text, (a)(1), (b), (c), (d), and (e) to read as follows:

§ 154.1225 Specific response plan development and evaluation criteria for fixed facilities that handle, store, or transport animal fats and vegetable oils.

(a) The owner or operator of a fixed facility that handles, stores, or transports animal fats or vegetable oils must include information in the response plan that identifies—

(1) The procedures and strategies for responding to a worst case discharge and to an average most probable discharge of an animal fat or vegetable oil to the maximum extent practicable; and

* * * * *

(b) The owner or operator of a fixed facility must make sure the equipment listed in the response plan will operate in the geographic area(s) where the facility operates. To determine if the equipment will operate, the owner or operator must—

(1) Use the criteria in table 1 and section 2 of appendix C of this part; and

(2) Consider the limitations in the area contingency plan for the COTP zone where the facility is located, including—

(i) Ice conditions;

(ii) Debris;

(iii) Temperature ranges; and

(iv) Weather-related visibility.

(c) The owner or operator of a facility that handles, stores, or transports animal fats or vegetable oils must name the personnel and list the equipment, including those specified in § 154.1240, that are available by contract or by a method described in § 154.1228(a).

(d) The owner or operator of a facility that handles, stores, or transports animal fats or vegetable oils must ensure that the response resources in paragraph (c) of this section are able to effectively respond to an incident within the amount of time indicated in the following table, unless otherwise specified in § 154.1240:

	Tier 1 (hrs.)	Tier 2	Tier 3
Higher volume port area	6	N/A	N/A
Great Lakes	12	N/A	N/A
All other river and canal, inland, nearshore, and offshore areas	12	N/A	N/A

(e) The owner or operator of a facility that handles, stores, or transports animal fats or vegetable oils must—

(1) List in the plan the personnel and equipment that the owner or operator will use to fight fires.

(2) If there is not enough equipment or personnel located at the facility, arrange by contract or a method described in § 154.1228(a) to have the necessary personnel and equipment available to fight fires.

(3) Identify an individual located at the facility who will work with the fire department on fires, involving an animal fat or vegetable oil. The individual—

(i) Verifies that there are enough trained personnel and operating equipment within a reasonable distance to the incident to fight fires.

(ii) Can be the qualified individual defined in § 154.1020 or an appropriate individual located at the facility.

* * * * *

9. Add § 154.1240 to subpart H to read as follows:

§ 154.1240 Specific requirements for animal fats and vegetable oils facilities that could reasonably be expected to cause substantial harm to the environment.

(a) The owner or operator of a facility, classified under § 154.1216 as a facility that could reasonably expect to cause substantial harm to the environment, must submit a response plan that meets the requirements of § 154.1035, except as modified by this section.

(b) The plan does not need to list the facility or corporate organizational structure that the owner or operator will use to manage the response, as required by § 154.1035(b)(3)(iii).

(c) The owner or operator must ensure and identify, by contract or a method described in § 154.1228, that the response resources required under § 154.1035(b)(3)(iv) are available.

(d) For a fixed facility, the owner or operator must also identify—

(1) By contract, at least 1,000 feet of containment boom or two times the length of the longest vessel that regularly conducts operations at the facility, whichever is greater, and the means of deploying and anchoring the boom within 1 hour of an incident. Based on site-specific or facility-specific information, the COTP may require the facility owner or operator to make available additional quantities of containment boom within 1 hour of an incident;

(2) Adequate sorbent material located at the facility;

(3) Oil recovery devices and recovered oil storage capacity capable of being at the incident's site within 2 hours of an incident; and

(4) Other appropriate equipment necessary to respond to an incident involving the type of oil handled.

(e) For a mobile facility, the owner or operator must also—

(1) Meet the requirements of § 154.1041;

(2) Have at least 200 feet of containment boom and the means of deploying and anchoring the boom within 1 hour of an incident. Based on site-specific or facility-specific information, the COTP may require the facility owner or operator to make available additional quantities of containment boom within 1 hour of an incident;

(3) Have adequate sorbent material capable of being at the site of an incident within 1 hour of its discovery;

(4) Oil recovery devices and recovered oil storage capacity capable of being at incident's site within 2 hours of an incident; and

(5) Other equipment necessary to respond to an incident involving the type of oil handled.

Dated: March 24, 1999.

J.C. Card,

Vice Admiral, U.S. Coast Guard, Acting Commandant.

[FR Doc. 99–8274 Filed 4–2–99; 12:33 pm]

BILLING CODE 4910–15–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 112

[FRL–6319–1]

RIN 2050–AE64

Oil Pollution Prevention and Response; Non-Transportation-Related Facilities

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule and advance notice of proposed rulemaking.

SUMMARY: EPA proposes to amend the Facility Response Plan (FRP) requirements in the Oil Pollution Prevention and Response regulation,

found at 40 CFR part 112 and promulgated under the Clean Water Act, for non-transportation-related facilities. The main purpose of this proposed rule is to provide a more specific methodology for planning response resources that can be used by owners or operators of facilities that handle, store, or transport animal fats and vegetable oils. EPA is issuing this proposed rule in response to Public Law 105–276, October 18, 1998, which requires EPA to issue regulations amending 40 CFR part 112 to comply with the Edible Oil Regulatory Reform Act. In addition, EPA is providing an advance notice for similar revisions that will be proposed for the Spill Prevention, Control, and Countermeasure Plan requirements, also found at 40 CFR part 112.

DATES: Send your comments on or before May 10, 1999.

ADDRESSES:

Comments: Address your comments on the proposed FRP rule to the Superfund Docket, Docket Number SPCC–9P, mail code 5203G, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. Address your comments on the advance notice of proposed rulemaking for the Spill Prevention, Control, and Countermeasure (SPCC) rule to the Superfund Docket, Docket Number SPCC–10P, mail code 5203G, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460. Send three copies of your comments. You also may submit electronic comments in ASCII format to superfund.docket@epamail.epa.gov.

Docket: You may review materials concerning this rulemaking in the Superfund Docket, Suite 105, 1235 Jefferson Davis Highway, Crystal Gateway I, Arlington, VA 22202. You may inspect the docket (Docket Number SPCC–9P and SPCC–10P) between 9:00 a.m. and 4:00 p.m., Monday through Friday, excluding Federal holidays; and you may make an appointment to review the docket by calling 703–603–9232.

You may copy a maximum of 266 pages from any regulatory docket at no cost. If the number of pages copied exceeds 266, however, you will be charged an administrative fee of $25 and a charge of $0.15 per page for each page after 266. The docket will mail materials to you if you are outside of the Washington, DC metropolitan area.

FOR FURTHER INFORMATION CONTACT: Barbara Davis, Oil Program Center, U.S. Environmental Protection Agency, at 703–603–8823 (davis.barbara@epamail.epa.gov) concerning the FRP proposed rule; or Hugo Fleischman, Oil Program Center, U.S. Environmental Protection Agency, at 703–603–8769 (fleischman.hugo@epamail.epa.gov) concerning the advance notice of proposed rulemaking for the SPCC rule; or the RCRA/Superfund Hotline at 800–424–9346 (in the Washington, DC metropolitan area, 703–412–9810). The Telecommunications Device for the Deaf (TDD) Hotline number is 800–553–7672 (in the Washington, DC metropolitan area, 703–412–3323).

SUPPLEMENTARY INFORMATION: We organized the contents of this Preamble in the following outline:

I. Introduction

A. Regulated Entities

Entities Potentially Regulated by this Proposal Include:

Category	NAICS codes
Starch and Vegetable Fats and Oils Manufacturing	NAICS 31122.
Warehousing and Storage	NAICS 493.
Petroleum and Coal Products Manufacturing	NAICS 324.
Petroleum Bulk Stations and Terminals	NAICS 42271.
Crude Petroleum and Natural Gas Extraction	NAICS 211111.
Transportation, Pipelines, and Marinas	NAICS 482–486/488112–48819/4883/48849/492/71393.
Electric Power Generation, Transmission, and Distribution	NAICS 2211.
Other Manufacturing	NAICS 31–33.
Gasoline Stations/Automotive Rental and Leasing	NAICS 4471/5321.
Heating Oil Dealers	NAICS 454311.
Coal Mining, Non-Metallic Mineral Mining and Quarrying	NAICS 2121/2123/213114/213116.
Heavy Construction	NAICS 234.

Category	NAICS codes
Elementary and Secondary Schools, Colleges	NAICS 6111–6113.
Hospitals/Nursing and Residential Care Facilities	NAICS 622–623.
Crop and Animal Production	NAICS 111–112.

This table is not exhaustive, but rather it provides a guide for you. Other types of entities not listed in the table could also be subject to the regulation. To determine whether this action affects your facility, you should carefully examine the criteria in § 112.1 and § 112.20 of title 40 of the Code of Federal Regulations. If you have questions regarding the applicability of this action to a particular facility, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

B. Statutory Authority

1. The Oil Pollution Act of 1990 and the Clean Water Act

Congress enacted the Oil Pollution Act (OPA) (Public Law 101–380) to expand oil spill prevention and preparedness activities, improve response capabilities, ensure that shippers and oil companies pay the costs of spills that do occur, provide an additional economic incentive to prevent spills through increased penalties and enhanced enforcement, establish an expanded research and development program, and establish a new Oil Spill Liability Trust Fund, administered by the U.S. Coast Guard (USCG). Section 4202(a) of OPA amends the Clean Water Act (CWA) section 311(j) to require regulations for owners or operators of facilities to prepare and submit ''a plan for responding, to the maximum extent practicable, to a worst case discharge, and to a substantial threat of such a discharge, of oil or a hazardous substance'' (i.e., a facility response plan or FRP). This requirement applies to any offshore facility and to any onshore facility that, ''because of its location, could reasonably be expected to cause substantial harm to the environment by discharging into or on the navigable waters, adjoining shorelines, or the exclusive economic zone'' (i.e., a ''substantial harm'' facility).

Section 311(j)(1)(C) of the CWA authorizes the President to issue regulations establishing procedures, methods, equipment, and other requirements to prevent discharges of oil from vessels and facilities and to contain such discharges. By Executive Order 12777 (56 FR 54757, October 22, 1991), the President has delegated to EPA the authority to regulate non-transportation-related onshore facilities under sections 311(j)(1)(C) and 311(j)(5) of the CWA. The President has delegated similar authority over transportation-related onshore facilities, deepwater ports, and vessels to the U.S. Department of Transportation (DOT). Within DOT, the USCG is responsible for developing requirements for vessels and marine transportation-related facilities.

2. Edible Oil Regulatory Reform Act

Congress enacted the Edible Oil Regulatory Reform Act (EORRA) (33 U.S.C. 2720) on November 20, 1995. Under this law, EPA must, in the issuance or enforcement of any regulation or the establishment of any interpretation or guideline relating to the transportation, storage, discharge, release, emission, or disposal of a fat, oil, or grease, differentiate among and establish separate classes for animal fats and oils and greases, fish and marine mammal oils, and oils of vegetable origin (as opposed to petroleum and other oils and greases).

3. Appropriations Act

Under the Departments of Veterans Affairs and Housing and Urban Development, and Independent Agencies Appropriations Act, 1999 (Public Law 105–276), which was signed into law on October 21, 1998, Congress directed EPA to issue regulations amending 40 CFR part 112 not later than March 31, 1999, to comply with the requirements of the Edible Oil Regulatory Reform Act (Public Law 104–55).

C. Background of this Rulemaking

1. The Agency's Jurisdiction

The Memorandum of Understanding (MOU) between DOT and EPA, dated November 24, 1971, established the definitions of non-transportation-related facilities and transportation-related facilities. The definitions in the 1971 MOU are in Appendix A to 40 CFR part 112.

2. Coordination with the United States Coast Guard

EPA and the USCG are proposing to modify their existing FRP rules for non-transportation-related facilities and marine transportation-related facilities that handle, store, and transport animal fats and vegetable oils. The two agencies have worked together closely to ensure uniformity in the proposed regulations whenever possible. Each agency is proposing requirements appropriate to the universe of facilities that it regulates. The two proposed rules reflect the similarities and differences in the nature and activities of facilities regulated by the two agencies. In EPA's proposed rule, the discussion of the rationale for revisions addresses the similarities and differences between EPA-regulated and USCG-regulated facilities.

3. 1994 Final Facility Response Plan Rule

On February 17, 1993, EPA (''we'') published a proposed rule to revise the Oil Pollution Prevention Regulation, which was originally promulgated under the Clean Water Act (58 FR 8824, February 17, 1993). We received a total of 1282 comments on the proposed rule. We considered these comments in developing the final rule. On July 1, 1994, we published the final FRP rule amending 40 CFR part 112 to add new planning requirements for worst case discharges to implement section 311(j)(5) of the CWA, as amended by OPA (59 FR 34070, July 1, 1994). Under the authority of section 311(j)(1)(C) of the CWA, we also required planning for small and medium discharges of oil, as appropriate.

a. The Clean Water Act applies to non-petroleum oils. In the Preamble to the final FRP rule, we noted that for the purpose of CWA section 311(j) planning, the CWA includes non-petroleum oils. We pointed out that the definition of ''oil'' in the CWA includes oil of any kind (40 CFR part 112.2). The oils regulated by 40 CFR part 112 include animal fats and vegetable oils.

b. Different rule requirements for non-petroleum oils. The FRP rule requires certain facility owners and operators to prepare plans for responding to a worst case discharge of oil and to a substantial threat of such a discharge. It also includes requirements to plan for a small and medium discharge of oil.

In addressing comments on the proposed FRP rule, we agreed that certain response equipment and strategies used for petroleum oil spills may be inappropriate for non-petroleum oil. For non-transportation-related facilities under our jurisdiction, we adapted the USCG approach to

determine response resources for worst case discharges of non-petroleum oils. Owners or operators of these facilities must: (1) Show procedures and strategies for responding to the maximum extent practicable to a worst case discharge; (2) show sources of equipment and supplies necessary to locate, recover, and mitigate discharges; (3) demonstrate that the equipment identified will work in the conditions expected in the relevant geographic areas, and that the equipment and other resources will be able to respond within the required times (according to Table 1 of Appendix E to part 112); and (4) ensure the availability of required resources by contract or other approved means. Unlike petroleum oil facilities, owners or operators of non-petroleum facilities are not limited to using emulsification or evaporation factors in Appendix E (the Equipment Appendix) of the final rule to calculate response resources for their facilities. In the final FRP rule, we added Section 7.7 to Appendix E to reflect these changes. We stated that when there were results from research on such factors as emulsification or evaporation of non-petroleum oil, we might make additional changes (59 FR 34088, July 1, 1994). Based on our examination of recent research, we are today proposing these factors for animal fats and vegetable oils.

D. FRP-Related Petitions

1. Petition for Reconsideration

By a letter dated August 12, 1994, we received a ''Petition for Reconsideration and Stay of Effective Date'' of the OPA-mandated final FRP rule as the rule applies to facilities that handle, store, or transport animal fats or vegetable oils. The petition was submitted on behalf of seven agricultural organizations (''the Petitioners''): the American Soybean Association, the Corn Refiners Association, the National Corn Growers Association, the Institute of Shortening & Edible Oils, the National Cotton Council, the National Cottonseed Products Association, and the National Oilseed Processors Association.

a. Petitioners' request. To support their claims, the Petitioners submitted an industry-sponsored report titled ''Environmental Effects of Releases of Animal Fats and Vegetable Oils to Waterways'' (ENVIRON Corporation, 1993) and an associated study titled ''Diesel Fuel, Beef Tallow, RBD Soybean Oil and Crude Soybean Oil: Acute Effects on the Fathead Minnow, *Pimephales Promelas*'' (Aqua Survey, Inc., 1993). We received copies of both of these studies with a comment filed more than nine months after the close of the comment period for the FRP rulemaking. Based, in part, on these studies, the Petitioners asked us to create a regulatory regime for response planning for ''non-toxic,'' non-petroleum oils separate from the framework established for petroleum oils and ''toxic'' non-petroleum oils. They suggested specific language revisions for the July 1, 1994, FRP rule. For facilities that handle, store, or transport animal fats and vegetable oils, their suggested revisions would: modify the definition of animal fats and vegetable oil (set out in Appendix E, Section 1.2 of the FRP rule); allow mechanical dispersal and ''no action'' options to be considered in lieu of the oil containment and recovery devices otherwise specified for response to a worst case discharge; require the use of containment booms only for the protection of fish and wildlife and sensitive environments; and increase the required on-scene arrival time for response resources at a spill from 12 hours (including travel time) to 24 hours plus travel time for medium discharges and worst case Tier 1 response resources.

b. Federal agency findings. The Federal natural resource trustee agencies who reviewed the ENVIRON study disagreed with many of the study's conclusions. The U.S. Fish and Wildlife Service (FWS) stated that the ENVIRON Report did not provide an accurate assessment of the dangers that non-petroleum oils pose to fish and wildlife and environmentally sensitive areas. The FWS further stated that key facts were misrepresented, incomplete, or omitted in the ENVIRON Report (U.S. Department of the Interior, Fish & Wildlife Service, 1994). The FWS stated that petroleum oils and vegetable oils and animal fats cause chronic effects from the fouling of coats and plumage in wildlife, which often leads to death. The National Oceanic and Atmospheric Administration (NOAA) also reviewed the ENVIRON study. NOAA evaluated the physical and chemical properties, toxicity, and environmental effects of spilled non-petroleum oils, including coconut, corn, cottonseed, fish, and palm oil, and indicated that some edible oils, when spilled, may have adverse environmental effects (U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 1993). The views of the FWS and NOAA on the adverse effects of animal fats and vegetable oils are discussed in detail in the Preamble to the USCG final rule setting forth response plan requirements for marine transportation-related facilities (61 FR 7890, February 29, 1996); in our Notice and Request for Data (59 FR 53742, October 26, 1994); and in our Denial of Petition Requesting Amendment of the Facility Response Plan (62 FR 54508, October 20, 1997). We also discussed comments from a bird rescue organization describing the harmful effects of spilled animal fats and vegetable oils on birds (Frink, 1994).

