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35.0 Appendix 6 40 Code of Federal Regulation Part 112 Oil Pollution Prevention

36.0 Appendix 7 Arizona – Oil Spill & Pollution Clean-up Contractors Directory

FACILITY NAME:	**Yuma International Airport**	
ADDRESS:	**2191 East 32nd Street**	
CITY: Yuma	**COUNTY: Yuma**	**STATE: Arizona**
PHONE: (928) 726-5882	**START-UP DATE: December 1965**	

FACILITY RESPONSE COORDINATOR: **Mark Workman**
PHONE **(928) 919-2388/(928) 726-5882 x2156/(928) 726-4567**

NAME OF OWNER/OPERATOR:
Yuma County Airport Authority, Inc.
2191 East 32nd Street, Suite 218
Yuma, Arizona 85365
(928)726-5882

MANAGEMENT APPROVAL:

The management of this facility recognizes the importance of environmental protection, and has adopted a policy of cooperation and compliance with EPA requirements for an SPCC Plan. We hereby commit the resources and manpower to fully implement the provisions of this SPCC Plan.

Signature:____________________________

Name:___________________________ **Title:**__________________________

I hereby certify that I am familiar with the requirements of 40 CFR 112, and have examined and reviewed this SPCC Plan and the applicable facility, and attest that this SPCC Plan has been prepared in accordance with good engineering practices.

Registered Professional Engineer

Reg. No.: 36702 **Date:** 7/20/15

Registered Professional Engineer (Environmental)
CERTIFICATE NO.
36702
STACY
GUTIERREZ
DATE SIGNED 7/20/15
ARIZONA, U.S.A.
EXPIRES 9/30/16

CERTIFICATION OF APPLICABILITY OF SUBSTANTIAL HARM CRITERIA CHECKLIST

FACILITY NAME: Yuma International Airport

FACILITY ADDRESS: 2191 East 32nd Street

Yuma, Arizona 85365

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

   YES ______ NO x

2. Does the facility have a total oil storage capacity greater than or equal to one million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

   YES ______ NO x

3. Does the facility have a total oil storage capacity greater than or equal to one million gallons and is the facility located at a distance[1] such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments[2]?

   YES ______ NO x

4. Does the facility have a total oil storage capacity greater than or equal to one million gallons and is the facility located at a distance[1] such that a discharge from the facility would shut down a public drinking water intake[2]?

   YES ______ NO x

5. Does the facility have a total oil storage capacity greater than or equal to one million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last five years?

   YES ______ NO x

CERTIFICATION

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

NAME: ______________________ SIGNATURE: ______________________

TITLE: ______________________ DATE: ______________________

[1] Distance shall be calculated using the formula in Attachment C-111, Appendix C, 40 CFR 112 or a comparable formula (attach formula calculations).

[2] Further description of fish and wildlife and sensitive environments is provided in Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Environments" (Section 10, Appendix E, 40 CFR 112 for availability) and any applicable area contingency plans.

[3] For the purposes of 40 CFR 112, public drinking water intakes are analogous to public water systems as described in 40 CFR 143.2 (c).

Calculations for SPCC Plan (Fuel Farm)

TANK #	VOLUME (gal)	RADIUS (ft)	AREA (ft^2)	CROSS SECTIONAL VOLUME (ft^3)	DISPLACEMENT (gal)
1	20,000	5	5.87	194	1449
2	20,000	5.25	6.02	199	1489
3	20,000	5	5.87	194	1449
4	20,000	5	5.87	211	1581
5	12,000	4.3	5.43	211	1340
6	12,000	4	5.23	179	1291
9	1,000	1.8	3.48	42	312

<u>Total displacement D_t from all tanks except one (largest):</u>

D_t = 1449 + 1489 + 1449 + 1340 + 1291 + 312 = 2,544 gallons

Total displacement = 7,330 gallons

<u>Volume Required:</u>

Volume Largest Tank: 20,000 gallons

Safety Factor: 10% = 2,000 gallons

Total Volume Required: 22,000 gallons

<u>Volume Provided:</u>

Volume of secondary containment

Gross Vol: V_g = L x W x d x 7.48 g/ft^3

160.0 x 110.0 x 1.0 x 7.48 = 131,648 gallons

Effective Vol: $V_e = V_g - D_t$ 131,648 – 7,330 = 124,318 gallons

<u>Secondary Containment Evaluation:</u>

Volume provided (124,318 gallons) > Volume required (22,000 gallons)

Secondary containment is adequate.

<u>Additional Volume Provided:</u>

Volume of retention basin (South)

4550 gallons

A = Cross-sectional area of a given tank
D = Depth of the secondary containment
D_1 = Displacement of largest tank
D_t = Total displacement of all tanks except the largest tank
ft = Foot
g = Gallon
r = Radius
V_e = Effective volume of the secondary containment
V_g = Gross volume of secondary containment
V_t = Volume of a given tank

Calculations for SPCC Plan (Fuel Farm)

TANK #	VOLUME (gal)	RADIUS (ft)	AREA (ft^2)	CROSS SECTIONAL VOLUME (ft^3)	DISPLACEMENT (gal)
7	12,000	4.0	5.23	179	1291
8	12,000	4.0	5.23	179	1291

Total displacement D_t from all tanks except one (largest):

D_t = 1,291

Total displacement = 1,291 gallons

Volume Required:

Volume Largest Tank: 12,000 gallons

Safety Factor: 10% = 1,200 gallons

Total Volume Required: 13,200 gallons

Volume Provided:

Volume of secondary containment

Gross Vol: $V_g = L \times W \times d \times 7.48\ g/ft^3$

$50 \times 30 \times 0.6 \times 7.48 = 6{,}732$ gallons

Effective Vol: $V_e = V_g - D_t$ 6,732 – 1,291 = 5,441 gallons

Secondary Containment Evaluation:

Volume provided by secondary containment of 5,441 gallons

Additional Volume Provided:

None

A = Cross-sectional area of a given tank
D = Depth of the secondary containment
D_1 = Displacement of largest tank
D_t = Total displacement of all tanks except the largest tank
ft = Foot
g = Gallon
r = Radius
V_e = Effective volume of the secondary containment
V_g = Gross volume of secondary containment
V_t = Volume of a given tank

PART I
GENERAL REQUIREMENTS PER 40 CFR §112.7
ONSHORE FACILITIES
(Excluding Production Facilities)

This Spill Prevention Control and Countermeasures (SPCC) Plan has been reviewed and certified to satisfy the requirements of 40 CFR 112.7. This document was originally prepared in accordance with 40CFR 112, Part II, Oct. 22, 1991, Federal Register, Vol. 56. No. 204 – Proposed Rules; as such, the sequence outline used in this SPCC follows the 1991 proposed rules. However, amendments have been made to reflect changes in facility design, construction, operation, and maintenance as required by 40 CFR 112.5.

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§112.7 Spill Prevention, Control, and Countermeasures Plan General Requirements.

(a) The SPCC Plan shall be a carefully thought out written description of the facility's compliance with the requirements of all applicable elements of §112.7, 112.8, 112.9, 112.10, and 112.11 and shall be prepared in accordance with good engineering practice. The Plan shall have the full approval of management at a level with authority to commit the necessary resources to fully comply.

1.0 COMPLIANCE STATEMENT:

This SPCC Plan is produced in full compliance with requirements of 40 CFR 112. Every applicable section of 40 CFR§ 112 and every requirement within these applicable sections has been addressed. When any requirement is not applicable it is denoted "NA".

- Plan Design: Table of Contents
- Management Approval Sheet
- Certification of Substantial Harm Determination Sheet
- PART I of the Plan: 40 CFR §112.7 General Requirements
- PART II of the Plan: 40 CFR §112.8 Specific Requirements for Onshore Facilities (excluding production facilities)
- List of Figures
- List of Appendices

APPLICABLE REGULATIONS:

†Stormwater Pollution Prevention Provisions (SWPPP)
†Hazardous Materials Management Provisions (HMMP)
†Occupational Safety Health Administration (OSHA)

---

§112.7(a)(1)

(1) The complete Plan shall follow the sequence outlined below and include a discussion of the facility's conformance with the requirements listed.

1.1 PLAN CONFORMANCE AND SEQUENCE STATEMENT

The complete plan follows the sequence outline of 40CFR112, Part II, Oct. 22, 1991, Federal Register, Vol. 56. No. 204 Proposed Rules. The facility requirements are listed and followed with item statements of conformance.

Each requirement is listed and, if not applicable, it is marked NA. The items are listed in the Table of Contents with a page reference. Items which are cross referenced to other state and federal regulation, such as Resource Conservation and Recovery Act are written below the item and or marked (RCRA). Also, items which apply to Hazardous Materials Management Provisions will be listed below the item and or marked (HMMP). Items which apply to Occupational Safety and Health Administration (OSHA) or Stormwater Pollution Prevention Provisions (SWPPP) will be marked or listed.

Facility Policies and Procedures (FPP) are drafted in Appendix 1. Airport Emergency Plan is in Appendix 2. Spill Reporting Form is in Appendix 3. Material Safety Data Sheets are in Appendix 4. Facility Policies and Procedures and Stormwater Pollution Prevention Provisions Log Sheets are in Appendix 5 and the 40 Code of Federal Regulation Part 112 Oil Prevention is in Appendix 6.

§112.7(a)(2)

(2) The Plan may deviate from the requirements in paragraph (c) of this section and §§ 112.8, 112.9, 112.10, and 112.11, where applicable, to a specific facility provided equivalent protection is provided by some other means of spill prevention, control, or countermeasures. Where the Plan does not conform to the applicable requirements of paragraph (c) of this section or §§ 112.8, 112.9, 112.10, and 112.11, the Plan shall state the reasons for nonconformance and describe in detail alternate methods and how equivalent protection will be achieved. The Regional Administrator can overrule the waiver/equivalent alternative measure if it is not adequately protective.

1.2 PLAN DEVIATIONS:

N/A

§112.7(a)(3)

(3) The complete Plan must describe the facility's physical plant...

2.0 PHYSICAL PLANT DESCRIPTION AND SPILL HISTORY:

This facility, under present ownership and management, began operation December 30, 1965 and has had no reportable spills to the date of this SPCC Plan.

The facility is located in the eastern portion of Yuma County, at the intersection of 32nd Street and Pacific Avenue. The site lies in Section 16, Township 9 south, Range 23 West of the Gila and Salt River Baseline Meridian system. The approximate latitude and longitude of the center of the airport are 32 degrees, 39 minutes, 39 minutes north and 114 degrees, 36 minutes, 24 seconds west respectfully (see Figure 1). Yuma International Airport is a shared-use airport operating with Marine Corps Air Station Yuma (MCAS Yuma) and is located south of the central business district in Yuma Arizona.

The facility includes, one (1) Fixed Base Operator (FBO), see Figure 2. The physical facility consists of: offices, hangars, storage tanks, and transfer facilities, ten (10) aboveground storage tanks with a total capacity of 128,750 gallons (see Figure 3) and eight (8) fuel trucks with a combined capacity of 33,750 gallons of fuel.

The facility has truck and vehicular access for the FBO and individuals who rent aircraft storage space. Airport personnel as well as Million Air utilized vehicles to service and or transport personnel to aircraft. Airport personnel utilize 22 vehicles and Million Air 44 vehicles. There are six (6) product transfer stations, four (4) at the fuel farm and two (2) at the self-service fueling area. Controlled drainage accompanies the fuel farm but not the self-service facility.

The ten (10) storage tanks are located at two sites on the facility (see Figure 3). Eight (8) of the ten (10) storage tanks are located at the fuel farm with secondary containment capable of retaining 102,318 gallons, more than a maximum spill equal to the capacity of the largest tank. This site is flanked by two retention basins totaling 79,550 gallons (see Figure 4). The first retention basin will contain 75,000 gallons and is located adjacent to the fuel farm and to the north while the second retention basin will contain 4,550 gallons and is located adjacent to the fuel farm to the south (see Figure 4). Six of the eight tanks in this containment area are double walled tanks. The two tanks that is not a double-walled tank is a red dye diesel tank with a capacity of 500 gallons and an unleaded gasoline tank with a capacity of 250 gallons. The two (2) remaining storage tanks are located at the self-service facility. This area does contain a secondary containment system; however, the two (2) fuel storage tanks are double walled tanks (see Figure 5).

There are no sensitive environments or species subject to substantial harm. The Colorado River, about 3.8 miles north of the facility, is habitat for the Clapper Rail, a bird regarded as an endangered species. However, any possible spill would be retained on the property and poses no substantial threat. There are no other waterways, ponds, wetlands, nor anything else of that likeness. Flooding is not reasonably possible at this site.

112.7(a)(3) cont.

... and include a facility diagram, which must have the location and contents of all tanks marked.

2.3 FACILITY DIAGRAM:
See Figure 2
†SWPPP
†HMMP

FACILITY DIAGRAM CONTENTS

1. Storage tanks (each unit):

   a. Location: (Figure 3)

   b. Storage capacities: (Figures 4 & 5)

   c. Contents: (Figures 4 & 5)

2. All buildings and other permanent structures. (Figure 2)

3. Secondary Containment features: design, volume, and dimensions. (Figure 4)

4. Spill diversion structures and like provisions. (Figure 4)

5. Dispensing facilities, containment and drainage. (Figure 4 & 5)

6. Storm drainage and facility effluent disposal provisions. (Figure 6-12)

7. All possible spill pathways on and beyond the facility if appropriate.

§112.7(a)(3) cont.

The Plan must also address the following:

(i) Unit-by-unit storage capacity;

(ii) Type and quantity of oil stored;

LISTING OF ALL CONTAINERS SHOWING:

2.4 STORAGE CONTAINER CAPACITIES:
†HMMP

2.5 TYPE AND MAX. QUANTITIES OF MATERIAL STORED IN EACH TANK OR CONTAINER:
†SWPPP
†HMMP

TANK	CAPACITY	MATERIAL	LOCATION
1	20,000 g	Jet A	* Fuel Farm
2	20,000 g	Jet A	* Fuel Farm
3	20,000 g	Jet A	* Fuel Farm
4	20,000 g	Jet A	* Fuel Farm
5	12,000 g	Jet A	* Fuel Farm
6	12,000 g	Jet A	* Fuel Farm
7	12,000 g	Avgas	Self-Service
8	12,000 g	Avgas	Self-Service
9	500 g	Diesel	* Fuel Farm
10	250 g	Unleaded Gas	* Fuel Farm

* Located at the Defense Contractor Complex southwest portion of airfield.

All tanks are of steel construction with external corrosion protection.

The below quantity is a combination of material of all FBO's.

Case lots, pails etc:
Oil: 55 cases
Hydraulic Oil: 10 cases
Grease: 25 pounds
Starting fluid: 25 cases
Antifreeze: 5 cases
Solvent: 55 g.

Total facility storage is 131,648 gallons.

---

§112.7(a)(3) cont.

(iii) Estimates of quantity of oils potentially discharged;

(iv) Possible spill pathways;

2.7 ESTIMATE OF MAX. QUANTITY OF EACH TYPE OF MATERIAL THAT COULD BE DISCHARGED IN A SINGLE EVENT:
†SWPPP

Jet A:	20,000 g.
Avgas:	12,000 g.
Red Dye Diesel	500 g.
Unleaded Gasoline	250 g.
Hydraulic oil:	5 g.
Engine Oil	5 g.

2.8 FLOW RATE FOR EACH SPILL PATHWAY:

(See Figures 5 & 8)
†SWPPP

Spill path and flow rate are irrelevant at the fuel farm since the material spilled in a single event involving the largest product container is a double- walled 20,000 gallon fuel tank designed to retain fuel in the event the inner tank fails. In the case of the single-walled steel 500 gallon red dye diesel or the single-walled 250 gallon unleaded fuel tank, if these tanks leak, the secondary containment in which the tanks are placed will contain the entire contents of the tanks. In the event of the self-service facility, the two (2) 12,000 fuel tanks are double-wall designed to retain fuel in the event the inner tank fails.

The airport property also acts as tertiary containment. The airport is surrounded by an earthen berm preventing any spill from leaving the property.

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

3.0 SPILL PREVENTION MEASURES:

3.1 Product Handling Procedure

See Appendix 1 Part 3.a.
†SWPPP

3.2 Personnel Training Program

See Appendix 1 Part 1
†SWPPP

3.3 Facility Security Procedures

See Appendix 1 Part 3.b.
†SWPPP

3.4 Facility Inspections and Testing

See Appendix 1 Part 2
†SWPPP

§112.7(a)(3) cont.

(vi) Spill controls such as secondary containment around tanks and other structures, equipment...

4.0 SPILL CONTROLS:

4.1 Secondary containment features:
†SWPPP

The total storage capacity of the largest product container at the fuel farm located in the southwest portion of the airfield is 20,000 gallons. Even in the event of a total failure involving any one of the largest containers, no product would escape the facility. All of the 20,000 gallon containers are designed with secondary containment. The total storage capacity of the largest product container at the self-service area is 12,000 gallons. Even in the event of a total failure involving any one of the largest containers, no product would escape the facility. All of the 12,000 gallon containers are designed with secondary containment.

The total storage capacity of the largest product container at the self-service facility is 12,000 gallons. Even in the event of a total failure involving any one of the largest container, no product would escape the facility. Both tanks are double-walled designed to retain fuel in the event the inner tank fails.

The airport property also acts as tertiary containment. The airport is surrounded by an earthen berm preventing any spill from leaving the property.

4.2 The cleanup contractor has equipment to mitigate spills and disposal of wastes.
†HMMP

§112.7(a)(3)(vi) cont.

... and procedures for the control of a discharge;

4.3 SPILL CONTROL PROCEDURES:

Spill Control Procedures:
See Appendix 1 Part 3
†SWPPP

(vii) Spill countermeasures for spill discovery, response, and cleanup (facility's capability and those that might be required of a contractor);

5.0 SPILL COUNTERMEASURES:

5.1 Countermeasures in use:
Leak Discovery Inspection Procedure
See Appendix 1 Part 2.e.
†SWPPP

5.2 Spill Response Procedure
See Appendix 1 Part 3.d.
†SWPPP

5.3 Cleanup Procedure
See Appendix 1 Part 3.e.
†SWPPP
†HMMP

(viii) Disposal of recovered materials in accordance with applicable legal requirements; and

5.4 DISPOSAL OF RECOVERED AND CONTAMINATED MATERIALS:

See Appendix 1 Part 3.c.
See Appendix 1 Part 3.f.
†SWPPP

§112.7(a)(3) Cont.

(ix) Contact list and phone numbers for the facility response coordinator, National Response Center, cleanup contractors, fire departments, Local Emergency Planning Committee, State Emergency Response Commission, and downstream water suppliers who must be contacted in case of a discharge to navigable waters.

6.0 FACILITY RESPONSE INFORMATION

The Airport Emergency Plan can be found in Appendix 2.

6.1 CONTACT LIST AND PHONE NUMBERS:

†SWPPP

1. Facility Spill Prevention Coordinator:
   Airport Director
   Name: Gladys Wiggins
   Phone: (928)-941-2394
   Cell: (707)-816-9453

2. Facility Response Coordinator:
   Airport Operations (24hours- (928) 941-2396)
   Name: Mark Workman
   Phone: (928) 919-2388

3. Response Centers:
   National EPA: (800)-424-8802 or (202)-267-7675
   Region 9 EPA: (800)-300-2193

4. Arizona Department Environmental Quality
   Phone: (602)-771-2330
   Phone: (800)-234-5677

5. Local Emergency Authorities:
   Name: Local HAZ Response Team
   Phone: **911**

5. Cleanup Contractor:
   The facility has its own clean-up equipment and hauls polluted drainage to:
   Name: Allied Waste
   Phone: (928) 343-7300
   Address: 2217 E. 13th St, Yuma, AZ 85365
   (A list of spill contractors can be found in Appendix 7)

7. Downstream Water Suppliers: None

8. Emergency Personnel Agency:
   Name: Rural/Metro Fire Dept.
   Phone: **911**
   Address: 2029 S. Arizona Ave., Yuma, AZ

9. Emergency Equipment Sources:
   Name: Sun Rental Equipment
   Phone: (928) 782-1855
   Address: 3089 E. 33rd Place, Yuma, AZ

10. Arizona Occupational Safety and Health Administration
    U.S. Department of Labor
    Phone: (602) 514-7250
    Address: Phoenix Federal Building, 230 N. 1ST Avenue, Suite 202, Phoenix, AZ 85003

§112.7(a)(4)

(4) Documentation in the Plan shall enable a person reporting a spill to provide information on the exact address and phone number of the facility, the spill date and time, the type of material spilled, estimates of the total quantity spilled, estimates of the quantity spilled into navigable water, the source of the spill, a description of the affected medium, the cause of the spill, any damages or injuries caused by the spill, actions being used to stop, remove, and mitigate the effects of the discharge, whether an evacuation may be needed, and the names of individual and/or organizations who have also been contacted.

7.0 SPILL REPORTING DATA:

(See Appendix 3)
†SWPPP

Facility Name: Yuma International Airport

Facility Phone: (928) 726-5882

Facility Address:
Street: 2191 East 32nd Street
City: Yuma
County: Yuma
State: AZ

Descriptive location, landmarks, etc.: Located on south side of 32nd Street at the intersection of 32nd Street and Pacific Avenue.

Data for spill or emergency reports:

Be prepared to report the following:

1. Type of emergency: fire, spill, injury etc.
2. Date and time
3. Potential hazards
4. Type of materials involved
5. Estimated quantities involved
6. Estimated quantities discharged into local waters
7. Source of spill
8. Description of affected mediums
9. Cause of spill
10. Damage and injuries
11. Actions taken up to time of report to stop, remove, or mitigate effects
12. Whether an evacuation is required or not
13. Names of persons and/or organizations who has been and/or shall be reported too

§112.7(a)(5)

(5) Portions of the Plan describing procedures to be used in emergency circumstances shall be organized in a manner to make them readily useable in an emergency with appropriate supporting material included as appendices.

7.1 EMERGENCY PROCEDURES:
See Appendix 1 Part 3.c.
†SWPPP
†HMMP

File location where emergency procedure may be found:

Main office files under Airport Emergency Plan/Program (AEP)

The emergency procedure provides instruction on how to deal with emergencies.

§112.7(b)

(b) Experience has indicated that a reasonable potential for oil discharge from tank overflow, rupture, or leakage, and faulty ancillary equipment exists. Therefore, the Plan shall include a prediction of the direction, rate of flow...

8.0 SPILL PREDICTIONS:

Vulnerability analysis:

The facility is located in the eastern portion of Yuma County, at the intersection of 32nd Street and Pacific Avenue. Yuma International Airport is a shared-use airport operating with Marine Corps Air Station Yuma and is located south of the central business district in Yuma Arizona. Yuma County Fairgrounds is located north of the airport on the south side of 32nd Street. Agricultural and commercial properties lie to the west and south. However, any spilled materials will be retained on the premises and pose no threat of substantial harm beyond the facility (see Figure 2).

§112.7(b) cont.

... and total quantity of oil that could be discharged from the facility as a result of each major type of failure.

8.1 Fault analysis:

For each possible source and major failure mode, the maximum quantity and type of material that could be spilled is as follows:

Fuel Farm:

FAIL MODES	MATERIAL	QUANTITY
Tank Rupture	Fuel Jet A	20,000g.
Tank Rupture	Fuel AVGAS	12,000g.
Tank Rupture	Fuel Diesel	500g.
Tank Rupture	Fuel Unleaded	250g.

Self-Service Area:

FAIL MODES	MATERIAL	QUANTITY
Tank Rupture	Fuel AVGAS	12,000g.

Fuel Truck Parking Area:

FAIL MODES	MATERIAL	QUANTITY
Tank Rupture	Fuel Jet A	10,000g.
Tank Rupture	Fuel AVGAS	1,000g.
Tank Rupture	Fuel Diesel	1,000g.

MRO – Arlington Jet Service:

FAIL MODES	MATERIAL	QUANTITY
Drum Rupture	Solvent	55g.
Container Rupture	Oil	3g.
Container Rupture	Antifreeze	1g.

The entire quantity would be retained on site.

Truck Loading Area:

FAIL MODES	MATERIAL	QUANTITY
Overfill	Fuel	time related

Aircraft Loading:

FAIL MODES	MATERIAL	QUANTITY
Overfill	Fuel	time related

Containment effectiveness:

Any maximum spill would be contained on the premises. The property boundary contains an earthen berm (tertiary containment) that would contain any spill that may not be contained by the secondary containment.

§112.7(c)

(c) Appropriate containment and/or drainage control structures or equipment to prevent discharged oil from reaching a navigable water course shall be provided. The entire containment system, including walls and floor, shall be impervious to oil for 72 hours and shall be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not permeate, drain, infiltrate, or otherwise escape to surface waters before cleanup occurs.

9.0 CONTAINMENT SYSTEM DESCRIPTION:
†OSHA

The fuel farm facility contains eight (8) fuel tanks and has a poured concrete containment area with concrete floor for the fuel tanks located in this containment area. Retention basins are located north and south of this containment. A release valve to the south retention basin from the containment area is maintained in the closed position. The 72 hour retention requirement is met.

The largest storage container is: 20,000 gallons.

The self-service facility contains two (2) double-walled fuel tanks. This facility does not have tertiary containment.

The largest storage container is: 12,000 gallons.

The airport property also acts as tertiary containment. The airport is surrounded by an earthen berm preventing any spill from leaving the property.

§112.7(c)(1)
One or more of the following prevention systems or its equivalent shall be used as:

(1) Onshore facilities:
(i) Dikes, berms, or retaining walls;
(ii) Curbing;
(iii) Culverting, gutters, or other drainage systems;
(iv) Weirs, booms, or other barriers;
(v) Spill diversion ponds;
(vi) Retention ponds; or
(vii) Sorbent materials

9.1 CONTAINMENT MEASURES:
See Figure 4
†HMMP
†OSHA

		Tanks	Drums
(I)	Dikes	**No**	**No**
	Berms.............	Yes	**Yes**
	Retaining walls	**Yes**	**Yes**
(ii)	Curbing...........	**Yes**	**Yes**
(iii)	Culverts, gutters, or other drains....	**No**	**No**
(iv)	Weirs, booms or other barriers.....	**No**	**No**
(v)	Spill diversion	**No**	**No**
(vi)	Retention basin....	**Yes**	**Yes**
(vii)	Sorbent material	**Yes**	**Yes**

No loose combustible material or empty drums or barrel shall be permitted within the storage tank area (retaining walls).
†OSHA

§112.7(d)

(d) When it is determined that the installation of structures or equipment listed in § 112.7(c) to prevent discharged oil from reaching the navigable waters is not practicable from any onshore or offshore facility, the owner or operator shall clearly demonstrate such impracticability...

Additional reg. text to be added when applicable.
(1) Contingency Plan
(2) Written Commitment

9.2 IF ALL PROVISIONS OF §112.7 ITEM (c)(1) ABOVE ARE DEEMED TO BE IMPRACTICAL, OR IF THOSE IN PLACE ARE INADEQUATE:

Explanation of impracticality:

(1) Contingency Plan: NA
(2) Written Commitment: NA

§112.7(e)

(e) Inspection, tests, and records. Inspections and tests required by this part shall be in accordance with written procedures developed for the facility by the owner or operator or the certifying engineer. These written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, shall be maintained with the SPCC Plan and maintained for a period of five years.

10.0 INSPECTIONS, TESTS, AND RECORDS:

See Appendix 1 Part 2
See Appendix 1
†SWPPP
†HMMP
†OSHA

All inspection and test records for the above ground fuel tanks are maintained in the YIA Operations Office.

All inspection and test records shall be maintained for a period of 5 years.

§112.7(f)

(f) Personnel, training, and spill prevention procedures.
(1) Owners or operators are responsible for properly instructing their personnel in the operation and maintenance of equipment to prevent discharges of oil and in applicable pollution control laws, rules, and regulations. Training exercises should be conducted at least yearly for all personnel and training should be given to new employees within one week of beginning work.

(2) Each applicable facility shall have a designated person who is accountable for oil spill prevention and who reports to line management.

(3) Owners or operators shall schedule and conduct spill prevention briefings for their operating personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings shall highlight and describe known spill events or failures, malfunctioning components, and recently developed precautionary measures.

11.0 PERSONNEL, TRAINING, AND SPILL PREVENTION PROGRAMS:
†SWPPP
†HMMP

11.1 Initial and refresher training is mandated for all personnel:

See Appendix 1 Part 1.a. - d.

Spill prevention:

See Appendix 1 Part 3.a - f.

11.2 A facility response coordinator has been appointed.

11.3 Refresher training and briefing is provided:

See Appendix 1 Part 1.a. - d.

§112.7(g)

(g) Security (excluding oil production facilities).

(1) It is recommended that all plants handling, processing, and storing oil be fully fenced and when fenced, entrance gates shall be locked and/or guarded when the plant is not in production or is unattended.

(2) The master flow and drain valves and any other valves permitting direct outward flow of the tank's contents to the surface shall have adequate security measures to ensure that they remain in the closed position when in non-operating or non-standby status.

(3) The starter control on all pumps shall be locked in the "off" position and be located at a site accessible only to authorized personnel when the pumps are in a non-operating or non-standby status.

