol/vol
Cyclohexane	110-82-7	1 - 3 %vol/vol
Naphthalene	91-20-3	0.1 - 2 %vol/vol
Methylcyclohexane	108-87-2	1 - 2 %vol/vol

Motor gasoline is considered a mixture by EPA under the Toxic Substances Control Act (TSCA). The refinery streams used to blend motor gasoline are all on the TSCA Chemical Substances Inventory. The appropriate CAS number for refinery blended motor gasoline is 86290-81-5. The product specifications of motor gasoline sold in your area will depend on applicable Federal and State regulations.

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye: Flush eyes with water immediately while holding the eyelids open. Remove contact lenses, if worn, after initial flushing, and continue flushing for at least 15 minutes. Get immediate medical attention.

Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: If swallowed, get immediate medical attention. Do not induce vomiting. Never give anything by mouth to an unconscious person.

Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue or if any other symptoms develop.

Most important symptoms and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye: Contact with the eyes causes severe irritation. Symptoms may include pain, tearing, reddening, swelling and impaired vision.

Skin: Contact with the skin causes irritation. Skin contact may cause drying or defatting of the skin. Contact with the skin is not expected to cause an allergic skin response. Symptoms may include pain, itching, discoloration, swelling, and blistering.

Ingestion: Highly toxic; may be fatal if swallowed. Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include pain, nausea, vomiting, and diarrhea.

Inhalation: Excessive or prolonged breathing of this material may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:
Reproduction and Birth Defects: Contains material that may cause harm to the unborn child if inhaled above the recommended exposure limit.
Cancer: Prolonged or repeated exposure to this material may cause cancer. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).
Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Genetic Toxicity: Contains material that may cause heritable genetic damage based on animal data.
Target Organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentrations above the recommended exposure limit:Blood/Blood Forming Organs Risk depends on duration and level of exposure. See Section 11 for additional information.

Indication of any immediate medical attention and special treatment needed
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.
Unusual Fire Hazards: See Section 7 for proper handling and storage.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible

gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying
non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Precautionary Measures: This product presents an extreme fire hazard. Liquid very quickly evaporates, even at low temperatures, and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Never siphon gasoline by mouth.
Do not store in open or unlabeled containers. READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. Do not get in eyes, on skin, or on clothing. Do not get in eyes. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling. Keep out of the reach of children.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank
cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

General Storage Information: DO NOT USE OR STORE near heat, sparks, flames, or hot surfaces . USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since

protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: Wear protective equipment to prevent eye contact. Selection of protective equipment may include safety glasses, chemical goggles, face shields, or a combination depending on the work operations conducted.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted.
Suggested materials for protective gloves include: Chlorinated Polyethylene (or Chlorosulfonated Polyethylene), Nitrile Rubber, Polyurethane, Viton.
Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors.
When used as a fuel, this material can produce carbon monoxide in the exhaust. Determine if airborne concentrations are below the occupational exposure limit for carbon monoxide. If not, wear an approved positive-pressure air-supplying respirator.
Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Gasoline	ACGIH	300 ppm (weight)	500 ppm (weight)	--	A3
Toluene (methylbenzene)	ACGIH	20 ppm (weight)	--	--	--
Toluene (methylbenzene)	OSHA Z-2	200 ppm (weight)	--	300 ppm (weight)	--
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	ACGIH	100 ppm (weight)	150 ppm (weight)	--	--
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	OSHA Z-1	435 mg/m3	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	OSHA Z-1	2350 mg/m3	--	--	--
Pentane, 2,2,4-trimethyl- (Isooctane)	ACGIH	300 ppm (weight)	--	--	--
Butane	ACGIH	--	1000 ppm (weight)	--	--
Ethanol	ACGIH	1000 ppm (weight)	--	--	A4 A3
Ethanol	OSHA Z-1	1900 mg/m3	--	--	--
Benzene	ACGIH	.5 ppm (weight)	2.5 ppm (weight)	--	Skin A1 Skin

Benzene	OSHA SRS	1 ppm (weight)	5 ppm (weight)	--	--
Benzene	OSHA Z-2	10 ppm (weight)	--	25 ppm (weight)	--
Benzene	CVX	1 ppm (weight)	5 ppm (weight)	--	--
Hexane	ACGIH	50 ppm (weight)	--	--	Skin
Hexane	OSHA Z-1	1800 mg/m3	--	--	--
Heptane	ACGIH	400 ppm (weight)	500 ppm (weight)	--	--
Heptane	OSHA Z-1	2000 mg/m3	--	--	--
Ethyl benzene	ACGIH	20 ppm (weight)	125 ppm (weight)	--	A3
Ethyl benzene	OSHA Z-1	435 mg/m3	--	--	--
Cyclohexane	ACGIH	100 ppm (weight)	--	--	--
Cyclohexane	OSHA Z-1	1050 mg/m3	--	--	--
Naphthalene	ACGIH	10 ppm (weight)	15 ppm	--	Skin A3
Naphthalene	OSHA Z-1	50 mg/m3	--	--	--
Methylcyclohexane	ACGIH	400 ppm (weight)	--	--	--
Methylcyclohexane	OSHA Z-1	2000 mg/m3	--	--	--

Consult local authorities for appropriate values.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Colorless to yellow
Physical State: Liquid
Odor: Petroleum odor
Odor Threshold: No data available
pH: Not Applicable
Vapor Pressure: 5 psi - 15 psi (Typical) @ 37.8 °C (100 °F)
Vapor Density (Air = 1): 3 - 4 (Typical)
Initial Boiling Point: 27.2°C (81°F) - 204.4°C (400°F) (Typical)
Solubility: Insoluble in water; miscible with most organic solvents. Freezing Point: Not Applicable
Melting Point: Not Applicable
Specific Gravity: 0.70 g/ml - 0.80 g/ml @ 15.6°C (60.1°F)
(Typical) Viscosity: <1 SUS @ 37.8°C (100°F)
Evaporation Rate: No data available
Decomposition temperature: No data available Octanol/Water Partition Coefficient: 2 - 7

FLAMMABLE PROPERTIES:

Flammability (solid, gas): No Data Available

Flashpoint: (Tagliabue Closed Cup ASTM D56) < -45 °C (< -49 °F) Autoignition: > 280 °C (> 536 °F)

Flammability (Explosive) Limits (% by volume in air): Lower: 1.4 Upper: 7.6

SECTION 10 STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: Not applicable

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product components.

Skin Corrosion/Irritation: For a 4-hour exposure, the Primary Irritation Index (PII) in rabbits is: 4.8/8.0.

Skin Sensitization: This material did not cause skin sensitization reactions in a Buehler guinea pig test. Acute Dermal Toxicity: LD50: >3.75 g/kg (rabbit).

Acute Oral Toxicity: LD50: >5 ml/kg (rat).

Acute Inhalation Toxicity: 4 hour(s) LD50: >20000 mg/m3 (rat).

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material. Gasoline has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Whole gasoline exhaust has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains benzene, which has been classified as a carcinogen by the National Toxicology Program (NTP) and a Group 1 carcinogen (carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Contains naphthalene, which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC). Contains ethylbenzene which has been classified as a Group 2B carcinogen (possibly carcinogenic to humans) by the International Agency for Research on Cancer (IARC).

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains naphthalene.

GENERAL TOXICITY: Exposure to naphthalene has been reported to cause methemoglobinemia and/or hemolytic anemia, especially in humans deficient in the enzyme glucose-6-phosphate dehydrogenase. Laboratory animals given repeated oral doses of naphthalene have developed cataracts.
REPRODUCTIVE TOXICITY AND BIRTH DEFECTS: Naphthalene did not cause birth defects when administered orally to rabbits, rats, and mice during pregnancy, but slightly reduced litter size in mice at dose levels that were lethal to the pregnant females. Naphthalene has been reported to cross the human placenta. GENETIC TOXICITY: Naphthalene caused chromosome aberrations and sister chromatid exchanges in Chinese hamster ovary cells, but was not a mutagen in several other in-vitro tests.CARCINOGENICITY: In a study conducted by the National Toxicology Program (NTP), mice exposed to 10 or 30 ppm of naphthalene by inhalation daily for two years had chronic inflammation of the nose and lungs and increased incidences of metaplasia in those tissues. The incidence of benign lung tumors (alveolar/bronchiolar adenomas) was significantly increased in the high-dose female group but not in the male groups. In another two-year inhalation study conducted by NTP, exposure of rats to 10, 30, and 60 ppm naphthalene caused increases in the incidences of a variety of nonneoplastic lesions in the nose.
Increases in nasal tumors were seen in both sexes, including olfactory neuroblastomas in females at 60 ppm and adenomas of the respiratory epithelium in males at all exposure levels. The relevance of these effects to humans has not been established. No carcinogenic effect was reported in a 2-year feeding study in rats receiving naphthalene at 41 mg/kg/day.

This product contains cyclohexane.
Cyclohexane primarily affects the central nervous systems of laboratory animals and humans. Acute or prolonged inhalation of cyclohexane at levels below the recommended exposure limits does not result in toxic effects while acute exposures to levels above these recommended limits can cause reversible central nervous system depression. Prolonged exposures of laboratory animals to high levels (up to low thousands of parts per million) have also caused reversible effects which included hyperactivity, diminished response to stimuli, and adaptive liver changes while very high levels (high thousands of parts per million) were fatal. No developmental effects were seen in rats or rabbits following exposures of up to 7000 ppm cyclohexane. No reproductive effects occurred in rats, although postnatal pup growth was reduced at 7000 ppm in a similar manner as observed in the parental animals. Cyclohexane has not been shown to be mutagenic in several in vitro and in vivo assays and has not produced tumors in several dermal application long-term bioassays. Based on these results and the lack of any mutagenic or genotoxic metabolites, cyclohexane is not expected to be mutagenic or genotoxic. Following dermal exposure, cyclohexane is rapidly absorbed, metabolized,and excreted.

This product contains butane.
An atmospheric concentration of 100,000 ppm (10%) butane is not noticeably irritating to the eyes, nose or respiratory tract, but will produce slight dizziness in a few minutes of exposure. No chronic systemic effect has been reported from occupational exposure.

This product contains benzene.
GENETIC TOXICITY/CANCER: Repeated or prolonged breathing of benzene vapor has been associated with the development of chromosomal damage in experimental animals and various blood diseases in humans ranging from aplastic anemia to leukemia (a form of cancer). All of these diseases can be fatal. In some individuals, benzene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation.

REPRODUCTIVE/DEVELOPMENTAL TOXICITY: No birth defects have been shown to occur in pregnant laboratory animals exposed to doses not toxic to the mother. However, some evidence of fetal toxicity such as delayed physical development has been seen at such levels. The available information on the effects of benzene on human pregnancies is inadequate but it has been established that benzene can cross the human placenta.
OCCUPATIONAL: The OSHA Benzene Standard (29 CFR 1910.1028) contains detailed requirements for training, exposure monitoring, respiratory protection and medical surveillance triggered by the exposure level. Refer to the OSHA Standard before using this product.

This product contains n-hexane.
TARGET ORGAN TOXICITY: Prolonged or repeated ingestion, skin contact or breathing of vapors of n-hexane has been shown to cause peripheral neuropathy. Recovery ranges from no recovery to complete recovery depending upon the severity of the nerve damage. Exposure to 1000 ppm n-hexane for 18 hr/day for 61 days has been shown to cause testicular damage in rats. However, when rats were exposed to higher concentrations for shorter daily periods (10,000 ppm for 6 h/day, 5 days/wk for 13 weeks), no testicular lesions were seen.
CARCINOGENICITY: Chronic exposure to commercial hexane (52% n-hexane) at a concentration of 9000ppm was not carcinogenic to rats or to male mice, but did result in an increased incidence of liver tumors in female mice. No carcinogenic effects were observed in female mice exposed to 900 or 3000 ppm hexane or in male mice. The relevance for humans of these hexane-induced mouse liver tumors is questionable.
GENETIC TOXICITY: n-Hexane caused chromosome aberrations in bone marrow of rats, but was negative in the AMES and mouse lymphoma tests.

This product contains ethanol (ethyl alcohol).
Chronic ingestion of ethanol can damage the liver, nervous system and heart. Chronic heavy consumption of alcoholic beverages has been associated with an increased risk of cancer. Ingestion of ethanol during pregnancy can cause human birth defects such as fetal alcohol syndrome. Gasolines are highly volatile and can produce significant concentrations of vapor at ambient temperatures. Gasoline vapor is heavier than air and at high concentrations may accumulate in confined spaces to present both safety and health hazards. When vapor exposures are low, or short duration and infrequent, such as during refueling and tanker loading/unloading, neither total hydrocarbon nor components such as benzene are likely to result in any adverse health effects. In situations such as accidents or spills where exposure to gasoline vapor is potentially high, attention should be paid to potential toxic effects of specific components. Information about specific components in gasoline can be found in Sections 2/3, 8 and 15 of this MSDS. More detailed information on the health hazards of specific gasoline components can be obtained calling the Chevron Emergency Information Center (see Section 1 for phone numbers).
Pathological misuse of solvents and gasoline, involving repeated and prolonged exposure to high concentrations of vapor is a significant exposure on which there are many reports in the medical literature. As with other solvents, persistent abuse involving repeated and prolonged exposures to high concentrations of vapor has been reported to result in central nervous system damage and eventually, death. In a study in which ten human volunteers were exposed for 30 minutes to approximately 200, 500 or 1000 ppm concentrations of gasoline vapor, irritation of the eyes was the only significant effect

observed, based on both subjective and objective assessments.

Lifetime inhalation of wholly vaporized unleaded gasoline at 2056 ppm has caused increased liver tumors in female mice and kidney cancer in male rats. In their 1988 review of carcinogenic risk from gasoline, The International Agency for Research on Cancer (IARC) noted that, because published epidemiology studies did not include any exposure data, only occupations where gasoline exposure may have occurred were reviewed. These included gasoline service station attendants and automobile mechanics. IARC also

noted that there was no opportunity to separate effects of combustion products from those of gasoline itself. Although IARC allocated gasoline a final overall classification of Group 2B, i.e. possibly carcinogenic to humans, this was based on limited evidence in experimental animals plus supporting evidence including

the presence in gasoline of benzene. The actual evidence for carcinogenicity in humans was considered inadequate.

MUTAGENICITY: Gasoline was not mutagenic, with or without activation, in the Ames assay (Salmonella typhimurium), Saccharamyces cerevisesae, or mouse lymphoma assays. In addition, point mutations were not induced in human lymphocytes. Gasoline was not mutagenic when tested in the mouse dominant lethal assay. Administration of gasoline to rats did not cause chomosomal aberrations in their bone marrow cells.

EPIDEMIOLOGY: To explore the health effects of workers potentially exposed to gasoline vapors in the marketing and distribution sectors of the petroleum industry, the American Petroleum Institute sponsored a cohort mortality study (Publication 4555), a nested case-control study (Publication 4551), and an exposure assessment study (Publication 4552). Histories of exposure to gasoline were reconstructed for cohort of more than 18,000 employees from four companies for the time period between 1946 and 1985. The results of the cohort mortality study indicated that there was no increased mortality from either kidney cancer or leukemia among marketing and marine distribution employees who were exposed to gasoline in the petroleum industry, when compared to the general population. More importantly, based on internal comparisons, there was no association between mortality from kidney cancer or leukemia and various indices of gasoline exposure. In particular, neither duration of employment, duration of exposure, age at first exposure, year of first exposure, job category, cumulative exposure, frequency of peak exposure, nor average intensity of exposure had any effect on kidney cancer or leukemia mortality. The results of the nested case-control study confirmed the findings of the original cohort study. That is, exposure to gasoline at the levels experienced by this cohort of distribution workers is not a significant risk factor for leukemia

(all cell types), acute myeloid leukemia, kidney cancer or multiple myeloma.

This product contains ethylbenzene.

BIRTH DEFECTS AND REPRODUCTION: Ethylbenzene is not expected to cause birth defects or other developmental effects based on well-conducted studies in rabbits and rats sponsored by NIOSH. Other studies in rats and mice which reported urinary tract malformations have many deficiencies and have limited usefulness in evaluating human risk. Reproductive effects are not expected based on a NIOSH study of fertility, and lack of effects observed for sperm counts and motility, estrous cycle and pathology of reproductive organs following repeated exposures.

HEARING: Statistically significant losses in outer hair cells (OHCs) were observed in rats exposed to >=200 ppm ethylbenzene, 6 hours/day, 6 days/week for 13 weeks, after an 8-week recovery period. Following longer exposure, inner hair cells losses were also observed in rats exposed to >= 600 ppm ethylbenzene, but only occasionally in rats exposed to 400 ppm.

The Lowest Observed Adverse Effect Level in rats (LOAEL) was 200 ppm for losses of OHCs. Guinea pigs exposed to ethylbenzene at 2,500 ppm, 6 hours/day for 5 days did not show auditory deficits or losses in OHCs. The concentration of ethylbenzene used in the JP-8 study was approximately 10 ppm.

GENETIC TOXICITY: Ethylbenzene tested negative in the bacterial mutation test, Chinese Hamster

Ovary (CHO) cell in vitro assay, sister chromatid exchange assay and an unscheduled DNA synthesis assay. Conflicting results have been reported for the mouse lymphoma cell assay. Increased micronuclei were reported in an in vitro Syrian hamster embryo cell assay; however, two in vivo micronuclei studies in mice were negative. In Syrian hamster embryo cells in vitro, cell transformation was observed at 7 days of incubation but not at 24 hours. Based on these results, ethylbenzene is not expected to be mutagenic or clastogenic.
CARCINOGENICITY: In studies conducted by the National Toxicology Program, rats and mice were exposed to ethylbenzene at 25, 250 and 750 ppm for six hours per day, five days per week for 103 weeks. In rats exposed to 750 ppm, the incidence of kidney tubule hyperplasia and tumors was increased.
Testicular tumors develop spontaneously in nearly all rats if allowed to complete their natural life span; in this study, the development of these tumors appeared to be enhanced in male rats exposed to 750 ppm. In mice, the incidences of lung tumors in males and liver tumors in females exposed to 750 ppm were increased as compared to control mice but were within the range of incidences observed historically in control mice. Other liver effects were observed in male mice exposed to 250 and 750 ppm. The incidences of hyperplasia were increased in the pituitary gland in female mice at 250 and 750 ppm and in the thyroid in male and female mice at 750 ppm.

This product contains toluene.
GENERAL TOXICITY: The primary effects of exposure to toluene in animals and humans are on the central nervous system. Solvent abusers, who typically inhale high concentrations (thousands of ppm) for brief periods of time, in addition to experiencing respiratory tract irritation, often suffer permanent central nervous system effects that include tremors, staggered gait, impaired speech, hearing and vision loss, and changes in brain tissue. Death in some solvent abusers has been attributed to cardiac arrhythmias, which appear to be have been triggered by epinephrine acting on solvent sensitized cardiac tissue. Although liver and kidney effects have been seen in some solvent abusers, results of animal testing with toluene do not support these as primary target organs.
HEARING: Humans who were occupationally exposed to concentrations of toluene as low as 100 ppm for long periods of time have experienced hearing deficits. Hearing loss, as demonstrated using behavioral and electrophysiological testing as well as by observation of structural damage to cochlear hair cells, occurred in experimental animals exposed to toluene. It also appears that toluene exposure and noise may interact to produce hearing deficits.
COLOR VISION: In a single study of workers exposed to toluene at levels under 50 ppm, small decreases in the ability to discriminate colors in the blue-yellow range have been reported for female workers. This effect, which should be investigated further, is very subtle and would not likely have been noticed by the people tested.
REPRODUCTIVE/DEVELOPMENTAL TOXICITY: Toluene may also cause mental and/or growth retardation in the children of female solvent abusers who directly inhale toluene (usually at thousands of ppm) when they are pregnant. Toluene caused growth retardation in rats and rabbits when administered at doses that were toxic to the mothers. In rats, concentrations of up to 5000 ppm did not cause birth defects. No effects were observed in the offspring at doses that did not intoxicate the pregnant animals. The exposure level at which no effects were seen (No Observed Effect Level, NOEL) is 750 ppm in the rat and 500 ppm in the rabbit.

This product contains xylene.
ACUTE TOXICITY: The primary effects of exposure to xylene in animals and humans are on the central nervous system. In addition,in some individuals, xylene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation.
DEVELOPMENTAL TOXICITY: Xylene has been reported to cause developmental toxicity in rats and mice exposed by inhalation during pregnancy. The effects noted consisted of delayed development and minor skeletal variations. In addition, when pregnant mice were exposed by ingestion to a level that

killed nearly one-third of the test group, lethality (resorptions) and malformations (primarily cleft palate) occurred. Since xylene can cross the placenta, it may be appropriate to prevent exposure during pregnancy. GENETIC TOXICITY/CARCINOGENICITY: Xylene was not genotoxic in several mutagenicity testing assays including the Ames test. In a cancer study sponsored by the National Toxicology Program (NTP),technical grade xylene gave no evidence of carcinogenicity in rats or mice dosed daily for two years.
HEARING: Mixed xylenes have been shown to cause measurable hearing loss in rats exposed to 800 ppm in the air for 14 hours per day for six weeks. Exposure to 1450 ppm xylene for 8 hours caused hearing loss while exposure to 1700 ppm for 4 hours did not. Although no information is available for lower concentrations, other chemicals that cause hearing loss in rats at relatively high concentrations do not cause hearing loss in rats at low concentrations. Worker exposure to xylenes at the permissible exposure limit (100 ppm, time-weighted average) is not expected to cause hearing loss.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is expected to be toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

48 hour(s) LC50: 3.0 mg/l (Daphnia magna)
96 hour(s) LC50: 1.8 mg/l (Mysidopsis
bahia)
96 hour(s) LC50: 8.3 mg/l (Cyprinodon variegatus)
96 hour(s) LC50: 2.7 mg/l (Oncorhynchus mykiss)

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY
This material is expected to be readily biodegradable. Following spillage, the more volatile components of gasoline will be rapidly lost, with concurrent dissolution of these and other constituents into the water. Factors such as local environmental conditions (temperature, wind, mixing or wave action, soil type, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, can contribute to the weathering of spilled gasoline.

The aqueous solubility of non-oxygenated unleaded gasoline, based on analysis of benzene, toluene, ethylbenzene+xylenes and naphthalene, is reported to be 112 mg/l. Solubility data on individual gasoline constituents also available.

POTENTIAL TO BIOACCUMULATE
Bioconcentration Factor: No data available.
Octanol/Water Partition Coefficient: 2 - 7

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations. Check governmental regulations and local authorities for approved disposal of this material.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: UN1203, GASOLINE, 3, II; OPTIONAL DISCLOSURE: UN1203, GASOLINE, 3, II, MARINE POLLUTANT (GASOLINE)

IMO/IMDG Shipping Description: UN1203, GASOLINE, 3, II, FLASH POINT SEE SECTION 5 OR 9, MARINE POLLUTANT (GASOLINE)

ICAO/IATA Shipping Description: UN1203, GASOLINE, 3, II

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:
Not applicable

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:	1.	Immediate (Acute) Health Effects:	YES
	2.	Delayed (Chronic) Health Effects:	YES
	3.	Fire Hazard:	YES
	4.	Sudden Release of Pressure Hazard:	NO
	5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

1-1 =IARC Group 1	03=EPCRA 313
1-2 A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ
RTK 07=PA RTK	

The following components of this material are found on the regulatory lists indicated.

Xylene (contains o-, m-, & p- xylene isomers in Varying amounts)	03, 05, 06, 07
Cyclohexane	05, 06, 07
Naphthalene	01-2B, 02, 04, 05, 06, 07
Pentane, 2,2,4-trimethyl- (Isooctane)	05, 06, 07
Ethyl benzene	01-2B, 03, 04, 05, 06, 07
Methylcyclohexane	05, 06, 07
Benzene	01-1, 02, 03, 04, 05, 06, 07
Ethanol	01-1, 02, 04, 05, 06, 07
Toluene (methylbenzene)	04, 05, 06, 07
Butane	05, 06, 07

Hexane	05, 06, 07
Gasoline	01-2B, 07
Heptane	05, 06, 07

CERCLA REPORTABLE QUANTITIES(RQ)/EPCRA 302 THRESHOLD PLANNING QUANTITIES(TPQ):

Component	Component RQ	Component TPQ	Product RQ
Benzene	10 lbs	None	186 lbs
Cyclohexane	1000 lbs	None	34188 lbs
Ethyl benzene	1000 lbs	None	34964 lbs
Hexane	5000 lbs	None	129149 lbs
Naphthalene	100 lbs	None	4000 lbs
Pentane, 2,2,4-trimethyl- (Isooctane)	1000 lbs	None	6270 lbs
Toluene (methylbenzene)	1000 lbs	None	2627 lbs
Xylene (contains o-, m-, & p- xylene isomers in varying amounts)	100 lbs	None	649 lbs

CHEMICAL INVENTORIES:
All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), ENCS (Japan), IECSC (China), KECI (Korea), PICCS (Philippines), TSCA (United States).