In view of the differing scientific conclusions reached by the Petitioners, the FWS, and other groups and agencies, we asked for broader public comment on issues raised by the Petitioners in our October 26, 1994 Notice and Request for Data. We asked whether we should have different specific response approaches for releases of animal fats and vegetable oils (rather than increased flexibility), and for additional data and comments on the effects on the environment of releases of these oils. We also asked commenters to provide specific data comparing the properties and effects of petroleum and non-petroleum oils. We received fourteen comments and considered them in our evaluation of the petition. We did not receive any new data on these issues.

c. Denial of petition. On October 20, 1997, EPA denied the petition to amend the FRP rule. We found that the petition did not substantiate claims that animal fats and vegetable oils differ from petroleum oils in properties and effects and did not support a further differentiation between these groups of oils under the FRP rule. Instead, we found that a worst case discharge or substantial threat of discharge of animal fats and/or vegetable oils to navigable waters, adjoining shorelines, or the exclusive economic zone could reasonably be expected to cause substantial harm to the environment, including wildlife that may be killed by the discharge. We pointed out that the FRP rule already provides for different response planning requirements for petroleum and non-petroleum oils, including animal fats and vegetable oils.

We also disagreed with Petitioners' claim that animal fats and vegetable oils are non-toxic when spilled into the environment and should be placed in a separate category from other ''toxic'' non-petroleum oils. Information and data we reviewed from other sources indicate that some animal fats and vegetable oils, their components, and degradation products are toxic. Furthermore, we emphasized that toxicity is only one way that oil spills cause environmental damage. Most immediate environmental effects are physical effects, such as coating animals

and plants with oil, suffocating aquatic organisms from oxygen depletion, and destroying food supply and habitats. We noted that toxicity is not one of the criteria in determining which on-shore facilities are high-risk and must prepare response plans. Rather, the criteria for determining high-risk facilities are certain facility and locational characteristics, because we expect that discharges of oil from facilities with these characteristics may cause substantial harm to the environment.

2. Differentiating Animal Fats and Vegetable Oils From Other Oils

a. Properties of animal fats and vegetable oils. Petroleum oils, vegetable oils and animal fats, and other non-petroleum oils share common physical properties and produce similar environmental effects. When spilled in the aquatic environment, these oils and their constituents can float on water; dissolve or form emulsions in the water column; settle on the bottom as a sludge; or contaminate the adjacent shoreline, depending on their physical and chemical properties. Similar methods of removal and cleanup are used to reduce the harm created by spills of petroleum oils, animal fats and vegetable oils, and other non-petroleum oils. We have compared the properties and effects of animal fats and vegetable oils with petroleum oils in detail (See 62 FR 54508, October 20, 1997, and supporting technical documents). While the physical and chemical properties of vegetable oils and animal fats are highly variable, most fall within a range that is similar to the physical parameters for petroleum oils. Common properties—such as solubility, specific gravity, and viscosity—are responsible for the similar environmental effects of petroleum oils, vegetable oils, and animal fats.

In one respect, however, many petroleum oils differ from most vegetable oils and animal fats. Unlike most vegetable oils and animal fats, many petroleum oils have a high vapor pressure. The high vapor pressure of petroleum oils can lead to significant evaporation from spills. It may also produce exposure of nearby populations through the air pathway.

We describe some important properties of oil below.

Solubility. Solubility refers to the ability of a chemical to dissolve in water or solvents. Like petroleum oils, vegetable oils and animal fats have limited water solubility and high solubility in organic solvents.

Specific Gravity. Specific gravity is the ratio of the density of a material to the density of fresh water. Specific gravity determines whether an oil floats on the surface of a water body or sinks below the surface and how long oil droplets reside in the water. It can also give a general indication of other properties of the oil. For example, oils with a low specific gravity tend to be rich in volatile components and are highly fluid (International Tanker Owners Pollution Federation, 1987). The specific gravity of vegetable oils and animal fats whose properties we examined is within the range of specific gravity values for petroleum oils.

Viscosity. Viscosity refers to the resistance to flow. It controls the rate at which oil spreads on water and how deeply it penetrates the shore. Viscosity also determines how much energy organisms need to overcome resistance to their movement. At similar temperatures, the dynamic viscosity (shear stress/rate of shear) and kinematic viscosity (dynamic viscosity/density) of vegetable oils and animal fats are somewhat greater than those for light petroleum oils but less than those for heavy petroleum oils. The viscosity of canola oil represents a medium weight oil and is comparable to that of a lightly weathered Prudhoe Bay crude oil after it has evaporated by 10 percent (Allen and Nelson, 1983).

Vapor Pressure. Vapor pressure is the pressure that a solid or liquid exerts in equilibrium with its own vapor depending on temperature. It controls the evaporation rate of an oil spill and air concentrations. The higher the vapor pressure of an oil, the faster it evaporates. Vapor pressure varies over a wide range for petroleum oils, from moderately volatile diesel-like products to slightly volatile heavy crude oils and residual products. The vapor pressure of animal fats and vegetable oils is generally much lower than that of many petroleum oils. Evaporation is significant for many petroleum oil spills, some of which completely evaporate in one to two days, but it is rarely an important factor in spills of vegetable oils and animal fats. In some vegetable oils, however, there is a small volatile fraction that can evaporate. Thermal decomposition can also cause the formation of many volatile degradation products.

Surface Tension. The spreading of oil relates to surface tension (interfacial tension) in a complex manner. When the sum of the oil-water and oil-air interfacial tensions is less than the water-air interfacial tension, spreading is promoted. At 25 °C, the oil-water interfacial tension for canola oil is far less than that of Prudhoe Bay crude oil, suggesting that canola oil could spread more (Allen and Nelson, 1983). Surface tension measurements in the laboratory, however, are not necessarily predictive of the behavior of oil that is being transformed by many processes in the environment.

Emulsions. Emulsions are fine droplets of liquid dispersed in a second, immiscible liquid. When oil and water mix vigorously, they form a dispersion of water droplets in oil and oil droplets in water (Hui, 1996c). When mixing stops, the phases separate. Small water drops fall toward the interface between the phases, and the oil drops rise. The emulsion breaks. When an emulsifier is present, one phase becomes continuous, while the other remains dispersed. The continuous phase is usually the one in which the emulsifier is soluble.

The tendency of petroleum and non-petroleum oils to form emulsions of water-in-oil or oil-in-water depends on the unique chemical composition of the oil as well as temperature, the presence of stabilizing compounds, and other factors. When an emulsion is formed in the environment, the oil changes appearance and its viscosity can increase by many orders of magnitude. Removal of the oil becomes harder because of the increased difficulty in pumping viscous fluids with up to fivefold increases in volume.

The similar tendencies for formation of emulsions by petroleum oils, vegetable oils, and animal fats is described in greater detail in the discussion of Appendix E, Section 10 and Table 7.

Adhesions. Although the ability to form adhesions is difficult to measure and predict, adhesions influence the ease with which spilled oil can be physically removed from surfaces. When water is colder than the oil pour point, oils become viscous and tar-like or form semi-solid, spherical particles that are difficult to recover. Weathering and evaporation are slowed, and oils may become entrapped or encapsulated in ice and later may float on the surface when ice breaks up. In ice adhesion tests, canola oil and Prudhoe Bay crude oil had the same tendency to coat the surface of sea ice drawn up through an oil/water interface (Allen and Nelson, 1983). Neither oil adhered to submerged sea ice even after surface coating. This study suggests that some vegetable oils and petroleum oils have a similar ability to form adhesions under certain environmental conditions.

b. Environmental effects. Physical contact, destruction of food sources, and toxic contamination produce the harmful environmental effects of spills of petroleum oils, animal fats and vegetable oils, and non-petroleum oils other than animal fats and vegetable oils

(62 FR 54508, October 20, 1997). Nearly all of the most immediate and devastating environmental effects from oil spills, such as smothering of fish or coating of birds and mammals and their food with oil, are physical effects related to the physical properties of oils and their interactions with living systems.

These immediate physical effects and effects on food sources may not be considered the result of ''toxicity'' in the classic sense—i.e., effects that are produced when a chemical reacts with a specific receptor site of an organism at a high enough concentration for a sufficient length of time. Nevertheless, severe debilitation and death of fish and wildlife and destruction of their habitats can result from spills of animal fats and vegetable oils, other non-petroleum oils, and petroleum and petroleum products.

Like petroleum oils, animal fats and vegetable oils and their constituents can cause toxic effects that are summarized below. They can:

- Cause devastating physical effects, such as coating animals and plants with oil and suffocating them by oxygen depletion;
- Be toxic and form toxic products;
- Destroy future and existing food supply, breeding animals, and habitat;
- Produce rancid odors;
- Foul shorelines, clog water treatment plants, and catch fire when ignition sources are present; and
- Form products that linger in the environment for many years.

Adverse environmental effects can also occur long after the initial exposure to animal fats and vegetable oils because of the formation of toxic or persistent products in the environment, destruction of food sources and habitat, or diminished reproduction.

Scientific research and experience with actual spills have shown that spills of animal fats and vegetable oils kill or injure fish, birds, mammals, and other species and produce other undesirable effects. Waterfowl and other birds, mammals, and fish that are coated with animal fats or vegetable oils can die of hypothermia, dehydration and diarrhea, or starvation. They can also sink and drown or fall victim to predators. Fish and other aquatic organisms may suffocate because of the depletion of oxygen caused by spilled animal fats and vegetable oils in water. Animal fats and vegetable oils can kill or injure wildlife through physical effects or toxicity.

Spills of animal fats and vegetable oils have the same or similar devastating impacts on the aquatic environment as petroleum oils. Reports of real-world oil spills detail the environmental harm that can be produced by spills of vegetable oils and animal fats into the environment (62 FR 54508, October 20, 1997).

c. Toxicity. Adverse effects occur through both non-toxic and toxic mechanisms. Toxicity refers to adverse effects that are produced when a chemical reacts with a specific receptor site of an organism at a high enough concentration for a sufficient length of time. Toxicity is affected by the characteristics of the organisms and properties of the chemicals or mixtures involved, the duration of exposure and dose required to produce the effects, and the nature of the toxic effects (Klaassen et al., 1986).

Many factors determine the toxicity of chemicals or mixtures. The ingestion of small quantities of animal fats and vegetable oils in food by humans and animals is a completely different situation from spills of oil into the environment. These situations differ markedly in the extent and duration of exposure, the route of exposure, the composition of the chemicals involved, the organisms and ecosystems exposed, the circumstances surrounding the exposure, and the types of effects produced—factors that determine the toxicity and severity of the adverse effects of chemicals. Thus, even if the human or animal consumption of small quantities of oils in food were judged completely safe, no inferences could be drawn about the toxicity and other effects of animal fats and vegetable oils on environmental organisms exposed in the very different circumstances of oil spills.

The toxic effects from acute exposure to a chemical (e.g., a single dose) during a short period of time, such as 24 hours, may differ greatly from those produced by repeated or chronic exposures. Oil spills may result in chronic exposure if oil or its degradation products remain in the environment for a long time.

Petroleum Oils. Petroleum oils affect nearly all aspects of physiology and metabolism and produce impacts on numerous organ systems of plants and animals, as well as altering local populations, community structure, and biomass (Albers, 1995; National Academy of Sciences, 1985; International Agency for Research on Cancer, 1984). Commonly reported individual effects of petroleum oils include impaired reproduction and reduced growth, as well as death in plants, fish, birds, invertebrates, reptiles, and amphibians; blood, liver, and kidney disorders in fish, birds, and mammals; malformations in fish and birds; altered respiration or heart rate in invertebrates, fish, reptiles, and amphibians; altered endocrine function in fish and birds; altered behavior in many animal species; hypothermia in birds and mammals; impaired salt gland function in birds, reptiles, and amphibians; altered photosynthesis in plants; and increased cells in gills and fin erosion in fish. Among the group effects of petroleum are changes in local population and community structure in plants, invertebrates, and birds, and changes in biomass of plants and invertebrates.

Certain petroleum products and crude oil fractions are associated with increased cancer in refinery workers and laboratory animals (IARC, 1989). Many of these petroleum oils contain benzene and polynuclear aromatic hydrocarbons (PAHs), toxic constituents that are carcinogenic in humans and animals.

Vegetable Oils and Animal Fats. Some acute lethality tests suggest that petroleum oils are more toxic to some aquatic species than certain vegetable oils and animal fats. Other studies, however, show that vegetable oils are more toxic than certain petroleum oils (62 FR54508, October 20, 1997). In one study, no rats receiving mineral oil died, although smaller doses of the vegetable oils administered for a shorter time period killed rats (Boyd, 1973). Acute lethality tests are typically LC_{50} (lethal concentration 50) or LD_{50} (lethal dose 50) tests that do not describe a ''safe'' level but rather a level at which 50 percent of test organisms are killed under the experimental conditions of the test. Standard acute toxicity tests are not designed to test for the effects of spills of highly insoluble materials, such as oils, but to measure the toxicity of chemicals in normal use and disposal in effluents. Researchers have raised serious questions about the relevance of such tests to spills in the environment (NAS, 1985).

Animal fats and vegetable oils produce other types of acute toxicity as well. Like petroleum oils, animal fats and vegetable oils are laxatives that can produce diarrhea or lipid pneumonia in animals and can impair their ability to escape predators (Frink, 1994; USDOI/FWS, 1994). Clinical signs of toxicity in rats fed large amounts of corn oil or cottonseed oil for 4 or 5 days include decreased appetite, loss of body weight, diarrhea, fur soiling, incoordination, cyanosis (dark blue skin color from deficient oxygenation of the blood), and prostration, followed by respiratory failure and central nervous system depression, coma, and death (Boyd, 1973). Autopsies showed violent local irritation of the gastrointestinal tract

that allowed the absorption of oil droplets into the bloodstream. In tissues, the oil droplets produced inflammation, congestion in the blood vessels, and degenerative changes in the kidney, among other effects.

Animals exposed to vegetable oils and animal fats can manifest a range of chronic toxic effects. High levels of some types of fats increase growth and obesity but cause early death in several species of animals and may decrease their reproductive ability or the survival of offspring (NAS/NRC, 1995; French et al., 1953). On the other hand, the growth of some fish decreases with elevated levels of oils (NAS/NRC, 1981, 1983; Takeuchi and Watanabe, 1979; Stickney and Andrews, 1971, 1972). Mussels exposed to one of four vegetable oils began to die after 2 or 3 weeks of exposure (Salgado, 1995; Mudge, 1995, 1997a). Mussels exposed to low levels of sunflower oil exhibited growth inhibition, effects on shells and shell lining, and decreases in the foot extension activity that is essential to survival.

Studies have associated dietary fat consumption with the increased incidence of some types of cancer, including mammary and colon cancer, in laboratory animals and humans (Hui, 1996a; US Department of Health and Human Services, 1990; Food and Agriculture Organization/World Health Organization, 1994). The intake of dietary fat or certain types of fat has also been correlated with the incidence of coronary artery disease, diabetes, and obesity in epidemiological studies. High dietary fat intake has also been linked to altered immunity, changes in steroid excretion, and effects on bone modeling and remodeling in humans.

Some vegetable oils and animal fats contain toxic constituents, including specific fatty acids and oxidation products formed by processing, heating, storage, or reactions in the environment (Hui, 1996a; Berardi and Goldblatt, 1980; Yannai, 1980; Mattson, 1973). We have summarized the toxic effects of some of these constituents on the heart, red blood cells, and immune system, as well as effects on metabolism and impairment of reproduction and growth (62 FR 54508, October 20, 1997). In addition, some lipid oxidation products may play a role in development of cancer and atherosclerosis.

d. How properties and effects of oils are changed in the environment. The physical and chemical properties of petroleum and non-petroleum oils can change after spills into the environment (USDOC/NOAA, 1992, 1996; Lewis et al., 1995; ITOPF, 1987; NAS, 1985; Hui, 1996a). Primary weathering processes that affect the composition of oil include spreading, evaporation, dissolution, dispersion, emulsification, and sedimentation (USDOC/NOAA, 1992, 1994, 1996). Wind transport, photochemical degradation, and microbial degradation may also play important roles. These processes can change the composition, behavior, routes of exposure, persistence, and toxicity of the spilled oil. As the spilled oil is changed by these environmental processes, its toxicity may increase, decrease, or stay the same. These changes may reduce the volume of some oils and increase the volume in other oils because of their persistence in water or ability to form emulsions. While some weathering mechanisms are different for petroleum oils and animal fats and vegetable oils, spills of all of these oils can create heavy sludges and hardened exposed surfaces with aggregates or tars that can persist in the environment for many years (USDOC/NOAA, 1994; NAS, 1985; Mudge, 1995, 1997a, 1997b).

Oil can affect different parts of the ecosystem as its composition changes. For example, when the lighter fractions of petroleum oil dissolve or evaporate, the oil sinks and contaminates sediments and contributes to water column toxicity (USDOC/NOAA, 1992; Hartung, 1995; NAS, 1985). Spilled sunflower oil forms polymers that can wash ashore or sink and cover sediments, exposing benthic and intertidal communities to the oil (Mudge et al., 1993, 1995). Spilled soybean oil can change its environmental behavior, forming rubbery floating masses that move downstream and cover sediments on the bottom of water bodies or lodge on the shoreline (Minnesota, 1963; USDHHS/PHS, 1963).

e. How properties affect removal of spilled oils. In aquatic environments, the behavior of petroleum oils and vegetable oils and animal fats is similar. They can form a layer on water, settle out on sediments, foul shorelines and beaches, and form emulsions when there is agitation by surf, wind, rapidly flowing streams, or prolonged exposure to heat or light (Crump-Wiesner and Jennings, 1975; USDOC/NOAA, 1996). When the emulsions and surface films or masses are entangled with debris, they can settle to the bottom as sludge.

Because of the similarity in properties of petroleum and non-petroleum oils, including vegetable oils and animal fats, many similar methods are used for their containment, removal from the aquatic environment, and cleanup from shorelines when the oils are spilled in the environment. Canola oil and Prudhoe Bay crude oil exhibited similar behavior in field tests with certain types of spill control equipment, including their tendency to form emulsions with seawater in cold tempera tures and their affinity for surfaces (Allen and Nelson, 1983).

Because of its greater viscosity at cold temperatures, the recovery rate for canola oil with saturated mop fibers was 30 to 40 percent greater than that of crude oil; at warm temperatures, the recovered volume of canola oil was twice that of crude oil (Allen and Nelson, 1983). While canola oil penetrated fibers of sorbent pads at a slightly slower rate than Prudhoe Bay crude oil, saturation for both occurred within minutes. The volumes absorbed and recovered from saturated pads were nearly identical for both oils, with amounts absorbed increasing with reduced temperatures.