12.0 FACILITY SECURITY MEASURES AND PROCEDURES:

See Appendix 1 Part 3.b.

12.1 The facility is enclosed by the perimeter fence of the Yuma International Airport. All fuel distribution points are secured within the airfield and accessible only to authorized personnel. The facility is under 24-hour watch from the Operations office by means of close-circuit TV.
†HMMP

12.2 All master flow and drain valves and all other valves permitting direct outflow have locking devices or other security.
†HMMP

12.3 Starter controls on all pumps have locking provisions in the off position. Starter controls are located in a secure area accessible only to authorized personnel.
†HMMP.

12.4 The self-service facility is a card-lock type system in which only an authorized card hold can dispense fuel from this location.

§112.7(g) cont.

(4) The loading/unloading connections of oil piping shall be securely capped or blank-flanged when not in service or when in standby service for a period of six months or more. This security practice also shall apply to piping that is emptied of liquid content either by draining or by inert gas pressure.

(5) It is recommended that facility lighting be commensurate with the type and location of the facility. Consideration shall be given to:

(i) Discovery of spills occurring during hours of darkness, both by operating personnel, if present, and by non-operating personnel (the general public, local police, etc.) and

(ii) prevention of spills occurring through acts of vandalism.

12.5 All loading/unloading connections on piping exists inside contained areas and pose no threat of uncontrolled spills.
†HMMP
†OSHA

12.6 The facility is sufficiently lighted during dark hours to permit:

(I) Discovery of spills

(ii) Prevention of spills due to vandalism

§112.7(h)

(h) Facility tank car and tank truck loading/unloading rack (excluding offshore facilities).

(1) Tank car and tank truck loading/unloading procedures shall meet the minimum requirements and regulations established by State or Federal law.

(2) Where rack area drainage does not flow into a catchment basin or treatment facility designed to handle spills, a quick drainage system shall be used for tank truck loading and unloading areas. The containment system shall be designed to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded in the plant.

(3) An interlocked warning light or physical barrier system, or warning signs, shall be provided in loading/unloading areas to prevent vehicular departure before complete disconnection of flexible or fixed transfer lines.

13.0 FACILITY TANK CAR AND/OR TANK TRUCK LOADING/UNLOADING RACK OR STATION:

13.1 Procedures meet or exceed regulations established by State and Federal law (Ref. Dept. of Transportation requirements, and 112.7(i) below for State laws.
(See Appendix 1 Part 3.a.)
†OSHA

13.2 Transfer rack or station drainage is held in the retention basin. Pollutants are disposed of by a cleanup crew or contractor. All product transfer operations take place within a contained area. Any spill will be contained and pose no threat beyond the facility.
†OSHA

13.3 Provisions to prevent premature vehicle movement or departure are unnecessary since all product transfer operations take place within a contained area. Any spill will be contained and pose no threat beyond the facility.

a. Interlock warning light **yes**

b. A physical barrier **no**

c. Warning lights **no**

d. Automatic shut off provisions are immediately activated in the event of an accidental disconnect **yes**

e. Wheel chocks **yes**

§112.7(h) cont.

(4) Prior to filling and departure of a tank car or tank truck, the lowermost drain and all outlets of such vehicles shall be closely examined for leakage, and, if necessary, tightened, adjusted, or replaced to prevent liquid leakage while in transit.

13.4 Prior to filling and/or departure of any truck, valves are:

a. Closed

b. Examined for leakage

c. Tightened, adjusted, or replaced to prevent leakage in transit

For Product Handling Procedure, See Appendix 1 Part 3.a.

§112.7(i)

(i) In addition to the minimal prevention standards listed under § 112.7 (c), (e), (f), (g), and (h), sections of the Plan shall include a complete discussion of conformance with the applicable requirements and other effective spill prevention and containment procedures listed in § § 112.8, 112.9, 112.10, and 112.11 (or, if more stringent, with State rules, regulations, and guidelines).

13.5 This plan conforms to state and local regulations and guidelines. All fuel and oil containers are maintained either in an area surrounded by a secondary containment wall or are placed on secondary containment. Other liquid filled containers are maintained in such a way to prevent the contents from reaching the soil or leaving the property. All fueling areas are maintained in good working order and any leaks or spills that occur are quickly cleaned-up and appropriate personnel are notified. All inspections are conducted in accordance with local, state and federal requirements. All records are maintained in the respective organizational maintenance area.

PART II

SPECIFIC REQUIREMENTS PER 40 CFR §112.8

ONSHORE FACILITIES
(Excluding Production Facilities)

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§112.8 SPCC Plan Requirements for Onshore Facilities.

(a) In addition to the specific spill retention and containment procedure listed under this section, onshore facilities (excluding production facilities) must also address the general requirements listed under § 112.7 in the SPCC Plan.

(a) GENERAL REQUIREMENTS OF §112.7 ARE PROVIDED FOR IN PART I ABOVE

---

§112.8(b)

(b) Facility drainage (onshore), (excluding production facilities).

(1) Drainage from diked storage areas shall be restrained by valves or other positive means to prevent a spill or other excessive leakage of oil into the drainage system or inplant effluent treatment system, except where facility systems are designed to handle such leakage. Diked areas may be emptied by pumps or ejectors. However, these shall be manually activated and the condition of the accumulation shall be examined before starting to ensure no oil will be discharged into the water.

14.0 FACILITY DRAINAGE:

14.1 Drainage from the retention provisions is achieved by pumps. Non-polluted water is allowed to evaporate and polluted water is handled by a clean-up contractor selected by the FBO and approved by the YIA.

†SWPPP
†OSHA

§112.8(b) cont.

(2) Flapper-type drain valves shall not be used to drain diked areas. Valves used for the drainage of diked areas shall, as far as practical, be of manual open and closed design. When facility drainage drains directly into water courses and not into waste water treatment plants, retained storm water shall be inspected as provided in paragraphs (c)(3) (ii), (iii), and (iv) of this section before drainage.

(3) Facility drainage systems from un-diked areas with a potential for oil spill contamination shall flow into ponds, lagoons, or catchment basins designed to retain oil or return it to the facility. It is recommended that catchment basins not be located in areas subject to periodic flooding.

(4) If facility drainage is not engineered as above, the final discharge of all inplant drainage shall be equipped with a diversion system that would, in the event of an uncontrolled spill, retain oil in the facility.

14.2 Flapper type drain valves are not used to drain the containment areas. Unpolluted drain water in the containment areas is allowed to evaporate. When water is disposed of it is inspected as required by §112.8(c) (3) below.

14.3 Polluted drainage from the secondary containment area is pumped into containers or a tank truck for safe disposition. This design retains all spilled product on the facility. Retention features are not subject to flooding.
†SWPPP

14.4 The facility is in conformance to items (1) through (3) above.

§112.8(b) cont.

(5) Where drainage waters are treated on more than one treatment unit, it is recommended that natural hydraulic flow be used. If pump transfer is needed, two "lift" pumps shall be provided and at least one of the pumps shall be provided and at least one of the pumps shall be permanently installed when such treatment is continuous. Whatever techniques are used, facility drainage systems shall be adequately engineered so that, in the event of equipment failure or human error at the facility, oil will be prevented from reaching navigable waters of the United States, adjoining shorelines, or other waters that would be affected by discharging oil as described in § 112.1(b)(1) of this part.

(6) For facilities in locations subject to flooding, it is recommended that the SPCC Plan address additional requirements for events that occur during a period of flooding.

14.5 Drain-water is not treated on site.
†SWPPP

Pump transfer, when required for removal, is achieved by means of pumps permanently installed on the cleanup contractor's tank truck.

14.6 Flooding of this facility not reasonably possible.
†SWPPP

§112.8(c)

(c) Bulk storage containers (onshore), (excluding production facilities).

(1) No tank shall be used for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure, temperature, etc. It is recommended that the construction, materials, installation, and use of tanks conform with relevant portions of industry standards such as API, NFPA, UL, or ASME standards, which are required in the application of good engineering practice for the construction and operation of the tank.

(2) All bulk storage tank installations shall be constructed so that a secondary means of containment is provided for the entire contents of the largest single tank and sufficient freeboard to allow for precipitation. Diked areas shall be sufficiently impervious to contain spilled oil for at least 72 hours. Dikes, containment curbs, and pits are commonly employed for this purpose, but they may not always be appropriate. An alternate system could consist of a complete drainage trench enclosure arranged so that a spill could terminate and be safely confined in an inplant catchment basin or holding pond.

15.0 BULK STORAGE CONTAINERS:

15.1 For all bulk storage containers, the materials of construction are compatible with the material stored and are constructed according to API, UL or ASTM standards for aboveground storage.
†HMMP
†OSHA

Each aboveground storage tank shall have some form of construction or device that will relieve excessive internal pressure caused by exposure fires.
†OSHA

The distance between any two flammable combustible liquid storage tanks shall not be less than 3 feet.
†OSHA

Each aboveground storage tank shall be numbered and labeled.
†OSHA

15.2 Bulk storage containers at the fuel farm are provided with secondary containment having a capacity equal to or greater than the spill capacity of the largest container with sufficient freeboard to accommodate any possible precipitation. The containment structure feature at the fuel farm is sufficiently impervious as to retain spilled materials for at least 72 hours. Bulk storage containers located at the self-service facility are double-walled and have tertiary containment.
†HMMP
†OSHA

§112.8(c) cont.

(3) Drainage of rainwater from the diked area into a storm drain or an effluent discharge emptying into an open watercourse, lake, or pond, and bypassing the in-plant treatment system may be acceptable if;

(i) The bypass valve is normally sealed closed.

(ii) Inspection of the runoff rainwater ensures compliance with applicable water quality standards and will not cause a discharge that may be harmful, as described in 40 CFR part 110.

(iii) The bypass valve is opened, and resealed following draining under responsible supervision.

(iv) Adequate records are kept of such events.

(4) Underground metallic storage tanks represent a potential for undetected spills. A new buried installation shall be protected from corrosion by coatings, cathodic protection, or other effective methods compatible with local soil conditions. It is recommended that such buried tanks at least be subjected to regular leak testing.

(5) It is recommended that partially buried or bunkered metallic tanks be avoided, since partial burial in earth can cause rapid corrosion of

---

15.3 Polluted storm drainage from the secondary containment does not enter a storm drain. Polluted runoff is treated or transferred to containers for proper disposal. Only pollutant-free water is allowed to enter any storm drainage system.
†SWPPP
†OSHA

(I) There are no containment bypass valves.

(ii) Drain-water leaving the facility is visually inspected for oil residues that would violate applicable water quality standards and 40 CFR 110.
SeeAppendix 1 Part 2.a.
†SWPPP

(iii) There are no containment bypass valves.

(iv) Adequate records are kept of all drainage events.

15.4 There are no underground tanks to be protected.

15.5 There are no partially buried metallic tanks.

§112.8(c) cont.

(6) Aboveground tanks shall be subject to integrity testing every ten years and when material repairs, etc. are done, taking into account tank design (floating roof, for example) and using such techniques or combinations of such techniques as hydrostatic testing, radiographic testing, visual inspections, ultrasonic testing, acoustic emissions testing, or a system of nondestructive shell testing. Comparison records shall be kept and tank supports and foundations shall be included in these inspections. In addition, the outside of the tank shall frequently be observed by operating personnel for signs of deterioration, leaks, or accumulation of oil inside diked areas.

15.6 Per 40 CFR 112.8(c) (6) at left, all aboveground tanks are subjected to integrity testing every ten years or as required by subsequent EPA regulations, and following repairs. SeeAppendix 1 Part 2.c.
†OSHA

§112.8(c) cont.

(7) To control leakage through defective internal heating coils:

(i) The steam return or exhaust lines from internal heating coils, which discharge into an open water course, shall be monitored for contamination, or passed through a settling tank, skimmer, or other separation or retention system. It is recommended that these systems be designed to hold the entire contents of the affected tank, be of sufficient size to contain a spill that may occur when the system is not being monitored or observed, or have fail-safe oil leakage detectors.

(ii) It is recommended that the feasibility of installing an external heating system also be considered.

15.6 The facility has no internally heated tanks.

§112.8(c) cont.

(8) New and old tank installations shall, as far as practical, be fail-safe engineered or updated into a fail-safe engineered installation to avoid spills. One or more of the following devices shall be provided:

(i) High liquid level alarms with an audible or visual signal at a constantly manned operation or surveillance station; in smaller plants an audible air vent may suffice.

(ii) Considering size and complexity of the facility, high liquid level pump cutoff devices set to stop flow at a predetermined tank content level.

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

(iv) A fast response system for determining the liquid level of each bulk storage tank, such as digital computers, telepulse, or direct vision gauges or their equivalent.

(v) Other devices can be considered for installation as alternate technologies, as allowed under
§112.7(a)(2).

(vi) Liquid level sensing devices shall be regularly tested to ensure proper operation.

15.8 All tanks are engineered to be fail-safe or modified to include:
†HMMP
†OSHA
(i) High liquid level alarm: **Yes**

(ii) High liquid level pump cut-off is provided by means of a Scully Automatic Shut-off System.

(iii) Audible communication: **Yes**

(iv) A fast responding tank level indicator: **No**
(v) Audible vents: **No**

(vi) Liquid level sensing devices: **Yes**

§112.8(c) cont.

(9) Effluents that are discharged into navigable waters shall have disposal facilities observed frequently enough to detect possible system upsets that could cause an oil spill event.

(10) Visible oil leaks, which result in a loss of oil from tank seams, gaskets, rivets, and bolts sufficiently large to cause the accumulation of oil in diked areas, shall be promptly corrected. Accumulated oil or oil contaminated materials resulting from such discharge shall be completely removed within 72 hours from the time the spill event occurs.

(11) Mobile or portable oil storage tanks (onshore) shall be positioned or located so as to prevent oil discharges. It is recommended that a secondary means of containment, such as dikes or catchment basins, be furnished for the largest single compartment or tank. It is recommended that these facilities be located where they will not be subject to periodic flooding or washout.

16.0 No effluents are discharged from the secondary containment. Drainage accumulations are closely inspected for traces of oil or other products.

16.1 Visible leaks causing accumulations of material are promptly cleaned up.
†SWPPP
†HMMP

16.2 Spilled, contaminated materials are removed and properly disposed of within 72 hours. See Appendix 1 Part 3.f.
†SWPPP
†HMMP

16.3 There are over 4 portable tanks on site at any given time. However, these tanks are used for transportation of product, not for product storage.
†OSHA

§112.8(d)

(d) Facility transfer operations, pumping, and inplant process (onshore) (excluding production facilities).

(1) It is recommended that all piping shall be placed aboveground, where possible. New or replaced buried piping installations shall have a protective wrapping and coating and shall be cathodically protected or otherwise satisfy the corrosion protection standards for piping in 40 CFR Part 280. If a section of buried line is exposed for any reason, it shall be carefully examined for deterioration. If corrosion damage is found, additional examination and corrective action shall be taken as indicated by the magnitude of the damage. It is recommended that buried piping installations comply to the extent applicable with all of the relevant provisions in 40 CFR Part 280.

(2) When piping is not in service or in standby service for six months or more, the terminal connection at the transfer point shall be capped or blank-flanged, and marked as to origin.

17.0 TRANSFER OPERATIONS:

17.1 No underground piping exists.
†HMMP

17.2 When piping is inactive or in standby service and will not be used for 6 months or more, terminal connections at the transfer points are capped or blank flagged and marked as to origin.

§112.8(d) cont,

(3) Pipe supports shall be properly designed to minimize abrasion and corrosion and allow for expansion and contraction.

(4) All aboveground valves, piping, and appurtenances shall be subjected to monthly examinations by operating personnel, at which time the general condition of items such as flange joints, expansion joints, valve glands and bodies, catch pans, pipe supports, locking of valves, and metal surfaces shall be assessed. In addition, it is recommended that facility owners or operators conduct annual integrity and leak testing of buried piping or monitor buried piping on a monthly basis. Records of such testing or monitoring shall be maintained for five years. It is recommended that all valves, pipes, and appurtenances conform to relevant industry codes such as ASME standards.

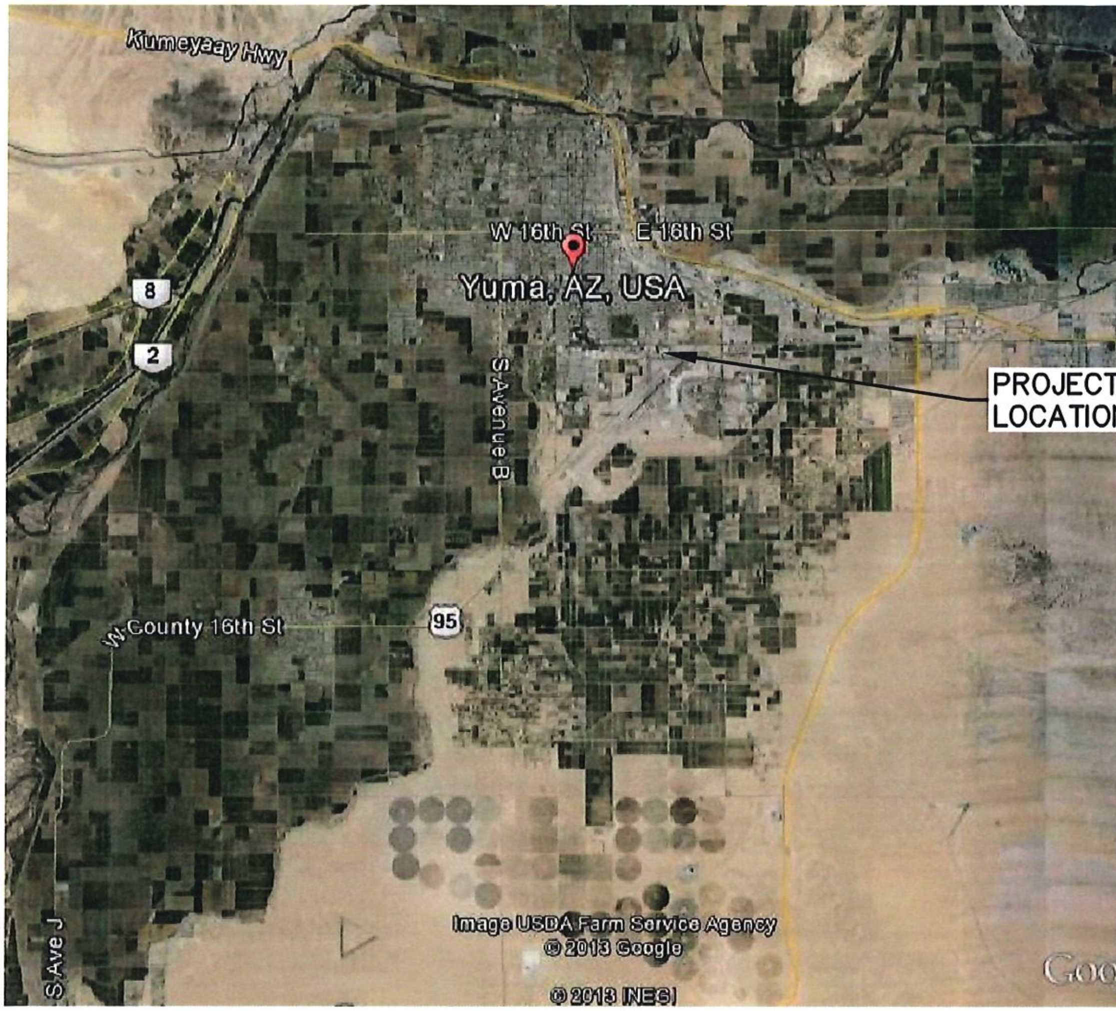
(5) Vehicular traffic granted entry into the facility shall be warned orally or by appropriate signs to be sure that the vehicle, because of its size, will not endanger aboveground piping or other oil transfer operations. It is recommended that weight restrictions be posted, as applicable, to prevent damage to underground piping.

17.3 All pipe supports are designed to minimize abrasion and corrosion.
†OSHA

17.4 All piping, valves, and associated items are periodically inspected per 112.8(d) (4). See Appendix 1 Part 2.d.
†SWPPP
†OSHA

17.5 There are no obstructions or vulnerable areas for vehicles entering the facility. Vehicle weight and clearance restrictions are not required.

Figures



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YUMA INTERNATIONAL AIRPORT

VICINITY MAP

Nicklaus Engineering Inc.
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DES. BY:	M.G.
DRAWN BY:	R.N.
SURVEYED BY:	–
JOB. No.:	013-0088
FILE No.:	–

FIGURE

1

FUEL FARM
(SEE FIGURE 4)

N

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YUMA INTERNATIONAL AIRPORT

FUEL STORAGE AREAS

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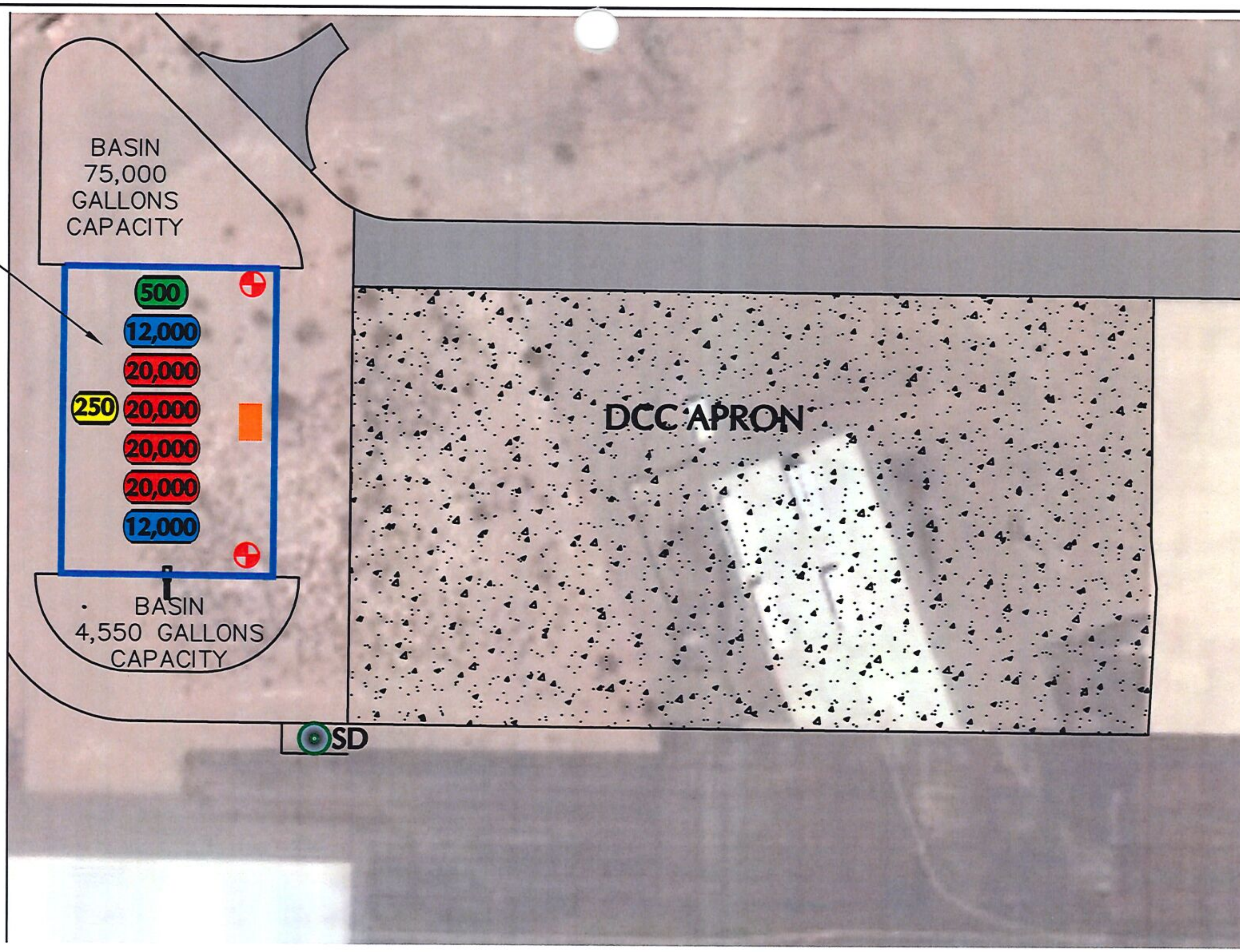
FIGURE

3



LEGEND

- SD — STORM DRAIN
- DIESEL ABOVE GROUND FUEL STORAGE TANK
- AVIATION GAS ABOVE GROUND FUEL STORAGE TANK
- UNLEADED GAS ABOVE GROUND FUEL STORAGE TANK
- JET A ABOVE GROUND FUEL STORAGE TANK
- SPILL KIT
- SECONDARY CONTAINMENT 110' X 160' X 1'
- DISPENSER

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YUMA INTERNATIONAL AIRPORT

DCC APRON/BULK FUEL AREA

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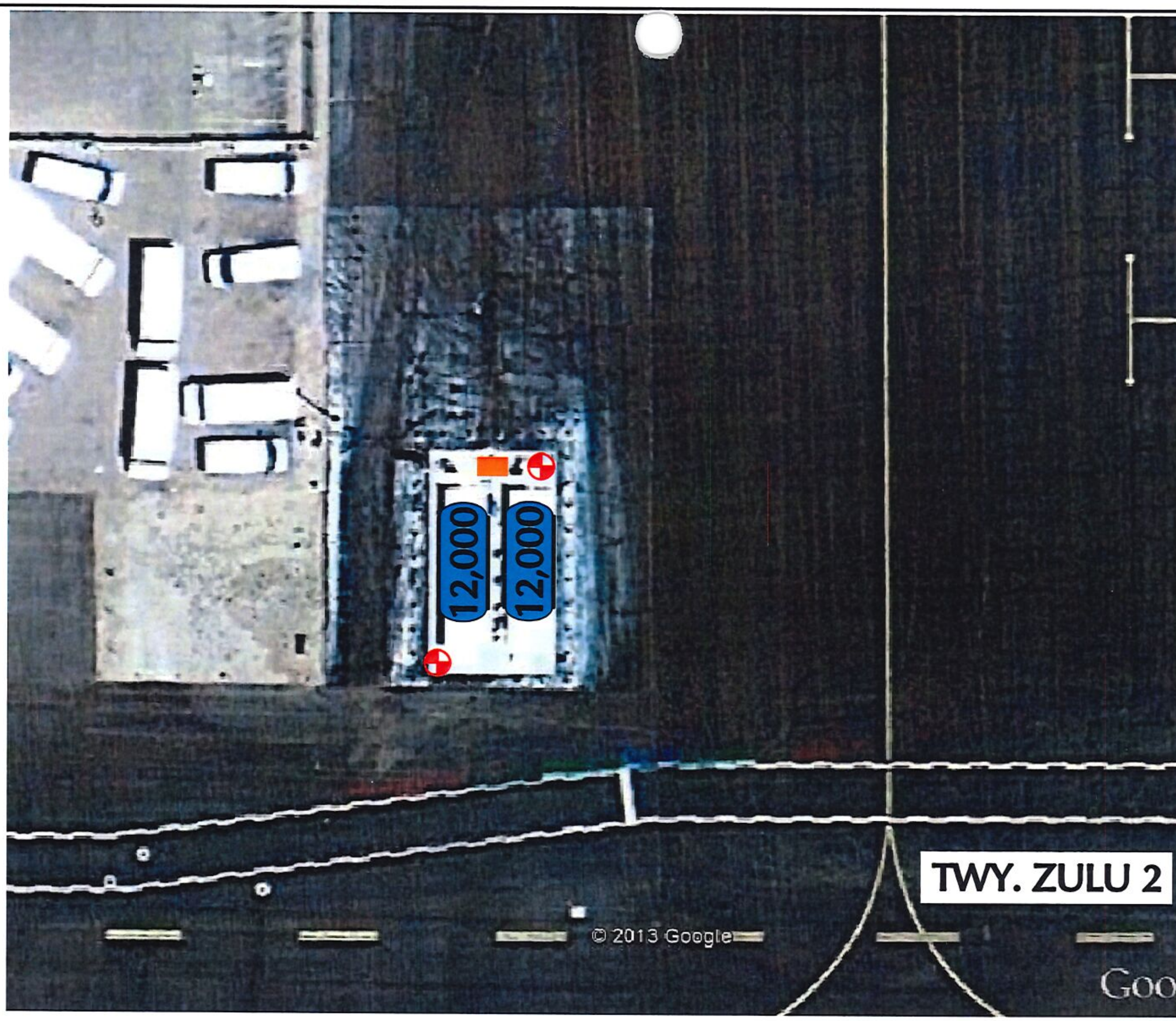
FIGURE
4