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 1 Flammability: 4 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 4 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

Additional Product Number(s): 201023, 201054, 201055, 201075, 201090, 201105, 201106, 201120, 201121, 201122, 201126, 201128, 201131, 201136, 201141, 201142, 201148, 201153, 201158, 201161, 201162, 201168, 201175, 201181, 201185, 201186, 201188, 201216, 201217, 201218, 201236, 201237, 201238, 201266, 201267, 201268, 201277, 201278, 201279, 201286, 201287, 201289, 201296, 201297, 201298, 201849, 201850, 201855, 201856, 201857, 204000, 204001, 204002, 204003, 204010, 204011, 204022, 204023, 204046, 204047, 204070, 204071, 204088, 204089, 204104, 204105, 204116, 204117, 204140, 204141, 204164, 204165, 204188, 204189, 204200, 204201, 204207, 204212, 204213, 204224, 204225, 204248, 204249, 204272, 204273, 204290, 204291, 204322, 204323, 204324, 204350, 204352, 204354, 204356, 204358, 204359, 204364, 204365, 204370, 204371, 204376, 204377, 204382, 204383, 204388, 204389, 204394, 204395, 204400, 204401, 204406, 204407, 204412, 204413, 204418, 204419, 204424, 204425, 204430, 204431, 204436, 204437, 204442, 204446, 204450, 204454, 204458, 204462, 204466, 204467, 204484, 204485, 204502, 204503, 204520, 204521, 204538, 204539, 204556, 204557, 204574, 204575, 204592, 204593, 204610, 204611, 204628, 204629, 204646, 204647, 204664, 204665,

204682, 204690, 204691, 204696, 204697, 204702, 204703, 204708, 204709, 204721, 204722, 204727, 204728, 204739, 241765
REVISION STATEMENT: This revision updates the following sections of this Safety Data Sheet: 1,16
Revision Date: MARCH 10, 2016

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
GHS - Globally Harmonized System	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Governmental Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	SDS - Safety Data Sheet
HMIS - Hazardous Materials Information System	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration
NCEL - New Chemical Exposure Limit	EPA - Environmental Protection Agency
SCBA - Self-Contained Breathing Apparatus	

Prepared according to the 29 CFR 1910.1200 (2012) by Chevron Energy Technology Company, 6001 Bollinger Canyon Road San Ramon, CA 94583.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

APPENDIX C

SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN

APPENDIX C – SPCC PLANS

Appendix C – Table of Contents Page

Example SPCC Plan……. C-2

SPCC Plan Review Checklist…… C-40

APPENDIX C – SPCC PLAN

DISCLAIMER - APPENDIX C

The sample Spill Prevention, Control and Countermeasure (SPCC) Plan in Appendix C is intended to provide examples and illustrations of how a bulk storage facility could address a variety of scenarios in its SPCC Plan. The "facility" is not an actual facility, nor does it represent any actual facility or company. Rather, EPA is providing illustrative examples of the type and amount of information that is appropriate SPCC Plan language for these hypothetical situations.

Because the SPCC rule is designed to give each facility owner/operator the flexibility to tailor the facility's SPCC Plan to the facility's circumstances, this sample SPCC Plan is not a template to be adopted by a facility; doing so does not mean that the facility will be in compliance with the SPCC rule requirements. Nor is the sample plan a template that must be followed in order for the facility to be considered in compliance with the SPCC rule.

APPENDIX C – SPCC PLAN

SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

Unified Oil Company

123 A Street
Stonefield, Massachusetts 02000

May 12, 2003

Prepared by
Poppins & Associates, Inc.
Clearwater Falls, Massachusetts, 02210

TABLE OF CONTENTS

	Page
Introduction	1
Part 1: Plan Administration	
1.1 Management Approval and Designated Person	3
1.2 Professional Engineer Certification	3
1.3 Location of SPCC Plan	4
1.4 Plan Review	4
1.5 Facilities, Procedures, Methods, or Equipment Not Yet Fully Operational	5
1.6 Cross-Reference with SPCC Provisions	5
Part 2: General Facility Information	
2.1 Facility Description	8
2.2 Evaluation of Discharge Potential	11
Part 3: Discharge Prevention – General SPCC Provisions	
3.1 Compliance with Applicable Requirements	12
3.2 Facility Layout Diagram	12
3.3 Spill Reporting	12
3.4 Potential Discharge Volumes and Direction of Flow	13
3.5 Containment and Diversionary Structures	14
3.6 Practicability of Secondary Containment	16
3.7 Inspections, Tests, and Records	16
3.8 Personnel, Training, and Discharge Prevention Procedures	18
3.9 Security	19
3.10 Tank Truck Loading/Unloading Rack Requirements	19
3.11 Brittle Fracture Evaluation	22
3.12 Conformance with State and Local Applicable Requirements	22
Part 4: Discharge Prevention – SPCC Provisions for Onshore Facilities (Excluding Production Facilities)	
4.1 Facility Drainage	23
4.2 Bulk Storage Containers	23
4.3 Transfer Operations, Pumping, and In-Plant Processes	29
Part 5: Discharge Response	
5.1 Response to a Minor Discharge	30
5.2 Response to a Major Discharge	31

5.3 Waste Disposal 32
5.4 Discharge Notification 32
5.5 Cleanup Contractors and Equipment Suppliers 33

List of Tables

Table 1-1: Plan Review Log 6
Table 1-2: SPCC Cross-Reference 7
Table 2-1: Oil Containers 9
Table 2-2: Oil Discharge History 10
Table 3-1: Potential Discharge Volume and Direction of Flow 13
Table 3-2: Inspection and Testing Program 16
Table 3-3: Fuel Transfer Procedures 21
Table 4-1: List of Oil Containers 24
Table 4-2: Scope and Frequency of Bulk Storage Containers Inspections and Tests 27

Appendices

A: Site Plan and Facility Diagram
B: Substantial Harm Determination
C: Facility Inspection Checklists
D: Record of Containment Dike Drainage
E: Record of Discharge Prevention Briefings and Training
F: Calculation of Secondary Containment Capacity
G: Records of Tank Integrity and Pressure Tests
H: Emergency Contacts
I: Discharge Notification Form
J: Discharge Response Equipment Inventory
K: Agency Notification Standard Report

LIST OF ACRONYMS AND ABBREVIATIONS

AST	Aboveground Storage Tank
EPA	U.S. Environmental Protection Agency
MADEP	Massachusetts Department of Environmental Protection
NPDES	National Pollutant Discharge Elimination System
PE	Professional Engineer
POTW	Publicly Owned Treatment Works
SPCC	Spill Prevention, Control, and Countermeasure
STI	Steel Tank Institute
UST	Underground Storage Tank

INTRODUCTION

Purpose

The purpose of this Spill Prevention, Control, and Countermeasure (SPCC) Plan is to describe measures implemented by Unified Oil to prevent oil discharges from occurring, and to prepare Unified Oil to respond in a safe, effective, and timely manner to mitigate the impacts of a discharge.

This Plan has been prepared to meet the requirements of Title 40, *Code of Federal Regulations,* Part 112 (40 CFR part 112), and supercedes the earlier Plan developed to meet provisions in effect since 1974.

In addition to fulfilling requirements of 40 CFR part 112, this SPCC Plan is used as a reference for oil storage information and testing records, as a tool to communicate practices on preventing and responding to discharges with employees, as a guide to facility inspections, and as a resource during emergency response.

Unified Oil management has determined that this facility does not pose a risk of substantial harm under 40 CFR part 112, as recorded in the "Substantial Harm Determination" included in Appendix B of this Plan.

This Plan provides guidance on key actions that Unified Oil must perform to comply with the SPCC rule:

- Complete monthly and annual site inspections as outlined in the Inspection, Tests, and Records section of this Plan (Section 3.7) using the inspection checklists included in Appendix C.

- Perform preventive maintenance of equipment, secondary containment systems, and discharge prevention systems described in this Plan as needed to keep them in proper operating conditions.

- Conduct annual employee training as outlined in the Personnel, Training, and Spill Prevention Procedures section of this Plan (Section 3.8) and document them on the log included in Appendix E.

- If either of the following occurs, submit the SPCC Plan to the EPA Region 1 Regional Administrator (RA) and the Massachusetts Department of Environmental Protection (MADEP), along with other information as detailed in Section 5.4 of this Plan:

    - The facility discharges more than 1,000 gallons of oil into or upon the navigable waters of the U.S. or adjoining shorelines in a single spill event; or

    - The facility discharges oil in quantity greater than 42 gallons in each of two spill events within any 12-month period.

- Review the SPCC Plan at least once every five (5) years and amend it to include more effective prevention and control technology, if such technology will significantly reduce the likelihood of a spill event and has been proven effective in the field at the time of the review. Plan amendments, other than administrative changes discussed above, must be recertified by a Professional Engineer on the certification page in Section 1.2 of this Plan.

- Amend the SPCC Plan within six (6) months whenever where is a change in facility design, construction, operation, or maintenance that materially affects the facility's spill potential. The revised Plan must be recertified by a Professional Engineer (PE).

- Review the Plan on an annual basis. Update the Plan to reflect any "administrative changes" that are applicable, such as personnel changes or revisions to contact information, such as phone numbers. Administrative changes must be documented in the Plan review log of Section 1.4 of this Plan, but do not have to be certified by a PE.

Part 1: Plan Administration

1.1 Management Approval and Designated Person (40 CFR 112.7)

Unified Oil Company ("Unified Oil') is committed to preventing discharges of oil to navigable waters and the environment, and to maintaining the highest standards for spill prevention control and countermeasures through the implementation and regular review and amendment to the Plan. This SPCC Plan has the full approval of Unified Oil management. Unified Oil has committed the necessary resources to implement the measures described in this Plan.

The Facility Manager is the Designated Person Accountable for Oil Spill Prevention at the facility and has the authority to commit the necessary resources to implement this Plan.

Authorized Facility Representative (facility response coordinator): Susan Blake

Signature: *Susan Blake*
Title: Facility Manager
Date: May 12, 2003

1.2 Professional Engineer Certification (40 CFR 112.3(d))

The undersigned Registered Professional Engineer is familiar with the requirements of Part 112 of Title 40 of the *Code of Federal Regulations* (40 CFR part 112) and has visited and examined the facility, or has supervised examination of the facility by appropriately qualified personnel. The undersigned Registered Professional Engineer attests that this Spill Prevention, Control, and Countermeasure Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards and the requirements of 40 CFR part 112; that procedures for required inspections and testing have been established; and that this Plan is adequate for the facility. [40 CFR 112.3(d)]

This certification in no way relieves the owner or operator of the facility of his/her duty to prepare and fully implement this SPCC Plan in accordance with the requirements of 40 CFR part 112. This Plan is valid only to the extent that the facility owner or operator maintains, tests, and inspects equipment, containment, and other devices as prescribed in this Plan.

Julie Andrews
Signature

90535055, Massachusetts
Professional Engineer Registration Number

Julie Andrews
Name

Sr. Process Engineer
Title

Poppins and Associates
Company

May 12, 2003
Date

PE Seal
MA
Julie Andrews
#90535055

1.3 Location of SPCC Plan (40 CFR 112.3(e))

In accordance with 40 CFR 112.3(e), a complete copy of this SPCC Plan is maintained at the

facility in the office building. The front office is attended whenever the facility is operating, i.e., 7:00 AM to 5:00 PM, 6 days per week (closed on Sundays).

1.4 Plan Review (40 CFR 112.3 and 112.5)

1.4.1 Changes in Facility Configuration

In accordance with 40 CFR 112.5(a), Unified Oil periodically reviews and evaluates this SPCC Plan for any change in the facility design, construction, operation, or maintenance that materially affects the facility's potential for an oil discharge, including, but not limited to:

- commissioning of containers;
- reconstruction, replacement, or installation of piping systems;
- construction or demolition that might alter secondary containment structures; or
- changes of product or service, revisions to standard operation, modification of testing/inspection procedures, and use of new or modified industry standards or maintenance procedures.

Amendments to the Plan made to address changes of this nature are referred to as technical amendments, and must be certified by a PE. Non-technical amendments can be done (and must be documented in this section) by the facility owner and/or operator. Non-technical amendments include the following:

- change in the name or contact information (i.e., telephone numbers) of individuals responsible for the implementation of this Plan; or
- change in the name or contact information of spill response or cleanup contractors.

Unified Oil must make the needed revisions to the SPCC Plan as soon as possible, but no later than six months after the change occurs. The Plan must be implemented as soon as possible following any technical amendment, but *no later than six months* from the date of the amendment. The Facility Manager is responsible for initiating and coordinating revisions to the SPCC Plan.

1.4.2 Scheduled Plan Reviews

In accordance with 40 CFR 112.5(b), Unified Oil reviews this SPCC Plan at least once every five years (in the past, such reviews were required every three years). Revisions to the Plan, if needed, are made within six months of the five-year review. A registered Professional Engineer certifies any technical amendment to the Plan, as described above, in accordance with 40 CFR 112.3(d). The last SPCC review occurred on *May 13, 2001*. This Plan is dated *May 12, 2003*. The next plan review is therefore scheduled to take place on or prior to *May 12, 2008*.

1.4.3 Record of Plan Reviews

Scheduled reviews and Plan amendments are recorded in the Plan Review Log (Table 1-1). This log must be completed even if no amendment is made to the Plan as a result of the review. Unless a technical or administrative change prompts an earlier review of the Plan, the next

1.5 Facilities, Procedures, Methods, or Equipment Not Yet Fully Operational (40 CFR 112.7)

Bulk storage containers at this facility have never been tested for integrity since their installation in 1989. Section 4.2.6 of this Plan describes the inspection program to be implemented by the facility following a regular schedule, including the dates by which each of the bulk storage containers must be tested.

1.6 Cross-Reference with SPCC Provisions (40 CFR 112.7)

This SPCC Plan does not follow the exact order presented in 40 CFR part 112. Section headings identify, where appropriate, the relevant section(s) of the SPCC rule. Table 1-2 presents a cross-reference of Plan sections relative to applicable parts of 40 CFR part 112.

Table 1-1: Plan Review Log

By	Date	Activity	PE certification required?	Comments
Mike Davies	5/20/1989	Prepare Plan Start of Operations	Yes	Initial SPCC Plan.
Mike Davies	5/18/1992	Scheduled review	No	No change.
Mike Davies	2/18/1994	Plan amendment	Yes*	Changes to inspection procedures, addition of a new tank, full review not conducted.
Susan Blake	5/15/1995	Scheduled review	No	Change in responsible individual and contact information.
Susan Blake	5/15/1998	Scheduled review	No	No change.
Susan Blake	5/13/2001	Scheduled review	No	No change.
Susan Blake	5/12/2003	Periodic review due to physical change	Yes*	Installation of oil/water separator

* Previous PE certifications of this Plan are summarized below.

Date	Scope	PE Name	Licensing State and Registration No.
2/18/1994	Addition of new tank and changes in inspection procedures.	Chris Ebert	MA, 90117823
5/12/2003	Installation of oil/water separator	Julie Andrews	MA, 905350055

Table 1-2: SPCC Cross-Reference

Provision	Plan Section	Page
112.3(d)	Professional Engineer Certification	3
112.3(e)	Location of SPCC Plan	4
112.5	Plan Review	4 Table 1-1
112.7	Management Approval	3
112.7	Cross-Reference with SPCC Rule	Table 1-2
112.7(a)(3)	Part 2: General Facility Information Appendix A: Site Plan and Facility Diagram	8 Appendix A
112.7(a)(4)	5.4 Discharge Notification	32 Appendix I Appendix K
112.7(a)(5)	Part 5: Discharge Response	32
112.7(b)	3.4 Potential Discharge Volumes and Direction of Flow	13
112.7(c)	3.5 Containment and Diversionary Structures	14
112.7(d)	3.6 Practicability of Secondary Containment	16
112.7(e)	3.7 Inspections, Tests, and Records	16 Appendix B
112.7(f)	3.8 Personnel, Training and Discharge Prevention Procedures	18
112.7(g)	3.9 Security	19
112.7(h)	3.10 Tank Truck Loading/Unloading	19
112.7(i)	3.11 Brittle Fracture Evaluation	22
112.7(j)	3.12 Conformance with Applicable State and Local Requirements	22
112.8(b)	4.1 Facility Drainage	23
112.8(c)(1)	4.2.1 Construction	23
112.8(c)(2)	4.2.2 Secondary Containment	25
112.8(c)(3)	4.2.3 Drainage of Diked Areas	26 Appendix D
112.8(c)(4)	4.2.4 Corrosion Protection	26
112.8(c)(5)	4.2.5 Partially Buried and Bunkered Storage Tanks	26
112.8(c)(6)	4.2.6 Inspection Appendix B - Facility Inspection Checklists	26 Appendix C
112.8(c)(7)	4.2.7 Heating Coils	27
112.8(c)(8)	4.2.8 Overfill Prevention System	27
112.8(c)(9)	4.2.9 Effluent Treatment Facilities	28
112.8(c)(10)	4.2.10 Visible Discharges	28
112.8(c)(11)	4.2.11 Mobile and Portable Containers	28
112.8(d)	4.3 Transfer Operations, Pumping and In-Plant Processes	29
112.20(e)	Certification of Substantial Harm Determination	Appendix B

* Only selected excerpts of relevant rule text are provided. For a complete list of SPCC requirements, refer to the full text of 40 CFR part 112.

Part 2: General Facility Information

Name:	Unified Oil Company
Address:	123 A Street Stonefield, MA 02000 (781) 555-5556
Type:	Bulk storage distribution facility
Date of Initial Operations:	May 20, 1989
Owner/Operator:	Blake and Daughters, Inc. 20 Fairview Road Stonefield, MA 02000
Primary contact:	Susan Blake, Facility Manager Work: (781) 555-5550 Cell (24 hours): (781) 555-5559

2.1 Facility Description (40 CFR 112.7(a)(3))

2.1.1 Location and Activities

Unified Oil distributes a variety of petroleum products to primarily commercial customers. The facility handles, stores, uses, and distributes petroleum products in the form of gasoline, diesel, No. 2 fuel oil, No. 6 fuel oil, and motor oil. Unified Oil receives products by common carrier via tanker truck. The products are stored in several aboveground storage tanks (ASTs) and in one underground storage tank (UST). They are delivered to customers by Unified Oil trucks or by independent contractors. The facility refuels its own two delivery trucks from an underground diesel tank connected to a fueling pump.

Hours of operation are between 7:00 AM and 5:00 PM, 6 days per week. Personnel at the facility include a facility manager, a plant operator, two truck drivers, an office administrator, and three operations and maintenance personnel.

The Site Plan and Facility Diagram included in Appendix A of this Plan show the location and layout of the facility. The Facility Diagram (Figure A-2) shows the location of oil containers, buildings, loading/unloading and transfer areas, and critical spill control structures.

Unified Oil is located in a primarily commercial area at 123 A Street in Stonefield, Massachusetts. The site is comprised of approximately 2 acres of land and is bordered to the east by A Street, to the west by Silver Creek, and to the north by ABC Plating Co.

The site includes an office building, a maintenance shop, a tanker truck loading rack and unloading area, and product storage and handling areas. Petroleum products are stored within the main bulk storage area, underground, and inside the maintenance building.

2.1.2 Oil Storage

Oil storage at the facility consists of seven tanks: four fixed ASTs, one portable tank, and two metallic USTs. In addition, the facility stores a varying stock of oil drums inside the maintenance building.

The capacities of oil containers present at the site are listed below and are also indicated on the facility diagram in Figure A-2. All containers with capacity of 55 gallons or more are included. The capacity of the oil/water separator is not included in the total storage capacity for the facility since it is used to treat storm water and as a means of secondary containment for areas of the facility with potential for an oil discharge outside dikes or berms.

Unified Oil owns two 2,000-gallon transport trucks that are used to deliver product to customers. One of the two trucks is periodically parked overnight while full; the capacity of this truck is therefore counted in the total storage capacity for this facility.

Table 2-1: Oil Containers

ID	Storage capacity	Content	Description
Fixed Storage			
1	20,000 gallons	Diesel	Aboveground vertical tank
2	20,000 gallons	Unleaded regular gasoline	Aboveground horizontal tank elevated on built-in saddles
3	20,000 gallons	Unleaded premium gasoline	Aboveground horizontal tank elevated on built-in saddles
6	1,000 gallons	No. 2 fuel oil	Underground horizontal tank
7	10,000 gallons	No. 6 fuel oil	Field-constructed aboveground vertical tank
	1,100 gallons	Motor oil	55-gallon storage drums (variable stock; up to 20 drums on site at any time)
Portable storage			
4	500 gallons	Gasoline	Double-walled aboveground horizontal tank
Vehicles			
	2,000 gallons	Fuel oil	Delivery truck*

* ***Note:*** *Unified Oil owns two delivery trucks. Both trucks are used in transportation-related activities outside the confines of the facility and generally return to the facility empty for parking overnight. One of the two delivery trucks is periodically parked while full. This truck is therefore counted in the storage capacity for this facility. The other truck is dedicated to scheduled deliveries and returns to the facility empty (except for minor residual). If the tanker truck returns to the facility with more than residual product, this product will be returned to inventory via the unloading station. If the facility decides to use this tanker for overnight storage, then this Plan must be modified to include the capacity of the truck and ensure compliance with other rule requirements, including*

secondary containment.

Total Oil Storage:	**74,600 gallons**

Other containers: (1) 1,500-gallon oil/water separator

Note: The oil/water separator is used treat facility drainage (i.e., wastewater) prior to discharge into Silver Creek under state and federal wastewater discharge permits. Discharge from the facility includes storm water collected from the paved areas outside the loading rack/unloading area containment berm and bulk storage containment dike. No external oil tanks are associated with the oil/water separator. This equipment is used to meet certain secondary containment requirements under 40 CFR part 112, as described later in this Plan. Thus, the capacity of the oil/water separator is not counted towards the facility total storage capacity.

(1) 5,000-gallon underground horizontal tank (Diesel) – Tank #5

Note: This underground storage tank is subject to, and meets, all the technical requirements of Massachusetts Underground Storage Tank Program at 527 CMR 9, as approved under 40 CFR part 281, and is therefore not counted in the storage capacity for this facility (exempted under 40 CFR 112.1(d)(4). Its location is indicated on the Facility Diagram in Appendix A. Note that the other underground storage tank (Tank #6) which contains No. 2 fuel oil for heating consumption on the premises of the facility is not subject to certain technical requirements under 40 CFR part 280 or a program approved under part 281, in particular corrosion protection, and is therefore included in the storage capacity for this facility (and is SPCC-regulated), as described above.

2.2 Evaluation of Discharge Potential

2.2.1 Distance to Navigable Waters and Adjoining Shorelines and Flow Paths

The facility is located on relatively level terrain. Drainage generally flows in the direction of Silver Creek, which runs immediately along the southwest side of the site. Silver Creek flows north to the Blackpool River approximately 1.5 miles from the facility. Spill trajectories are indicated on the facility diagram. Storm drains are located along A Street at the northeast end of the site. They discharge to Silver Creek.

Approximately three-quarters of the facility's ground surface area is paved with asphalt. The remainder consists of compacted gravel, grass, and low-lying vegetation.

2.2.2 Discharge History

Table 2-1 summarizes the facility's discharge history.

Table 2-2: Oil Discharge History

Description of Discharge	Corrective Actions Taken	Plan for Preventing Recurrence
On 3/23/2003, a leaking valve on a delivery truck discharged 50 gallons of diesel oil onto the ground during a rain event, allowing approximately 10 gallons to enter Silver Creek.	A boom was placed into Silver Creek immediately upon discovery. Approximately 35 gallons of oil were recovered from Silver creek and the facility ground.	An oil/water separator was installed and the facility drainage was designed to flow into the separator.

PART 3: Discharge Prevention - General SPCC Provisions

The following measures are implemented to prevent oil discharges during the handling, use, or transfer of oil products at the facility. Oil-handling employees have received training in the proper implementation of these measures.

3.1 Compliance with Applicable Requirements (40 CFR 112.7(a)(2))

This facility uses an oil/water separator as part of its drainage system to contain oil discharged in certain areas of the facility (i.e., overfills, and the loading/unloading area associated with Tank #4). Because Tank #4 does not meet the specifications provided in EPA's memorandum concerning its policy on double-walled tanks, general containment must be provided to address overfills. The separator provides environmental protection equivalent to the requirements under 112.8(b)(3) to use ponds, lagoons, or catchment basins to retain oil at the facility in the event of an uncontrolled discharge. As described in Section 3.5 of this Plan, the operational and emergency oil storage capacity of the oil/water separator is sufficient to handle the quantity of oil expected to be discharged in undiked areas from tank overfills or transfer operations.

Non-destructive integrity evaluation is not performed on Tank #4 (500-gallon portable storage tank) or the 55-gallon storage drums. Tank #4 has a double-wall construction and is elevated off the ground. The tank is inspected regularly and following a regular schedule in accordance with the Steel Tank Institute (STI) SP-001 tank inspection standard as described in this Plan. Any leakage from the primary container would be detected through monitoring of the interstitial space performed on a monthly basis. Any leakage from the secondary shell would be detected visually during scheduled visual inspections by facility personnel. Storage drums are elevated on spill pallets and have all sides visible, and any leak would be readily detected by facility personnel before they can cause a discharge to navigable waters or adjoining shorelines. Corrosion poses minimal risk of failure since drums are single-use and remain on site for a relatively short period of time (less than one year). The drum storage area is inspected monthly. This is in accordance with accepted industry practice for drum storage and provides an effective means of verifying container integrity, as noted by EPA in the preamble to the SPCC rule at 67 FR 47120.

3.2 Facility Layout Diagram (40 CFR 112.7(a)(3))

Figure A-1 in Appendix A shows the general location of the facility on a U.S. Geological Survey topographic map. Figure A-2 in Appendix A presents a layout of the facility and the location of storage tanks and drums. The diagram also shows the location of storm water drain inlets and the direction of surface water runoff. As required under 40 CFR 112.7(a)(3), the facility diagram indicates the location and content of ASTs, USTs, and transfer stations and connecting piping.

3.3 Spill Reporting (40 CFR 112.7(a)(4))

The discharge notification form included in Appendix I will be completed upon immediate detection of a discharge and prior to reporting a spill to the proper notification contacts.

3.4 Potential Discharge Volumes and Direction of Flow (40 CFR 112.7(b))

Table 3-1 presents expected volume, discharge rate, general direction of flow in the event of equipment failure, and means of secondary containment for different parts of the facility where oil is stored, used, or handled.