3. Other Petitions Submitted to EPA and the USCG

On January 16, 1998, we received a request from the Animal Fat/Vegetable Oil Coalition to modify the FRP rule as it applies to facilities that handle, store, or transport vegetable oils and animal fats. We met with Coalition representatives on April 6, 1998 to clarify their request. On April 9, 1998, we received a second request amending two items in the previous request. The requests ask us to revise the FRP rule by creating a separate category for response planning for animal fat/vegetable oil facilities and a separate Appendix with procedures for these facilities. The requests also include suggested language for the revised rule. The suggested language would make the following changes for facilities that handle, store, or transport vegetable oils and animal fats:

- Move the definitions of vegetable oils and animal fats from the Preamble and Appendix E of the current FRP rule to the definitions section, and modify the language slightly;
- State the applicability dates by which facilities storing vegetable oils and animal fats would need to comply with the rule;
- Limit requirements for submitting a facility response plan;
- Change the planning distance formula used in determining whether a facility storing vegetable oils and animal fats may present substantial harm;
- Revise the criteria considered by EPA Regional Administrators in determining whether a facility is a significant and substantial harm facility;
- Increase required response time from on-scene arrival time of 12 hours including travel time to 24 hours, with

a response commencing within 12 hours of discovery of a discharge;

- Eliminate planning for small or medium discharges of oil and eliminate tier planning requirements;
- Eliminate the definitions of non-persistent and persistent oil;
- Allow mechanical dispersal and ''no action'' options to be considered in lieu of the oil containment and recovery devices otherwise specified for response for a worst case discharge; and
- Make other changes in the rule language.

We address some of these issues in detail in this proposed rule. On March 14, 1997, the National Oilseed Processors Association filed a petition with the USCG requesting similar amendments to the marine-transportation-related facility response plan regulations. To further address these petitions, EPA and the USCG are requesting comments and information on how facilities that handle animal fats and vegetable oils should be regulated.

II. Request for Comment and Discussion of Proposed Revisions

A. Request for Comment

We request public comments on the usefulness of the new procedure and tables in the proposed rule for determining response equipment needs for facilities that handle, store, or transport animal fats and vegetable oils compared to the approach provided in the existing rule. In connection with these proposed changes, we invite public comment on new approaches or data that have been developed since the issuance of the rule, which would reduce the burden of FRP rule requirements without compromising environmental protection. We are interested in research in progress or planned research on the issues raised in this rule. We also request data and comments bearing on the issues raised in the requests for changes to the existing regulations.

In addition, we invite public comments for the purpose of securing information to develop possible future rules or policies. We seek data and comments on approaches for non-petroleum oils other than animal fats and vegetable oils that are not now required, but that would enhance the environmental protection the FRP rule provides.

B. Proposed Revisions

The main purpose of these revisions is to provide a more specific methodology for planning response resources that can be used by owners or operators of facilities that handle, store, or transport animal fats and vegetable oils. Specific proposed revisions are discussed below.

1. Section 112.2 Definitions

The FRP rule defines oil as ''oil of any kind or in any form, including, but not limited to petroleum, fuel oil, sludge, oil refuse and oil mixed with wastes other than dredged spoil.'' (40 CFR 112.2). In response to comments on our 1993 proposed FRP rule (58 FR 8866, February 17, 1993), we set forth definitions for ''animal fat,'' ''vegetable oil, '' ''petroleum oil,'' ''non-petroleum oil,'' and ''other non-petroleum oil'' in the Preamble to the final FRP rule (59 FR 34070, 34088 July 1, 1994) to assist owners or operators in distinguishing among oil types. We also define non-petroleum oil in Appendix E to the rule.

We propose to add the definitions of ''animal fat,'' ''non-petroleum oil,'' ''petroleum oil,'' and ''vegetable oil'' to the FRP regulations in § 112.2. We believe that adding these definitions to the regulatory text will help the regulated community better understand the FRP rule. We have made slight revisions to the definitions to more closely reflect the language of the 1995 Edible Oil Regulatory Reform Act. According to the proposed definitions, non-petroleum oils other than animal fats and vegetable oils would include, but are not limited to, coal tar, silicone oils, and turpentine.

2. Section 112.20(a)(4) Preparation and Submission of Facility Response Plans for Animal Fat and Vegetable Oil Facilities

The current FRP rule includes requirements for the owner or operator of a facility to prepare and submit an FRP to the RA in § 112.20(a)(1), (a)(2), and (a)(3). The proposed rule includes a new § 112.20(a)(4) that describes the requirements for the facility owner or operator to prepare and submit an FRP using the new methodology for response planning for animal fats and vegetable oils. The proposed new methodology for calculating planning volumes for worst case discharges of animal fats and vegetable oils is discussed in Appendix E, Section 10.

The proposed requirements for preparation and submission of an FRP for animal fat and vegetable oil facilities are as follows:

- If you have an approved FRP, you would not have to prepare a new plan, unless there is a planned change in design, construction, operation, or maintenance or an unplanned event or change in facility characteristics. The existing FRP would be good for the 5-year period of approval. The requirements for submitting a new plan after planned or unplanned changes or events would be the same as in the current rule.
- If you have submitted an FRP to the RA and have not received approval, you would recalculate response resources using the new methodology. The new methodology is described in detail in the discussion of Appendix E, Section 10. If your FRP does not meet or exceed the recalculated estimate of response resources, you would prepare and submit a new plan to meet this estimate within 60 days of the effective date of this rule. A new plan would not be required, however, if your existing FRP meets or exceeds the new estimate of response resources.
- If you are preparing a new FRP, you would ensure that response resources meet or exceed the estimate obtained using the new methodology. You would submit the new plan prior to the start of operations as required by the existing FRP rule.
- If you are amending your FRP, you would recalculate the response resources using the new methodology and ensure that response resources meet or exceed the new estimate. If the plan does not meet or exceed the requirements, you would submit a new plan. In the proposed rule, the time requirements for submitting a new plan remain the same as in the existing FRP rule.

3. Section 112.20(f) Facility Classification

OPA requires agencies to classify facilities for the purposes of response planning based on the facility's expected ability to cause ''substantial harm'' or ''significant and substantial harm'' to the environment in the event of a spill or discharge. In § 112.20(f)(1), we indicate two sets of criteria that define a ''substantial harm'' facility for the purposes of response planning:

- Any non-transportation-related facility that transfers oil over water to or from vessels and has a total oil storage capacity greater than or equal to 42,000 gallons; or
- Any non-transportation-related facility that has a total oil storage capacity of greater than or equal to 1 million gallons and meets at least one of the following criteria: has insufficient secondary containment to contain the capacity of the facility's largest storage container in each storage area plus precipitation; is located in proximity to fish and wildlife and sensitive environments; is located in proximity to public drinking water intakes; or has experienced an oil spill greater than or equal to 10,000 gallons within the last five years.

The owner or operator of a facility that meets one of these requirements for ''substantial harm'' must prepare and submit to the Regional Administrator (RA) a response plan, or must self-certify that the facility does not meet the requirements of the FRP regulations and maintain that self-certification on file. An RA may determine that a facility could reasonably be expected to cause ''significant and substantial harm'' to the environment by considering the facility's frequency of past spills, the age of the facility's oil storage tanks, the facility's proximity to navigable waters, and other facility and Region-specific information, including local impacts on public health. If an RA makes such a determination, the RA must notify the facility owner or operator and must review and approve the response plan upon initial receipt of the plan and at least once every five years thereafter. The RA may require amendments to any ''significant and substantial harm'' FRP that does not meet the requirements in 40 CFR part 112. An appeals process allows facility owners or operators the opportunity to challenge the RA's determination.

Currently, the owner or operator determines whether or not the facility can be considered a ''substantial harm'' facility. Then, EPA and the USCG make the initial designation of facilities as ''substantial harm'' or ''significant and substantial harm'' and can subsequently reclassify them. For all types of oils, EPA designates a facility as ''substantial harm'' initially and then determines whether the facility meets criteria for ''significant and substantial harm.'' The USCG has determined that any facility capable of transferring any type of oil to or from a vessel with a capacity of 250 barrels (10,500 gallons) or more, except for mobile facilities, could reasonably be expected to cause significant and substantial harm in the event of a discharge (33 CFR 154.1015(c)). The USCG considers non-petroleum oil facilities ''significant and substantial harm'' facilities unless they are reclassified. The USCG Captain of the Port may reclassify a facility based on certain relevant factors including, but not limited to: type and quantity of oil handled in bulk, facility spill history, age of facility, proximity to public and commercial water supply intakes, proximity to navigable waters, and proximity to sensitive environments.

EPA's response planning rules intentionally do not distinguish between types of oils for the purposes of determining ''substantial harm'' and ''significant and substantial harm.'' We have decided not to modify the ''substantial harm'' and ''significant and substantial harm'' criteria or to distinguish between types of oils for the purposes of making the designation in this proposed rule. We have come to this decision because we believe that all oils addressed in the FRP rule have the potential to produce similar effects when released into the environment. The USCG is considering revisions to its classification scheme that would make its policy on initial classification more uniform with ours by initially classifying these facilities as ''substantial harm.''

4. Section 112.20(h)(5) Response Planning Levels

a. Summary of proposed rule. In the existing FRP rule, the response plan must include a discussion of three specific planning scenarios for all oil discharges—small (2,100 gallons or less), medium (between 2,100 and 36,000 gallons, or ten percent of the capacity of the largest tank), and worst case. Although we would add separate sections for animal fats and vegetable oils, we are proposing to keep the same response planning scenarios that are required in the existing rule. We are proposing no changes in the response planning level requirements for petroleum oils and non-petroleum oils other than to create separate regulatory sections for animal fats and vegetable oils. Because we understand that at the time of a spill certain factors may exist that counter the original assumptions used during response planning, we would continue to allow case-by-case deviations when such deviations afford equivalent environmental protection. Nothing in the response planning regulations is intended to limit the actions of the owner or operator of the facility provided that those actions are in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), the Area Contingency Plan (ACP), and the Regional Contingency Plan and that the actions are approved by the Federal On-Scene Coordinator.

b. Comparison of facilities regulated by EPA and the USCG. Unlike EPA, the USCG currently requires response planning for non-petroleum oils (including animal fats and vegetable oils) at marine transportation-related facilities only for a worst case discharge. However, under 33 CFR 154.545 each facility must have ready access to enough containment material and equipment to contain any oil discharged on the water from operations at the facility. ''Access'' includes direct ownership, joint ownership, cooperative venture, or contractual agreement. The facility must establish response time limits, which are approved by the Captain of the Port, for deployment of containment material and equipment. These requirements were issued in 1980 and pre-date the OPA response planning requirements and were intended to prepare a facility for an ''operational'' discharge. The USCG proposed rule retains response planning for a worst case discharge and proposes planning for Average Most Probable Discharge that is similar to existing requirements for identifying response equipment for operational discharges.

EPA and the USCG regulate facilities with different physical activities and different response schemes to fit their environment. Each of the agencies addresses the most probable activities for the facilities under its jurisdiction. EPA's non-transportation-related facilities generally have a greater potential for large spills than USCG-regulated facilities. The worst case discharge from EPA-regulated facilities is often greater by an order of magnitude or more. EPA-regulated facilities also tend to have a larger number of oil transfers than USCG-regulated facilities, and they have a significant potential for small and medium discharges. Because of the greater diversity of structures and processes, oil can discharge in many ways over a range of volumes at EPA-regulated facilities. At these facilities, there is a wide range of activities, and many parameters can affect discharges. Causes of oil discharges at EPA-regulated facilities can include tank failure, deterioration of tanks or valves, transfer from tank cars to tank trucks, and discharges from processing units. At USCG-regulated facilities, however, discharges usually result from human error or equipment failure, such as a barge sinking, or failure of off loading lines or valves. The spill size associated with these transfer activities is determined primarily by pump rate and pipe diameter and covers a narrower range than discharge volumes at EPA-regulated facilities.

c. Rationale for planning for three response scenarios. EPA believes that discharges less severe than a worst case scenario may pose a serious threat to navigable waters, especially from the cumulative effects of several discharges, and that preparation to respond to smaller spills produces better overall protection of the nation's navigable waters. We have found that small spills of petroleum oils, vegetable oils, and animal fats oils can cause significant environmental damage (62 FR 54508, October 20, 1997). Real-world examples demonstrate that spills of animal fats and vegetable oils do occur and produce harmful environmental effects.

Various sizes of discharges can require different types and amounts of equipment, products, and personnel, and must therefore be addressed separately. For example, a facility may want to hire a contractor to support response to a worst case discharge scenario, but handle smaller, operational spills using its own personnel and equipment. To the extent that facility personnel are better able to address immediate actions associated with smaller spills, they will be better prepared to initiate a response to a worst case discharge until back-up resources arrive on-scene. Increased proficiency in handling the initial stages of a discharge can result in significant reductions in the extent of spill movement and associated impacts to the environment.

We recognize that this planning approach may not be appropriate for all facilities, including those where the range of possible spill scenarios is small. Under the proposed rule, as under the current rule, large facilities would need to plan for three discharge amounts, but a small facility may only need to plan for two scenarios or a single scenario if the worst case discharge falls within one of the specified ranges. Many commenters on the 1993 proposed FRP rule (58 FR 8824, February 17, 1993) recognized that planning for responses to more commonly occurring discharges may be more beneficial to facilities than planning for a worst case discharge with a lower probability of occurrence.

We have examined spill data for animal fats and vegetable oils to determine whether the distribution of discharge size for these oils is similar to the pattern for all oils. In the existing FRP rule, the planning volumes for discharges other than a worst case discharge are based on an analysis of Emergency Response Notification System (ERNS) data, which contains data on discharges from facilities, etc. These data showed that the average reported discharge is 1,300 gallons, and 99.5 percent of the discharges of all oils were less than approximately 36,000 gallons. The planning volume of 2,100 gallons or less for small discharges represents a realistic planning quantity. (See the Proposed FRP rule, 58 FR 8836, February 17, 1993).

In many of the ERNS records for spills, animal fats and vegetable oils could not be distinguished from other non-petroleum oils, or data on spill volume were incomplete. ERNS data for the entire U.S. show that approximately 150 oils spills each year are greater than 10,000 gallons; fewer than one percent of these larger discharges are positively identified as vegetable oil or animal fat.

We also reviewed data from the USCG's Marine Safety Information System from 1992 to 1998 and found 28 non-petroleum discharges from non-transportation-related facilities and from the non-transportation segment of a transportation facility. The size of discharges ranged from one gallon to 7,500 gallons. Most discharges (24) were less than 1,000 gallons and only 4 were greater than or equal to 1,000 gallons. Fifty percent of the discharges were less than 20 gallons and 93 percent were less than 1,500 gallons.

Other data demonstrate the occurrence of spills of animal fats and vegetable oils but do not provide estimates of spill size. Animal fats and vegetable oils were among the most frequently spilled organic materials, ranking sixth and seventh respectively, and were responsible for over 6 percent of all spills (384 of 6076 spills) of organic materials reported along the coasts and major waterways in the United States in 1973–1979 (Wolfe, 1986). Other authors estimate that at least 5 percent of all spill notifications are for vegetable oils and animal fats (Crump-Wiesner and Jennings, 1975). Of the 18,000 to 24,000 spills in the United States reported annually to the National Response Center and EPA Regions, 2 to 12 percent are from non-petroleum oils, including vegetable oils and animal fats (USEPA/OSWER, 1995, 1996).

These figures represent the minimum number of spills. It is likely that they greatly underestimate the actual number of spills because of significant underreporting. We made a comparison of reports of spills in Ohio of vegetable oil and soybean oil from January 1984 to June 1993 to the State of Ohio Environmental Protection Agency (Ohio EPA) and to the National Response Center (NRC). Only 7 of 27 reports (26 percent) to the Ohio EPA were also reported to the NRC (USEPA, 1994). There were a number of reports of vegetable and soybean oil spills to the NRC that were not on the State list (USEPA, 1994).

We have also compared spills of animal fats and vegetable oils that were reported to the State of Iowa and to the NRC between 1991 and 1996. Only 32 percent of the reports to Iowa were also reported to the NRC. Of 19 reports from fixed facilities, where the amount spilled was known, the size of discharges ranged from one gallon to 37,728 gallons. Most (13) were less than 1,000 gallons and only two were greater than 10,000 gallons.

d. Request for data and comment. Our figures on spill size suggest that the most commonly occurring discharges of animal fats and vegetable oils are small discharges. We request comment on the reliability of these data and whether these data are representative of spills of animal fats and vegetable oils at other facilities. We request that States or other parties who have data about the discharges of animal fats and vegetable oils provide this information to assist our rulemaking efforts.

In keeping with requirements of the Edible Oil Regulatory Reform Act, EPA has examined the properties and effects of classes of oils to determine how or whether to differentiate them in response planning levels. We have found that the properties and environmental effects are similar for petroleum oils, animal fats and vegetable oils, and other non-petroleum oils. We also analyzed the size of oil discharges. According to our data, the size distribution for spills of animal fats and vegetable oils is comparable to that of all other oils.

EPA solicits comments on whether it is feasible to require differentiated response planning levels for animal fats and vegetable oils. Members of the public have inquired as to whether we will modify the rule such that facilities would only be responsible for one or two planning levels instead of the three levels required in the existing rule. We presently have no basis for making this distinction in response planning levels for different classes of oils. Our existing information shows similar properties, effects, and spill size for animal fats and vegetable oils and other oils at EPA-regulated facilities. We solicit data justifying different levels of planning, such as combining small and medium discharge planning or eliminating some planning levels.

5. Other Changes

As described in the following sections, most of the proposed changes affect Appendix E to part 112, which assists facility owners and operators in determining the required FRP response resources. Some general changes include adding to the Appendix new Sections 8.0, 9.0, and 10.0 for animal fats and vegetable oils, renumbering of existing sections, and adding and renumbering definitions in Section 1.2.

6. Appendix E, Section 1.2 Definitions

a. Non-persistent oils and persistent oils. Sections 1.2.3 and 1.2.8. In the current FRP rule, the definitions of persistent and non-persistent oils rely on distillation criteria and specific gravity for petroleum oils and specific gravity for non-petroleum oils. We propose changing the definitions of

persistent and non-persistent oils to eliminate their applicability to animal fats and vegetable oils. The terms ''persistent'' and ''non-persistent'' would still apply to petroleum oils and non-petroleum oils other than animal fats and vegetable oils. The definitions would also be renumbered.