LEGEND

- AVIATION GAS ABOVE GROUND FUEL STORAGE TANK
- SPILL KIT
- DISPENSER

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YUMA INTERNATIONAL AIRPORT

SELF-SERVICE FUELING AREA

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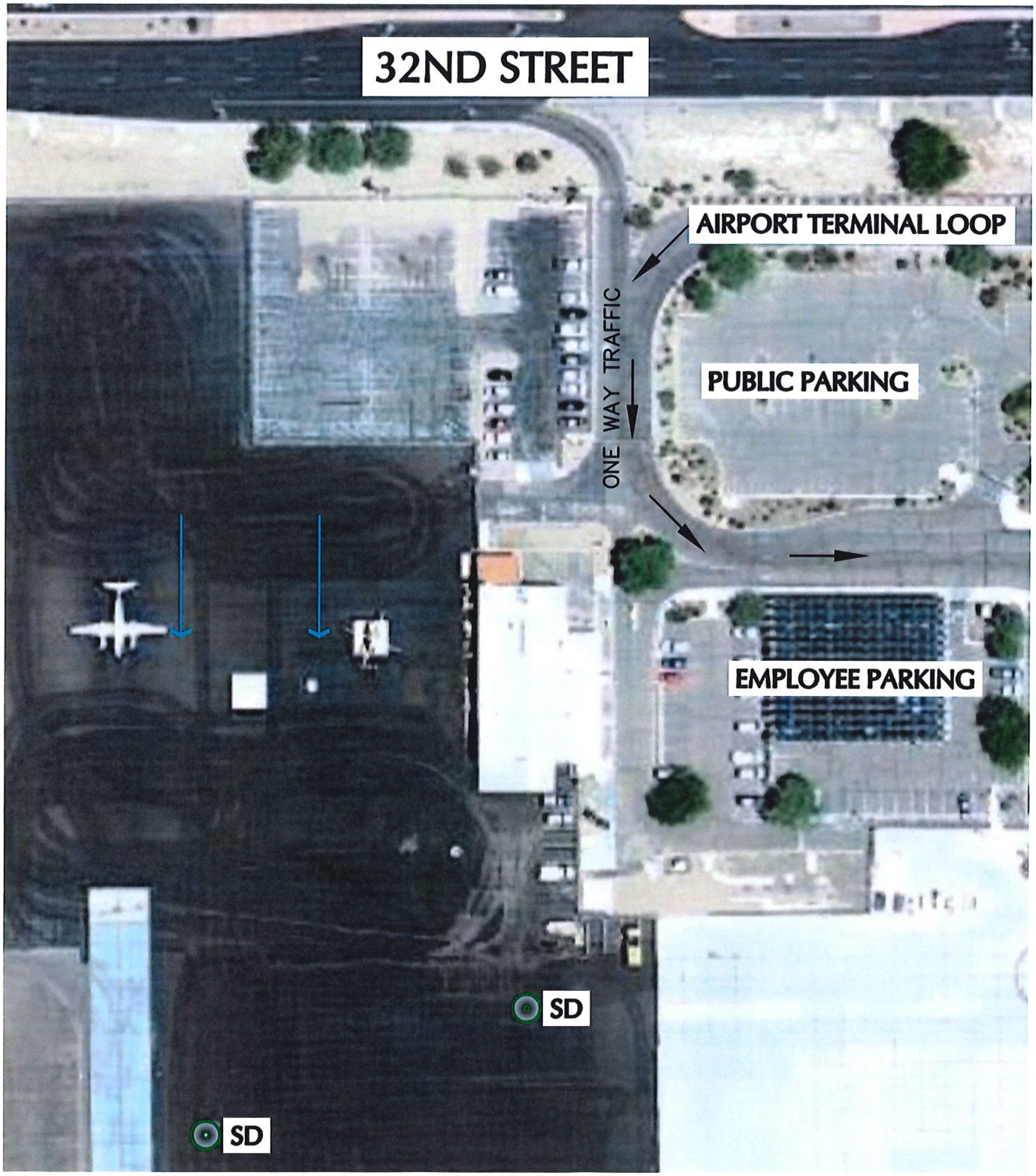
FIGURE
5



LEGEND

SD STORM DRAIN

← STORM WATER FLOW

N

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YUMA INTERNATIONAL AIRPORT

YCAA MAINTENANCE/IT FACILITY DRAINAGE PATTERN

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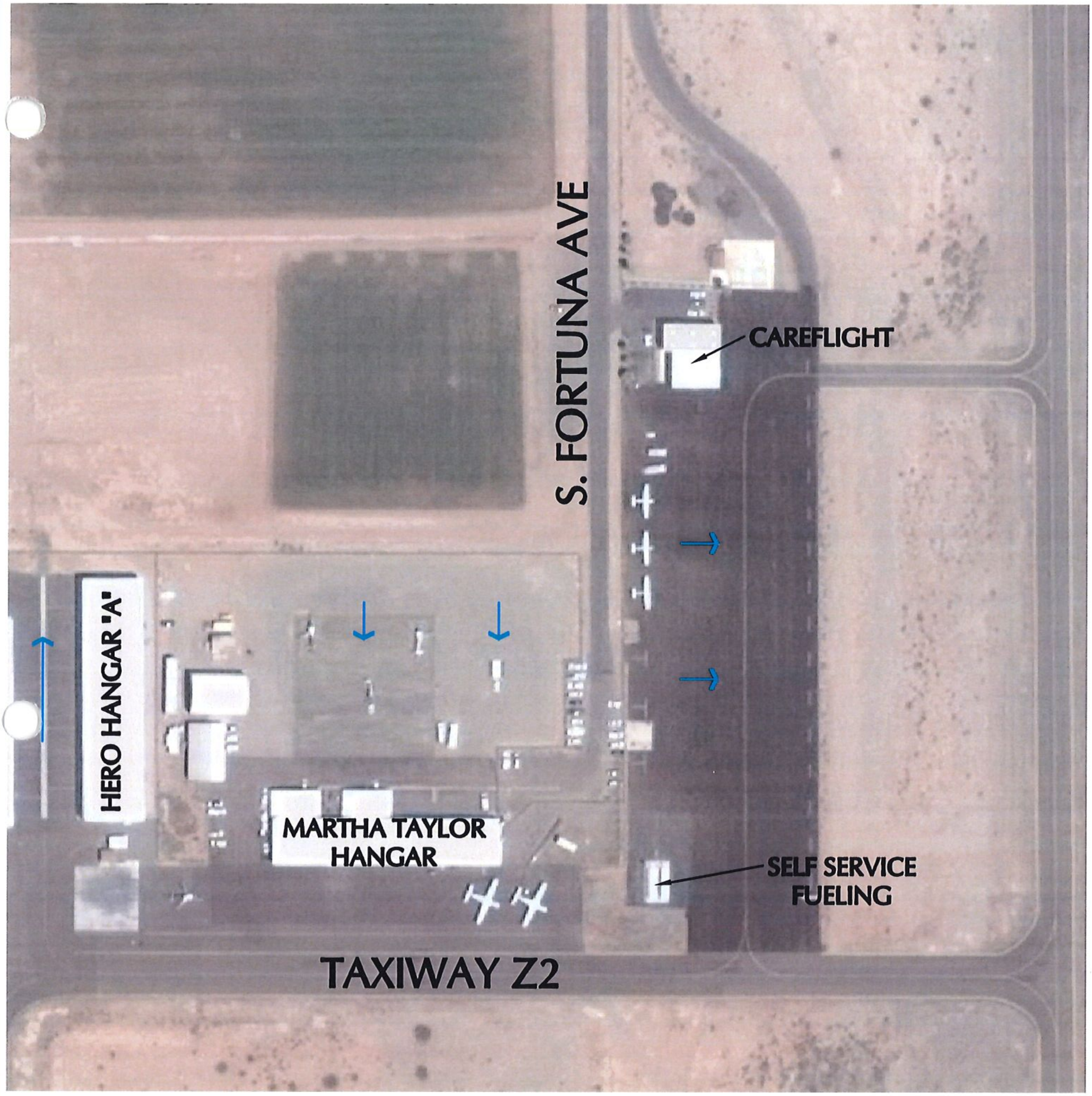
FIGURE

7



LEGEND

AGFS ABOVE GROUND FUEL STORAGE TANK

← STORM WATER FLOW

N

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YUMA INTERNATIONAL AIRPORT

CARE FLIGHT/YCAA T-HANGERS DRAINAGE PATTERN

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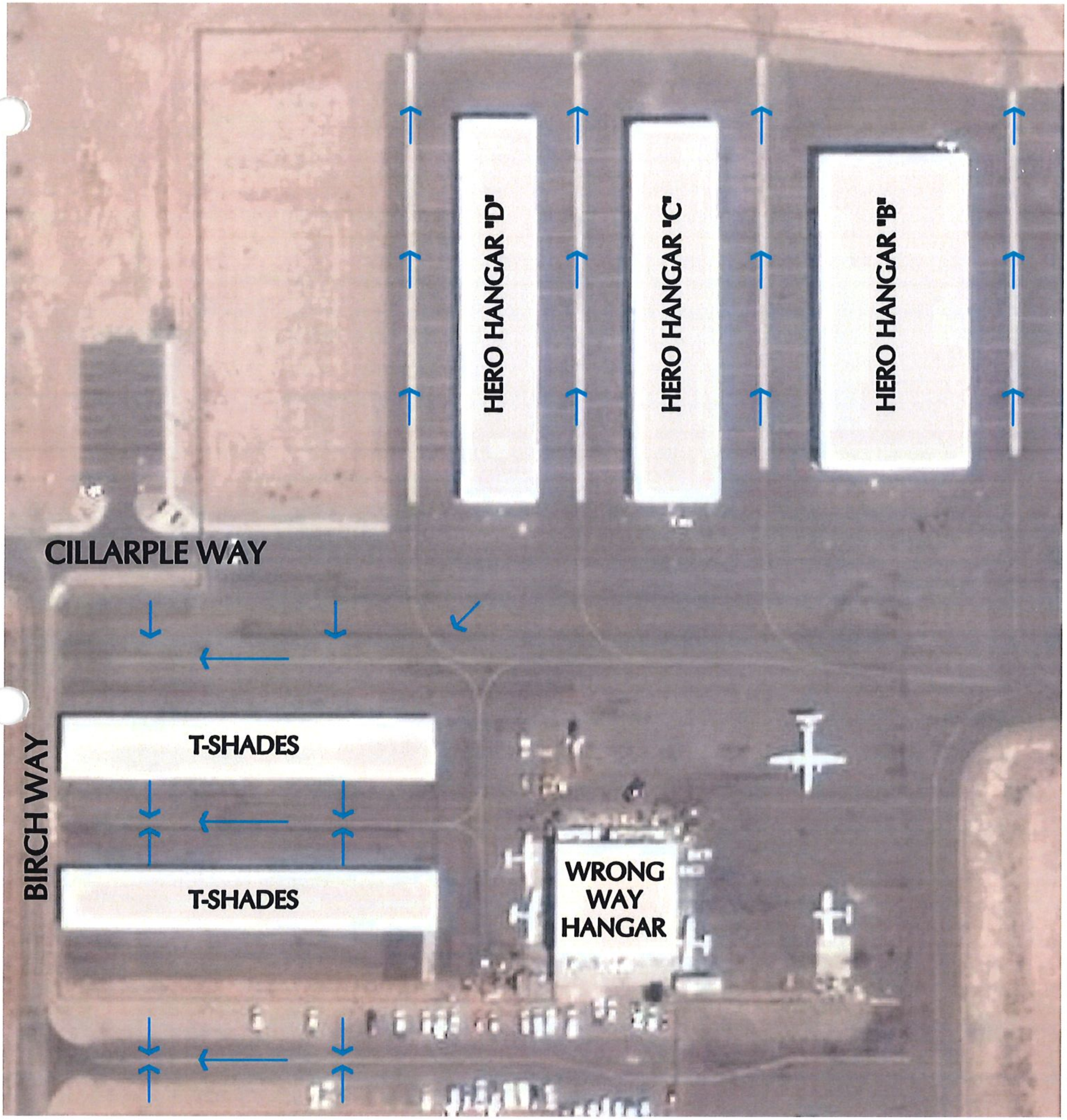
FIGURE

8



LEGEND

← STORM WATER FLOW

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NORTHEAST HANGAR AREA
DRAINAGE PATTERN

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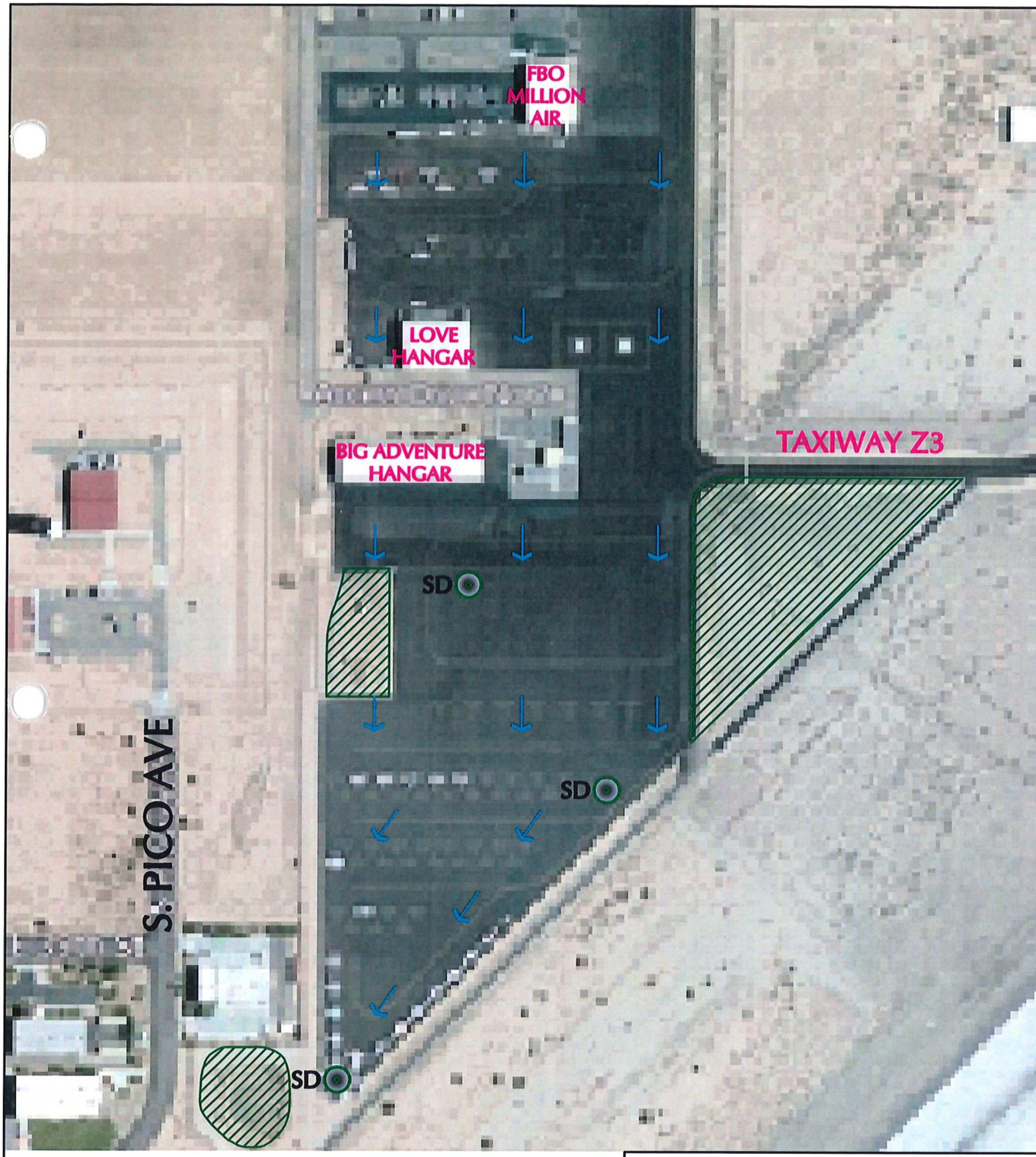
FIGURE
9



LEGEND

- SD — STORM DRAIN
- STORMWATER RETENTION
- ← STORM WATER FLOW

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YUMA INTERNATIONAL AIRPORT

MILLION-AIR FACILITY-SOUTHEAST APRONS DRAINAGE PATTERN

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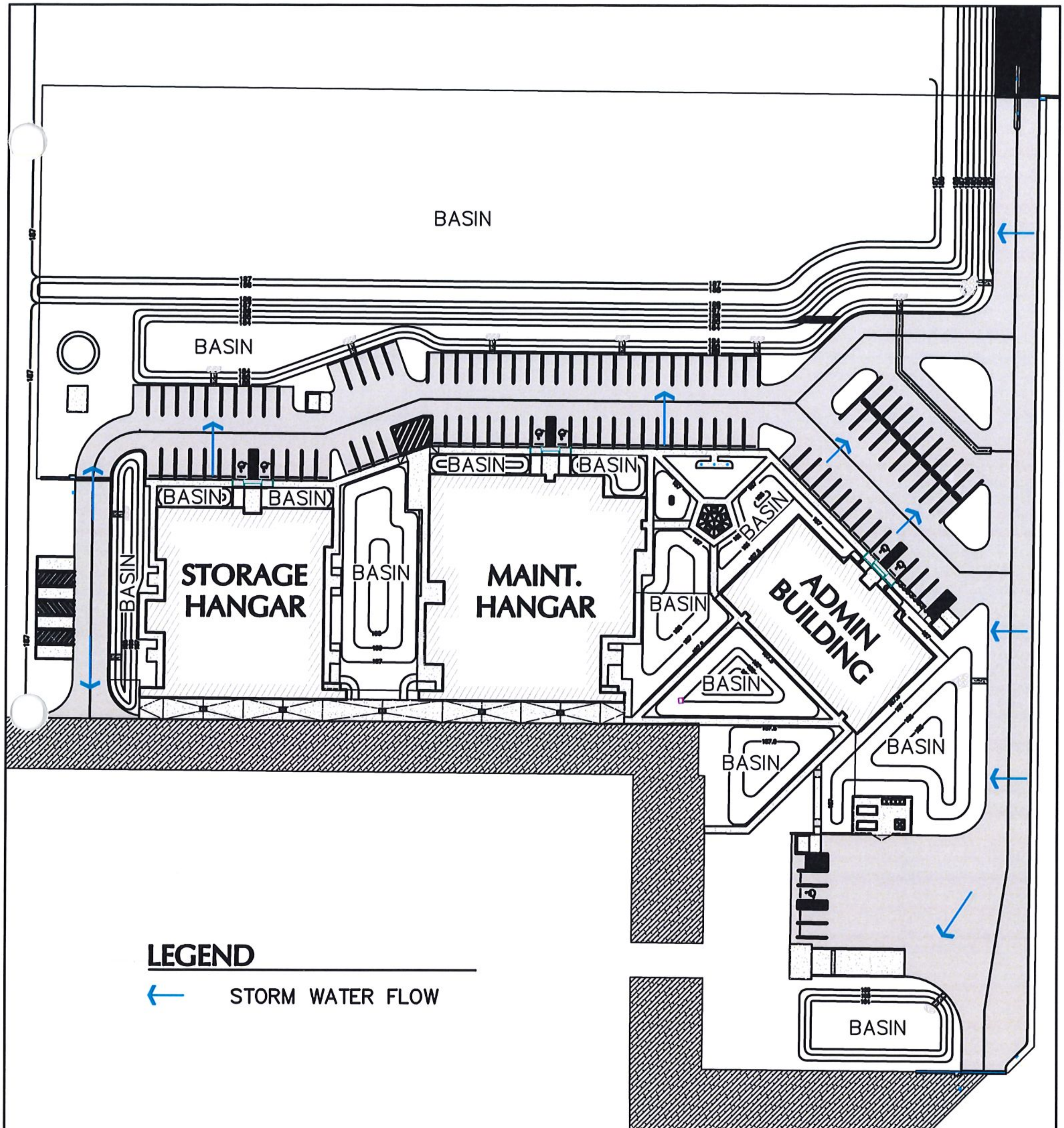
FIGURE
10



LEGEND

← STORM WATER FLOW

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CBP HANGAR COMPLEX DRAINAGE PATTERN

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FIGURE
11

LEGEND

← STORM WATER FLOW

N

FOR INFORMATION ONLY
NOT TO SCALE

YUMA INTERNATIONAL AIRPORT

FEDEX FACILITY DRAINAGE PATTERN

SCALE:	AS SHOWN
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FIGURE 12

Appendix 1

Facility Policies and Procedures

Yuma International Airport

and

Million Air

(Additional Information can be found in the FBO's Fueling Office)

APPENDIX 1

INTRODUCTION

The following system of programs and procedures compliments the facility SPCC Plan as referenced therein and is comprehensive with respect to EPA requirements. EPA is insistent that all facilities handling petroleum products, and/or other related products shall have written training, inspection, and test programs and performance procedures to satisfy the requirements of 40 CFR 112 relevant to "spill prevention, control, and countermeasures,.

Your SPCC Plan provides for adoption of such programs and procedures and the following documents fulfill the present EPA requirements.

FACILITY POLICIES AND PROCEDURES

In compliance with 40 CFR 112 and the SPCC Plan this system of written programs and procedures is adopted. These programs are designed in three parts as follows:

Part 1. Personnel Training Program

Part 2. Facility Inspection and Test Program

Part 3. Spill Prevention, Control, and Response Program

Each of these three programs contains detailed documents. All personnel must be made proficient in the practice of these programs and procedures, and copies of these documents must be maintained in a place or places lmown and available to all personnel. Programs and procedures are as follows:

Part 1. Personnel Training Program

a. Policy Statement: New personnel training prior to critical job tasks

b. Policy Statement: Periodic refresher training for all personnel

c. Product Handling and Safety Training

d. Spill Prevention and Response Training

Part 2. Facility Inspection and Test Program

a. Effluent Water Monitoring (secondary containment, oil/water separator, etc.) for: detection of product spill or leakage, possible malfunctions, and contamination prevention (define method and procedure)

b. Sensing Equipment Calibration and Test Procedure

c. Periodic Tank Integrity Testing every ten years and following repairs (define method and procedure)

d. Periodic Piping and Associated Equipment Inspection and Integrity Testing (define method and procedure)

e. Leak Discovery Inspection Procedure

f. Daily Routine, Inspection, and Events Requirements

Part 3. Spill Prevention, Control and Response Program

a. Product Handling Procedure

b. Facility Security Procedure

c. Facility Emergency Procedure (except for spills)

d. Spill Response Procedure

e. Cleanup Procedure

f. Disposal of Recovered and Contaminated Materials

PART 1. PERSONNEL TRAINING PROGRAM

The personnel training program provides for the training of all personnel including clerical and management personnel. Even though some elements of the program may not be directly applicable to some personnel, it is appropriate that all personnel be familiar with the operation of the facility and how to respond to an emergency. There are four levels of training:

Level 1A. Task specific intensive proficiency training for all new personnel handling product. This training shall be in depth and shall qualify individuals to perform effectively in their specific tasks.

Level 1B. Task specific intensive periodic refresher training for all personnel handling product. This training shall introduce new policy, procedures, and equipment, and insure that a high level of proficiency is maintained.

Level2A. General familiarization training for all new non-product handling personnel. This training shall be conducted from the same procedures as the product handling training but need not be as intensive or detailed except in the area of emergency response training where all personnel shall be thoroughly prepared to deal with any emergency.

Level 2B. General periodic refresher training for all non-product handling personnel. This training shall also be conducted from the same procedures as the product handling training but need not be as intensive or detailed except in the area of emergency response training where all personnel shall continue to be thoroughly prepared to deal with any emergency.

a. Policy statement: New personnel training prior to product handling task assignments

It is the policy of this facility that all new personnel shall be trained. Product handling personnel shall be trained to Level 1A requirements. Non-product handling personnel shall be trained to Level 2A requirements.

b. Policy statement: Periodic refresher training for all personnel

It is the policy of this facility to maintain a high level of proficiency among all personnel. Product handling personnel shall receive periodic refresher training to Level lB requirements. Non-product handling personnel shall receive periodic refresher training to Level2B requirements.

c. Training Element A: Product handling and safety training: The basis and materials for all instruction in this element of the training program and for all levels of training shall include:

(1) All of the procedures contained in PART 2 (Facility Inspection and Test Program), and PART 3a. "Product Handling Procedure".

(2) Training in the use of emergency equipment available.

(3) Training in personnel safety, first aid, and CPR. This training shall be performed by a qualified instructor, and is an important part of this element of the training program.

d. Training Element B: Spill prevention and response (SPCC) training: The basis and materials for all instruction in this element of the training program and for all levels of training shall include:

(1) The SPCC Plan

(2) All of the procedures in PART 3 (Spill Prevention, Control, and Response Program)

(3) All record keeping logs-The use and keeping of the "Inspection and Test Logs", the "Daily Routine, Inspections, and Events Log", and the "Facility Emergency Log". These record keeping logs track and are legal evidence of adherence to facility procedures contained in the "Facility Inspection and Test Program" and the "Spill Prevention, Control, and Response Program".

A diagram of the training program is presented at this point to simply illustrate what has been presented above:

FACILITY
TRAINING PROGRAM

TRAINING ELEMENT A PRODUCT HANDLING AND SAFETY	TRAINING ELEMENT B SPILL PREVENTION AND RESPONSE

LEVEL 1A
Task specific intensive proficiency training
for all new personnel handling product

LEVEL 2A
General familiarization training
for all new non-product handling personnel

LEVEL1B
Task specific intensive periodic refresher training
for all personnel handling product

LEVEL2B
General periodic refresher training for
all non-product handling personnel

PART 2. FACILITY INSPECTION AND TEST PROGRAM

CONTENTS:

a. Effluent Water Monitoring Procedure (secondary containment, oil/water separator, etc.) for detection of product spill or leakage, possible malfunctions, and contamination (define method and procedure)

b. Sensing Equipment Service, Calibration and Test Procedure

c. Periodic Tank Integrity Testing every ten years and following repairs (define method and procedure)

d. Periodic Piping and Associated Equipment Inspection and Integrity Testing (define method and procedure)

e. Leak Discovery Inspection Procedure

f. Daily Routine, Inspection, and Events Requirements

a. EFFLUENT WATER MONITORING PROCEDURE

This document pertains to the monitoring of all effluents from secondary containment features, oil/water separators, etc. for detection of product spill or leakage, possible malfunctions, and contamination. Method and procedure are defined herein. This procedure is required whenever drainage is released.

PROCEDURE:

A. Whenever it is found necessary to drain and clean a secondary spill containment due to accumulation of water, leaves or other types of trash, the activity shall be authorized by a supervisor or management person.

B. A qualified supervisor or management person shall examine the water closely for spill residues. If visible residues (an oil slick, slug residues, etc.) are present the water shall be processed through an oil/water separator or other type of system, or the entire volume shall be disposed of by a qualified disposal agency.

C. If a separation system is utilized the treated water may be evaporated or committed to a storm drain system. The water so disposed of shall be visually inspected by a qualified person for spill residues before entering the storm drain.

D. Following drainage, the secondary spill containment drain shall be closed and locked.

E. Following drainage of any secondary spill containment, the event, time, and specific data pertinent to the event shall be recorded in the "Daily Routine, Inspections, and Event Log" and in the "Containment Drainage and Effluent Water Monitoring Log".

b. SENSING EQUIPMENT SERVICE CALIBRATION AND TEST PROCEDURE

GENERAL INFORMATION:

This document pertains to the calibration and periodic testing of all tank level sensing devices and/or other sensing equipment, and must be performed in accordance with manufacturer's recommendations. The manufacturer's recommendations must be physically filled as "Sensing Equipment, Manufacturer's Recommendations". If the sensing devices are simple audible vents, testing need only be performed when the audible tone is impaired. Where sensing equipment consists of sophisticated electronic equipment, testing and calibration must be performed by a qualified person or by a manufacturer's agent or recommended repair facility.

PROCEDURE:

A. An index card file shall be established for sophisticated sensing equipment. This file shall be indexed by month.

B. A card shall be prepared for each piece of sensing equipment, and each card shall be filed under the next month when the particular piece of equipment is due for testing, service, or calibration according to manufacturer's recommendations.

C. The card file shall be the responsibility of a supervisor who shall, each month, pull the applicable cards, and assign the service or testing responsibilities.

D. When service, testing and/or calibration for a given piece of equipment is complete the card shall be refiled under the month when attention is again due.

E. The equipment file card shall be a simple lined 3x5 or 5x7 card filled out to show:

1. Name of equipment
2. Manufacturer
3. Manufacturer's inspection and calibration recommendations

F. A line on the card shall be dated and signed-off each time service, testing and/or calibration is performed on a piece of equipment. This card shall serve as the "Sensing Equipment, Service, Calibration, and Test" and the file box shall be so labeled.

c. PERIODIC TANK INTEGRITY TESTING

GENERAL INFORMATION:

This document pertains to periodic tank integrity testing. This testing is required every ten years or as directed by the EPA Regional Administrator, and following any tank repairs. This testing must be accomplished in accordance with proven procedures and by qualified personnel. Method, procedures and the testing personnel or agency shall be defined in the "Inspection and Test Log, Periodic Tank Integrity Testing".

d. PERIODIC PIPING AND ASSOCIATED EQUIPMENT INSPECTION AND INTEGRITY TESTING

GENERAL INFORMATION:

This document pertains to periodic piping and associated equipment inspection and integrity testing. This document is required annually or more often if corrosion becomes noticeable. This document defines method and procedure for this requirement.

PROCEDURE:

A. Aboveground Piping

1. Aboveground piping shall be inspected daily as part of "Leak Discovery Inspection" in association with the "Daily Routine and Inspection Requirements".

