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# Part III

# Environmental Protection Agency

## 40 CFR Part 112

## Oil Pollution Prevention and Response; Non-Transportation-Related Facilities; Final Rule

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Part 112**

**[FRL–6707–6]**

**RIN 2050–AE64**

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

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Final rule.

**SUMMARY:** Under section 311 of the Clean Water Act, EPA is amending the Facility Response Plan requirements in the Oil Pollution Prevention regulation for non-transportation-related facilities. The main purpose of these amendments is to provide a more specific methodology for planning response resources that can be used by an owner or operator of a facility that handles, stores, or transports animal fats and vegetable oils. EPA has issued this rule in response to legislation which requires the Agency to issue regulations.

**EFFECTIVE DATE:** July 31, 2000.

**ADDRESSES:** 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) 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); 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:** The preamble is organized in the following outline:

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## I. Introduction

### *A. Regulated Entities*

Entities Potentially Regulated by this Rule 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. |
| Elementary and Secondary Schools, Colleges. | NAICS 6111–6113. |
| Hospitals/Nursing and Residential Care Facilities. | NAICS 622–623. |
| Crop and Animal Production. | NAICS 111–112. |

''NAICS'' refers to the North American Industry Classification System, a method of classifying various facilities. The NAICS was adopted by the United States, Canada, and Mexico on January 1, 1997 to replace the Standard Industrial Classification (SIC) code. 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)(A) of the CWA authorizes the President to issue regulations establishing methods and procedures for removal of discharged oil, and section 311(j)(1)(C) 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 54757–70, October 22, 1991), the President has delegated to EPA the authority to regulate non-transportation-related onshore facilities under sections 311(j)(1)(A) and (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, most Federal agencies 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). The Federal agency must consider the differences in the physical, chemical, biological, and other properties, and in the environmental effects, of the classes.

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 to comply with the requirements of EORRA.

*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

In today's rule, EPA is modifying the existing FRP rule for non-transportation-related facilities that handle, store, and transport animal fats and vegetable oils. Today the Coast Guard is also modifying its rule for 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 and final regulations whenever possible. Each agency's requirements are appropriate to the universe of facilities that it regulates. The two rules reflect the similarities and differences in the nature and activities of facilities regulated by the two agencies.

3. 1994 Facility Response Plan Rule

On February 17, 1993, EPA (''we'') published a proposed rule (58 FR 8824–8879) to revise the Oil Pollution Prevention regulation, which we originally promulgated under the Clean Water Act, to address the OPA facility response plan requirements. We received a total of 1282 comments on the proposed rule. We considered these comments in developing the 1994 final rule. On July 1, 1994, we published the FRP rule (59 FR 34070–340136) 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. Under the authority of section 311(j)(1)(A) and (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. The definition of ''oil'' includes 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. 33 U.S.C. 1321(a)(1). In the preamble to the 1994 FRP rule (59 FR 34070–34136, July 1, 1994), we noted that for the purpose of CWA section 311(j) planning, the CWA includes non-petroleum oils. The non-petroleum oils regulated by part 112 include animal fats, such as lard and tallow; vegetable oils, such as corn oil, rapeseed oil, and soy bean oil; and other non-petroleum oils, such as coal tar, turpentine, and silicon fluids. See the definition of ''oil'' at 40 CFR 112.2.

b. Different rule requirements for non-petroleum oils. In the preamble to the 1994 FRP rule, we agreed with commenters that certain response equipment and strategies used for petroleum oil spills may be inappropriate for non-petroleum oil. Therefore, we adopted requirements giving more flexibility in estimating response resources to an owner or operator of a facility that handles, stores, or transports non-petroleum oil. We used the USCG approach to determine response resources for worst case discharges of non-petroleum oil. We required the owner or operator of a non-petroleum oil facility to: (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 (according to Table 1 of appendix E to part 112), and that the equipment and other resources will be able to respond within the required times; and (4) ensure the availability of required resources by contract or other approved means. Unlike our requirements for the owner or operator of a petroleum oil facility, we did not limit the owner or operator of a non-petroleum oil facility to using emulsification or evaporation factors in appendix E (the Equipment Appendix) to calculate response resources. In the 1994 FRP rule, we added section 7.7 to Appendix E to reflect these changes from the 1993 proposal. 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 34070, 34088, July 1, 1994. Based on our examination of recent research, in today's rule we have included these factors for the owner or operator of a facility that handles, stores, or transports animal fats and vegetable oils. Owners or operators of facilities that handle, store, or transport non-petroleum oils other than animal fats and vegetable oils are not limited to using the emulsification or evaporation factors in appendix E.

4. Petition for Reconsideration

As described in the preamble to the proposed rule (67 FR 17227–17267, April 8, 1999), 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 and 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.

On October 20, 1997, we denied the petition to amend the FRP rule (62 FR 54508–54543). We found that the petition did not substantiate most claims that animal fats and vegetable oils differ from petroleum oils in properties and effects and concluded that the facts 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 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 disagreed with Petitioners' claim that all animal fats and vegetable oils are readily biodegradable and noted that when biodegradation does occur in the environment, it can lead to oxygen depletion and death of fish and other aquatic organisms. We also disagreed with Petitioners' claim that all animal fats and vegetable oils are non-toxic when spilled into the environment and should therefore 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 their 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 spills of oil from facilities with these characteristics may cause substantial harm to the environment.

5. FRP-Related Requests

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 animal fats and vegetable oils. 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 asked us to revise the FRP rule by creating a separate category for response planning for animal fat and vegetable oil facilities and a separate part of the Appendix with procedures for these facilities. The requests also included suggested language for the revised rule. These requests are addressed in section II.G of today's preamble.

6. 1999 Proposed Rule

On April 8, 1999, we published a proposed rule to amend the FRP requirements at 40 CFR part 112 (64 FR 17227–17267). The main purpose of the proposal was to provide a more specific methodology for planning response resources that can be used by an owner or operator of a facility that handles, stores, or transports animal fats and vegetable oils. We issued the proposal in response to Public Law 105–276, October 18, 1998, which requires us to amend part 112. We requested public comments on the usefulness of the new procedure and tables for determining response equipment needs for animal fat and vegetable oil facilities. On May 18, 1999 (64 FR 26926–26927), we extended the public comment period through June 9, 1999. We received one comment supporting the proposed methodology and no comments specifically opposing the proposed methodology.

In Section II of today's preamble, we discuss comments received on major issues. In the Docket for this rulemaking (SPCC–9P), you will find a detailed Response to Comments document addressing all comments and supporting analyses. As shown in the Response to Comments document, we received no adverse comments on the definitions proposed in § 112.2 or the definitions (and groups of oils) proposed in appendix E. As described in section II.G of today's preamble, we have finalized those definitions as proposed, except for minor editorial changes.

In today's rule, we have also finalized most of the minor editorial changes that we included in the proposal, except that we did not change ''spill'' to the word ''discharge'' everywhere that it appears in appendix E and other sections of the rule. Although ''discharge'' is the term that is defined and used in the Clean Water Act, we did not make this change in phrases such as ''spill prevention and response'' and ''oil spill removal organization.''

## II. Discussion of Issues

### *A. Response Planning Scenarios*

In today's rule, EPA is retaining the requirement to plan for three specific scenarios for oil discharges: small (2,100 gallons or less), medium (between 2,100 and 36,000 gallons), and worst case. Most discharges are small or medium. Planning for responses to more commonly occurring discharges may be more beneficial to facilities than planning for a worst case discharge that has a lower probability of occurrence. Discharges of animal fats and vegetable oils less severe than a worst case scenario may pose a serious threat to navigable waters or adjoining shorelines, especially from the cumulative effects of several discharges, and can cause other adverse effects (62 FR 54508–54543, October 20, 1997).

The preamble to the April 8, 1999 proposal stated that EPA proposed to keep the same response planning levels for animal fats and vegetable oils, although EPA proposed to add separate sections for those oils. Several commenters did not agree with EPA's proposal to require three planning scenarios for animal fat and vegetable oil facilities; instead, they suggested that planning should be required only for worst case discharges, under the authority of OPA. One commenter agreed that planning for commonly occurring discharges is most valuable, and asserted that most commonly occurring discharges of vegetable oils are small; the commenter suggested planning for small and worst case discharges only so that EPA and Coast Guard rules are consistent. Another commenter supported EPA's proposal for three planning scenarios.

In the preamble to the 1994 FRP rule, EPA noted that although planning for several discharge amounts is not specifically mandated under OPA, EPA has broad regulatory authority under CWA section 311(j)(1)(C) for such a requirement. The Agency also made this point in the denial of the petition (62 FR 54508, 54509, October 20, 1997) and in the proposed rule (67 FR 17227, 17229, April 8, 1999). We also believe that EPA has regulatory authority under CWA section 311(j)(1)(A) for such a requirement.

A primary purpose of OPA was to expand oil spill prevention and preparedness activities. Different personnel and equipment may be necessary to respond to small, medium, and worst case discharges. In our review of FRPs submitted for animal fat and vegetable oil facilities, we found several facilities that show clear differences for the three planning scenarios. For example, a facility may use its own personnel and equipment to respond to a small discharge, call in an Oil Spill Removal Organization (OSRO) to assist the facility during a medium discharge, and allow a worst case discharge to be handled entirely by the OSRO. Planning can increase the effectiveness of response actions and can significantly reduce the spread of spilled oil, the environmental impacts of such spills, and cleanup costs. Commenters have not questioned these assertions.

EPA and the USCG regulate facilities with different physical activities and different response schemes, and the requirements of each agency are appropriate for the universe of facilities regulated by that agency. Specifically, each of the agencies addresses the activities for the facilities under its jurisdiction. EPA's non-transportation-related facilities generally have a greater potential for large discharges than USCG-regulated facilities. The worst case discharge from an EPA-regulated facility (generally the capacity of the largest bulk storage tank) is often greater by an order of magnitude or more than the worst case discharge from a USCG-regulated facility (determined by the piping capacity and flow rate for loading and unloading a vessel). Based on information about animal fat and vegetable oil FRPs provided to the EPA Regions, the mean worst case discharge (WCD) is approximately 2.0 million gallons; the median WCD is approximately 1.2 million gallons; and the largest WCD is over 20 million gallons. For Coast Guard-regulated facilities that handle only animal fats and vegetable oils, the mean worst case discharge was over 22,000 gallons; the median WCD was about 10,000 gallons; and the largest worst case discharge was less than 153,000 gallons.

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 and in 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, facility transfers to or from tank cars or tank trucks, and discharges from processing units. At USCG-regulated facilities, however, discharges usually result from human error or equipment failure. The discharge volume 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.

We have examined discharge data for animal fats and vegetable oils to determine whether the distribution of different discharge volumes for these oils is similar to the pattern for all oils. In the FRP rule, the planning volumes for discharges other than a worst case discharge are based on an analysis of the Emergency Response Notification System (ERNS), which contains data on discharges from all sources. These data showed that the average reported discharge for all oils is 1,300 gallons, and 99.5 percent of the discharges of all oils were less than approximately 36,000 gallons. Thus, in the existing FRP rule the planning volume of 2,100 gallons rule or less for small discharges represents a realistic planning quantity. (See the Proposed FRP rule, 58 FR 8824, 8836, February 17, 1993).

We also reviewed data from the USCG's Marine Safety Information System, which provided some information that is not readily available in ERNS. Specifically, the database enabled us to identify which discharges are from EPA-regulated, non-transportation-related facilities. During the period 1992 to 1998, we found 28 reported non-petroleum oil discharges from non-transportation-related facilities or from the non-transportation segment of a transportation facility. The volume of these non-petroleum discharges ranged from 1 gallon to 7,500 gallons. Most discharges (24) were less than 1,000 gallons and only four 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.

According to these data, the distribution of quantities discharged for animal fats and vegetable oils is comparable to that for all other oils. In our proposed rule (67 FR 17227–17267, April 8, 1999), we requested comment on the reliability of these data and whether they are representative of discharges of animal fats and vegetable oils at other facilities. We requested 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. No commenter provided data on discharge volume distribution.

The FRP rule also provides for facilities where the range of possible discharge scenarios is small. Under today's rule, as under the pre-existing rule, a smaller facility may only need to plan for two scenarios or a single scenario if its worst case discharge falls within one of the specified ranges for small or medium discharges. Furthermore, case-by-case deviations may be allowed if they afford equal environmental protection.

To summarize, our response planning scenarios differ from those of the USCG. Unlike EPA, the USCG requires response planning for animal fats and vegetable oils at marine transportation-related facilities only for a worst case discharge and an Average Most Probable Discharge (the equivalent of EPA's small discharge). This difference, however, is the result of differences in the universe, nature, and characteristics of the facilities regulated by each agency. Each agency's requirements are appropriate to the universe of facilities that it regulates. Our existing information shows similar properties, effects, and discharge volume for animal fats and vegetable oils and other oils at EPA-regulated facilities. We conclude that our response planning scenario requirements for animal fat and vegetable oil facilities should be consistent with our response planning scenario requirements for petroleum facilities. We believe that such planning will be most useful for regulated facilities in helping to protect the environment.

*B. Planning Response Resources*

The primary changes to FRP requirements for animal fat and vegetable oil facilities in today's rule involve the addition of section 10.0 and Tables 6 and 7 to appendix E. Proposed ssction 10.0 described the approach for calculating planning volumes for a worst case discharge of animal fats and vegetable oils. We proposed the two new tables specifically for animal fats and vegetable oils, Table 6 for Removal Capacity Planning and Table 7 for Emulsification Factors. Several commenters supported the creation of separate provisions for animal fat and vegetable oil facilities. One commenter supported the proposed methodology, including Table 6, and the emulsification factors for animal fats and vegetable oils (Table 7). The commenter stated that Table 6 accounts for the potential for natural degradation of oil as spilled animal fats and vegetable oils undergo changes as well as percentages of loss and recovery

which will aid in response planning. No commenters opposed our approach in Section 10 or provided data suggesting different values for Tables 6 and 7. Today we are finalizing the proposed methodology and tables.

In the preamble to the USCG's proposed rule (64 FR 17222–17227, April 8, 1999), the USCG asked for public comment on the appropriateness of EPA's Tables 6 and 7 for animal fat and vegetable oil facilities. The animal fat and vegetable oil industry provided no comments indicating support of or opposition to the tables. In the interest of affording maximum flexibility to the regulated community, the USCG is offering the use of EPA's planning volume tables as an option, but not a requirement, in its final rule that is also published in today's **Federal Register**. The USCG notes that the use of these tables may allow certain facilities to provide a more appropriate level of response resources to mitigate an oil spill.

We have documented that the methodology in section 10 and Tables 6 and 7 is supported by recent scientific studies. These studies are summarized in the preamble of the proposed FRP rule (64 FR 17227, 17240, April 8, 1999). To arrive at the numbers in Table 6, we examined numerous studies on the fate and effects of animal fats and vegetable oils in the environment (62 FR 54508–54543, 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. 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. Animal fats and vegetable oils can also be transformed by other chemical reactions, such as hydrolysis.

Other reports are also summarized in the proposed FRP rule. Preliminary data from a study, which is being conducted for EPA by Battelle Columbus Laboratories, estimates that at 25°C, at least 20 to 25 percent of crude soybean oil was biodegraded after 25 days, and at least 15 to 39 percent of the crude canola oil was biodegraded after 365 days, depending on pH (Venosa and Alleman, Personal Communication, 1999). At 10°C, less biodegradation occurred. During biodegradation, an increase in toxicity was observed, using the Microtox test (ASTM, 1997).

Several studies described in the proposed FRP rule indicate that the degradation of animal fats and vegetable oils depends on a variety of factors. 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 estimated that approximately 20 percent of the volume of a Group B animal fat or vegetable oil may be lost due to natural processes.