We are proposing to change these definitions because persistence or non-persistence of animal fats and vegetable oils does not depend merely on specific gravity. Instead, it depends on many environmental factors. The same oil may exhibit differing degrees of persistence in different environmental situations. In addition to the scientific imprecision of ''persistent'' and ''non-persistent'' for animal fats and vegetable oils, these terms do not determine response planning requirements for animal fats and vegetable oils in the current FRP rule or in the approach proposed in this rule.

In our evaluation of studies on the environmental fate of animal fats and vegetable oils, we found that the extent of degradation or persistence depends on many factors (62 FR 54508, October 20, 1997). Although some animal fats and vegetable oils can degrade rapidly, others persist in the environment years after the oil was spilled (Mudge et al., 1995; Mudge, 1995, 1997a, 1997b).

Every spill is different. Factors such as pH (acidity), temperature, oxygen concentration, dispersal of oil, the presence of other chemicals, soil characteristics, nutrient quantities, and populations of various microorganisms at the location of the spill profoundly influence the degradation of oil. Environmental processes can alter the chemical composition and environmental behavior of the spilled oils and influence their proximity to environmentally sensitive areas and the environmental damage they cause.

All oils can deplete oxygen and suffocate aquatic organisms. Under certain conditions, however, some animal fats and vegetable oils present a far greater risk to aquatic organisms than other oils spilled in the environment, as indicated by their greater biological oxygen demand (BOD). According to studies designed to measure the degradation of fats in wastewater, some food oils exhibit nearly twice the BOD of fuel oil and several times the BOD of other petroleum-based oils (Groenewold et al., 1982; Institute, 1985; Crump-Wiesner and Jennings, 1975). While the higher BOD of food oils is associated with greater biodegradability by microorganisms using oxygen, it also reflects the increased likelihood of oxygen depletion and suffocation of aquatic organisms under certain environmental conditions. Oil creates the greatest demand on the dissolved oxygen concentration in smaller water bodies, depending on the extent of mixing (Crump-Wiesner and Jennings, 1975). Furthermore, spilled animal fats and vegetable oils can cause long-term harm even if they remain in the environment for relatively short periods of time because they destroy existing and future food sources, reduce breeding animals and plants, and contaminate eggs and nesting habitats.

b. Definitions for groups of oils. Sections 1.2.1 and 1.2.9. We propose reclassifying the oil categories for animal fats and vegetable oils to further differentiate between classes of oils. We would add definitions of three new groups (Groups A, B, and C) for animal fats and vegetable oils. We have found that the specific gravity of most animal fats and vegetable oils falls within the range for Group 3 oils, so that we can reduce the number of categories for these oils. We are proposing to combine Groups 2, 3, and 4 into a single group (Group B) for animal fats and vegetable oils. No longer would animal fats and vegetable oils be considered Groups 1, 2, 3, 4, or 5 in our proposed rule. Rather, they would belong to Groups A, B, or C. These groups would be used in new Tables 6 and 7 in Appendix E to assist owners or operators of facilities that handle, store, or transport animal fats and vegetable oils in determining response equipment needs.

The groups of oils are based on the specific gravity of the animal fats and vegetable oils. Most of the common vegetable oils and animal fats found in commerce will be classified in Group B with a specific gravity greater than or equal to 0.8 but less than 1.0. Group A substances are defined as having a specific gravity of less than 0.8 and will include a few substances such as light greases. Group C substances are those with a specific gravity equal to or greater than 1.0 and are likely to drop below the water's surface.

7. Appendix E, Section 3.0 Determining Response Resources Required for Small Discharges—Petroleum Oils and Non-petroleum Oils Other Than Animal Fats and Vegetable Oils

The current FRP rule describes planning requirements for small discharges of all oils in one section (Section 3.0). We are proposing to add a new section (Section 8.0) for animal fats and vegetable oils. The planning requirements for small discharge of other oils would remain in Section 3.0.

Section 3.2. The proposed rule would clarify the requirements for response planning for small discharges at installations with both EPA-regulated and USCG-regulated facilities and describe current USCG requirements. This section would apply to petroleum oils and non-petroleum oils other than animal fats and vegetable oils. We would add a separate section (Section 8.2) for animal fats and vegetable oils.

Section 3.3. We propose minor revisions to clarify the determination of response resources. We would change the word ''spill'' to the more specific term ''discharge'' and change the number of the section mentioned in Section 3.3.3 to make it consistent with the new section numbers in the proposed rule.

8. Appendix E, Section 4. 0 Determining Response Resources Required for Medium Discharges—Petroleum Oils and Non-petroleum Oils Other Than Animal Fats and Vegetable Oils

The current FRP rule describes planning requirements for medium discharges of all oils in one section (Section 4.0). This section would apply to petroleum oils and non-petroleum oils other than animal fats and vegetable oils. We are proposing a new section (Section 9.0) for medium discharges of animal fats and vegetable oils.

Section 4.2. The proposed rule would clarify the requirements for response planning for medium discharges at EPA–USCG complexes and describe current USCG requirements. This section would apply to petroleum oils and non-petroleum oils other than animal fats and vegetable oils.

Section 4.4. We propose replacing the word ''spill'' with the more specific term ''discharge.''

9. Appendix E, Section 6.0. Determining the Appropriate Amount of Response Equipment

We will continue to use the criteria in Section 6.0 to determine the effective daily recovery capacity (EDRC) of oil recovery devices. These criteria are specified in Section 5.4. Section 6.0 provides for primary and alternative criteria for determining the EDRC of oil recovery devices. We have no data to suggest that a different EDRC would be appropriate for animal fats and vegetable oils. We request comment and data on the EDRC of oil recovery devices for animal fats and vegetable oils and whether different rates are appropriate for animal fats, vegetable oils, and petroleum oils with similar physical and chemical characteristics.

10. Appendix E, Section 7.0 Calculating Planning Volumes for a Worst Case Discharge—Petroleum Oils and Non-petroleum Oils Other Than Animal Fats and Vegetable Oils

In the current FRP rule, the worst case discharge of all oils is described in one section (Section 7.0). We propose adding new Section 10.0 for animal fats and vegetable oils and removing animal fats and vegetable oils from provisions in Section 7.0. We propose to modify Section 7.0 to include only petroleum oils and non-petroleum oils other than animal fats and vegetable oils. Our revisions would clarify that petroleum oils and non-petroleum oils other than animal fats and vegetable oils are included in Sections 7.0, 7.1, 7.7, 7.7.1, 7.7.2, and 7.7.3.

Section 7.7.5. Our revisions would require the facility owner or operator to ensure fire fighting resources by contract or other approved means. In the current rule, we recommend that the owner or operator ensure these resources. We propose this revision because although most oils do not easily catch fire by themselves, once oil fires begin, they are difficult to extinguish and can cause considerable environmental damage.

11. Appendix E, Section 8.0 Determining Response Resources Required for Small Discharges—Animal Fats and Vegetable Oils

In the current FRP rule, small discharges of all oils are included in one section (Section 3.0). We propose adding a new section (Section 8.0) for small discharges for facilities that handle, store, or transport animal fats and vegetable oils. The requirements for other oils would remain in Section 3.0. The planning requirements for small discharges of animal fats and vegetable oils would stay the same, except for the revisions that we propose below.

Section 8.2. The proposed rule would explain the requirements for response planning for small discharges at EPA–USCG complexes and describe current USCG requirements.

Section 8.3.1. The specific term ''discharge'' would replace ''spill,'' which is used in current Section 3.3

Section 8.3.3. We would renumber the section referred to in current Section 3.3.3.

12. Appendix E, Section 9.0 Determining Response Resources Required for Medium Discharges—Animal Fats and Vegetable Oils

In the current FRP rule, medium discharges of all oils are included in one section (Section 4.0). We propose adding Section 9.0 for medium discharges for facilities that handle, store, or transport animal fats and vegetable oils. The requirements for other oils would remain in Section 4.0. The planning requirements for medium discharges of animal fats and vegetable oils would stay the same, except for the revisions that we propose below.

Section 9.2. The proposed rule would explain the requirements for response planning for medium discharges at EPA–USCG complexes and would separate sections for petroleum oils and non-petroleum oils. The proposed rule would clarify current USCG requirements.

Sections 9.4 and 9.6. We would renumber the sections described in current Sections 4.4 and 4.6.

Section 9.7. We are including a new example that demonstrates the method discussed in this Appendix for calculating response planning equipment for medium discharges.

13. Appendix E, Section 10.0 Calculating Planning Volumes for a Worst Case Discharge—Animal Fats and Vegetable Oils

a. *Summary of Proposed Revisions.* In the current FRP rule, worst case discharges for all oils are included in one section (Section 7.0), which includes separate provisions for non-petroleum oils (Section 7.7). We address the likely differences in responding to spills of petroleum oil as opposed to non-petroleum oils, and create an approach that allows owners or operators of facilities that handle, store, or transport non-petroleum oils the flexibility to determine appropriate response equipment within the framework established by the regulation. (See Section 7.7 of Appendix E to 40 CFR part 112.) We provide further flexibility by allowing the Regional Administrator to assess the adequacy of response plans, including those for non-petroleum facilities, to account for site-specific factors. We do not prescribe the type and amount of equipment that response plans for non-petroleum oil discharges must identify. As required at § 112.20(h)(3)(i), in cases where it is not appropriate to follow part of Appendix E to identify response resources to meet the facility response plan requirements, owners or operators must clearly demonstrate in the plan why use of Appendix E is not appropriate at the facility and make comparable arrangements for response resources.

Our review of FRPs submitted to date shows that most owners and operators of facilities that handle, store, or transport animal fats and vegetable oils have voluntarily employed the petroleum oil methodology for determining response resources. The petroleum oil methodology is appropriate for determining response resources for petroleum discharges at facilities that store both petroleum oils and animal fats and vegetable oils. We are proposing a similar approach with some different factors for derermining response resources for discharges of animal fats and vegetable oils at such facilities and at facilities that store only animal fats and vegetable oils.

We are proposing a separate section (Section 10.0) describing the approach for calculating planning volumes for a worst case discharge of animal fats and vegetable oils. This new section reflects recent knowledge about the emulsification and environmental fate of animal fats and vegetable oils. It clearly differentiates between animal fats and vegetable oils and other classes of oils. The definitions and groups of animal fats and vegetable oils described above—Groups A, B, and C—are included in this section. The requirements for other oils would remain in Section 7.0.

We propose two new tables for animal fats and vegetable oils—Table 6, Removal Capacity Planning Table for Animal Fats and Vegetable Oils, and Table 7, Emulsification Factors for Animal Fats and Vegetable Oils. These tables are discussed in detail below.

The proposed methodology includes paragraphs on the following topics:

Section 10.1. Accounting for the potential for loss of oil to the environment through physical, chemical, and biological processes and deposition of oil on the shoreline or on sediments when planning for on-water oil recovery.

Section 10.2. Steps in determining the on-water recovery capacity.

Section 10.3. Procedures to calculate the volume for shoreline cleanup resource planning and identify appropriate shoreline cleanup capacity.

Section 10.4. Identifying response resources with appropriate fire fighting capability.

Section 10.5. An example showing how the proposed method and tables would be applied.

Section 10.6. Procedures for Group C oils (oil with a specific gravity greater than 1.0).

Section 10.7. Procedures used to determine appropriate response plan development and evaluation criteria.

b. *Calculating planning volumes for a worst case discharge using the current FRP rule.* EPA and the USCG considered the components of the weathering process in developing criteria for

determining adequate response resources for the purpose of response planning for oils. These criteria considered loss to the environment, potential for on-water recovery, and potential for shoreline impact. In developing rules for response planning for facilities and tank vessels, EPA and the USCG have previously discussed the applicability, development, and use of these criteria in several **Federal Register** notices (62 FR 54508, October 20, 1997; 61 FR 7890, February 29, 1996; 61 FR 1081, January 12, 1996; 59 FR 34070, July 1, 1994; 58 FR 7330, February 5, 1993; 58 FR 7376, February 5, 1993; 57 FR 27514, June 19, 1992).

The current FRP rule details several steps to calculate planning volume for a worst case discharge of petroleum oils. These steps involve selecting factors from tables and multiplying these factors by other numbers. The rule includes a worksheet that explains these steps. If you are a petroleum oil facility owner or operator, you must follow the steps in Appendix E to identify response resources or, where not appropriate, clearly demonstrate in the response plan why use of Appendix E is not appropriate at your facility and make comparable arrangements for response resources.

Under the current rule, if you are an owner or operator of a facility that handles, stores, or transports petroleum oils, you would determine the worst case discharge, the oil groups at the facility, and the geographic areas in which the facility operates (Table 1). Next, you would determine the percentages of oil volume used to determine resource planning for recovery of floating oil and shoreline cleanup (based on Table 2). Then you would obtain the on-water oil recovery capacity by multiplying this figure by an emulsification factor (Table 3) and an on-water oil recovery resource mobilization factor (Table 4). This latter value depends on the geographic area where your facility operates (such as rivers and canals or inland/nearshore areas) and three levels of response tiers. As a facility owner or operator, you would have to plan for a certain proportion of response resources to arrive at the scene of the discharge within the time frames that correspond to the three response tiers. Next, you would determine whether the requirements for the three response tiers exceed the values for response capability caps by operating area (Table 5). You would have to ensure by contract or other approved means, as described in § 112.2, availability of the quantity of resources required to meet the cap. You would not need to contract for resources that are above the response capability caps in advance, but you must identify sources of additional response resources. Once you had determined the amount and type of response equipment that you need, you would have to identify the additional response resources available by contract or other approved means, as described in § 112.2. The equipment that you identify must be capable of operating effectively in the conditions where the facility operates and within the tier response times.

If you are the owner or operator of a non-petroleum oil facility, including an animal fat or vegetable oil facility, you would have greater flexibility than the owner or operator of a petroleum oil facility. You would have to show procedures and strategies for responding to the maximum extent practicable to a worst case discharge; show sources of equipment and supplies necessary to locate, recover, and mitigate discharges; demonstrate that the equipment identified will work in the conditions expected in the relevant geographic areas, and respond within the required times; and ensure the availability of required resources by contract or other approved means. You would not be limited to using the emulsification and evaporation factors in the petroleum tables (Tables 2 and 3).

c. *Calculating planning volumes for a worst case discharge of animal fats and vegetable oils under the proposed rule.* The proposed rule would make no changes in the methodology for calculating planning volumes for a worst case discharge of petroleum oils or non-petroleum oils other than animal fats and vegetable oils. For animal fats and vegetable oils, we propose to modify the methodology that is used to assess response equipment needs for petroleum oils to account for factors that are specific to animal fats and vegetable oils. With the proposed methodology, the owner or operator of an animal fat or vegetable oil facility would calculate response resources using the same steps that are used for petroleum oils, but some factors used in the calculation would be different. Section 10.0 describes the proposed methodology.

The proposed methodology includes two new tables to Appendix E (Table 6, Removal Capacity Planning for Animal Fats and Vegetable Oils, and Table 7, Emulsification Factors for Animal Fats and Vegetable Oils). For animal fats and vegetable oils, these tables would replace Tables 2 and 3, which apply to petroleum oils. Three existing tables (Table 1, Response Resource Operating Criteria; Table 4, On-Water Oil Recovery Resource Mobilization Factors; and Table 5, Response Capability Caps by Operating Area) would remain the same in the proposed methodology. We are including Table 5 to recognize the practical limitations on the availability of response resources. The use of response caps in the methodology for petroleum oils and animal fats and vegetable oils would prevent excessive planning requirements for response equipment that does not exist in general operating areas. Any equipment identified in a response plan would have to be capable of operating in the conditions expected in the geographic area(s) (i.e., operating environments) in which the facility operates using the criteria in Table 1 (see Section 10.7.2 of Appendix E). The proposed rule also includes an example (Section 10.5) and a new worksheet that shows a second example of the calculation of response resources for a worst case discharge of animal fat or vegetable oils (Attachment E–2).

If you are the owner or operator of an animal fat or vegetable oil facility who is using the proposed methodology, you would follow the steps listed in the new worksheet to determine response resources. First you would calculate the worst case discharge for your facility and determine the oil group and operating area. The oil group is listed in Table 7 and defined in Section 1.2 of this Appendix. The operating areas are defined in Section 1.1 of Appendix C and listed in Table 1 of Appendix E. In the next step, you would determine the percentage of your oil that is apportioned to the three segments listed in Table 6—oil lost to the environment, recovered floating oil, and oil onshore. By multiplying the percentage of oil on-water or onshore by the worst case discharge, you would determine on-water oil recovery or shoreline recovery. Next, you would multiply the on-water recovery or shoreline recovery by the emulsification factor, which is determined in Table 7. You would multiply that figure by the on-water oil recovery resource mobilization factors for the three response tiers in Table 4 and compare the values to the response capability caps in Table 5. You must ensure by contract, or other approved means, as described in § 112.2, availability of the quantity of resources to meet the applicable caps. You would not need to contract in advance for amounts of response resources above the caps, but you must identify sources of additional response resources.

d. *Removal capacity planning for animal fats and vegetable oils.* In the current FRP rule, owners or operators of non-petroleum oil facilities do not have to use the evaporation factors that apply

to petroleum oils in Table 2. Unlike petroleum oils, most animal fats and vegetable oils do not contain substantial amounts of volatile materials that evaporate. Compared to some petroleum oils, a greater proportion of spilled vegetable oils and animal fats usually remains in the water, collects on sediments or land, or contaminates biota (USDOC/NOAA, 1992, 1996; Hui, 1996a, 1996b).

We are proposing a new table, Table 6, Removal Capacity Planning Table for Animal Fats and Vegetable Oils. This table accounts for the potential for natural degradation of oil as spilled animal fats and vegetable oils undergo changes in the environment. Although we recognize that degradation is affected by many factors and conditions that are specific to each spill, we are proposing the percentages of loss and recovery in Table 6 to aid in response planning.

To arrive at the numbers in Table 6, EPA has examined numerous studies on the fate and effects of animal fats and vegetable oils in the environment (62 FR 54508, October 20, 1997). Experiments using three vegetable oils (olive oil, sunflower oil, and linseed oil) demonstrated that natural degradation occurred at a rate of between 3 and 8 percent per day (Mudge et al., 1994). At some stage during the degradation process, the oils polymerized and degradation rates were reduced to less than 1 percent per day. Polymerization, a chemical reaction in which a large number of relatively simple molecules combine to form a chain-like macromolecule, occurs spontaneously in the environment (Sax and Lewis, 1987). With polymerization, soybean oil and sunflower oil form a concrete-like aggregate with soil and sand that cannot be readily degraded by bacteria and may remain in the environment for many years after they are spilled (Minnesota, 1963; Mudge, 1995, 1997a, 1997b). Petroleum oils also undergo oxidation and polymerization reactions and can form tars that persist in the environment for years (NAS, 1985). Animal fats and vegetable oils can also be transformed by other chemical reactions, such as hydrolysis.