2. The person conducting the "Daily Routine and Inspection Requirements" shall be alert to detect and record any observable points of corrosion, or abrasion on aboveground piping.

3. The person conducting these test excavations shall record the findings in the "Inspection and Test Log, Periodic Piping and Associated Equipment Inspection and Integrity Testing". Any serious findings shall be reported directly to management.

e. LEAK DISCOVERY INSPECTION PROCEDURE

GENERAL INFORMATION:

This document pertains to leak discovery inspection. This procedure is required twice daily. Once in the morning when the facility is placed in operation and once when the facility is shut down. This procedure shall be performed by trained facility personnel, and shall dovetail with the various activities of the "Daily Routine and Inspection Requirements".

PROCEDURE:

A. This procedure requires a thorough inspection of the facility. The person performing this inspection shall be alert to any leakage or seepage from any containers or piping.

B. Look for points of corrosion or abrasion, or other potential leaks from aboveground piping.

C. Look for corrosion or other potential leaks at points where underground piping emerges from the ground.

D. Record findings in the "Daily Routine, Inspections, and Events Log" and report all leaks and/or potential leaks directly to management.

f. DAILY ROUTINE AND INSPECTION REQUIREMENTS

GENERAL INFORMATION:

Daily routine implies those actions required to make the facility ready for operation or to close the facility for the night, a weekend, a holiday, or for any other purpose. This does not include shut-down for an extended period of time.

A. Certain SPCC required inspection procedures shall be performed in association with the daily routine requirements of the facility. These SPCC requirements are as follows:

   1. Leak Discovery Inspection (See "LEAK DISCOVERY INSPECTION PROCEDURE")

   2. Facility Security Inspection (See "FACILITY SECURITY INSPECTION PROCEDURE")

B. Certain events related to the SPCC Plan are to be recorded in the "Daily Routine, Inspections, and Events Log". These events are as follows:

   1. Secondary containment drainage events

   2. Facility emergencies

   3. Facility spill incidents

   4. Spill cleanup

   5. Disposition of spill residues

   6. Spill reports

PART 3. SPILL PREVENTION, CONTROL, AND RESPONSE PROGRAM

CONTENTS:

a. Product Handling Procedure

b. Facility Security Procedure

c. Emergency Procedure

d. Spill Response Procedure

e. Cleanup Procedure

f. Disposition of Contaminated Materials and Spill Residues

a. PRODUCT HANDLING PROCEDURE

GENERAL INFORMATION:

This document pertains to product handling. This procedure is to be observed whenever product is being stored and transferred. All personnel should be generally familiar with the requirements of this procedure. Personnel directly involved with product handling must be thoroughly familiar with and act in strict compliance with this procedure.

HAZARDS:

A. Volatility and flammability

B. Potential for environmental harm

This facility handles petroleum products which are highly subject to spills, especially during transfer operations. The training program must make all personnel aware of the hazards involved and the importance of keeping a facility free of spill or drip residues.

PRODUCT HANDLING PROCEDURE:

A. Storage

1. Product must be stored in containers that are chemically and physically compatible.

2. Environmental conditions must also be compatible with the products being stored.

B. Precautions

1. In the course of getting the job done, paramount consideration are:

   a. Personnel safety

   b. Environmental safety

2. Petroleum products are regarded as hazardous materials potentially harmful to people and the environment.

3. Spills can present a hazard to life and property.

C. Product Handling Procedure

1. Product transfer operations are the most vulnerable to spills.

2. Product transfer must take place under secure conditions.

   a. Vehicle Precautions

      1) The vehicle's motor must be shut off and the brake set.

      2) No person shall remain inside the cab of the vehicle during transfer operations.

      3) All provisions for insuring that the vehicle remains stationary during transfer operations shall be implemented.

   b. Preparations for Transfer

      1) All connections between the transfer station and the vehicle shall be securely established and tightened prior to opening any valves.

      2) Smoking is prohibited in the transfer area during operations.

c. Transfer Operations

1) As transfer begins the operator shall be especially alert for any unexpected leaks or discharge of product.

2) During transfer operations the operator shall remain alert for any unexpected events, and avoid overfill.

d. Concluding Transfer

1) When transfer is complete, close and lock all appropriate valves.

2) When connections are broken, insure that drips enter the spill catchment.

3) Any product dripped or spilled outside the catchment shall be cleaned up immediately.

e. Prior to departure of any tank, car, or truck

1) All valves are closed.

2) All valves are examined for leakage.

3) All valves are tightened, adjusted or replaced to prevent leakage in transit.

D. Whenever transfer from one stationary or portable container to another is attempted, similar precautions and procedures shall be observed to prevent spills and insure cleanup when spills occur.

E. Appropriate product record keeping shall be executed.

b. FACILITY SECURITY PROCEDURE

GENERAL INFORMATION:

This document pertains to facility security. This procedure is to be observed whenever facility operations are shut down.

HAZARDS:

A. Pilferage

B. Vandalism

C. Liability for injury of minors

This facility handles petroleum products which are regarded as hazardous materials. Effective security is important from the standpoint of insurance cost, loss by theft, and legal liability. The training program must make all personnel aware of the risks involved in lax security.

FACILITY SECURITY PROCEDURE:

A. The security inspection shall be a part of the closing "Daily Routine and Inspection Requirements", and shall be coordinated with the various activities of closing the facility.

B. Procedure

1. Assure that all security lights are operative.
2. Assure that all gates are closed and locked.
3. Assure that all alarm and surveillance systems are activated.

4. Assure that there are no unauthorized persons remaining on the facility prem1ses.

5. Record the conclusion of this procedure in the "Daily Routine, Inspections, and Events Log".

c. FACILITY EMERGENCY PROCEDURE

GENERAL INFORMATION:

This document pertains to facility emergency response, except for spill response, which is dealt with in the "Spill Response Procedure".

HAZARDS:

A. Fire

B. Explosive potential

C. Toxic potential

D. Confined spaced asphyxiation

E. Moving vehicles

This facility handles petroleum products which are regarded as hazardous materials. Since these materials are flammable, explosive, and considered toxic from the standpoint of both internal and external exposure, the training program must make all personnel aware of the risks involved in lax precautions against accidents, facility damage, and public liability.

FACILITY EMERGENCY PROCEDURE:

A. All Personnel shall exercise cautious awareness with respect to potential safety hazards, and possibility of property damage.

B. All potentially hazardous conditions observed shall be reported immediately to management.

C. Emergencies

1. Immediate risk to life and property.

   a. When an urgent emergency arises, the immediate consideration shall be remediation to halt progress of the condition, and/or rescue the person affected.

   b. Call for help, sound alarm, etc.

   c. Continue remediation until the emergency is abated.

   d. Report the event and submit a description.

      (1) The nature of the event

      (2) Action taken

      (3) Witnesses

      (4) Resultant effects

2. Condition exists, but is not an immediate threat to life or property.

   a. Report the event to management.

   b. Render assistance as may be appropriate.

3. All emergency events shall be entered in the "Daily Routine, Inspections, and Events Log" and the "Facility Emergency Log".

d. SPILL RESPONSE PROCEDURE

SPILL RESPONSE PROCEDURES:

A. Whenever a spill occurs:

1. The first action shall be, if possible, to stop the spill at the closest possible point of intervention (see Fuel Response Guide).

2. The second action is to contain the flow and insure that it does not escape the facility (see Fuel Response Guide).

3. The third order of action is cleanup. If the spill can be handled by facility personnel, the task should begin immediately and conclude within 72 hours at most. If this is not possible with facility personnel, a Cleanup Contractor shall be brought into action (Cleanup Contractors are listed in the "SPCC Plan").

4. If the spill extends beyond the facility premises, a reportable spill has occurred and as soon as actions "a" and "b" are completed, reports are in order and required. A written report shall be prepared in accordance with SPCC Plan requirements below. Reports are required at the following agencies:

   Response Center:
   National EPA: 1-800-424-8802
   Region 9 EPA: 1-415-744-2000

   Arizona Emergency Response Commission
   Phone: 1-602-262-6334

ATA

Specification 103: Standards for Jet Fuel Quality Control

REVISION
2009.1

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Highlights

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Preface

This document is intended to provide guidance to the user covering the safe storage and distribution of quality jet fuel at airports as currently practiced in the commercial aviation industry. Due to the wide diversity of airport fueling operations, this document is not intended to be all-inclusive. Technical information, along with competent judgment, should be considered and followed at all times when overseeing aviation fueling operations. In addition, operators should comply with all applicable rules, regulations, restrictions, ordinances and other laws of federal, state, local and airport entities relating to fuel storage and distribution.

Chapter 1. Introduction

Member airlines of the Air Transport Association of America (ATA) recognize the importance of using quality jet fuel for ensuring the highest degree of flight safety. To achieve this goal, ATA Specification 103, entitled "Standard for Jet Fuel Quality Control at Airports," was developed by member airlines to cover fuel distribution facilities and fuel quality control procedures at airports servicing airline operations.

This standard identifies commonly recognized industry inspection procedures and safety checks of jet fuel storage and distribution facilities at airports that will help minimize introduction of contaminated or unacceptable jet fuel from being delivered to airline aircraft. It is important to note that additional facilities and testing procedures may be required at individual airports based on fuel system complexity and local operating conditions. Alternative procedures and use of non-standard facilities and equipment may also be recognized and determined acceptable for achieving the above safety requirements based on extenuating circumstances.

ATA Specification 103 does not, in itself, impose any performance obligations on any airline, fuel supplier, fuel storage facility, fuel transporter, or any other entity. Its provisions become effective only to the extent they are adopted by an airline and incorporated into its operating manual.

Chapter 2. General

2-1. General

This section covers jet fuel handling issues and procedures that are general in nature and are applicable to all facets of jet fuel handling at airports.

1. Scope

This document contains standards covering airport jet fuel storage facilities, hydrant distribution systems and aircraft refueling equipment to help ensure the safe and dependable flow of quality jet fuel to airline aircraft.

2. Records

All jet fuel quality assurance, airport facility and aircraft refueling equipment maintenance and training records are to be available for inspection and review during normal business hours. All records must be signed, or be adequately identified, by the person performing tasks or the person accepting responsibility that tasks were performed in accordance to this standard.

3. Notification of New or Modified Equipment

Affected airlines are to be notified well in advance whenever new, additional, replacement or modified airport fuel storage, distribution facilities or aircraft refueling equipment is placed into operation. At the airline's option, all airport fueling facilities, into-plane refueling equipment and operator's procedures may be inspected and approved for use prior to servicing airline aircraft.

4. Variance/Waiver

A variance or waiver to the policies and procedures in this document that will not compromise fuel quality, safety or security may be granted. A request for variance or waiver must be made in writing to each affected airline and shall include:

(a) Requirement from which the variance or waiver is being requested.

(b) Explanation as to why compliance with airline requirement is not possible or practical.

(c) Alternate means of compliance to be considered for approval of request.

(d) Period of time for which variance or waiver is to be effective.

5. Fuel Contamination

If a fuel supply is suspected of contamination, aircraft refueling must be discontinued from that source. Notify all affected aircraft operators if it is anticipated that such contamination might impact operations. Fueling shall not be resumed from the system until the source of fuel contamination is found and removed.

Fuel, suspected of possible contamination, shall be held in quarantine until selected fuel quality, purity or specification tests have determined that it is acceptable for aircraft use. Selected product tests and expected acceptance criteria are to be determined and mutually agreed upon by fueling vendor and all affected customers prior to approving fuel for future use. To the extent the fuel is no longer acceptable for aircraft use, it should be managed and/or disposed consistent with applicable federal, state and local requirements.

6. Prevention of Misfuelings

Measures are required to ensure that the correct grade of fuel is delivered when using an overwing (trigger) nozzle. Delivering the wrong grade of fuel into an aircraft is termed a misfueling. It is essential that tight control procedures are in place at all times to avoid misfueling.

The risk of delivering the wrong grade of fuel exists because many General Aviation (GA) aircraft and some airline type aircraft are over wing fueled and can therefore potentially be fueled with the wrong grade of fuel.

The serious consequences of misfueling include:

- Total engine failure due to knock damage if jet fuel is delivered into a spark ignition piston engine powered aircraft that requires avgas
- Ignition failure if avgas is delivered into a compression ignition (diesel) piston engine powered aircraft that requires jet fuel
- Vapor lock and engine failure due to fuel starvation if avgas is delivered into a turbine engine powered aircraft that requires jet fuel. Many turbine engines are capable of operating on avgas, but such operation is strictly controlled as described in the Pilot Operating Handbook

The facility and equipment operator shall establish written procedures for overwing fueling that meet as a minimum those described in 3-16.

7. Defueled Product

Product defueled from an aircraft for purposes other than contamination should be returned to the airline from which it was removed. Defueled product may not be delivered to another airline's aircraft without their approval. Defueling aircraft directly into joint use fueling systems is not authorized unless all system users have unanimously approved a joint use procedure.

8. Inoperative System

If for any reason a fueling system becomes inoperative so as to impair normal refueling operations, all affected airlines must be notified immediately.

9. Training/Qualification

Facility and fueling equipment operators are responsible for ensuring that all personnel under their direction and control are properly trained and qualified for performing tasks assigned to them as specified in this document. Training and qualification records are to be available for review by the airline or its designated representative.

10. Deficiency Reporting

The facility and equipment operator shall establish written procedures for the reporting of any observed deficiencies or safety hazards by its employees to their supervisors.

11. Operations & Maintenance Manuals

All airport fueling vendors having aviation fuel storage facilities and/or aircraft refueling equipment administrative and operational responsibilities should have operations and maintenance (O & M) manuals. These documents are intended to be used by fuel handling vendors and equipment operators to help ensure the safe and dependable flow of quality fuel to aircraft. Guidance on the development of a site-specific O & M manual can be found in the ATA "Airport Fuel Facility Operations and Maintenance Guidance Manual".

2-2. Jet Fuel Specification & Purity Standards

1. Specification Requirements

Jet fuel shall conform to [ASTM D1655], Latest Revision, "Standard Specification for Aviation Turbine Fuels", Jet A or Jet A-1 Kerosene Type.

In all phases of fuel handling, appearance of jet fuel shall be clear and bright (visually free of undissolved water, sediment and suspended matter). The odor of the fuel shall not be nauseating or irritating.

The color of jet fuel generally ranges from water white to light straw or amber. Other colors may be an indication the fuel has been contaminated by other products or unauthorized additives. In such cases, it shall be the facility operator's responsibility to discontinue fuel transfer and/or quarantine product until fuel has been determined acceptable for aircraft use.

2. Upstream Jet Fuel Purity and Specification Parameters

The following jet fuel purity and specification parameters should apply **UPSTREAM** of airport receiving filtration.

Table 2-2.1. ***Jet Fuel Purity and Specification Parameters***

Test Property	Maximum Allowable	Test Method
APPEARANCE	CLEAR & BRIGHT	VISUAL Ref. [Section 3-1]
DENSITY (API GRAVITY)	37° TO 51° API (775-840 Kg/m³) Corrected to 60° F (15° C)	[ASTM D1298] Metric measurement shall be used in event of dispute (775-840 Kg/m³).

NOTE:	It is important that the facility operator assigned the task and responsibility to receive jet fuel into airport storage tanks sample inbound deliveries upstream of receiving filtration for potential contamination or excessive water/dirt levels. Inbound jet fuel purity shall permit reasonable receiving filtration system performance and service life. Upstream appearance ratings less than Clear & Bright may indicate excessive contamination levels which could result in shortened receiving filtration life and may increase operational costs. Unacceptable operational and economic issues based on upstream jet fuel purity levels are to be resolved between applicable shipper, facility operator and/or customer.

3. Downstream Jet Fuel Purity and Specification Parameters

The following jet fuel purity and specification limits shall apply **DOWNSTREAM** of the receiving and dispensing filtration as:

1. Received into airport storage tanks and dispensed from airport storage facilities which will issue product directly to hydrant systems and to aircraft refueler loading racks

2. Dispensed into aircraft

   See rejection criteria in reference NOTES or in [Section 2-3] for applicable transportation methods:

Table 2-2.2. ***Downstream Jet Fuel Purity and Specification Limits***

Test Property	Maximum Allowable	Test Method	See Notes
FREE WATER	15 PPM	Ref. [Section 3-3]	
PARTICULATE COLOR*	A, B or G 2 - DRY or A, B or G 3 – WET	[ASTM D2276]	1
PARTICLE ASSESSMENT*	A	VISUAL	2

* Sample sizes are either 1 Gallon or 5 Liter

NOTE 1: A color rating of 3-DRY or greater may indicate a particulate contaminant problem. If a color rating of 3-DRY or greater is observed, proceed as follows:

Perform a subsequent particulate test consisting of two membranes in plastic holder to compare color difference between top and bottom membranes. If top and bottom membranes have a color rating difference of 2 or less, fuel is to be considered clean and acceptable. If difference is 3 or greater, conduct a gravimetric (weight) analysis. Fuel is unacceptable if gravimetric test ([ASTM D2276]) results exceed 2.0 mg/G or 0.5 mg/L based on test sample size taken.

NOTE 2: An assessment rating of "B" or greater (reference Gammon Technical Products SGTP-3940 "Color and Particle Assessment Rating Guide" or Shell Oil Company "Filter Membrane Evaluation Guide") indicates that solid particles are visible on the test membrane or in the sample container. This observation may be an indication that there is generation of contamination in system or failure of filtration upstream of sample test connection. Particle Assessment is an aid in communicating visual observations of size and distribution of solids as they appear on test membranes or the bottom of sample containers.

2-3. Fuel Receipts Into Airport Storage

1. General

This section covers quality control and safety requirements for receiving jet fuel into airport storage. These requirements can vary depending on method of delivery and facility layout. Receipts of jet fuel at airports are normally made by dedicated or multi-product pipelines, and highway transport trucks. There are some airports receiving product directly from railroad tank cars or marine vessels. It is important that facility operator recognizes that each of these transportation methods has different delivery requirements and that they be addressed in local receiving procedures to ensure fuel quality and safety.

2. Pipeline Deliveries

Prior to delivery, it is required that the airport facility operator receives a certification document from jet fuel supplier or shipping agent certifying product to be delivered to airport meets [ASTM D1655] specification requirements as required in [Section 2-2] with at least the following select property values listed as measured by specified ASTM test methods in accordance with [ASTM D1655]. In the event such certification is not received, then the facility operator must immediately conduct [ASTM D1655] testing per table 2-3.1 below, prior to releasing the tank for aircraft use.

(a) Visual Appearance in White Bucket Ref. [Section 3-1]

(b) Gravity, Corrected to 60° F (15° C)

(c) Distillation

10% Recovered

50% Recovered

90% Recovered

Final Boiling Point

Residue

Loss

(d) Flash Point

(e) Freezing Point

(f) Water Separation (MSEP)

(g) Copper Strip Corrosion

(h) Existent Gum

Shipping document shall also include all delivery information, i.e.: destination; batch number; fuel grade or type; quantity to be shipped.

NOTE:	Fuel receipts should not be rejected based on incomplete certification documentation. If the certification documentation cannot be delivered prior to delivery, affected airlines must be notified.

Facility operator shall prepare receiving tank(s) and facility items prior to delivery of product, i.e.: gauging, sumping, correct inlet and outlet valve positioning, etc. Before the transfer is made, the facility operator must ensure that the capacity available in the receiving tank(s) is greater than the volume of product to be transferred to the tank(s).

Fuel receiving process must be monitored constantly by airport facility personnel, and such personnel must be able to communicate with the pipeline company during fuel receipt.

CAUTION:	IT IS NOT ACCEPTABLE TO RECEIVE AND DISPENSE FUEL FROM THE SAME TANK SIMULTANEOUSLY

At the beginning, mid-point and near the end of fuel receipts, the facility operator shall conduct the following tests on fuel samples taken downstream of receiving filtration and record the results. This series of tests is to be repeated for each shipper tank or batch. The mid-point test may be omitted on shipments of less than four hours in duration.

(a) Visual Appearance in White Bucket

(b) API Gravity, Corrected to 60° F (15° C)

(c) Color Membrane (Particulate weight to be performed only if necessary per Note 1 of 2-2.3)

(d) Free Water Detection Test

(e) Flash Point (Multi-Product Pipeline Deliveries Only)

NOTE 1:	Operators should be aware that pipeline volumes between shipping tanks and sampling points may be from a previous batch. Fuel tests should be timed to coincide with actual arrival of product from shipping tank.
NOTE 2:	If any of the above receiving tests fail reject limits, product in receiving tank(s) must be quarantined and not released for aircraft use pending further investigation and corrective actions as required.
NOTE 3:	Use extreme care and vigilance when performing the Visual Appearance test. Slight traces of water, solids or color may indicate the presence of product mixes or other contaminants that could cause jet fuel to be off-specification and unacceptable for aircraft use. Any unusual results must be investigated.

If there is a change of more than 1° API or 5° F (3° C) in Flash Point from the source as shown on the shipping document, discontinue fuel transfer or receipt and initiate an investigation to determine if there is product contamination or a specification problem.

Fuel is unacceptable and must be rejected if API Gravity, corrected to 60° F (15° C), is not between 37° and 51° API (775-840 Kg/m^3) and/or Flash Point is less than 100° F (38° C). While receiving fuel into airport storage, the facility operator is to periodically monitor pressure differential of inlet filtration, tank fill levels and check system for product leaks.

Upon completion of fuel receipt into airport storage, the facility operator shall secure receiving tank(s) and facility items, i.e.: gauging, record results of sumping tanks and filters, set inlet and outlet valves for correct positioning, etc. Tank and filter sump results are to be recorded and retained for 12 months.

NOTE:	After fuel receipt into storage, it is desirable to have one hour settling per vertical foot of product depth.

There is a significant increase in exposure to fuel contamination problems when airports receive jet fuel by "multi-product" pipelines as compared to "dedicated" pipelines. Additional care must be taken to prevent the deterioration of fuel quality. Pipelines are considered "dedicated" only if they do not have inlet connections to any other product from the last point the fuel was certified as jet fuel meeting [ASTM D1655] specification.

Upon completion of jet fuel receipt into airport storage via a multi-product pipeline, the facility operator must conduct the following [ASTM D 1655] property tests for comparison to the shipping documents and for meeting specification requirements prior to releasing the tank for aircraft use. Full [ASTM D 1655] specification testing is required if any of the following test properties exceeds the maximum allowable difference from the shipping documents. Fuel not meeting [ASTM D1655] specification is to be quarantined and affected carriers notified.

Table 2-3.1. ***ASTM D1655 Property Test***

PROPERTY	SPEC LIMIT	MAX DIFFERENCE
(a) Visual Appearance in White Bucket	Clear & Bright	
(b) Gravity, Corrected to 60° F (15° C)	37° to 51° API (775-840 Kg/m³)	1° API
(c) Distillation		
10% Recovered	400° F (205° C)	14° F (8° C)
50% Recovered	Report	14° F (8° C)
90% Recovered	Report	14° F (8° C)
Final Boiling Point	572° F (300° C)	14° F (8° C)
Residue	1.5	Spec Limit
Loss	1.5	Spec Limit
(d) Flash Point	100° F (38° C)	5° F (3° C)
(e) Freezing Point		
Jet A	-40° F (-40° C)	5° F (3° C)
Jet A-1	-53° F (-47° C)	5° F (3° C)
(f) Water Separation (MSEP)	85 min 70 min with electrical conductivity improver (additive)	Spec Limit at Point of Receipt
(g) Copper Corrosion Strip	No. 1 max	Spec Limit
(h) Existent Gum	7 max	Spec Limit

3. Transport Truck Deliveries

Airport facility operator shall receive a certification document from jet fuel supplier or shipping agent certifying product to be delivered to airport meets [ASTM D1655] specification requirements required in [Section 2-2] with at least the following select property values listed as measured by specified ASTM test methods (Ref. [Table 2-3.1] "ASTM D1655 Property Test" for Min./Max. Spec. Limits). A single certification document can represent multiple transport truck deliveries:

(a) Visual Appearance in White Bucket — Ref. [Section 3-1]

(b) Gravity, Corrected to 60° F (15° C)

(c) Distillation

- 10% Recovered
- 50% Recovered
- 90% Recovered
- Final Boiling Point
- Residue
- Loss

(d) Flash Point

(e) Freezing Point

(f) Water Separation (MSEP)

(g) Copper Strip Corrosion

(h) Existent Gum

Accompanying documentation shall also include all delivery information, i.e.: destination; batch number; fuel grade or type; quantity to be shipped.

Facility operator shall prepare receiving tank(s) and facility items prior to delivery of product, i.e., gauging, sumping, correct inlet and outlet valve positioning, etc.

At time of delivery and prior to connecting truck discharge hoses, transport truck driver and facility operator are to review and agree that fuel delivery documentation and procedures are in place to ensure satisfactory fuel receipt.

Truck unloading hoses and fittings are to be inspected for deficiencies, pending failures and cleanliness prior to connection to airport facility receiving connections.

Prior to testing and unloading of the transport truck, allow truck to sit for a minimum of 10 minutes with the tank internal valves open.

Facility operator shall conduct the following tests on fuel samples received from each highway transport truck tank compartment and record the results (vehicles with a common manifold will be considered as a single compartment for sample taking purposes; a composite sample of up to 3 compartments is acceptable for the API Gravity check only):

(a) Visual Appearance in White Bucket

(b) API Gravity, corrected to 60° F (15° C)

NOTE:	Use extreme care and vigilance when performing the Visual Appearance test. Slight traces of water, solids or color may indicate the presence of product mixes or other contaminants that could cause jet fuel to be off-specification and unacceptable for aircraft use. Any unusual results must be investigated.

If visible contamination is observed in White Bucket, more than one sumping may be required to clear it. If contamination remains after five (5) one gallon individual samples from one tank truck compartment, the load must be rejected. If a load is rejected, affected aircraft operators are to be notified if it is anticipated that such rejections may impact aircraft operations. A representative sample of the rejected product, including supporting documentation, shall be retained in a clean container for a minimum of 30 days for future reference. Documentation shall include copy of Bill of Lading, truck/trailer number and reason for rejection.

Fuel is unacceptable and must be rejected if API Gravity, corrected to 60° F (15° C), is not between 37° and 51° API (775-840 Kg/m3). Discontinue fuel transfer or receipt and initiate an immediate investigation to determine if there is fuel contamination or a specification problem if there is a change of more than 1° API from source as shown on shipping document.

While receiving fuel into airport storage, facility operator is to periodically monitor pressure differential of inlet filtration and check system for product leaks. Fuel receiving process must be monitored constantly by airport facility personnel.

CAUTION:	IT IS NOT ACCEPTABLE TO RECEIVE AND DISPENSE FUEL FROM THE SAME TANK SIMULTANEOUSLY.

Upon completion of receipt by transport truck, facility operator shall;

- Close inlet valve(s) on receipt tank(s)
- Sump each receiving filter vessel. (Sumping of inbound filter vessels, after each transport truck receipt, will assist facility operator in identifying a particular delivery of product, which may have contained unacceptable levels of water prior to off-loading, but which were undetectable during initial visual receiving checks.)

- Sump tank(s) in which product was received. (A minimum of 1 hour between the end of transport truck receiving and storage tank sumping is recommended to allow any water and/or solids stirred up during tank receiving to settle to the tank sump for removal.)
- Record the results of each sump

NOTE 1:	It is recognized that many facilities receive fuel via simultaneous off-loading of transport trucks, making sumping, of inbound filter vessels, after each individual delivery, unfeasible. Therefore, multiple deliveries into a product receiving tank, during a single day, may be considered a single receipt, provided the tank does not change from receipt to delivery status during that period.
NOTE 2:	It is desirable to have one hour settling per vertical foot of product depth.

Retain fuel receiving records for 12 months.

4. Railroad Tank Car Deliveries

Airport facility operator should follow the "TRANSPORT TRUCK DELIVERIES" section for guidance procedures.

5. Marine Vessel Deliveries

Airport facility operator should follow the "PIPELINE DELIVERIES" section for guidance procedures.

2-4. Fuel Storage Facility Requirements

1. General

Fuel storage facilities which will supply fuel directly into aircraft, refuelers, or hydrant systems must meet the following requirements, unless otherwise indicated. Vendors with facilities that do not meet the requirements of this section shall submit a waiver request to the affected customers under subsection 2-1.4 of this standard. Examples of Waiver/Variance may be found in [Section 5-1] and [Section 5-2] .

CAUTION:	ZINC GALVANIZED MATERIALS MUST NOT BE USED IN JET FUEL SERVICE. NO COPPER ALLOYS, CADMIUM PLATING OR PLASTIC MATERIALS ARE PERMITTED FOR MAIN FUEL PIPING. THE USE OF COPPER OR COPPER ALLOY MATERIALS FOR OTHER COMPONENTS MUST BE MINIMIZED.