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

Potential Event	Maximum volume released (gallons)	Maximum discharge rate	Direction of Flow	Secondary Containment
Bulk Storage Area (Aboveground Storage Tanks #1, 2, 3, or 7)				
Failure of aboveground tank (collapse or puncture below product level)	20,000	Gradual to instantaneous	SW to Silver Creek	Concrete dike
Tank overfill	1 to 120	60 gal/min	SW to Silver Creek	Concrete dike
Pipe failure	20,000	240 gal/min	SW to Silver Creek	Concrete dike
Leaking pipe or valve packing	600	1 gal/min	SW to Silver Creek	Concrete dike
Leaking heating coil (Tank #7)	10,000	1 gal/min	SW to Silver Creek	Concrete dike
Loading Rack/Unloading Area				
Tank truck leak or failure inside the rollover berm	1 to 2,000	Gradual to instantaneous	SW to Silver Creek	Rollover berm, on to oil/water separator
Tank truck leak or failure outside the rollover berm	1 to 2,000	Gradual to instantaneous	SW to Silver Creek	Rollover berm, on to oil/water separator
Hose leak during truck loading	1 to 300	60 gal/min	SW to Silver Creek	Rollover berm
Fuel Dispensing Areas				
Tank #4 and diesel dispenser hose/ connections leak	1 to 150	30 gal/minute	SW to Silver Creek.	Land-based spill response capability (spill kit) and oil/water separator
Maintenance Building				
Leak or failure of drum	1 to 55	Gradual to instantaneous	SW to Silver Creek.	Spill pallets, oil/water separator
Other Areas				
Complete failure of portable tank (Tank #4)	500	Gradual to instantaneous	SW to Silver Creek.	Secondary shell, oil/water separator
Leaking portable tank or overfills (Tank #4)	1 to 100	3 gal/min	SW to Silver Creek.	Secondary shell, oil/water separator
Leak during transfer to heating fuel UST (Tank # 6)	1 to 120	60 gal/min	SW to Silver Creek.	Oil/water separator
Oil/water separator malfunction	1 to 300	1 gal/min	SW to Silver Creek.	

3.5 Containment and Diversionary Structures (40 CFR 112.7(c))

Methods of secondary containment at this facility include a combination of structures (e.g., dike, berm, built-in secondary containment), drainage systems (e.g., oil/water separator), and land-based spill response (e.g., drain covers, sorbents) to prevent oil from reaching navigable waters and adjoining shorelines:

< For bulk storage containers (refer to Section 4.2.2 of this Plan):

  < **Dike.** A concrete dike enclosure is provided around fixed aboveground storage tanks, as described in Section 4.2.2 of this Plan.

  < **Double-wall tank construction.** Tank #6 (UST), and the 500-gallon portable storage tank (Tank #4) both have double-wall design with a secondary shell designed to contain 110 percent of the inner shell capacity. The portable tank is generally located near the entrance to the maintenance building; however, it may be used elsewhere on site. It is used to refuel various small pieces of equipment (each less than 55-gallon capacity) such as trucks and compressors, that may be deployed at different areas on the site.

  < **Spill pallets.** Each spill pallet has a capacity of 75 gallons, which can effectively contain the volume of any single 55-gallon drum. Drums are also stored inside the maintenance building and are not exposed to precipitation. The floor of the maintenance building and lower 24 inches of the outside walls are constructed of poured concrete that would restrict the flow of oil outside the building. The floor has two floor drains; the drain closest to the drum storage area is located 18 feet away. Floor drains flow into the oil/water separator, which is capable of containing any oil discharged from a 55-gallon drum.

< At the loading rack and unloading area (refer to Section 3.10 of this Plan):

  < **Rollover berm.** The loading rack/unloading area is surrounded by a 4-inch rollover berm that provides sufficient containment for the largest compartment of the tank truck loading or unloading at the facility (2,000 gallons), and an additional 4 inches of freeboard for precipitation.

< In transfer areas and other parts of the facility where a discharge could occur:

  < **Drip pans.** Fill ports for all ASTs are equipped with drip pans to contain small leaks from the piping/hose connections.

  < **Sorbent material.** Spill cleanup kits that include absorbent material, booms, and other portable barriers are located inside the maintenance building near the drummed oil storage area and in an outside shed located near the loading rack/unloading area, as shown on the Facility Diagram in Appendix A. The spill kits are located within close proximity of

- the oil product storage and handling areas for rapid deployment should a spill occur. Sorbent material, booms, and other portable barriers are stored in the shed next to the loading rack/unloading area to allow for quick deployment in the event of a discharge during loading/unloading activities or any other accidental discharge outside the dike or loading rack/unloading area, such as from tank vehicles entering/leaving the facility or spills associated with the fuel dispenser. The response equipment inventory for the facility is listed in Appendix J of this Plan. The inventory is checked monthly to ensure that used material is replenished.

- **Drainage system.** The facility surface drainage is engineered to direct oil that may be discharged outside of engineered containment structures such as dikes or berms into the oil/water separator.

- **Oil/water separator.** The oil/water separator is designed to separate and retain oil at the facility. The oil/water separator has a total capacity for oil/water mixture of 1,500 gallons and a design flow rate of 150 gallons per minute. The separator outlet valve can be closed in the event of a large discharge (greater than 300 gallons) to provide additional emergency containment of up to 1,200 gallons. The maximum amount of oil potentially discharged outside the diked or bermed areas is estimated at roughly 2,000 gallons (from the complete failure of an on-site tanker truck). A spill of this volume outside the diked or bermed areas will be primarily contained by deploying sorbent material and other portable spill barriers upon discovery of the spill, and additional oil containment capacity will be provided by the oil/water separator. The operating oil storage capacity is 300 gallons. Best Management Practices are used to minimize the amount of solids and oil that flow into the oil/water separator. Facility personnel are instructed to avoid and address small spills using sorbents to minimize runoff of oil into the oil/water separator. The oil/water separator is inspected monthly as part of the scheduled inspection to check the level of water within the separator and measure the depth of bottom sludges and floating oils. Floating oil is removed by a licensed waste collector when it reaches a thickness of 2 inches.

3.6 Practicability of Secondary Containment (40 CFR 112.7(d))

Unified Oil management has determined that secondary containment is practicable at this facility.

3.7 Inspections, Tests, and Records (40 CFR 112.7(e))

As required by the SPCC rule, Unified Oil performs the inspections, tests, and evaluations listed in the following table. Table 3-2 summarizes the various types of inspections and tests performed at the facility. The inspections and tests are described later in this section, and in the respective sections that describe different parts of the facility (e.g., Section 4.2.6 for bulk storage containers).

Table 3-2: Inspection and Testing Program

Facility Component	Action	Frequency/Circumstances
Aboveground container	Test container integrity. Combine visual inspection with another testing technique (non-destructive shell testing). Inspect outside of container for signs of deterioration and discharges.	Following a regular schedule (monthly, annual, and during scheduled inspections) and whenever material repairs are made.
Container supports and foundation	Inspect container's supports and foundations.	Following a regular schedule (monthly, annual, and during scheduled inspections) and whenever material repairs are made.
Liquid level sensing devices (overfill)	Test for proper operation.	Monthly
Diked area	Inspect for signs of deterioration, discharges, or accumulation of oil inside diked areas.	Monthly
	Visually inspect content for presence of oil.	Prior to draining
Lowermost drain and all outlets of tank truck	Visually inspect.	Prior to filling and departure
Effluent treatment facilities	Detect possible system upsets that could cause a discharge.	Daily, monthly
All aboveground valves, piping, and appurtenances	Assess general condition of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces.	Monthly
Buried metallic storage tank	Leak test.	Annually
Buried piping	Inspect for deterioration.	Whenever a section of buried line is exposed for any reason.
	Integrity and leak testing.	At the time of installation, modification, construction, relocation, or replacement.

3.7.1 Daily Inspection

A Unified Oil employee performs a complete walk-through of the facility each day. This daily visual inspection involves: (1) looking for tank/piping damage or leakage, stained or discolored soils, or excessive accumulation of water in diked and bermed areas; (2) observing the effluent from the oil/water separator; and (3) verifying that the dike drain valve is securely closed.

3.7.2 Monthly Inspection

The checklist provided in Appendix C is used for monthly inspections by Unified Oil personnel. The monthly inspections cover the following key elements:

- Observing the exterior of aboveground storage tanks, pipes, and other equipment for signs of deterioration, leaks, corrosion, and thinning.
- Observing the exterior of portable containers for signs of deterioration or leaks.
- Observing tank foundations and supports for signs of instability or excessive settlement.
- Observing the tank fill and discharge pipes for signs of poor connection that could cause a discharge, and tank vent for obstructions and proper operation.
- Verifying the proper functioning of overfill prevention systems.
- Checking the inventory of discharge response equipment and restocking as needed.
- Observing the effluent and measuring the quantity of accumulated oil within the oil/water separator.

All problems regarding tanks, piping, containment, or response equipment must immediately be reported to the Facility Manager. Visible oil leaks from tank walls, piping, or other components must be repaired as soon as possible to prevent a larger spill or a discharge to navigable waters or adjoining shorelines. Pooled oil is removed immediately upon discovery.

Written monthly inspection records are signed by the Facility Manager and maintained with this SPCC Plan for a period of three years.

3.7.3 Annual Inspection

Facility personnel perform a more thorough inspection of facility equipment on an annual basis. This annual inspection complements the monthly inspection described above and is performed in June of each year using the checklist provided in Appendix C of this Plan.

The annual inspection is preferably performed after a large storm event in order to verify the imperviousness and/or proper functioning of drainage control systems such as the dike, rollover berm, control valves, and the oil/water separator.

Written annual inspection records are signed by the Facility Manager and maintained with this SPCC Plan for a period of three years.

3.7.4 Periodic Integrity Testing

In addition to the above monthly and annual inspections by facility personnel, Tanks #1, 2, 3, 4, and 7 are periodically evaluated by an outside certified tank inspector following the Steel Tank Institute (STI) *Standard for the Inspection of Aboveground Storage Tanks*, SP-001, 2005 version, as described in Section 4.2.6 of this Plan.

3.8 Personnel, Training, and Discharge Prevention Procedures (40 CFR 112.7(f))

The Facility Manager is the facility designee and is responsible for oil discharge prevention, control, and response preparedness activities at this facility.

Unified Oil management has instructed oil-handling facility personnel in the operation and maintenance of oil pollution prevention equipment, discharge procedure protocols, applicable pollution control laws, rules and regulations, general facility operations, and the content of this SPCC Plan. Any new facility personnel with oil-handling responsibilities are provided with this same training prior to being involved in any oil operation.

Annual discharge prevention briefings are held by the Facility Manager for all facility personnel involved in oil operations. The briefings are aimed at ensuring continued understanding and adherence to the discharge prevention procedures presented in the SPCC Plan. The briefings also highlight and describe known discharge events or failures, malfunctioning components, and recently implemented precautionary measures and best practices. Facility operators and other personnel will have the opportunity during the briefings to share recommendations concerning health, safety, and environmental issues encountered during facility operations.

A simulation of an on-site vehicular discharge has been conducted, and future training exercises will be periodically held to prepare for possible discharge responses.

Records of the briefings and discharge prevention training are kept on the form shown in Appendix E and maintained with this SPCC Plan for a period of three years.

3.9 Security (40 CFR 112.7(g))

The facility is surrounded by 8-ft tall steel security fencing. The fence encircles the entire footprint of the facility. The single entrance gate is locked when the facility is unattended.

All drain valves for containment areas are locked in the closed position to prevent unauthorized opening. Water draw valves on the 20,000-gallon storage tanks are maintained in the closed position to prevent unauthorized opening via locks. Keys for all locked valves are kept in the front office.

Two area lights illuminate the loading/unloading and storage areas. Additional motion-activated lights are placed in other areas of the facility. The lights are placed to allow for the discovery of discharges and to deter acts of vandalism.

The electrical starter controls for the oil pumps, including the fuel dispenser, are located in a closet inside the maintenance shop. The closet is locked when the pumps are not in use. The maintenance shop is locked when the facility is unattended.

The facility securely caps or blank-flanges the loading/unloading connections of facility piping when not in service or when in standby service for an extended period of time, or when piping is

emptied of liquid content either by draining or by inert gas pressure.

3.10 Tank Truck Loading/Unloading Rack Requirements (40 CFR 112.7(h))

The potential for discharges during tank truck loading and unloading operations is of particular concern at this facility. Unified Oil management is committed to ensuring the safe transfer of material to and from storage tanks. The following measures are implemented to prevent oil discharges during tank truck loading and unloading operations.

3.10.1 Secondary Containment (40 CFR 112.7(h)(1))

The facility has both a loading rack (for loading moderate capacity oil delivery tanker trucks) and an unloading area (where product is unloaded from large capacity tanker truck to the facility bulk storage tanks).

The loading rack and unloading area are co-located and are used by outside suppliers making deliveries to the facility and to load Unified Oil delivery trucks.

The tank truck loading rack/unloading area is surrounded with a 4-inch rollover asphalt berm that provides secondary containment in the event of a discharge during transfer operations. The secondary containment berm is designed to address the more stringent rack containment requirements of 40 CFR 112.7(h), which requires that the berm be sufficient to contain the capacity of the largest compartment, plus freeboard for precipitation. The curbed area provides a catchment capacity of 2,500 gallons, which is capable of containing the largest compartment of the petroleum suppliers truck making deliveries at this facility (maximum 2,000 gallons), and is also capable of containing the capacity of Unified Oil's delivery trucks, which each have a total capacity of 2,000 gallons.

To minimize direct exposure to rain, and facilitate the cleanup of small spills that may occur during loading/unloading operations, the area is partially covered by a roof.

The area is graded to direct the flow of oil or water away from the vehicle, and the low point of the curbed area is fitted with a gate valve that is normally kept closed and locked. The key for that lock is kept in the main office. The berm is drained by Unified personnel after verifying that the retained water is free of oil. The accumulated water is released to the oil/water separator. The drain valve is closed and locked following drainage.

Although delivery trucks are usually empty while at the site for extended periods of time, Unified Oil periodically parks one of its two delivery trucks while full overnight. If a delivery truck is parked overnight or for an extended period of time while it still contains fuel, it is parked inside the loading rack/unloading area containment berm. As discussed above, the berm provides sufficient containment capacity for the truck volume, plus sufficient freeboard for 4 inches of precipitation.

3.10.2 Loading/Unloading Procedures (40 CFR 112.7(h)(2) and (3))

All suppliers must meet the minimum requirements and regulations for tank truck

loading/unloading established by the U.S. Department of Transportation. Unified Oil ensures that the vendor understands the site layout, knows the protocol for entering the facility and unloading product, and has the necessary equipment to respond to a discharge from the vehicle or fuel delivery hose.

The Facility Manager or his/her designee supervises oil deliveries for all new suppliers, and periodically observes deliveries for existing, approved suppliers.

All loading and unloading of tank vehicles takes place only in the designated loading rack/unloading area.

Vehicle filling operations are performed by facility personnel trained in proper discharge prevention procedures. The truck driver or facility personnel remain with the vehicle at all times while fuel is being transferred. Transfer operations are performed according to the minimum procedures outlined in Table 3-3. This table is also posted next to the loading/unloading point.

Table 3-3: Fuel Transfer Procedures

Stage		Tasks
Prior to loading/ unloading	□	Visually check all hoses for leaks and wet spots.
	□	Verify that sufficient volume (ullage) is available in the storage tank or truck.
	□	Lock in the closed position all drainage valves of the secondary containment structure.
	□	Secure the tank vehicle with wheel chocks and interlocks.
	□	Ensure that the vehicle's parking brakes are set.
	□	Verify proper alignment of valves and proper functioning of the pumping system.
	□	If filling a tank truck, inspect the lowermost drain and all outlets.
	□	Establish adequate bonding/grounding prior to connecting to the fuel transfer point.
	□	Turn off cell phone.
During loading/ unloading	□	Driver must stay with the vehicle at all times during loading/unloading activities.
	□	Periodically inspect all systems, hoses and connections.
	□	When loading, keep internal and external valves on the receiving tank open along with the pressure relief valves.
	□	When making a connection, shut off the vehicle engine. When transferring Class 3 materials, shut off the vehicle engine unless it is used to operate a pump.
	□	Maintain communication with the pumping and receiving stations.
	□	Monitor the liquid level in the receiving tank to prevent overflow.
	□	Monitor flow meters to determine rate of flow.
	□	When topping off the tank, reduce flow rate to prevent overflow.
After loading/ unloading	□	Make sure the transfer operation is completed.
	□	Close all tank and loading valves before disconnecting.
	□	Securely close all vehicle internal, external, and dome cover valves before disconnecting.
	□	Secure all hatches.
	□	Disconnect grounding/bonding wires.
	□	Make sure the hoses are drained to remove the remaining oil before moving them away from the connection. Use a drip pan.
	□	Cap the end of the hose and other connecting devices before moving them to prevent uncontrolled leakage.
	□	Remove wheel chocks and interlocks.
	□	Inspect the lowermost drain and all outlets on tank truck prior to departure. If necessary, tighten, adjust, or replace caps, valves, or other equipment to prevent oil leaking while in transit.

3.11 Brittle Fracture Evaluation (40 CFR 112.7(i))

The only field-constructed tank at the facility is Tank #7. All other tanks were shop-built.

The shell thickness of Tank #7 is less than one-half inch. As discussed in the American Petroleum Institute (API) Standard 653 *Tank Inspection, Repair, Alteration, and Reconstruction* (API-653), brittle fracture is not a concern for tanks that have a shell thickness of less than one-half inch. This is the extent of the brittle fracture evaluation for this tank.

Nonetheless, in the event that Tank #7 undergoes a repair, alteration, reconstruction, or change in service that might affect the risk of a discharge or failure, the container will be evaluated for risk of discharge or failure, following API-653 or an equivalent approach, and corrective action will be taken as necessary.

3.12 Conformance with State and Local Applicable Requirements (40 CFR 112.7(j))

All bulk storage tanks at this facility are registered with the state and local authorities (Stonefield Fire Department) and have current certificates of registration and special use permits required by the local fire code.

Both USTs at the facility (Tanks #5 and 6) meet all requirements of Massachusetts UST regulation, including cathodic protection, double-wall construction, and monitoring systems, although Tank #6 is not subject to these requirements.

Treated storm water runoff is discharged to Silver Creek as permitted under NPDES permit #MA0001990. The maximum allowable daily oil/grease concentration is 15 mg/L. Grab samples are taken each quarter, following the monitoring requirements specified in the NPDES permit.

PART 4: Discharge Prevention – SPCC Provisions for Onshore Facilities (Excluding Production Facilities)

4.1 Facility Drainage (40 CFR 112.8(b))

Drainage from the concrete dike surrounding tanks 1, 2, and 3 is restrained by a manually-operated gate valve to prevent a discharge from entering the facility drainage system. The gate valve is normally sealed closed, except when draining the secondary containment structure. The content of the secondary containment dike is inspected by facility personnel prior to draining to ensure that only oil-free water is allowed to enter the facility storm water drainage system. The bypass valve is opened and resealed under direct personnel supervision. Drainage events are recorded in the log included in Appendix D to this SPCC Plan.

Any potential discharge from ASTs will be restrained by secondary containment structures. Discharges occurring during loading/unloading operations will be restrained by the rollover berm. The facility includes a drainage system and an oil/water separator, which are used to as containment for spill sources outside the main berm areas (fuel dispensing, overfills of 500-gallon AST (Tank#4), and transfers associated with the heating oil tank). The facility is equipped with an oil/water separator engineered to retain oil at the facility. This separator provides environmental protection equivalent to ponds, lagoons, or catchments basins required under 40 CFR 112.8(b)(3) and (4), as allowed in 40 CFR 112.7(a)(2). Discharges outside the containment areas, such as those occurring in the fuel dispensing area or while unloading heating oil, will flow by gravity into the drainage collection area and into the oil/water separator where oil will be retained until it can be pumped out.

4.2 Bulk Storage Containers (40 CFR 112.8(c))

Table 4-1 summarizes the construction, volume, and content of bulk storage containers at Unified Oil facility.

Table 4-1: List of Oil Containers

Tank	Location	Type (Construction Standard)	Capacity (gallons)	Content	Discharge Prevention & Containment
#1	Bulk Storage Area	AST vertical (UL142)	20,000	Diesel	Concrete dike. Liquid level gauge.
#2	Bulk Storage Area	AST horizontal (UL142)	20,000	Premium unleaded gasoline	Concrete dike. Liquid level gauge.
#3	Bulk Storage Area	AST horizontal (UL142)	20,000	Regular unleaded gasoline	Concrete dike. Liquid level gauge.
#4	Varies	AST dual wall, portable tank (UL142)	500	Regular unleaded gasoline	Double-wall. Liquid level gauge and interstitial monitoring system.
#5	Fuel Dispensing Area	UST dual wall (STI P3)	5,000	Diesel	Double-wall. Liquid level gauge, overfill protection system, and interstitial monitoring.
#6	Outside Office Building	UST dual wall (STI P3)	1,000	No. 2 Fuel Oil	Double-wall. Liquid level gauge, overfill protection system, and interstitial monitoring.
#7	Bulk Storage Area	AST vertical (field-erected). Heated during winter months (internal coils)	10,000	No. 6 Fuel Oil	Concrete dike. Liquid level gauge.
	Inside Maintenance Building	Steel drums	55	Motor oil and used oil	Spill pallets with built-in containment capacity. Building also serves as containment since floor drains flow into oil/water separator

4.2.1 Construction (40 CFR 112.8 (c)(1))

All oil tanks used at this facility are constructed of steel, in accordance with industry specifications as described above. The design and construction of all bulk storage containers are compatible with the characteristics of the oil product they contain, and with temperature and pressure conditions.

Piping between fixed aboveground bulk storage tanks is made of steel and placed aboveground on appropriate supports designed to minimize erosion and stress.

4.2.2 Secondary Containment (40 CFR 112.8(c)(2))

A dike is provided around Tanks #1, 2, 3, and 7. Tanks #1, 2, and 3 each have a 20,000-gallon capacity. Tank #7 has a 10,000-gallon capacity. The dike has a total containment capacity of 27,316 gallons to allow sufficient volume for the largest tank and freeboard for precipitation. The freeboard is sufficient to contain a 4-inch rainfall corresponding to a 25-year, 24-hour storm event for this region of Massachusetts, as documented in Appendix F of this Plan. The floor and walls of the containment dike are constructed of poured concrete reinforced with steel. The concrete dike was built under the supervision of a structural engineer and in conformance with his specifications to be impervious to oil for a period of 72 hours. The facility is unattended for a maximum of 40 hours (Saturday evening through Monday morning) and therefore any spill into the diked area would be detected before it could escape the diked area. The surface of the concrete floor, the inside and outside of the walls, and the interface of the floor and walls, are visually inspected during the monthly facility inspection to detect any crack, signs of heaving or settlement, or other structural damage that could affect the ability of the dike to contain oil. Any damage is promptly corrected to prevent migration of oil into the ground, or out of the dike.

The 500-gallon portable AST tank is of double-wall construction and provides intrinsic secondary containment for 110 percent of the tank capacity. Since the secondary containment is not open to precipitation, this volume is sufficient to fully contain the product in the event of a leak from the primary container. The interstitial space between the primary and secondary containers is inspected on a monthly basis to detect any leak of product from the primary container. The container, however, is not equipped to prevent overfills as required by EPA policy in its memorandum on double-walled tanks. Therefore, general containment is required for potential tank overfills. This containment is accomplished through the facility drainage system and the oil/water separator, which provide environmentally equivalent protection as described in Section 3.1 of this Plan.

Both USTs are of double-wall construction and provide intrinsic secondary containment for 110 percent of the tank capacity. The interstitial space between the primary and secondary containers is inspected on a monthly basis to detect any leak of product from the primary container.

The 55-gallon drums are placed on spill pallets inside the maintenance shop. Each spill pallet provides 75 gallons of containment capacity, which is more than the required 55 gallons for any single drum since the drums are not exposed to precipitation. The floor of the maintenance shop is impervious and sloped to direct any discharge occurring in the building away from doorways and towards the drainage system that leads to the facility oil/water separator.

4.2.3 Drainage of Diked Areas (40 CFR 112.8(c)(3))

The concrete dikes are drained under direct supervision of facility personnel. The accumulated water is observed for signs of oil prior to draining. The gate valves are normally kept in a closed position and locked except when draining the dike. Dike drainage events are recorded on the form included in Appendix D of this Plan; records are maintained at the facility for at least three years.

4.2.4 Corrosion Protection (40 CFR 112.8(c)(4))

Both metallic underground storage tanks, including Tank #6, which is subject to the requirements of 40 CFR part 112, are coated and cathodically protected to prevent corrosion and leakage into the ground. Pressure testing is performed on both buried storage tanks every two years following the requirements of 40 CFR part 280. The cathodic protection system is tested annually to verify its efficacy.

Cathodic protection is provided for both tanks in accordance with 40 CFR part 280 and meets the requirements of 40 CFR part 112.

Records of pressure tests are kept for at least three years.

4.2.5 Partially Buried and Bunkered Storage Tanks (40 CFR 112.8(c)(5))

This section is not applicable since there are no partially buried or bunkered storage tanks at this facility.

4.2.6 Inspections and Tests (40 CFR 112.8(c)(6))

Visual inspections of ASTs by facility personnel are performed according to the procedure described in this SPCC Plan. Leaks from tank seams, gaskets, rivets, and bolts are promptly corrected. Records of inspections and tests are signed by the inspector and kept at the facility for at least three years.

The scope and schedule of certified inspections and tests performed on the facility's ASTs are specified in STI Standard SP-001. The external inspection includes ultrasonic testing of the shell, as specified in the standard, or if recommended by the certified tank inspector to assess the integrity of the tank for continued oil storage.

Records of certified tank inspections are kept at the facility for at least three years. Shell test comparison records are retained for the life of the tanks.

Table 4-2 summarizes inspections and tests performed on bulk storage containers ("EE" indicates that an environmentally equivalent measure is implemented in place of the inspection/test, as discussed in Section 3.1 of this Plan).

Table 4-2: Scope and Frequency of Bulk Storage Containers Inspections and Tests

	Tank ID							
Inspection/Test	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Drums**
Visual inspection by facility personnel (as per checklist of Appendix C)	M A	M A	M A	M A			M A	M A
External inspection by certified inspector (as per STI Standard SP-001)	20 yr	20 yr	10 yr	EE			10 yr	EE
Internal inspection by certified inspector (as per STI Standard SP-001)	†	†	20 yr*	EE			20 yr*	EE
Tank tightness test meeting requirements of 40 CFR 280					2 yr	2 yr		

Legend: M: Monthly
A: Annual
EE: Inspection not required given use of environmentally equivalent measure (refer to Section 3.1 of this Plan).
* Or earlier, as recommended by the certified inspector based on findings from an external inspection.
† Internal inspection may be recommended by the certified inspector based on findings from the external inspection.