Another study, which is being conducted for EPA by Battelle Columbus Laboratories, measures the biodegradation of vegetable oils (Venosa and Alleman, Personal Communication, 1999). Preliminary data provide an estimate of the biodegradation of two vegetable oils that occurs under the conditions of the experiment. The experiment was carried out at three pH levels (5, .7, and 9) and at two temperatures (10 °C and 25 °C). Bacterial cultures were added to samples of crude soybean oil and crude canola oil, and oil was extracted from the samples at various times using standard method 5520B (APHA, 1992). Because this extractable oil includes lipids derived from the bacteria and other sources, the values represent the minimum amount of biodegradation of the samples. At 25 C at least 20 to 25 percent of the crude soybean oil was biodegraded after 25 days, and at least 15 to 39 percent of the crude canola oil was biodegraded after 36 days, depending on pH. At the lower temperature less biodegradation occurred. The total extractable oil was measured for a period up to 36 days. The sample was cloudy, indicating significant emulsification. During biodegradation an increase in toxicity was observed using the Microtox test (ASTM, 1997).

Other reports indicate that the degradation of animal fats and vegetable oils depends on a variety of factors. A summary of a group of studies by the British Ministry of Agriculture, Fisheries and Food (MAFF) explains that biodiesel (rape methyl ester), which was tested at three concentrations, disappeared from the waterbody, plants, and sediments more quickly than marine diesel (MAFF, 1996). Another report describes the deterioration of olive oil by hydrolysis, phytoxidation, and microbial action (Kiritsakis, 1991). The transformation of vegetable oils exposed to air and light has been measured in terms of deterioration of flavor (Hui, 1996a). A study of land disposal of cooking oils used in potato processing measured a decomposition of 70 to 76 percent of the oil in soils over 12 weeks (Smith, 1974). When adequate nitrogen was present, palm oil and soybean oil decomposed rapidly. Another study reported that various fungal species caused biochemical changes in the constituents of palm oil (Cornelius et al., 1965). Factors that affect the biodegradation of oils include pH, dispersal of oil, dissolved oxygen, presence of nutrients, soil type, type of oil, and the concentration of undissociated fatty acids in water (Ratledge, 1994; Venosa et al., 1996; Salanitro et al., 1997).

Based on the above information, we are suggesting that approximately 20 percent of the volume of a Group B animal fat or vegetable oil may be lost due to natural processes. We also expect that facilities could plan to recover from the water approximately 15 percent of the total oil discharged during a 3-day period of sustained operations in the Rivers and Canals operating environment. Due to the narrowness of many of these operating environments, the spilled oil is more likely to become stranded on the shoreline. We expect that facilities could plan to recover approximately 20 percent of the oil discharged during a 4-day period of sustained operations in the Nearshore, Inland, and Great Lakes operating environments. Because of the open nature of these operating environments, there will be a greater opportunity for on-water recovery before the oil is stranded on the shoreline. However, one study comparing canola oil (rapeseed oil) to crude oil indicates that under certain conditions a 30 to 40 percent increase in the recovery of canola oil is likely when compared to crude oil (Allen and Nelson, 1983). In actual spill situations, some responders have indicated that a larger percentage of the discharged animal fats or vegetable oils may be recovered on the water than the level we are proposing for on-water recovery in Table 6.

We request data and comments on the factors listed in Table 6, including whether higher factors (percentage recovered) for on-water recovery are appropriate. We are particularly interested in receiving data on recovery of animal fats and vegetable oils from oil spill contractors, such as Oil Spill Removal Organizations, or others who may have experience in responding to discharges of animal fats and vegetable oils. We are also interested in ongoing or planned research on animal fats and vegetable oils that relates to these factors.

e. *Emulsification factors for animal fats and vegetable oils.* The tendency of petroleum and non-petroleum oils to form emulsions of water-in-oil or oil-in-water depends on the unique chemical composition of the oil (NAS, 1985; Knowlton and Pearce, 1993; Fingas et al., 1995; Lewis et al., 1995). Emulsification also depends on tempera ture, the presence of stabilizing compounds, and other factors. Some oils contain natural emulsifiers, such as lecithin, or form compounds, such as monoglycerides, that are used as commercial emulsifiers (Hui, 1996c). When an emulsion is formed in the environment, the oil changes appearance, and its viscosity can increase by many orders of magnitude (USDOC/NOAA, 1994). Removal of the oil becomes harder because of the increased difficulty in pumping viscous fluids with up to fivefold increases in volume.

While there is no simple method for determining the tendency of oils to form emulsions in the environment, one study demonstrated that canola oil and crude oils have similar tendencies for emulsification in cold temperature tests

(Allen and Nelson, 1983). Each oil took up approximately 10 percent of the original volume in water globules that did not settle out for several hours in the shake test. Under warm conditions, canola oil formed small stable emulsions, while crude oil formed emulsions with large amounts of seawater.

Another study indicates that certain crude and refined vegetable oils form emulsions, ranging from 10 to 32 percent. The investigators observed that crude corn oil has a greater tendency to emulsify than refined corn oil (Calanog et al., 1999).

According to one scale, the characteristics of some animal fats and vegetable oils and petroleum oils are similar (Hui, 1996c). The hydrophilic-lyphophilic balance (HLB) scale characterizes the solubility of emulsifiers. The scale has been used by manufacturers seeking emulsifier systems with high stability and long shelf life. The original HLB scale ranges from 0 to 20. The low end of the scale signifies an emulsifier that is more soluble in oil than water, while emulsifiers in the high end of the scale are more soluble in water than in oil. Water/oil emulsions are most stable in the 3 to 6 range; oil/water emulsions are favored in the 11 to 15 range; and emulsions with intermediate values are generally not stable.

Some petroleum oils and vegetable oils and animal fats have a similar range of HLB values in water-in-oil and oil-in-water emulsions used in commercial products (Knowlton and Pearce, 1993). The required HLB values for water-in-oil emulsions are 5 for cottonseed oil, 4 to 6 for mineral oil, 6 for kerosene, and 7 for gasoline. For oil-in-water emulsions, HLB values for vegetable oils and animal fats include 5 for lard, 6 for tallow, 6 to 10 for cottonseed oil, 12 for menhaden oil, and 14 for castor oil; for other oils, HLB values for oil-in-water emulsions are 7 to 8 for petrolatum, 10 to 12 for mineral oils, 12 for kerosene, and 14 for petroleum naphtha.

While the physical properties of vegetable oils and animal fats are highly variable, most fall within a range that is similar to the physical parameters for petroleum oils (October 20, 1997, 63 FR 24508, Appendix I, Table 1). Common properties, such as solubility, specific gravity, and viscosity, are responsible for the similar environmental effects of discharges of petroleum oils and animal fats and vegetable oils. These common properties are also likely to result in similar emulsification factors between petroleum oils and animal fats and vegetable oils.

Based on similarities in chemical and physical characteristics of petroleum oils, vegetable oils, and animal fats, we are proposing emulsification factors for animal fats and vegetable oils which are similar to the emulsification factors for petroleum oils in corresponding oil groups. Emulsification factors are unitless multipliers that are used in calculating planning volumes for worst case discharges. The emulsification factors in Table 7 account for the increases in volume that result when discharged oil forms emulsions. For example, the emulsification factor of 2.0 means that the volume of the oil increases two-fold when emulsified with water under appropriate mixing conditions.

We request data on emulsification factors for animal fats or vegetable oils from either laboratory testing or from actual discharges.

f. *Example—Application of Response Capability Caps to determine response resources.* We propose to apply the Response Capability Caps in Table 5 in Appendix E to response equipment requirements for animal fats and vegetable oils. In reviewing response plans submitted by facilities that handle or store animal fats or vegetable oils, we discovered that most plan holders had voluntarily employed the petroleum oil methodology for determining response resources. In proposing a methodology for animal fats and vegetable oils that is similar to but different from the methodology for petroleum oils, we determined that it is appropriate to recognize the practical limitations on the availability of response resources. Failure to do this may result in excessive planning requirements for response equipment that does not exist in the general operating areas. See Appendix A in the preamble and Appendix B in the preamble for examples of the Planning Worksheet from Appendix E in 40 CFR part 112 and application of the values in proposed Tables 6 and 7. The examples demonstrate how the application of the Response Capability Caps is as relevant for vegetable oils and animal fats as it is for petroleum oils.

Determining the planning volume and response resources. To follow the methodology, you would establish the volume of the worst case discharge using one of the methods in Appendix D in part 112. Then you would identify the oil group using the definitions in Section 1.2 of Appendix E, identify the facility operating area using the definitions in Appendix C, and locate the appropriate operating area (spill location) in Table 6 in Appendix E. From Table 6, column Nearshore/Inland/Great Lakes, you would identify the ''Percent Recovered Floating Oil'' and the ''Percent Recovered Oil from Onshore.'' You would multiply the ''Percent Recovered Floating Oil'' by the worst case discharge and multiply the resulting value by the proper emulsification factor in Table 7 to establish the on-water oil recovery volume in barrels. You would consult Table 4 in Appendix E to establish the On-Water Oil Recovery Resource Mobilization Factors. Then you would multiply the factors in each of the three tiers by the on-water oil recovery volume to determine the on-water recovery capacity (barrels per day) that must be planned to be on scene at the response times provided in Section 5.3 in Appendix E. You can check these values against the Response Capability Caps (expressed in barrels per day) in Table 5 for the specific operating area and date. The facility owner or operator (plan holder) must ensure by contract or other approved means the availability of response resources for the lesser of either the on-water recovery capacity or the capability caps. Response resources are required to be identified (but not contracted for in advance) for the volume above the response capability caps. The capability of oil recovery devices can be determined using Section 6.0 in Appendix E in part 112. To establish the shoreline cleanup volume, you would multiply the ''Percent Recovered Oil from Onshore'' from Table 6, column Nearshore/Inland/Great Lakes in Appendix E times the worst case discharge times the proper emulsification factor. The resulting volume must be used to identify an oil spill removal organization with the appropriate shoreline cleanup capability.

Comparison of planning volumes and response resources. Appendix C in this preamble provides an example of the application of existing regulations for petroleum oils. When the on-water recovery capacity (Part II of the Worksheets) is compared in each of the three examples in Appendix A, B, and C of the preamble, it is apparent that the required planning volume for animal fats and vegetable oils to be recovered from the water is less than for petroleum oils. The proposed rule will require lesser amounts of response equipment to be identified in a response plan for facilities that are located in the nearshore or inland operating areas relative to a similar facility with petroleum oil. It is also apparent that application of the Response Capability Caps in Table 5 in Appendix E limits the amount of daily recovery capacity

required to be ensured by contract or other approved means.

Section 10.5 in the proposed rule provides a similar example of calculating the planning volume from a worst case discharge of animal fats and vegetable oils into an Inland Operating Area. The planning volume for on-water recovery is for a worst case discharge of 21 million gallons (500,000 barrels) of Group B vegetable oil.

By using the Response Capability Caps in Table 5, facilities that handle or store oils are limited in the amount of response resources they must have under contract or otherwise identify in the FRP. The caps in Table 5 reflect the limits of technology and private removal capability. Table 5 also provides the increases in the response capability caps after February 18, 1998 to reflect the increase in private removal resources. One study by the USCG on the scheduled increases in removal resources indicates that the response capability caps that were scheduled for 1998 have been exceeded in many areas.

C. Advance Notice of Proposed Rulemaking

EPA requests comment concerning ways we might differentiate among the various classes of oils listed in the Edible Oil Regulatory Reform Act for purposes of the Spill Prevention, Control, and Countermeasure Rule, found at 40 CFR part 112. Those classes of oil are: animal fats and oils and greases, and fish and marine mammal oils; oils of vegetable origin, including oils from seeds, nuts, and kernels; and other oils and greases, including petroleum. We are interested in how we might differentiate in the prevention requirements for these classes of oils based on the physical, chemical, biological, and other properties of these oils, and on their environmental effects if discharged into the environment.

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IV. Regulatory Analyses

A. Executive Order 12866: OMB Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), we must determine whether the regulatory action is ''significant'' and therefore subject to review by the Office of Management and Budget (OMB). A ''significant regulatory action'' is an action that results in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise new legal or policy issues arising out of legal mandates, the President's priorities, or the principles in the Executive Order.

It has been determined that this rule is not a ''significant regulatory action'' under the terms of Executive Order 12866 and is therefore not subject to OMB review.

B. Executive Order 12875: Enhancing the Intergovernmental Partnership

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local, or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 12875 requires EPA to provide to the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local, and tribal governments, the nature of their concerns, any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local, and tribal governments ''to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates.''

Today's rule does not create a mandate on State, local, or tribal governments. The rule does not impose any enforceable duties on these entities. EPA believes that no State, local, or tribal governments are included in its FRP-regulated community. Accordingly, the requirements of section 1(a) of Executive Order 12875 do not apply to this rule.

C. Executive Order 13084: Consultation and Coordination with Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to prove to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. EPA believes that no tribal governments are included in its FRP-regulated community. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

D. Executive Order 13045: Children's Health

Executive Order 13045: ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 F.R. 19885, April 23, 1997) applies to any rule that : (1) is determined to be ''economically significant'' as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency. EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5–501 of the Order has the potential to influence the regulation. The proposed rule is not subject to Executive Order 13045, because it is not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This is so, because the types of risks resulting from oil discharges do not have a disproportionate effect on children.

The public is invited to submit or identify peer-reviewed studies and data, of which the Agency may not be aware, that assessed results from early-life

exposure to vegetable oils and animal fats.

E. Regulatory Flexibility Act

Under the Regulatory Flexibility Act (5 U.S.C. 601 et seq., as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996) whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities.

SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have a significant economic impact on a substantial number of small entities. The following discussion explains our determination.

We have examined this rule's potential effects on small entities as required by the Regulatory Flexibility Act and have determined that this action will not have a significant economic impact on a substantial number of small entities. Based on a survey of FRPs, we have determined that out of approximately 29 companies that are affected by this rulemaking (because they have one or more FRP facilities with animal fats or vegetable oils), only about twelve meet the Small Business Administration's definition of a small business (Screening Analysis of the Facility Response Planning Requirements on Small Non-Petroleum Entities).

In this rulemaking, we are proposing to add a methodology that can be used by facilities to plan for the appropriate volume of response resources needed for a worst case discharge of an animal fat or vegetable oil, similar to the existing methodology provided for petroleum oils. As a result, the overall economic effect of this regulation has been determined to reduce the reporting and recordkeeping burden for facilities that are required to prepare and maintain plans for the discharge of vegetable oils and animal fats because they no longer will be required to provide additional documentation to support their determinations. We believe that facilities will save on the order of one to four labor hours in annual reporting and recordkeeping burden as a result of the proposed changes. These effects are discussed in greater detail in the Paperwork Reduction Act section of this Preamble. Furthermore, we believe that some facilities could realize additional cost savings as a result of calculations performed in estimating the appropriate amount of response planning resources needed to respond to a worst case discharge based on new information provided in proposed Tables 6 and 7. However, we have not attempted to quantify the total cost savings associated with this possibility in order to avoid overestimating the effects of the rulemaking. I hereby certify that this rule will not have a significant economic impact on a substantial number of small entities. This rule, therefore, does not require a regulatory flexibility analysis.

F. Paperwork Reduction Act

We will submit the information collection requirements in this proposed rule to OMB for approval as required by the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* We prepared Information Collection Request (ICR) documents (EPA ICR No. 1630.05), and you may obtain a copy by contacting Sandy Farmer, OP Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., SW.; Washington, D.C. 20460 or by calling 202–260–2740. You may also view or download these ICRs at our ICR Internet site at http://www.epa.gov/icr.

The FRP rule (40 CFR 112.20–21) requires that owners or operators of facilities that could cause ''substantial harm'' to the environment by discharging oil into navigable waters or adjoining shorelines prepare plans for responding, to the maximum extent practicable, to a worst case discharge of oil, to a substantial threat of such a discharge, and, as appropriate, to discharges smaller than worst case discharges. All facilities subject to this requirement must submit their plans to us. In turn, we review and approve plans submitted by facilities identified as having the potential to cause ''significant and substantial harm'' to the environment from oil discharges. Other low-risk, regulated facilities are not required to prepare FRPs but are required to document their determination that they do not meet the ''substantial harm'' criteria.

Through this rulemaking, we propose to reduce the reporting and recordkeeping burden for facilities that are regulated under the FRP rule due to the storage of animal fats and vegetable oils by clarifying response planning requirements for these facilities. Specifically, we propose to add a new methodology to allow facilities to calculate planning volumes for a worst case discharge of animal fats or vegetable oils similar to the methodology provided for discharges of petroleum oils. Currently these facilities are required to identify in their plans the procedures used to determine the appropriate amount of resources needed to respond to a worst case discharge of a non-petroleum oil. As a result, we believe that the overall economic effect of this proposal will be to reduce the reporting and recordkeeping burden for these facilities.

In addition, we are proposing to allow case-by-case deviations for facility response planning levels and are soliciting comment on whether to allow facilities to combine response planning at either the small and medium stage, or the medium and large stage for discharges of vegetable oils and animal fats. We estimate the cost savings from this proposal to be minimal, as our Regional Administrators already give consideration to unique facility characteristics during their review of FRPs in allowing plan deviations.

We do not expect the number of facilities subject to the requirements to develop an FRP and maintain the plan on a year-to-year basis to change as a result of this proposed rulemaking. In the current ICR, we estimate that 5,465 facilities would be required to develop and submit FRPs. Of these 5,465 facilities, we estimate that approximately 61 facilities (owned or operated by 29 companies) are required to develop and submit FRPs due to the storage of vegetable oils and animal fats.