2. Storage Tanks

Storage tanks shall include the following equipment;

(a) Floating suction with means of verifying proper operation

(b) Inlet diffuser

(c) Gauge hatch with slotted tube

(d) Access manway (Two are preferred)

(e) Automatic high liquid level device(s) to prevent tank overfill

(f) Suitable secondary containment as applicable

(g) A placard, adjacent to tank sump drain(s), indicating the volume of tank drain piping

Above ground vertical tanks shall also adhere to the following, in addition to 2-4.2. (a) through (g), above, unless otherwise indicated;

(a) Fixed roof

(b) Light color epoxy coated floor and sides up to the top of the first wall panel. Complete internal coating is recommended

(c) Cone down bottom to positive center sump with drain. Floor plates shall be arranged to ensure water run-off.

- Slope of 1 in 20 is recommended

(d) Non-Metallic tanks are not acceptable

Above ground horizontal tanks shall also adhere to the following, in addition to 2-4.2. (a) thru (g), above, unless otherwise indicated;

(a) Carbon steel tanks must have complete internal light colored epoxy coating

(b) Sloped bottom to positive sump with drain

- Slope of 1 in 20 is recommended

(c) Non-Metallic tanks are not acceptable

(d) Access manways should be equipped with an internal ladder

Underground tanks shall also adhere to the following, in addition to 2-4.2. (a) through (g), above, unless otherwise indicated;

(a) Carbon steel tanks must have complete internal light colored epoxy coating.

(b) Access manways should be equipped with an internal ladder.

(c) Manways and other tank appurtenances must be extended above ground.

(d) Sloped bottom to positive sump with permanent pump

- Slope of 1 in 20 is recommended

3. Filters

Filter/Separators are required for receiving fuel into and dispensing fuel from storage which will supply fuel directly into aircraft, refuelers, or hydrant systems. Existing full-flow monitors at fuel facilities must be replaced within 1-year from the date of ATA 103 revision 2009.1. If only one Filter/Separator is available, it must be installed to perform both fuel receiving and dispensing functions.

NOTE 1:	Additional filtration, such as micronic filters, water coalescers (haypacks) or clay treaters, may be required due to local conditions. If micronic filters are used, they must meet the qualification requirements of [API/IP 1590].
NOTE 2:	If additional filtration/treaters are in use, a written maintenance/test program must be established that ensures their proper operation.
NOTE 3:	An API monogram is not necessary to meet the requirements of this document.

All new vessels and element combinations shall meet [API/IP 1581] latest edition. Existing vessels and element conversions shall meet, by test or similarity, the latest edition of [API/IP 1581] / [API/IP 1582]. For existing vessels, conversion to the latest edition shall occur within 12 months of qualified elements becoming available for a specific vessel. If qualified by similarity, a similarity data sheet must be maintained locally and a data plate reflecting such qualification must be attached to the filter vessel.

Filter/Separators must be equipped with an automatic water defense system that will stop fuel flow or alert operating personnel when actuated by a high water level.

- Float or electronic probe systems must include provisions for an operational test
- If a probe is used, and the fuel contains anti-icing additive, the control must be able to detect a water/additive mix

All filter vessels must be equipped with:

(a) Provisions for the elimination of air

(b) Direct reading differential pressure gauges with an accuracy of +/- 2 PSI

(c) Manual sump drains - Valves with handles spring loaded to the closed position are recommended

(d) Upstream and downstream sampling (Millipore) connections, including probes and dust caps or plugs.

(e) Pressure relief valves

(f) Placard indicating month and year of last filter change

Use of automatic water drain valves is not recommended. Existing automatic drain valves should be removed.

4. Physically Segregated Systems

Physically segregated systems are required where more than one grade of fuel is stored to prevent accidental mixing of products.

Isolation valves and/or blind flanges are not acceptable methods of product grade separation.

Connections for receiving and dispensing different grades of fuel must be physically incompatible.

5. Emergency Fuel Shutoff System

An emergency fuel shutoff system is required

Emergency shutoff valves and switches must be clearly marked in accordance with the requirements of [NFPA 407], latest edition, and the area around them must be kept free of obstructions.

6. Fire Extinguishers With Inspection Tags

Fire extinguishers with inspection tags must be positioned in accordance with applicable safety requirements.

7. Fuel Loading and Unloading Hoses

Loading hoses and couplings must meet the following standard when purchased by the end user.

- [API 1529], Grade 2, Type C, latest edition

Hoses shall be installed within 2 years of the date of the hose's manufacture, and have a maximum service life of 10 years from the date of manufacture.

If reusable couplings are installed on loading/unloading hoses the couplings and hose shall meet the requirements of [API 1529] and operator shall abide by the testing requirements of [API/IP 1540], latest edition.

Operators choosing to reattach couplings must undergo training from the hose or coupling manufacturer.

CAUTION:	PRIOR TO THE PERIODIC PRESSURE TESTING OF A FUEL LOADING HOSE, THE MAXIMUM ALLOWABLE PRESSURE RATING OF THE ATTACHED VALVES, METERS, OR SWIVELS SHOULD BE CHECKED TO PREVENT POSSIBLE INJURY TO THE OPERATOR OR DAMAGE TO THE EQUIPMENT. IT MAY BE NECESSARY TO REMOVE THE FUELING HOSE PRIOR TO TESTING. FOLLOWING THE SAFETY PRECAUTIONS OUTLINED IN [API/IP 1540] IS HIGHLY RECOMMENDED.

Fuel "unloading" hoses shall be compatible with jet fuel and suitable for local conditions, but are not required to meet API 1529 requirements. Dust covers or other protective devices must be used to keep out dirt and water.

8. "No Smoking", "Flammable", and Product Identification Signs

"NO SMOKING", "FLAMMABLE", and product identification signs must be prominently displayed.

9. Facility Identification and Color Coding

Fuel storage facilities must be properly identified and color coded in accordance with the standards of [API/IP 1542], latest edition.

10. Metal Underground Tanks and Piping

Metal underground tanks and piping must be cathodically protected.

11. Relaxation Chambers

Relaxation chambers, where installed, shall be equipped with the following:

(a) Provision for the elimination of air

(b) Protection by pressure relief valve

(c) Manual sump drain - Valves with handles spring loaded to the closed position are recommended

12. Bulk Air Eliminator

Bulk air eliminators, where installed, shall be equipped with the following:

(a) Protection by pressure relief valve

(b) Manual sump drain

13. Refueling Truck Loading Station

A handheld deadman control device is required for all truck loading operations, per [NFPA 407]. Bottom loading control systems do not negate the need to bond with a separate bonding cable.

Loading station must be equipped with pressure control provisions if necessary to prevent damage to the refueling truck during high level shutdown of truck mounted valves.

All stations must be equipped with static bonding capability.

Bottom-loading nozzles and couplers must be equipped with 60 mesh or finer screens. These screens are not required if an upstream strainer is installed and no hoses are used between the strainer and the nozzle/coupler, i.e., "swing arm" applications.

Fire extinguishers with inspection tags must be positioned in accordance with applicable safety requirements.

Hoses and hose couplings must meet the following standard when purchased by the end user:

- [API 1529], Grade 2, Type C, latest edition

Hoses shall be installed within 2 years of the date of the hose's manufacture, and have a maximum service life of 10 years from the date of manufacture.

Dust covers or other protective devices must be used to prevent debris from accumulating on mating surfaces of fuel loading hose couplers.

14. Product Reclamation Storage Tank

A Reclamation storage tank, where installed, shall include the following equipment:

- Gauge hatch with slotted tube
- Means for access or visual inspection
- Means to prevent overfill
- Suitable secondary containment as applicable
- A placard, adjacent to tank sump drain(s), indicating the volume of tank drain piping

Tank must be identified as "Jet A Recovery Tank Intended for Aviation Use".

Tank must have sloped bottom to a positive sump with a drain or permanent pump. Sump must be located in the lowest point of the tank. Drain or pump pick-up must be at the lowest point of the sump.

- Slope of 1 in 20 is recommended

All tank appurtenances, access entrances, vents, inspection ports, etc., must be extended above ground, and designed to prevent the ingress of contaminants.

Reclaimed product, except from sump separators, must be filtered prior to returning to off-line storage tank. Filtration must meet the requirements of [Heading 2-4.3] Filters.

2-5. Fuel Facility Checks

1. General

The following checks must be performed on all fuel storage facilities servicing aircraft and at the frequencies specified. Additional tasks or more frequent checks may be required based on local conditions.

Daily checks and inspections should be made at the beginning of each work day including weekends and holidays.

Maintenance requirements specified in this section are generally limited to those items pertaining to fuel quality and safety. Additional programs should be established to ensure mechanical reliability of all facility equipment . Any facility equipment not in daily use must have all daily, monthly, quarterly and annual checks current and recorded before the equipment is returned to service.

2. Facility Check Records

Records, paper or electronic, must be completed by the person performing the tasks, or by the person accepting responsibility for performance of the tasks.

Use of Forms 103.01, A through D, is recommended, but not required. No variance authority is needed to use other forms if they meet or exceed the task and frequency requirements specified in this section. Additional copies of Forms 103.01, A through D, may be reproduced locally (See [Section 6-2]).

The legible signature, initials or employee identification number of the person performing the tasks or the person accepting responsibility for the performance of the tasks is required.

(a) If initials or employee identification numbers are used, a record of each person's name and initials/identification number must be maintained and available for review

(b) Supporting documentation, completed by the person actually performing the tasks and containing their signature, initials or identification number must be available if another person has accepted responsibility for accomplishment of the tasks

Records must indicate when fueling equipment is not used. Retain records in local files as follows:

Daily, Monthly, Quarterly, Semi-Annual, and Annual check records – 12 months

Filter Change records – 36 months

Tank Inspection and Cleaning records - Indefinitely

Upon completion of the checks, record results using the following condition codes:

S = Indicates Satisfactory

C = Indicates Comment. Comment required in remarks section. Corrective action must be documented and dated.

N/U = Indicates unit Not Used

N/A = Indicates Task Not Applicable

Sump samples are to be rated according to [Section 3-1].

3. Daily Checks

3.1. General Condition of Tank Yard

(a) Check the general condition of the yard area for appearance and cleanliness. Report and correct any condition that needs immediate attention, i.e., plugged drainage, weeds, poor housekeeping, etc

(b) Evidence of any recent fuel spill, including, but not limited to, staining, strong fuel odors or the presence of fuel in catchment basins, overflow tanks, oil/water separators, or sumps, must be investigated immediately

3.2. Security, Fire & Safety Deficiencies

(a) Check tank yard and fuel handling facilities for any security, fire or safety deficiencies or unusual conditions requiring immediate corrective actions

(b) Fuel Leaks

- Check tanks, piping, valves, hoses, meters, filters, and other fuel handling equipment for fuel leaks.
- Any visible leaks must be immediately reported and repaired

(c) Ensure that all gates and access doors are kept locked when area is unattended

(d) All broken fences and gates are to be repaired or replaced immediately

(e) In unsecured areas, all tank openings, valves, sump drains, fill caps, monitoring ports, loading/unloading hoses, master electrical switches and other accessible fittings must be kept closed and locked at all times when not in use

3.3. Storage Tank and Product Reclamation Tank Sumps

(a) Drain fuel, at maximum practical flow, into suitable container (Ref. [Section 3-1]). Sample quantity shall be of sufficient size to ensure displacement of sampling line volume

(b) Perform fuel appearance test of sample

(c) Record findings of first sample taken, after displacement of sampling line volume, according to [Section 3-1]

(d) Continue draining until clean, dry fuel is obtained

(e) Remove tank from service if unable to obtain clean, dry fuel. Report unusual contamination to aircraft operators if it is anticipated that such contamination may impact aircraft operations

3.4. Filter Sumps

(a) Drain fuel, at maximum practical flow, into suitable container (Ref. [Section 3-1]). Vessel must be pressurized, but fuel does not have to be flowing through vessel when sample is taken

(b) Perform fuel appearance test of sample

(c) Record findings of first sample taken, after displacement of sampling line volume, according to [Section 3-1]

(d) Remove filter vessel from service if unable to obtain clean, dry fuel. Report unusual contamination to aircraft operators if it is anticipated that such contamination may impact aircraft operations

3.5. Filter Differential Pressure

Under normal flow conditions, check and record differential pressure across all working filters (Ref. [Section 3-9]).

3.6. Hoses, Swivels, Nozzles & Couplers

(a) Check condition of all fuel hoses, swivels, nozzles and couplers for wear, damage and leakage

(b) Ensure dust covers or other protective devices are available, installed and in good repair

1) Check hoses for abrasions, cuts, soft spots, carcass separation, worn covers, blisters, exposed reinforcement, cracks, twists and sharp bends that give the appearance of pending failure

2) Check tightness of all swivel attachment screws and hose couplings

3) Check condition of nose and poppet seals on nozzles/couplers for cuts, nicks and wear

(c) Any item that is defective or is leaking must be replaced or repaired immediately

3.7. Static Reels, Cables & Clamps

(a) Check condition of static reels, cables and clamps

(b) Any defect that affects continuity must be corrected prior to use

NOTE:	Continuity must be checked after maintenance to static bonding systems.

3.8. Fire Extinguishers

(a) Verify that fire extinguishers:

1) Are located in their designated place

2) Have unobstructed access and visibility

3) Are tagged to indicate monthly inspections are current

4) Have unbroken safety seals or tamper indicators

5) Have no obvious physical damage, corrosion or leakage

6) When so equipped, the pressure gauge reading or indicator is in the operable range or position

(b) If any fire extinguisher is missing or does not meet the criteria listed above, it shall be repaired, or removed from service and replaced with a serviceable extinguisher of the same or greater capacity

4. Monthly Checks

4.1. Filtration (Millipore) & Free Water Test

Perform a membrane color/particle (Millipore) simultaneously , under flow, upstream and downstream of each filter/separator and monitor vessel.

Perform a free water test downstream of each filter/separator and monitor vessel.

(Ref. [Section 3-2] and [Section 3-3]). Record results and attach test membrane to Form 103.08 or equal.

4.2. Corrected Filter Differential Pressure

Under normal flow conditions, check and record observed differential pressure, flow rate, and corrected differential pressure across each working filter.

4.3. Bonding Cable/System Continuity

Perform electrical continuity check on bonding cables and clamps (Ref. [Section 3-10]).

- Resistance must be 25 ohms or less
- Defective equipment must be repaired prior to fuel transfer

On loading racks equipped with combined bonding and overfill protection systems, operator must check resistance between appropriate system connection point and facility pipe work.

4.4. Nozzle Screens

(a) Remove nozzles and examine screens for particles or damage

- If particles are found, investigate sources of contamination which could be from inner hose lining, pipe rust, sand, low point sediment, equipment failure, seals, gaskets, etc.

(b) Screens are to be cleaned if contaminated or replaced if damaged

4.5. Signs, Labels & Placards

Verify that fueling equipment is clearly marked with the proper type of fuel being dispensed, flammable, no smoking, emergency shutoff and other appropriate information and instructions, signs or labels as required.

4.6. Floating Suctions

Verify satisfactory operation of all tank floating suctions.

4.7. Fire Extinguishers

(a) Check each fire extinguisher for inspection tag and seal.

(b) Maintain extinguishers in accordance with the applicable [NFPA 10] guidelines

(c) Upon completion of the inspection, update inspection tag

5. Quarterly Checks

5.1. Emergency Shutoff System

(a) Operationally check the emergency shutoff system

1) Coordinate shutoff test with all persons, agents, airlines, fuel suppliers, and other groups having interest in the operation of the system

2) Each control device must be tested at least once a year

(b) Immediately report any operational discrepancies

5.2. Water Defense System - External Checks

Check operation of water defense systems in accordance with quarterly requirements of [Section 3-12].

5.3. Tank High Level Controls

(a) Check satisfactory operation of tank high level sensing devices and automatic fuel flow shutoff valves where installed

(b) Inoperative controls should be adjusted or repaired immediately or have alternate operating procedures in effect that will provide positive spill prevention while tank is in service

5.4. Product Reclamation Tank Interior Inspection

On a quarterly basis product reclamation tanks must be visually inspected for cleanliness or pass a microbiological growth test, as recommended, by the affected airlines. Clean as required (Ref. [Section 3-11]).

6. Semi-Annual Check

6.1. Hose Pressure Checks

(a) Loading/unloading hoses fitted with reusable couplings, and being operated under system pressure, must undergo the six-month pressure testing at 225 PSI, per the requirements found in [API/IP 1540]

NOTE:	Pressure testing to 300 PSI is required whenever a new hose attachment or coupling is fitted
CAUTION:	RECOUPLING AND PRESSURE TESTING OF HOSES AND FITTINGS SHOULD ONLY BE CARRIED OUT BY PERSONS ADEQUATELY TRAINED IN THEIR PROPER FITTINGS AND TESTING, USING PROCEDURES THAT HAVE BEEN APPROVED BY THE OEM.

7. Annual Checks

7.1. Storage Tank Interiors

(a) Check fuel storage tank interiors for cleanliness and condition of coating

(b) Clean as required (Ref. [Section 3-11])

7.2. Filter Differential Pressure Gauges

Verify proper operation of filter differential pressure gauge(s) in accordance with gauge manufacturers' procedures. Accuracy must be within +/- 2 PSI. Repair or replace as required. (Ref. [Section 3-9])

7.3. Filter Elements

(a) Change filter elements per [Section 3-13]

(b) Replace filter elements per criteria found in [Section 3-14]

(c) All filter vessels must be opened annually to visually check condition of interior for cleanliness, and integrity of elements

7.4. Filter/Separator Heaters

Where installed, check filter/separator sump and drain line heaters for proper operation per manufacturer specifications before freezing weather.

7.5. Tank Vents

(a) Where installed, check cleanliness of tank vent screens

- Clean, repair or replace vent screens as required

(b) Tanks that have pressure/vacuum vents, check satisfactory operation and condition of poppets and inlet screens

- Under freezing conditions, additional checks may be required to assure free movement of poppets

7.6. Cathodic Protection

Where installed, confirm satisfactory operation of cathodic protection systems. This requirement is generally contracted to businesses specializing in this type of service. State or local regulations may require greater frequency of inspection.

7.7. Line Strainers

(a) If installed, check line strainers for cleanliness and damage

(b) Clean or replace screens as required

(c) Local conditions may require more frequent check of some strainers, such as those used for truck unloading

7.8. Water Defense System Inspection & Test

Check operation of water defense systems in accordance with annual requirements of [Section 3-12]

2-6. Hydrant System Checks

1. General

The following checks must be performed on all hydrant fueling systems servicing aircraft and at the frequencies specified. Additional tasks or more frequent checks may be required based on local conditions.

Daily checks and inspections should be made at the beginning of each work day including weekends and holidays.

All personnel engaged in ramp operations must be continuously observant of abnormal conditions that may exist in and around fuel pits. Any fuel leaks, fire/safety hazards, or adverse conditions must be reported immediately.

Aircraft operators shall be notified by contracted fueling agent of any modifications, changes, or construction work to hydrant systems. Hydrant systems must be flushed per [Section 3-15].

Hydrant systems or segments of hydrant systems not in daily use must have all daily, monthly, and annual checks current and recorded before the system, or segment is returned to service. Based on fuel test results, flushing may be required by aircraft operator prior to use. Records must indicate when systems are out of service.

2. Hydrant System Check Records

Records, paper or electronic, must be completed by the person performing the tasks, or by the person accepting responsibility for performance of the tasks.

Use of Forms 103.05, A through C, is recommended, but not required. No variance authority is needed to use other forms if they meet or exceed the task and frequency requirements specified in this section. Additional copies of Form 103.05 may be reproduced locally (Ref. [Section 6-2]).

The legible signature, initials or employee identification number of the person performing the tasks or the person accepting responsibility for the performance of the tasks is required.

(a) If initials or employee identification numbers are used, a record of each person's name and initials/identification number must be maintained and available for review

(b) Supporting documentation with the signature, initials or identification number of the person actually performing the tasks must be available if another person has signed the form accepting responsibility for accomplishment of the tasks

Records must indicate when fueling equipment is not used.

Retain records, including supporting documentation, in local files for 12 months.

Upon completion of the checks, record results using the following condition codes:

S = Indicates Satisfactory

C = Indicates Comment. Comment required in remarks section. Corrective action must be documented and dated.

N/U = Indicates unit Not Used

N/A = Indicates Task Not Applicable

Sump samples are to be rated according to [Section 3-1].

3. Daily Checks

3.1. Hydrant Pit

(a) Visually check hydrant pits and all components for deficiencies

(b) Pits should be clean & free of standing liquid

(c) Correct deficiencies in a timely manner.

3.2. Emergency Fuel Shutoff (EFS) Stations

(a) Verify that all emergency fuel shutoff stations on the ramp have:

1) Clear access

2) A sign or placard identifying EFS location

(b) Any deficiencies are to be corrected immediately

4. Monthly Checks

4.1. Isolation Valve Pits and Control Vaults

Check isolation valve pits for:

- emergency access
- fuel leaks
- standing liquid and debris
- general condition of all components

Verify proper operation of valves.

Correct any deficiencies found.

4.2. Hydrant Valve Assembly

(a) Check the general condition of the hydrant pit valve and sense line connectors

(b) Verify the satisfactory operation of the hydrant pit valve

(c) Check for leaks, excessive coupler mating flange wear and loose or missing fasteners

(d) Promptly correct any deficiencies

4.3. Low Point Drains

(a) Open all low point drains until all water and/or sediment is removed

(b) Flush a minimum of two (2) gallons at each low point until clear fuel is obtained to ensure positive removal of all contaminants

(c) Replace missing tags or markings to pit lids or low point drain valves as required to ensure proper identification

4.4. Emergency Fuel Shutoff

(a) Verify the satisfactory operation of the emergency shutoff system, by actuating one or more of the control devices for each zone

(b) Coordinate the shutoff test with all persons, fueling agents, fuel suppliers, and any other group having an interest in the operation of the facility

(c) Each control device must be tested at least once a year

(d) Immediately repair any discrepancies

NOTE:	If for any reason the emergency shutoff system cannot be repaired immediately, system operator must have an approved alternate plan in effect for continuing system use until discrepancies are corrected.

5. Quarterly Checks

5.1. High Point Vents

(a) Bleed all high point vents to ensure the removal of all entrapped air

(b) Continue to bleed air until clear fuel is present

(c) It is necessary to bleed high point vents more frequently if pipeline was drained or modified, allowing air entry into system

(d) Replace missing tags or markings to pit lids or high point vent valves as required to ensure proper identification

5.2. Surge Absorbers

(a) Where installed, check the general condition and operating pressure setting of each unit

(b) Recharge as required

5.3. Leak Detection and Piping Isolation Systems

(a) Where installed, check the satisfactory operation of pipeline leak detection systems and pipeline monitoring wells

(b) Monitoring devices and fuel flow shutoff valves are to be tested

(c) Immediately report and repair any deficiencies

NOTE:	In critical areas, i.e., baggage rooms, basements, etc., this task may be more frequent based on local needs and exposure.

6. Annual Checks

6.1. Cathodic Protection

Where installed, confirm satisfactory operation of cathodic protection systems. This requirement is generally contracted to businesses specializing in this type of service. State or local regulations may require greater frequency of inspection.

2-7. Aircraft Fueling Equipment Requirements

CAUTION:	ZINC GALVANIZED MATERIALS MUST NOT BE USED IN JET FUEL SERVICE. NO COPPER ALLOYS, CADMIUM PLATING OR PLASTIC MATERIALS ARE PERMITTED FOR MAIN FUEL PIPING. THE USE OF COPPER OR COPPER ALLOY MATERIALS FOR OTHER COMPONENTS MUST BE MINIMIZED.

1. General

All aircraft fueling equipment, including refueling trucks, hydrant vehicles, hydrant carts, fueling cabinets and fuel stands must comply with the requirements in this section.

Fueling equipment shall be free of leaks.

Tires, wheels, wheel studs/nuts and axle studs/nuts must be maintained in good condition at all times.

Electrical equipment, including lights, light lenses and wiring, must be maintained in a safe and operational condition.

Windows must be clean and free of cracks and crazing.

2. Filter/Separator or Full Flow Fuel Monitor

All aircraft fueling equipment must have a Filter/Separator or a Full Flow Fuel Monitor.

(a) All new vessels and element combinations shall meet [API/IP 1581] latest edition. Existing vessels and element conversions shall meet, by test or similarity, the latest edition of [API/IP 1581] / [API/IP 1582]. For existing vessels, conversion to the latest edition shall occur within 12 months of qualified elements becoming available for a specific vessel. If qualified by similarity, a similarity data sheet must be maintained locally and a data plate reflecting such qualification must be attached to the filter vessel.

1) Filter/Separators must be equipped with an automatic water defense system that will cause fueling to stop when activated by excessive water

a) Water defense systems must include provisions for an operational test

(b) Full flow fuel monitors must meet the requirements of [IP 1583] latest edition.

1) Full flow fuel monitors must be equipped with a pressure limiting device that will prevent excessive differential pressure from damaging elements in the event of complete blockage.

CAUTION:	FULL FLOW MONITORS MUST NOT BE USED WITH FUELS CONTAINING FUEL SYSTEM ICING INHIBITORS (FSII). THE WATER REMOVAL PERFORMANCE OF FULL FLOW MONITORS MAY BE REDUCED WITH FUEL CONTAINING FSII.

(c) All filtration vessels must include:

1) Air elimination provisions

2) Direct reading differential pressure gauges with an accuracy of +/- 2 PSI

3) Manual sump drains - Valves with handles spring loaded to the closed position are recommended

4) Upstream and downstream membrane sampling connections, including probes and dust covers

5) Pressure relief valve or other device that will prevent over-pressurization due to thermal expansion of fuel. Include a means for accommodating relieved fuel

NOTE:	An API monogram is not necessary to meet the requirements of this document.

3. Pressure Controls

All aircraft fueling equipment must have separate and independent primary and secondary pressure control devices.

(a) Primary pressure control is intended to protect the aircraft under conditions of constant flow and also from pressure surge caused during aircraft valve closure

(b) Secondary pressure control is intended to protect the aircraft in the event of primary pressure control failure

CAUTION:	FUELING PRESSURE CONTROL SYSTEMS SHALL NEVER ALLOW THE ACTUAL FUEL PRESSURE, MEASURED AT THE FUEL NOZZLE, TO EXCEED THE PRESSURE INDICATED BY THE OPERATOR'S GAUGE.

(c) Fuel pressure control systems may utilize the following:

1) Pressure controlling hydrant pit valves

2) Pressure controlling hydrant pit couplers

3) In-line pressure control valves

4) Hose End Pressure Control Valves (HEPCV)

5) Pressure switches that will cause rapid shutoff of fuel flow in the event of high fueling pressure

(d) Primary pressure control devices must limit fueling pressure, at the fuel nozzle, to 40 psig or less under conditions of constant flow

(e) Secondary pressure control devices must limit fueling pressure, at the fuel nozzle, to 50 psig or less under conditions of constant flow

4. Deadman Control System

All aircraft fueling equipment must have a handheld deadman control device. The deadman control system must completely stop fuel flow within 5 percent of the fuel flow rate at the time of release. This test should be run at flow rates from 100% of rated flow down to 10% of rated flow, but at flow rates below 50% of rated flow, a shutdown in 10% of the fuel flow rate is allowed.

EXAMPLE: If actual fuel flow rate at the time of deadman control release is 500 gpm, total overrun must not exceed 25 gallons (represents 5% of the actual flow rate)

5. Emergency Fuel Shutoff System

Hydrant vehicles, hydrant carts and fueling cabinets must be equipped with an emergency fuel shutoff system in addition to a deadman control.

(a) Each unit must have an emergency fuel shutoff control accessible from the ground

(b) Units equipped with a lift or platform must have an emergency fuel shutoff control accessible from the lift or platform, in addition to one accessible from the ground

(c) The system should stop the fuel flow by automatically closing the hydrant pit valve upon activation

Refueling trucks must be equipped with an emergency fuel shutoff control accessible from each side of the truck.

(a) Units equipped with a lift or platform must have an emergency fuel shutoff control accessible from the lift or platform, in addition to one accessible from the ground

(b) The emergency fuel shutoff system should also close the tank outlet valve(s)

Each emergency fuel shutoff control must completely stop fuel flow within a maximum of 5 percent overrun.

EXAMPLE: If actual fuel flow rate at the time of emergency fuel shutoff activation is 500 gpm, total overrun must not exceed 25 gallons.

6. Fire Extinguishers

Hydrant vehicles, hydrant carts and fueling cabinets must be equipped with a minimum of one 20lb. B:C rated fire extinguisher, securely mounted and readily accessible.

Refueling trucks must be equipped with a minimum of two 20lb. B:C rated fire extinguishers, securely mounted on opposite sides of the truck and readily accessible.

Seals must be intact.

Current inspection, testing and recharging records must be attached.

7. Safety Interlock System

All mobile fueling equipment must have a safety interlock system which will prevent the equipment from being moved when;

(a) Couplers and/or nozzles are not in their stowed position

(b) The pumping system is activated on tank trucks

(c) Lift platforms are in the extended position

The interlock system may stop the engine on motorized equipment, but should also apply the vehicle brakes.

Refueling trucks with bottom loading provisions shall incorporate a brake interlock system that will prevent the vehicle from being moved until the bottom loading coupler has been disconnected from the vehicle.

Interlock systems shall be equipped with an override device i.e., push-button, spring loaded toggle switch, lever device, etc. Regardless of the type and location, it shall be secured in the normal position, with a breakaway seal. Placards must identify normal and override positions. A light, indicating override activation is recommended and should be prominently located in the vehicle cab.