The frequency above is based on implementation of a scheduled inspection/testing program. To initiate the program, ASTs will be inspected by the following dates:

- Tank #1: external inspection to be performed by December 31, 2009
- Tank #2: external inspection to be performed by December 31, 2009
- Tank #3: external inspection to be performed by December 31, 2006
- Tank #7: external Inspection to be performed by December 31, 2006

4.2.7 Heating Coils (40 CFR 112.8(c)(7))

Exhaust lines from internal heating coils for Tank #7 drain to the oil/water separator. The exhaust lines are monitored for signs of leakage as part of the monthly inspection of the facility.

4.2.8 Overfill Prevention Systems (40 CFR 112.8(c)(8))

All tanks are equipped with a direct-reading level gauge. Additionally, all four fixed ASTs (Tanks #1, 2, 3, and 7) are equipped with high level alarms set at 90 percent of the rated capacity. Tank #4 does not have an overfill prevention system. General secondary containment is provided in the event of overfills, as described in this Plan.

Storage drums are not refilled, and therefore overfill prevention systems do not apply.

Tanks #5 and 6 are equipped with liquid level gauges and overfill protection systems. Liquid level sensing devices are tested on a monthly basis during the monthly inspection of the facility,

following manufacturer recommendations. Venting capacity is suitable for the fill and withdrawal rates.

Facility personnel are present throughout the filling operations to monitor the product level in the tanks.

4.2.9 Effluent Treatment Facilities (40 CFR 112.8(c)(9))

The facility's storm water effluent discharged into Silver Creek is observed and records maintained according to the frequency required by NPDES permit MA0000157 (at least once per month) to detect possible upsets in the oil/water separator that could lead to a discharge.

4.2.10 Visible Discharges (40 CFR 112.8(c)(10))

Visible discharges from any container or appurtenance – including seams, gaskets, piping, pumps, valves, rivets, and bolts – are quickly corrected upon discovery.

Oil is promptly removed from the diked area and disposed of according to the waste disposal method described in Part 5 of this Plan.

4.2.11 Mobile and Portable Containers (40 CFR 112.8(c)(11))

Tank #4 is of double-wall design, which provides for adequate secondary containment in the event of leaks in the primary container shell. The interstitial space is monitored monthly for signs of leakage.

Small portable oil storage containers, such as 55-gallon drums, are stored inside the maintenance shop where secondary containment is provided by spill pallets and the floor is sloped to drain away from the floor drains and door. Any discharged material is quickly contained and cleaned up using sorbent pads and appropriate cleaning products.

Unified Oil delivery trucks generally return to the facility empty or product is returned to inventory. Whenever they remain at the facility while full for an extended period of time (such as when parking overnight with an emergency load of product), they are positioned in the loading rack/unloading area, which provides 2,500 gallons of secondary containment capacity (i.e., sufficient for the capacity of the delivery truck (2,000 gallons) and additional freeboard for 4 inches of precipitation).

4.3 Transfer Operations, Pumping, and In-Plant Processes (40 CFR 112.8(d))

Transfer operations at this facility include:

- The transfer of oil from the underground fuel oil storage tank to the furnace located in the basement of the office building. The oil is pumped from the oil storage tank by means of buried steel fuel lines and a suction pump system.
- The filling of facility delivery trucks using the gasoline dispenser.

< The transfer of oil into or from tanker trucks at the loading rack/unloading area.

All buried piping at this facility is cathodically protected against corrosion and is provided with a protective wrapping and coating. When a section of buried line is exposed, it is carefully examined for deterioration. If corrosion damage is found, additional examination and corrective action must be taken as deemed appropriate considering the magnitude of the damage. Additionally, Unified Oil conducts integrity and leak testing of buried piping at the time of installation, modification, construction, relocation, or replacement. Records of all tests are kept at the facility for at least three years.

Lines that are not in service or are on standby for an extended period of time are capped or blank-flanged and marked as to their origin.

All pipe supports are designed to minimize abrasion and corrosion and to allow for expansion and contraction. Pipe supports are visually inspected during the monthly inspection of the facility.

All aboveground piping and valves are examined monthly to assess their condition. Inspection includes aboveground valves, piping, appurtenances, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. Observations are noted on the monthly inspection checklist provided in this Plan.

Warning signs are posted at appropriate locations throughout the facility to prevent vehicles from damaging aboveground piping and appurtenances. Most of the aboveground piping is located within areas that are not accessible to vehicular traffic (e.g., inside diked area). Brightly painted bollards are placed where needed to prevent vehicular collisions with equipment.

Part 5: Discharge Response

This section describes the response and cleanup procedures in the event of an oil discharge. The uncontrolled discharge of oil to groundwater, surface water, or soil is prohibited by state and possibly federal laws. Immediate action must be taken to control, contain, and recover discharged product.

In general, the following steps are taken:

- Eliminate potential spark sources;
- If possible and safe to do so, identify and shut down source of the discharge to stop the flow;
- Contain the discharge with sorbents, berms, fences, trenches, sandbags, or other material;
- Contact the Facility Manager or his/her alternate;
- Contact regulatory authorities and the response organization; and
- Collect and dispose of recovered products according to regulation.

For the purpose of establishing appropriate response procedures, this SPCC Plan classifies discharges as either “minor” or “major,” depending on the volume and characteristics of the material released.

A list of Emergency Contacts is provided in Appendix H. The list is also posted at prominent locations throughout the facility. A list of discharge response material kept at the facility is included in Appendix J.

5.1 Response to a Minor Discharge

A “minor” discharge is defined as one that poses no significant harm (or threat) to human health and safety or to the environment. Minor discharges are generally those where:

- The quantity of product discharged is small (e.g., may involve less than 10 gallons of oil);
- Discharged material is easily stopped and controlled at the time of the discharge;
- Discharge is localized near the source;
- Discharged material is not likely to reach water;
- There is little risk to human health or safety; and
- There is little risk of fire or explosion.

Minor discharges can usually be cleaned up by Unified Oil personnel. The following guidelines apply:

- Immediately notify the Facility Manager.
- Under the direction of the Facility Manager, contain the discharge with discharge response materials and equipment. Place discharge debris in properly labeled waste containers.
- The Facility Manager will complete the discharge notification form (Appendix I) and attach a copy to this SPCC Plan.
- If the discharge involves more than 10 gallons of oil, the Facility Manager will call the Massachusetts Department of Environmental Protection Incident Response Division (617-556-1133).

5.2 Response to a Major Discharge

A “major” discharge is defined as one that cannot be safely controlled or cleaned up by facility personnel, such as when:

- The discharge is large enough to spread beyond the immediate discharge area;
- The discharged material enters water;
- The discharge requires special equipment or training to clean up;
- The discharged material poses a hazard to human health or safety; or
- There is a danger of fire or explosion.

In the event of a major discharge, the following guidelines apply:

- All workers must immediately evacuate the discharge site via the designated exit routes and move to the designated staging areas at a safe distance from the discharge. Exit routes are included on the facility diagram and posted in the maintenance building, in the office building, and on the outside wall of the outside shed that contains the spill response equipment.
- If the Facility Manager is not present at the facility, the senior on-site person notifies the Facility Manager of the discharge and has authority to initiate notification and response. Certain notifications are dependent on the circumstances and type of discharge. For example, if oil reaches a sanitary sewer, the publicly owned treatment works (POTW) should be notified immediately. A discharge that threatens Silver Creek may require immediate notification to downstream users such as the town drinking water plant, which has an intake located on Silver Creek.
- The Facility Manager (or senior on-site person) must call for medical assistance if workers are injured.
- The Facility Manager (or senior on-site person) must notify the Fire Department or Police Department.
- The Facility Manager (or senior on-site person) must call the spill response and cleanup contractors listed in the Emergency Contacts list in Appendix H.

- The Facility Manager (or senior on-site person) must immediately contact the Massachusetts Department of Environmental Protection Incident Response Division (617-556-1133) and the National Response Center (888-424-8802).
- The Facility Manager (or senior on-site person) must record the call on the Discharge Notification form in Appendix I and attach a copy to this SPCC Plan.
- The Facility Manager (or senior on-site person) coordinates cleanup and obtains assistance from a cleanup contractor or other response organization as necessary.

If the Facility Manager is not available at the time of the discharge, then the next highest person in seniority assumes responsibility for coordinating response activities.

5.3 Waste Disposal

Wastes resulting from a minor discharge response will be containerized in impervious bags, drums, or buckets. The facility manager will characterize the waste for proper disposal and ensure that it is removed from the facility by a licensed waste hauler within two weeks.

Wastes resulting from a major discharge response will be removed and disposed of by a cleanup contractor.

5.4 Discharge Notification

Any size discharge (i.e., one that creates a sheen, emulsion, or sludge) that affects or threatens to affect navigable waters or adjoining shorelines must be reported immediately to the National Response Center (1-800-424-8802). The Center is staffed 24 hours a day.

A summary sheet is included in Appendix I to facilitate reporting. The person reporting the discharge must provide the following information:

- Name, location, organization, and telephone number
- Name and address of the party responsible for the incident
- Date and time of the incident
- Location of the incident
- Source and cause of the release or discharge
- Types of material(s) released or discharged
- Quantity of materials released or discharged
- Danger or threat posed by the release or discharge
- Number and types of injuries (if any)
- Media affected or threatened by the discharge (i.e., water, land, air)
- Weather conditions at the incident location
- Any other information that may help emergency personnel respond to the incident

Contact information for reporting a discharge to the appropriate authorities is listed in Appendix H and is also posted in prominent locations throughout the facility (e.g., in the office building, in the maintenance building, and at the loading rack/unloading area).

In addition to the above reporting, 40 CFR 112.4 requires that information be submitted to the United States Environmental Protection Agency (EPA) Regional Administrator and the appropriate state agency in charge of oil pollution control activities (see contact information in Appendix H) whenever the facility discharges (as defined in 40 CFR 112.1(b)) *more than 1,000 gallons of oil in a single event,* or discharges (as defined in 40 CFR 112.1(b)) *more than 42 gallons of oil in each of two discharge incidents within a 12-month period.* The following information must be submitted to the EPA Regional Administrator and to MADEP within 60 days:

- Name of the facility;
- Name of the owner/operator;
- Location of the facility;
- Maximum storage or handling capacity and normal daily throughput;
- Corrective action and countermeasures taken, including a description of equipment repairs and replacements;
- Description of facility, including maps, flow diagrams, and topographical maps;
- Cause of the discharge(s) to navigable waters and adjoining shorelines, including a failure analysis of the system and subsystem in which the failure occurred;
- Additional preventive measures taken or contemplated to minimize possibility of recurrence; and
- Other pertinent information requested by the Regional Administrator.

A standard report for submitting the information to the EPA Regional Administrator and to MADEP is included in Appendix K of this Plan.

5.5 Cleanup Contractors and Equipment Suppliers

Contact information for specialized spill response and cleanup contractors are provided in Appendix H. These contractors have the necessary equipment to respond to a discharge of oil that affects Silver Creek or adjoining shorelines, including floating booms and oil skimmers.

Spill kits are located at the loading rack/unloading area and inside the maintenance building. The inventory of response supplies and equipment is provided in Appendix J of this Plan. The inventory is verified on a monthly basis. Additional supplies and equipment may be ordered from the following sources:

AA Equipment Co.	(800) 555-5556
Eastern Sorbent	(800) 555-5557

Appendix A
Site Plan and Facility Diagram

Figure A-1: Site Plan.

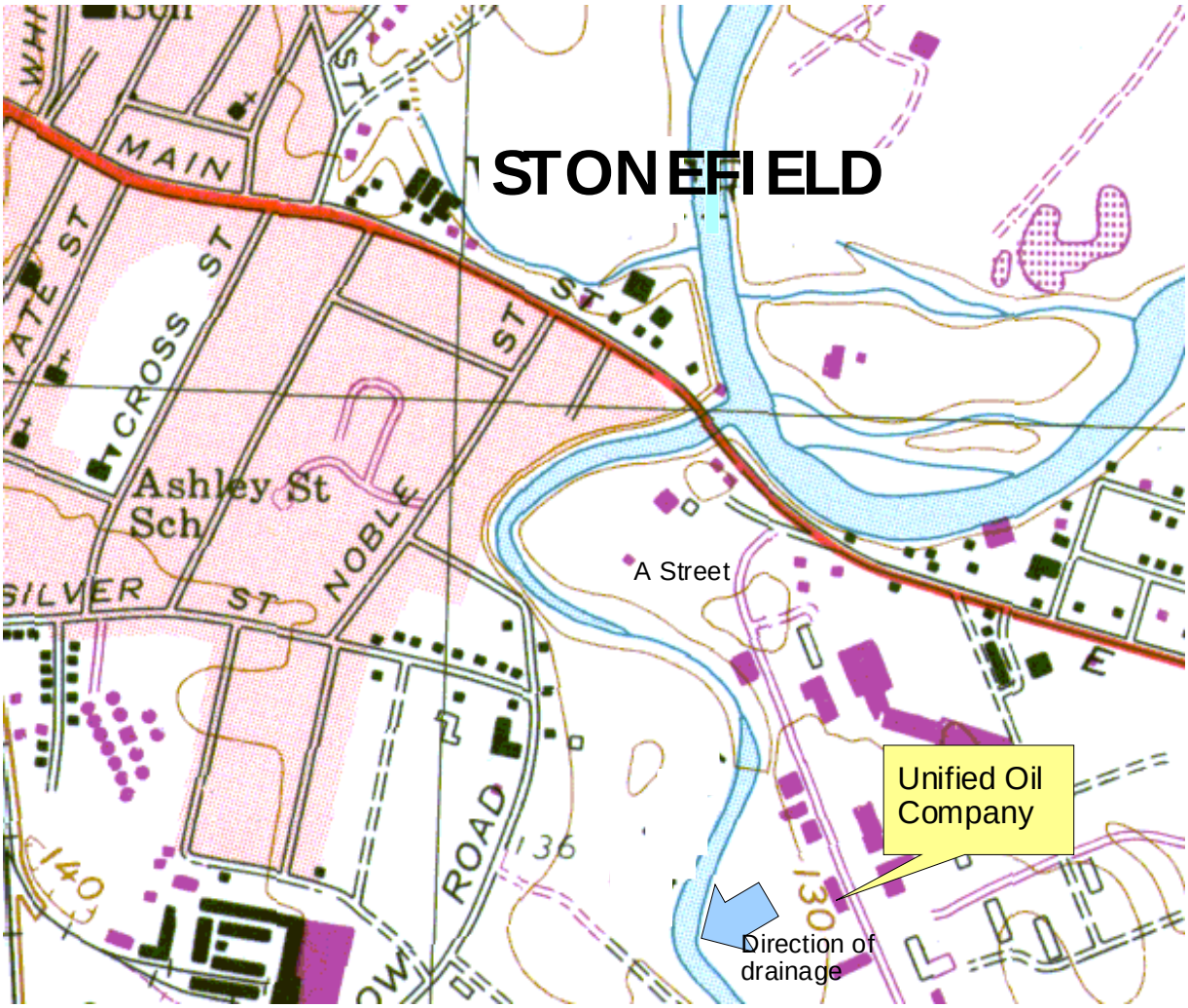
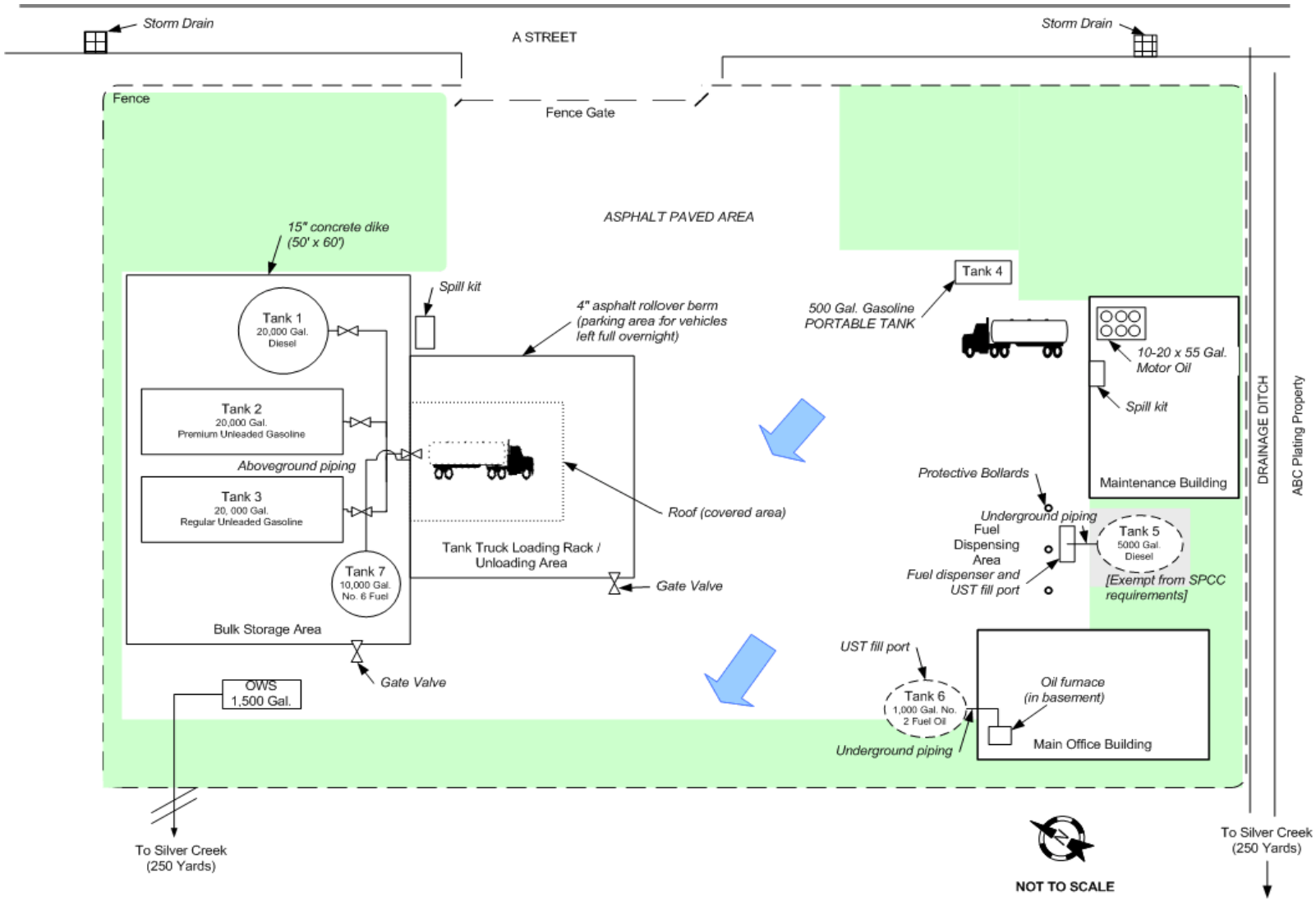


Figure A-2: Facility Diagram.



Appendix B

Substantial Harm Determination

Facility Name: Unified Oil Company
Facility Address: 123 A Street
Stonefield, MA 02000

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
Yes G No 0

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground storage tank area?
Yes G No 0

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in 40 CFR part 112 Appendix C, Attachment C-III or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
Yes G No 0

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in 40 CFR part 112 Appendix C, Attachment C-III or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?
Yes G No 0

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
Yes G No 0

Certification

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

Susan Blake — *Facility Manager*
Signature — Title

Susan Blake — *May 12, 2003*
Name (type or print) — Date

APPENDIX C

Facility Inspection Checklists

The following checklists are to be used for monthly and annual facility-conducted inspections. Completed checklists must be signed by the inspector and maintained at the facility, with this SPCC Plan, for at least three years.

Monthly Inspection Checklist

This inspection record must be completed *each month* except the month in which an annual inspection is performed. Provide further description and comments, if necessary, on a separate sheet of paper and attach to this sheet. *Any item that receives “yes” as an answer must be described and addressed immediately.

	Y*	N	Description & Comments
Storage tanks			
Tank surfaces show signs of leakage			
Tanks are damaged, rusted or deteriorated			
Bolts, rivets, or seams are damaged			
Tank supports are deteriorated or buckled			
Tank foundations have eroded or settled			
Level gauges or alarms are inoperative			
Vents are obstructed			
Secondary containment is damaged or stained			
Water/product in interstice of double-walled tank			
Dike drainage valve is open or is not locked			
Piping			
Valve seals, gaskets, or other appurtenances are leaking			
Pipelines or supports are damaged or deteriorated			
Joints, valves and other appurtenances are leaking			
Buried piping is exposed			
Loading/unloading and transfer equipment			
Loading/unloading rack is damaged or deteriorated			
Connections are not capped or blank-flanged			
Secondary containment is damaged or stained			
Berm drainage valve is open or is not locked			
Oil/water separator			
Oil/water separator > 2 inches of accumulated oil			
Oil/water separator effluent has a sheen			
Security			
Fencing, gates, or lighting is non-functional			
Pumps and valves are locked if not in use			
Response Equipment			
Response equipment inventory is complete			

Date: _____ **Signature:** _____

Annual Facility Inspection Checklist

This inspection record must be completed *each year.* If any response requires further elaboration, provide comments in Description & Comments space provided. Further description and comments, if necessary, must be provided on a separate sheet of paper and attached to this sheet. *Any item that receives “yes” as an answer must be described and addressed immediately.

	Y*	N	Description & Comments
Storage tanks			
Tank #1			
Tank surfaces show signs of leakage			
Tank is damaged, rusted or deteriorated			
Bolts, rivets or seams are damaged			
Tank supports are deteriorated or buckled			
Tank foundations have eroded or settled			
Level gauges or alarms are inoperative			
Vents are obstructed			
Tank #2			
Tank surfaces show signs of leakage			
Tank is damaged, rusted, or deteriorated			
Bolts, rivets, or seams are damaged			
Tank supports are deteriorated or buckled			
Tank foundations have eroded or settled			
Level gauges or alarms are inoperative			
Vents are obstructed			
Tank #3			
Tank surfaces show signs of leakage			
Tank is damaged, rusted, or deteriorated			
Bolts, rivets, or seams are damaged			
Tank supports are deteriorated or buckled			
Tank foundations have eroded or settled			
Level gauges or alarms are inoperative			
Vents are obstructed			
Tank #4			
Tank surfaces show signs of leakage			
Tank is damaged, rusted or deteriorated			
Bolts, rivets or seams are damaged			
Tank supports are deteriorated or buckled			
Tank foundations have eroded or settled			
Level gauges or alarms are inoperative			
Vents are obstructed			
Oil is present in the interstice			
Tank #7			
Tank surfaces show signs of leakage			
Tank is damaged, rusted, or deteriorated			
Bolts, rivets, or seams are damaged			
Tank supports are deteriorated or buckled			
Tank foundations have eroded or settled			
Level gauges or alarms are inoperative			
Leakage in exhaust from heating coils			

	Y*	N	Description & Comments
Concrete dike			
Secondary containment is stained			
Dike drainage valve is open or is not locked			
Dike walls or floors are cracked or are separating			
Dike is not retaining water (following large rainfall)			
Piping			
Valve seals or gaskets are leaking			
Pipelines or supports are damaged or deteriorated			
Joints, valves and other appurtenances are leaking			
Buried piping is exposed			
Out-of-service pipes are not capped			
Warning signs are missing or damaged			
Loading/unloading and transfer equipment			
Loading/unloading rack is damaged or deteriorated			
Connections are not capped or blank-flanged			
Rollover berm is damaged or stained			
Berm drainage valve is open or is not locked			
Drip pans have accumulated oil or are leaking			
Oil/water separator			
Oil/water separator > 2 inches of accumulated oil			
Oil/water separator effluent has a sheen			
Security			
Fencing, gates, or lighting is non-functional			
Pumps and valves are not locked (and not in use)			
Response equipment			
Response equipment inventory is incomplete			

Annual reminders:

< Hold SPCC Briefing for all oil-handling personnel (and update briefing log in the Plan);

< Check contact information for key employees and response/cleanup contractors and update them in the Plan as needed;

Additional Remarks:

Date: _____ Signature: _____

APPENDIX D

Record of Containment Dike Drainage

This record must be completed when rainwater from diked areas is drained into a storm drain or into an open watercourse, lake, or pond, and bypasses the water treatment system. The bypass valve must normally be sealed in closed position. It must be opened and resealed following drainage under responsible supervision.

Date	Diked Area	Presence of	Time	Time	Signature
06/05/2003	Area 1	No oil	08:00	10:00	Susan Blake
07/15/2003	Area 1	No oil	08:20	10:30	Susan Blake

APPENDIX E

Record of Annual Discharge Prevention Briefings and Training

Briefings will be scheduled and conducted by the facility owner or operator for operating personnel at regular intervals to ensure adequate understanding of this SPCC Plan. The briefings will also highlight and describe known discharge events or failures, malfunctioning components, and recently implemented precautionary measures and best practices. Personnel will also be instructed in operation and maintenance of equipment to prevent the discharge of oil, and in applicable pollution laws, rules, and regulations. Facility operators and other personnel will have an opportunity during the briefings to share recommendations concerning health, safety, and environmental issues encountered during facility operations.

Date	Subjects Covered	Employees in Attendance	Instructor(s)

APPENDIX F

Calculation of Secondary Containment Capacity

The maximum 24-hour rainfall recorded in the last 25 years at this location is **3.75 inches**.

Bulk Storage Dike

Capacity of Tanks within the Diked Area:
Tank 1 = 20,000 gallons (saddle-mounted tank, no significant displacement)
Tank 2 = 20,000 gallons (saddle-mounted tank, no significant displacement)
Tank 3 = 20,000 gallons (need to account for tank displacement)
Tank 7 = 10,000 gallons (on legs, no significant displacement)

Dike Dimensions:
Dike footprint = 50 feet x 60 feet
Dike height = 15 inches = 1.25 feet
Dike volume = 50' x 60' x 1.25' = 3750 ft^3 x 7.48 gal/ft^3 = 28,050 gallons

Displacement Volume of Tank 3:
Tank diameter = 10 feet
3.1415 * (10 ft)^2 / 4 * 1.25' = 98 ft^3 x 7.48 gal/ft^3 = 734 gallons

Available Freeboard for Precipitation:
28,050 gallons - (20,000 gallons + 734 gallons) = 7,316 gallons
7,316 gallons / 7.48 gallons/ft^3 / (50 ft x 60 ft) = 0.33 ft = **4 inches**

The dike therefore **provides sufficient storage capacity for the largest bulk storage container within the diked area, tank displacement, and precipitation**. The containment capacity is equivalent to 137% of the capacity of the largest container ((28,050 gallons - 734 gallons)/20,000 gallons).