We have previously estimated that it requires between 85 and 126 hours for facility personnel in a large facility (i.e, total storage capacity greater than one million gallons) and between 21 and 44 hours for personnel in a medium facility (i.e., total storage capacity greater than 42,000 gallons and less than or equal to one million gallons) to comply with the annual, subsequent-year reporting and recordkeeping requirements of the FRP rule. We have also estimated that a newly regulated facility will require between 225 and 280 hours to prepare a plan in the first year. We estimate that the present information collection burden of the FRP rule for facilities that are regulated due to the storage of vegetable oils and animal fats to be approximately 5,979 hours a year. Through this rulemaking, we propose to reduce that burden by approximately four hours for a large facility and one hour for a medium facility. This proposed reduction would result in an annual average burden of 5,751 hours.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time required to perform the following tasks: (1) review instructions; (2) develop, acquire, install, and utilize technology and systems for the purpose of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; (3) adjust the existing ways to comply with any previously applicable instructions and requirements; (4) train personnel to be able to respond to a collection of information; (5) search data sources; (6) complete and review the collection of information; and (7) transmit or otherwise disclose the information.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15. We request your comments on our need for this information, the accuracy of the provided burden estimates, and the accuracy of the supporting analyses used to develop the burden estimates. We also request your suggestions on methods for further minimizing respondent burden, including the use of automated collection techniques. Send your comments and suggestions on the ICR to both:

(1) The Director, OP Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., SW.; Washington, D.C. 20460, or E-mail to farmer.sandy@epa.gov; and

(2) The Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., NW.; Washington, D.C. 20503, marked ''Attention: Desk Officer for EPA.''

Include the ICR number in any correspondence. Because OMB must make a decision concerning the ICR between 30 and 60 days after April 8, 1999, OMB requests your comments by May 10, 1999. In the final rule, we will respond to any OMB or public comments we receive on the information collection requirements contained in this proposal.

G. Unfunded Mandates

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least burdensome alternative if the Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

Today's rule contains no Federal mandates (under the regulatory provisions of Title II of the UMRA) for State, local, or tribal governments or the private sector. This determination is based on the fact that the proposed revisions are designed to clarify the requirements for certain facilities that store vegetable oils and animal fats to comply with the FRP rule. The proposed revisions are designed to decrease the current reporting or recordkeeping burden and cost for these facilities and do not impose any additional requirements. EPA has also determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments for similar reasons. Furthermore, based on a survey of FRPs submitted to EPA, we did not identify any small governments that would be affected by this rulemaking.

H. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law No. 104–113, § 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This proposed rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards. EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites you to identify potentially applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

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V. Appendices to the Preamble

Appendix A to the Preamble

Example 1 - Worksheet for Animal Fats and Vegetable Oils Discharge into Rivers and Canals Operating Areas

Worksheet to Plan Volume of Response Resources

All reference to appendices in this worksheet are to existing or proposed changes to appendices in 40 CFR part 112

Part I Background Information

Step (A) Calculate Worst Case Discharge in barrels (Appendix D) . . . . . 500,000 (A)

Step (B) Oil Group[1] (Table 7 and section 1.2 of Appendix E) . . . . . B

Step (C) Operating Area (choose one)

	Nearshore /Inland Great Lakes		or Rivers and Canals
		x	

Step (D) Percentages of Oil (Table 6 of Appendix E)

Percent Lost to Natural Dissipation	Percent Recovered Floating Oil	Percent Oil Onshore
20	15	65
(D1)	(D2)	(D3)

Step (E1) On-Water Oil Recovery $\frac{\text{Step(D2) x Step(A)}}{100}$ = 75,000 (E1)

Step (E2) Shoreline Recovery $\frac{\text{Step (D3) x Step (A)}}{100}$ = 325,000 (E2)

Step (F) Emulsification Factor (Table 7 of Appendix E) . . . . . 2.0 (F)

Step (G) On-Water Oil Recovery Resource Mobilization Factor
(Table 4 of Appendix E)

Tier 1	Tier 2	Tier 3
.30	.40	.60
(G1)	(G2)	(G3)

[1] A facility that handles, stores, or transports multiple groups of oil must do separate calculations for each oil group on site except for those oil groups that constitute 10 percent or less by volume of the total oil storage capacity at the facility. For purposes of this calculation, the volumes of all products in an oil group must be summed to determine the percentage of the facility's total oil storage capacity.

Part II On-Water Oil Recovery Capacity (barrels/day)

Tier 1	Tier 2	Tier 3
45,000	60,000	90,000
Step (E1) x Step (F) x Step (G1)	Step (E1) x Step (F) x Step (G2)	Step (E1) x Step (F) x Step (G3)

Part III Shoreline Cleanup Volume (barrels) . . . 650,000

Step (E2) x Step (F)

Part IV On-Water Response Capacity By Operating Area
(Table 5 of Appendix E)
(Amount needed to be contracted for in barrels/day)

Tier 1	Tier 2	Tier 3
1,875	3,750	7,500
(J1)	(J2)	(J3)

Part V On-Water Amount Needed to be Identified, but not Contracted for in Advance (barrels/day)

Tier 1	Tier 2	Tier 3
43,125	56,250	82,500
Part II Tier 1 - Step (J1)	Part II Tier 2 - Step (J2)	Part II Tier 3 - Step (J3)

NOTE: To convert from barrels/day to gallons/day, multiply the quantities in Parts II through V by 42 gallons/barrel.

Appendix B to the Preamble
Example 2 - Worksheet for Animal Fats and Vegetable Oils Discharge into Inland Operating Area

Worksheet to Plan Volume of Response Resources
All reference to appendices in this worksheet are to existing or proposed changes to appendices in 40 CFR part 112

Part I Background Information

Step (A) Calculate Worst Case Discharge in barrels (Appendix D)	500,000 (A)
Step (B) Oil Group[1] (Table 7 and section 1.2 of appendix E)	B

Step (C) Operating Area (choose one) . . . . . [x] Nearshore/Inland Great Lakes [ ] or Rivers and Canals

Step (D) Percentages of Oil (Table 6 of Appendix)

Percent Lost to Natural Dissipation	Percent Recovered Floating Oil	Percent Oil Onshore
30 (D1)	20 (D2)	50 (D3)

Step (E1) On-Water Oil Recovery $\frac{\text{Step(D2) x Step(A)}}{100}$	100,000 (E1)
Step (E2) Shoreline Recovery $\frac{\text{Step (D3) x Step (A)}}{100}$	250,000 (E2)
Step (F) Emulsification Factor (Table 7 of Appendix E)	2.0 (F)

Step (G) On-Water Oil Recovery Resource Mobilization Factor (Table 4 of Appendix E)

Tier 1	Tier 2	Tier 3
.15 (G1)	.25 (G2)	.40 (G3)

[1] A facility that handles, stores, or transports multiple groups of oil must do separate calculations for each oil group on site except for those oil groups that constitute 10 percent or less by volume of the total oil storage capacity at the facility. For purposes of this calculation, the volumes of all products in an oil group must be summed to determine the percentage of the facility's total oil storage capacity.

Appendix B to the Preamble (continued)
Example 2 (continued)

Part II On-Water Oil Recovery Capacity (barrels/day)

Tier 1	Tier 2	Tier 3
30,000	50,000	80,000
Step (E1) x Step (F) x Step (G1)	Step (E1) x Step (F) x Step (G2)	Step (E1) x Step (F) x Step (G3)

Part III Shoreline Cleanup Volume (barrels) . . . 500,000

Step (E2) x Step (F)

Part IV On-Water Response Capacity By Operating Area
(Table 5 of Appendix E)
(Amount needed to be contracted for in barrels/day)

Tier 1	Tier 2	Tier 3
12,500	25,000	50,000
(J1)	(J2)	(J3)

Part V On-Water Amount Needed to be Identified, but not Contracted for in Advance (barrels/day)

Tier 1	Tier 2	Tier 3
17,500	25,000	30,000
Part II Tier 1 - Step (J1)	Part II Tier 2 - Step (J2)	Part II Tier 3 - Step (J3)

NOTE: To convert from barrels/day to gallons/day, multiply the quantities in Parts II through V by 42 gallons/barrel.

Appendix C to the Preamble
Example 3 - Worksheet for Petroleum Oil Discharge into Inland Operating Areas

Worksheet to Plan Volume of Response Resources
All reference to appendices in this worksheet are to existing or proposed changes to appendices in 40 CFR part 112

Part I Background Information

Step (A) Calculate Worst Case Discharge in barrels (Appendix D) . . . . . 500,000 (A)

Step (B) Oil Group[1] (Table 3 and section 1.2 of Appendix E) 3

Step (C) Operating Area (choose one) [x] Nearshore /Inland Great Lakes [ ] or Rivers and Canals

Step (D) Percentages of Oil (Table 2 of Appendix E)

Percent Lost to Natural Dissipation	Percent Recovered Floating Oil	Percent Oil Onshore
30	50	50
(D1)	(D2)	(D3)

Step (E1) On-Water Oil Recovery $\frac{\text{Step(D2) x Step(A)}}{100}$ = 250,000 (E1)

Step (E2) Shoreline Recovery $\frac{\text{Step(D3) x Step(A)}}{100}$ = 250,000 (E2)

Step (F) Emulsification Factor (Table 3 of Appendix E) . . . . . 2.0 (F)

Step (G) On-Water Oil Recovery Resource Mobilization Factor (Table 4 of Appendix E)

Tier 1	Tier 2	Tier 3
.15	.25	.40
(G1)	(G2)	(G3)

[1] A facility that handles, stores, or transports multiple groups of oil must do separate calculations for each oil group on site except for those oil groups that constitute 10 percent or less by volume of the total oil storage capacity at the facility. For purposes of this calculation, the volumes of all products in an oil group must be summed to determine the percentage of the facility's total oil storage capacity.

Appendix C to the Preamble (continued)
Example 2 (continued)

Part II On-Water Oil Recovery Capacity (barrels/day)

Tier 1	Tier 2	Tier 3
75,000	125,000	200,000
Step (E1) x Step (F) x Step (G1)	Step (E1) x Step (F) x Step (G2)	Step (E1) x Step (F) x Step (G3)

Part III Shoreline Cleanup Volume (barrels) . . 500,000

Step (E2) x Step (F)

Part IV On-Water Response Capacity By Operating Area
(Table 5 of Appendix E)
(Amount needed to be contracted for in barrels/day)

Tier 1	Tier 2	Tier 3
12,500	25,000	50,000
(J1)	(J2)	(J3)

Part V On-Water Amount Needed to be Identified, but not Contracted for in Advance (barrels/day)

Tier 1	Tier 2	Tier 3
62,500	100,000	150,000
Part II Tier 1 - Step (J1)	Part II Tier 2 - Step (J2)	Part II Tier 3 - Step (J3)

NOTE: To convert from barrels/day to gallons/day, multiply the quantities in Parts II through V by 42 gallons/barrel.

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List of Subjects in 40 CFR Part 112

Environmental protection, Fire prevention, Flammable materials, Materials handling and storage, Oil pollution, Oil spill response, Petroleum, Reporting and recordkeeping requirements, Tanks, Water pollution control, Water resources.

Dated: March 26, 1999.

Peter D. Robertson,

Acting Administrator.

For the reasons discussed in the Preamble, the Environmental Protection Agency proposes to amend 40 CFR part 112 as follows:

PART 112—OIL POLLUTION PREVENTION

1. The authority citation for part 112 continues to read as follows:

Authority: 33 U.S.C. 1321 and 1361; E.O. 12777 (October 18, 1991), 3 CFR, 1991 Comp., p. 351; 33 U.S.C. 2720.

2. Amend § 112.2 to add the following definitions in alphabetical order to read as follows:

§ 112.2 Definitions

* * * * *

Animal fat means non-petroleum oils, fats, and greases of animal, fish, or marine mammal origin.

* * * * *

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

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

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

* * * * *

3. Amend § 112.20 by adding paragraph (a)(4) and revising the phrase ''section 10'' in paragraph (f)(1)(ii)(B) to read section 13 as follows:

§ 112.20 Facility response plans.

(a) * * *

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

(i) *Facilities with approved plans.* The owner or operator of a facility with a facility response plan that has been approved by [effective date of the final rule] need not prepare or submit a revised plan except as otherwise required by paragraphs (b), (c), and (d) of this section.

(ii) *Facilities with plans that have been submitted to the Regional Administrator.* Except for facilities with approved plans as provided in (a)(4)(i) of this section, the owner or operator of a facility that has submitted a response plan to the Regional Administrator prior to [effective date of the final rule] must review the plan to determine if it meets or exceeds the applicable provisions of this part. An owner or operator need not prepare or submit a new plan if the existing plan meets or exceeds the applicable provisions of this part. If the plan does not meet or exceed the applicable provisions of this part, the owner or operator must prepare and submit a new plan by [date sixty days after the effective date of the final rule].

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

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

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4. Amend § 112.21 by revising the phrase ''section 10'' to read ''section 13'' in the second sentence of paragraph (c).

5. Amend Appendix C to part 112 by revising phrase ''section 10'' to read ''section 13'' in the second sentence of section 2.3, the last sentence in section 4.0, and the second sentence of Attachment C–II, paragraph 3.

6. Amend Appendix D to part 112 by revising the phrase ''section 10'' to read ''section 13'' in the second sentence in section 1.4.

7. Appendix E to part 112 is amended by revising the phrase ''section 10'' to read ''section 13'' wherever it appears;

by revising the phrase ''section 9.2'' to read ''section 12.2'' wherever it appears;

by revising the word ''spill'' to read ''discharge'' wherever it appears;

by revising the phrase ''non-petroleum oils'' to read ''non-petroleum oils other than animal fats and vegetable oils'' wherever it appears;

by redesignating sections 1.2.1 through 1.2.7 as section 1.2.2 through 1.2.8, respectively, and by redesignating section 1.2.8 as 1.2.10;

by adding new sections 1.2.1 and 1.2.9 to read as set forth below;

by revising newly designated section 1.2.3 (2) to read as set forth below;

by revising newly designated section 1.2.4 to read as set forth below;

by revising the first sentence of newly designated section 1.2.8 (2) to read as set forth below;

by revising newly designated section 1.2.10 to read as set forth below;

by revising the phrase ''section 4.3'' to read ''sections 4.3 and 9.3'' in the third sentence of section 2.6;

by revising section 3.0 to read as set forth below;

by revising section 3.2 to read as set forth below;

by adding new sections 3.2.1 and 3.2.2 to read as set forth below;

by revising section 4.0 to read as set forth below;

by revising section 4.2 to read as set forth below;

by adding new sections 4.2.1 and 4.2.2 to read as set forth below;

by revising the phrase ''Section 7'' to read ''Sections 7 and 10'' in the second sentence of section 5.1;

by revising the phrase ''Attachment E–1'' to read ''Attachments E–1 and E–2'' in the third sentence of section 5.1;

by revising the phrase ''sections 7.2 and 7.3 of this appendix'' to read ''sections 7.2 and 7.3 or sections 10.2 and 10.3 of this appendix'' in the third sentence of section 5.3;

by revising the phrase ''Table 2'' to read ''Table 2 and Table 6'' in the fifth sentence of section 5.7;

by revising the phrase ''Tables 2 and 3'' to read ''Tables, 2, 3, 6, 7'' in the second sentence of section 5.8;

by revising section 7.0 to read as set forth below;

by revising the second sentence of section 7.2.1 to read as set forth below;

by revising the third sentence of section 7.4 to read as set forth below;

by revising the third sentence of section 7.6.3 to read as set forth below;

by revising the second sentence of section 7.7 to read as set forth below;

by revising section 7.7 (1) to read as set forth below;

by revising the second, third and fourth sentences of section 7.7.5 to read as set forth below;

by redesignating sections 8.0, 8.1 and 8.2 as sections 11.0, 11.1, 11.2, respectively, and revising those sections to read as set forth below;

by redesignating sections 9.0, 9.1, 9.2 and 9.3 as sections 12.0, 12.1, 12.2 and 12.3, respectively, and revising those sections to read as set forth below;

by redesignating sections 10.0, 10.1, 10.2 and 10.3 as sections 13.0, 13.1, 13.2 and 13.3, respectively, and revising those sections to read as set forth below; and

by adding new sections 8.0, 9.0, and 10.0 to read as set forth below.

Appendix E to Part 112—Determination and Evaluation of Required Response Resources for Facility Response Plans

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1.2.1 *Animal fat* means non-petroleum oils, fats, and greases of animal, fish, or marine mammal origin. Animal fats are further classified based on specific gravity as follows:

(A) Group A—specific gravity less than 0.8.

(B) Group B—specific gravity equal to or greater than 0.8 and less than 1.0.

(C) Group C—specific gravity equal to or greater than 1.0.

1.2.2 * * *

1.2.3 * * *

(2) A non-petroleum oil, other than an animal fat or vegetable oil, with a specific gravity less than 0.8.

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

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1.2.8 * * *

(2) A non-petroleum oil, other than an animal fat or vegetable oil, with a specific gravity of 0.8 or greater. * * *

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1.2.9 *Vegetable oil* means a non-petroleum oil or fat of vegetable origin, including but not limited to oils and fats derived from plant seeds, nuts, fruits, and kernels. Vegetable oils are further classified based on specific gravity as follows:

(A) Group A—specific gravity less than 0.8.

(B) Group B—specific gravity equal to or greater than 0.8 and less than 1.0.

(C) Group C—specific gravity equal to or greater than 1.0.

1.2.10 Other definitions are included in § 112.2, section 1.2 of Appendices C and E, and section 3.0 of Appendix F.

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3.0 Determining Response Resources Required for Small Discharges—Petroleum oils and non-petroleum oils other than animal fats and vegetable oils

* * * * *

3.2 Complexes that are regulated by EPA and the USCG must also consider planning quantities for the transportation-related transfer portion of the facility.

3.2.1 *Petroleum oils.* The USCG planning level that corresponds to EPA's ''small discharge'' is termed ''the average most probable discharge.'' A USCG rule found at 33 CFR 154.1020 defines ''the average most probable discharge'' as a discharge of 50 barrels (2,100 gallons). Owners or operators of complexes that handle, store, or transport petroleum oils must compare oil spill volumes for a small discharge, and an average most probable discharge, and plan for whichever quantity is greater.

3.2.2 *Non-petroleum oils other than animal fats and vegetable oils.* Owners or operators of complexes that handle, store, or transport non-petroleum oils other than animal fats and vegetable oils must plan for oil spill volumes for a small discharge. There is no USCG planning level that directly corresponds to EPA's ''small discharge.'' However, the USCG (at 33 CFR 154.545) has requirements to identify equipment to contain oil resulting from an operational discharge.

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4.0 Determining Response Resources Required for Medium Discharges—Petroleum oils and non-petroleum oils other than animal fats and vegetable oils

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4.2 Complexes that are regulated by EPA and the USCG must also consider planning quantities for the transportation-related transfer portion of the facility.