8. Aircraft Fueling Hoses

Hoses and couplings must meet the following standard when purchased by the end user:

- [API 1529], Grade 2, Type C, latest edition

Hoses shall be installed within 2 years of the date of the hose's manufacture, and have a maximum service life of 10 years from the date of manufacture.

If reusable couplings are installed on hoses, the couplings and hose shall meet the requirements of [API 1529] and operator shall abide by the periodic pressure testing requirements of [API/IP 1540] latest edition..

Operators choosing to reattach couplings must undergo training from the hose or coupling manufacturer.

CAUTION:	PRIOR TO THE PERIODIC PRESSURE TESTING OF AN AIRCRAFT FUELING HOSE, THE MAXIMUM ALLOWABLE PRESSURE RATING OF THE ATTACHED VALVES, METERS, OR SWIVELS SHOULD BE CHECKED TO PREVENT POSSIBLE INJURY TO THE OPERATOR OR DAMAGE TO THE EQUIPMENT. IT MAY BE NECESSARY TO REMOVE THE FUELING HOSE PRIOR TO TESTING. FOLLOWING THE SAFETY PRECAUTIONS OUTLINED IN [API/IP 1540] IS HIGHLY RECOMMENDED.
NOTE:	An API monogram is not necessary to meet the requirements of this document.

9. Manual Isolation Valves

Equipment with multiple aircraft delivery hoses must have a manual isolation valve installed upstream of each delivery hose.

10. Dust Covers

Dust covers or other protective devices must be used to prevent debris from accumulating on mating surfaces of hydrant couplers and aircraft fueling nozzles.

11. Strainers and Swivels

Aircraft fueling nozzles must be equipped with 100 mesh screens.

Hydrant coupler and aircraft fueling nozzle swivel retention devices must be equipped with at least two levels of redundancy, such as collar lock rings and collar retention screws secured by safety wire.

12. Aircraft Fuel Pressure Gauges

A pressure gauge is required for monitoring aircraft fueling pressures.

Gauges should be located where they will be visible to the equipment operator during aircraft fueling operations.

Gauges shall have a minimum face diameter of 4 inches and must have an accuracy of +/-2% of full scale.

Digital pressure displays shall have a minimum character height of 3/4 inch.

13. Fuel Quantity Measurement Meter

Meters must be capable of maintaining accuracy of 1/10 of one percent (0.1%) and repeatability of 1/20 of one percent (0.05%) at flow rates ranging from 100 gpm to the maximum rated flow of the fueling equipment.

Calibrator/adjustor must be sealed.

14. Electrostatic Bonding System

Electrostatic bonding system must have 25 ohms or less total resistance.

15. Signs, Placards & Labels

The following signs, placards or labels must be placed on the equipment as indicated:

(a) Product identification on each side and rear

(b) FLAMMABLE on each side and rear

(c) NO SMOKING posted prominently in cab of vehicles

(d) NO SMOKING on at least two sides

(e) EMERGENCY FUEL SHUTOFF placard adjacent to each emergency fuel shutoff control. Placards must also indicate method of operation (e.g., Push, Pull, Turn, etc.)

(f) Fire extinguishers located in enclosed compartments shall have their location clearly marked.

(g) Aircraft fueling pressure and filter differential pressure gauges shall be identified

(h) Filter and tank drain valves shall be identified

(i) A placard indicating the date (Month and Year) during which the filter elements were last changed shall be placed on the filter housing

(j) A placard indicating the date (Month and Year) of the last satisfactory single element test, if applicable, shall be placed on the filter housing

(k) A sign or placard indicating proper procedure for engaging the pumping system should be prominently displayed adjacent to pump controls

16. Additional Requirements for Refueling Trucks

Cargo Tanks must be constructed of stainless steel, aluminum or internally light color epoxy coated carbon steel.

Dome covers must be provided with:

(a) A forward mounted hinge and latches which will automatically cause the cover to close and latch with forward motion of the vehicle

(b) Water-tight, fuel resistant seals and gaskets

Each tank compartment must be equipped with a water drain located at the lowest point.

- Valves with handles spring loaded to the closed position are recommended

Tank outlets should be equipped with shutoff valves located inside the tank shell.

Refueling trucks with bottom loading capability must be equipped with a high level shutoff system. The system may activate a shutoff device that is mounted on-board the truck or on the loading station. Provisions for ensuring the satisfactory operation of the system (known as a "Pre-Check") shall be included. The pre-check system should simulate a high level condition in the truck by submerging the sensing device in fuel.

Recirculation connections are recommended. If equipped, recirculation systems shall be arranged so that all fuel is recirculated into product tank, i.e., no fuel is to be recirculated into the pump suction.

(c) The refueler must have a means of ensuring that the internal valve is closed except when bottom loading or fueling.

17. Overwing Nozzle Spouts

To prevent misfueling, overwing jet fuel nozzles shall utilize a large [wide] diameter spout while avgas nozzles shall utilize a smaller diameter spout [for additional details refer to SAE Aerospace Standard AS 1852, titled "Nozzles and Ports-Gravity Fueling Interface Standard for Civil Aircraft"]. Grade selective nozzle spout dimensions shall be as follows:

AVGAS

- Maximum Nozzle Spout Diameter is 50 mm or 1.97 inch
- Minimum Nozzle Diameter of 40 mm or 1.57 inch

JET FUEL

- Minimum Nozzle Spout Length is 67.6 mm or 2.66 inch
- Maximum Nozzle Spout Width is 29.7 mm or 1.17 inch

Jet fuel nozzle spouts shall adopt an elongated or elliptical cross section with maximum and minimum axes within dimensional limits noted above.

2-8. Aircraft Fueling Equipment Checks

1. General

The following periodic checks must be performed by qualified individuals, at the specified frequencies, on all aircraft fueling equipment, including fueling cabinets. Additional or more frequent checks may be required due to local conditions.

Maintenance requirements specified in this section are generally limited to those items required for maintaining fuel quality and safety. Additional programs should be established to ensure mechanical reliability of all equipment servicing aircraft.

Daily checks must occur once each calendar day. Tanker truck tank sumping must be performed prior to or during the first aircraft servicing of the day.

Any fueling equipment not in daily use must have all daily, monthly, quarterly and annual checks current and recorded before the equipment is placed in service.

2. Aircraft Fueling Equipment Check Records

Records, paper or electronic, must be completed by the person performing the tasks, or by the person accepting responsibility for performance of the tasks.

Use of Forms 103.04, A through C, is recommended, but not required. No variance authority is needed to use other forms if they meet or exceed the task and frequency requirements specified in this section. Additional copies of Forms 103.04, A through C, may be reproduced locally (Ref. [Section 6-2]).

The legible signature, initials or employee identification number of the person performing the tasks or the person accepting responsibility for the performance of the tasks is required.

(a) If initials or employee identification numbers are used, a record of each person's name and initials/identification number must be maintained and available for review

(b) Supporting documentation, completed by the person actually performing the tasks and containing their signature, initials or identification number must be available if another person has accepted responsibility for accomplishment of the tasks

Records must indicate when fueling equipment is not used.

2.1 Records Retention

Retain records in local files as follows:

- Daily, Monthly, Quarterly, Semi-Annual, and Annual check records – 12 months
- Filter Change records – 36 months

Upon completion of the checks, record results using the following condition codes:

S = Indicates Satisfactory

C = Indicates Comment. Comment required in remarks section. Corrective action must be documented and dated

N/U = Indicates unit Not Used

N/A = Indicates Task Not Applicable

Sump samples are to be rated according to [Section 3-1].

3. Daily Checks

3.1. General Condition

(a) Check the general condition of the fueling vehicle for safety defects, fuel leaks, damage and proper appearance

(b) Take appropriate corrective action for noted defects

(c) Units with fuel leaks are not to be used to service aircraft

3.2. Filter Sumps

(a) Filter vessel must be under pressure, but fuel does not have to be flowing through the vessel when the sample is taken

(b) Drain approximately one gallon of fuel into a suitable container. Fuel flowing from sump drain valve should be at maximum practicable flow to ensure adequate flushing occurs

(c) Perform fuel appearance test of filter sumps according to [Section 3-1]

(d) Record findings of first sample taken according to [Section 3-1]

(e) Continue to sample until clean, dry fuel is obtained

(f) Remove unit from service if unable to obtain clean, dry sample after three samples have been drained. Report unusual contamination to aircraft operators if it is anticipated that such contamination may impact aircraft operations.

3.3. Filter Differential Pressure

(a) Under normal flow conditions, check and record differential pressure (Ref. [Section 3-9])

(b) Filter differential pressure must be periodically monitored during fueling operation. Remove unit from service if a sudden drop in differential pressure from previous readings is observed or if differential pressure exceeds 15 psi on filter/separators or full flow monitors

3.4. Deadman Controls

(a) Perform a functionality check of the deadman control system

(b) Remove vehicle from service if deadman control does not function properly

3.5. Safety Interlocks

(a) Verify proper operation of safety interlock system

1) Remove one nozzle from its storage position and attempt to move unit. Unit should not move.

NOTE:	Some refueling trucks may move slightly under heavy engine acceleration due to high gear reduction drive trains. Movement should be minimal and must stop immediately upon returning engine to idle.

2) Repeat task for each additional nozzle, coupler, lift platform and bottom loading interlock, as applicable

3) Defective interlock systems should be repaired immediately

3.6. Nozzle Fueling Pressure

(a) Check and record nozzle delivery fueling pressure

(b) Nozzle pressure must be periodically monitored during fueling operation

(c) Nozzle Pressure should not exceed 40 psig under conditions of constant flow

1) Pressure in excess of 40 psig, but less than 50 psig, indicates an out of adjustment or malfunctioning primary pressure control. Investigate and correct as necessary

2) Pressure fluctuations greater than +/- 10 psi, under conditions of constant flow, may indicate a malfunctioning pressure control system, and should be investigated

(d) Immediately remove unit from service if pressure exceeds 50 psig

3.7. Hoses, Nozzles & Swivels

(a) Check condition of all fuel hoses, swivels, nozzles and couplers for damage, leakage or excessive wear.

(b) Ensure dust covers or other protective devices are available, installed and in good repair.

1) Check hoses for abrasions, cuts, soft spots, carcass separation, worn covers, blisters, exposed reinforcement, cracks, twists and sharp bends that give the appearance of pending failure

2) Check the tightness and safety wiring of all swivel and collar attachment screws and hose couplings

3) Check condition of nose and poppet seals on nozzles for cuts, nicks and wear

(c) Any item which is defective or leaking must be repaired or replaced before being used to service aircraft

3.8. Static Reels, Cables & Clamps

(a) Check the condition of static bonding reels, cables, clamps and connections

(b) Any defect that affects continuity must be corrected prior to use

NOTE:	Continuity must be checked after maintenance to static bonding systems.

3.9. Lift Platforms

(a) Check the general condition and verify proper operation of lift platforms

(b) Remove unit from service if deficiencies are noted

3.10. Fire Extinguishers

(a) Verify that fire extinguishers:

1) Are located in their designated place

2) Are tagged to indicate monthly inspections are current

3) Have unbroken safety seals or tamper indicators

4) Have no obvious physical damage, corrosion or leakage

5) When so equipped, the pressure gauge reading or indicator is in the operable range or position

(b) If any fire extinguisher is missing or does not meet the criteria listed above, it shall be repaired or removed from service and replaced with a serviceable extinguisher of the same or greater capacity

3.11. Surge/Relief Tanks

Check atmospheric surge tanks and thermal relief tanks. Drain water and sediment from tank as needed. Any tank or vessel that has the ability to be recycled and/or reintroduced into the fueling system must be secured and designed to prevent the ingress of contaminants.

Note:	Waste tanks (if installed) must be placarded as such and are not available for product recovery/recycle.

3.12. Air Tanks

Drain all moisture from air tanks to prevent damage to air system components and freezing during cold weather.

3.13. Refueling Truck Troughs

(a) Check truck troughs for water

(b) If standing water is present, clean troughs and drains

CAUTION:	IF STANDING WATER IS FOUND IN TRUCK TROUGHS, EXTRA CARE MUST BE USED IN INSPECTING TANK COMPARTMENTS AND FILTER DRAINS FOR WATER.

3.14. Refueling Truck Sumps

(a) Drain minimum of one gallon of fuel at high flow rate into a suitable container

(b) Perform fuel appearance test on a fuel sample from each tank compartment (Ref. [Section 3-1])

(c) Record findings of first sample taken according to [Section 3-1]

(d) Continue to sample until clean, dry fuel is obtained

(e) Additional checks are required during and immediately after inclement weather

(f) Remove unit from service if unable to obtain clean, dry fuel after three samples have been drained. Report unusual contamination to aircraft operators if it is anticipated that such contamination may impact aircraft operations.

3.15. Refueling Truck Bottom Loading Pre-check

(a) Verify proper operation of high level shutoff systems on refueling trucks, which are bottom loaded by operating pre-check controls during filling

(b) Trucks should not be bottom loaded with an inoperative high level shutoff system unless alternate procedures are followed

4. Monthly Checks

4.1. Filtration Test & Free Water Test

Perform a membrane color/particle (Millipore) simultaneously , under flow, upstream and downstream of each filter/separator.

Perform a free water test downstream of each filter/separator and monitor vessel.

On a monthly basis, determine the "corrected" filter differential pressure using the appropriate manufacturer curve charts or programs.

(Ref. [Section 3-2] and [Section 3-3])

NOTE:	Use of bottom loading connections on tank trucks for recirculation must be avoided in order to prevent erroneous test results.

4.2 Corrected Filter Differential Pressure

Under normal flow conditions, check and record observed differential pressure, flow rate, and corrected differential pressure across each working filter.

4.3. Static System Continuity Test

(a) Perform electrical continuity check of static bonding system

(b) Resistance must be 25 ohms or less

(c) Defective equipment must be repaired prior to servicing aircraft

4.4. Nozzle Screens

(a) Examine each nozzle screen for particles or other solid contaminants

- If particles are found, investigate possible sources of contamination (inner hose lining, pipe rust, sand, seals, gaskets, equipment failure, etc.) and take appropriate corrective action.

(b) Clean screens as necessary

(c) Verify that screens are 100 mesh

(d) Damaged screens are to be replaced

4.5. Fuel Hoses

(a) Lay hoses out full-length with system at full operating pressure and check hoses for abrasions, cuts, soft spots, carcass separation, worn covers, blisters, exposed reinforcement, cracks, twists and sharp bends that give the appearance of pending failure.

(b) Check couplings at both ends for cracks and signs of slippage or leakage

(c) Replace any defective hoses prior to further servicing of aircraft

4.6. Signs, Labels & Placards

(a) Verify that unit is clearly marked with applicable signs, placards and labels.

1) Product identification on each side and rear
2) **"FLAMMABLE"** on each side and rear
3) **"NO SMOKING"** on at least two sides
4) **"NO SMOKING"** posted prominently in cab of vehicles
5) **"EMERGENCY FUEL SHUTOFF"** adjacent to each emergency fuel shutoff control.
6) Placards indicating method of Emergency Fuel Shutoff operation, e.g., Push, Pull, Turn, etc.
7) Signs indicating location of fire extinguishers inside enclosed compartments
8) Placards identifying Nozzle Fueling Pressure
9) Placards identifying Filter Differential Pressure
10) Placards identifying Filter and Tank Drain valves
11) Placard indicating the last date (Month and Year) during which the filter elements were replaced

12) Placard indicating the date (Month and Year) of a satisfactory single element test was performed, if applicable

13) Other information and instructional markings as required by local conditions

4.7. Meter Seals

(a) Verify that meter calibrators/adjusters are sealed

(b) Meters with missing seals may only be used with airline permission and must be calibrated

4.8. Fire Extinguishers

(a) Check each fire extinguisher for inspection tag and seal.

(b) Maintain extinguishers in accordance with the applicable [NFPA 10] guidelines

(c) Upon completion of the inspection, update inspection tag

4.9. Emergency Fuel Shutoff System

(a) Verify that each emergency fuel shutoff control device will completely stop fuel flow before overrun has exceeded 5 percent of actual flow rate at the time of release

EXAMPLE: If actual flow rate is 400 gpm, fuel flow must completely stop within 20 gallons of emergency shutoff activation

(b) Equipment with a defective emergency fuel shutoff system must be removed from service until the system has been repaired

4.10. Deadman Control System

(a) Verify that the deadman control system will completely stop fuel flow before overrun has exceeded 5 percent of actual flow rate at the time of release

EXAMPLE: If actual flow rate is 400 gpm, fuel flow must completely stop within 20 gallons of emergency shutoff activation.

(b) Equipment with a defective deadman control system must be removed from service until the system has been repaired

4.11. Lift Platforms

(a) Verify the safe and dependable operation of all lift platforms

(b) Thoroughly inspect the lift, including lift and emergency let-down mechanisms, lift interlocks, hydraulic lines, couplings, lighting, wiring, handrails, steps, working surface and signing

(c) Any deficiencies must be repaired prior to returning unit to service

4.12. Refueling Truck Interiors

(a) Visually inspect tank interior from dome cover openings for water, debris, surfactants, microbial growth and other contamination

(b) Check epoxy coated tanks for coating deterioration

(c) Clean and repair as necessary

4.13. Refueling Truck Vents & Dome Covers

(a) Check tank dome covers, including latches, hinges, seals and gaskets

(b) Verify that hinges are forward mounted and will close with forward motion of the vehicle

(c) Verify proper operation of tank vents

(d) Correct any deficiencies as necessary

4.14. Refueling Truck Trough Drains

(a) Manually check trough drains for plugging

- Use cable or wire to ensure that there are no obstructions present

(b) More frequent checks may be required during inclement weather

5. Quarterly Checks

5.1. Vehicle Inspection

Perform a thorough overall inspection of the unit to identify components with excessive wear and pending equipment failure.

5.2. Pressure Controls

(a) Operator must have written test procedures specific to the vehicle pressure control systems and test facilities at that location.

(b) Check all primary and secondary pressure control equipment. Adjust as necessary. Record primary and secondary fuel pressure settings

(c) Regardless of type, the primary pressure control system must be defeated to properly test the setting of the secondary control system

CAUTION:	NEVER ADJUST PRESSURE CONTROL EQUIPMENT WHILE FUELING AN AIRCRAFT.

NOTES:	All testing of pressure control equipment should be conducted at a test facility or through test connections on tank trucks. When performing this test it is required that a calibrated gauge is utilized to directly measure the pressure in the nozzle or the fixture the nozzle is connected to. The test shall have the operator restrict flow by partly closing a valve downstream until the pressure in the nozzle is at its maximum both with the primary pressure control enabled and disabled.

5.3. Water Defense System Check - External Check

Check operation of water defense system in accordance with quarterly requirements of [Section 3-12]

NOTE:	Filter/separators that have been converted to monitors are not required to have the water defense systems checked.

5.4. Internal Valve Check

Test to ensure that the internal valve functions properly utilizing the "pre-check" test.

5.5 Interlock Override Function Check

Verify the proper operation of the interlock override control by having at least one interlock device activated, ensuring vehicle does not move until activating interlock override.

Upon satisfactory verification of the operation of the override control, seal the control back in the normal position using breakaway wire or breakaway plastic seal.

6. Semi-Annual Checks

6.1. Hose Pressure Check

(a) Refueling hoses fitted with reusable couplings, and being operated under system pressure, must undergo the six-month pressure testing at 225 PSI, per the requirements found in [API/IP 1540]

NOTE:	Pressure testing to 300 PSI is required whenever a new hose attachment or coupling is fitted.
CAUTION:	RECOUPLING AND PRESSURE TESTING OF HOSES AND FITTINGS SHOULD ONLY BE CARRIED OUT BY PERSONS ADEQUATELY TRAINED IN THEIR PROPER FITTINGS AND TESTING, USING PROCEDURES THAT HAVE BEEN APPROVED BY THE OEM.

7. Annual Checks

7.1. Filter Element Change

(a) Replace filter/separator filter elements. (Ref. [Section 3-13])

- Coalescer element service life may be extended to a maximum of two years, provided the criteria in [Section 3-14] are followed

(b) Teflon and synthetic separator elements may be reused, provided that they are cleaned and tested in accordance with the element manufacturer procedures

(c) Full flow monitor elements are to be replaced annually

(d) A visual inspection of all vessel interiors is to be performed on an annual basis regardless of filter element replacement frequency

1) Verify that the vessel interior is generally clean and free of water, sediment, evidence of microbial growth or other contamination. Clean interior and repair coating as necessary

2) Verify that all elements are undamaged and secure

7.2. Fueling Pressure and Differential Pressure Gauges

(a) Verify that accuracy of gauges used to monitor fuel delivery to aircraft is within +/- 2% of full scale.

(b) Verify proper operation of filter differential gauge(s) in accordance with gauge manufacturers' procedures. Accuracy must be within +/- 2 PSI. Repair or replace as required. (Ref. [Section 3-9])

(c) Replace, or repair and calibrate defective gauges

7.3. Meter Calibration

(a) Check accuracy of all aircraft fueling equipment meters

(b) Adjust meters to an accuracy of +/- 0.10%. Verify repeatability of +/- 0.05%.

- Meter adjusters/calibrators are to be sealed upon completion of calibration

7.4. Water Defense System Inspection and Test

Check operation of water defense system in accordance with annual requirements [Section 3-12].

2-9. Refueling Truck Loading

CAUTION 1:	DURING LOADING OF THE REFUELING TRUCK, THE EQUIPMENT MUST NOT BE LEFT UNATTENDED AT ANY TIME.
CAUTION 2:	IT IS NOT ACCEPTABLE TO TRANSFER FUEL INTO A REFUELING TRUCK WHILE IT IS REFUELING AN AIRCRAFT.
CAUTION 3:	IT IS NOT ACCEPTABLE TO TRANSFER FUEL FROM A TRANSPORT TRUCK INTO A REFUELING TRUCK.
CAUTION 4:	REFUELING TRUCKS SHOULD NOT BE LOADED DIRECTLY FROM HYDRANT SYSTEMS, HYDRANT VEHICLES OR CARTS. IF REFUELING TRUCKS ARE FILLED FROM A HYDRANT SYSTEM, ADDITIONAL PRECAUTIONS SHOULD BE TAKEN TO PROTECT AGAINST OVERPRESSURIZATION, STATIC DISCHARGE AND SPILLAGE.

The refueling truck must be bonded to the loading facility piping during filling operations.

If top loading, the loading arm piping shall be bonded to the truck and the loading tubing shall be extended to the bottom of the truck to prevent "splash" loading.

If bottom loading, the loading operation shall be started and the pre-check operated immediately to ensure proper operation of high level shutoff system.

WARNING:	IF THE PRE-CHECK SYSTEM DOES NOT OPERATE PROPERLY, THE FUEL TRUCK OPERATOR MUST MONITOR THE RISING FUEL LEVEL TO PREVENT OVERFILL.

Chapter 3. Procedures and Tests

3-1. Appearance Tests

These procedures provide a quick method for detecting free water, solids, and other traces of possible contamination. The two most common sampling methods used for evaluating the visual appearance of aviation fuel samples are; the White Bucket Test and the Clear and Bright Test. Another test method, also used, is known as the Closed Circuit Sampler, or VisiJar. Unusual color, in aviation fuel, may indicate mixing with another product. Both clear and opaque containers can be used to observe product color. However, informal tests have shown the clean white porcelain bucket to be best suited for the detection of unusual color such as contamination with low concentrations of dyed fuel or color resulting from crude oil characteristics or refinery processing. Hence, only the white porcelain bucket is to be used for the optimum detection of red dye contaminated fuel.

1. Appearance Test (also known as the "White Bucket Test")

1. Fill a suitable container (preferably a white porcelain bucket) with approximately 1 gallon of fuel.
2. Let the sample settle for 1 minute to remove air bubbles.
3. Place the clean bucket on a level surface and inspect the bottom for water droplets, solid contaminants, hazy/cloudy condition, brown slime and observe the color of the fuel.

CAUTION:	TO DETERMINE THE DIFFERENCE BETWEEN A HAZE CAUSED BY ENTRAINED WATER OR AIR BUBBLES, IT MAY BE NECESSARY TO PERFORM A WATER DETECTION TEST (Ref. [Section 3-3]).

4. Examine the sample for solids and/or sediment on the bottom of the bucket. Sample clarity can be checked by placing a small, shiny object with definition on the bucket's bottom. If the fuel is dry, the definition can be easily distinguished. The amount of sediment observed can be described by a letter category using the "Color and Particle Assessment Rating Guide", SGTP-3940, available from Gammon Technical Products, Manasquan, NJ.

NOTE 1:	The presence of contamination is much more evident when the sample is taken from a pressurized system. Samples removed from a static system may indicate little contamination when significant contamination actually can be found under flow or pressurized conditions.
NOTE 2:	Ensure the fuel sampling tap is free of loose contaminants.
WARNING:	IF A PINK OR REDDISH DISCOLORATION IS OBSERVED, PERFORM A REFEREE WHITE BUCKET TEST FOR POSSIBLE DYE CONTAMINATION.

1.1 Rating of White Bucket Sample

1.1.1 Solids Contaminant and Moisture Indicators

Table 3-1.1. ***Rating of White Bucket Sample***

Solids Contaminant Indicators	Moisture Content Indicators
1. Clean	A. Bright
2. Slight Particulate Matter	B. Hazy
3. Particulate Matter	C. Cloudy
4. Dirty	D. Wet (Free Water)
	E. Surfactants

1.1.2 Rating Definitions

Table 3-1.2. ***Solids Contaminant Indicators***

Rating	Rating Guide
Clean	Refers to lack of particles, silt or sediment, flakes, dye, rust or solids
Slight Particulate Matter	Contains several fine to moderate sized particles
Particulate Matter	A sample in which many small particles may be seen floating or settled on the bottom
Dirty	Discoloration or many particles dispersed in the fuel or settled on the bottom

Table 3-1.3. ***Moisture Content Indicators***

Rating	Rating Guide
Bright	Brightness is a quality independent of the color of the sample and refers to the lack of suspended or free water in the sample. Bright fuel tends to sparkle.
Hazy	A condition resulting from fine droplets of moisture dispersed throughout the sample producing a dull hazy appearance. This can be a temporary condition brought about by a drop in temperature. During the first minute, the fuel can appear hazy due to air bubbles.
Cloudy	The result of extremely fine droplets of water dispersed throughout the sample giving it a milky appearance
Wet	Any form of free water appearing as droplets or bulk water on the bottom of the bucket or clinging to the sides
Surfactants	Slime in the bottom of the bucket or at the fuel/water interface appearing as a dark brown/black layer, scum or lacy material floating in or on the sample

1.2. Action Required if Red Dye is Detected (Referee White Bucket Test)

1. The White Bucket test shall be used to inspect for red dye contamination. The referee White Bucket shall be the white porcelain bucket obtained from Gammon Technical Products, GTP-1746B or GTP-1746C. This test requires collecting approximately a two (2) gallon sample with a fuel depth of 6 inches, +/- 1.0 inch. The inspector (with normal vision or wearing corrective non-tinted lenses) performs a visual examination of the fuel for color under normal daylight conditions, or in any well-lighted room such as an office with fluorescent lighting. If the inspector is not sure of the fuel color, a consensus of the color should be obtained from several individuals.

   a. Jet fuel with no visible red tint should be judged acceptable for use in aircraft.

   b. A red tint resulting from refinery processing will usually disappear when exposed to light. Jet fuel is acceptable for use if the red tint disappears in less than 30 minutes after being exposed to light.

2. Jet fuel produced by blending a red dyed fuel with a non-dyed fuel may be acceptable, providing the resulting fuel has no visible red tint, and fuel satisfies [ASTM D1655] specifications. Blending is not to be performed at an airport fuel storage facility without prior authorization by affected airline(s).

NOTE:	Reference: Boeing Service Letter, dated 27 August 1998, ATA: 2800.00, Aircraft Use of Dyed Fuels.

2. Clear and Bright Test

NOTE:	The White Bucket test may be used in lieu of the Clear and Bright test where the Clear and Bright test is specified; however, the Clear and Bright test may NOT be used in lieu of the White Bucket test, where specified.

The clear and bright test is performed by filling a 32 oz. Mason jar ¾ full and then visually examining it for clarity, water, solids and/or sediment. The jar is then closed, swirled and examined for traces of water at the vortex bottom. There should be no suspended or visible free water, and sample should be clear and bright (slight sparkle). Air bubbles may cause hazy appearance immediately after the sample is drawn, but haze clears from the bottom up. Therefore, while small water droplets and air bubbles may appear similar, air bubbles will rise while water droplets will settle upon standing. Finely dispersed droplets in the fuel sample may be caused by temperature change due to cooling and may show up as a cloudy white appearance.

3. Visual Detection

Large quantities of water in fuel can be detected visually. The water quickly separates from the fuel and settles on the bottom of the sample container. Jet fuel varies in color from dark straw to water white and it is possible to mistake an all water sample as fuel. Adding a known quantity of water to fuel, the water will quickly separate and settle to the bottom of the sample. If the sample is all water, the added water will not separate. For additional clarity, a drop of liquid food coloring may be added to the sample. The food coloring will separate from the fuel, settle to the bottom of the sample, and color the water when mixed.