To evaluate the reasonableness of the recovery rates in Table 6 to appendix E, we have examined field data on recovery rates for discharges of animal fats and vegetable oils. According to the Coast Guard's Marine Safety Information System, for 664 discharges of animal fats and vegetable oils between 1984 and 1999 responded to by the Coast Guard, the data indicated that 39.9 percent of animal fats and vegetable oils discharged to the water were recovered. Similarly, 86.9 percent of the animal fats and vegetable oils discharged to land were recovered. The data did not account for the amount of water or solids, including soil or debris, that may have been in the recovered material. We believe that these recovery rates are consistent with the planned recovery rates in today's rule. We also note that today's rule requires temporary storage of twice the effective daily recovery capacity.

In today's FRP rule, we are finalizing this methodology as proposed. The methodology recognizes those differences that exist in the physical and chemical properties of petroleum oils and animal fats and vegetable oils. While most properties of these classes of oils are similar, some petroleum oils volatilize to a greater extent than most animal fats and vegetable oils, and some animal fats and vegetable oils can biodegrade more rapidly than petroleum oils under certain conditions. These properties are criteria that we considered in differentiating classes of oils under EORRA. The similarities and differences in properties and effects of petroleum oils and animal fats and vegetable oils are discussed further in 62 FR 54508–54543, October 20, 1997; the supporting Technical Document, which is available in the Docket; and in the proposed rule.

Although we recognize that degradation is affected by many factors and conditions that are specific to each spill, we are using the percentages of loss and recovery in Table 6 to aid in response planning. According to Table 6, facilities must 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. Facilities must 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.

In today's rule, we are also finalizing Table 7, which presents emulsification factors to account for the increases in volume that result when discharged oil forms emulsions. 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.

Studies that apply to emulsification of animal fats and vegetable oils are described in the preamble of the proposed FRP rule. 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). Another study indicated that certain crude and refined vegetable oils form emulsions, ranging from 10 to 32 percent (Calanog *et al.,* 1999). On the hydrophilic-lipophilic balance (HLB) scale that characterizes the solubility of emulsifiers, some petroleum oils, 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).

Based on similarities in chemical and physical characteristics of petroleum oils and animal fats and vegetable oils that have been detailed in the proposed FRP rule and in our earlier evaluation (62 FR 54508–54543, October 20, 1997), we are finalizing Table 7. The emulsification factors for animal fats and vegetable oils in Table 7 are similar

to those of petroleum oils in corresponding oil groups.

Today's rule also includes a provision for response capability caps or limits on the quantity of response resources which individual owners or operators are required to contract for in advance. Caps were developed during the USCG Vessel Response Plan and FRP rules and the 1994 EPA FRP rule to recognize the limits of available technology and private oil spill removal contractors in specific operating areas. The USCG and EPA response planning regulations provide for the increase of caps on contracted response resources at five year intervals. Caps were initially established on February 18, 1993 for all operating areas and were increased by 25 percent on February 18, 1998 for EPA-regulated facilities. The 1998 caps remain in effect for the purposes of this rule until the February 18, 2003 caps are developed.

The methodology in today's FRP rule will also reduce the information collection burden for some facilities by providing specific tables that an owner or operator may use to calculate response resources. Many owners or operators of animal fat and vegetable oil facilities have been using Tables 2 and 3 in the existing FRP regulation, even though they were not required to use them. These tables were developed to establish the planning volume and the planned response resources for petroleum oil discharges, including on-water recovery and onshore recovery of petroleum oils. Using the new Tables 6 and 7 in today's rule, some facility owners or operators will now be able to plan for a lower level of response resources. Our approach also maintains flexibility for an owner or operator to use an alternative methodology or approach as long as such methodology or approach achieves equivalent environmental protection.

In this rule, we have redesignated sections 8.0, 9.0 and 10.0 of the 1994 rule as sections 11.0, 12.0 and 13.0, respectively.

*C. Higher Volume Port Areas*

Under sections 7.2.3 and 7.7.4 of appendix E of the existing FRP rule, response resources identified in the FRP must be located so that they are capable of arriving at the scene of a discharge within the time specified for different response tiers. Tiering of response resources allows for the timely and orderly arrival of response resources and allows for the identification of response resources from outside the area of the facility to meet the planning requirements. Each response tier corresponds to the on-water recovery capacity necessary to respond to a percentage of the worst case discharge.

EPA recognizes the value of planning for the rapid arrival of response resources and the increased availability of response resources in certain areas where higher volumes of oil are handled, stored, and transported. For higher volume port areas, the response resources must arrive on-scene within six hours for Tier 1, 30 hours for Tier 2, and 54 hours for Tier 3. The arrival times for all other operating areas (including the Great Lakes, Inland, Nearshore, and Rivers and Canals) are 12 hours for Tier 1, 36 hours for Tier 2, and 60 hours for Tier 3. The arrival times are the same for petroleum and non-petroleum facilities, including animal fat and vegetable oil facilities.

In Appendix E of the proposed rule (64 FR 17227–17267, April 8, 1999), we proposed to continue to apply these arrival times to petroleum oil facilities in section 7.2.3 and to animal fat and vegetable oil facilities in section 10.2.3. We did not propose any changes to the response times for any facilities. Section 10.2.3 of appendix E in the proposed rule (64 FR 17227–17267, April 8, 1999) would require that animal fat and vegetable oil facilities calculate the required on-water recovery capacity of the response resources needed for each tier, and we included a formula to do so.

The commenters did not comment on the recovery capacity calculations, but they did comment on the response arrival times, which we did not propose to change. Commenters requested that we eliminate references to higher volume port areas and the 6-hour response times for animal fat and vegetable oil facilities in higher volume port areas. They suggested that because we designated higher volume port areas based on the location of petroleum oil facilities, the faster response times for facilities near these port areas should not apply to animal fat and vegetable oil facilities. We acknowledge that the designated higher volume port areas in our rule are based on the increased availability of response resources in areas where a higher volume of petroleum oils are handled, stored, and transported. Because the same equipment is generally used in responses to spills of petroleum oils and animal fats and vegetable oils with similar characteristics, these areas usually have the greatest availability of response resources for discharges of animal fats and vegetable oils.

CWA section 311(j)(5), as amended by OPA, requires facilities that prepare FRPs to ensure by contract or other approved means the availability of resources to remove a worst case discharge to the maximum extent practicable. Higher volume port areas have a greater number of response contractors and resources nearby. Therefore, we estimated a shorter response time for facilities in higher volume port areas compared with facilities located in all other operating areas. We believe that the increased availability of response contractors and reduced response times is likely to reduce damage to the environment resulting from discharges with little if any additional costs.

We believe that the availability of response equipment at higher volume port areas and the shortened response times (relative to other areas) is appropriate for animal fat and vegetable oil facilities located in these higher volume port areas. We did not create any new higher volume port areas based solely on the amount of animal fats and vegetable oils stored or shipped in the United States. Oil type is one factor that affects the performance of oil recovery equipment such as skimmers. Other factors are oil condition, oil viscosity; winds, waves, currents; air and sea temperatures; slick thickness, and the presence of debris (Schultze, 1999). The equipment that is used in responding to discharges of petroleum oils is generally the same equipment that is used to respond to discharges of animal fats and vegetable oils.

In May 1999, the USCG completed a study on the availability of response equipment (U.S. Coast Guard, 1999). This study examined among other issues the availability of mechanical recovery equipment in geographic areas of the United States and higher volume port areas. Based on our review of this report and our own analysis, we have determined that at most higher volume port areas the average estimated daily recovery capacity at Tier 1 is 511,627 barrels per day. We have determined that based on our review of 14 non-higher volume port areas, the average estimated daily recovery capacity at Tier 1 is 481,345 barrels per day. We conclude that greater amounts of response equipment are still found in higher volume port areas compared to other operating areas and that shortened response times are appropriate in higher volume port areas.

In the face of statutory mandates under OPA, the response community apparently has made a concerted effort to increase the response resources in other operating areas. In the future, EPA may examine whether the expanded availability of resources in non-higher volume port areas warrants a reduction in the response times in these operating areas.

The arrival times in today's FRP rule do not depend on the type of oil spilled. We believe that the equipment needed to respond to spills of animal fats and vegetable oils is generally the same as equipment needed to respond to spills of petroleum oils that have similar characteristics, such as viscosity and specific gravity.

We examined data on all FRPs submitted by animal fat and vegetable oil facilities, and found that about 30 percent of such facilities are in higher volume port areas. We believe those facilities can achieve more rapid response times than facilities in other areas. The data show that facilities in higher volume port areas are located within 6 hours or less of at least one USCG-classified level D or level E OSRO. Most animal fat and vegetable oil facilities located in higher volume port areas are near several USCG-classified level D or level E OSROs. All other animal fat and vegetable oil facilities who submitted FRPs are located within 12 hours of such an OSRO. Thus, all the facilities can meet the required FRP arrival times for response resources. In addition to a contract with an OSRO, the owner or operator of a facility can ensure the availability of necessary personnel and equipment within appropriate response times by other approved means. Under unique circumstances when appendix E of our rule is inappropriate for a particular facility, the owner or operator and the Regional Administrator (RA) may arrive at alternative methods for determining appropriate response resources. To date, no animal fat and vegetable oil facilities have suggested to RAs that these response times cannot be met or that alternative methods of determining resources are appropriate while maintaining equivalent levels of environmental protection.

For these reasons, we are finalizing sections 7.2.3 and 10.2.3 of appendix E as proposed.

*D. Evaluation of Toxicity and Biodegradation*

One commenter submitted two sets of comments with attachments describing the toxicity, biodegradation, and performance characteristics of certain animal fat and vegetable oil products. The papers attached to the comments had not been submitted to EPA previously in response to our Notice and Request for Data (59 FR 53742–53745, October 26, 1994) or as part of the Petition and requests to modify the FRP rule. The commenter stated that there is an emerging body of science that confirms differences among types of oils with respect to biodegradation and aquatic toxcity.

The papers attached to the comments and our evaluations of the papers were peer reviewed by EPA scientists in other offices. Peer reviewers were chosen from within EPA, because of the initial need to maintain the confidentiality of material in one of the studies submitted, and because of the expertise of the peer reviewers, who are recognized for their extensive experience and knowledge of the types of tests described in the papers and the interpretation of test results. After peer reviewers were selected, the commenter submitted another letter granting permission to place the confidential study in the docket and allow limited distribution of the study for rulemaking. The detailed evaluations and peer review comments can be found in the Docket.

*Summary of our findings*

Although toxicity and biodegradation were not specified in the 1994 FRP rule provisions or in the 1999 proposed FRP revisions as risk factors and do not form the basis for requirements to prepare FRPs, we have evaluated both sets of comments and attachments thoroughly. In the FRP rule, facility and locational characteristics are the basis for identifying certain high risk facilities that could reasonably be expected to cause substantial harm in the environment. We re-examined our earlier evaluation of the properties, environmental fate, and effects of spilled animal fats and vegetable oils to determine whether the additional material submitted by commenters would alter our recommendations on the type and quantity of resources needed for planning effective oil spill response and whether response planning requirements should be modified for facilities that handle, store, or transport animal fats and vegetable oils. After a careful evaluation of these comments and papers, we found that the proposed response planning requirements appropriately reflect the similarities and differences in properties and effects of petroleum oils, animal fats and vegetable oils, and other non-petroleum oils. We considered the impact of these similarities and differences among classes of oils on planning for effective response to oil spills.

Several of the papers that were submitted with the comments support the findings of our earlier evaluation (62 FR 54508–54543, October 20, 1997). None of the papers refutes our conclusion that response planning is essential for insuring efficient responses and minimizing the environmental harm from spills of animal fats and vegetable oils. Although we carefully considered all of the materials submitted, some papers did not provide adequate data to support their conclusions or allow full evaluation of the methods, their implementation, or validity and interpretation of results. The papers generally do not address physical effects of spilled oil, which are usually the most immediate and devastating effects.

One of the comment attachments contains EPA methods that were already discussed in detail and included in appendix I, Table 3 of our earlier evaluation; this table compared acute aquatic testing methods in our earlier evaluation (62 FR 54508, 54539, October 20, 1997). Another comment attachment includes ''Chemical Fate Testing Guidelines for Part 796.'' ''New Fate, Transport and Transformation Tests'' in the 835 series, which replace the tests in the 796 series, apply to toxic substances and pesticides regulated under the Toxic Substances Control Act and Federal Insecticide, Fungicide, and Rodenticide Act. These tests are not requirements of the 1994 FRP rule or the proposed revisions, which were promulgated under the Clean Water Act as amended by the Oil Pollution Act. Nevertheless, we evaluated the results of these tests and their relevance to oil spills. As noted above, we found nothing to support modification of our proposed requirements for animal fat and vegetable oil facilities.

*Uses and Chemical Composition of Animal Fats and Vegetable Oils*

Some of the papers that were submitted with the comments discuss expanding inedible uses of animal fats and vegetable oils, thus underscoring our finding that many animal fats and vegetable oils are not used as food but for inedible uses. In 1992, approximately 20.8 billion pounds of animal fats and vegetable oils were consumed in the United States, including over 14.8 billion pounds for edible uses and more than 5.9 billion pounds for inedible uses, such as soap, paint or varnish, feed, resins and plastics, lubricants, fatty acids, and other products (Hui, 1996; 62 FR 54508, 54510, October 20, 1997). These inedible products often contain additives or contaminants.

Several papers submitted with the comments discuss the importance of additives in developing vegetable oil-based products for new applications and show that the presence of additives can have a profound effect on biodegradation and toxicity of these products under given test conditions.

According to the materials submitted, additives can comprise as much as 20 percent of a lubricant. Such lubricants can differ greatly from the original vegetable oil in properties, toxicity, and environmental fate. Additives can include metals, emulsifiers, and perhaps dispersants that can greatly influence the toxicity and spread of spilled oil and hinder its recovery.

*Physical Properties of Animal Fats and Vegetable Oils*

Many of the properties described in the papers submitted with comments were addressed in our previous evaluation comparing the properties of petroleum oils with animal fats and vegetable oils (62 FR 54508–54543, October 20, 1997). These properties are closely linked to performance characteristics of certain products and applications. They include specific gravity, flash point, pour point, viscosity, and vapor pressure. We found that petroleum oils, animal fats, and vegetable oils share common properties and produce similar environmental effects (Crump-Wiesner and Jennings, 1975; USDOI, 1994; Frink, 1994). For further information on the properties of petroleum oils, animal fats and vegetable oils, see 62 FR 54508–54543, October 20, 1997, and the supporting Technical Document.

In our earlier evaluation, we also discussed the physical, chemical, and biological processes that transform animal fats and vegetable oils, including their oxidation (62 FR 54508–54543, October 20, 1997). We described the toxic effects of some oxidation products and the rancidity that results from oxidation of unsaturated fatty acids. Because of the similarity in properties of petroleum and non-petroleum oils, including animal fats and vegetable oils, many of the same methods are used for their containment, removal from the aquatic environment, and cleanup from shorelines (see 62 FR 54508–54543, October 20, 1997, and supporting Technical Document).

Most of the papers attached to the comments focus on performance characteristics of vegetable oil-based products for specific applications, particularly lubricants. While some of these characteristics, such as the ability to withstand friction and wear, relate to performance standards for certain applications, other characteristics are consistent with the properties we discussed in our earlier evaluation (62 FR 54508–54543, October 20, 1997). Several papers state that the additives that are utilized to overcome these limitations can be toxic or affect biodegradation of the vegetable oil-based product.