4.2.1 *Petroleum oils.* The USCG planning level that corresponds to EPA's ''medium discharge'' is termed ''the maximum most probable discharge''. The USCG rule found at 33 CFR part 154 defines ''the maximum most probable discharge'' as a discharge of 1,200 barrels (50,400 gallons) or 10 percent of the worst case discharge, whichever is less. Owners or operators of complexes that handle, store, or transport petroleum oils must compare spill volumes for a medium discharge and a maximum most probable discharge and plan for whichever quantity is greater.

4.2.2 *Non-petroleum oils other than animal fats and vegetable oils.* Owners or operators of complexes that handle, store, or transport non-petroleum oils other than animal fats and vegetable oils must plan for oil spill volumes for a medium discharge. For non-petroleum oils, there is no USCG planning level that directly corresponds to EPA's ''medium discharge.''

* * * * *

7.0 Calculating Planning Volumes for a Worst Case Discharge—Petroleum oils and non-petroleum oils other than animal fats and vegetable oils.

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7.2.1 * * * See sections 1.2.3 and 1.2.8 of this appendix for the definitions of non-persistent and persistent oils, respectively. * * *

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7.4 * * * The facility owner or operator shall ensure, by contract or other approved means as described in § 112.2, the availability of these resources. * * *

* * * * *

7.6.3 * * * The facility owner or operator shall ensure, by contract or other approved means as described in § 112.2, the availability of these resources. * * *

7.7 * * * Refer to section 11 of this appendix for information on the limitations on the use of chemical agents for inland and nearshore areas.

7.7.1 * * *

(1) * * * Procedures and strategies for responding to a worst case discharge to the maximum extent practicable; and

* * * * *

7.7.5 * * * The owner or operator of a facility that handles, stores, or transports non-petroleum oils other than animal fats and vegetable oils that does not have adequate fire fighting resources located at the facility or that cannot rely on sufficient local fire fighting resources must identify adequate fire fighting resources. The owner or operator shall ensure, by contract or other approved means as described in § 112.2, the availability of these resources. The response plan must also identify an individual located at the facility to work with the fire department for fires of these oils. * * *

8.0 Determining Response Resources Required for Small Discharges—Animal fats and vegetable oils

8.1 A facility owner or operator shall identify sufficient response resources available, by contract or other approved means as described in § 112.2, to respond to a small discharge of animal fats or vegetable oils. A small discharge is defined as any discharge volume less than or equal to 2,100 gallons, but not to exceed the calculated worst case discharge. The equipment must be designed to function in the operating environment at the point of expected use.

8.2 Complexes that are regulated by EPA and the USCG must also consider planning quantities for the marine transportation-related portion of the facility.

8.2.1 Owners or operators of complexes that handle, transport, or store only animal fats or vegetable oils must plan for a small discharge. There is no USCG planning level that directly corresponds to EPA's ''small discharge.'' Although the USCG does not have planning requirements for small discharges, they do have requirements (at 33 CFR 154.545) to identify equipment to

contain oil resulting from an operational discharge.

8.3 The response resources shall, as appropriate, include:

8.3.1 One thousand feet of containment boom (or, for complexes with marine transfer components, 1,000 feet of containment boom or two times the length of the largest vessel that regularly conducts oil transfers to or from the facility, whichever is greater), and a means of deploying it within 1 hour of the discovery of a discharge;

8.3.2 Oil recovery devices with an effective daily recovery capacity equal to the amount of oil discharged in a small discharge or greater which is available at the facility within 2 hours of the detection of a discharge; and

8.3.3 Oil storage capacity for recovered oily material indicated in section 12.2 of this appendix.

9.0 Determining Response Resources Required for Medium Discharges—Animal fats and vegetable oils

9.1 A facility owner or operator shall identify sufficient response resources available, by contract or other approved means as described in § 112.2, to respond to a medium discharge of animal fats or vegetable oils for that facility. This will require response resources capable of containing and collecting up to 36,000 gallons of oil or 10 percent of the worst case discharge, whichever is less. All equipment identified must be designed to operate in the applicable operating environment specified in Table 1 of this appendix.

9.2 Complexes that are regulated by EPA and the USCG must also consider planning quantities for the transportation-related transfer portion of the facility. The USCG planning level that corresponds to EPA's ''medium discharge'' is termed ''the maximum most probable discharge.'' The USCG revisions to 33 CFR part 154 define ''the maximum most probable discharge'' as a discharge of 1,200 barrels (50,400 gallons) or 10 percent of the worst case discharge, whichever is less. Owners or operators of complexes must compare spill volumes for a medium discharge and a maximum most probable discharge and plan for whichever quantity is greater.

9.2.1 Owners or operators of complexes that handle, store, or transport animal fats or vegetable oils must plan for oil spill volumes for a medium discharge. For non-petroleum oils, there is no USCG planning level that directly corresponds to EPA's ''medium discharge.'' Although the USCG does not have planning requirements for medium discharges, they do have requirements (at 33 CFR 154.545) to identify equipment to contain oil resulting from an operational discharge.

9.3 Oil recovery devices identified to meet the applicable medium discharge volume planning criteria must be located such that they are capable of arriving on-scene within 6 hours in higher volume port areas and the Great Lakes and within 12 hours in all other areas. Higher volume port areas and Great Lakes areas are defined in section 1.2 of Appendix C to this part.

9.4 Because rapid control, containment, and removal of oil are critical to reduce discharge impact, the owner or operator must determine response resources using an effective daily recovery capacity for oil recovery devices equal to 50 percent of the planning volume applicable for the facility as determined in section 9.1 of this appendix. The effective daily recovery capacity for oil recovery devices identified in the plan must be determined using the criteria in section 6 of this appendix.

9.5 In addition to oil recovery capacity, the plan shall, as appropriate, identify sufficient quantity of containment boom available, by contract or other approved means as described in § 112.2, to arrive within the required response times for oil collection and containment and for protection of fish and wildlife and sensitive environments. For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's ''Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments'' (59 FR 14713, March 29, 1994) and the applicable ACP. While the Guidance does not set required quantities of boom for oil collection and containment, the response plan shall identify and ensure, by contract or other approved means as described in § 112.2, the availability of the quantity of boom identified in the plan for this purpose.

9.6 The plan must indicate the availability of temporary storage capacity to meet section 12.2 of this appendix. If available storage capacity is insufficient to meet this level, then the effective daily recovery capacity must be derated (downgraded) to the limits of the available storage capacity.

9.7 The following is an example of a medium discharge volume planning calculation for equipment identification in a higher volume port area: The facility's largest aboveground storage tank volume is 840,000 gallons. Ten percent of this capacity is 84,000 gallons. Because 10 percent of the facility's largest tank, or 84,000 gallons, is greater than 36,000 gallons, 36,000 gallons is used as the planning volume. The effective daily recovery capacity is 50 percent of the planning volume, or 18,000 gallons per day. The ability of oil recovery devices to meet this capacity must be calculated using the procedures in section 6 of this appendix. Temporary storage capacity available on-scene must equal twice the daily recovery capacity as indicated in section 12.2 of this appendix, or 36,000 gallons per day. This is the information the facility owner or operator must use to identify and ensure the availability of the required response resources, by contract or other approved means as described in § 112.2. The facility owner shall also identify how much boom is available for use.

10.0 Calculating Planning Volumes for a Worst Case Discharge—Animal fats and vegetable oils.

10.1 A facility owner or operator shall plan for a response to the facility's worst case discharge. The planning for on-water oil recovery must take into account a loss of some oil to the environment due to physical, chemical, and biological processes, potential increases in volume due to emulsification, and the potential for deposition of oil on the shoreline or on sediments. The procedures for animal fats and vegetable oils are discussed in section 10.7 of this appendix.

10.2 The following procedures must be used by a facility owner or operator in determining the required on-water oil recovery capacity:

10.2.1 The following must be determined: the worst case discharge volume of oil in the facility; the appropriate group(s) for the types of oil handled, stored, or transported at the facility (Groups A, B, C); and the facility's specific operating area. See sections 1.2.1 and 1.2.9 of this appendix for the definitions of animal fats and vegetable oils and groups thereof. Facilities that handle, store, or transport oil from different oil groups must calculate each group separately, unless the oil group constitutes 10 percent or less by volume of the facility's total oil storage capacity. This information is to be used with Table 6 of this appendix to determine the percentages of the total volume to be used for removal capacity planning. Table 6 of this appendix divides the volume into three categories: oil lost to the environment; oil deposited on the shoreline; and oil available for on water recovery.

10.2.2 The on-water oil recovery volume shall, as appropriate, be adjusted using the appropriate emulsification factor found in Table 7 of this appendix. Facilities that handle, store, or transport oil from different groups must compare the on-water recover volume for each oil group (unless the oil group constitutes 10 percent or less by volume of the facility's total storage capacity) and use the calculation that results in the largest on-water oil recovery volume to plan for the amount of response resources for a worst case discharge.

10.2.3 The adjusted volume is multiplied by the on water oil recovery resource mobilization factor found in Table 4 of this appendix from the appropriate operating area and response tier to determine the total on water oil recovery capacity in barrels per day that must be identified or contracted to arrive on-scene within the applicable time for each response tier. Three tiers are specified. For higher volume port areas, the contracted tiers of resources must be located such that they are capable of arriving on-scene within 6 hours for Tier 1, 30 hours for Tier 2, and 54 hours for Tier 3 of the discovery of a discharge. For all other rivers and canals, inland, nearshore areas, and the Great Lakes, these tiers are 12, 36, and 60 hours.

10.2.4 The resulting on water oil recovery capacity in barrels per day for each tier is used to identify response resources necessary to sustain operations in the applicable operating area. The equipment shall be capable of sustaining operations for the time period specified in Table 6 of this appendix. The facility owner or operator shall identify and ensure the availability, by contract or other approved means as described in § 112.2, of sufficient oil spill recovery devices to provide the effective daily oil recovery capacity required. If the required capacity exceeds the applicable cap specified in Table 5 of this appendix, then a facility owner or operator shall ensure, by contract or other approved means as described in § 112.2, only for the quantity of resources required to meet the cap, but shall identify

sources of additional resources as indicated in section 5.4 of this appendix. The owner or operator of a facility whose planning volume exceeded the cap in 1998 must make arrangements to identify and ensure the availability, by contract or other approved means as described in § 112.2, for additional capacity to be under contract by 2003, as appropriate. For a facility that handles multiple groups of oil, the required effective daily recovery capacity for each oil group is calculated before applying the cap. The oil group calculation resulting in the largest on water recovery volume must be used to plan for the amount of response resources for a worst case discharge, unless the oil group comprises 10 percent or less by volume of the facility's oil storage capacity.

10.3 The procedures discussed in sections 10.3.1–10.3.3 of this appendix must be used to calculate the planning volume for identifying shoreline cleanup capacity (for Groups A and B oils).

10.3.1 The following must be determined: the worst case discharge volume of oil for the facility; the appropriate group(s) for the types of oil handled, stored, or transported at the facility (Groups A or B); and the geographic area(s) in which the facility operates (i.e., operating areas). For a facility handling, storing, or transporting oil from different groups, each group must be calculated separately. Using this information, Table 6 of this appendix must be used to determine the percentages of the total volume to be used for shoreline cleanup resource planning.

10.3.2 The shoreline cleanup planning volume must be adjusted to reflect an emulsification factor using the same procedure as described in section 10.2.2 of this appendix.

10.3.3 The resulting volume shall be used to identify an oil spill removal organization with the appropriate shoreline cleanup capability.

10.4 A response plan must identify response resources with fire fighting capability appropriate for the risk of fire and explosion at the facility from the discharge or threat of discharge of oil. The owner or operator of a facility that handles, stores, or transports Group A or B oils that does not have adequate fire fighting resources located at the facility or that cannot rely on sufficient local fire fighting resources must identify adequate fire fighting resources. The facility owner or operator shall ensure, by contract or other approved means as described in § 112.2, the availability of these resources. The response plan must also identify an individual to work with the fire department for Group A or B oil fires. This individual shall also verify that sufficient well-trained fire fighting resources are available within a reasonable response time to a worst case scenario. The individual may be the qualified individual identified in the response plan or another appropriate individual located at the facility.

10.5 The following is an example of the procedure described in section 10.2 and 10.3 of this appendix. A facility with a 37.04 million gallon (881,904 barrel) capacity of several types of vegetable oils is located in the Inland Operating Area. The vegetable oil with the highest specific gravity stored at the facility is soybean oil (specific gravity 0.922, Group B vegetable oil). The facility has ten aboveground oil storage tanks with a combined total capacity of 18 million gallons (428,571 barrels) and without secondary containment. The remaining facility tanks are inside secondary containment structures. The largest aboveground oil storage tank (3 million gallons or 71,428 barrels) has its own secondary containment. Two 2.1 million gallon (50,000 barrel) tanks (that are not connected by a manifold) are within a common secondary containment tank area, which is capable of holding 4.2 million gallons (100,000 barrels) plus sufficient freeboard.

10.5.1 The worst case discharge for the facility is calculated by adding the capacity of all aboveground vegetable oil storage tanks without secondary containment (18.0 million gallons) plus the capacity of the largest aboveground storage tank inside secondary containment (3.0 million gallons). The resulting worst case discharge is 21 million gallons or 500,000 barrels.

10.5.2 With a specific worst case discharge identified, the planning volume for on-water recovery can be identified as follows:

Worst case discharge: 21 million gallons (500,000 barrels) of Group B vegetable oil
Operating Area: Inland
Planned percent recovered floating vegetable oil (from Table 6, column Nearshore/Inland/Great Lakes): Inland, Group B is 20%
Emulsion factor (from Table 7): 2.0
Planning volumes for on-water recovery:
21,000,000 gallons x .2 x 2.0 = 8,400,000 gallons or 200,000 barrels.

Determine required resources for on-water recovery for each of the three tiers using mobilization factors (from Table 4, column Inland/Nearshore/Great Lakes)

Inland operating area	Tier 1	Tier 2	Tier 3
Planning volume on water X	.15	.25	.40
Estimated Daily Recovery Capacity (bbls)	30,000	50,000	80,000

10.5.3 Because the requirements for On-Water Recovery Resources for Tiers 1, 2, and 3 for inland Operating Area exceed the caps identified in Table 5 of this appendix, the facility owner will contract for a response of 12,500 barrels per day (bpd) for Tier 1, 25,000 bpd for Tier 2, and 50,000 bpd for Tier 3. Resources for the remaining 17,500 bpd for Tier 1, 25,000 bpd for Tier 2, and 30,000 bpd for Tier 3 shall be identified but need not be contracted for in advance.

10.5.4 With the specific worst case discharge identified, the planning volume of onshore recovery can be identified as follows:

Worst case discharge: 21 million gallons (500,000 barrels) of Group B vegetable oil
Operating Area: Inland
Planned percent recovered floating vegetable oil from onshore (from Table 6, column
Nearshore/Inland/Great Lakes): Inland, Group B is 65%
Emulsion factor (from Table 7): 2.0
Planning volumes for shoreline recovery:
21,000,000 gallons x 0.65 x 2.0 =27,300,000 gallons or 650,000 barrels

10.5.5 The facility owner or operator shall, as appropriate, also identify or contract for quantities of boom identified in the response plan for the protection of fish and wildlife and sensitive environments within the area potentially impacted by a worst case discharge from the facility. For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's ''Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments,'' (see Appendix E to this part, section 1.1, for availability) and the applicable ACP. Attachment C–III to Appendix C provides a method for calculating a planning distance to fish and wildlife and sensitive environments and public drinking water intakes that may be adversely affected in the event of a worst case discharge.

10.6 The procedures discussed in sections 10.6.1–10.6.3 of this appendix must be used to determine appropriate response resources for facilities with Group C oils.

10.6.1 The owner or operator of a facility that handles, stores, or transports Group C oils shall, as appropriate, identify the response resources available by contract or other approved means, as described in § 112.2. The equipment identified in a response plan shall, as appropriate, include:

(1) Sonar, sampling equipment, or other methods for locating the oil on the bottom or suspended in the water column;

(2) Containment boom, sorbent boom, silt curtains, or other methods for containing the oil that may remain floating on the surface or to reduce spreading on the bottom;

(3) Dredges, pumps, or other equipment necessary to assess the impact of such discharges;

(4) Equipment necessary to assess the impact of such discharges; and

(5) Other appropriate equipment necessary to respond to a discharge involving the type of oil handled, stored, or transported.

10.6.2 Response resources identified in a response plan for a facility that handles, stores, or transports Group C oils under section 10.6.1 of this appendix shall be capable of being deployed on scene within 24 hours of discovery of a discharge.

10.6.3 A response plan must identify response resources with fire fighting capability. The owner or operator of a facility that handles, stores, or transports Group C

oils that does not have adequate fire fighting resources located at the facility or that cannot rely on sufficient local fire fighting resources must identify adequate fire fighting resources. The owner or operator shall ensure, by contract or other approved means as described in § 112.2, the availability of these resources. The response plan shall also identify an individual located at the facility to work with the fire department for Group C oil fires. This individual shall also verify that sufficient well-trained fire fighting resources are available within a reasonable response time to respond to a worst case discharge. The individual may be the qualified individual identified in the response plan or another appropriate individual located at the facility.

10.7 The procedures described in sections 10.7.1–10.7.5 of this appendix must be used to determine appropriate response plan development and evaluation criteria for facilities that handle, store, or transport animal fats and vegetable oils. Refer to section 11 of this appendix for information on the limitations on the use of chemical agents for inland and nearshore areas.

10.7.1 An owner or operator of a facility that handles, stores, or transports animal fats and vegetable oils must provide information in the response plan that identifies:

(1) Procedures and strategies for responding to a worst case discharge of animal fats and vegetable oils to the maximum extent practicable; and

(2) Sources of the equipment and supplies necessary to locate, recover, and mitigate such a discharge.

10.7.2 An owner or operator of a facility that handles, stores, or transports animal fats and vegetable oils must ensure that any equipment identified in a response plan is capable of operating in the geographic area(s) (i.e., operating environments) in which the facility operates using the criteria in Table 1 of this appendix. When evaluating the operability of equipment, the facility owner or operator must consider limitations that are identified in the appropriate ACPs, including:

(1) Ice conditions;

(2) Debris;

(3) Temperature ranges; and

(4) Weather-related visibility.