NOTE:	"ASTM Manual 5" may be used to complement this procedure.

3.1 Recoverable Product Intended for Aviation Use

Recoverable product must be handled carefully to prevent contamination. Containers or equipment used for handling recovered product must be clean and dedicated to that purpose (e.g. equipment used for cleaning hydrant pits shall not be used for handling reclaim product). Every effort should be made to remove visible solids and water (waste fuel) prior to moving fuel into a reclaim tank or returning to storage from a reclaim tank.

Fuel eligible for reclaim shall be limited to fuel from the following sources:

- Tank sumps
- Filter sumps
- Low point drains
- High point vents
- Surge/Relief Tanks

Samples from:

- Fuel truck receipts
- Membrane filtration tests
- Gravity/density checks

Equipment Maintenance:

- Filter changeout
- Draining tanks for inspection/cleaning/repair

CAUTION:	FUEL FROM ANY OTHER SOURCE THAN THOSE LISTED ABOVE SHALL NOT BE RECLAIMED.

3-2. Membrane Color Filtration Test

This test provides a field method for detection of particulate matter in jet fuel. It is particularly useful in monitoring the cleanliness of fuel received and in evaluating the performance of filter vessels. Because the method produces results which are not quantitative, it is not to be used as the basis for rejection of product. However, it does provide an alert signal, which indicates the need for further investigation using a gravimetric test to determine weight per unit volume or a double membrane test.

If both single and double color/particle ratings exceed maximum allowable limits or are in dispute, a matched-weight gravimetric test will govern or fuel will be rejected.

The operator should be cognizant of the fact that a wet membrane may appear darker than a dry membrane. This must be taken into consideration if there is a need for immediate evaluation. Ratings are to be made after the membrane is completely dry using the [ASTM D2276] Rating Guide, Shell Oil Evaluation Guide or Gammon Evaluation Guide (SGTP 3940).

Whether wet or dry, a membrane with visible particles is cause for concern and requires prompt investigation of the condition of filtration equipment.

3-3. Free Water Test

1. Background

Dry fuel is a prime contributor to flight safety. There are numerous ways that water enters fuel systems; the most common are leakage at manholes and tank plumbing, water-laden transport deliveries, condensation of atmospheric moisture in partially filled storage tanks.

Water in fuel is in one of two forms: Dissolved water ("water in solution") or free water.

Dissolved water is best described as a condition similar to humidity in the air. The amount of dissolved water in fuel varies with the fuel temperature. The higher the fuel temperature, the higher the potential concentration of dissolved water. When the temperature of the fuel is reduced due to change in ambient temperature or in flight, especially at high altitudes, dissolved water will condense from the fuel and become free water. Free water is heavier than fuel and will settle to the bottom of tanks and accumulate in low points in fuel systems.

Free water in fuel can cause serious problems, e.g., engine flame-out if a slug of water reaches the engine, and the formation of ice crystals, which may block fuel filters and fuel control units. Therefore, free water is not permitted to accumulate or remain in fuel systems and free water testing must be performed as scheduled. Over the years, various tests have been developed. However, experience has shown that the human senses cannot be substituted.

2. Water Sensitive Paste or Paper

Chemically treated paste or paper may be used to indicate the presence of free water. These materials change color when they contact water. They do not readily react to low concentrations of water, such as a hazy fuel sample.

These pastes and papers are normally applied to gauging sticks and tapes when checking storage tank bottoms for bulk water.

3. Water Detection Kits

All free water test kits mentioned herein, are known to be commercially available. Manufacturer's instructions are to be followed when using these kits. Kits that have exceeded their expiration dates are not to be used.

(1) **Velcon Hydrokit.** The test consists of adding fuel to a vial containing a pre-measured amount of water-sensitive powder. If water is present, the powder turns pink. Two kits are available: one with chemical powder sensitive to water concentrations greater than 15 ppm; the other kit with sensitivity greater than 30ppm.

(2) **Metrocator Kit.** The test, which may be used in detecting free water in concentrations from 5 ppm to greater than 60 ppm, consists of adding a pre-measured amount of water-sensitive powder to a sample of fuel in a special bottle. A disc of filter paper is placed in the screw cap of the bottle. After shaking the contents blue spots appear on the test wafer or disk, and when compared to a standard, indicate the amount of water that is present in the fuel.

(3) **Aqua-Glo Kit.** The test is capable of detecting free water concentrations as low as 1 ppm. The test consists of passing a measured amount of fuel through a chemically coated paper disc. The disc is then compared to a known color standard. The chemical will glow in ultraviolet light proportional to the amount of water in the fuel.

(4) **Shell Water Detection Kit.** The test consists of drawing fuel through a capsule containing a water-sensitive chemical. If free water is present, the chemical changes color. The color changes become progressively more noticeable with increasing water concentrations until, at approximately 30 ppm, with a 5 ml sample, a strong, obvious green color is obtained.

3-4. Fuel Density Test (API Gravity)

1. Introduction and Purpose

This procedure describes the means for measuring the density of fuel with a hydrometer. A significant change in density may indicate contamination by another product. Hydrometers may be calibrated in one of the following units of density measurement: API Gravity, Relative Density (Specific Gravity) or Density.

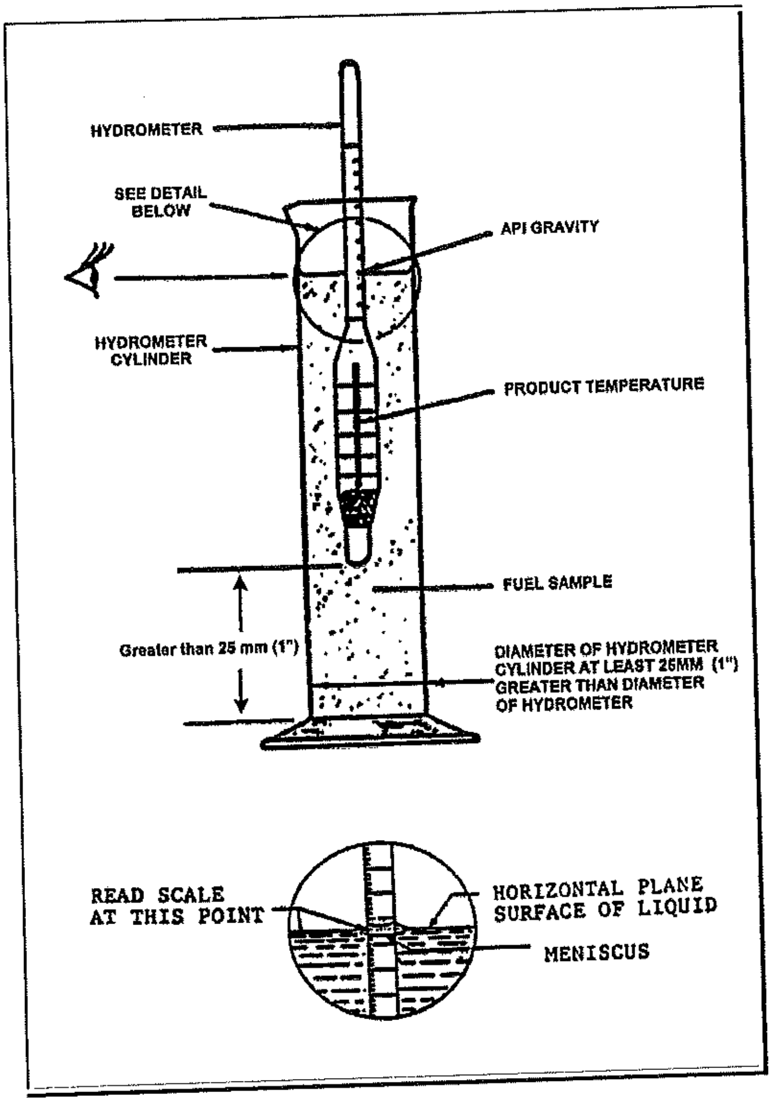
2. Description

The scale reading at the intersection of the fuel surface, on a freely floating hydrometer, in addition to the temperature of the fuel at the time of the test, are observed and recorded. The observed readings are then used to correct the API gravity to the standard temperature for the test.

3. Equipment

1. ASTM approved thermohydrometers are graduated in degrees API Gravity and degrees F as specified in [ASTM E100].
2. ASTM plain form hydrometers are graduated in units of density, relative density (specific gravity) or API gravity. These must conform to requirements outlined in [ASTM E100]. Plain form hydrometers do not contain a built-in thermometer.
3. ASTM approved thermometers are graduated in either degrees F or degrees C and specified in [ASTM E1]. Specific thermometers recommended are the ASTM 12F (graduated in degrees F) or the ASTM 12C (graduated in degrees C). Thermometers are not required where thermohydrometers are used.
4. Use a clear glass, plastic or metal hydrometer cylinder as shown in [Figure 3-4.1]. Clear glass or clear plastic cylinders are preferred since accurate hydrometer readings can only be obtained with opaque plastic or metal cylinders when the sample level is at the top of the cylinder.

Figure 3-4.1. ***Hydrometer Cylinder***



4. Procedure

1. Collect the sample in a clean hydrometer cylinder and place it in a vertical position in a location free from air currents. Allow a minute or two for air bubbles to disappear. Remove any air bubbles that remain on the surface of the sample by touching them with the corner of a clean paper towel.

2. When using a thermohydrometer, gently lower it into the sample and, when it has settled, depress it about two scale divisions into the liquid and then release it. Gently spin the hydrometer when releasing it. This will assist in bringing it to rest, floating freely away from the cylinder walls.

3. When the thermohydrometer has come to rest and the thermometer is showing a steady reading, read and record the temperature of the sample to the nearest 0.5 C or 1 F. Then read the hydrometer to the nearest scale division and record the value. The correct hydrometer reading is that point on the hydrometer scale at which the principal surface of the liquid cuts the scale (Ref. [Figure 3-4.1]).

4. When using a plain form hydrometer, first measure temperature with an approved thermometer. Continuously stir the sample with the thermometer taking care that the mercury is kept fully immersed. As soon as a steady reading is obtained, read and record the temperature of the sample to the nearest 0.5 C or 1 F and then remove the thermometer. To obtain the hydrometer reading, follow the procedure described in paragraphs 2 and 3 above.

5. Correct the observed hydrometer reading to the standard temperature of 60 F for API gravity and relative density, or to 15 C for density using the appropriate correction table. (Reference [Figure 3-4.2]).

6. Report the corrected gravity measurement.

Figure 3-4.2. ***Hydrometer Reading Correction Table***

CORRECTION OF OBSERVED API GRAVITY
TO STANDARD TEMPERATURE

(1) Enter Table Here

(2) Read down this column to an observed temperature of 78.5 °F

TEMP F	API GRAVITY AT OBSERVED TEMPERATURE / CORRESPONDING API GRAVITY AT 60 F: 45.0	45.5	46.0	46.5	47.0	47.5	48.0	48.5	49.0	49.5	50.0	TEMP F
75.0	43.6	44.1	44.6	45.1	45.6	46.1	46.6	47.1	47.5	48.0	48.5	75.0
75.5	43.6	44.1	44.6	45.1	45.6	46.0	46.5	47.0	47.5	48.0	48.5	75.5
76.0	43.6	44.0	44.5	45.0	45.5	46.0	46.5	47.0	47.5	47.9	48.4	76.0
76.5	43.5	44.0	44.5	45.0	45.5	45.9	46.4	46.9	47.4	47.9	48.4	76.5
77.0	43.5	44.0	44.4	44.9	45.4	45.9	46.4	46.9	47.4	47.8	48.3	77.0
77.5	43.4	43.9	44.4	44.9	45.4	45.9	46.3	46.8	47.3	47.8	48.3	77.5
78.0	43.4	43.9	44.3	44.8	45.3	45.8	46.3	46.8	47.3	47.7	48.2	78.0
78.5	43.3	43.8	44.3	44.8	45.3	45.8	46.2	46.7	47.2	47.7	48.2	78.5
79.0	43.3	43.8	44.3	44.7	45.2	45.7	46.2	46.7	47.2	47.7	48.1	79.0
79.5	43.2	43.7	44.2	44.7	45.2	45.7	46.2	46.6	47.1	47.6	48.1	79.5
80.0	43.2	43.7	44.2	44.7	45.1	45.6	46.1	46.6	47.1	47.6	48.0	80.0
80.5	43.2	43.6	44.1	44.6	45.1	45.6	46.1	46.5	47.0	47.5	48.0	80.5
81.0	43.1	43.6	44.1	44.6	45.0	45.5	46.0	46.5	47.0	47.5	47.9	81.0
81.5	43.1	43.6	44.0	44.5	45.0	45.5	46.0	46.5	46.9	47.4	47.9	81.5
82.0	43.0	43.5	44.0	44.5	45.0	45.4	45.9	46.4	46.9	47.4	47.9	82.0
82.5	43.0	43.5	43.9	44.4	44.9	45.4	45.9	46.4	46.8	47.3	47.8	82.5
83.0	42.9	43.4	43.9	44.4	44.9	45.3	45.8	46.3	46.8	47.3	47.8	83.0
83.5	42.9	43.4	43.9	44.3	44.8	45.3	45.8	46.3	46.7	47.2	47.7	83.5
84.0	42.8	43.3	43.8	44.3	44.8	45.3	45.7	46.2	46.7	47.2	47.7	84.0
84.5	42.8	43.3	43.8	44.2	44.7	45.2	45.7	46.2	46.7	47.1	47.6	84.5
85.0	42.8	43.2	43.7	44.2	44.7	45.2	45.6	46.1	46.6	47.1	47.6	85.0
85.5	42.7	43.2	43.7	44.2	44.6	45.1	45.6	46.1	46.6	47.0	47.5	85.5
86.0	42.7	43.2	43.6	44.1	44.6	45.1	45.6	46.0	46.5	47.0	47.5	86.0
86.5	42.6	43.1	43.6	44.1	44.5	45.0	45.5	46.0	46.5	46.9	47.4	86.5
87.0	42.6	43.1	43.5	44.0	44.5	45.0	45.5	45.9	46.4	46.9	47.4	87.0
87.5	42.5	43.0	43.5	44.0	44.5	44.9	45.4	45.9	46.4	46.8	47.3	87.5
88.0	42.5	43.0	43.5	43.9	44.4	44.9	45.4	45.8	46.3	46.8	47.3	88.0
88.5	42.5	42.9	43.4	43.9	44.4	44.8	45.3	45.8	46.3	46.8	47.2	88.5
89.0	42.4	42.9	43.4	43.8	44.3	44.8	45.3	45.8	46.2	46.7	47.2	89.0
89.5	42.4	42.8	43.3	43.8	44.3	44.8	45.2	45.7	46.2	46.7	47.1	89.5
90.0	42.3	42.8	43.3	43.8	44.2	44.7	45.2	45.7	46.1	46.6	47.1	90.0

API GRAVITY = 45.0 TO 50.0

EXAMPLE: Hydrometer reading for a jet fuel sample at 78.5 °F is 45.5 °API. To determine the corrected API Gravity

(1) Enter table 5B in the column "API Gravity at Observed Temperature" headed 45.5 °API

(2) Read down this column to an observed temperature of 78.5 °F

(3) The corrected API Gravity at 60 °F is 43.9 °API

5. Cautions

The hydrometer must float freely to obtain a correct reading. It must not come to rest against the side or bottom of the cylinder during the test.

The thermometer should not be completely removed from the liquid to read temperature. Evaporation of liquid from the thermometer stem and bulb will lower the temperature and cause an incorrect reading.

Hydrometers and thermometers must be inspected periodically to ensure they are not cracked and there is no separation of the mercury column.

3-5. Water Separation Test (MSEP)

This test provides a field method for determining water separation characteristics of jet fuel. Fuel containing little or no surfactant has excellent water separation characteristics. Fuel containing significant amounts of surfactant has very poor water separation characteristics. The better the water separation rating, the more effective system filtration equipment will be in removing free water.

Detailed instructions for performing the test are contained in [ASTM D3948].

The test is particularly useful in monitoring clay treatment vessel performance. Tests are normally performed on samples from the upstream and downstream sides of the vessel and the results compared. Assuming a relatively low rating upstream (e.g., 70), the downstream result should be higher if the clay is active. No improvement or a worsening of the rating on the downstream side of the vessel are indications of spent clay. In a well maintained fuel handling system equipped with a clay treatment vessel, water separation ratings are normally in the range of 90 to 100.

The operator should be cognizant of the fact that this is a very sensitive test. Erroneous results can be obtained if improper sample containers are used. This is especially true with new unlined metal containers.

NOTE:	Additional industry accepted testing methods are available.

3-6. Fuel Odor

Acceptable jet fuel produces a distinctive odor which can range from relatively mild or sweet to moderately objectionable. Specification [ASTM D1655] states that the fuel shall not produce an odor which is "nauseating or irritating." Such strong odors can be indicative of problems and requires further investigation.

During all phases of fuel handling, sampling and testing, the operator should be cognizant of the significance of fuel which produces an unfamiliar odor. If fuel producing an unfamiliar, nauseating or irritating odor is detected, further investigation is required. Draw a one gallon sample of the fuel into a suitable sample container (Ref. [Section 3-8]), and notify the affected airline(s).

3-7. Visual Detection of Microorganisms

1. Introduction and Purpose

This method is a visual means for detecting symptoms which indicate the presence of microorganisms in a turbine fuel handling system.

2. Description

The test is performed concurrently with routine drainage of storage tank and filtration equipment sumps and low point drains in system piping. A sample from these locations is drawn into a White Bucket and examined visually. Microorganisms produce visual evidence, which can be identified by the operator.

3. Equipment

Equipment consists of a plain white porcelain lined bucket and clear glass petroleum product sample bottles.

3.1. Equipment Preparation

Thoroughly rinse the White Bucket and sample bottles in system fuel. Wipe the inside of the bucket dry and free of contaminants with a clean rag or paper towel.

3.2. Cautions

Some contaminants commonly found in turbine fuel handling systems produce visual evidence which may be erroneously interpreted as microorganisms. For this reason, it is essential that the operator does not draw immediate conclusions.

CAUTION:	BECAUSE VISUAL EVALUATION IS USED, THE ELEMENTS OF HUMAN PERCEPTION AND JUDGMENT ARE INVOLVED.

The determinations made using this test indicate only the probability that microbial contamination exists. Confirmation must be made by laboratory analysis. (Reference [ASTM D6469] entitled " Standard Guide for Microbial Contamination in Fuels and Fuel Systems")

4. Test Procedure

(a) Collect sample from storage tank sump, filtration equipment sump, or low point drain in system piping in the White Bucket

(b) Allow the bucket sample to settle for at least two minutes

(c) Tip the bucket from side to side while visually observing sample for any evidence of dark-colored solids, dark-colored water, substances which cling to the side of the bucket, or scummy mucus-like material

(d) If any suspect materials are found, carefully pour off the fuel contained in the bucket, and collect a sample of the suspect material in a clear glass sample bottle

(e) Cap the sample bottle tightly and identify as to date, location, and sampling point

5. Evaluation of Sample

(a) Visually examine the contents of the sample bottle in an area providing strong background lighting

(b) If suspect portion of the sample is a dark-colored, sludge-like substance, the presence of fungi or microorganisms is a possibility. Further indicators are a matty, lumpy or stringy consistency or a rank moldy odor.

(c) If visual examination, as described above, indicates the possible presence of fungi or microorganisms, forward the sample to a qualified laboratory for analysis. (Reference [ASTM D6469] entitled "Standard Guide for Microbial Contamination in Fuels and Fuel Systems")

3-8. Sample Containers

The types and preparation of containers most suitable for the handling of aviation fuel samples can be found in [ASTM D4306], entitled "Standard Practice for Sampling Aviation Fuel for Tests Affected by Trace Contamination."

For the purpose of retaining one gallon samples of suspect product as specified in this manual, a one gallon epoxy-coated sample can is recommended. Such cans are commercially available from a number of aviation fueling equipment distributors.

3-9. Filter Vessel Differential Pressure

The purpose of observing differential pressure across a filter vessel is to monitor the changing condition of the elements. Whenever fuel passes through a filter, a drop in pressure should occur. The difference in pressure between the inlet and outlet of the filter vessel is known as differential pressure, and is one of the more apparent indicators of filter element condition. Differential pressure will fluctuate proportionately to flow rate. Fuel must be flowing through a filter vessel in order to have a differential pressure.

The differential pressure reading shall be taken and recorded daily. For accuracy, these checks should be undertaken when the flow rate is steady, and as close as possible to maximum operating flow rate. Tests on individual filter vessels should be carried out at the same flow rate, if possible.

The filter elements must be replaced when a sudden drop in differential pressure occurs under similar flow conditions or the filter vessel differential pressure exceeds the following limits:

- Coalescer elements - 15 psi.
- Monitor elements - 15 psi.

Verify proper operation of filter differential gauge(s) in accordance with gauge manufacturers' procedures. Accuracy must be within +/- 2 PSI. The differential pressure gauge lines and valves should be checked periodically to ensure they are not plugged or restricted.

Some direct reading gauges have small filters in their inlets. They must be replaced at each filter change out to assure proper operation.

3-10. Bonding Cable Continuity Check

1. General

This section describes the equipment and procedures to check and test bonding cable. Safety of personnel, equipment, and facilities is of primary concern.

2. Bonding Equipment, Checks, and Maintenance

Maintain bonding cables, clips, straps, and adapter plugs in good condition. Check this equipment for frayed wires, broken or damaged clips, and worn or damaged adapter plugs. Make electrical continuity checks monthly between the bonding clamp and the fueling system framework. If bonding cable is stored on a rotating reel, the reel must be rotated at least one complete rotation during the check. Resistance must be 25 ohms or less.

3-11. Fuel Storage Tank Inspection and Cleaning

CAUTION:	ENTRY OF A FUEL STORAGE TANK REQUIRES SPECIALIZED EQUIPMENT AND PERSONNEL TRAINING, AND MUST BE ACCOMPLISHED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL OCCUPATIONAL SAFETY REGULATIONS. THE VENDOR SHOULD NOT ATTEMPT ENTRY OF A STORAGE TANK UNLESS THE REQUIRED EQUIPMENT IS ON HAND AND THE REQUIRED TRAINING OF PERSONNEL HAS BEEN ADMINISTERED.

Storage tank floor must be visually inspected at least every 12 months. Check for build-up of sediment, evidence of microbial growth or significant coating failure. If inspection reveals microbial growth or build up of sediment exceeding 1/10 of the area of the tank bottom surface, cleaning must be accomplished.

Jet fuel storage tanks shall be cleaned with water only. High pressure application is recommended.

After cleaning with water, squeegees and lint free mops may be used to dry the tank surfaces. Assure removal of all free water, and allow tank to dry thoroughly.

Inspect internal epoxy coating for evidence of chipping, flaking, or other deterioration. Repair as required.

Maintain a record of tank inspection and cleaning on ATA Form No. 103.07 (or similar). The tank inspection and cleaning dates shall be recorded (month and year) on the tank manhole cover.

3-12. Water Defense Systems

1. General Description

There are primarily two types of water defense systems for filter/separator vessels:

1.1 Float-operated System

This system is actuated by a signal from a float with a sealed air and fluid chamber, which, when properly balanced, will sink in fuel and float in water. The float remains in the downward position, permitting fuel flow, until enough water accumulates in the sump to raise the float. As the float rises, it re-positions a pilot valve or operates an electrical switch, either of which will stop fuel flow. In order to restart fuel flow, the accumulated water must be drained from the sump, allowing the float to return to the downward position.

In some float-operated systems, an additional function is provided whereby, at an intermediate float position, the pilot valve (or an additional electrical switch) is actuated. This causes a drain valve to open and drain the accumulated water. At a higher level, the flow is stopped as previously noted. An automatic water drain valve does not discharge all the water from the sump. Complete water removal must be ensured to prevent microbiological growth.

CAUTION:	USE THE MANUAL WATER DRAIN VALVE FOR DAILY OR MORE FREQUENT DRAINING, EVEN WHEN AN AUTOMATIC WATER DRAIN VALVE IS INSTALLED. IT SHOULD BE EMPHASIZED THAT THESE AUTOMATIC DRAIN VALVES DO NOT OPERATE UNTIL THERE IS A SUBSTANTIAL QUANTITY OF WATER IN THE SUMP OF THE UNIT, AND THEREFORE, DOES NOT REPLACE THE REQUIREMENT FOR MANUALLY DRAINING ALL WATER FROM THESE SUMPS.

1.2 Electric Probe-Operated Systems

This type of system consists of an electric probe installed in the filter/separator sump, which actuates a relay system to stop fuel flow when enough water accumulates in the sump. In order to restart fuel flow, the accumulated water must be drained from the sump.

In some probe-operated systems, an additional function is provided whereby, at an intermediate water level in the sump, an additional set of contacts, in the probe, are actuated. This causes a drain valve to open and drain the accumulated water. At a higher level, the flow is stopped as previously noted. An automatic water drain valve does not discharge all the water from the sump. Complete water removal must be ensured to prevent microbiological growth.

CAUTION:	USE THE MANUAL WATER DRAIN VALVE FOR DAILY OR MORE FREQUENT DRAINING, EVEN WHEN AN AUTOMATIC WATER DRAIN VALVE IS INSTALLED. IT SHOULD BE EMPHASIZED THAT THESE AUTOMATIC DRAIN VALVES DO NOT OPERATE UNTIL THERE IS A SUBSTANTIAL QUANTITY OF WATER IN THE SUMP OF THE UNIT, AND THEREFORE, DO NOT REPLACE THE REQUIREMENT FOR MANUALLY DRAINING ALL WATER FROM THESE SUMPS.

2. Check Procedures

Water defense systems must be checked in accordance with the manufacture's procedures, at the frequencies specified in this document. For systems where manufacturer's procedures are not available, guidance may be obtained from [ASTM MNL5].

NOTE:	Checking of water defense systems is not required on filter/separator vessels that have been converted to monitors.
CAUTION 1:	NEVER USE PUBLIC OR OTHER POTABLE WATER SUPPLY SYSTEMS FOR WATER DEFENSE SYSTEM TESTS. THE FUEL PRESSURE MAY BE GREATER THAN THE WATER SUPPLY PRESSURE, AND FUEL COULD BE FORCED INTO THE WATER SYSTEM, CONTAMINATING THE SYSTEM.
CAUTION 2:	WHEN INJECTING WATER INTO A FILTER VESSEL DURING TEST OF WATER DEFENSE SYSTEMS, ALWAYS INJECT A MEASURED AMOUNT OF WATER, BEING CAREFUL NOT TO FLOOD THE SEPARATOR STOOLS. THE SAME AMOUNT OF WATER MUST BE RECOVERED AS WAS INITIALLY INJECTED. WHEN TESTING MOBILE EQUIPMENT, NO MORE THAN ONE (1) US GALLON SHOULD BE INJECTED. DUE TO THE VOLUME OF WATER REQUIRED, AS WELL AS FLOW RATES AND PRESSURES ENCOUNTERED, STATIONARY UNITS SHOULD NOT BE TESTED BY INJECTING WATER.
CAUTION 3:	BE SURE THAT THE VENT PORT FROM THE FLOAT-OPERATED PILOT VALVE IS UNOBSTRUCTED. IF THE VENT PORT IS PLUGGED, IMPROPER OPERATION OF THE FUEL FLOW CONTROL VALVE AND/OR AUTOMATIC DRAIN VALVE WILL OCCUR. PLUGS AND/OR VALVES MUST NEVER BE INSTALLED TO STOP LEAKS IN OPERATIONAL SYSTEMS.
CAUTION 4:	MANUAL TESTERS ON SOME FLOAT-OPERATED PILOT VALVES (NON-EXTERNALLY-BALLASTED FLOATS) ONLY CHECK THE OPERATION OF THE CONTROL VALVE, AND NOT THE BUOYANCY OF THE FLOAT.
CAUTION 5:	WATER SHALL NEVER BE INJECTED INTO MOBILE EQUIPMENT WATER DEFENSE SYSTEMS WHILE FUELING AN AIRCRAFT.
CAUTION 6:	FUEL MUST BE RECIRCULATED ON MOBILE FUELING EQUIPMENT AFTER WATER DEFENSE SYSTEM CHECKS.

2.1. Quarterly External Check

A. Externally check for satisfactory operation of water defense system by mechanically raising the float or float ballast on float-type systems, or injecting water into the probe on probe-type systems. The system(s) may also be checked, by injecting water into the filter sump(s).

B. Repair any system deficiencies before returning equipment to service.

2.2. Annual System Inspection & Test

A. Check for satisfactory operation of float-type water defense systems by verifying proper system shutdown when the float is in the raised position, and confirm buoyancy of floats that are not equipped with external ballasts

B. Check for satisfactory operation of probe-type water defense systems by injecting water into the probe

C. Both system types may also be checked, by injecting water into the filter sump

D. Check probe assemblies in probe-type systems for contaminants, which may have accumulated on the outside of the probe. Clean the probe exterior according to manufacturer's instructions. This will ensure that the probe will be sensitive to changes in resistivity and properly signal the presence of water in the filter sump. If the probe is insulated by contaminants, it may not properly activate the water defense system.