Loading Rack/Unloading Area Rollover Berm

Capacity of Largest Tank Truck Compartment:
2,000 gallons

Berm Dimensions:
Berm footprint = 28 feet x 45 feet (50% of the berm surface area is covered by the roof)
Berm height = 4.5 inches = 0.375 feet
Berm volume = 28 ft x 45 ft x 0.375 ft = 473 ft^3 x 7.48 gal/ft^3 = 3,534 gallons

Available Freeboard for Precipitation:
Since 50% of the surface area of the berm is covered by a roof, the volume of precipitation that enters the berm is reduced.

Minimum freeboard required = 28 ft x 45 ft x 0.5 x 3.75/12 = 197 ft^3 = 1,472 gallons
Actual freeboard = 3,534 gallons - 2,000 gallons = 1,534 gallons

The berm therefore **provides sufficient storage capacity to contain both the largest compartment of tank trucks loading/unloading at the facility, and the volume of precipitation that enters the berm**.

APPENDIX G

Records of Tank Integrity and Pressure Tests

Attach copies of official records of tank integrity and pressure tests.

APPENDIX H

Emergency Contacts

Designated person responsible for spill prevention: ***Susan Blake, Facility Manager***
781-555-5550

EMERGENCY TELEPHONE NUMBERS:

Facility	
Susan Blake, Facility Manager	781-555-5550
Local Emergency Response	
Stonefield Fire Department	911 or 781-555-5551
St. Mary's Hospital	781-555-5552
Response/Cleanup Contractors	
EZ Clean	617-555-5554
Stonefield Oil Removal	781-555-5555
Notification	
Massachusetts Department of Environmental Protection, Incident Response Division	617-556-1133
National Response Center	800-424-8802
United States Environmental Protection Agency, Region 1	888-372-7341

APPENDIX I

Discharge Notification Form

Part A: Discharge Information	
General information when reporting a spill to outside authorities: Name: Unified Oil Company Address: 123 A Street Stonefield, MA 02000 Telephone: (781) 555-5556 Owner/Operator: Blake and Daughters, Inc. 20 Fairview Road Stonefield, MA 02000 Primary Contact: Susan Blake, Facility Manager Work: (781)555-5550 Cell (24 hrs): (781)555-5559	
Type of oil:	Discharge Date and Time:
Quantity released:	Discovery Date and Time:
Quantity released to a waterbody:	Discharge Duration:
Location/Source:	
Actions taken to stop, remove, and mitigate impacts of the discharge:	
Affected media: G air G water G soil	G storm water sewer/POTW G dike/berm/oil-water separator G other: _____
Notification person:	Telephone contact: Business: 24-hr:
Nature of discharges, environmental/health effects, and damages: Injuries, fatalities or evacuation required?	

Part B: Notification Checklist		
	Date and time	Name of person receiving call
Discharge in any amount		
Susan Blake, Facility Manager and Response Coordinator (781) 555-5550 / (781) 555-5559		
Discharge in amount exceeding 10 gallons and *not affecting a waterbody or groundwater*		
Local Fire Department Fire Chief: D. Evans (781) 555-1258 or 911		
Massachusetts Department of Environmental Protection (888) 304-1133 or (617) 553-1133		

Discharge in any amount and affecting (or threatening to affect) a waterbody		
Local Fire Department Fire Chief: D. Evans (781) 555-1258 or 911		
Massachusetts Department of Environmental Protection (888) 304-1133 or (617) 553-1133		
National Response Center (800) 424-8802		
*Town of Stonefield POTW Plant Operator: K. Bromberg (781) 555-5453		
Town of Stonefield Drinking Water Plant Plant Operator: D. Lopez (781) 555-5450		
EZ Clean (617) 555-5554		

* The POTW should be notified of a discharge only if oil has reached or threatens sewer drains that connect to the POTW collection system.

APPENDIX J

Discharge Response Equipment Inventory

The discharge response equipment inventory is verified during the monthly inspection and must be replenished as needed.

Tank Truck Loading/Unloading Area

G	Empty 55-gallons drums to hold contaminated material	4
G	Loose absorbent material	200 pounds
G	Absorbent pads	3 boxes
G	Nitrile gloves	6 pairs
G	Neoprene gloves	6 pairs
G	Vinyl/PVC pull-on overboots	6 pairs
G	Non-sparking shovels	3
G	Brooms	3
G	Drain seals or mats	2
G	Sand bags	12

Maintenance Building

G	Empty 55-gallons drums to hold contaminated material	1
G	Loose absorbent material	50 pounds
G	Absorbent pads	1 box
G	Nitrile gloves	2 pairs
G	Neoprene gloves	2 pairs
G	Vinyl/PVC pull-on overboots	2 pairs
G	Non-sparking shovels 1	
G	Brooms	1
G	Drain seals or mats	1

APPENDIX K

Agency Notification Standard Report

Information contained in this report, and any supporting documentation, must be submitted to the EPA Region 1 Regional Administrator, and to MADEP, within 60 days of the qualifying discharge incident.

Facility:	*Unified Oil Company*
Owner/operator:	*Blake and Daughters* *20 Fairview Road* *Stonefield, MA 02000*
Name of person filing report:	
Location:	*123 A Street* *Stonefield, MA 02000*
Maximum storage capacity:	*74,600 gallons*
Daily throughput:	*8,000 gallons*

Nature of qualifying incident(s):

G Discharge to navigable waters or adjoining shorelines exceeding 1,000 gallons
G Second discharge exceeding 42 gallons within a 12-month period.

Description of facility (attach maps, flow diagrams, and topographical maps):

Unified Oil distributes a variety of petroleum products to primarily commercial customers. The facility handles, stores, uses, and distributes petroleum products in the form of gasoline, diesel, No. 2 fuel oil, No. 6 fuel oil, and motor oil. Unified Oil receives products by common carrier via tanker truck. The products are stored in five aboveground storage tanks (ASTs) and in one underground storage tank (UST). They are delivered to customers by Unified Oil trucks or by independent contractors. The facility refuels its own two delivery trucks from an underground diesel tank connected to a fueling pump.

Unified Oil is located in a primarily commercial area at 123 A Street in Stonefield, Massachusetts. The site is comprised of approximately 2 acres of land and is bordered to the East by A Street, to the West by Silver Creek, and to the North by ABC Plating Co.

Site improvements include an office building, a maintenance shop, a tanker truck loading rack and unloading area, and product storage and handling areas. Petroleum products are stored in the bulk storage area, the maintenance building, and the office building.

Agency Notification Standard Report (cont'd)
Cause of the discharge(s), including a failure analysis of the system and subsystems in which the failure occurred:
Corrective actions and countermeasures taken, including a description of equipment repairs and replacements:
Additional preventive measures taken or contemplated to minimize possibility of recurrence:
Other pertinent information:

U.S. ENVIRONMENTAL PROTECTION AGENCY
SPCC FIELD INSPECTION AND PLAN REVIEW CHECKLIST

ONSHORE FACILITIES (EXCLUDING OIL DRILLING, PRODUCTION AND WORKOVER)

Overview of the Checklist

This checklist is designed to assist EPA inspectors in conducting a thorough and nationally consistent inspection of a facility's compliance with the Spill Prevention, Control, and Countermeasure (SPCC) rule at 40 CFR part 112. It is a required tool to help federal inspectors (or their contractors) record observations for the site inspection and review of the SPCC Plan. While the checklist is meant to be comprehensive, the inspector should always refer to the SPCC rule in its entirety, the SPCC Regional Inspector Guidance Document, and other relevant guidance for evaluating compliance. This checklist must be completed in order for an inspection to count toward an agency measure (i.e., OEM inspection measures or GPRA). The completed checklist and supporting documentation (i.e. photo logs or additional notes) serve as the inspection report.

This checklist addresses requirements for onshore facilities including Tier II Qualified Facilities (excluding facilities involved in oil drilling, production and workover activities) that meet the eligibility criteria set forth in §112.3(g)(2).

Separate standalone checklists address requirements for:
Onshore oil drilling, production, and workover facilities including Tier II Qualified Facilities as defined in §112.3(g)(2);
Offshore drilling, production and workover facilities; and
Tier I Qualified Facilities (for facilities that meet the eligibility criteria defined in §112.3(g)(1))

Qualified facilities must meet the rule requirements in §112.6 and other applicable sections specified in §112.6, except for deviations that provide environmental equivalence and secondary containment impracticability determinations as allowed under §112.6.

The checklist is organized according to the SPCC rule. Each item in the checklist identifies the relevant section and paragraph in 40 CFR part 112 where that requirement is stated.

- Sections 112.1 through 112.5 specify the applicability of the rule and requirements for the preparation, implementation, and amendment of SPCC Plans. For these sections, the checklist includes data fields to be completed, as well as several questions with "yes," "no" or "NA" answers.
- Section 112.6 includes requirements for qualified facilities. These provisions are addressed in Attachment D.
- Section 112.7 includes general requirements that apply to all facilities (unless otherwise excluded).
- Sections 112.8 and 112.12 specify requirements for spill prevention, control, and countermeasures for onshore facilities (excluding production facilities).

The inspector needs to evaluate whether the requirement is addressed adequately or inadequately in the SPCC Plan and whether it is implemented adequately in the field (either by field observation or record review). For the SPCC Plan and implementation in the field, if a requirement is addressed adequately, mark the "Yes" box in the appropriate column. If a requirement is not addressed adequately, mark the "No" box. If a requirement does not apply to the particular facility or the question asked is not appropriate for the facility, mark as "NA". Discrepancies or descriptions of inspector interpretation of "No" vs. "NA" may be documented in the comments box subsequent to each section. If a provision of the rule applies only to the SPCC Plan, the "Field" column is shaded.

Space is provided throughout the checklist to record comments. Additional space is available as Attachment E at the end of the checklist. Comments should remain factual and support the evaluation of compliance.

Attachments

- Attachment A is for recording information about containers and other locations at the facility that require secondary containment.
- Attachment B is a checklist for documentation of the tests and inspections the facility operator is required to keep with the SPCC Plan.
- Attachment C is a checklist for oil spill contingency plans following 40 CFR 109. Unless a facility has submitted a Facility Response Plan (FRP) under 40 CFR 112.20, a contingency plan following 40 CFR 109 is required if a facility determines that secondary containment is impracticable as provided in 40 CFR 112.7(d). The same requirement for an oil spill contingency plan applies to the owner or operator of a facility with qualified oil-filled operational equipment that chooses to implement alternative requirements instead of general secondary containment requirements as provided in 40 CFR 112.7(k).

- Attachment D is a checklist for Tier II Qualified Facilities.
- Attachment E is for recording additional comments or notes.
- Attachment F is for recording information about photos.

FACILITY INFORMATION			
FACILITY NAME:			
LATITUDE:	LONGITUDE:	GPS DATUM:	
Section/Township/Range:	FRS#/OIL DATABASE ID:	ICIS#:	
ADDRESS:			
CITY:	STATE:	ZIP:	COUNTY:
MAILING ADDRESS (IF DIFFERENT FROM FACILITY ADDRESS – IF NOT, PRINT "SAME"):			
CITY:	STATE:	ZIP:	COUNTY:
TELEPHONE:	FACILITY CONTACT NAME/TITLE:		
OWNER NAME:			
OWNER ADDRESS:			
CITY:	STATE:	ZIP:	COUNTY:
TELEPHONE:	FAX:	EMAIL:	
FACILITY OPERATOR NAME (IF DIFFERENT FROM OWNER – IF NOT, PRINT "SAME"):			
OPERATOR ADDRESS:			
CITY:	STATE:	ZIP:	COUNTY:
TELEPHONE:	OPERATOR CONTACT NAME/TITLE:		
FACILITY TYPE:		NAICS CODE:	
HOURS PER DAY FACILITY ATTENDED:	TOTAL FACILITY CAPACITY:		
TYPE(S) OF OIL STORED:			
LOCATED IN INDIAN COUNTRY? ☐ YES ☐ NO RESERVATION NAME:			

INSPECTION/PLAN REVIEW INFORMATION		
PLAN REVIEW DATE:	REVIEWER NAME:	
INSPECTION DATE:	TIME:	ACTIVITY ID NO:
LEAD INSPECTOR:		
OTHER INSPECTOR(S):		

INSPECTION ACKNOWLEDGMENT	
I performed an SPCC inspection at the facility specified above.	
INSPECTOR SIGNATURE:	DATE:
SUPERVISOR REVIEW/SIGNATURE:	DATE:

SPCC GENERAL APPLICABILITY—40 CFR 112.1

IS THE FACILITY REGULATED UNDER 40 CFR part 112?

The completely buried oil storage capacity is over 42,000 U.S. gallons, **OR** the aggregate aboveground oil storage capacity is over 1,320 U.S. gallons **AND** ☐ Yes ☐ No

The facility is a non-transportation-related facility engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, using, or consuming oil and oil products, which due to its location could reasonably be expected to discharge oil into or upon the navigable waters of the United States ☐ Yes ☐ No

AFFECTED WATERWAY(S):	DISTANCE:

FLOW PATH TO WATERWAY:

Note: The following storage capacity is not considered in determining applicability of SPCC requirements:

- *Equipment subject to the authority of the U.S. Department of Transportation, U.S. Department of the Interior, or Minerals Management Service, as defined in Memoranda of Understanding dated November 24, 1971, and November 8, 1993; Tank trucks that return to an otherwise regulated facility that contain only residual amounts of oil (EPA Policy letter)*
- *Completely buried tanks subject to all the technical requirements of 40 CFR part 280 or a state program approved under 40 CFR part 281;*
- *Underground oil storage tanks deferred under 40 CFR part 280 that supply emergency diesel generators at a nuclear power generation facility licensed by the Nuclear Regulatory Commission (NRC) and subject to any NRC provision regarding design and quality criteria, including but not limited to CFR part 50;*
- *Any facility or part thereof used exclusively for wastewater treatment (production, recovery or recycling of oil is not considered wastewater treatment); (This does not include other oil containers located at a wastewater treatment facility, such as generator tanks or transformers)*
- *Containers smaller than 55 U.S. gallons;*
- *Permanently closed containers (as defined in §112.2);*
- *Motive power containers(as defined in §112.2);*
- *Hot-mix asphalt or any hot-mix asphalt containers;*
- *Heating oil containers used solely at a single-family residence;*
- *Pesticide application equipment and related mix containers;*
- *Any milk and milk product container and associated piping and appurtenances; and*
- *Intra-facility gathering lines subject to the regulatory requirements of 49 CFR part 192 or 195.*

Does the facility have an SPCC Plan? ☐ Yes ☐ No

FACILITY RESPONSE PLAN (FRP) APPLICABILITY—40 CFR 112.20(f)

A non-transportation related onshore facility is required to prepare and implement an FRP as outlined in 40 CFR 112.20 if:

☐ The facility transfers oil over water to or from vessels and has a total oil storage capacity greater than or equal to 42,000 U.S. gallons, **OR**

☐ The facility has a total oil storage capacity of at least 1 million U.S. gallons, **AND** at least one of the following is true:

- ☐ The facility does not have secondary containment sufficiently large to contain the capacity of the largest aboveground tank plus sufficient freeboard for precipitation.
- ☐ The facility is located at a distance such that a discharge could cause injury to fish and wildlife and sensitive environments.
- ☐ The facility is located such that a discharge would shut down a public drinking water intake.
- ☐ The facility has had a reportable discharge greater than or equal to 10,000 U.S. gallons in the past 5 years.

Facility has FRP: ☐ Yes ☐ No ☐ NA	FRP Number:

Facility has a completed and signed copy of Appendix C, Attachment C-II, "Certification of the Applicability of the Substantial Harm Criteria." ☐ Yes ☐ No

Comments:

SPCC TIER II QUALIFIED FACILITY APPLICABILITY—40 CFR 112.3(g)(2)	
The aggregate aboveground oil storage capacity is 10,000 U.S. gallons or less **AND**	☐ Yes ☐ No
In the three years prior to the SPCC Plan self-certification date, or since becoming subject to the rule (if the facility has been in operation for less than three years), the facility has **NOT** had:	
• A single discharge as described in §112.1(b) exceeding 1,000 U.S. gallons, **OR**	☐ Yes ☐ No
• Two discharges as described in §112.1(b) each exceeding 42 U.S. gallons within any twelve-month period[1]	☐ Yes ☐ No
IF ***YES*** TO ALL OF THE ABOVE, THEN THE FACILITY IS A TIER II QUALIFIED FACILITY[2] SEE ATTACHMENT D FOR TIER II QUALIFIED FACILITY CHECKLIST	

REQUIREMENTS FOR PREPARATION AND IMPLEMENTATION OF A SPCC PLAN—40 CFR 112.3			
Date facility began operations:			
Date of initial SPCC Plan preparation:		Current Plan version (date/number):	
112.3(a)	**For facilities (except farms), including mobile or portable facilities:**		
	• In operation on or prior to November 10, 2011: Plan prepared and/or amended and fully implemented by **November 10, 2011**		☐ Yes ☐ No ☐ NA
	• Beginning operations after November 10, 2011, Plan prepared and fully implemented before beginning operations		☐ Yes ☐ No ☐ NA
	For farms (as defined in §112.2):		
	• In operation on or prior to August 16, 2002: Plan maintained, amended and implemented by **May 10, 2013**		☐ Yes ☐ No ☐ NA
	• Beginning operations after August 16, 2002 through May 10, 2013: Plan prepared and fully implemented by **May 10, 2013**		☐ Yes ☐ No ☐ NA
	• Beginning operations after May 10, 2013: Plan prepared and fully implemented before beginning operations		☐ Yes ☐ No ☐ NA
112.3(d)	Plan is certified by a registered Professional Engineer (PE) and includes statements that the PE attests:		☐ Yes ☐ No ☐ NA
	• PE is familiar with the requirements of 40 CFR part 112		☐ Yes ☐ No ☐ NA
	• PE or agent has visited and examined the facility		☐ Yes ☐ No ☐ NA
	• Plan is prepared in accordance with good engineering practice including consideration of applicable industry standards and the requirements of 40 CFR part 112		☐ Yes ☐ No ☐ NA
	• Procedures for required inspections and testing have been established		☐ Yes ☐ No ☐ NA
	• Plan is adequate for the facility		☐ Yes ☐ No ☐ NA

PE Name:	License No.:	State:	Date of certification:

112.3(e)(1)	Plan is available onsite if attended at least 4 hours per day. If facility is unattended, Plan is available at the nearest field office. *(Please note nearest field office contact information in comments section below.)*	☐ Yes ☐ No ☐ NA

[1] Oil discharges that result from natural disasters, acts of war, or terrorism are not included in this determination. The gallon amount(s) specified (either 1,000 or 42) refers to the amount of oil that actually reaches navigable waters or adjoining shorelines not the total amount of oil spilled. The entire volume of the discharge is oil for this determination.

[2] An owner/operator who self-certifies a Tier II SPCC Plan may include environmentally equivalent alternatives and/or secondary containment impracticability determinations when reviewed and certified by a PE.

Comments:		

AMENDMENT OF SPCC PLAN BY REGIONAL ADMINISTRATOR (RA)—40 CFR 112.4		
112.4(a),(c)	Has the facility discharged more than 1,000 U.S. gallons of oil in a single reportable discharge or more than 42 U.S. gallons in each of two reportable discharges in any 12-month period?[3]	☐ Yes ☐ No
If **YES**	• Was information submitted to the RA as required in §112.4(a)?[4]	☐ Yes ☐ No ☐ NA
	• Was information submitted to the appropriate agency or agencies in charge of oil pollution control activities in the State in which the facility is located§112.4(c)	☐ Yes ☐ No ☐ NA
	• Date(s) and volume(s) of reportable discharges(s) under this section: _____	
	• Were the discharges reported to the NRC[5]?	☐ Yes ☐ No
112.4(d),(e)	Have changes required by the RA been implemented in the Plan and/or facility?	☐ Yes ☐ No ☐ NA
Comments:		

AMENDMENT OF SPCC PLAN BY THE OWNER OR OPERATOR—40 CFR 112.5		
112.5(a)	Has there been a change at the facility that materially affects the potential for a discharge described in §112.1(b)?	☐ Yes ☐ No
If **YES**	• Was the Plan amended within six months of the change?	☐ Yes ☐ No
	• Were amendments implemented within six months of any Plan amendment?	☐ Yes ☐ No
112.5(b)	Review and evaluation of the Plan completed at least once every 5 years?	☐ Yes ☐ No ☐ NA
	Following Plan review, was Plan amended within six months to include more effective prevention and control technology that has been field-proven to significantly reduce the likelihood of a discharge described in §112.1(b)?	☐ Yes ☐ No ☐ NA
	Amendments implemented within six months of any Plan amendment?	☐ Yes ☐ No ☐ NA
	Five year Plan review and evaluation documented?	☐ Yes ☐ No ☐ NA
112.5(c)	Professional Engineer certification of any technical Plan amendments in accordance with all applicable requirements of §112.3(d) *[Except for self-certified Plans]*	☐ Yes ☐ No ☐ NA

Name:	License No.:	State:	Date of certification:
Reason for amendment:			

[3] A reportable discharge is a discharge as described in §112.1(b)(see 40 CFR part 110). The gallon amount(s) specified (either 1,000 or 42) refers to the amount of oil that actually reaches navigable waters or adjoining shorelines not the total amount of oil spilled. The entire volume of the discharge is oil for this determination.

[4] Triggering this threshold may disqualify the facility from meeting the Qualified Facility criteria if it occurred in the three years prior to self certification

[5] Inspector Note-Confirm any spills identified above were reported to NRC

Comments:

GENERAL SPCC REQUIREMENTS—40 CFR 112.7		PLAN	FIELD
Management approval at a level of authority to commit the necessary resources to fully implement the Plan[6]		☐ Yes ☐ No	
Plan follows sequence of the rule or is an equivalent Plan meeting all applicable rule requirements and includes a cross-reference of provisions		☐ Yes ☐ No ☐ NA	
If Plan calls for facilities, procedures, methods, or equipment not yet fully operational, details of their installation and start-up are discussed *(Note: Relevant for inspection evaluation and testing baselines.)*		☐ Yes ☐ No ☐ NA	
112.7(a)(2)	The Plan includes deviations from the requirements of §§112.7(g), (h)(2) and (3), and (i) and applicable subparts B and C of the rule, except the secondary containment requirements in §§112.7(c) and (h)(1), 112.8(c)(2),112.8(c)(11), 112.12(c)(2), and 112.12(c)(11)	☐ Yes ☐ No ☐ NA	
If **YES**	• The Plan states reasons for nonconformance	☐ Yes ☐ No ☐ NA	
	• Alternative measures described in detail and provide equivalent environmental protection *(Note: Inspector should document if the environmental equivalence is implemented in the field, in accordance with the Plan's description)*	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA

[6] May be part of the Plan or demonstrated elsewhere.