*Toxicity*

*Earlier Consideration of Toxicity and Other Effects*

The physical and toxic effects of animal fats and vegetable oils and petroleum oils, their constituents, and transformation products are discussed in detail in 62 FR 54508–54543, October 20, 1997 and the supporting Technical Document. Among our findings are the following:

- We emphasized that toxicity is only one of several mechanisms by which oil spills cause environmental damage. The deleterious environmental effects of spills of petroleum oils and non-petroleum oils, including animal fats and vegetable oils, are produced through physical contact and destruction of food sources as well as toxic contamination. 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 physical interactions with living systems (Hartung, 1995).
- Our evaluation contained extensive discussion and tables comparing the toxic effects of animal fats and vegetable oils with petroleum oils. We described studies of the acute lethality of petroleum oils and animal fats and vegetable oils and other types of acute toxicity that can compromise the ability of animals in the wild to escape their predators. We discussed the range of chronic toxic effects that can be manifested by animals exposed to animal fats and vegetable oils. We summarized studies of mussels that show exposure to certain vegetable oils can cause mortality, growth inhibition, effects on shells and shell lining, and decreases in foot extension activity that is essential to survival. We detailed the effects of toxic constituents of animal fats and vegetable oils, including specific fatty acids and oxidation products formed by processing, heating, storage, or reactions in the environment.
- We described the limitations of the acute lethality ($LC_{50}$) laboratory tests that had been submitted with the August 12, 1994 petition. We found major deficiencies in the manner in which the tests were conducted, rendering the results highly questionable. Furthermore, these acute lethality tests measured only the death of organisms and did not describe acute toxic effects just short of lethality, such as serious irreversible damage. They also fail to measure long-term effects experienced by organisms and ecosystems or toxicity to other organisms or life-stages or toxicity under other environmental conditions. We asserted that these tests do not determine safe levels, but rather the concentrations of oil that kill half the organisms under a given set of experimental conditions. We discussed serious questions about the relevance of $LC_{50}$ laboratory results to spills in the environment that have been raised by scientific experts, including the National Academy of Sciences.
- We stated that while low levels of certain animal fats and vegetable oils or their components may be essential constituents of the diet of humans and wildlife, adverse effects occur from exposure to high levels of these chemicals.

*Report on Acute Lethality Tests ($LC_{50}$) Submitted by Commenter*

The only toxicity studies submitted by the commenter are acute lethality ($LC_{50}$) tests. Our evaluations of these studies are detailed in the Response to Comments document and supporting analyses. The acute lethality tests submitted by the commenter provide additional examples of the toxicity of base oils (primary stocks used to formulate lubricants) and products based on vegetable oils. We discussed the limitations of acute lethality tests in detail in our earlier evaluation (see 62 FR 54508–54543, October 20, 1997, and supporting Technical Document) and summarize them below.

*Acute Lethality Tests of Vegetable-Based Oil Sample BIO 25–30*

The Parametrix report, which was developed for Agro Management Group and provided by Colorado State University, described an $LC_{50}$ value of 8,766 mg/l for rainbow trout (Oncorhynchus mykiss) exposed to various concentrations of a vegetable-based Oil Sample BIO 25–30 in an acute range-finding toxicity test. In a 96-hour acute definitive toxicity test, a No Observed Effect Concentration (NOEC) of 5,000 mg/l; a Lowest Observed Effect Concentration (LOEC) of 10,000 mg/l; and an $LC_{50}$ of 7,320 mg/l for Oil Sample BIO 25–30 were reported. The test protocols listed in the report are *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms,* EPA/600/4–90/027F, August 1993 (hereafter referred to as ''ORD Methods''). According to the report, the tests deviate from protocols in ways that raise doubts about the validity of the test results.

Apparently, similar studies for petroleum oils were not conducted. Instead, the report compares the results of its tests on the vegetable-based oil sample with lower toxicity values reported in two papers, one that measured the $LC_{50}$ of oil shale process water and its inorganic constituents in 96-hour tests with rainbow trout, and a second that determined the maximum safe limit for one type of crude oil in a 90-day study with cutthroat trout. Results of the tests on Oil Sample BIO 25–30, however, cannot be easily compared with the toxicity values derived from tests that were conducted using different experimental conditions, species, toxicity endpoints, and other factors. Because many factors influence toxicity, comparison of toxicity based on measurements of survival times, mortality, rates or fixed-time $LC_{50}$ values are inadequate to establish the existence or magnitude of a toxic effect (Abel, 1996).

The report submitted with the comments contains: no information about sample preparation; no description of acclimation or aeration procedures, no information on feeding; no data describing the number of rainbow trout killed at each concentration of test material; no data on the actual concentration of parent compound or breakdown products in the test vessels and their change over time; no data on the period of time that dissolved oxygen was below the required level or observations on the effect of low oxygen on the rainbow trout in the test; no measurements of pH and temperature; no discussion of whether the vessels were covered; and, no statistical analysis of the data, including standard deviations, confidence limits, and slope of the dose-response curve. The absence of these data precludes evaluation of the accuracy of the $LC_{50}$ determination. Among the deficiencies noted in the report are the following:

1. Unknown methods of sample preparation. The method of sample preparation is especially critical for oily substances. The report contains no description of sample preparation, no data on oil particle size, and no data on the concentration of the parent chemical and its breakdown products during the course of the tests. Thus, it is not clear what fractions or concentrations were actually tested, how these fractions or concentrations changed over time, or how such changes affected test results. Oil-in-water dispersions are usually unstable under the conditions of static tests, such as those described in the report (NAS, 1985a).

2. Unknown concentrations of test material encountered by fish during the test. Because the actual concentrations of the parent chemical and degradation products were not measured, the $LC_{50}$ estimated in the test corresponds to unknown concentrations of the parent chemical and its degradation products. The tests appear to have relied on nominally designated concentrations (i.e., concentrations estimated, but not measured), which EPA and the peer reviewers believe is a highly questionable approach. The report contains no data on actual chemical concentrations of the chemical or its breakdown product, a critical determination in static tests where concentrations are affected by changes in oil-water partitioning through solubilization, chemical transformation, or the loss of oil through degradation or adsorption onto the test chambers or fish (Rand and Petrocelli, 1985; NAS, 1985a). While ORD Methods, which are cited in the report as the protocol used, allow gentle aeration of test solutions, they require that the concentration of test material not vary more than 20 percent at any treatment level during the exposure period. In the absence of measurements of actual chemical concentrations to which the fish were exposed or data proving that the test material does not volatilize or degrade, the tests would be considered invalid according to these guidelines.

3. Oxygen depletion. The toxicity of a chemical may be masked by depletion of oxygen when the biochemical oxygen demand (BOD) is high in the test solution, particularly in static tests (Rand and Petrocelli, 1985). The Parametrix report admits that the dissolved oxygen concentrations fell below the levels required by ORD Methods cited as the test protocol (USEPA/ORD, 1993). It cannot be determined whether rainbow trout were killed in the test by oxygen depletion or by toxicity. Aeration apparently was initiated at 72 hours for the range finding test and 48 hours for the definitive test, but the report contains no discussion of the aeration procedures, including whether all test vessels were aerated or how vigorous the aeration was.

4. Lack of statistical analysis of data. Because of the lack of data on the proportion of rainbow trout that died at each concentration level, and the failure to describe the method used to estimate the $LC_{50}$ and provide a statistical analysis of the data, the accuracy of the $LC_{50}$ cannot be determined. Statistical analyses, including confidence intervals and slope of the dose-response curve, are specified by the ORD Methods (USEPA/ORD, 1993). While the report states that no rainbow trout died at the lowest three concentrations of oil in the definitive test, and that the lowest observed effect concentration (LOEC) exceeded the $LC_{50}$, it is unclear when they died, or whether all trout died in the two groups exposed to the highest concentrations of oil. According to ORD Methods, additional lower concentration groups are added to an $LC_{50}$ study when the mortality is 100 percent in the highest concentration groups within 1 hour of the start of the test.

*Acute Lethality Toxicity Tests of Several Vegetable Oil-Based Products and Other Products*

The International Lubricants, Inc. (ILI)—University of Idaho report summarizes aquatic toxicity tests that were conducted by Parametrix for a number of products, apparently using ORD Methods. Although the study contains material labeled as ''confidential,'' ILI has authorized limited distribution of the report for purposes of EPA rulemaking. As requested by ILI, the report is maintained in the docket for public inspection, but not copying.

According to the report, acute lethality tests ($LC_{50}$ tests) with rainbow trout showed ''negligible toxicity'' for some vegetable oil-based products unless the formulations contained certain ingredients. The $LC_{50}$, BOD, and COD (Chemical Oxygen Demand) were reported for about 25 products, but critical information supporting the findings of the tests (for example, sample preparation, dissolved oxygen throughout the course of the test, response data for various concentrations, and statistical analyses) were not included in the report. Apparently only the 96-hour aquatic toxicity test with rainbow trout was conducted, although several other protocols were listed in the report. The report also includes two tables on toxicity that apparently represent hypotheses or rely on data that are not included in the report.

*Acute Lethality Toxicity Tests of Lubricants*

*Hydraulic Oils.* One paper attached to the comments describes $LC_{50}$ values obtained in 96-hour rainbow trout tests using five concentrations of test material and a control (*Galvain et al.,* 1994). Trout were exposed to various concentrations of an oil-water dispersion created by using a central cylinder-housed propeller system to simulate physical dispersion of oil by waves and currents. While the paper

summarizes information about these oils, it does not include important details about the implementation of the protocol in individual tests or groups of tests (such as oil particle size) that are essential for evaluating the accuracy of the determination of $LC_{50}$ values. For vegetable oils, the $LC_{50}$ ranged from 633 parts per million (ppm) to >5000 ppm; $LC_{50}$ values were 389 ppm to >5000 ppm, 80 ppm to >5000 ppm, and >5000 ppm for mineral oil, polyglycol, and synthetic ester, respectively. The paper states that the aquatic toxicity is caused by additives.

*Lubricating Oils.* A paper on lubricating oils that is attached to the comments emphasizes that a biodegradable product is not necessarily environmentally friendly (Baggot, 1992). Biodegradability must be combined with test data on potential human and environmental toxicity and bioaccumulation of the product, its components, or related substances to support its environmental benefits. Additives that can improve performance characteristics of a product may increase its human and environmental toxicity. Some substances partially biodegrade into products that are more toxic to aquatic life than the original substances. Tests are available to evaluate the toxicity of substances to aquatic organisms and soil organisms and the potential toxicity of substances to animals and humans.

*European Laws, Requirements, Standards, and Guidelines.* The commenter described the increasing interest in biodegradable lubricants in Europe and provided information on European requirements but did not specify how those standards should make a difference in our rule. Several papers describe European standards and guidelines, but do not provide specific information on toxicity and other effects. Two papers explain the Blue Angel standards, used in Germany, for base fluids and finished lubricants (Mang, 1993; Korff and Fessenbecker, 1992).

*Relevance of Acute Lethality Tests to Oil Spills in the Environment and to the FRP Rule*

Some papers attached to the comments describe results of acute lethality ($LC_{50}$) tests for vegetable oil-based products, base fluids, and additive systems (Parametrix, 1997; ILI and University of Idaho, 1996; Galvain *et al.,* 1994). Our earlier evaluation of the properties, fate, and effects of animal fats and vegetable oils detailed the limitations of this type of testing (62 FR 54508, 54515–54516, October 20, 1997, and supporting Technical Document).

Acute lethality tests measure only the death of organisms and usually provide no data on toxic effects other than death (NAS, 1985a; Rand and Petrocelli, 1985; Klaassen *et al.,* 1986). Animals that survive a toxic response nevertheless may suffer irreversible damage (NAS, 1985c). As we stressed in our earlier evaluation, such tests do not describe other acute toxic effects, long-term effects, effects on ecological communities or changes in predator-prey relationships, toxicity to other organisms or life-stages, or toxicity under other environmental conditions (62 FR 54508, 54516, October 20, 1997). The $LC_{50}$ (lethal concentration 50) value or $LD_{50}$ (lethal dose 50) value does not describe a ''safe'' level, but rather a level of test material at which 50 percent of test organisms are killed under the experimental conditions of the test (Rand and Petrocelli, 1985; Klaassen *et al.,* 1986). A high $LC_{50}$ value indicates low acute lethal toxicity, because a large concentration of chemical is needed to cause 50 percent mortality.

Even if the acute lethality tests were conducted properly—and we have described significant doubts about the manner in which some of these studies were performed—serious questions remain about the relevance of the $LC_{50}$ laboratory results to spills in the environment. We described these considerations in detail in our earlier evaluation (62 FR 54508, 54515–54516, October 20, 1997, and supporting Technical Document) and will discuss them briefly here.

The methods used in the Parametrix tests and similar tests are designed for effluents, not for oils with limited water solubility. The water-soluble fraction that is typically used in static tests does not simulate the dynamic changes that occur between the aqueous and oil phases unique to each spill (NAS, 1985a). In methods that attempt to simulate some types of oil spills by creating oil-water dispersions, the size of the oil particles in the test profoundly affects the composition and toxicity results. Only one paper attached to the comments used an oil-water dispersion method, and it did not report the size of oil particles (Galvain *et al.*, 1994).

The many test variables that influence estimates of $LC_{50}$—the nature of the chemicals or mixtures tested; test parameters (for example, route of administration, frequency and duration of exposure, mixing energy, temperature, salinity, static vs. flow-through systems, duration of observations); and biological factors (for example, species selected for testing, sex, age or life-stage, weight, contamination history of the organism)—rarely reflect the conditions that occur following a spill (Rand and Petrocelli, 1985; NAS, 1985a; Wolfe/USEPA, 1986; Abel, 1996). Oil concentrations from spills in the environment can be virtually unlimited and may well exceed $LC_{50}$ concentrations. If environmental conditions were identical to those in the experiment, concentrations in the $LC_{50}$ range would be expected to kill half of the organisms with sensitivity similar to rainbow trout. Among more sensitive aquatic populations, lethality would be even greater.

Furthermore, EPA reemphasizes that toxicity is only one way that oils can harm the environment. The most immediate and devastating environmental harm is often produced by physical effects, such as coating of plants and animals and suffocation (see 62 FR 54508, 54511, October 20, 1997). EPA has found that vegetable oils, animal fats, and petroleum oils share common properties and produce similar effects when spilled in the environment. The papers submitted with the comments do not acknowledge the importance of physical effects, although an earlier Petition by some of the same Commenters admitted that the physical effects of spilled animal fats and vegetable oils can harm the environment.

The comments, and papers attached to them, ignore the long-term effects of spills of animal fats and vegetable oils. Some animal fats and vegetable oils, their components, or breakdown products remain in the environment for years. Whether or not the oil persists in the environment, spilled oil can have long-lasting deleterious environmental effects. By contaminating food sources, reducing breeding animals and plants that provide future food, contaminating nesting habitats, and reducing reproductive success through contamination and reduced hatchability of eggs, oil spills can cause long-term effects years later even if the oil remains in the environment for relatively short periods of time.

Our earlier evaluation of the effects and fate of animal fats and vegetable oils spilled in the environment pointed out that they have a broad range of properties that influence their effects and persistence in the environment and that the presence of other compounds or other factors can affect the environmental fate and effects of oils (62 FR 54508, 54523, October 20, 1997). Although the papers that were submitted with the comments discussed vegetable oil-based products, these

formulations usually contain many other compounds that may be toxic or affect the toxicity of the oil or alter its persistence. For example, several papers attached to the comments showed that additives that were necessary for adequate performance of some lubricants often increased the aquatic toxicity and altered the biodegradability of the oil, according to the tests reported in the papers (Galvain *et al.*, 1994; Korff and Fessenbecker, 1992; Baggot, 1992; Rhodes, 1996). According to the papers, some formulations contain as much as 20 percent additives, including barium and lead compounds, lithium soaps, emulsifiers, and perhaps dispersants. The presence of toxic substances in a vegetable oil-based lubricant casts significant doubt on claims that all vegetable oils and products derived from them are non-toxic.

Unlike the European guidelines and German laws described in these papers that apply to specific uses of oils, EPA's 1994 FRP rule and today's FRP rule revisions, which were promulgated under the Clean Water Act as amended by the Oil Pollution Act, apply to planning for responses to oil spills. The 1994 FRP rule and today's FRP rule revisions apply to facilities that transfer large volumes of oil over water or handle, store, or transport 1 million gallons of oil or more and meet other criteria indicating that their discharges could reasonably be expected to cause substantial harm to the environment. The rule does not require performance standards for various applications or tests that are described in the papers submitted with the comments.