10.7.3. The owner or operator of a facility that handles, stores, or transports animal fats and vegetable oils must identify the response resources that are available by contract or other approved means, as described in § 112.2. The equipment described in the response plan shall, as appropriate, include:

(1) Containment boom, sorbent boom, or other methods for containing oil floating on the surface or to protect shorelines from impact;

(2) Oil recovery devices appropriate for the type of animal fat or vegetable oil carried; and (3) Other appropriate equipment necessary to respond to a discharge involving the type of oil carried.

10.7.4 Response resources identified in a response plan according to section 10.7.3 of this appendix must be capable of commencing an effective on-scene response within the applicable tier response times in section 5.3 of this appendix.

10.7.5 A response plan must identify response resources with fire fighting capability. The owner or operator of a facility that handles, stores, or transports animal fats and vegetable oils that does not have adequate fire fighting resources located at the facility or that cannot rely on sufficient local fire fighting resources must identify adequate fire fighting resources. The owner or operator shall ensure, by contract or other approved means as described in § 112.2, the availability of these resources. The response plan shall also identify an individual located at the facility to work with the fire department for animal fat and vegetable oil fires. This individual shall also verify that sufficient well-trained fire fighting resources are available within a reasonable response time to respond to a worst case discharge. The individual may be the qualified individual identified in the response plan or another appropriate individual located at the facility.

11.0 Determining the Availability of Alternative Response Methods

11.1 For chemical agents to be identified in a response plan, they must be on the NCP Product Schedule that is maintained by EPA. (Some States have a list of approved dispersants for use within State waters. Not all of these State-approved dispersants are listed on the NCP Product Schedule.)

11.2 Identification of chemical agents in the plan does not imply that their use will be authorized. Actual authorization will be governed by the provisions of the NCP and the applicable ACP.

12.0 Additional Equipment Necessary to Sustain Response Operations

12.1 A facility owner or operator shall identify sufficient response resources available, by contract or other approved means as described in § 112.2, to respond to a medium discharge of animal fats or vegetables oils for that facility. This will require response resources capable of containing and collecting up to 36,000 gallons of oil or 10 percent of the worst case discharge, whichever is less. All equipment identified must be designed to operate in the applicable operating environment specified in Table 1 of this appendix.

12.2 A facility owner or operator shall evaluate the availability of adequate temporary storage capacity to sustain the effective daily recovery capacities from equipment identified in the plan. Because of the inefficiencies of oil spill recovery devices, response plans must identify daily storage capacity equivalent to twice the effective daily recovery capacity required on-scene. This temporary storage capacity may be reduced if a facility owner or operator can demonstrate by waste stream analysis that the efficiencies of the oil recovery devices, ability to decant waste, or the availability of alternative temporary storage or disposal locations will reduce the overall volume of oily material storage requirement.

12.3 A facility owner or operator shall ensure that response planning includes the capability to arrange for disposal of recovered oil products. Specific disposal procedures will be addressed in the applicable ACP.

13.0 References and Availability

13.1 All materials listed in this section are part of EPA's rulemaking docket and are located in the Superfund Docket, 1235 Jefferson Davis Highway, Crystal Gateway 1, Arlington, Virginia 22202, Suite 105 (Docket Numbers SPCC–2P, SPCC–3P, and SPCC–9P). The docket is available for inspection between 9:00 a.m. and 4:00 p.m., Monday through Friday, excluding Federal holidays. Appointments to review the docket can be made by calling 703–603–9232. Docket hours are subject to change. As provided in 40 CFR part 2, a reasonable fee may be charged for copying services.

13.2 The docket will mail copies of materials to requestors who are outside the Washington, DC metropolitan area. Materials may be available from other sources, as noted in this section. As provided in 40 CFR part 2, a reasonable fee may be charged for copying services. The RCRA/Superfund Hotline at 800–424–9346 may also provide additional information on where to obtain documents. To contact the RCRA/Superfund Hotline in the Washington, DC metropolitan area, dial 703–412–9810. The Telecommunications Device for the Deaf (TDD) Hotline number is 800–553–7672, or, in the Washington, DC metropolitan area, 703–412–3323.

13.3 Documents

(1) National Preparedness for Response Exercise Program (PREP). The PREP draft guidelines are available from United Coast Guard Headquarters (G-MEP–4), 2100 Second Street, SW., Washington, DC 20593. (See 58 FR 53990, October 19, 1993, Notice of Availability of PREP Guidelines).

(2) ''Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments' (published in the **Federal Register** by DOC/NOAA at 59 FR 14713, March 29, 1994.). The guidance is available in the Superfund Docket (see sections 13.1 and 13.2 of this appendix).

(3) ASTM Standards. ASTM F 715, ASTM F 989, ASTM F 631–80, ASTM F 808–83 (1988). The ASTM standards are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103–1187.

(4) Response Plans for Marine Transportation-Related Facilities, Interim Final Rule. Published by USCG, DOT at 58 FR 7330, February 5, 1993.

8. Amend the Tables to Appendix E to Part 112 by revising Table 2 and adding Tables 6 and 7 to read as follows:

TABLE 2 TO APPENDIX E—REMOVAL CAPACITY PLANNING TABLE FOR PETROLEUM OILS AND NON-PETROLEUM OILS OTHER THAN ANIMAL FATS AND VEGETABLE OILS

Spill location	Rivers and canals			Nearshore/inland		
Sustainability of on-water oil recovery	3 days			4 days		
Oil Group[1]	Percent natural dissipation	Percent recovered floating oil	Percent oil onshore	Percent natural dissipation	Percent recovered floating oil	Percent oil onshore
1 Non-persistent oils	80	10	10	80	20	10
2 Light crudes	40	15	45	50	50	30
3 Medium crudes and fuels	20	15	65	30	50	50
4 Heavy crudes and fuels	5	20	75	10	50	70
Group 5 oils are defined in section 1.2.8 of this appendix; the response resource considerations are outlined in section 7.6 of this appendix.						

[1] Petroleum oil, non-petroleum oil, animal fat, and vegetable oil are defined in § 112.2

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TABLE 6 TO APPENDIX E—REMOVAL CAPACITY PLANNING TABLE FOR ANIMAL FATS AND VEGETABLE OILS

Spill location	Rivers and canals			Nearshore/inland Great Lakes		
Sustainability of on-water oil recovery	3 days			4 days		
Oil group[1]	Percent natural loss	Percent recovered floating oil	Percent recovered oil from onshore	Percent natural loss	Percent recovered floating oil	Percent recovered oil from onshore
Group A	40	15	45	50	20	30
Group B	20	15	65	30	20	50
Group C oils are defined in section 1.2.1 and 1.2.9 of this appendix; the response resource procedures are discussed in section 10.6 of this appendix.						

[1] Substances with a specific gravity greater than 1.0 generally sink below the surface of the water. Response resource considerations are outlined in section 8.6 of this appendix. The owner or operator of the facility is responsible for determining appropriate response resources for Group C oils including locating oil on the bottom or suspended in the water column; containment boom or other appropriate methods for containing oil that may remain floating on the surface; and dredges, pumps, or other equipment to recover animal fats or vegetable oils from the bottom and shoreline.

TABLE 7 TO APPENDIX E—EMULSIFICATION FACTORS FOR ANIMAL FATS AND VEGETABLE OILS

Oil Group[1]	
Group A	1.0
Group B	2.0
Group C oils are defined in section 1.2.1 and 1.2.9 of this appendix; the response resource procedures are discussed in section 10.6 of this appendix.	

[1] Substances with a specific gravity greater than 1.0 generally sink below the surface of the water. Response resource considerations are outlined in section 8.6 of this appendix. The owner or operator of the facility is responsible for determining appropriate response resources for Group C oils including locating oil on the bottom or suspended in the water column; containment boom or other appropriate methods for containing oil that may remain floating on the surface; and dredges, pumps, or other equipment to recover animal fats or vegetable oils from the bottom and shoreline.

9. Amend the attachments to Appendix E by revising Attachment E–1 and Attachment E–1 Example and adding Attachment E–2 and Attachment E–2 Example to read as follows:

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Attachment E-1 --
Worksheet to Plan Volume of Response Resources for Worst Case Discharge - Petroleum Oils and Non-Petroleum Oils Other than Animal Fats and Vegetable Oils

Part I Background Information

Step (A) Calculate Worst Case Discharge in barrels (Appendix D) [ ] (A)

Step (B) Oil Group[1] (Table 3 and section 1.2 of this appendix) . . . . . [ ]

Step (C) Operating Area (choose one). . . [ ] Nearshore /Inland Great Lakes or [ ] Rivers and Canals

Step (D) Percentages of Oil (Table 2 of this appendix)

Percent Lost to Natural Dissipation	Percent Recovered Floating Oil	Percent Oil Onshore
[ ] (D1)	[ ] (D2)	[ ] (D3)

Step (E1) On-Water Oil Recovery $\frac{\text{Step(D2) x Step(A)}}{100}$ [ ] (E1)

Step (E2) Shoreline Recovery $\frac{\text{Step (D3) x Step (A)}}{100}$ [ ] (E2)

Step (F) Emulsification Factor (Table 3 of this appendix) . . . . . [ ] (F)

Step (G) On-Water Oil Recovery Resource Mobilization Factor
(Table 4 of this appendix)

Tier 1	Tier 2	Tier 3
(G1)	(G2)	(G3)

[1] A facility that handles, stores, or transports multiple groups of oil must do separate calculations for each oil group on site except for those oil groups that constitute 10 percent or less by volume of the total oil storage capacity at the facility. For purposes of this calculation, the volumes of all products in an oil group must be summed to determine the percentage of the facility's total oil storage capacity.

Part II On-Water Oil Recovery Capacity (barrels/day)

Tier 1	Tier 2	Tier 3
Step (E1) x Step (F) x Step (G1)	Step (E1) x Step (F) x Step (G2)	Step (E1) x Step (F) x Step (G3)

Part III Shoreline Cleanup Volume (barrels) . . . . | | Step (E2) x Step (F)

Part IV On-Water Response Capacity By Operating Area
(Table 5 of this appendix)
(Amount needed to be contracted for in barrels/day)

Tier 1	Tier 2	Tier 3
(J1)	(J2)	(J3)

Part V On-Water Amount Needed to be Identified, but not Contracted for in Advance (barrels/day)

Tier 1	Tier 2	Tier 3
Part II Tier 1 - Step (J1)	Part II Tier 2 - Step (J2)	Part II Tier 3 - Step (J3)

NOTE: To convert from barrels/day to gallons/day, multiply the quantities in Parts II through V by 42 gallons/barrel.

Attachment E-1 Example --
Worksheet to Plan Volume of Response Resources for Worst Case Discharge - Petroleum Oils and Non-Petroleum Oils Other than Animal Fats and Vegetable Oils

Part I Background Information

Step (A) Calculate Worst Case Discharge in barrels (Appendix D) . . . . . 170,000 (A)

Step (B) Oil Group[1] (Table 3 and section 1.2 of this appendix) 4

Step (C) Operating Area (choose one). [X] Nearshore /Inland Great Lakes [ ] or Rivers and Canals

Step (D) Percentages of Oil (Table 2 of this appendix)

Percent Lost to Natural Dissipation	Percent Recovered Floating Oil	Percent Oil Onshore
10	50	70
(D1)	(D2)	(D3)

Step (E1) On-Water Oil Recovery $\frac{\text{Step(D2) x Step(A)}}{100}$ = 85,000 (E1)

Step (E2) Shoreline Recovery $\frac{\text{Step(D3) x Step(A)}}{100}$ = 119,000 (E2)

Step (F) Emulsification Factor (Table 3 of this appendix) . . . . . 1.4 (F)

Step (G) On-Water Oil Recovery Resource Mobilization Factor
(Table 4 of this appendix)

Tier 1	Tier 2	Tier 3
0.15	0.25	0.40
(G1)	(G2)	(G3)

[1] A facility that handles, stores, or transports multiple groups of oil must do separate calculations for each oil group on site except for those oil groups that constitute 10 percent or less by volume of the total oil storage capacity at the facility. For purposes of this calculation, the volumes of all products in an oil group must be summed to determine the percentage of the facility's total oil storage capacity.

Part II On-Water Oil Recovery Capacity (barrels/day)

Tier 1	Tier 2	Tier 3
17,850	29,750	47,600
Step (E1) x Step (F) x Step (G1)	Step (E1) x Step (F) x Step (G2)	Step (E1) x Step (F) x Step (G3)

Part III Shoreline Cleanup Volume (barrels) 166,600

Step (E2) x Step (F)

Part IV On-Water Response Capacity By Operating Area
(Table 5 of this appendix)
(Amount needed to be contracted for in barrels/day)

Tier 1	Tier 2	Tier 3
10,000	20,000	40,000
(J1)	(J2)	(J3)

Part V On-Water Amount Needed to be Identified, but not Contracted for in Advance (barrels/day)

Tier 1	Tier 2	Tier 3
7,850	9,750	7,600
Part II Tier 1 - Step (J1)	Part II Tier 2 - Step (J2)	Part II Tier 3 - Step (J3)

NOTE: To convert from barrels/day to gallons/day, multiply the quantities in Parts II through V by 42 gallons/barrel.

Attachment E-2 --
Worksheet to Plan Volume of Response Resources
for Worst Case Discharge - Animal Fats and Vegetable Oils

Part I Background Information

Step (A) Calculate Worst Case Discharge in barrels (Appendix D) [ ] (A)

Step (B) Oil Group[1] (Table 7 and section 1.2 of this appendix) . . . . . [ ]

Step (C) Operating Area (choose one) . . . [ ] Nearshore /Inland Great Lakes [ ] or Rivers and Canals

Step (D) Percentages of Oil (Table 6 of this appendix)

Percent Lost to Natural Dissipation	Percent Recovered Floating Oil	Percent Oil Onshore
[ ]	[ ]	[ ]
(D1)	(D2)	(D3)

Step (E1) On-Water Oil Recovery $\frac{\text{Step(D2) x Step(A)}}{100}$ [ ] (E1)

Step (E2) Shoreline Recovery $\frac{\text{Step (D3) x Step (A)}}{100}$ [ ] (E2)

Step (F) Emulsification Factor (Table 7 of this appendix) . . . . . [ ] (F)

Step (G) On-Water Oil Recovery Resource Mobilization Factor
(Table 4 of this appendix)

Tier 1	Tier 2	Tier 3
(G1)	(G2)	(G3)

[1] A facility that handles, stores, or transports multiple groups of oil must do separate calculations for each oil group on site except for those oil groups that constitute 10 percent or less by volume of the total oil storage capacity at the facility. For purposes of this calculation, the volumes of all products in an oil group must be summed to determine the percentage of the facility's total oil storage capacity.

Part II On-Water Oil Recovery Capacity (barrels/day)

Tier 1	Tier 2	Tier 3
Step (E1) x Step (F) x Step (G1)	Step (E1) x Step (F) x Step (G2)	Step (E1) x Step (F) x Step (G3)

Part III Shoreline Cleanup Volume (barrels) . . . . | | Step (E2) x Step (F)

Part IV On-Water Response Capacity By Operating Area
(Table 5 of this appendix)
(Amount needed to be contracted for in barrels/day)

Tier 1	Tier 2	Tier 3
(J1)	(J2)	(J3)

Part V On-Water Amount Needed to be Identified, but not Contracted for in Advance (barrels/day)

Tier 1	Tier 2	Tier 3
Part II Tier 1 - Step (J1)	Part II Tier 2 - Step (J2)	Part II Tier 3 - Step (J3)

NOTE: To convert from barrels/day to gallons/day, multiply the quantities in Parts II through V by 42 gallons/barrel.

Attachment E-2 Example --
Worksheet to Plan Volume of Response Resources
for Worst Case Discharge - Animal Fats and Vegetable Oils

Part I Background Information

Step (A) Calculate Worst Case Discharge in barrels (Appendix D) . . . . . 500,000 (A)

Step (B) Oil Group[1] (Table 7 and section 1.2 of this appendix) . . . . . B

Step (C) Operating Area (choose one) [X] Nearshore /Inland Great Lakes [ ] or Rivers and Canals

Step (D) Percentages of Oil (Table 6 of this appendix)

Percent Lost to Natural Dissipation	Percent Recovered Floating Oil	Percent Oil Onshore
30 (D1)	20 (D2)	50 (D3)

Step (E1) On-Water Oil Recovery $\frac{\text{Step (D2)} \times \text{Step (A)}}{100}$ = 100,000 (E1)

Step (E2) Shoreline Recovery $\frac{\text{Step (D3)} \times \text{Step (A)}}{100}$ = 250,000 (E2)

Step (F) Emulsification Factor (Table 7 of this appendix) . . . . . 2.0 (F)

Step (G) On-Water Oil Recovery Resource Mobilization Factor
(Table 4 of this appendix)

Tier 1	Tier 2	Tier 3
0.15	0.25	0.40
(G1)	(G2)	(G3)

[1] A facility that handles, stores, or transports multiple groups of oil must do separate calculations for each oil group on site except for those oil groups that constitute 10 percent or less by volume of the total oil storage capacity at the facility. For purposes of this calculation, the volumes of all products in an oil group must be summed to determine the percentage of the facility's total oil storage capacity.

Part II On-Water Oil Recovery Capacity (barrels/day)

Tier 1	Tier 2	Tier 3
30,000	50,000	80,000
Step (E1) x Step (F) x Step (G1)	Step (E1) x Step (F) x Step (G2)	Step (E1) x Step (F) x Step (G3)

Part III Shoreline Cleanup Volume (barrels) 500,000
Step (E2) x Step (F)

Part IV On-Water Response Capacity By Operating Area
(Table 5 of this appendix)
(Amount needed to be contracted for in barrels/day)

Tier 1	Tier 2	Tier 3
12,500	25,000	50,000
(J1)	(J2)	(J3)

Part V On-Water Amount Needed to be Identified, but not Contracted for in Advance (barrels/day)

Tier 1	Tier 2	Tier 3
17,500	25,000	30,000
Part II Tier 1 - Step (J1)	Part II Tier 2 - Step (J2)	Part II Tier 3 - Step (J3)

NOTE: To convert from barrels/day to gallons/day, multiply the quantities in Parts II through V by 42 gallons/barrel.

10. Amend Appendix F to Part 112 by revising the phrase ''section 10'' to read ''section 13'' in the last sentence of section 1.3(4), in footnote 2 to section 1.4.2, in section 1.8.2(A), and in footnote 3 of the attachments to appendix F.

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