Describe each deviation and reasons for nonconformance:

		PLAN	FIELD
112.7(a)(3)	Plan describes physical layout of facility and includes a diagram[7] that identifies: • Location and contents of all regulated fixed oil storage containers • Storage areas where mobile or portable containers are located • Completely buried tanks otherwise exempt from the SPCC requirements (marked as "exempt") • Transfer stations • Connecting pipes, including intra-facility gathering lines that are otherwise exempt from the requirements of this part under §112.1(d)(11)	☐ Yes ☐ No	☐ Yes ☐ No
	Plan addresses each of the following:		
(i)	For each fixed container, type of oil and storage capacity (see Attachment A of this checklist). For mobile or portable containers, type of oil and storage capacity for each container or an estimate of the potential number of mobile or portable containers, the types of oil, and anticipated storage capacities	☐ Yes ☐ No	☐ Yes ☐ No
(ii)	Discharge prevention measures, including procedures for routine handling of products (loading, unloading, and facility transfers, etc.)	☐ Yes ☐ No	☐ Yes ☐ No
(iii)	Discharge or drainage controls, such as secondary containment around containers, and other structures, equipment, and procedures	☐ Yes ☐ No	☐ Yes ☐ No

[7] Note in comments any discrepancies between the facility diagram, the description of the physical layout of facility, and what is observed in the field

	for the control of a discharge		
(iv)	Countermeasures for discharge discovery, response, and cleanup (both facility's and contractor's resources)	☐ Yes ☐ No	☐ Yes ☐ No
(v)	Methods of disposal of recovered materials in accordance with applicable legal requirements	☐ Yes ☐ No	
(vi)	Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors with an agreement for response, and all Federal, State, and local agencies who must be contacted in the case of a discharge as described in §112.1(b)	☐ Yes ☐ No	
112.7(a)(4)	***Does not apply if the facility has submitted an FRP under §112.20:*** ☐ Yes ☐ No ☐ NA Plan includes information and procedures that enable a person reporting an oil discharge as described in §112.1(b) to relate information on the: • Exact address or location and phone number of the facility; • Date and time of the discharge; • Type of material discharged; • Estimates of the total quantity discharged; • Estimates of the quantity discharged as described in §112.1(b); • Source of the discharge; • Description of all affected media; • Cause of the discharge; • 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.		
112.7(a)(5)	***Does not apply if the facility has submitted a FRP under §112.20:*** Plan organized so that portions describing procedures to be used when a discharge occurs will be readily usable in an emergency	☐ Yes ☐ No ☐ NA	
112.7(b)	Plan includes a prediction of the direction, rate of flow, and total quantity of oil that could be discharged for each type of major equipment failure where experience indicates a reasonable potential for equipment failure	☐ Yes ☐ No ☐ NA	
Comments:			

		PLAN	**FIELD**
112.7(c)	Appropriate containment and/or diversionary structures or equipment are provided to prevent a discharge as described in §112.1(b), **except as provided in §112.7(k) of this section for certain qualified operational equipment**. The entire containment system, including walls and floors, are capable of containing oil and are constructed to prevent escape of a discharge from the containment system before cleanup occurs. The method, design, and capacity for secondary containment address the typical failure mode and the most likely quantity of oil that would be discharged. See Attachment A of this checklist. **For onshore facilities**, one of the following or its equivalent: • Dikes, berms, or retaining walls sufficiently impervious to contain oil; • Curbing or drip pans; • Sumps and collection systems; • Culverting, gutters or other drainage systems; • Weirs, booms or other barriers; • Spill diversion pond; • Retention ponds; or • Sorbent materials.		
	Identify which of the following are present at the facility and if appropriate containment and/or diversionary structures or equipment are provided as described above:		
	☐ Bulk storage containers	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	☐ Mobile/portable containers	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	☐ Oil-filled operational equipment (as defined in 112.2)	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	☐ Other oil-filled equipment (i.e., manufacturing equipment)	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA

	☐ Piping and related appurtenances	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	☐ Mobile refuelers or non-transportation-related tank cars	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	☐ Transfer areas, equipment and activities	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	☐ Identify any other equipment or activities that are not listed above: _____	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
112.7(d)	Secondary containment for one (or more) of the following provisions is determined to be impracticable: ☐ General secondary containment §112.7(c) ☐ Bulk storage containers §§112.8(c)(2)/112.12(c)(2) ☐ Loading/unloading rack §112.7(h)(1) ☐ Mobile/portable containers §§112.8(c)(11)/ 112.12(c)(11)	☐ Yes ☐ No	
If **YES**	• The impracticability of secondary containment is clearly demonstrated and described in the Plan	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• For bulk storage containers,[8] periodic integrity testing of containers and integrity and leak testing of the associated valves and piping is conducted	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	(Does not apply if the facility has submitted a FRP under §112.20): • Contingency Plan following the provisions of 40 CFR part 109 is provided (see Attachment C of this checklist) **AND**	☐ Yes ☐ No ☐ NA	
	• Written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA

Comments:

		PLAN	**FIELD**
112.7(e)	Inspections and tests conducted in accordance with written procedures	☐ Yes ☐ No	☐ Yes ☐ No
	Record of inspections or tests signed by supervisor or inspector	☐ Yes ☐ No	☐ Yes ☐ No
	Kept with Plan for at least 3 years (see Attachment B of this checklist)[9]	☐ Yes ☐ No	☐ Yes ☐ No
112.7(f)	Personnel, training, and oil discharge prevention procedures		
(1)	Training of oil-handling personnel in operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and contents of SPCC Plan	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(2)	Person designated as accountable for discharge prevention at the facility and reports to facility management	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(3)	Discharge prevention briefings conducted at least once a year for oil handling personnel to assure adequate understanding of the Plan. Briefings highlight and describe known discharges as described in §112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
112.7(g)	Plan describes how to: • Secure and control access to the oil handling, processing and	☐ Yes ☐ No ☐	☐ Yes ☐ No ☐ NA

[8] These additional requirements apply only to bulk storage containers, when an impracticability determination has been made by the PE

[9] Records of inspections and tests kept under usual and customary business practices will suffice

	storage areas; • Secure master flow and drain valves; • Prevent unauthorized access to starter controls on oil pumps; • Secure out-of-service and loading/unloading connections of oil pipelines; and • Address the appropriateness of security lighting to both prevent acts of vandalism and assist in the discovery of oil discharges.	NA	
112.7(h)	Tank car and tank truck loading/unloading rack[10] is present at the facility ☐ Yes ☐ No *Loading/unloading rack* means a fixed structure (such as a platform, gangway) necessary for loading or unloading a tank truck or tank car, which is located at a facility subject to the requirements of this part. A loading/unloading rack includes a loading or unloading arm, and may include any combination of the following: piping assemblages, valves, pumps, shut-off devices, overfill sensors, or personnel safety devices.		
If **YES** (1)	Does loading/unloading rack drainage flow to catchment basin or treatment facility designed to handle discharges or use a quick drainage system?	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	Containment system holds at least the maximum capacity of the largest single compartment of a tank car/truck loaded/unloaded at the facility	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(2)	An interlocked warning light or physical barriers, warning signs, wheel chocks, or vehicle brake interlock system in the area adjacent to the **loading or unloading rack** to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(3)	Lower-most drains and all outlets on tank cars/trucks inspected prior to filling/departure, and, if necessary ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Comments:			

		PLAN	FIELD
112.7(i)	Brittle fracture evaluation of field-constructed aboveground containers is conducted after tank repair, alteration, reconstruction, or change in service that might affect the risk of a discharge or after a discharge/failure due to brittle fracture or other catastrophe, and appropriate action taken as necessary (applies to only field-constructed aboveground containers)	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
112.7(j)	Discussion of conformance with applicable more stringent State rules, regulations, and guidelines and other effective discharge prevention and containment procedures listed in 40 CFR part 112	☐ Yes ☐ No ☐ NA	
112.7(k)	Qualified oil-filled operational equipment is present at the facility[11] ☐ Yes ☐ No *Oil-filled operational equipment* means equipment that includes an oil storage container (or multiple containers) in which the oil is present solely to support the function of the apparatus or the device. Oil-filled operational equipment is not considered a bulk storage container, and does not include oil-filled manufacturing equipment (flow-through process). Examples of oil-filled operational equipment include, but are not limited to, hydraulic systems, lubricating systems (e.g., those for pumps, compressors and other rotating equipment, including pumpjack lubrication systems), gear boxes, machining coolant systems, heat transfer systems, transformers, circuit breakers, electrical switches, and other systems containing oil solely to enable the operation of the device.		
If **YES**	Check which apply: Secondary Containment provided in accordance with 112.7(c) ☐ Alternative measure described below (confirm eligibility) ☐		

[10] Note that a tank car/truck loading/unloading rack must be present for §112.7(h) to apply

[11] This provision does not apply to oil-filled manufacturing equipment (flow-through process)

112.7(k)	Qualified Oil-Filled Operational Equipment • Has a single reportable discharge as described in §112.1(b) from any oil-filled operational equipment exceeding 1,000 U.S. gallons occurred within the three years prior to Plan certification date?		☐ Yes ☐ No ☐ NA
	• Have two reportable discharges as described in §112.1(b) from any oil-filled operational equipment each exceeding 42 U.S. gallons occurred within any 12-month period within the three years prior to Plan certification date?[12]		☐ Yes ☐ No ☐ NA
	*If **YES** for either, secondary containment in accordance with §112.7(c) is required*		
	• Facility procedure for inspections or monitoring program to detect equipment failure and/or a discharge is established and documented	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	Does not apply if the facility has submitted a FRP under §112.20: • Contingency plan following 40 CFR part 109 (see Attachment C of this checklist) is provided in Plan **AND**	☐ Yes ☐ No ☐ NA	
	• Written commitment of manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful is provided in Plan	☐ Yes ☐ No ☐ NA	

Comments:

ONSHORE FACILITIES (EXCLUDING PRODUCTION) **40 CFR 112.8/112.12**		**PLAN**	**FIELD**
112.8(b)/ 112.12(b) Facility Drainage			
Diked Areas (1)	Drainage from diked storage areas is: • Restrained by valves, except where facility systems are designed to control such discharge, **OR** • Manually activated pumps or ejectors are used and the condition of the accumulation is inspected prior to draining dike to ensure no oil will be discharged	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(2)	Diked storage area drain valves are manual, open-and-closed design (not flapper-type drain valves)	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	If drainage is released directly to a watercourse and not into an onsite wastewater treatment plant, retained storm water is inspected and discharged per §§112.8(c)(3)(ii), (iii), and (iv) or §§112.12(c)(3)(ii), (iii), and (iv).	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Undiked Areas (3)	Drainage from undiked areas with a potential for discharge designed to flow into ponds, lagoons, or catchment basins to retain oil or return it to facility. Catchment basin located away from flood areas.[13]	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(4)	If facility drainage not engineered as in (b)(3) (i.e., drainage flows	☐ Yes ☐ No ☐	☐ Yes ☐ No ☐ NA

[12] Oil discharges that result from natural disasters, acts of war, or terrorism are not included in this determination. The gallon amount(s) specified (either 1,000 or 42) refers to the amount of oil that actually reaches navigable waters or adjoining shorelines not the total amount of oil spilled. The entire volume of the discharge is oil for this determination.

[13] Oil discharges that result from natural disasters, acts of war, or terrorism are not included in this determination. The gallon amount(s) specified (either 1,000 or 42) refers to the amount of oil that actually reaches navigable waters or adjoining shorelines not the total amount of oil spilled. The entire volume of the discharge is oil for this determination.

	into ponds, lagoons, or catchment basins) then the facility is equipped with a diversion system to retain oil in the facility in the event of an uncontrolled discharge.[14]	NA	
(5)	Are facility drainage waters continuously treated in more than one treatment unit and pump transfer is needed?	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
If ***YES***	• Two "lift" pumps available and at least one permanently installed	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Facility drainage systems engineered to prevent a discharge as described in §112.1(b) in the case of equipment failure or human error	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA

Comments:

112.8(c)/112.12(c) Bulk Storage Containers ☐ NA

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

If bulk storage containers are not present, mark this section Not Applicable (NA). If present, complete this section and Attachment A of this checklist.

(1)	Containers materials and construction are compatible with material stored and conditions of storage such as pressure and temperature	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(2)	Except for mobile refuelers and other non-transportation-related tank trucks, construct all bulk storage tank installations with secondary containment to hold capacity of largest container and sufficient freeboard for precipitation	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	Diked areas sufficiently impervious to contain discharged oil **OR**	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	Alternatively, any discharge to a drainage trench system will be safely confined in a facility catchment basin or holding pond	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
		PLAN	**FIELD**
(3)	Is there drainage of uncontaminated rainwater from diked areas into a storm drain or open watercourse?	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
If **YES**	• Bypass valve normally sealed closed	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Retained rainwater is inspected to ensure that its presence will not cause a discharge as described in §112.1(b)	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Bypass valve opened and resealed under responsible supervision	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Adequate records of drainage are kept; for example, records required under permits issued in accordance with 40 CFR §§122.41(j)(2) and (m)(3)	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(4)	For completely buried metallic tanks installed on or after January 10, 1974 (if not exempt from SPCC regulation because subject to all of the technical requirements of 40 CFR part 280 or 281):		
	• Provide corrosion protection with coatings or cathodic protection compatible with local soil conditions	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Regular leak testing conducted	☐ Yes ☐ No ☐	☐ Yes ☐ No ☐ NA

[14] These provisions apply only when a facility drainage system is used for containment; otherwise mark NA

		NA	
(5)	The buried section of partially buried or bunkered metallic tanks protected from corrosion with coatings or cathodic protection compatible with local soil conditions	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(6)	• Test or inspect each aboveground container for integrity on a regular schedule and whenever you make material repairs. Techniques include, but are not limited to: visual inspection, hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or other system of non-destructive testing	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Appropriate qualifications for personnel performing tests and inspections are identified in the Plan and have been assessed in accordance with industry standards	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• The frequency and type of testing and inspections are documented, are in accordance with industry standards and take into account the container size, configuration and design	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Comparison records of aboveground container integrity testing are maintained	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Container supports and foundations regularly inspected	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Outside of containers frequently inspected for signs of deterioration, discharges, or accumulation of oil inside diked areas	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Records of all inspections and tests maintained[15]	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Integrity Testing Standard identified in the Plan:			
112.12 (c)(6)(ii) *(Applies to AFVO Facilities only)*	Conduct formal visual inspection on a regular schedule for bulk storage containers that meet all of the following conditions: • Subject to 21 CFR part 110; • Elevated; • Constructed of austenitic stainless steel; • Have no external insulation; and • Shop-fabricated.	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas.	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	You must determine and document in the Plan the appropriate qualifications for personnel performing tests and inspections.[15]	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
		PLAN	**FIELD**
(7)	Leakage through defective internal heating coils controlled: • Steam returns and exhaust lines from internal heating coils that discharge into an open watercourse are monitored for contamination, **OR**	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
	• Steam returns and exhaust lines pass through a settling tank, skimmer, or other separation or retention system	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(8)	Each container is equipped with at least one of the following for liquid level sensing: • High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station, or audible air vent in smaller facilities; • High liquid level pump cutoff devices set to stop flow at a predetermined container content level; • Direct audible or code signal communication between container gauger and pumping station; • Fast response system for determining liquid level (such as digital computers, telepulse, or direct vision gauges) and a person present to monitor gauges and overall filling of bulk containers; or • Regularly test liquid level sensing devices to ensure proper operation.	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA

[15] Records of inspections and tests kept under usual and customary business practices will suffice

(9)	Effluent treatment facilities observed frequently enough to detect possible system upsets that could cause a discharge as described in §112.1(b)	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(10)	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	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(11)	Mobile or portable containers positioned to prevent a discharge as described in §112.1(b). Mobile or portable containers (excluding mobile refuelers and other non-transportation-related tank trucks) have secondary containment with sufficient capacity to contain the largest single compartment or container and sufficient freeboard to contain precipitation	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA
112.8(d)/112.12(d)Facility transfer operations, pumping, and facility process			
(1)	Buried piping installed or replaced on or after August 16, 2002 has protective wrapping or coating Buried piping installed or replaced on or after August 16, 2002 is also cathodically protected or otherwise satisfies corrosion protection standards for piping in 40 CFR part 280 or 281 Buried piping exposed for any reason is inspected for deterioration; corrosion damage is examined; and corrective action is taken	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA
(2)	Piping terminal connection at the transfer point is marked as to origin and capped or blank-flanged when not in service or in standby service for an extended time	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(3)	Pipe supports are properly designed to minimize abrasion and corrosion and allow for expansion and contraction	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
(4)	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 to assess their general condition Integrity and leak testing conducted on buried piping at time of installation, modification, construction, relocation, or replacement	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA ☐ Yes ☐ No ☐ NA
(5)	Vehicles warned so that no vehicle endangers aboveground piping and other oil transfer operations	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA

Comments:

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ATTACHMENT A: SPCC FIELD INSPECTION AND PLAN REVIEW TABLE

Documentation of Field Observations for Containers and Associated Requirements

Inspectors should use this table to document observations of containers as needed.

Containers and Piping

Check containers for leaks, specifically looking for: drip marks, discoloration of tanks, puddles containing spilled or leaked material, corrosion, cracks, and localized dead vegetation, and standards/specifications of construction.

Check aboveground container foundation for: cracks, discoloration, and puddles containing spilled or leaked material, settling, gaps between container and foundation, and damage caused by vegetation roots.

Check all piping for: droplets of stored material, discoloration, corrosion, bowing of pipe between supports, evidence of stored material seepage from valves or seals, evidence of leaks, and localized dead vegetation. For all aboveground piping, include the general condition of flange joints, valve glands and bodies, drip pans, pipe supports, bleeder and gauge valves, and other such items (Document in comments section of §112.8(d) or 112.12(d).)

Secondary Containment (Active and Passive)

Check secondary containment for: containment system (including walls and floor) ability to contain oil such that oil will not escape the containment system before cleanup occurs, proper sizing, cracks, discoloration, presence of spilled or leaked material (standing liquid), erosion, corrosion, penetrations in the containment system, and valve conditions.

Check dike or berm systems for: level of precipitation in dike/available capacity, operational status of drainage valves (closed), dike or berm impermeability, debris, erosion, impermeability of the earthen floor/walls of diked area, and location/status of pipes, inlets, drainage around and beneath containers, presence of oil discharges within diked areas.

Check drainage systems for: an accumulation of oil that may have resulted from any small discharge, including field drainage systems (such as drainage ditches or road ditches), and oil traps, sumps, or skimmers. Ensure any accumulations of oil have been promptly removed.

Check retention and drainage ponds for: erosion, available capacity, presence of spilled or leaked material, debris, and stressed vegetation.

Check active measures (countermeasures) for: amount indicated in plan is available and appropriate; deployment procedures are realistic; material is located so that they are readily available; efficacy of discharge detection; availability of personnel and training, appropriateness of measures to prevent a discharge as described in §112.1(b).

Container ID/ General Condition[16] Aboveground or Buried Tank	Storage Capacity and Type of Oil	Type of Containment/ Drainage Control	Overfill Protection and Testing & Inspections

[16] Identify each tank with either an A to indicate aboveground or B for completely buried

ATTACHMENT A: SPCC FIELD INSPECTION AND PLAN REVIEW TABLE (CONT.)

Documentation of Field Observations for Containers and Associated Requirements

Container ID/ General Condition[17] Aboveground or Buried Tank	Storage Capacity and Type of Oil	Type of Containment/ Drainage Control	Overfill Protection and Testing & Inspections

[17] Identify each tank with either an A to indicate aboveground or B for completely buried

ATTACHMENT B: SPCC INSPECTION AND TESTING CHECKLIST

Required Documentation of Tests and Inspections

Records of inspections and tests required by 40 CFR part 112 signed by the appropriate supervisor or inspector must be kept by all facilities with the SPCC Plan for a period of three years. Records of inspections and tests conducted under usual and customary business practices will suffice. Documentation of the following inspections and tests should be kept with the SPCC Plan.

Inspection or Test		Documentation		Not Applicable
		Present	Not Present	
112.7–General SPCC Requirements				
(d)	Integrity testing for bulk storage containers with no secondary containment system and for which an impracticability determination has been made	☐	☐	☐
(d)	Integrity and leak testing of valves and piping associated with bulk storage containers with no secondary containment system and for which an impracticability determination has been made	☐	☐	☐
(h)(3)	Inspection of lowermost drain and all outlets of tank car or tank truck prior to filling and departure from loading/unloading rack	☐	☐	☐
(i)	Evaluation of field-constructed aboveground containers for potential for brittle fracture or other catastrophic failure when the container undergoes a repair, alteration, reconstruction or change in service or has discharged oil or failed due to brittle fracture failure or other catastrophe	☐	☐	☐
k(2)(i)	Inspection or monitoring of qualified oil-filled operational equipment when the equipment meets the qualification criteria in §112.7(k)(1) and facility owner/operator chooses to implement the alternative requirements in §112.7(k)(2) that include an inspection or monitoring program to detect oil-filled operational equipment failure and discharges	☐	☐	☐
112.8/112.12–Onshore Facilities (excluding oil production facilities)				
(b)(1), (b)(2)	Inspection of storm water released from diked areas into facility drainage directly to a watercourse	☐	☐	☐
(c)(3)	Inspection of rainwater released directly from diked containment areas to a storm drain or open watercourse before release, open and release bypass valve under supervision, and records of drainage events	☐	☐	☐
(c)(4)	Regular leak testing of completely buried metallic storage tanks installed on or after January 10, 1974 and regulated under 40 CFR 112	☐	☐	☐
(c)(6)	Regular integrity testing of aboveground containers and integrity testing after material repairs, including comparison records	☐	☐	☐
(c)(6), (c)(10)	Regular visual inspections of the outsides of aboveground containers, supports and foundations	☐	☐	☐
(c)(6)	Frequent inspections of diked areas for accumulations of oil	☐	☐	☐
(c)(8)(v)	Regular testing of liquid level sensing devices to ensure proper operation	☐	☐	☐
(c)(9)	Frequent observations of effluent treatment facilities to detect possible system upsets that could cause a discharge as described in §112.1(b)	☐	☐	☐
(d)(1)	Inspection of buried piping for damage when piping is exposed and additional examination of corrosion damage and corrective action, if present	☐	☐	☐
(d)(4)	Regular inspections of aboveground valves, piping and appurtenances and assessments of the general condition of flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces	☐	☐	☐
(d)(4)	Integrity and leak testing of buried piping at time of installation, modification, construction, relocation or replacement	☐	☐	☐

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ATTACHMENT C: SPCC CONTINGENCY PLAN REVIEW CHECKLIST

☐ NA

40 CFR Part 109–Criteria for State, Local and Regional Oil Removal Contingency Plans

If SPCC Plan includes an impracticability determination for secondary containment in accordance with §112.7(d), the facility owner/operator is required to provide an oil spill contingency plan following 40 CFR part 109, unless he or she has submitted a FRP under §112.20. An oil spill contingency plan may also be developed, unless the facility owner/operator has submitted a FRP under §112.20 as one of the required alternatives to general secondary containment for qualified oil filled operational equipment in accordance with §112.7(k).

	109.5–Development and implementation criteria for State, local and regional oil removal contingency plans[18]	**Yes**	**No**
(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.	☐	☐
(b)	Establishment of notification procedures for the purpose of early detection and timely notification of an oil discharge including:	☐	☐
(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., National Contingency Plan (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.	☐	☐
(c)	Provisions to assure that full resource capability is known and can be committed during an oil discharge situation including:	☐	☐
(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 that 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.	☐	☐
(d)	Provisions for well-defined and specific actions to be taken after discovery and notification of an oil discharge including:	☐	☐
(1)	Specification of an oil discharge response operating team consisting of trained, prepared and available operating personnel.	☐	☐
(2)	Pre-designation 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.	☐	☐
(e)	Specific and well defined procedures to facilitate recovery of damages and enforcement measures as provided for by State and local statutes and ordinances.	☐	☐

[18] The contingency plan should be consistent with all applicable state and local plans, Area Contingency Plans, and the NCP.

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ATTACHMENT D: TIER II QUALIFIED FACILITY CHECKLIST ☐ NA

TIER II QUALIFIED FACILITY PLAN REQUIREMENTS —40 CFR 112.6(b)		
112.6(b)(1)	**Plan Certification:** Owner/operator certified in the Plan that:	☐ Yes ☐ No
(i)	He or she is familiar with the requirements of 40 CFR part 112	☐ Yes ☐ No ☐ NA
(ii)	He or she has visited and examined the facility[19]	☐ Yes ☐ No ☐ NA
(iii)	The Plan has been prepared in accordance with accepted and sound industry practices and standards and with the requirements of this part	☐ Yes ☐ No ☐ NA
(iv)	Procedures for required inspections and testing have been established	☐ Yes ☐ No ☐ NA
(v)	He or she will fully implement the Plan	☐ Yes ☐ No ☐ NA
(vi)	The facility meets the qualification criteria set forth under §112.3(g)(2)	☐ Yes ☐ No ☐ NA
(vii)	The Plan does not deviate from any requirements as allowed by §§112.7(a)(2) and 112.7(d), except as described under §112.6(b)(3)(i) or (ii)	☐ Yes ☐ No ☐ NA
(viii)	The Plan and individual(s) responsible for implementing the Plan have the full approval of management and the facility owner or operator has committed the necessary resources to fully implement the Plan.	☐ Yes ☐ No ☐ NA
112.6(b)(2)	**Technical Amendments:** The owner/operator self-certified the Plan's technical amendments for a change in facility design, construction, operation, or maintenance that affected potential for a §112.1(b) discharge	☐ Yes ☐ No ☐ NA
If **YES**	• Certification of technical amendments is in accordance with the self-certification provisions of §112.6(b)(1).	☐ Yes ☐ No ☐ NA
(i)	A PE certified a portion of the Plan (i.e., Plan is informally referred to as a hybrid Plan)	☐ Yes ☐ No ☐ NA
If **YES**	• The PE also certified technical amendments that affect the PE certified portion of the Plan as required under §112.6(b)(4)(ii)	☐ Yes ☐ No ☐ NA
(ii)	The aggregate aboveground oil storage capacity increased to more than 10,000 U.S. gallons as a result of the change	☐ Yes ☐ No ☐ NA
If **YES**	*The facility no longer meets the Tier II qualifying criteria in §112.3(g)(2) because it exceeds 10,000 U.S. gallons in aggregate aboveground storage capacity.*	
	The owner/operator prepared and implemented a Plan within 6 months following the change and had it certified by a PE under §112.3(d)	☐ Yes ☐ No ☐ NA
112.6(b)(3)	**Plan Deviations:** Does the Plan include environmentally equivalent alternative methods or impracticability determinations for secondary containment?	☐ Yes ☐ No ☐ NA
If **YES**	Identify the alternatives in the hybrid Plan:	
	• Environmental equivalent alternative method(s) allowed under §112.7(a)(2);	☐ Yes ☐ No ☐ NA
	• Impracticability determination under §112.7(d)	☐ Yes ☐ No ☐ NA
112.6(b)(4)	• For each environmentally equivalent measure, the Plan is accompanied by a written statement by the PE that describes: the reason for nonconformance, the alternative measure, and how it offers equivalent environmental protection in accordance with §112.7(a)(2);	☐ Yes ☐ No ☐ NA
	• For each secondary containment impracticability determination, the Plan explains the reason for the impracticability determination and provides the alternative measures to secondary containment required in §112.7(d)	☐ Yes ☐ No ☐ NA
	AND	
(i)	PE certifies in the Plan that:	
(A)	He/she is familiar with the requirements of 40 CFR Part 112	☐ Yes ☐ No ☐ NA
(B)	He/she or a representative agent has visited and examined the facility	☐ Yes ☐ No ☐ NA
(C)	The alternative method of environmental equivalence in accordance with §112.7(a)(2) or the determination of impracticability and alternative measures in accordance with §112.7(d) is consistent with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR Part 112.	☐ Yes ☐ No ☐ NA

[19] Note that only the person certifying the Plan can make the site visit

Comments:

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ATTACHMENT E: ADDITIONAL COMMENTS

ATTACHMENT E: ADDITIONAL COMMENTS (CONT.)

ATTACHMENT F: PHOTO DOCUMENTATION NOTES

Photo#	Photographer Name	Time of Photo Taken	Compass Direction	Description

ATTACHMENT F: PHOTO DOCUMENTATION NOTES (CONT.)

Photo#	Photographer Name	Time of Photo Taken	Compass Direction	Description

APPENDIX D

OPERATONS

MANUAL

AND

RESPONSE PLAN

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Appendix D – Table of Contents Page

Operations Manual Completion Guidelines…….. D-2

USCG Response Plan Checklist…… D-22

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

OPERATIONS MANUAL
COMPLETION GUIDELINES

Developed by: USCG MSO ANCHORAGE
Revised: January 1997

United States Coast Guard
Marine Safety Office Anchorage
PO Box 5800
JBER, AK 99505-0800
(907) 428-4152

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

INTRODUCTION

This set of guidelines was prepared by the Captain of the Port (COTP) Western Alaska To help facility operators write their Letter of Intent and Operations Manual. All the information Necessary for operators of facilities handling and storing non-persistent oils, such as Gasoline And #1 and #2 Diesels, to properly write their manual is contained or referenced in this handout.