Furthermore, EPA's 1994 FRP rule and today's FRP rule revisions are on a vastly different scale from the European regulations described in the submitted papers. According to one paper attached to the comments, German lubricant demand is predicted to rise to about 115,000 to 170,000 tons per year, the equivalent of approximately 32.2 million gallons to 47.6 million gallons total for all German lubricants, if favorable conditions occur. By comparison, vegetable oil and animal fat facilities under EPA's jurisdiction have estimated a worst case discharge of as much as 20 million gallons from a single spill. The volume of oil discharged from two spills of this size is nearly as great as the maximum German lubricant demand projected for an entire year.

*Biodegradation*

*Earlier Consideration of Biodegradation and Other Transformation Processes*

We detailed the chemical and biological processes affecting animal fats and vegetable oils in the environment and described the environmental fate of animal fats and vegetable oils in actual spills in our earlier evaluation (62 FR 54508–54543, October 20, 1997). Several articles submitted by the commenters further support EPA's earlier findings.

EPA has found that:

- While some animal fats and vegetable oils degrade rapidly under certain conditions, others persist in the environment years after the oil is spilled.
- The process of biodegradation can cause environmental harm. When biodegradation occurs in the environment, it can lead to oxygen depletion and suffocation of fish and other aquatic organisms. Oxygen depletion can result from reduced oxygen exchange across the air-water surface below the spilled oil, or from the high BOD by microorganisms degrading oil (Crump-Wiesner and Jennings, 1975; Mudge, 1995). Under certain conditions, some animal fats and vegetable oils present a greater risk to aquatic organisms than other oils spilled in the environment, as indicated by their greater BOD (Groenewold et al., 1982; Institute, 1985; Crump-Wiesner and Jennings, 1975; 62 FR 54508, 54512–54513, October 20, 1997). While the higher BOD of vegetable 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 that is spilled in inland waters, such as small rivers and streams, may be especially harmful if there are limited oxygen resources in the water body and little dispersal of the oil.
- Every spill is different. How long the vegetable oil or animal fat remains in the environment after it is spilled, what proportion of the oil degrades and at what rate, what products are formed, and where the oil and its products are transported and distributed, are determined by the properties of the oil itself and those of the environment where the oil is spilled. 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 affect the degradation of oil.
- Some products formed by biodegradation and other transformation processes are more toxic than the original oils and fats. Toxicity can also decrease or remain unchanged by biodegradation. We have summarized the toxic effects of animal fats and vegetable oils, their constituents, and degradation products in our earlier evaluation (see 62 FR 54508–54543, October 20, 1997).
- Spilled animal fats and vegetable oils can cause long-term deleterious environmental effects 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. Adverse effects of spilled animal fats and vegetable oils include physical effects, such as coating and suffocation, oiling of the food supply, and toxicity. Spilled oils can also produce rancid odors, foul shorelines, clog water treatment plants, and catch fire when ignition sources are present.
- Real-world examples demonstrate the deleterious effects of spills of animal fats and vegetable oils and show that some animal fats and vegetable oils, their components, and breakdown products remain in the environment many years after a spill (see 62 FR 54508–54543, October 20, 1997).

*Study Submitted by Commenter on Biodegradability of Certain Lubricants, Lubricant Additives, and Formulations Containing Telomer*

In the ILI-University of Idaho study submitted by the commenter, biodegradability was measured in water and soil for a variety of compounds, including ILI telomers and other base stocks, lubricants, lubricant additives, gear oils, hydraulic fluids, and cutting fluids. Most of the products were based on vegetable oils, and some of them were compared to mineral base oils. The study report notes that the meaning of the term ''biodegradable'' is not exact and that biodegradability tests measure the disappearance of a certain amount of test material in a given period of time. It discusses persistence tests for three classifications of biodegradability (primary, ultimate, and inherent).

The ILI-University of Idaho report describes the results of two environmental persistence tests—the EPA Shake Flask Test and the OECD 301B Modified Sturm Test, two 28-day tests that measure ultimate biodegradability. The report states that over 100 samples in nine separate groups underwent testing using the EPA Shake Flask Test, and limited testing with two base stocks, two lubricants, and one standard was performed using the OECD 301B Modified Sturm test. A method was also developed to test soil biodegradation, and a different rank order for biodegradation in soil and water was noted. The report considers

the ''passing level'' as 60 percent biodegradation (40 percent remaining) after 28 days in the EPA Shake Flask test or 70 percent biodegradation (30 percent remaining) after 28 days, with 10 to 40 percent biodegradation in 10 days, for the Modified Sturm test. For many products, less than 40 percent of the oil remained in the aqueous system after 28 days. The results are based on atypical estimation techniques that involve correction of the curve using canola standards, despite wide variation (5–38 percent after 28 to 40 days) among the six standard canola curves, and fitting an unusual polynomial to the data.

The curves shown in the report indicate that except for one lubricant, at least 65 percent of every product tested remained after 4 days—a period of time that is used to plan for equipment for responses to oil spills at certain facilities. For canola standards, an average of 70 percent, ranging from 40–95 percent, remained at 4 days.

*Studies of Biodegradability of Lubricants Submitted by Commenter*

*Hydraulic Oils.* One paper attached to the comments describes the development of vegetable oil-based hydraulic products for use as lubricants for situations in which the lubricant may inadvertently leak into the environment (Galvain *et al.,* 1994). The paper lists some physical properties of the selected vegetable oil and formulated product and discusses performance concerns. Most of the paper describes performance tests, including bench tests, full pump tests, and field tests, that measure the effectiveness of the products in certain applications of lubricants. It emphasizes that any claim of environmental acceptability must be specific and supported by appropriate technical documentation. The paper states that most petroleum-based lubricants are environmentally acceptable by various standards and proposes criteria for a vegetable-oil based lubricant that passes most of the company performance tests. The paper describes two biodegradation tests of mineral oils and three other types of base oils that have been employed for lubricants—vegetable oils, polyglycols, and synthetic esters. Vegetable oils and a number of synthetic esters that were tested met the proposed criterion (>60 percent conversion to $CO_2$ in 28 days), while mineral oil formulations did not meet this criterion despite exhibiting some biodegradation.

*Lubricants, Lubricating Oils, and Industrial Lubricants.* One paper submitted with the comments describes the use of different additives to improve the performance of rapeseed oil and synthetic esters as lubricant base fluids, and the regulations affecting the use of additives (Korff and Fessenbecker, 1992). Lubricants described in the paper contain as much as 2–3 percent additives. The paper reports that certain additives allowed these fluids to achieve the same performance as mineral oil-based products. It describes different combinations of additives, such as antioxidants, corrosion inhibitors, and pour point depressants, that were investigated for their ability to overcome performance problems that have limited the use of rapeseed oil in lubricants. The paper explains that lubricants were developed to balance technical requirements and potential negative impacts by additives on biodegradability or ecotoxicological properties.

Another paper attached to the comments points out trends in the application of environmental legislation that promote the development of biodegradable lubricants in Germany and other European countries (Mang, 1993). Biodegradable lubricants represented 2 percent of the market share of lubricants in Germany in 1992. The paper forecast that they would soon occupy 10–15 percent of the demand for German lubricants.

Another paper submitted with the comments describes the ''real issues'' that must be evaluated to convincingly demonstrate that a lubricant reduces environmental impact (Baggot, 1992). It summarizes properties, performance characteristics, and other information about some types of oils that can be used in lubricants, but does not present detailed data from individual laboratory tests. The paper defines biodegradation as the decomposition of substances by biological systems.

The paper emphasizes that a biodegradable product is not necessarily environmentally friendly and cautions against unsubstantiated claims. It notes that advertisers have promoted the spurious notion that biodegradable products somehow automatically reduce the impact on the environment. Biodegradability tests measure the fate of a substance, not its impact. Some substances partially biodegrade into products that are more toxic to aquatic life than the original substances. Justifying the environmental benefits of a product requires relevant test data on biodegradability; mammalian toxicity; ecotoxicity; and bioaccumulation of the product, its components, or related substances. These data should demonstrate that the product is not likely to be hazardous in environmental media that it may pollute.

In principle, a full life cycle analysis of the manufacture, packaging, distribution, product use, and recycling or disposal of base fluid and additives should be performed before comparing environmental impacts of products. In practice, the evaluation generally focuses on the use part of the life cycle and potential impact from environmental contamination that may result from use or disposal.

To determine the biodegradability of different substances, results from biodegradability tests are compared with certain accepted standards. Tests of lubricants generally require the use of an emulsifier, because lubricants are usually not water soluble and often are a complex mixture of base fluids and chemical additives. While the technical limitations of some biodegradable fluids can be partially overcome by including additives in the product formulation, these additives may reduce the biodegradability of a product and can increase a product's human and environmental toxicity. Any kind of environmental contamination should be avoided and all spills and leaks cleaned up.

Another paper submitted with the comments appears to be a handout from a presentation on industrial lubricants (Rhodes, 1996). The paper lists considerations associated with biodegradable fluids. It describes lubricant composition, showing that the base stock can comprise 80–100 percent of the lubricant, while additives are 0–20 percent of the lubricant. Additives can be detrimental to the environmental acceptability of biodegradable fluid. Available or potential additives in biodegradable lubricants include viscosity modifiers, anti-oxidants, pour point modifiers, rust inhibitors, non-ferrous metal protectants, anti-wear and friction modifiers, extreme pressure additives, dispersants, detergents, and emulsifiers.

*Relevance of Biodegradability Tests to Oil Spills in the Environment and to FRP Rule*

As we have noted, biodegradability tests are not specified in the 1994 or today's revised FRP rule and do not form the basis for requirements to prepare FRPs. Several papers refer to ''passing EPA tests'' or ''EPA criteria'' or a ''passing level'' of 40 percent material remaining at 28 days. These tests are not requirements of the 1994 or today's revised FRP rule, and do not address important mechanisms by which oils cause environmental harm. The tests described in the papers and reports were not developed to implement Clean Water Act requirements, but as test

guidelines for pesticides and toxic substances regulated under the Toxic Substances Control Act (TSCA) and Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). These guidelines have been harmonized with some European guidelines. Several guidelines include recent versions of tests that are listed in the reports that were attached to comments. (See Fate, Transport, and Transformation Test Guidelines OPPTS 835.3110 Ready Biodegradability (EPA/OPPTS, 1998a) for six methods that permit screening of chemicals in an aerobic aqueous medium, including Modified Sturm Test; Ministry of International Trade and Industry test, Japan; and Closed Bottle test; OPPTS 835.3200 (EPA/OPPTS, 1998b) for the Zahn-Wellens/EMPA Test, and OPPTS 835.3210 for the Modified SCAS Test (EPA/OPPTS, 1998c).)

The 21-day or 28-day period used in the biodegradability tests in the papers attached to the comments has little relevance to prompt responses to oil spills or to the planning requirements of the FRP rule. Environmental effects can begin immediately after a discharge. To minimize environmental damage and reduce the spread of spilled oil, the FRP rule requires the first tier of response equipment to arrive within 6 to 12 hours of the discharge. FRP requirements for estimating the response equipment needed to recover oil from water and from the shoreline are based on responses during the first 3 to 4 days after a discharge, when the most immediate deleterious environmental effects occur. Nevertheless, bioremediation can be useful for long-term cleanup of some shoreline spills under carefully controlled conditions.

Spills of petroleum oils, animal fats and vegetable oils, and other non-petroleum oils have immediate and devastating physical effects, such as coating and suffocation, that injure and kill animals and plants, destroy food supplies and habitat, and eliminate breeding plants and animals. Some animal fats and vegetable oils and their components and breakdown products can also produce toxic effects and form compounds that linger in the environment. Thus, an oil spill can cause environmental damage even if all of the spilled oil is transformed completely into a harmless product in 28 days.

Even small discharges of animal fats and vegetable oils can produce significant environmental damage. For facilities that meet the FRP criteria, however, the volumes of the discharges may be very large indeed. EPA regulates vegetable oil/animal fat facilities with worst case discharges as large as 20 million gallons.

Reports submitted by one commenter show that 60–70 percent of most of the products tested degrade after 28 days. If the conditions in the area of the spill were similar to those in the laboratory tests, 300,000 to 400,000 gallons of oil would remain in the environment after 28 days if 1 million gallons of vegetable oils or animal fats were discharged.

Too often the term ''biodegradability'' has been misapplied to suggest the complete breakdown of a compound with formation of harmless products. In fact, the tests employed measure only the partial degradation of a compound over a given period of time. They do not analyze effects during biodegradation or consider toxicity or other deleterious effects of the breakdown products or their influence on persistence. Thus, applying the term ''biodegradable'' appropriately requires understanding the time period, conditions, and extent of biodegradability. Criteria have been established for various types of biodegradability tests.

While the papers submitted by the commenter describe biodegradability tests and performance results that are not required under the FRP rule, many support EPA's previous findings about the properties, fate, and effects of animal fats and vegetable oils (see 62 FR 54508–54543, October 20, 1997). For example, one paper attached to the comments recognizes that various tests and criteria have been developed (Baggot, 1992). It urges accurate definitions of biodegradability, including conditions related to the term. Other statements in the paper strongly support our earlier findings that deleterious effects can be produced even by biodegradable oils. The paper asserts that a biodegradable product is not necessarily environmentally friendly and that biodegradability tests measure only the fate of a substance and not its environmental impact.

In our previous evaluation, we found that while some animal fats and vegetable oils degrade rapidly under certain conditions, others persist in the environment years after the oil is spilled. We examined the immediate physical effects, such as coating and suffocation, that can be produced by spills of animal fats and vegetable oils, other non-petroleum oils, and petroleum oils. Utilization of oxygen by microorganisms during biodegradation can deplete oxygen and suffocate aquatic organisms. Even if the exposure period is relatively short, spilled oil can result in long-term effects. We warned—and the paper submitted with the comments affirms—that biodegradation can lead to the formation of products that are more toxic than the original substance (Baggot, 1992). We also emphasized that biodegradation and other transformation processes are not limited to animal fats and vegetable oils; petroleum oils and other non-petroleum oils also biodegrade and are transformed in the environment.

We disagree with some statements in the paper submitted with the comments that imply that biodegradability data, combined with toxicity data, are sufficient to support claimed environmental benefits of a product (Baggot, 1992). While these considerations are important, they do not consider other important effects of oil spills—the devastating environmental consequences of physical effects, such as coating and suffocation, that can occur with spills of any type of oil, the interference of oil spills with vital water treatment, or other impacts of spilled oil. Nor do they address fundamental concerns raised by the National Academy of Sciences and others about the relevance of laboratory test results to actual oil spills (NAS, 1985a). That spills of animal fats and vegetable oils can cause environmental harm through physical effects has been acknowledged in the previous Petition submitted by the same commenter on behalf of some of the same associations (62 FR 54508, 54527, October 20, 1997). EPA has further elaborated upon the environmental harm that can result from physical effects of oils in the Agency Decision Document and supporting documents regarding that Petition (62 FR 54508–54543, October 20, 1997, and supporting Technical Document).

Several other papers and reports submitted with the comments contain incorrect premises about the environmental damage that can be caused by biodegradable oils. Unlike the previous paper (Baggot, 1992), these papers and reports do not acknowledge that oils can cause damage when spilled in the environment regardless of whether they are ''biodegradable'' (Galvain *et al.*, 1994; Mang, 1992; Rhodes, 1996; ILI-University of Idaho, 1996). As our earlier evaluation demonstrated, rapid biodegradation of an oil does not insure that spills of the oil will do no harm. When biodegradation does occur in the environment, it can lead to oxygen depletion and death of fish and other aquatic organisms. Oxygen depletion can result from reduced oxygen exchange across the air-water surface below the spilled oil or from the high biological oxygen demand by microorganisms degrading oil (Crump-

Wiesner and Jennings, 1975; Mudge, 1995).