Included in this guideline is a sample Letter of Intent. Fill in the required information and Submit it to the Captain of the Port (COTP) along with two copies of your operations manual.

The Operations Manual should follow the sequence of this guideline pamphlet, however another sequence format can be selected if a cross reference index is provided. Sections that might not be applicable to mobile (tank-truck) facility operations manuals are indicated by an asterisk (*). Each pager is divided into four sections.

1) Heading

2) The reason for the requirement

3) Required information for manual

4) An example of how to write that section

This handout is for your use and benefit. Feel free to reproduce anything, or to use our format and wording. Hopefully, all you will have to do is use our example and substitute information specific to your operation.

Two copies of the completed Operations Manual must be submitted for examination to the COTP Western Alaska at least 60 days prior to the operation of the facility. The facility must also maintain a current copy to be read and understood by all personnel involved in fuel oil transfers. The facility copy must be readily available to all personnel involved in oil transfer operations and to the COTP representative for examination.

If you have questions concerning the completion of your Operations Manual please contact on of the following numbers:

South Central/Interior Region	271-6718
Bristol Bay/Western Alaska Region	271-6709
North Slope/NW Arctic Region	271-6731
Marine Safety Detachment Kenai	283-3292
Marine Safety Detachment Kodiak	487-5750
Marine Safety Detachment Unalaska	581-5405
Marine Safety Office Anchorage 24 hr	271-6700

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

SAMPLE LETTER OF INTENT

(Your mailing address)

(Date letter submitted)

Captain of the Port
Western Alaska
PO Box 5800
JBER, AK 99505-0800

Dear Sir:

Please accept this as a Letter of Intent to operate a facility capable of transferring oil in bulk to or from any vessel or public vessel with a capacity of 250 or more barrels of oil. The following information is provided to your office under the provisions of Title 33, Code of Federal Regulations, Part 154.110:

FACILILTY OWNER: (Name of Facility Owner)
(Address of Facility Owner)
(Telephone Number(s) of Facility Owner)

FACILITY OPERATOR: (Name of Facility Operator)
(Address of Facility Operator)
(Telephone Number(s) of Facility Operator)

FACILITY INFORMATION: (Name of Facility)
(Address of Facility)
(Telephone Number(s) of Facility)

GEOGRAPHIC LOCATION: (Give geographic location of the facility in relation to the associated body of navigable waters. Include an accurate latitude and longitude position)

PERSONNEL DESIGNATED AS PERSONS-IN-CHARGE (PIC) (List persons the facility operators has designated as qualified persons-in-charge)
The PIC information is generally given in writing in a separate letter so it can be easily up-dated with personnel changes

Sincerely,

(Your Signature)

APPENDIX D - OPERATONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

THE PROPER SEQUENCE FOR THE OPERATIONS MANUAL: 33 CFR 154.310(a)

1. GEOGRAPHICAL LOCATION OF THE FACILITY
2. PHYSICAL DESCRIPTION OF THE FACILITY
3. THE HURS OF OPERATON OF THE FACILITY (*)
4. THE NUMBER, TYPE, AND SIZE OF THE SHIPS THE FACILITY CAN TRANSFER OIL TO OR FROM SIMULTANEOUSLY.
5. FOR EACH PRODUCT TRANSFERRED AT THE FACILITY:
   i. GENERIC OR CHEMICAL NAME
   ii. THE FOLLOWINIG CARGO INFORMATION:
      a. THE NAME OF THE CARGO, AS LISTED IN TABLE 30.25-1 OF 46 CFR,
      b. A DESCRIPTION OF THE APPEARANCE OF THE CARGO,
      c. A DESCRIPTION OF THE ODOR OF THE CARGO,
      d. THE HAZARDS INVOLVED IN HANDLING OF THE CARGO,
      e. THE INSTRUCTIONS FOR THE SAFE HANDLING OF THE CARGO,
      f. THE PROCEDURES TO BE SOLLOWED IF THE CARGO SPILLS OR LEAKS, OR IF A PERSON IS EXPOSED TO THE CARGO, AND,
      g. A LIST OF FIRE FIGHTING PROCEDURES AND EXTINGUISHING AGENTS EFFECTIVE WITH FIRES INVOLVING THE CARGO.
6. THE MINIMUM NUMBER OF PERSONS ON DUTY DURING TRANSFER OPERATIONS AND THEIR DUTIES
7. THE NAMES AND TELEPHONE NUMBERS OF THE QUALIFIED INDIVIDUAL, COAST GUARD, AND OTHER PERSONNEL WHO MAY BE CALLED BY EMPLOYEES OF THE FACILITY FOR EMERGENCY PURPOSES.
8. DUTIES OF THE WATCHMAN, REQUIRED BY 33 CFR 155.810 AND 46 CFR 35.05-1 FOR UNMANNED VESSELS MOORED AT THE FACILITY. (*)
9. DESCRIPTIONS OF EACH COMMUNICATION SYSTEM REQUIRED BY THIS PART.
10. LOCATION AND FACILITES OF EACH PERSONNEL SHELTER, IF ANY. (*)
11. DESCRIPTION AND INSTRUCTIONS FOR THE USE OF DRIP AND DISCHARGE COLLECTION AND VESSEL SLOP RECEPTION FACILITY, IF ANY. (*) (A Mobile Facility may be authorized to use a portable discharge collection of 5-21 gallons.)
12. DESCRIPTION AND LOCATION OF EACH EMERGENCY SHUTDOWN SYSTEM.
13. QUANTITY, TYPE, LOCATION, AND INSTRUCTIONS FOR USE OF MONITORING DEVISES REQUIRED BY 33 CFR 154.525.

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

14. QUANTITY, TYPE, LOCATION, INSTRUCTIONS FOR USE AND TIME LIMITS FOR GAINING ACCESS TO THE CONTQIMNET EQUUIPMENT REQUIRED BY 22 CFR 154.545.
15. QUANTITY, TYPE, LOCATION, AND INSTRUCTIONS FOR USE FIRE EXTINSUISHING EQUIPMENT.
16. MAXIMUM ALLOWABLE QIORKING PRESSURE, INCLUDING MAXIMUM RELIEF VALVE SETTING (OR THE MAXIMUM SYSTEM PRESSURE WHEN RELIEF VALVES ARE NOT PROVIDED) FOR EACH OIL TRANSFER SYSTEM.
17. PROCEDURES FOR:
    i. OPERATING EACH LOADING ARM INCLUDING LIMITATIONS FOR EACH LOADING ARM,
    ii. TRANSFERRING OIL,
    iii. COMPLETION OF PUMPING, AND
    iv. EMERGENCIES.
18. PROCEDURES FOR REPORTING AND INITIAL CONTAINMENT OF OIL DISCHARGES.
19. BRIEF SUMMARY OF APPLICABLE FEDERAL, STATE, AND LOCAL OIL POLLUTION LAWS AND REGULATIONS.
20. PROCEDURES FOR SHIELDIG PORTABLE LIGHTING AURTHORIZED BY THE COTP UNDER 33 CFR 154.570(c).
21. DESCRIPTION OF THE TRAINING AND QUALIFICATION PROGRAMS FOR PERSONS-IN –CHARGE.
22. STATEMENTS EXPLAINING THAT EACH HAZARDOUS MATERIALS TRANSFER HOSE IS MARKED WITH EITHER THE NAME OF EACH PRODUCT WHICH MAY BE TRANSFERRED THROUGH THE HOSE OR WITH LETTERS, NUMBERS OR OTHER SYMBOLS REPRESENTING ALL SUCH PRODUCTS AND THE LOCATION IN THE OPERATIONS MANUAL WHERE A CHART OR LIST OF THE SYMBOLS USED AND A LIST OF THE COMPATIBLE PRODUCTS WHICH MAY BE TRANSFERRED THROUGH THE HOSE CAN BE FOUND FOR CONSULTATION BEFORE EACH TRANSFER.

Note: * - for mobile facility (tank truck) transfer operation manual, indicate address of company or main dispatching office, etc. for geographic location: other sections marked with one (*) may not be applicable.

APPENDIX D – OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

1. THE GEOGRAPHIC LOCATION OF THE FACILITY:

REASON: The Captain of the Port (COTP) is required to know the location of all oil facilities in his zone for oil spill contingency planning and for enforcement of oil pollution prevention regulations.

REQUIREMENT: Give the exact geographic location of the facility. Give the latitude, longitude, and the facility's relative position to the associated body of navigable waters. Include a topographical map or chart is possible.

EXAMPLE: Sawbuck Logging Co., is located on the east side of Baranof Island at the west end of Kasnyku Bay in Chatham Strait, Alaska. 57 13'05"N, 134 51'23"W.

2. A PHYSICAL DESCRIPTION OF THE FACILITY INCLUDING A PLAN OR PLANS, MAPS, DRAWINGS, AERIAL PHOTOGRAPHS, OR DIAGRAMS, SHOWING THE BOUNDRIES OF THE FACILITY SUBJECT TO COAST GUARD JURISDICTION, MOORING AREAS, TRANSFER LOCATIONS, CONTROL STATIONS, WHARFS, THE EXTENT AND SCOPE OF THE PIPING SUBJECT TO THE TESTS REQUIRED BY SEC. 156.170(c)(4) OF THIS CHAPTER, AND THE LOCATION OF SAFETY EQUIPMENT. FOR MOBILE FACILITIES, A PHYSICAL DESCRIPTION OF THE FACILITY:

REASON: In an emergency situation, Coast Guard and civilian response forces would have available a current facility plan to assist in developing a plan of action.

REQUIREMENT: List the following information in this section:

a. Number and holding capacities of your bulk storage tanks.
b. Description of docking facility for bulk fuel vessels, if vessel anchors out, describe proximity to fuel storage areas.
c. Describe types of fuel pipes or hoses, and their connection points. If main fueling line will be supplied by the fueling vessel, so state.
d. Describe type of containment used around bulk storage tank.
e. Describe location of all safety equipment, (including First Aid Equipment), in conjunction with the fuel transfer and storage areas, that is, the location of portable fire extinguishers or any fixed fire fighting systems.
f. Include a plan, drawing or blueprint of your facility. This plan must include the information stated above. Failure to submit this plan with your operations manual will render your manual incomplete and no Letter of Adequacy will be issued to your facility

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

EXAMPLE: The following is a physical description of the Sawbuck Logging Co. fuel transfer facility:

a. The bulk storage tanks consist of two welded 10,000 gallon diesel fuel storage tanks mounted on concrete pads with lined earth filled dike containment enclosure. Enclosure has a maximum capacity of 20,000 gallons.
b. A barge ramp approximately 175' long is located adjacent to the headers on the fuel pier. The ramp has mooring dolphins.
c. Sawbuck Logging Co. has two 3" fueling hoses, one going to each storage tank. The hoses begin at the duel fueling header, where they connect to fueling hoses supplied by the fueling barge.
d. Containment around the storage tank area consists of a lined earth fill dike that can contain a maximum of 20,000 gallons.
e. One 20 pound hand-held dry chemical extinguisher is located on the fuel pier adjacent to the headers and an identical extinguisher is carried up to the storage tank area during each transfer.
f. Enclosed is a blueprint of the Sawbuck Logging Co. facility. We have highlighted on it areas of importance, including the location of storage tanks, the barge ramp, etc.

3. THE HOURS OF OPERATIONS OF THE FACILITY

REASON: Provides facility and Coast Guard personnel with knowledge of when transfers are conducted. Additional safety precautions would be required at night.

REQUIREMENTS: State the hours the facility will be engaged in a fuel transfer. If all fueling will be done in daylight hours, state the hours from sunrise to sunset. If fueling will be done whenever the barge arrives, regardless of time, state the facility plans to operate 24 hours a day.

Example: All fuel transfers at the Sawbuck Logging Co. facility will be done between the hours of 8:00 a.m. and 5:00 p.m. Adequate lighting is supplied by the barge should darkness occur during these hours.

4. THE SIZES, TYPES, AND NUMBER OF VESSELS THE FACILITY CAN TRANSFER OIL FROM OR TO SIMULTANEOUSLY:

REASON: Provides the COTP with a list of vessels operating in the zone. A vessel file will be maintained at MSO Anchorage listing vessel capacity, Bessel owner/operator, etc. All this information is vital in the event of a vessel casualty or oil spill.

REQUIREMENT: List the size and type of vessels which fuel your facility. If your facility can transfer to more than one vessel simultaneously, then state the maximum number of vessels your facility can transfer to.

EXAMPLE: The Sawbuck Logging Co. facility is supplied by only one vessel, the barge Seaspan

834. The barge is 230 feet long, 2129 net tons and has a bulk fuel capacity of 490,000 gallons.

Operations Manual Completion Guidelines

5. FOR EACH DIFFERENT PRODUCT TRANSFERRED AT THE FACILTY, INCLUDE ITEMS a. THROUGH g. LISTED BELOW. (Information from a Materials Safety Data Sheet may also be used.)

REASON: Provides all personnel involves in the transfer operation with a concise guide on cargo handling, hazards and response. By reviewing this section prior to a transfer, personnel may perform a transfer safely.

REQUIREMENTS AND EXAMPLES:

a. THE GENERIC OR COMMON NAME OF THE CARGO AND THE NAME OF THE CARGO AS LISTED IN 46 CFR 30.25-1

Regular Gasoline	gasoline: Automotive (containing not over 4.23 grams lead per gallon)
Unleaded Gasoline	gasoline: Automotive (unleaded)
Diesel	Oil: Diesel

b. A DESCRIPTION OF THE APPEARANCE OF THE CARGO.

CARGO	APPEARANCE
Gasoline:	a light bronze, volatile
Diesel:	a dark amber liquid

c. A DESCRIPTION OF THE ODOR OF THE CARGO.

CARGO	ODOR
Gasoline	sweet, aromatic
Diesel:	distinct, pungent

d. THE HAZARDS INVOLVED IN HANDLING THE CARGO.

The hazards are very much the same for handling all petroleum cargoes. They are susceptible to fire and explosion, they can cause chemical burns upon contact with the skin, and prolonged breathing of the product can be dangerous.

e. THE INSTRUCTIIONS FOR SAFE HANDLING OF THE CARGO.

Instructions are the same for the handling of petroleum products. Keep sparks, open flames, open lights, and other sources of ignition away from the area of handling. Handlers should wear gloves and other protective clothing. Handlers should avoid breathing petroleum vapors directly.

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

f. PROCEDURES TO BE FOLLOWED IF THE CARGO SPILLS, LEAKS, OR IF A PERSON IS EXPOSED TO THE CARGO

Should a leak or spill occur during the transfer or any petroleum product, stop pumping immediately. Close all valves, stop the leak if possible, contain the escaping fuel, commence clean-up activity and restore things to normal before resuming transfer. If a person is exposed to a petroleum cargo, they should try to avoid breathing the vapors and immediately wash any areas of their body that came in contact with the cargo.

g. A LIST OF FIREFIGHTING PROCEDURES AND EXTINGUISHING AGENTS EFFECTIVE WITH FIRES INVOLVING THE CARGO.

For all fires, sound alarm and immediately eliminate all sources which may feed the fire. Stop all fueling operations and have barge move away from pier if possible. Close all valves and secure electrical breakers. List types and locations of fire extinguishers in the area. Examples of effective agents to use on fires would be dry-chemical fire extinguisher, a high velocity water fog or sand.

6. THE MINIMUM NUMBER OF PERSONS ON DUTY DURING THE TRANSFER OPERATION AND THEIR DUTIES.

REASON: Provides person-in-charge with a set of written standards as to the number of personnel required, and their detailed duties. If each person understands and completes his duties, all transfers should be conducted without accident.

REQUIREMENT: The COTP requires that a minimum of two persons be on duty during all transfers. One person should be in the area of the pipe headers and the other should be gauging the tanks.

EXAMPLE: The Sawbuck Logging Co. will have two facility personnel on duty during all transfer operations. (1) One shall be stationed at the fill-line terminus to: (a) maintain visual contact with the barge tankerman and the storage facility, (b) Monitor the fill connections, and (c) Operate the fill line valves as instructed by the barge operator and the person at the storage facility. (2) The second facility person shall be stationed at the storage facility area to: (a) Monitor the liquid level in the storage tanks, and (b) Operate necessary valves at the storage facility. All duty personnel shall be in direct communication.

7. THE NAMES AND TELEPHONE NUMBERS OF QUALIFIED INDIVIDUALS IDENTIFIED UNDER SEC. 154.1026 OF THIS PART AND THE TITLE AND/OR POSITION, AND TELEPHONE NUMBER OF THE COAST GUARD, STATE, LOCAK, AND OTHER PERSONNEL OR AGENCIES, WHO MAY BE CALLED BY EMPLOYEES OF THE FACILITY IN AN EMERGENCY.

REASON: Provides a quick reference guide to all points of contact in an emergency.

main operators, the Coast Guard Marine Safety Office in Anchorage, the local fire and police departments, the local harbormaster and any other departments you feel could be of assistance in the event an emergency occurs. Below is a listing of the main numbers required by the Captain of the Port.

COAST GUARD NATIONAL RESPONSE CENTER (pollution)	(800) 424-8802
COAST GUARD MARINE SAFETY OFFICE ANCHORAGE	(907) 428-4200
ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION	(907) 451-2121
ADEC (weekends and after hours)	(800) 478-9300
ENVIRONMENTAL PROTECTION AGENCY (EPA)	(907) 271-5083
FACILITY QUALIFIED INDIVIDUAL	(907) XXX-XXXX
MAIN NUMBER OF YOUR FACILILTY	(907) XXX-XXXX
NUMBER OF YOUR FACILILTY OPERATOR	(907) XXX-XXXX
YOUR LOCAL POLICE DEPARTMENT	(907) XXX-XXXX
YOUR LOCAL HARBORMASTER OF FISH AND GAME OFFICER	(907) XXX-XXXX

8. THE DUTIES OF THE WATCHMAN, AS REQUIRED BY 33 CFR 155.810 AND 46 CFR 35.05-15 FOR UNMANNED VESSELS MOORED AT THE FACILITY

REASON: Provides procedures for the safety of unmanned barges. All fuel barges are a potential fire of pollution hazard, and their safety must be assured.

REQUIREMENT: Duties of a watchman for unmanned vessels moored at your facility can be found in the titles of the Code of Federal Regulations mentioned above.

EXAMPLE: There are no unmanned vessels moored at Sawbuck Logging Co. Fuel Transfer Facility. The barge that fuels this facility moors at the barge ramp, discharges its cargo, and departs.

9. A DESCRIPTION OF EACH COMMUNICATION SYSTEM REQUIRED:

REASON: All personnel involved in the transfer operation must maintain good, safe communications. All involved personnel must be quickly alerted if a spill or hazardous condition develops.

REQUIREMENT: Some type of communication is required between the tankerman on the vessel and the person-in-charge on the facility side of the transfer. Although in extremely small operations, where there is only a short distance between the two persons-in-charge, voice communication could be allowed, but alone is generally not acceptable. When electric means, such as two-way hand held radios are used, federal regulations require that they be intrinsically safe. It is also recommended that the person gauging the storage tanks be provided a means of communication.

EXAMPLE: At the Sawbuck Logging Co. facility, during all transfers, two-way hand held VHF radios are used by the barge tankerman, the duty person at the fuel line

headers and the duty person at the fuel storage area. All radios are intrinsically wage and meet the Class 1, Division 1, Group C standards. All persons are in direct communications at all times.

10. LOCATION AND FACILITIES OF EACH PERSONNEL SHELTER, IF ANY:

REASON: Provides all transfer personnel with a description of the shelter and describes all facilities located with the structure I n the event of an emergency of bad weather.

REQUIREMENT: If there is some sort of shoreside shelter adjacent to the transfer area, perhaps housing a telephone, coffee pot, raingear, first aid equipment, etc. state its location. The regulations do not require a personnel shelter. However, if you have no shelter, so state.

EXAMPLE: Sawbuck Logging Co. has one small personnel shelter located at the end of the fuel pier. This shelter contains a telephone, first aid supplies, sorbent pads, toilet facilities and a copy of the facility operation manual.

11. A DESCRIPTION AND INSTRUCTIONS FOR THE USE OF DRIP AND DISCHARGE COLLECTION AND VESSEL SLOP RECEPTION FACILITIES, IF ANY:

REASON: Ensures that the facility meets requirements for the collection of oil from discharges at the marine header and provides instruction to transfer personnel on their correct use. Containment that is too small or improperly used is a major source of many oil spills.

REQUIREMENT: List the types and locations of discharge containment equipment used by your facility at the fuel transfer site. Containment capacity must be 84 gallons if it serves one or more hoses of 6-inch inside diameter or smaller. Containment must be 126 gallons if it serves one of more hoses with an inside diameter of more than six inches but less then 12 inches. The facility may use portable drip pans of not less than 21 gallons capacity each if permanent oil containment collection is not feasible. If there is a slop reception tank at your fuel facility, describe it.

EXAMPLE: The Sawbuck Logging Co. has one tank overflow monitoring device for each fuel tank at the facility. The electronic monitoring device will sound an alarm when the level of fuel reaches the level at which the tank is full.

12. GIVE A DESCRIPTION AND THE LOCATION OF ERACH EMERGENCY SHUTDOWN SYSTEM:

REASON: All personnel must know the location and operation of all emergency shutdown systems. Should an emergency occur, it would be too late. Detailed actions must be known beforehand.

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

REQUIREMENT: In the event of a fire, spill or other emergency occurs, fuel transfer should be shut down in accordance with 33 C.F.R. 154.550. In most cases, an emergency shutdown will be done by the personnel involved with the transfer. Describe the duties of each person laid out in your emergency shutdown plan. The facility when transferring to a vessel must be able to stop the flow of oil in 60 seconds or less on any facility which started operations on or before November 1, 1980; and 30 seconds or less on any facility which started operations after November 1, 1980.

EXAMPLE: At the Sawbuck Logging Co. facility, two-way VHF radios are used by all persons involved in a fuel transfer. Should an emergency occur, the barge's crew would be instructed to shutdown immediately. The hose watch would close the valves at the pipe headers. The storage tank watch would close the valves at the base of each tank. All valves would then be closed to contain the product in the pipeline.

13. GIVE THE QUANTITY, TYPE, LOCATION, AND INSTRUCTIONS OF MONITORING DEVICES IF REQUIRED BY 33 CFR 154.525:

REQUIREMENT: The COTP may require the facility to install monitoring devices if the installation of monitoring devices at the facility would significantly limit the size of a discharge. If there are no Coast Guard requirements, there still could be an EPA or ADEC requirement for monitoring devices.

14. GIVE THE QUANTITY, TYPES, LOCATIONS, INSTRUCTIONS FOR USE AND THE LIMITS FOR GAINING ACCESS TO THE CONTAINMENT EQUIPMENT:

REASON: If a spill does occur, transfer personnel must know this information to quickly contain the spill. This also provides the Coast Guard with valuable information in planning a response to a spill.

REQUIREMENT: Each facility must have ready access to enough oil containment materials and equipment to contain any oil discharged on the water from operations at that facility. For the purpose of this section, "access" may be direct ownership, joint ownership, cooperative venture, or contractual agreement. The COTP Western Alaska requires that the facility be able to deploy containment material and equipment within 30 minutes. If the facility has a response plan then you may reference those sections rather than listing the equipment.

EXAMPLE: The Sawbuck Logging Co. keeps three 100' sections of deployable boom on the fuel pier during each oil transfer, therefore it may be deployed within a matter of minutes should a spill occur. In addition, four 50-pound bales of sorbent pads are located in the personnel shelter on the fuel pier. Should this material become exhausted, or more is needed in a timely manner, we can call upon George's Barge Company,

Mullet's Marine Supply, or the local Harbormaster for backup equipment. Material can be obtained from all three within an hour.

15. LIST THE QUANTITIES, TYPES, LOCATIONS AND INSTRUCTIONS FOR USE OF ALL FIRE EXTINGUISHING EQUIPMENT:

REASON: If a fire should occur, this information is essential for a rapid, effective response. This also allows the Coast Guard to determine if an adequate number of fire-fighting appliances are on hand.

REQUIREMENT: Give the number and types of fire extinguishers available at the transfer site and be certain your personnel are instructed in the use of each. Make their locations known, such as on your facility plan or blueprint.

EXAMPLE: Sawbuck Logging Co. keeps a 20 pound dry chemical hand-held fire extinguisher at the fuel line terminals located on the fuel pier. Another 20-pound dry chemical hand-held fire extinguisher is carried to the fuel storage area prior to each transfer. In addition, two 10-pound hand help chemical extinguishers are kept in the personnel shelter, located on the fuel storage pier. The location of each extinguisher is clearly marked. The actual location, plus a symbol for a fire extinguisher, is noted on your facility diagram. All personnel involved in the transfers have been trained in the use of this equipment. Instructions for the use of our extinguishers are all the same:

1) HOLD UPRIGHT, PULL RING PIN.
2) STAND BACK 8-10 FEET, AIM AT BASE OF FIRE.
3) SQUEEZE LEVER AND SWEEP FROM SIDE TO SIDE.

16. THE MAXIMUM ALLOWABLE WORKINIG PRESSURE FOR EACCH LOADING ARM, TRANSFER PIPE SYSTEM, AND THE HOSE ASSEMBLY REQUIRED TO BE TESTED BY SEC. 156.170 OF THIS CHAPTER, INCLUDING THE MAXIMUM RELEIF VALVE SETTING (OR MAXIMUM SYSTEM PRESSURE WHEN RELIEF VALVES ARE NOT PROVIDED)} FOR EACH TRANSFER SYSTEM:

REASON: This section is nee4ded to prevent over-pressuring the system, popping relief valves or rupturing hoses or piping. A rupture of a transfer hose usually results in a large spill.

REQUIREMENT: List the maximum allowable working pressure for your transfer system. Also list the maximum system pressure if your transfer system does not include a relief valve.

EXAMPLE: The transfer systems at the Sawbuck Logging Co. facility have no relief valve installed. However, all lines and hoses are hydrostatically tested each year at a pressure of 225 PSI. All lines are physically labeled as having a maximum allowable working pressure of 150 PSI.

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

17. PROCEDURES FOR:

i. OPERATING EACH LOADING ARM INCLUDING THE LIMITATIONS OF EACH LOADING ARM;

REASON: It is imperative that both the facility personnel and the barge tankerman are familiar with the loading arms and do not try to exceed their limits.