Whether biodegradation of a vegetable oil or animal fat occurs when the oil is spilled in the environment, how long the oil remains in the environment after it is spilled, what proportion of the oil is degraded and at what rate, what products are formed, and where the oil and its products are transported and distributed, are determined by the properties of the oil itself and those of the environment where the oil is spilled. 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 (Ratledge, 1994; Venosa *et al.,* 1996; Salanitro *et al.,* 1997; NAS, 1985b).

While the focus of several papers, reports, and other materials submitted with the comments is on the performance of lubricants rather than the technical issues that relate directly to EPA's FRP regulation, they underscore the importance of preventing spills of vegetable oils and responding effectively to oil spills when they occur. The papers show that vegetable oil-based lubricants require additives in order to perform satisfactorily as lubricants in many applications and that additives can alter the toxicity and biodegradability of the product (Galvain *et al.,* 1994; Korff and Fessenbecker, 1992; Mang, 1993; Baggot, 1992; Rhodes, 1996). When oil is spilled in the environment, species in the area of the oil spill are at risk from exposure to all of the components of the formulation—the vegetable oil base fluid, antioxidants, corrosion inhibitors, anti-wear and friction modifiers, pour point depressants, viscosity modifiers, and other additives or contaminants.

Among the additives described in the papers submitted with the comments are lead and barium compounds, phenolic and aminic antioxidants, lithium soaps, emulsifiers, and perhaps dispersants (Korff and Fessenbecker, 1992; Mang, 1993; Rhodes, 1996; ILI and University of Idaho, 1996). Emulsifiers can alter the toxicity and transformation of oils in the environment. They can complicate the recovery of oil spills, expand the amount of material that must be recovered, greatly decrease the effectiveness of recovery operations, and increase recovery costs.

According to one paper attached to the comments, dispersants and detergents are being developed for use in lubricants (Rhodes, 1996). Dispersants that may be authorized for oil spill response are on the Product Schedule of the National Contingency Plan (40 CFR 300.905—subpart J—Use of Dispersants and Other Chemicals). The use of dispersants for oil spill response in inland areas is limited by their toxicity and adverse environmental effects. Similar effects may well occur when lubricants containing such additives are spilled in the environment. If a facility discharges 1 million gallons of lubricant containing 20 percent additives, some 200,000 gallons of additives would be discharged into the environment. These compounds may have a profound effect on the behavior of oil in the environment, and some of them can inhibit the microorganisms that biodegrade oil.

*E. Application of Executive Order 13101 (Purchasing)*

*Background.* The President signed Executive Order 13101, ''Greening the Government through Waste Prevention, Recycling, and Federal Acquisition,'' on September 14, 1998. The Executive Order directs all Executive agencies to use the principles and concepts in EPA Guidance on Acquisition of Environmentally Preferable Products and Services, in addition to pilot and demonstration projects, in identifying and purchasing environmentally preferable products and services. ''Environmentally preferable'' refers to products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or services. In addition to promoting environmentally preferable purchasing, the Executive Order encourages agencies to purchase bio-based products.

*Comment.* One commenter pointed out that Executive Order 13101 includes biobased products such as animal fats and vegetable oils. The commenter stated that through this Executive Order, the Federal government has recognized the environmentally preferable characteristics of animal fats and vegetable oils and has set out an action plan to substitute their use for other, less desirable products. The commenter believed that the same differences in characteristics that are used to promote the use of biobased products as environmentally preferred products should be recognized by EPA when regulating those products.

*Response.* EPA has developed guidance for identifying environmentally preferable products (USEPA/OPPTS, 1999). The guidance describes five guiding principles for applying environmentally preferable purchasing in the Federal government. These principles include: (1) Environmental considerations should become part of the normal purchasing practice, consistent with such traditional factors as product safety, price, performance, and availability; (2) Consideration of environmental preferability should begin early in the acquisition process and be rooted in the ethic of pollution prevention, which strives to eliminate or reduce, up-front, potential risks to human health and the environment; (3) A product or service's environmental preferability is a function of multiple attributes from a life cycle perspective; (4) Determining environmental preferability might involve comparing environmental impacts; in comparing environmental impacts, Federal agencies should consider the reversibility and geographic scale of the environmental impacts, the degree of difference among competing products or services, and the overriding importance of protecting human health; and (5) Comprehensive, accurate, and meaningful information about the environmental performance of products or services is necessary in order to determine environmental preferability.

The guidance notes that bio-based products may also be environmentally preferable. However, Federal purchasers should not assume that all bio-based products are automatically environmentally preferable. As with other products, agencies should consider a range of environmental impacts associated with bio-based products when making purchasing decisions. In some cases, factors such as pesticide use or high water consumption might make a bio-based product less environmentally preferable.

The guidance also includes a menu of environmental attributes. The impact of products and services on natural resources use, including ecosystem impacts; human health and ecological stressors, including conventional pollutants released to water and other stressors; and hazard factors, including aquatic toxicity, are among the attributes considered.

Executive Order 13101 and the EPA Guidance apply to government procurement of products and services rather than to planning requirements for effective response to oil spills. In our detailed comparison of the properties and effects of petroleum oils and animal fats and vegetable oils, we found that these oils share many of the properties of petroleum oils and produce many of the same environmental effects when discharged into the environment. Not only can animal fats and vegetable oils cause harmful environmental impacts at

the time of a discharge, but their adverse environmental effects may continue long after the discharge.

Furthermore, the properties of these bio-based products do not affect the probability that they might be discharged when they are handled, stored, or transported. Increasing the effectiveness of oil spill response through planning, as mandated by OPA, will reduce environmental harm and can reduce overall costs. Environmental benefits include avoided cleanup costs, value of lost product, avoided natural resource damages, and avoided property damage as a result of the mitigation of the severity of spills (USEPA, 1994).

*F. Other Issues*

1. Recovery Capacity

We also received a comment regarding section 6.0 of appendix E, which describes the process that facilities follow to determine the effective daily recovery capacity needed for oil recovery devices. The commenter stated that a sufficient body of measured and compared data does not exist for the recovery capacities for petroleum oils and animal fats and vegetable oils. Therefore, the commenter stated that we can only apply the recovery capacities for petroleum oils to animal fats and vegetable oils until a body of data for animal fats and vegetable oils indicates otherwise.

We agree. In section 6.0 we did not propose to use different recovery capacities for devices depending on the type of oil, or to make any other revisions to the section. The same methods and types of equipment are often used to respond to spills of petroleum oils and animal fats and vegetable oils with comparable properties (see 62 FR 54508–54543 October 20, 1997, and supporting Technical Document). Because of the similarity in properties, we would anticipate similar recovery capacities for devices that recover petroleum oils and animal fats and vegetable oils. Therefore, as the commenter suggests, we will continue to use the same criteria to determine recovery capacities for devices that are used to recover all types of oil.

2. Use of Mechanical Dispersal Equipment

Some commenters urged us to modify the 1994 FRP rule to clarify that ''other appropriate equipment'' includes mechanical dispersal equipment. We disagree that this change is necessary. We specifically discussed the use of mechanical dispersal devices in our 1997 Denial of Petition requesting amendment of the FRP rule (62 FR 54508, 54528, October 20, 1997). Although the use of such devices may be considered in response to an actual spill under certain conditions (e.g., river currents are too high for the effective use of a boom), specifically allowing the use of these devices alone in response planning does not meet the intent of OPA. The intent of OPA was for industry to plan for and secure the equipment and resources needed to respond to and remove a worst case discharge of oil, which may be a discharge of 1 million gallons or greater for a large animal fat or vegetable oil facility.

Mechanical dispersal of the animal fat or vegetable oil into the water column could shut down or negatively impact drinking water intakes because of flavor changes and odors, reduce cooling efficiency in cooling waters of power plants, contaminate food from receiving waters, increase BOD levels, violate water quality standards, cause sludges, and adversely impact benthic organisms and the resulting food chain in inland areas (62 FR 54508, 54528, October 20, 1997). Oil dispersed by mechanical means may resurface and cause further environmental damage in the same area or a different area depending on the characteristics of the water body.

In our denial of the Petition, we also provided an example of the ineffective use of mechanical dispersal to respond to a spill of rapeseed oil in Vancouver Harbor (Smith and Herunter, 1989; 62 FR 54508, 54525–54526, October 20, 1997). After an attempt to disperse the thick oil with multiple passes of small tug, booms were set up to contain the oil and skimmer boats recovered the oil. The authors of the paper emphasized that containing and recovering the spilled oil as soon as possible is critical to minimizing environmental damage, such as the death of oiled birds in the harbor. They urged the use of booms, testing transfer lines, having spill detection equipment in place, training on-site personnel, and reporting spills immediately as essential measures in reducing environmental harm.

Section 10.7.3 of appendix E in today's rule (section 7.7.3 of the 1994 FRP rule) requires that the owner or operator of the facility identify the response resources that are available by contract or other approved means. The equipment described in the response plan must include: (1) boom or other containment methods; (2) appropriate recovery devices; and, (3) other appropriate equipment necessary to respond to a discharge involving the type of oil carried. Other appropriate equipment can be described in the FRP, but only to supplement appropriate containment and recovery devices.

We have received no additional data from commenters that demonstrate the effectiveness of mechanical dispersal in supplementing appropriate containment and recovery devices for responses to discharges of animal fats and vegetable oils. We believe that such equipment will generally be ineffective in supplementing containment and recovery devices that are appropriate for responses to discharges of animal fats and vegetable oils and that it may well lead to environmental damage and other adverse effects, as described above. However, we believe that the FRP may describe mechanical dispersal equipment as appropriate to supplement containment and recovery devices in those cases where the facility owner or operator demonstrates the effectiveness of such equipment in supplementing appropriate containment and recovery devices for responses to discharges of animal fats and vegetable oils from the facility and shows that the use of such equipment will not increase environmental harm or produce other adverse effects, or when the relevant Area Contingency Plan identifies such equipment as appropriate for supplementing containment and recovery devices for responses to discharges of animal fats and vegetable oils from the facility.

We have refrained from being too prescriptive in defining or naming particular types of equipment in the regulation wherever possible to avoid limiting technology and innovation by responders. If you need advice about recovery devices, we recommend that you consult your trade association, local OSRO, or the appropriate EPA Regional office.

3. No-Action Option

Some commenters urged us to acknowledge that no action may be appropriate in certain circumstances.

We disagree. Although a ''no action'' option may be considered in response to an actual spill under certain conditions, such an option is not appropriate for planning purposes. The intent of OPA is for industry to plan for and secure the equipment and resources needed to respond to a worst case discharge, which may be a discharge of 1 million gallons or greater for a large vegetable oil facility.

The commenters are confusing requirements for preparedness and planning with the actual response. As we have emphasized repeatedly, 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 OSC . See 64 FR 17227, 17235, April 8, 1999, 62 FR 54508, 54528, October 20, 1997, 59 FR 34070–34136, July 1, 1994.

4. FRP Preparation

In today's rule we are finalizing § 112.20(a)(4) as proposed. One commenter agreed with EPA's proposal. A second commenter asked for clarification of the need to prepare and submit a plan following the proposed requirements. Other commenters supported EPA's timeframe for resubmission of FRPs or the Agency's provision of a specific compliance schedule. The preamble of today's rule clarifies the need for preparation and submission of a plan.

*Facilities with Approved Plans.* Section 112.20(a)(4)(i) of the proposed rule would provide that if you are the owner or operator of an animal fat or vegetable oil facility with an approved FRP, you would not need to prepare or submit a revised plan, except as otherwise required by paragraphs (b), (c), and (d) of § 112.20. 64 FR 17227, 17253, April 9, 1999. Under § 112.20(d), an owner or operator of a facility subject to the FRP rule is required to revise and resubmit the revised portion of the response plan within 60 days of a facility change that materially may affect the response to a worse case discharge. Such a material change requiring a revision includes: a change in the facility's configuration that materially alters the information included in the response plan; a change in the type of oil handled, stored, or transferred that materially alters the required response resources; a material change in capabilities of the oil spill removal organizations that provide equipment and personnel to respond to certain discharges of oil; a material change in the facility spill prevention and response equipment or emergency response procedures; and, any other changes that materially affect the implementation of the response plan.

We agree with the second commenter's interpretation that the owner or operator of an animal fat or vegetable oil facility whose FRP has been approved by EPA need not submit a new one, except as required by paragraphs (b), (c), and (d) of this section. It may be beneficial, however, for an owner or operator with an approved plan to perform a recalculation using the new methodology, because EPA believes that the new methodology for calculating response resources for animal fat and vegetable oil facilities in today's rule may reduce the response resources required for some facilities. In addition, owners or operators of animal fat or vegetable oil facilities, as do all owners or operators subject to the FRP rule, need to be aware of the requirement to revise a plan and resubmit the revised portion if there is a material change at the facility as outlined above and in § 112.20(d). As such, an owner or operator of an animal fat or vegetable oil facility with an approved FRP plan for which a recalculation with the new methodology results in a change in the required response equipment or a change in resources that an OSRO will provide to the facility in response to a worst-case discharge, will need to revise the plan and the revised portion will need to be submitted to the Regional Administrator. We expect that this may occur in a number of cases even for facilities with approved plans, because the use of the new methodology in appendix E, section 10 may result in fewer resources required to respond to a worst case discharge for some facilities, and, thus, there may be an incentive to perform the recalculation due to the potential for reduced costs.

*Facilities with Plans that Have Been Submitted to the Regional Administrator.* We disagree with the commenter's interpretation that a facility owner or operator automatically must submit a new plan if the 5-year duration period for the approved plan has expired. Section 112.20(a)(4)(ii) of today's rule provides that the owner or operator of an animal fat or vegetable oil facility who has submitted a response plan but has not obtained EPA approval (either because the facility is not a significant and substantial harm facility for which approval is required or because the Agency has not yet acted on the final approval) must review the submitted plan and determine whether it meets or exceeds the requirements of today's rule for animal fat and vegetable oil facilities. If a recalculation using the new methodology indicates that the existing plan meets or exceeds the rule requirements, there is no need to resubmit the plan. Although not required by today's rule, we believe that it may be useful for an owner or operator of an animal fat or vegetable oil facility who has conducted a recalculation under the new methodology to keep evidence of that recalculation with his or her plan. If the plan must be revised, however, then the owner or operator must submit an amended plan that meets or exceeds the applicable requirements to the Regional Administrator within 90 days after today's date.

*Newly Regulated Facilities.* We agree with the second commenter's interpretation that the owner or operator of a newly regulated animal fat and vegetable oil facility that commences operations after the effective date of the rule must prepare and submit a plan in accordance with § 112.20(a)(2)(ii). If there are planned or unplanned changes in facility characteristics that subject an existing facility to regulation under § 112.20(f)(1), the owner or operator of that facility must prepare and submit a plan in accordance with paragraph (a)(2)(iii) or (iv) of this section, as appropriate. The plan must meet or exceed the applicable requirements of today's rule.

*Facilities Amending Existing Plans.* We agree with the second commenter's interpretation that a facility that is amending an existing plan because of material changes must submit a new plan that complies with the requirements of today's rule. This requirement is discussed further in the above section on Facilities with Approved Plans.

The facility owner or operator amending an existing plan must determine whether the existing plan meets or exceeds the requirements of today's rule. If the plan does not meet or exceed the requirements established in the rule, the owner or operator must revise and submit revised portions of an amended plan that meet or exceed the applicable requirements to the Regional Administrator in accordance with § 112.20(d).

We disagree with the commenter's interpretation that a facility owner or operator is always required to recalculate oil spill response resources, although recalculation will often be necessary. Other approaches for determining the adequacy of response resources, such as comparing factors that are multiplied in the recalculation, may be possible, as long as the owner or operator can show that these approaches can ensure that the plan meets or exceeds the applicable provisions of today's rule.

One commenter asked for clarification of the need to prepare and submit a plan following the proposed requirements. Plan preparation and submission depends on the adequacy of plan resources. Recalculation of response resources using the revised methodology described in appendix E, section 10, may or may not be necessary. After reviewing relevant factors used in the methodology, you

may find that your plan already meets or exceed the requirements of today's rule. If such is the case, you do not need to amend your plan. If your plan does not meet or exceed the requirements of today's rule, you must prepare and submit revised portions of your plan. Whenever you submit changes to your plan, you must provide the EPA-issued facility identification number as required by § 112.20(d)(3).

*G. Agency Decision on the Requests for Modification of the FRP Rule*

As part of this rulemaking, we have considered the requests that were submitted by the Animal Fat/Vegetable Oil Coalition on January 16, 1998, and amended on April 9, 1998. We agree in whole or in part with some items in the requests and disagree with others. Today's rule reflects our decision.

The requests ask us to revise the FRP rule by creating a separate category for response planning for animal fat and vegetable oil facilities and a separate Appendix with procedures for these facilities. The requests also include suggested language for the revised rule. Some requests for changes, particularly those requests that were also major issues considered in today's rule, are discussed below. The other requested changes and our decisions concerning them are in the Response to Comments document, which is available in the Docket for this rule.

• *Request.* Move definitions of animal fats and vegetable oils. Move the definitions of animal fats and vegetable oils from the preamble and Appendix E of the 1994 FRP rule to the definitions section, i.e., § 112.2, and modify the language slightly.

*Decision.* We agree. In today's rule, we are finalizing the definitions as proposed. Commenters also supported the change.

• *Request.* Clarify applicability dates. Clarify the applicability dates by which animal fat and vegetable oil facilities must comply with the rule.

*Decision.* We agree. Today's rule incorporates the applicability dates as proposed. In section II.F.4 of the preamble, we have discussed in detail the requirements for preparation and submission of FRPs.

• *Request.* Create separate regulatory provisions for animal fat and vegetable oil facilities. Create separate regulatory provisions for animal fat and vegetable oil facilities.

*Decision.* We agree. In today's rule, we are retaining separate provisions for animal fat and vegetable oil facilities. Commenters supported this aspect of the proposal rule.

• *Request.* Create categories of animal fats and vegetable oils that recognize physical characteristics. Modify the FRP rule to reflect the non-persistence of animal fats and vegetable oils.

*Decision.* We agree in part and disagree in part. We agree that persistence varies greatly according to the nature of the oil and environmental conditions. We changed the rule to reflect that decision. We disagree that all animal fats and vegetable oils are non-persistent. In today's rule, we eliminated the terms ''persistent'' and ''non-persistent'' for animal fats and vegetable oils. We also created new groups, i.e., groups ''A,'' ''B,'' and ''C'' for animal fats and vegetable oils, based on specific gravity. Commenters supported these rule revisions.

• *Request.* Create specific planning requirements for animal fat and vegetable oil facilities. Create specific planning requirements based on the type of animal fat or vegetable oil handled at the facility.

*Decision.* We agree with the need to create specific planning requirements for animal fat and vegetable oil facilities. As discussed in Section II.B of today's preamble, we proposed a new methodology for determining response resources needed for spills of animal fats and vegetable oils. One commenter supported the methodology, and others supported the creation of specific planning requirements for these facilities. In today's FRP rule, we have finalized the methodology as proposed, except for clarification and editorial changes.

• *Request.* Modify criteria for determining significant and substantial harm. Adopt criteria that are identical to those in the Coast Guard's proposed rule for facility response plans for marine-transportation-related facilities.

*Decision.* We disagree and are denying this request. We received several comments requesting this change and one comment supporting the criteria for substantial harm and significant and substantial harm as proposed. A comparison between the EPA rule and Coast Guard rule shows that most differences in the listed criteria result primarily from differences between the facilities regulated by each agency. Some factors listed in the EPA rule, such as a lack of secondary containment, are relevant to EPA-regulated facilities, which are generally onshore, but may be less effective for preventing spills from reaching navigable waters in marine-transportation-related facilities regulated by the Coast Guard. The EPA rule requires consideration of oil storage capacity as a significant and substantial harm criterion, while Coast Guard criteria include the type and quantity of oil handled. This difference in the two rules reflects the greater volumes of oil that are generally stored at EPA-regulated facilities (often an order of magnitude or more greater than Coast Guard-regulated facilities), the more varied activities, and greater number and types of transfers. If the type of oil is an important consideration, the Regional Administrator has broad discretion to consider other site-specific characteristics and environmental factors that are related to protecting the environment in the EPA rule.

• *Request.* Require plans only for worst case discharge. Modify the FRP rule to require planning for a worst case discharge only, as required by OPA.

*Decision.* We disagree and are denying this request. Section 4202(a) of the OPA amends 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.'' This requirement applies to all offshore facilities and 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'' (''substantial harm facilities''). Under authority of section 311(j)(1)(A) and (C) of the CWA, the 1994 FRP rule and today's rule also require planning for a small and medium discharge of oil, as appropriate.

We have discussed the rationale for retaining planning requirements for small, medium, and worst case discharges (59 FR 34070–34136, July 1, 1994; 62 FR 54508, 54509, October 20, 1997; 62 FR 17227, 17229, 17235–17236, April 8, 1999). EPA strongly believes that planning for small and medium discharges, which comprise about 95 percent of all discharges, is vital for environmental protection. Personnel and equipment needed for responses to small, medium, and worst case discharges are often different.

We received comments supporting one, two, or three planning levels. We have detailed the differences between facilities regulated by EPA and Coast Guard and our rationale for requiring three response planning levels in the preamble of today's rule in section II.A. In today's rule, we are retaining planning requirements for small, medium, and worst case discharges.

• *Request.* Proposed elimination of references to higher volume port areas

and 12-hour response time for all areas. Modify the rule by eliminating reference to Higher Volume Port Areas, including the 6-hour response time requirements, on the basis that these port areas were identified in connection with the location of petroleum facilities, and the concept of Higher Volume Port Areas has no relation to the location of animal fat and vegetable oil facilities.

*Decision.* We disagree and are denying this request. The availability of response equipment that is used for spills of animal fats and vegetable oils as well as petroleum oils is usually greatest in Higher Volume Port Areas. Response times are designed to reduce environmental harm from spills and allow the orderly arrival of response equipment so that it can be deployed effectively in spill response. We received several comments supporting elimination of this requirement and one comment supporting its retention. Our reasons for retaining this requirement are described in the proposed rule (64 FR 17227–17267, April 8, 1999) and summarized in the preamble in II.C. In today's rule, we have finalized this requirement as proposed.

• *Request.* Clarification of Use of Mechanical Dispersal Equipment. Modify the rule to clarify that ''other appropriate equipment'' includes mechanical dispersal equipment.

*Decision.* We disagree and are denying this request. The mechanical dispersion option does not meet the intent of OPA for planning purposes. The intent of OPA was for industry to plan for and secure the equipment and resources needed to respond to a worst case discharge, which may be a discharge of 1 million gallons or greater for a large vegetable oil facility. Mechanical dispersal of an animal fat or vegetable oil into the water column can produce a host of adverse impacts on drinking water intakes and aquatic organisms. A detailed discussion of our previous denials of this request and the rationale for our decision is in the preamble in section II. F.2.

• *Request.* No Action Option. Modify the rule to include the no action option.

*Decision.* We disagree and deny the request. Although the no action option may be considered in response to an actual spill under certain conditions, *i.e.,* river currents too high for the effective use of a boom, the no action option would not meet the intent of OPA for planning purposes. It would allow a large amount of oil to remain in the environment, which would in turn cause immediate physical effects to resources that could extend for considerable distances as the oil spreads. This oil would have the potential to remain in the environment for long periods of time. We have emphasized repeatedly that 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 OSC (see 62 FR 54508, 54528, October 20, 1997). We have rejected this request for a ''no action'' planning option before (62 FR 54508–54543, October 20, 1997). Our reasons for continuing to deny it are described in the preamble in section II.F.3.

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## IV. Regulatory Analyses

### *A. Executive Order 12866: OMB Review*

Under Executive Order 12866, (58 FR 51735–51744, October 4, 1993), we must determine whether a regulatory action is ''significant'' and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The order defines ''significant regulatory action'' as one that is likely to result 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 set forth 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 13132: Federalism*

Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure ''meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.'' ''Policies that have federalism implications'' is defined in the Executive Order to include regulations that have ''substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.''

Under section 6 of Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law, unless the Agency consults with State and local officials early in the process of developing the proposed regulation.

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Under CWA section 311(o), States are free to impose additional requirements, including more stringent requirements, that pertain to response planning for facilities that may have discharges of oil to navigable waters. The FRP regulation which we are revising in today's rule already recognizes that States may require facilities to prepare response plans. 40 CFR 112.20(h). Moreover, we have acknowledged that the number of States requiring preparation of response plans which are similar to or which overlap with the Agency's regulation has increased. 62 FR 7769, 7774 (Feb. 20, 1997). This rule does not preempt State law or regulations. Thus, the requirements of section 6 of the Executive Order do not apply to this rule.

*C. Executive Order 12898 Environmental Justice*

Executive Order 12898 requires that each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minorities and low-income populations. EPA has determined that the regulatory changes in this rule will not have a disproportionate impact on minorities and low-income populations. This rule will only affect the environmental standards of a small number of regulated entities that use or store large volumes of animal fats or vegetable oils that are located throughout all communities, not only in low income or minority communities. In addition, today's rule revisions will have a positive environmental effect for neighboring communities by helping affected facilites to plan for effective responses to oil discharges.

*D. Executive Order 13045 Children's Health*

Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19883–19888, 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 Executive Order has the potential to influence the regulation. This final 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. We have no data that indicate that the types of risks resulting from animal fat or vegetable oil discharges have a disproportionate effect on children, and do not have reason to believe that they do so.

*E. 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 provide to OMB, 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 into 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. Our records indicate that none of the animal fat and vegetable oil FRP facilities subject to this revised rule are located within Indian Lands. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

*F. Regulatory Flexibility Act (RFA), as Amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), 5 U.S.C. 601 et seq.*

The RFA generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice

and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of today's rule on small entities, small entity is defined as: (1) A small business that is any business which is independently owned and operated and not dominant in its field as defined by Small Business Administration (SBA) regulations under section 3 of the Small Business Act; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. In determining whether a rule has a significant economic impact on a substantial number of small entities, the impact of concern is any significant *adverse* economic impact on small entities, since the primary purpose of the regulatory flexibility analyses is to identify and address regulatory alternatives ''which minimize any significant economic impact of the proposed rule on small entities.'' 5 U.S.C. 603 and 604. Thus, an agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, or otherwise has a positive economic effect on all of the small entities subject to the rule.

In this rulemaking, we are adding 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 animal fats and vegetable oils because they no longer will be required to provide additional documentation to support their determinations. 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. We have therefore concluded that today's final rule will not increase the regulatory burden for any small entities.

*G. Unfunded Mandates Reform Act*

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 revisions are designed to clarify the requirements for certain facilities that store animal fats and vegetable oils to comply with the FRP rule. The revisions are designed to decrease the current reporting or recordkeeping burden and cost for these facilities and do not impose any additional 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. For these reasons, EPA has also determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments.

*H. Paperwork Reduction Act*

The information collection requirements in this rule have been submitted for approval to OMB under 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); Ariel Rios Building; 1200 Pennsylvania Avenue, NW.; Washington, DC 20460, by email at farmer.sandy@epamail.epa.gov, 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 information collection requirements are not effective until OMB approves them.

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 EPA. 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 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 final rulemaking, we are reducing 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 are finalizing our proposal 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 final rule will be to reduce the reporting and recordkeeping burden for these facilities.

In addition, we are allowing case-by-case deviations for facility response planning levels. In the proposed rulemaking, we solicited 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 animal fats and vegetable oils. Based on those comments (see section II. A of this preamble), and on our own study of the different types of response plans, we have decided to retain all three planning levels. We estimated the cost savings from eliminating a response planning level to be minimal, because our Regional Administrators already give consideration to unique facility characteristics during their review of FRPs in allowing plan deviations.

EPA has information to suggest that certain bulk storage facilities may store large quantities of both petroleum oils and animal fats/vegetable oils in the same tanks but at different times. We have not included these facilities within the scope of our economic analysis for this rule, because the goal of this regulation is to address response planning requirements for those facilities storing only animal fats or vegetable oils. We believe that facilities which store both types of oils in the same tanks at different times should follow the response planning requirements for petroleum oils.

We do not expect the number of facilities that are 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 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 63 facilities (owned or operated by approximately 34 companies) are required to develop and submit FRPs because of the storage of animal fats and vegetable oils. We have previously estimated that it requires between 99 and 132 hours for facility personnel in a large facility (i.e., total storage capacity greater than 1 million gallons) and between 26 and 46 hours for personnel in a medium facility (i.e., total storage capacity greater than 42,000 gallons and less than or equal to 1 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 253 and 293 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 animal fats and vegetable oils to be approximately 6,867 hours a year. Through this rulemaking, we are reducing that burden by approximately five hours for a large facility and two hours for a medium facility. This proposed reduction would result in an annual average burden of 6,587 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. In the proposed rule, we requested 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 requested suggestions on methods for further minimizing respondent burden, including the use of automated collection techniques. No comments were received on either of these issues.

*I. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''). Public Law 104–113, section 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 such as 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 rulemaking does not involve technical standards. We received no comments on this aspect of the rulemaking.

*J. Congressional Review Act*

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2). This rule will be effective July 31, 2000.

**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: May 24, 2000.

**Carol M. Browner,**

*Administrator.*

For the reasons discussed in the preamble, the Environmental Protection Agency amends 40 CFR part 112 as follows:

## PART 112—OIL POLLUTION PREVENTION

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

**Authority:** 33 U.S.C. 1251 *et seq.*; 33 U.S.C. 2720; E.O. 12777 (October 18, 1991), 3 CFR, 1991 Comp., p. 351.

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

**§ 112.2 Definitions.**

* * * * *

*Animal fat* means a non-petroleum oil, fat, or grease 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.

* * * * *

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

* * * * *

*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:

a. adding paragraph (a)(4) to read as set forth below;

b. revising the phrase ''section 10'' to read ''section 13'' in the second sentence of paragraph (f)(1)(ii)(B);

c. revising the word ''spill'' to read ''discharge'' in paragraph (f)(1)(ii)(D);

d. revising the word ''spills'' to read ''discharges'' in paragraph (f)(3)(i); and

e. revising the words ''spill'' and ''spilled'' to read ''discharge'' and ''discharged'', respectively, wherever they appear in paragraph (h).

**§ 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 under paragraph (c) of this section by July 31, 2000 need not prepare or submit a revised plan except as otherwise required by paragraphs (b), (c), or (d) of this section.

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

(iii) *Newly regulated facilities.* The owner or operator of a newly constructed facility that commences operation after July 31, 2000 must prepare and submit a plan to the Regional Administrator in accordance with paragraph (a)(2)(ii) of this section. The plan must meet or exceed the applicable provisions of this part. The owner or operator of an existing facility that must prepare and submit a plan after July 31, 2000 as a result of a planned or unplanned change in facility characteristics that causes the facility to become regulated under paragraph (f)(1) of this section, must prepare and submit a plan to the Regional Administrator in accordance with 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 July 31, 2000, including plans that had been previously approved, must also review the plan to determine if it meets or exceeds the applicable provisions of this part. If the plan does not meet or exceed the applicable provisions of this part, the owner or operator must revise and resubmit revised portions of an amended plan to the Regional Administrator in accordance with paragraph (d) of this section, as appropriate. The plan must meet or exceed the applicable provisions of this part.