REQUIREMENT: Most small transfer facilities do not have loading arms. If that is the case with your facility, so state.

EXAMPLE: There are no loading arms at the Sawbuck Logging Co. facility.

ii. TRANSFERRIING OIL:

REASON: By requiring standard written transfer procedures, the chances of an oil spill caused by negligence or unfamiliarity are greatly reduced. This also allows the COTP to review your procedures and determine if they are adequate.

REQUIREMENT: List the procedures required by your facility and the Coast Guard n conjunction with all fuel transfers. Begin with the procedures conducted prior to the transfer. This will include the transfer conference between the barge or vessel tankerman and the shoreside facility personnel. Once a Declaration of Inspection has been signed, all personnel should be aware of their duties. Describe each person's duties at the beginning of the transfer and their duties throughout the transfer. These procedures must be in compliance with 33 CFR 156.

EXAMPLE: Prior to each transfer at the Sawbuck Logging Co. facility all shoreside personnel involved meet with the tankerman of the barge. We establish the fact that one man will be stationed at the shoreside fuel line terminals and another will be stationed at the fuel storage site. All personnel are to be in continuous communications via two-way hand-held radios. A Declaration of Inspection is signed, and we report to our individual stations. The tankerman announces what fuel and into what line he will first begin pumping. When oil reaches the shoreside fuel line terminus, and valves are adjusted, the man at the storage tanks is alerted. When fuel continues up the line, the man at the storage tanks adjusts his valves to permit proper flow into the tanks. Personnel are constantly on the alert for fuel line ruptures or hose coupling leaks during this early period. When everything appears to be running normally, pumping pressure may be slightly increased, not to 3xceed the maximum allowable working pressure, and see how the hoses and piping are going to behave, we walk the line every 10-15 minutes to check for leaks or chafing.

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

iii. COMPLETION OF PUMPING:

REASON: By requiring standard written procedures to be followed at the completion of each transfer, the chance of a spill due to negligence or unfamiliarity is greatly reduced. By reviewing your procedures, the COTP can determine if they are adequate.

REQUIREMENT: State the procedures agreed upon between your shoreside personnel and the barge tankerman for completing a transfer and unhooking all equipment without causing damage,

EXAMPLE: At the termination of a fuel transfer at Sawbuck Logging Co., a designated person-in-charge will personally monitor any topping-off procedures. The Barge quits pumping fuel and its valves are closed first to help eliminate the possibility of building excessive pressure in the shoreside lines and causing a rupture. Once the shoreside valves are closed, the fueling lines are carefully disconnected at the header and walked towards the storage tank, emptying all fuel remaining in the hose into the storage tank. All valves are then rechecked for proper closure. The transfer line is then capped on each end and properly stored for the next transfer.

iv. EMERGENCIES

REASON: To ensure personnel involved in the transfer are versed in emergency procedures and valuable time and resources are not waster during an emergency when quick action is required.

REQUIREMENT: List agencies to be contacted in the event an emergency arises. List the emergency shut-down procedures to be flowed by all personnel involved. Ensure all personnel are very familiar with the procedures.

EXAMPLE: At the Sawbuck Logging Co. facility, a list of all agencies to be contacted in an emergency are posted in the front office. All personnel involved with transfers must have previously read, understood and initialed an outline of our established emergency procedures. In the event of a product spill, fire, etc., procedures require personnel to secure pumping immediately, close tank and line valves and make an immediate report to the appropriate local, federal and company personnel. Our emergency procedures are discussed with the barge tankerman prior to the signing of the Declaration of Inspection. The Coast Guard NRC will be contacted at 1-800-424-8802

18. PROCEDURES FOR REPORTING AND THE INITIAL CONTAINMENT OF OIL DISCHARGES:

REASON: To ensure an appropriate established policy has been set and is familiar to all personnel involved in transfer operations should a discharge occur.

APPENDIX D - OPERATIONS MANUAL & RESPONSE PLAN

Operations Manual Completion Guidelines

REQUIREMENT: List procedures to be followed at your facility in the event of an accidental discharge. Determine the source of the spill if not obvious, determine best response methods for containment and clean-up of various types of spills. List all agencies which must be notified in the event of a discharge. A facility person-in-charge must immediately notify the National Response Center as soon as they have knowledge of any discharge of oil from the facility.

EXAMPLE: Oil discharge detection at the Sawbuck Logging Co. facility is usually by direct observation. There are no electronic or mechanical monitoring systems. The storage tanks and associated fuel lines are visually inspected twice weekly. Once a spill has been detected, immediate action will be taken to determine the exact source of the spill and confirm its magnitude. It is essential that these first steps be taken to ensure accurate spill reporting and to avoid overreaction. If the spill can easily be stopped at the source, and the discharge can be quickly contained or picked up, this important initial response would follow containment and clean-up. All reports would be to the Sawbuck front office, who would record pertinent data. The front office would in turn notify the appropriate agencies.

19. A BRIEF SUMMARY OF APPLICIABNLE FEDERAL, STATE AND LOCAL OIL POLLUTION LAWS AND REGULATIONS:

REASON: To ensure all personnel involved with oil transfers are familiar with the laws of all agencies that pertain to them. This also insures the COTP that the facility has this information on record.

REQUIRMENT AND EXAMPLE: List the following text as written or as given by USCG, EPA, and ADEC:

FEDERAL LAW: Requires the immediate reporting of all spills of oil and hazardous substances. The Federal Water Pollution Control Act Amendments of 1972 made it unlawful to discharge oil “into or upon the navigable waters of the United states, adjoining shorelines, or into or upon waters of contiguous zone.” [33 USC 1321 (b)(3)]. Immediate reporting of such discharges is required by both the USCG and EPA. The responsibility is established in the National Oil and Hazardous Substances Contingency Plan, 40 CFR 15410.36(b)(1) and (2). Spills on inland waters are the responsibility of the EPA, while the Coast Guard has jurisdiction for coastal waters, ports and harbors.

ALASKA LAW: 18 AAC 75.300, requires that the Alaska Department of Environmental Conservation (ADEC) be notified of any discharge of oil or hazardous substances onto the water, and any sudden or cumulative discharge of oil in excess of 55 gallons solely to land “as soon as the person (in charge of the facility) has knowledge” of the incident. Spills soley to land in excess of 10 gallons, but less than 55 gallons, are to be reported within 48 hours. Spills in excess of 55 gallons to and “impermeable containment area” are to be reported within 48 hours. Direct verbal contact must be

made with ADEC.

ADEC will contact all other state agencies requiring notifications. ADEC regulations contained in 18 AAC 75.307(c) stipulate that a written report must be submitted within fifteen days of completion of cleanup for any spill in excess of 10 gallons and is to include:

(1) Date and time of discharge.
(2) Location of the discharge.
(3) The name of the facility.
(4) The name, mailing address, and telephone number of
    (A) the person or persons causing or responsible for the discharge; and
    (B) the owner and operator of the facility
(5) Type(s) and amount(s) of hazardous substance(s) discharged.
(6) Causes of the discharge.
(7) Environmental damage caused by the discharge.
(8) Cleanup actions undertaken.
(9) Estimated amount of:
    (A) hazardous substance cleaned up: and
    (B) hazardous waste generated;
(10) Date, location and method of disposal of hazardous substance and contaminated cleanup materials.
(11) Actions being taken to prevent recurrence of the discharge.
(12) Other information ADEC requires to assess is cause and impact of spill.

In addition, 18 AAC 75.307 indicated that ADEC may require interim reports during cleanup. A notification format can be obtained from ADEC.

20. PROCEDURES FOR SHIELDING PORTABLE LIGHTING AUTHORIZED BY THE COTP UNDER 33 CFR 154.570(c).

REASON: Lighting must be located or shielded so as not to mislead or otherwise interfere with navigation on the adjacent waterways.

REQUIREMENT: List how portable lighting will be shielded.

EXAMPLE: No portable lighting is used at the Sawbuck Logging Co. facility. Should darkness occur during our hours of operation, 8:00a.m. to 5:00p.m., illumination will be provided by the fuel barge.

21. A DESCRIPTION OF THE TRAINING AND QUALIFICATIO PROGRAM FOR THE DESIGNATED PERSONS-IN-CHARGE AT YOUR FACILITY:

REASON: To ensure your persons-in-charge have undergone training for their position of responsibility.

REQUIRMENT: Persons designated by the facility as persons-in-charge must have had at least 48 hours of experience in oil transfer operations at a fuel facility and have had enough experience at the particular facility for which they are being

designated. However, at new facilities, the COTP may authorize alternative experience requirements. In this case, the facility operator must ensure his designees are familiar with the hazards of each product to be transferred, the facility operating procedures as described in the operations manual, each facility oil transfer control system, all local discharge reporting procedures and the facilities contingency plan for discharge reporting and containment. Describe the qualifications of your facility's persons-in-charge.

EXAMPLE: All persons-in-charge at the Sawbuck Logging Co. Fuel Facility have had no less than 48 hours of experience in transfer operations at a facility to which this standard applies. All have had enough experience at this facility to enable the facility operator to determine that his experience is adequate. All are aware of the hazards of the cargoes involved, the procedures for transfer as described in our operations manual, and procedures for discharge reporting and containment.

22. STATEMENT EXPLAINING THAT EACH HAZARDOUS MATERIALS TRANSFER HOSE IS MARKED WITH EITHER THE NAME OF EACH PRODUCT WITH MAY BE TRANSFERRED THROUGH THE HOSE OR WITH LETTERS, NUMBERS OR OTHER SYMBOLS REPRESENTING ALL SUCH PRODUCTS IN THE LOCATION IN THE OPERATIONS MANUAL WHERE A CHART OR LIST OF THE SYMBOLS USED AND THE LIST OF THE COMPATABLE PRODUCTS WHICH MAY BE TRANBSFERRED THROUGH THE HOSE AND CAN BE FOUND FOR CONSULTATION BEFORE EACH TRANSFER.

REASON: To prevent incompatible products from being transferred through the same hose.

REQUIREMENT: For may small or remote facilities, the barge company supplies the hoses for transfer. If you have your own hoses, state what products your hoses are marked for.

EXAMPLE: At Sawbuck Logging Co. fuel facility, we maintain two transfer hoses marked as follows:

UNL	for Unleaded Gasoline, and
Diesel	for #1 and #2 Diesel

USCG RESPONSE PLAN CHECKLIST

Facility:				Date Reviewed:
Reviewed By:				
Yes	**No**	**Cite**	**Requirement**	**Comment**
		154.1035(a)	**Introduction, table of contents and cross index**	
		(a)(1)	Facility name, address, telephone and FAX numbers, mailing address if different then street address	
		(a)(2)	Facility's geographic location	
		(a)(3)	24 hour procedures for contacting facilities owner or operator	
		(a)(4)	Table of Contents	
		(a)(5)	Cross reference. Note: Do not complete review if cross reference is not included, or is inadequate to locate required information	
		(a)(6)	Record of changes	
		154.1035(b)	**Emergency Response Action Plan**	
		(b)(1)	Notification Procedures	
		(b)(1)(i)	Prioritized list identifying persons, including name, telephone number (24hr) and role in the plan who must be notified of a discharge or substantial threat of discharge of oil. This section must include:	
		(b)(1)(i)(A)	Facility response personnel, spill management team, OSROs (if applicable), the QI and alternate QI	
		(b)(1)(i)(B)	National Response Center and other Federal, State, and local agencies as required	Note: Correct emergency phone numbers for MSO Anchorage is 428-4200.
		(b)(1)(ii)	Notification form similar to one shown in Fig. 1 or 154.1035. Form must contain prominent statement that initial notification must not be delayed pending collection of information	References to the MSD's should be deleted.
		(b)(2)	Facility spill mitigation procedures	
		(b)(2)(i)	Volume(s) of non-persistent and persistent oil groups involved	
		(b)(2)(i)(A)	Average most probable discharge from MTR portion	
		(b)(2)(i)(B)	Maximum most probable discharge from MTR portion	
		(b)(2)(i)(C)	Worse Case discharge from MTR portion	
		(b)(2)(i)(D)	If applicable, worse case discharge from not MTR portion	
		(b)(2)(ii)	Prioritized procedures for facility personnel by job title to mitigate or prevent spill resulting from operational activities associated with internal or external facility transfers including procedures to shut down affected operations in the event of:	Note: These procedures may be contained in the facility's operations manual, provide the appropriate sections are submitted for review.
		(b)(2)(ii)(A)	Failure of manifold, mechanical loading arm, other transfer equipment, or hoses as appropriate	
		(b)(2)(ii)(B)	Tank overfill	
		(b)(2)(ii)(C)	Tank failure	
		(b)(2)(ii)(D)	Piping rupture	

USCG RESPONSE PLAN CHECKLIST

Yes	No	Cite	Requirement	Comment
		(b)(2)(ii)(E)	Piping leak, both under pressure and not under pressure, if applicable.	
		(b)(2)(ii)(F)	Explosion or fire	
		(b)(2)(ii)(G)	Equipment failure (e.g. pumping system failure, relief valve failure, or failure of other equipment associated with internal or external transfers)	
		(b)(2)(iii)	List of equipment and responsibilities of facility personnel to mitigate an average most probably discharge	
		(b)(3)	Facility response activities	
		(b)(3)(i)	Description of facility personnel's responsibilities to initiate and supervise a response pending arrival of QI or alternate	
		(b)(3)(ii)	Description or the responsibilities and authority of the QI and alternate QI as required in 154.1026	
		(b)(3)(iii)	Identify personnel who will manage response actions and provide a description of duties for the following positions.	
		(b)(3)(iii)(A)	Command and control	
		(b)(3)(iii)(B)	Public information	
		(b)(3)(iii)(C)	Safety	
		(b)(3)(iii)(D)	Liaison with government agencies	
		(b)(3)(iii)(E)	Spill operations	
		(b)(3)(iii)(F)	Planning	
		(b)(3)(iii)(G)	Logistics	
		(b)(3)(iii)(H)	Finance	
		(b)(3)(iv)	Identify the oil spill removal organization(s) and spill management team available by contract or other means described in 154.1028(a). These must be capable of responding to the following discharges:	
		(b)(3)(iv)(A)(1)	Average most probable discharge	
		(b)(3)(iv)(A)(2)	Maximum most probable discharge	
		(b)(3)(iv)(A)(3)	Worse case discharge to maximum extent possible	
		(b)(3)(iv)(B)	Be capable of providing the following resources:	
		(b)(3)(iv)(B)(1)	Equipment and supplies to meet requirements of 154.1045, 154.1047 or 154.049 as appropriate. See page 7 & 8 for 154.1045 equipment requirements	Note: Must meet 154.1047 if handle or store Group V petroleum oils or 154.1049 if handle or store non petroleum oils
		(b)(3)(iv)(B)(2)	Trained personnel to operate equipment and staff the oil spill removal organization and management team for seven days.	
		(b)(4)	Sensitive areas	
		(b)(4)(i)	Identify areas of environmental and economic sensitivity	Note: Must be consistent with ACP
		(b)(4)(ii)	For the worse case discharge, the plan must:	

USCG RESPONSE PLAN CHECKLIST

Yes	No	Cite	Requirement	Comment
		(b)(4)(ii)(A)	List areas of environmental and economic sensitivity which may potentially be impacted by discharge or persistent, non-persistent or non-petroleum oils.	
		(b)(4)(ii)(B)	Describe specific, planned response actions to protect identified areas.	
		(b)(4)(ii)(C)	Contain a map or chart showing locations of sensitive areas which may potentially be impacted. Must also depict response actions which will be used to protect these areas.	
		(b)(4)(iii)A	For worse case discharge, identify personnel and equipment necessary to protect sensitive areas indentified in ACP within distance oil is likely to travel for number of days listed in 33 CFR 154, Table 2, Appendix C.	
		(b)(4)(iii)B	Identify required personnel and equipment available by contract or other means described in 154.1028 to protect identified areas:	
		(b)(4)(iii)(b)(1)	For persistent oils and non-petroleum oils discharged into non-tidal waters, the facility reached in 48 hours at maximum current.	
		(b)(4)(iii)(B)(2)	For persistent oil and non-petroleum oils discharged into tidal waters, 15 miles for the facility down current during ebb tide and to the point of maximum tidal influence or 15 miles whichever is less, during flood tide.	
		(b)(4)(iii)(B)(3)	For non-persistent oils discharged into non-tidal waters, the distance from the facility reached in 25 hours of maximum current.	
		(b)(4)(iii)(B)(4)	For non-persistent oils discharged into tidal waters, 5 miles from the facility down current during ebb tide and to the point of maximum tidal influence or 5 miles, whichever is less, during flood tide.	
		(b)(4)(iii)(B)(5)	For persistent oils, non-persistent oils, or non-petroleum oils a spill trajectory or model may be substituted for the distances listed in non-tidal and tidal waters.	
		(b)(4)(iii)(B)(6)	Additional areas required by the COTP (are none at present)	
		(b)(5)	Disposal plan. This section must describe actions or procedures to ensure all recovered oil and oil contaminated debris produced as a result of a spill and clean-up are disposed of per applicable Federal, State and local regulations.	
		154.1035(c)	**Training and drills**	
		(c)(1)	Training procedures. This section must describe the training program to meet the requirements outlined in 154.1050	
		(c)(5)	Drill procedures. This section must describe the facility's drill program. It must comply with either the requirements outlined in 154.1055 or PERP.	

USCG RESPONSE PLAN CHECKLIST

YES	NO	CITE	REQUIREMENT	COMMENT
		154.1035(D)	**Plan review and update procedures**	
			This section must describe the procedures to meet the requirements of 154.1065 as well as to evaluate the plan and validate its effectiveness following a discharge.	
		154.1035(e)	**Appendices**	
		(e)(1)	Facility specific information	
		(e)(1)(i)	A physical description of the facility, including a plan of the facility showing the mooring area, transfer locations, control stations, locations of safety equipment, and the location and capacity of all piping and storage tanks.	
		(e)(1)(ii)	Identify the sizes, types and number of vessels that facility can transfer oil to or from simultaneously.	
		(e)(1)(iii)	Must identify the first valve(s) separating the MTR portion of the facility from the non-MTR portion.	
		(e)(1)(iv)	Information on the oil(s) and HAZMAT handled at the facility. This information can be maintained separately from the response plan, provided the plan identifies where the required information is stored.	
		(e)(2)	List of 24 hour contacts for key personnel and organizations. The list must include:	
		(e)(2)(i)	Primary and alternate QI	
		(e)(2)(ii)	Contacts for OSROs retained under contract	
		(e)(2)(iv)	Appropriate Federal, State and local officials/agencies.	
		(e)(3)(i)	List of equipment and facility personnel required to respond to an average most probable discharge. The locations of equipment must also be included.	
		(e)(3)(ii)&(iii)	A detailed list of all major equipment identified in the plan which is available by contract or other means identified in 154.1020. See 154.1035(g)(3)(iii) for allowed exceptions. The list, if required, shall include: skimmers; booms; dispersant application, in-situ burning, bioremediation equip.; boats and motors; disposal and storage equipment; and heavy equip. The following information shall be provided for equipment listed:	
		(e)(3)(iii)(A)	Type, make, model and year of manufacture.	
		(e)(3)(iii)(B)	For oil recovery equipment, the effective daily recovery rate	
		(e)(3)(iii)(C)	For containment boom, the overall height (draft and freeboard) and type of end connectors.	
		(e)(3)(iii)(D)	Spill scenario in which the equipment will be used or for which it is contracted.	
		(e)(3)(iii)(E)	Total daily capacity for storage and disposal of recovered oil.	
		(e)(3)(iii)(F)	For communication equipment, the type and amount of equipment intended for use during response activities. If applicable, primary and secondary frequencies must be listed.	
		(e)(3)(iii)(G)	Location of equipment	

		(e)(3)(iii)(H)	Date of last inspection	

USCG RESPONSE PLAN CHECKLIST

Yes	No	Cite	Requirement	Comment
		(e)(4)	Communications plan. Must describe primary and alternate method of communicating during a discharge, including communications at the facility and on-scene at locations included in the plan.	
		(e)(5)	Site specific safety and health plan. This section should include as much detailed information as is practicable in advance of an actual discharge. May reference another existing plan required by 29 CFR 1910.120	
		(e)(6)	List of acronyms and definitions.	
		154.1045	**Evaluation criteria for facilities that handle, store or transport Group I through IV petroleum oils.**	
		(a)(2)	Were response resources identified in the plan evaluated based on ice conditions, debris, temperature ranges and weather related visibility which may be encountered?	
		(b)	All response equipment must	
		(b)(1)	Meet or exceed operating criteria listed in Table 1 of Appendix C (33 CFR 154 Appendix C)	
		(b)(2)	Function in the applicable operating environment (rivers and canals; inland; nearshore; offshore/ocean)	
		(b)(3)	Be appropriate for petroleum oil carried.	
		(c)	The response equipment listed in the plan, or which is otherwise available through contract or other means listed in 154.1028, must include at a minimum:	
		(c)(1)	Whichever is greater, 1000 FT of containment boom or two times the length of the largest vessel that regularly transfers oil to ro from the facility, and the means to deploy and anchor the boom within one hour of detecting a oil spill; and	
		(c)(2)	Oil; recovery devices and recovered oil storage capacity capable of being at the facility within 2 hours of detecting a oil spill from the facility for an average most probable discharge.	
		(d),(d)(2) and (3)	The plan must identify adequate response resources based on procedures in Appendix C available through contract, or other means approved by 154.1028, to respond to the facility's maximum most probable discharge.	
		(d)(1)(iii)	This equipment must be capable of arriving within 24 hours of discovering an oil spill at the facility.	
		(e), (e)(3), (4) and (5)	The plan must identify response resources available by contract, or other means approved by 154.1028, to respond to a worse case discharge, to the maximum extent practicable.	Note: Appendix C contains guidelines for calculating the quantity of response equipment required for a worse case discharge and each response tier.
		(e)(1) and (f)	The location of response resources must be suitable to meet response times for the facility's geographic area and response.	
		(e)(2)	Response resources must be appropriate for:	
		(e)(2)(i)	The volume of the facility's worse case discharge:	
		(e)(2)(ii)	Group(s) of oil handled, stored or transported at the	

			facility; and	

USCG RESPONSE PLAN CHECKLIST

Yes	No	Cite	Requirement	Comment
		(e)(2)(iii)	Geographic area in which the facility is located.	
		(g)	Tier 1 response equipment must be capable of being mobilized and enroute within 2 hours of notification. Notification procedures must provide for notification and authorization of Tier 1 response resources--	Note: Plan should identify arrangements which have been made to ensure Tier 1 equipment will be on-scene within specified time.
		(g)(1)	Either directly or through the QI; and	
		(g)(2)	Within 30 minutes of discovery of a discharge or substantial threat of a discharge.	
		(h)	Plan should identify arrangements in place to ensure Tier 2 and Tier 3 response resources arrive within specified times.	
		(j)	Facilities which do not have adequate firefighting resources or which cannot rely on sufficient local firefighting resources must identify by contract or other means listed in 154.1028, the availability of adequate firefighting resources.	
		(k)	Quantity of boom required to protect areas required to be identified by section 154.1035(b)(4)	
		(l)	Response resources available through contract or other means listed in 154.1028, to effect shoreline clean-up operations based on the requirements of Appendix C.	

APPENDIX E

GLOSSARY

APPENDIX E - GLOSSARY

Appendix E – Table of Contents

Glossary…… 2

APPENDIX E - GLOSSARY

Aboveground Storage Tank - A cylindrical container, used for storing fuels and fuel products, that is situated either horizontally or vertically and has the entire bottom supported on the ground, on saddles or other supports.

Aboveground Storage Tank Facility = Tank Farms- Storage tanks, piping, secondary containment and other features associated with the tanks.

Cathodic Protection – A system using impressed current or sacrificial metals to prevent and reduce corrosion from occurring on tanks and piping.

Confined Space – A space that has limited openings for entry and exit, poor ventilation and could contain or produce dangerous concentration of air contaminants.

Declaration of Inspection (DOI) – A form, required by the U.S. Coast Guard, describing procedures that will be used during fuel transfer.

Distribution Piping – Piping, valves and gauges between tanks at the facility and other associated tanks such as day tanks.

HAZWOPER – Hazardous Waste Operations and Emergency Response

Hydraulic Hammer – An event that can occur when the valves at the tank farm are shut down before pumping on the barge stops. The high pressure in the piping or hoses causes them to jump in a snake-like manner. This could cause pipes to crack or break.

Hydrostatic Test – A test, using water, to check for soundness and leaks in tanks and piping. For tanks the test consists of filling the tank with water to the maximum design liquid level and holding it there for a period of time. For pipes and hoses the test consists of filling the pipes or hoses with water at a pressure higher than normal and leaving it there for a period of time.

Industry Standards – Documents, developed by professionals, that provide guidelines for designing, operating and maintaining facilities in a safe, organized and functional manner.

Manifold Piping – Piping and valves between tanks and dispensing pump.

APPENDIX E - GLOSSARY

Safety Data Sheet (SDS) – A form, provided by manufacturers, that contains information about chemical composition, physical and chemical properties, health and safety hazards, emergency response and waste disposal. These forms were formerly called Material Safety Data Sheets (MSDS,) and it is not uncommon to see either title.

Operator – Person responsible for handling fuel and performing routine tasks at the facility.

Owner – Legal entity having control and responsibility for the operation and maintenance of a facility.

Response Plans – A document required by the U.S. Coast Guard and Environmental Protection Agency, which describes the preparations, procedures, training and actions necessary for responding to discharges of oil at a facility.

Safe Gauge Height – How much fuel the tank can safely hold, allowing for expansion due to temperature variations.

Secondary Containment – The area around tanks that is enclosed by double walls, dikes, berms, and/or liners. It is designed to hold petroleum products should a spill occur.

Spill Prevention Containment and Countermeasures (SPCC) Plans – A document required by the U.S. Environmental Protection Agency, describe training, equipment testing, drills and response actions carried out under the plan, to ensure safety of the facility and to mitigate or prevent a discharge or substantial threat of a discharge.

Transfer Piping – Pipes, hoses, valves and gauges associated with carrying fuel from a barge or other delivery source to tanks.