* * * * *

**§ 112.21 [Amended]**

4. Amend § 112.21 by revising the phrase ''section 10'' to read ''section 13'' in the second sentence of paragraph (c). C to Part C—[Amended]

**Appendix C to Part C—[Amended]**

5. Amend Appendix C to part 112 by:

a. revising the phrase ''section 10'' to read ''section 13'' wherever it appears;

b. revising the word ''spill'' to read ''discharge'' in sections 2.3 and 2.4, and the last sentence of section 2.5;

c. revising the word ''Spills'' to read ''Discharges'' in the heading of section 2.5;

d. revising the word ''spill'' to read ''discharge'' in paragraph 5 of Attachment C–II;

e. revising the word ''spilled'' to read ''discharged'' in section 1.1 of Attachment C–III;

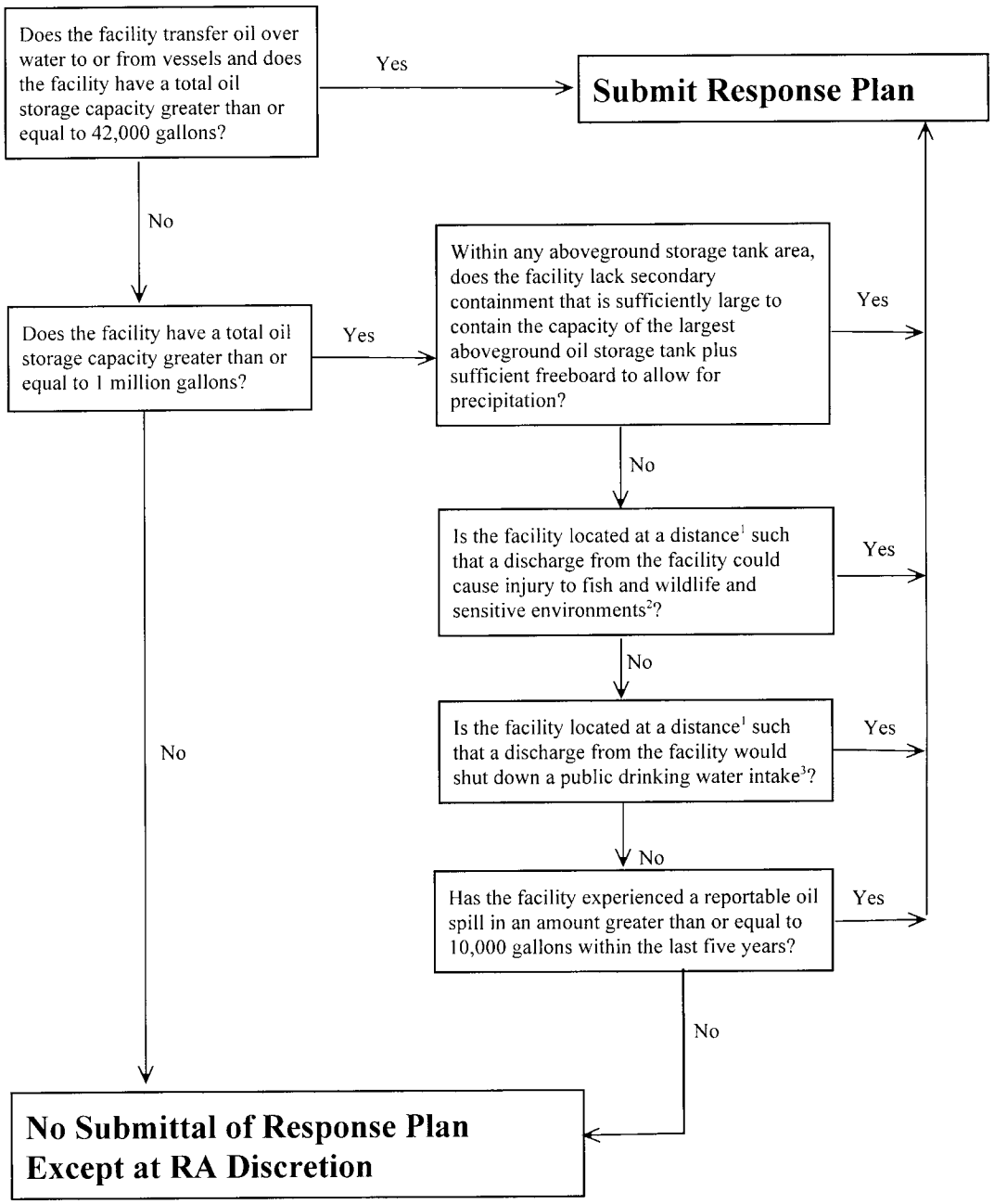
f. revising the word ''spill'' to read ''discharge'' in section 3.2(1) of Attachment C–III; and

g. revising Attachment C–I to read as follows:

BILLING CODE 6560–50–P

Attachment C-I

## Flowchart of Criteria for Substantial Harm




[1] Calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula.

[2] For further description of fish and wildlife and sensitive environments, see Appendices I,II, and III to DOC/NOAA's "Guidance for Facility and vessel response Plans: Fish and Wildlife and Sensitive Environments" (59 FR 14713, March 29, 1994) and the applicable Area Contingency Plan.

[3] Public drinking water intakes are analogous to public water systems as described at CFR 143.2(c).

## Appendix D to Part 112—[Amended]

6. Amend Appendix D to part 112 by revising the phrase ''section 10'' to read ''section 13'' in the second sentence of section 1.4, and by revising the word ''spill'' to read ''discharge'' in section 2.2.3 of Attachment D–1.

7. Amend Appendix E to Part 112 as follows:

a. Revising section 1.0 and sections 1.2.1 through 1.2.8 and adding sections 1.2.9 and 1.2.10;

b. Revising sections 2.0, 2.3.1, and 2.6;

c. Revising sections 3.0, 3.2, 3.3, 3.3.1, and 3.3.3 and adding sections 3.2.1 and 3.2.2;

d. Revising sections 4.0, 4.2, and 4.4 through 4.7 and adding sections 4.2.1 and 4.2.2;

e. Revising sections 5.0, 5.1, 5.3, 5.5, 5.7, and 5.8;

f. Revising sections 6.0, 6.3, and 6.3.1;

g. Revising sections 7.0, 7.1, 7.2, 7.2.1, 7.4, 7.5.2, 7.6.3, 7.7, 7.7.1, 7.7.2, 7.7.3, and 7.7.5;

h. Revising sections 8.0, 8.1 and 8.2 and adding sections 8.2.1, 8.3, 8.3.1, 8.3.2, and 8.3.3;

i. Revising sections 9.0, 9.1, 9.2 and 9.3 and adding sections 9.2.1 and 9.4 through 9.7;

j. Revising sections 10.0, 10.1, 10.2, and 10.3;

k. Adding sections 10.2.1 through 10.2.4, sections 10.3.1 through 10.3.3, and section 10.4;

l. Adding sections 10.5 and 10.5.1 through 10.5.5;

m. Adding sections 10.6 and 10.6.1 through 10.6.3;

n. Adding sections 10.7 and 10.7.1 through 10.7.5;

o. Adding sections 11.0 through 11.2;

p. Adding sections 12.0 through 12.3; and

q. Adding sections 13.0 through 13.3.

The revisions and additions read as follows:

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

*1.0 Purpose and Definitions*

* * * * *

1.2 Definitions.

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

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

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

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

1.2.2 *Nearshore* is an operating area defined as extending seaward 12 miles from the boundary lines defined in 46 CFR part 7, except in the Gulf of Mexico. In the Gulf of Mexico, it means the area extending 12 miles from the line of demarcation (COLREG lines) defined in 49 CFR 80.740 and 80.850.

1.2.3 *Non-persistent oils* or *Group 1 oils* include:

(1) A petroleum-based oil that, at the time of shipment, consists of hydrocarbon fractions:

(A) At least 50 percent of which by volume, distill at a temperature of 340 degrees C (645 degrees F); and

(B) At least 95 percent of which by volume, distill at a temperature of 370 degrees C (700 degrees F); and

(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.

1.2.5 *Ocean* means the nearshore area.

1.2.6 *Operating area* means Rivers and Canals, Inland, Nearshore, and Great Lakes geographic location(s) in which a facility is handling, storing, or transporting oil.

1.2.7 *Operating environment* means Rivers and Canals, Inland, Great Lakes, or Ocean. These terms are used to define the conditions in which response equipment is designed to function.

1.2.8 *Persistent oils* include:

(1) A petroleum-based oil that does not meet the distillation criteria for a non-persistent oil. Persistent oils are further classified based on specific gravity as follows:

(A) Group 2—specific gravity less than 0.85;

(B) Group 3—specific gravity equal to or greater than 0.85 and less than 0.95;

(C) Group 4—specific gravity equal to or greater than 0.95 and less than 1.0; or

(D) Group 5—specific gravity equal to or greater than 1.0.

(2) A non-petroleum oil, other than an animal fat or vegetable oil, with a specific gravity of 0.8 or greater. These oils are further classified based on specific gravity as follows:

(A) Group 2—specific gravity equal to or greater than 0.8 and less than 0.85;

(B) Group 3—specific gravity equal to or greater than 0.85 and less than 0.95;

(C) Group 4—specific gravity equal to or greater than 0.95 and less than 1.0; or

(D) Group 5—specific gravity equal to or greater than 1.0.

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:

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

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

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

1.2.10 Other definitions are included in § 112.2, section 1.1 of Appendix C, and section 3.0 of Appendix F.

*2.0 Equipment Operability and Readiness*

* * * * *

2.3.1 The Regional Administrator may require documentation that the boom identified in a facility response plan meets the criteria in Table 1 of this appendix. Absent acceptable documentation, the Regional Administrator may require that the boom be tested to demonstrate that it meets the criteria in Table 1 of this appendix. Testing must be in accordance with ASTM F 715, ASTM F 989, or other tests approved by EPA as deemed appropriate (see Appendix E to this part, section 13, for general availability of documents).

* * * * *

2.6 This appendix provides information on response resource mobilization and response times. The distance of the facility from the storage location of the response resources must be used to determine whether the resources can arrive on-scene within the stated time. A facility owner or operator shall include the time for notification, mobilization, and travel of resources identified to meet the medium and Tier 1 worst case discharge requirements identified in sections 4.3 and 9.3 of this appendix (for medium discharges) and section 5.3 of this appendix (for worst case discharges). The facility owner or operator must plan for notification and mobilization of Tier 2 and 3 response resources as necessary to meet the requirements for arrival on-scene in accordance with section 5.3 of this appendix. An on-water speed of 5 knots and a land speed of 35 miles per hour is assumed, unless the facility owner or operator can demonstrate otherwise.

* * * * *

*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 United States Coast Guard (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 the lesser of 50 barrels (2,100 gallons) or 1 percent of the volume of the worst case discharge. Owners or operators of complexes that handle, store, or transport petroleum oils must compare oil discharge 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 discharge 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.

3.3 The response resources shall, as appropriate, include:

3.3.1 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;

* * * * *

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

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

* * * * *

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 calculated discharge 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 discharge volumes for a medium discharge. For non-petroleum oils, there is no USCG planning level that directly corresponds to EPA's ''medium discharge.''

* * * * *

4.4 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 4.1 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.

4.5 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'' (see Appendix E to this part, section 13, for availability) and the applicable ACP. Although 40 CFR part 112 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.

4.6 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.

4.7 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.

*5.0 Determining Response Resources Required for the Worst Case Discharge to the Maximum Extent Practicable*

5.1 A facility owner or operator shall identify and ensure the availability of, by contract or other approved means as described in § 112.2, sufficient response resources to respond to the worst case discharge of oil to the maximum extent practicable. Sections 7 and 10 of this appendix describe the method to determine the necessary response resources. Worksheets are provided as Attachments E–1 and E–2 at the end of this appendix to simplify the procedures involved in calculating the planning volume for response resources for the worst case discharge.

* * * * *

5.3 Oil discharge response resources identified in the response plan and available, by contract or other approved means as described in § 112.2, to meet the applicable worst case discharge planning volume must be located such that they are capable of arriving at the scene of a discharge within the times specified for the applicable response tier listed as follows

| | Tier 1 (in hours) | Tier 2 (in hours) | Tier 3 (in hours) |
|---|---|---|---|
| Higher volume port areas | 6 | 30 | 54 |
| Great Lakes | 12 | 36 | 60 |
| All other river and canal, inland, and nearshore areas | 12 | 36 | 60 |

The three levels of response tiers apply to the amount of time in which facility owners or operators must plan for response resources to arrive at the scene of a discharge to respond to the worst case discharge planning volume. For example, at a worst case discharge in an inland area, the first tier of response resources (*i.e.,* that amount of on-water and shoreline cleanup capacity necessary to respond to the fraction of the worst case discharge as indicated through the series of steps described in sections 7.2 and 7.3 or sections 10.2 and 10.3 of this appendix) would arrive at the scene of the discharge within 12 hours; the second tier of response resources would arrive within 36 hours; and the third tier of response resources would arrive within 60 hours.

* * * * *

5.5 A facility owner or operator shall identify the availability of temporary storage capacity to meet section 12.2 of this appendix. If available storage capacity is insufficient, then the effective daily recovery capacity must be derated (downgraded) to the limits of the available storage capacity.

* * * * *

5.7 In addition to oil spill recovery devices, a facility owner or operator shall identify sufficient quantities of boom that are available, by contract or other approved means as described in § 112.2, to arrive on-scene within the specified response times for oil containment and collection. The specific quantity of boom required for collection and containment will depend on the facility-specific information and response strategies employed. A facility owner or operator shall, as appropriate, also identify sufficient quantities of oil containment boom to protect fish and wildlife and sensitive environments. For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's ''Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments'' (see Appendix E to this part, section 13, for availability), and the applicable ACP. Refer to this guidance document for the number of days and geographic areas (*i.e.,* operating

environments) specified in Table 2 and Table 6 of this appendix.

5.8 A facility owner or operator shall also identify, by contract or other approved means as described in § 112.2, the availability of an oil spill removal organization(s) (as described in § 112.2) capable of responding to a shoreline cleanup operation involving the calculated volume of oil and emulsified oil that might impact the affected shoreline. The volume of oil that shall, as appropriate, be planned for is calculated through the application of factors contained in Tables 2, 3, 6, and 7 of this appendix. The volume calculated from these tables is intended to assist the facility owner or operator to identify an oil spill removal organization with sufficient resources and expertise.

*6.0 Determining Effective Daily Recovery Capacity for Oil Recovery Devices*

* * * * *

6.3 As an alternative to section 6.2 of this appendix, a facility owner or operator may submit adequate evidence that a different effective daily recovery capacity should be applied for a specific oil recovery device. Adequate evidence is actual verified performance data in discharge conditions or tests using American Society of Testing and Materials (ASTM) Standard F 631–99, F 808–83 (1999), or an equivalent test approved by EPA as deemed appropriate (see Appendix E to this part, section 13, for general availability of documents).

6.3.1 The following formula must be used to calculate the effective daily recovery capacity under this alternative:

$R = D \times U$

where:

R—Effective daily recovery capacity;

D—Average Oil Recovery Rate in barrels per hour (Item 26 in F 808–83; Item 13.2.16 in F 631–99; or actual performance data); and

U—Hours per day that equipment can operate under discharge conditions. Ten hours per day must be used unless a facility owner or operator can demonstrate that the recovery operation can be sustained for longer periods.

* * * * *

*7.0 Calculating Planning Volumes for a Worst Case Discharge—Petroleum Oils and Non-Petroleum Oils Other Than Animal Fats and Vegetable Oils*

7.1 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 evaporative and natural dissipation, potential increases in volume due to emulsification, and the potential for deposition of oil on the shoreline. The procedures for non-petroleum oils other than animal fats and vegetable oils are discussed in section 7.7 of this appendix.

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

7.2.1 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 [persistent (Groups 2, 3, 4, 5) or non-persistent (Group 1)]; and the facility's specific operating area. See sections 1.2.3 and 1.2.8 of this appendix for the definitions of non-persistent and persistent oils, respectively. 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 2 of this appendix to determine the percentages of the total volume to be used for removal capacity planning. Table 2 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.

* * * * *

7.4 A response plan must identify response resources with fire fighting capability. The owner or operator of a facility that handles, stores, or transports Group 1 through Group 4 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 located at the facility to work with the fire department for Group 1 through Group 4 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.

* * * * *

7.5.2 Because the requirements for Tiers 1, 2, and 3 for inland and nearshore exceed the caps identified in Table 5 of this appendix, the facility owner will contract for a response to 10,000 barrels per day (bpd) for Tier 1, 20,000 bpd for Tier 2, and 40,000 bpd for Tier 3. Resources for the remaining 7,850 bpd for Tier 1, 9,750 bpd for Tier 2, and 7,600 bpd for Tier 3 shall be identified but need not be contracted for in advance. The facility owner or operator shall, as appropriate, also identify or contract for quantities of boom identified in their 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 13, 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 impacted in the event of a worst case discharge.

* * * * *

7.6.3 A response plan must identify response resources with fire fighting capability. The owner or operator of a facility that handles, stores, or transports Group 5 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 shall also identify an individual located at the facility to work with the fire department for Group 5 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.

7.7 *Non-petroleum oils other than animal fats and vegetable oils.* The procedures described in sections 7.7.1 through 7.7.5 of this appendix must be used to determine appropriate response plan development and evaluation criteria for facilities that handle, store, or transport non-petroleum oils other than 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 near shore areas.

7.7.1 An owner or operator of a facility that handles, stores, or transports non-petroleum oils other than animal fats and vegetable oils must provide information in his or her plan that identifies:

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

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

7.7.2 An owner or operator of a facility that handles, stores, or transports non-petroleum oils other than animal fats and vegetable oils must ensure that any equipment identified in a response plan is 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 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.

7.7.3 The owner or operator of a facility that handles, stores, or transports non-petroleum oils other than 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 non-petroleum oil carried; and

(3) Other appropriate equipment necessary to respond to a discharge involving the type of oil carried.

* * * * *

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

*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 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 the lesser of 50 barrels (2,100 gallons) or 1 percent of the volume of the worst case discharge. Owners or operators of complexes that handle, store, or transport petroleum oils must compare oil discharge volumes for a small discharge and an average most probable discharge, and plan for whichever quantity is greater.

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 calculated discharge 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 discharge 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 1.1 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 14713–22, March 29, 1994) and the applicable ACP. Although 40 CFR part 112 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 response planning procedures for animal fats and vegetable oils are discussed in section 10.7 of this appendix. You may use alternate response planning procedures for animal fats and vegetable oils if those procedures result in environmental protection equivalent to that provided by the procedures 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 recovery 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, near shore 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, by contract or other approved means as described in § 112.2, the availability 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, by contract or other approved means as described in § 112.2, the availability of 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 through 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 sections 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 Near shore/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 × .2 × 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/Near shore/Great Lakes).

| Inland operating area | Tier 1 | Tier 2 | Tier 3 |
|---|---|---|---|
| Planning volume on water | .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 Near shore/Inland/Great Lakes): Inland, Group B is 65%
Emulsion factor (from Table 7): 2.0
Planning volumes for shoreline recovery:
21,000,000 gallons × 0.65 × 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 13, 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 through 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 recover oil from the bottom and shoreline;

(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 through 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 near shore 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.

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 a.m. and 4 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 States Coast Guard Headquarters (G–MEP–4), 2100 Second Street, SW., Washington, DC 20593. (See 58 FR 53990–91, 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 14713–22, 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 631–99, ASTM F 808–83 (1999). The ASTM standards are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959.

(4) Response Plans for Marine Transportation-Related Facilities, Interim Final Rule. Published by USCG, DOT at 58 FR 7330–76, 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

| Spill location | Rivers and canals | | | Near shore/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 |

[1] The response resource considerations for non-petroleum oils other than animal fats and vegetable oils are outlined in section 7.7 of this appendix.

**Note:** 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.

* * * * *

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

| Spill location | Rivers and canals | | | Near shore/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 |

[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 10.6 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.

**Note:** 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.

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

| | |
|---|---|
| *Oil Group* [1]: | |
| Group A | 1.0 |
| Group B | 2.0 |

[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 10.6 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.

**Note:** 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.

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**

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) . . . . [ ] Near shore/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.

**Attachment E-1 (continued) --**
**Worksheet to Plan Volume of Response Resources**
**for Worst Case Discharge - Petroleum Oils**

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**

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] Near shore/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.

**Attachment E-1 Example (continued) --**
**Worksheet to Plan Volume of Response Resources**
**for Worst Case Discharge - Petroleum Oils**

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) . . . . [ ] Near shore/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.

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

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] Near shore/Inl and 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 | 20 | 50 |
| (D1) | (D2) | (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 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.

**Attachment E-2 Example (continued) --**
**Worksheet to Plan Volume of Response Resources**
**for Worst Case Discharge - Animal Fats and Vegetable Oils (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 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 and the attachments to Appendix F by revising the phrase ''section 10'' to read ''section 13'' wherever it appears.

11. Appendix F to Part 112 is further amended as follows:

a. Revise section 1.1, section 1.3 (A)(5), (6) and (7), and section 1.3.4.1;

b. Revise the first sentence of section 1.4.2 and sections 1.4.3 and 1.4.4 (12);

c. Revise sections 1.5, 1.5.1, 1.5.1.1, and 1.5.1.2;

d. Revise sections 1.6, 1.6.1, and 1.6.2;

e. Revise sections 1.7 and 1.7.1, the introductory text of section 1..7.1.1, and the introductory text of section 1.7.3;

f. Revise section 1.8.2 (B), section 1.8.3; and

g. Revise the introductory text of attachment F–1. The revised text reads as follows:

## Appendix F To Part 112—Facility-Specific Response Plan

* * * * *

1.1 Emergency Response Action Plan

Several sections of the response plan shall be co-located for easy access by response personnel during an actual emergency or oil discharge. This collection of sections shall be called the Emergency Response Action Plan. The Agency intends that the Action Plan contain only as much information as is necessary to combat the discharge and be arranged so response actions are not delayed. The Action Plan may be arranged in a number of ways. For example, the sections of the Emergency Response Action Plan may be photocopies or condensed versions of the forms included in the associated sections of the response plan. Each Emergency Response Action Plan section may be tabbed for quick reference. The Action Plan shall be maintained in the front of the same binder that contains the complete response plan or it shall be contained in a separate binder. In the latter case, both binders shall be kept together so that the entire plan can be accessed by the qualified individual and appropriate spill response personnel. The Emergency Response Action Plan shall be made up of the following sections:

1. Qualified Individual Information (Section 1.2) partial
2. Emergency Notification Phone List (Section 1.3.1) partial
3. Spill Response Notification Form (Section 1.3.1) partial
4. Response Equipment List and Location (Section 1.3.2) complete
5. Response Equipment Testing and Deployment (Section 1.3.3) complete
6. Facility Response Team (Section 1.3.4) partial
7. Evacuation Plan (Section 1.3.5) condensed
8. Immediate Actions (Section 1.7.1) complete
9. Facility Diagram (Section 1.9) complete

* * * * *

1.3 Emergency Response Information

(A) * * *

(5) Section 1.3.4 lists the facility response personnel, including those employed by the facility and those under contract to the facility for response activities, the amount of time needed for personnel to respond, their responsibility in the case of an emergency, and their level of response training. Three different forms are included in this section. The Emergency Response Personnel List shall be composed of all personnel employed by the facility whose duties involve responding to emergencies, including oil discharges, even when they are not physically present at the site. An example of this type of person would be the Building Engineer-in-Charge or Plant Fire Chief. The second form is a list of the Emergency Response Contractors (both primary and secondary) retained by the facility. Any changes in contractor status must be reflected in updates to the response plan. Evidence of contracts with response contractors shall be included in this section so that the availability of resources can be verified. The last form is the Facility Response Team List, which shall be composed of both emergency response personnel (referenced by job title/position) and emergency response contractors, included in one of the two lists described above, that will respond immediately upon discovery of an oil discharge or other emergency (i.e., the first people to respond). These are to be persons normally on the facility premises or primary response contractors. Examples of these personnel would be the Facility Hazardous Materials (HAZMAT) Spill Team 1, Facility Fire Engine Company 1, Production Supervisor, or Transfer Supervisor. Company personnel must be able to respond immediately and adequately if contractor support is not available.

(6) Section 1.3.5 lists factors that must, as appropriate, be considered when preparing an evacuation plan.

(7) Section 1.3.6 references the responsibilities of the qualified individual for the facility in the event of an emergency.

* * * * *

1.3.5 Evacuation Plans

1.3.5.1 Based on the analysis of the facility, as discussed elsewhere in the plan, a facility-wide evacuation plan shall be developed. In addition, plans to evacuate parts of the facility that are at a high risk of exposure in the event of a discharge or other release must be developed. Evacuation routes must be shown on a diagram of the facility (see section 1.9 of this appendix). When developing evacuation plans, consideration must be given to the following factors, as appropriate:

(1) Location of stored materials;

(2) Hazard imposed by discharged material;

(3) Discharge flow direction;

(4) Prevailing wind direction and speed;

(5) Water currents, tides, or wave conditions (if applicable);

(6) Arrival route of emergency response personnel and response equipment;

(7) Evacuation routes;

(8) Alternative routes of evacuation;

(9) Transportation of injured personnel to nearest emergency medical facility;

(10) Location of alarm/notification systems;

(11) The need for a centralized check-in area for evacuation validation (roll call);

(12) Selection of a mitigation command center; and

(13) Location of shelter at the facility as an alternative to evacuation.

* * * * *

1.4.2 Vulnerability Analysis

The vulnerability analysis shall address the potential effects (*i.e.*, to human health, property, or the environment) of an oil discharge. * * *

* * * * *

1.4.3 Analysis of the Potential for an Oil Discharge

Each owner or operator shall analyze the probability of a discharge occurring at the facility. This analysis shall incorporate factors such as oil spill history, horizontal range of a potential discharge, and vulnerability to natural disaster, and shall, as appropriate, incorporate other factors such as tank age. This analysis will provide information for developing discharge scenarios for a worst case discharge and small and medium discharges and aid in the development of techniques to reduce the size and frequency of discharges. The owner or operator may need to research the age of the tanks and the oil spill history at the facility.

1.4.4 Facility Reportable Oil Spill History

* * * * *

(12) Description(s) of how each oil discharge was detected.

* * * * *

1.5 Discharge Scenarios

In this section, the owner or operator is required to provide a description of the facility's worst case discharge, as well as a small and medium discharge, as appropriate. A multi-level planning approach has been chosen because the response actions to a discharge (*i.e.*, necessary response equipment, products, and personnel) are dependent on the magnitude of the discharge. Planning for lesser discharges is necessary because the nature of the response may be qualitatively different depending on the quantity of the discharge. The facility owner or operator shall discuss the potential direction of the discharge pathway.

1.5.1 Small and Medium Discharges

1.5.1.1 To address multi-level planning requirements, the owner or operator must consider types of facility-specific discharge scenarios that may contribute to a small or medium discharge. The scenarios shall account for all the operations that take place at the facility, including but not limited to:

(1) Loading and unloading of surface transportation;

(2) Facility maintenance;

(3) Facility piping;

(4) Pumping stations and sumps;

(5) Oil storage tanks;

(6) Vehicle refueling; and

(7) Age and condition of facility and components.

1.5.1.2 The scenarios shall also consider factors that affect the response efforts required by the facility. These include but are not limited to:

(1) Size of the discharge;
(2) Proximity to downgradient wells, waterways, and drinking water intakes;
(3) Proximity to fish and wildlife and sensitive environments;
(4) Likelihood that the discharge will travel offsite (*i.e.,* topography, drainage);
(5) Location of the material discharged (*i.e.,* on a concrete pad or directly on the soil);
(6) Material discharged;
(7) Weather or aquatic conditions (*i.e.,* river flow);
(8) Available remediation equipment;
(9) Probability of a chain reaction of failures; and
(10) Direction of discharge pathway.

* * * * *

1.6 Discharge Detection Systems

In this section, the facility owner or operator shall provide a detailed description of the procedures and equipment used to detect discharges. A section on discharge detection by personnel and a discussion of automated discharge detection, if applicable, shall be included for both regular operations and after hours operations. In addition, the facility owner or operator shall discuss how the reliability of any automated system will be checked and how frequently the system will be inspected.

1.6.1 Discharge Detection by Personnel

In this section, facility owners or operators shall describe the procedures and personnel that will detect any discharge of oil or release of a hazardous substance. A thorough discussion of facility inspections must be included. In addition, a description of initial response actions shall be addressed. This section shall reference section 1.3.1 of the response plan for emergency response information.

1.6.2 Automated Discharge Detection

In this section, facility owners or operators must describe any automated discharge detection equipment that the facility has in place. This section shall include a discussion of overfill alarms, secondary containment sensors, etc. A discussion of the plans to verify an automated alarm and the actions to be taken once verified must also be included.

1.7 Plan Implementation

In this section, facility owners or operators must explain in detail how to implement the facility's emergency response plan by describing response actions to be carried out under the plan to ensure the safety of the facility and to mitigate or prevent discharges described in section 1.5 of the response plan. This section shall include the identification of response resources for small, medium, and worst case discharges; disposal plans; and containment and drainage planning. A list of those personnel who would be involved in the cleanup shall be identified. Procedures that the facility will use, where appropriate or necessary, to update their plan after an oil discharge event and the time frame to update the plan must be described.

1.7.1 Response Resources for Small, Medium, and Worst Case Discharges

1.7.1.1 Once the discharge scenarios have been identified in section 1.5 of the response plan, the facility owner or operator shall identify and describe implementation of the response actions. The facility owner or operator shall demonstrate accessibility to the proper response personnel and equipment to effectively respond to all of the identified discharge scenarios. The determination and demonstration of adequate response capability are presented in Appendix E to this part. In addition, steps to expedite the cleanup of oil discharges must be discussed. At a minimum, the following items must be addressed: * * *

* * * * *

1.7.3 Containment and Drainage Planning

A proper plan to contain and control a discharge through drainage may limit the threat of harm to human health and the environment. This section shall describe how to contain and control a discharge through drainage, including: * * *

* * * * *

1.8.2 Facility Drills/Exercises

(A) * * *

(B) The PREP Guidelines specify that the facility conduct internal and external drills/exercises. The internal exercises include: qualified individual notification drills, spill management team tabletop exercises, equipment deployment exercises, and unannounced exercises. External exercises include Area Exercises. Credit for an Area or Facility-specific Exercise will be given to the facility for an actual response to a discharge in the area if the plan was utilized for response to the discharge and the objectives of the Exercise were met and were properly evaluated, documented, and self-certified.

* * * * *

1.8.3 Response Training

Section 112.21(a) requires facility owners or operators to develop programs for facility response training. Facility owners or operators are required by § 112.20(h)(8)(iii) to provide a description of the response training program to be carried out under the response plan. A facility's training program can be based on the USCG's Training Elements for Oil Spill Response, to the extent applicable to facility operations, or another response training program acceptable to the RA. The training elements are available from the USCG Office of Response (G–MOR) at (202) 267–0518 or fax 267–4085/4065. Personnel response training logs and discharge prevention meeting logs shall be included in sections 1.8.3.1 and 1.8.3.2 of the response plan respectively. These logs may be included in the facility response plan or kept as an annex to the facility response plan.

* * * * *

1.9 Diagrams

* * * * *

(2) * * *

(H) direction of discharge flow from discharge points.

* * * * *

Attachments to Appendix F

Attachment F–1—Response Plan Cover Sheet

This cover sheet will provide EPA with basic information concerning the facility. It must accompany a submitted facility response plan. Explanations and detailed instructions can be found in Appendix F. Please type or write legibly in blue or black ink. Public reporting burden for the collection of this information is estimated to vary from 1 hour to 270 hours per response in the first year, with an average of 5 hours per response. This estimate includes time for reviewing instructions, searching existing data sources, gathering the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate of this information, including suggestions for reducing this burden to: Chief, Information Policy Branch, Mail Code: PM–2822, U.S. Environmental Protection Agency, Ariel Rios Building, 1200 Pennsylvania Avenue, NW., Washington, D.C. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington D.C. 20503.

* * * * *

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