E. Repair any system deficiencies before returning equipment to service

3-13. Filter/Monitor Element Change Procedures

A. Stop pumping product to the filter vessel, close the shutoff valves in the inlet and outlet lines, and open vent.

WARNING: IF FILTER VESSEL IS EQUIPPED WITH AN ELECTRICAL HEATER, BE SURE TO TURN OFF HEATER BEFORE OPENING DRAIN.

B. Open drain valves, allow sufficient time for unit to vent, and drain completely before opening cover

C. Open cover and remove old elements

D. Wash the interior of the filter vessel with clean jet fuel

E. Inspect epoxy-coating for deterioration. Repair as necessary

WARNING: FILTER/SEPARATOR VESSEL WILL NOT PERFORM CORRECTLY IF POSITION OF COALESCER AND SEPARATOR ELEMENTS IS REVERSED.

F. Install new filter vessel elements in accordance with the manufacturer's recommendations. Disposable polyethylene or cotton gloves should be used when handling the elements. With gloves on, the elements may be handled without disarming them.

CAUTION: FAILURE TO FOLLOW MANUFACTURER'S TORQUE RECOMMENDATIONS MAY RESULT IN DAMAGE TO FILTER ELEMENTS OR COMPROMISE PERFORMANCE.

G. Install new seal, close cover, and tighten all bolts.

H. Open shutoff valves and allow the filter vessel to fill slowly, allowing all entrapped air to escape

WARNING:	FILLING VESSEL TOO RAPIDLY MAY CAUSE STATIC DISCHARGE, POSSIBLY RESULTING IN EXPLOSION.

I. Inspect for leaks. Repair as necessary

J. Open inlet and outlet valves to full open position

K. Record filter change date on filter change record

L. Record month and year of filter change on filter vessel

M. Circulate product as per filter manufacturer recommended procedure. Check and record the differential pressure.

Maintain a record of filter vessel inspection and cleaning on ATA Form No. 103.09 (or similar).

NOTE:	Unusually low or no differential pressure at normal flow may indicate that some of the elements are not properly sealed allowing product to by-pass some of the elements. Further investigation may be required.

3-14. Filter Element Replacement Criteria

1. Element Replacement Criteria and Frequency

1.1. Coalescer Elements

A. Coalescer elements must be replaced when:

1. Filter Membrane Test indicates elements are not performing (Refer to [Section 3-2])
2. Differential pressure exceeds 15 psi or there is a sudden drop in differential pressure
3. Continuous sump samples indicate surfactants, microbial or solid contaminants
4. 12-month service life has expired and approved extension procedure is not accomplished
5. Free water detection test indicates elements are not performing (Ref. [Section 3-3])

B. Coalescer Element Time Extension

Although normal coalescer element life is 12 months, the elements' life may be extended, provided all affected airlines approve the coalescer element life extension program. Station, fueling agent, FBO, etc., will submit proposed time extension program in writing. If accepted, airlines will provide written approval, which must be available for review.

1.2. Teflon-coated and Synthetic Separator Elements

Teflon-coated and synthetic separator element life can be extended as long as the elements are cleaned and inspected according to manufacturer's instructions.

1.3. Full Flow Monitor Elements

(a) Full flow monitor elements must be replaced when:

1. Filter Membrane Test indicates element is not performing (Ref. [Section 3-2])

2. Differential pressure exceeds 15 psi or there is a sudden drop in differential pressure

3. Chemical water detection test indicates a positive reading of more than 15 ppm (Ref. [Section 3-3])

4. 12-month service life has expired

3-15. Flushing Standards and Specifications

Before a new, modified, repaired or inactive fuel system, or portion thereof, is placed into service, all piping affected by change must be flushed to ensure system cleanliness.

1. Flushing Standards

All flushing procedures shall be pre-approved by the fuel quality assurance (QA) representative(s) of the affected airline(s).

Product used for flushing shall meet [ASTM D1655], latest revision, specification for kerosene Jet A/A-1 type aviation grade turbine fuels.

Desired fuel velocity during flush is 10 feet per second minimum unless a lesser rate is agreed upon by the QA representative(s) of the affected airline(s). Additional temporary pumps and filters may be required to provide minimum flow velocity.

No flushing will be allowed through hydrant pit valves.

Hose assemblies must meet the requirements of [API 1529]. Documented certification of hydrostatic test to at least 300 PSI is required within the last 24 months. Banded hose fittings are prohibited.

Test samples are to be drawn:

- Immediately ahead of filtration on closed loop recirculation systems, or
- Immediately ahead of storage tanks from receiving manifold on recirculation systems returning flushed fuel to tank, or
- Immediately ahead of transport trucks, from the cross-sectional center of the flushing riser, on single line systems.

Sampling connections shall be equipped with probes installed in the flow path.

Where possible, temporary piping connections to form a closed loop piping system should be installed and the system flushed by means of recirculation.

All general service valves and adapters shall be in place throughout the flushing procedure. Remove control valves and metering assemblies prior to initiating flush.

2. Flushing Into Tank Trucks and Portable Tanks

CAUTION:	ALL ELECTRICAL AND MOTORIZED EQUIPMENT IN AREA SHOULD BE SHUT DOWN IN CASE OF A MISHAP OR FUEL SPILL. FOR SAFETY, ALL PERSONS NOT INVOLVED IN THE FLUSHING OPERATION MUST BE KEPT A MINIMUM OF 100 FEET AWAY FROM THE TANK TRUCKS AND HYDRANT PITS USED IN THE FLUSHING OPERATION.

1. Notify local authorities as necessary.

2. Ensure provision of temporary manifolds and a sufficient number of tank trucks and hoses to safely achieve the desired flow rate.

3. Tank truck internal valve controls shall be secured in the open position.
4. Ensure all seals and gaskets are in place before securing couplings. All quick release type couplings are to be secured by wire, tape or other means to prevent accidental disconnection during flushing.
5. Hoses are to be secured in a manner to prevent whipping during flushing.
6. Electrically bond tank to system piping.
7. Check for leaks and system tightness before reaching flushing velocity.
8. Fire extinguisher(s) are to be in place in case of emergency.
9. Location of test personnel:
    - One person per tank to monitor fuel level in tank.
    - One person at hose inlet connection to control fuel flow into tank.
    - One person at main pump control station to shut down pumps in emergency.
    - One person at nearest emergency fuel shutoff station to shut down pumps in an emergency.
    - One person must be dedicated to the command of flushing operation.

3. Acceptance Criteria

A minimum of two consecutive acceptable test results is required to ensure piping cleanliness. The system being flushed must be displaced with clean fuel prior to taking the second test. Unusual conditions, if observed, must be acted upon accordingly, i.e., feel, color, odor, etc.

Fuel must meet [ASTM D1655], latest revision, specification for kerosene Jet A/A-1 type aviation grade turbine fuels before delivery to the aircraft.

In addition:

Visual - All fuel samples must be clear and bright.

Solids criteria (one gallon sample) –

- Membrane Color - Maximum wet rating of A3, B3 or G3 [ASTM D2276]
- Particle Assessment - Maximum rating of "B" [Shell Oil Evaluation Guide or the Gammon Evaluation Guide (SGTP 3940)]

NOTE:	If color rating exceeds the above limits or is in dispute, a gravimetric rating not to exceed 0.5 mg/L shall govern.

Free Water - 15 ppm maximum

Water Separation (MSEP) Rating - 85 minimum

4. Final Acceptance

It shall be the responsibility of the airline(s) fuel quality assurance representative(s), or designee(s), to have final decision on system cleanliness and acceptance before aircraft fuel servicing is permitted.

3-16 Overwing Fueling-Misfueling Prevention

Measures are required to ensure that the correct grade of fuel is delivered when using an overwing (trigger) nozzle. Fueling personnel should never make an assumption about the grade of fuel required. Grade confirmation between the customer and fueling personnel must take place. All verbal requests shall be repeated back to the pilot/aircraft/airline representative and verbal request alone are not acceptable if the aircraft does not have the relevant grade markings adjacent to the fill point. Whenever possible, written confirmation of the grade of fuel required shall be provided by the customer.

Before fueling commences, the operator shall check that the grade requested is the same as the grade marked on the aircraft, adjacent to the tank filler cap, and the same as the grade marked on the overwing fueling nozzle

If there is no grade marking on the aircraft, fueling shall not commence until a Fuel Confirmation Order Form (or similar) reconfirming the grade of fuel required has been completed by the pilot or designated airline representative. An example is shown in Figure 6-2.17.

If the grade marking on the aircraft is different to that of the fueling equipment, fueling must not commence until the discrepancy has been fully investigated and resolved in writing between the pilot or designated airline representatives.

For turbine powered aircraft which do not accept the larger diameter jet fuel nozzle spout a small diameter jet fuel nozzle spout shall be available. These shall be kept in secure containers and only fitted for those fuelings where they are required and returned to their container when the fueling is complete. If a small diameter jet fuel nozzle spout is required to fuel the aircraft, fueling shall not commence until a Fuel Confirmation Order Form reconfirming the grade of fuel required has been completed by the pilot or designated airline representative. Written procedures shall be prepared to ensure that after fueling such aircraft the smaller spout is removed from service and replaced by the larger Jet Fuel spout. An alternate means of compliance would be to locate the Jet nozzle spout on the equipment in a holder which is interlocked with the Vehicle drive-off interlock system of the vehicle. Such a system will then require the jet nozzle to be reinstated before the equipment can be moved.

The following additional precautions are applicable for overwing fueling

- Prior to fueling aircraft, and where a nozzle spout extension or funnel is required to avoid splash fueling ensure that the grade of fuel is confirmed in writing by completing the fuel order form with the pilot or designated airline representative
- Several companies are now producing reciprocating aircraft engines that are powered using Jet Fuel or Diesel Fuel. These engines are being installed on aircraft that typically had previously been fitted with engines that used Aviation Gasoline (Avgas).
    - These aircraft represent a serious risk of misfueling by the delivery of Avgas to an engine designed for diesel fuel. Also, because these aircraft were originally designed for use with Avgas, most will have filling orifices that are too small for the normal 67mm Jet Fuel nozzle.
    - Although some engines fitted to certain aircraft types may be certified for use with Jet Fuel and Diesel, DIESEL FUEL MUST NOT be supplied to those aircraft.
    - The use of a Fuel Confirmation Order Form (or equivalent) is required for all refueling of diesel-powered aircraft types.

Additional information in the prevention of Misfueling can be found in API/IP Recommended Practice 1597 " Procedures for Overwing Fuelling to Ensure Delivery of the Correct Fuel Grade to an Aircraft".

Chapter 4. Terms & Definitions

Additives	Compounds used to impart new properties to a product or to improve a property which it already possesses
Adsorption	A separation method where a component of a mixture is concentrated on a surface e.g.: Surfactants (surface-active-agents) are separated from jet fuel by adsorption on clay
API (American Petroleum Institute)	The institute represents and is supported by the petroleum industry. It standardizes the tools and equipment used by the industry and promotes the advancement of research in the petroleum field
API Gravity	An arbitrary scale expressing the density of liquid petroleum products, as established by the American Petroleum Institute (API). The measuring scale is expressed in terms of degrees API from 0 to 100, the higher the API gravity, the lighter the compound. API gravity can be reported at observed temperature or corrected to 60°F. (See Relative Density.)
Ambient Temperature	The air temperature at a specific location
Antioxidant	A chemical added to petroleum products to inhibit oxidation
Appearance	Refers to the visual examination of fuel; appearances are, clear, bright, hazy, and cloudy
ASTM (American Society of Testing and Materials)	A scientific and technical organization formed for the development of standards on characteristics and performance of materials, products, systems, and services and the promotion of related knowledge
Barge	A vessel, either motorized or towed, used to carry products in navigable waterways
Barrel (bbl)	A common unit of measurement of liquids in the petroleum industry. It equals 42 US standard gallons
Batch	A measured amount in which crude oil and refined product shipments are sent through a pipeline
Batching Sequence	The order in which shipments are sent through a pipeline
Blending	The procedures by which pre-determined quantities of two or more similar products are homogeneously mixed to upgrade one of the products or to produce an intermediate grade or quality. This term is also used to define the injection of additives, such as corrosion or icing inhibitors, into fuels.
Breathing	The movement of gas (product vapors or air) in and out of the vent lines of storage tanks
Calibration	(1) The graduation of a measuring instrument. (2) The determination of accuracy of graduation in a measuring instrument
Cathodic Protection	An electrolytic method of protecting a buried pipeline or other metal structure against corrosion by surrounding it with an electrical field strong enough to overpower the currents seeking to leave the metal to go into the soil. (See Impressed Current and Sacrificial Anode)
Clay Treatment Vessel	A vessel containing bulk clay, clay bags or clay canisters used for removing surfactants (surface-active-agents), by adsorption, from jet fuel

Clear and Bright	Clear is the absence of visible solids, a cloud, a haze, an emulsion, or free water in the product. Bright is the sparkle of clean, dry product in transmitted light.
Coalescing	(1) Drawing together, combining, or uniting to form one body. (2) A method of separating finely divided or suspended water from a petroleum product by passing the product through filter media of a filter/separator.
Coalescer Element	The first stage cartridge in a filter/separator vessel that removes solid particles and coalesces free water from jet fuel. It is upstream of the separator cartridge.
Commingling	The mixing of two or more products of different ownership, type, or grade
Conductivity	The ability of a given substance to conduct electric current
Contaminants	Substances which may be present in jet fuel that detract from its performance
Contaminated Product	A product in which one or more grades or types of products have been inadvertently mixed; or a product containing contaminants such as dust, dirt, rust or water
Copper Strip Corrosion Test	A qualitative method of determining the degree of corrosivity of a fuel by suspending or placing a strip of polished copper in a sample of fuel and comparing the test strip with a standard
Correction Factor	Due to the natural effects of thermal expansion and contraction of petroleum products in general, petroleum products must be corrected to a volume at 60°F for inventory and/or quality control purposes. Petroleum products are temperature corrected by using API Tables 5B and 6B for Generalized Products. Table 5B is for Correction of Observed API Gravity to API Gravity at 60°F. Table 6B is for Generalized Products, Correction of volume at 60°F against API Gravity at 60°F. Reference [ASTM D1250].
Deadman Control	A control device which must be hand held by the operator to allow fuel to flow. When released, fuel flow stops automatically.
Dedicated System	A system of pipeline(s), vessel(s), tank(s) and/or truck(s) used solely for the transportation and storage of one type of product
Density	Specific weight or mass of a substance per unit volume (pounds per cubic foot or gallon, or kilograms per cubic meter)
Differential Pressure (Delta P)	The measured difference in pressure between any two points, generally between inlet and outlet connections on filtration vessels
Dike	An embankment or wall erected around a storage tank to contain the product if tank leakage or rupture should occur
Direct Reading Differential Pressure Gauge	A pressure gauge which automatically displays the differential pressure between the inlet and outlet connections of filtration vessels
Disarming Action	The process by which elements in filtration systems are rendered incapable of performing their designed functions
Dissolved Water	Water which is in solution in jet fuel. This water is not free water and cannot be removed by conventional means
Effluent	Stream of fluid at the outlet of filtration vessels
Elements	A generic term given to different types of decontamination media installed in various types of filtration vessels
Emulsion	A dispersion of immiscible liquids in a continuous liquid phase

Entrained Water	Entrained water is found in fuels in the form of very small droplets, fog, or mist and it may or may not be visible. When large quantities of entrained water are present, the fuel will have a hazy or milky appearance. Water usually becomes entrained in the fuel when it is broken up into small droplets and thoroughly mixed with the fuel in equipment such as pumps or meters. Given sufficient time and the proper conditions, entrained water will settle out, however since turbine engine fuel is fairly dense it will hold entrained water in suspension for long periods of time.
Evaporation	The conversion of a liquid into vapor, usually by means of heat
Filter	A device to remove solid particles from fuel
Filter Membrane (Millipore ®) Test	A standard test in which jet fuel is passed through a small filter membrane. The cleanliness of the fuel can be determined by measuring the residue or amount of solid contaminates left on the membrane. (Ref. [ASTM D2276])
Filter/Separator	A filtration vessel which removes solids and coalesces free water from jet fuel. Filter/separators are equipped with two or more types of cartridges, including coalescer elements (first stage) and separator elements (second stage)
Fixed Base Operator (FBO)	Common title for aircraft fueling agents or vendors at airports
Flash Point	The lowest fuel temperature at which the vapor above the fuel will ignite. (Ref. [ASTM D56] or [ASTM D3828])
Floating Suction	Pump suction piping with floatation capability used to draw the cleanest product from an upper level of the fuel in a jet fuel storage tank
Free Water	Water in fuel other than dissolved water. Free water may be in the form of droplets or haze suspended in fuel (entrained water or an emulsion) and/or water layered at the bottom of the container holding the fuel.
Freeze Point	The fuel temperature at which the last fuel wax crystals disappear when the fuel is warmed. (Ref. [ASTM D2386])
Fuel System Icing Inhibitor (FSII)	An anti-icing additive for jet turbine engine fuels
Fungible	Interchangeability of like product batches which can be substituted for purposes of shipment or storage
Gallon (gal)	A unit of measure of volume. A U.S. gallon contains 231 cubic inches or 3.78541 liters
Gauging	To measure the contents of a tank
Gauging Table	Tank specific measurement tables used to determine the volume of the tank at selected incremental levels
Hydrometer	A graduated instrument for determining the unit density of liquids. It is usually made of hollow glass and weighted at one end so as to float upright. The depth to which the instrument sinks when immersed in a liquid is determined by the density of that liquid. The lighter the liquid, the lower the instrument sinks. Some hydrometers are marked to read in degrees of API gravity, specific gravity (relative density), or density
Hydrophilic	Attracts water or is water wetting. Has an affinity for water. Opposite of hydrophobic
Hydrophobic	Repels water or is non-water wetting. Resists attracting water. Opposite of hydrophilic
Immiscible	Liquids which are mutually insoluble; Opposite of miscible

Impressed Current	Cathodic protection system utilizing a direct supply of electrical current to develop the potential difference between the (Energized) anode and the structure being protected. The method involves putting electrical current into the soil so that it flows toward and into the line or structure
Influent	Stream of fluid at the inlet of filtration vessels
Innage	The volume of the liquid in a tank or container measured from the bottom of the tank to the top surface of the liquid
Interface	The common boundary (or surface) of two liquids
Jet A/A-1 Fuel	High-quality kerosene products used primarily as fuel for commercial jet and turboprop aircraft engines
Joint Use Fueling Systems	A fuel system shared by multiple users
Liter (L)	A metric unit of volume equal to 0.264 US gallons
Lubricity	The ability to lubricate. In fuels, it refers to a value that is measured by the BOCLE test. (Ref. [ASTM D5001])
Manifold	A piping arrangement which permits a stream of liquid or gas to be divided into two or more streams, or which permits several streams to be collected into one
Micron	A metric unit of linear measurement; One micron is equal to 0.000039 inches and approximately 25,400 microns equals one inch
Micronic Filter	A filtration vessel or element designed to remove solid particles from aviation fuels
Miscible	Liquids which are mutually soluble; opposite of immiscible
Monitor Element	A cartridge designed to absorb water and remove particulates in aviation fuel. As the cartridge approaches its maximum capacity, flow is progressively restricted due to the accumulation of absorbed water and/or retained particulate matter.
NIST	National Institute of Standards and Technology
NFPA	National Fire Protection Association
Must	Indicates a mandatory requirement
Off-Specification Product	A product which fails to meet one or more of the physical, chemical, or performance requirements of the product specification or is otherwise unfit for its intended use
Ohm	A unit of measure of electrical resistance; the higher the value, the greater the resistance to electrical flow
Outage (or Ullage)	The volumetric difference between the nominal capacity and the actual contents of a storage container
Oxidation	A chemical reaction whereby material(s) combine with oxygen to form a new compound
Particulates	Solid contaminants found in jet fuel, i.e., dirt, rust, sand or fibers
Pipeline Batch	The quantity of a product pumped into the pipeline in one continuous operation
Pipeline Tender	A quantity of product offered or designated for pipeline shipment moved in one or more batches
Pre-Check System	A system used to check the operation of the automatic high level shutoff equipment on tank trucks for preventing fuel spills
Pressure Drop	See Differential Pressure
Product	Unless indicated otherwise, jet fuel

PSI	Pounds per square inch; a measurement of pressure
PSIG	Pounds per square inch gauge
Reclaim Fuel	Fuel which has been removed from a fueling system (non-aircraft) for purposes of quality control checks or maintenance, which has been determined acceptable for return to storage
Relative Density	The ratio of weight of any volume of fuel to the weight of an equal volume of water at the same temperature and pressure; sometimes referred to as Specific Gravity. Typically, the measurement is corrected to 60 degrees Fahrenheit
Repeatability	The allowable difference between two test results on the same sample by the same operator using the same equipment
Reproducibility	The allowable difference between two test results on the same sample by different operators in different locations
Sacrificial (Galvanic) Anode	Cathodic protection system utilizing a controlled cell, which shifts the corrosion on the protected structure to the sacrificial anode. Sacrificial anodes are consumed, but are installed so they are easily replaceable. Sacrificial anodes are commonly made of magnesium, aluminum, zinc, etc.
Sample	A representative portion of fuel taken from a batch, tank or system etc., for analysis. Samples may be taken either manually or automatically.
Screen	A filter, sieve, or barrier made of meshed wire or perforated metal intended to remove solid matter from a flow stream or to segregate particulates by size of solid matter.
Sediment	Solid matter that settles to the bottom of a liquid filled container.
Separator Element	The second stage cartridge or shroud in a filter/separator vessel that allows passage of jet fuel but repels free water. It is located downstream of the coalescer cartridge.
Settling Time	The elapsed time that a product remains undisturbed between receipt of product into a storage tank before being discharged
Shall	Indicates a mandatory requirement
Shelf Life	The length of time a product, other than jet fuel, may typically be stored from the date of manufacture without deteriorating
Should	Indicates a recommendation or that which is advised, but not mandatory
Sludge	A deposit consisting of water, dirt, and other sediment
Soluble	Capable of dissolving or passing into solution
Specification	Prescribed limits of control used to maintain uniformity of a product.
Specific Gravity	See relative density
Sump (noun)	A chamber or depression installed at the low point of fuel system components; such as storage tanks, filtration vessels, etc., to facilitate the collection and removal of contaminates
Sump (verb)	The process of removing liquid from a drain for the purpose of quality control
Sump Fuel	Fuel removed from sumps, e.g., storage tanks, filtration vessels, aircraft refuelers, etc., while performing routine quality control checks and equipment maintenance. Some sump fuel may be recoverable. See Reclaimed Fuel

Surfactants	An acronym for surface-active-agents, which are chemical substances or detergent-like compounds frequently found in jet fuels. These chemicals reduce interfacial tension and may disarm the water removing capability of coalescer cartridges in filter/separators. Clay treatment is the primary means of removing surfactants from jet fuel.
Surge Tanks	Small tanks that collect fuel from pressure relief valves and/or air eliminators
Suspension	Dispersion of small particles of a solid, or small droplets of a liquid, in a liquid or gas
Switch Loading	The loading of a high static charge retaining hydrocarbon (diesel, jet fuel, kerosene) into a tank truck, tank car or other vessel that has previously contained a low flash point hydrocarbon (gasoline Jet B, JP 4) and may contain a flammable mixture of product vapor and air.
Temperature	Degree of heat or cold as measured by a thermometer: Temperature centigrade degrees (C) is measured on a scale on which water freezes at 0 degrees and boils at 100 degrees. Temperature Fahrenheit (F) is measured on a scale on which water freezes at 32 degrees and boils at 212 degrees.
Thermal Stability	The quality of a product to resist changes caused by heat such as oxidation or polymerization. Thermal stability measurements are related to the amount of deposits formed in the engine fuel system upon heating the fuel in a jet aircraft.
Thermohydrometer	A hydrometer used in determining fuel density which has a built in thermometer for simultaneously measuring fuel temperature
Thief (Sump) Pump	A small pump having a suction line which extends to the low point of a fuel storage tank for the purpose of drawing off water, which may have accumulated
Tolerance	An allowable variance from a specified limit
Trace	An amount large enough to be detected, but not to be measured
Turbine Fuel	A generic term used for various kerosene-based fuels manufactured for use in jet engines
Vapor pressure	The measure of the pressure exerted by a product in vapor form on the interior of a container
Vendor	An agent that provides services or products
Vent	An opening in a tank, container or pipe that permits the flow of air and vapor due to changes in pressure
Waste Fuel	Fuel that can no longer be used for its intended purpose
Water Defense System	A system or device, which detects excess free water in fuel systems and automatically stops the flow of fuel or sets off an alarm to prevent downstream contamination.
Water Finding Paste	A paste which changes color on contact with water
Water Slug	A large amount of free water
Working Tank	The fuel storage tank being used to supply fuel to aircraft refuelers, refueling trucks or hydrant systems

Chapter 5. Waver/Variance

5-1. Waiver/Variance Request

Figure 5-1.1. ***Waiver/Variance Request***

[VENDOR LETTERHEAD]
____
____

[DATE]
[AIRLINE]
____
____
____

RE: REQUEST FOR WAIVER /VARIANCE
Airline Manual Subsection _________________
Airport: ____
Effective Through: _________________

Dear _________________:

Your airline has adopted as a part of its manual certain provisions relating to inspection tests and safety procedures which are intended to preclude the introduction of contaminated or impure fuel into the airline's aircraft. [Vendor] is unable to comply with the designated subsection of the airline's manual referenced above at the designated airport, for the following reason:
[Describe why unable to comply]
____
____
____

However, in order to ensure an equivalent level of fuel purity to that prescribed in the manual, [Vendor] proposes to adopt the following inspection and testing procedures at that airport until the date above when it will be in compliance with the manual:

[Describe substitute procedures]
____
____
____

Accordingly, [Vendor] hereby requests that it be granted a waiver /variance by the airline from the provision of the manual referenced above.

[Signature]
[Typed name]
[Title]

5-2. Grant of Waiver/Variance

Figure 5-2.1. ***Grant of Waiver/Variance***

[AIRLINE LETTERHEAD]

____

____

[DATE]
[VENDOR]

____

____

____

RE: GRANT OF WAIVER /VARIANCE
Manual Subsection _____________________
Vendor: ____
Airport: ____
Effective Through: _____________________

Dear ____________________:

By letter dated _________ you have requested a waiver /variance from the provisions of the subsection of the airline's manual referenced above with respect to operations at the specified airport. In addition, you identified procedures or tests you will substitute for those specified in the manual which you state will ensure that the requisite fuel quality and purity will be achieved. The airline finds these procedures acceptable.

Accordingly, the airline hereby grants a waiver /variance from the manual subsection as described in the reference above, subject to the condition that the substitute procedures or tests will remain in effect during the entire period, as described in your letter.

[Signature]
[Typed name]
[Title]

Chapter 6. Forms

6-1. List of Forms

NOTE: Although use of the forms in this document is recommended, it is not required. No variance authority is needed to use other forms if they meet or exceed the task and frequency requirements specified throughout this document. Additional copies of these forms may be reproduced locally. These forms are also provided in Excel. To locate the Excel file (which is located/attached within the PDF document), select "View" in the main navigation, then select "Navigation Tab" from the drop down menu, then select "Attachments".

Table 6-1.1. ***List of Forms***

ATA FORM NO.	FORM
103.01A	Fuel Facility Checks - Daily & Monthly
103.01B	Fuel Facility Checks (Daily) - Sump Results & Filter Differential Pressure
103.01C	Quarterly Fuel Facility Checks
103.01D	Annual Fuel Facility Checks
103.02	Record of Receipt by Transport Truck
103.03	Record of Receipt by Pipelines
103.04A	Aircraft Fueling Equipment Checks - Daily
103.04B	Aircraft Fueling Equipment Checks - Monthly
103.04C	Aircraft Fueling Equipment Checks - Quarterly & Annual
103.05A	Hydrant System Checks - Daily
103.05B	Hydrant System Checks - Monthly
103.05C	Hydrant System Checks - Quarterly
103.06	Jet Fuel Filter Vessel Record
103.07	Storage Tank Inspection & Cleaning Record
103.08	Fuel Quality Test Record
103.09	Annual Filter Change Record
103.10	Fuel Confirmation Order Form

6-2. Test and Check Forms

FUEL FACILITY CHECKS

STATION FACILITY MONTH YEAR

DAILY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. GENERAL CONDITION OF TANK YARD																															
2. SECURITY, FIRE & SAFETY DEFICIENCIES																															
3. HOSES, SWIVELS, NOZZLES & COUPLERS																															
4. STATIC REELS, CABLES AND CLAMPS																															
5. FIRE EXTINGUISHERS																															
IDENTIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																															

MONTHLY		DATE	SIGNATURE	MONTHLY		DATE	SIGNATURE
1. FILTRATION & FREE WATER TEST				6. FIRE EXTINGUISHERS			
2. BONDING CABLE CONTINUITY				7. CORRECTED DIFFERENTIAL PRESSURE			
3. NOZZLE SCREENS							
4. SIGNS, LABELS & PLACARDS							
5. FLOATING SUCTION							

CONDITION CODES:

S = SATISFACTORY

C = COMMENT

N/U = NOT USED

N/A = NOT APPLICABLE

NOTE - RECORD SUMP RESULTS & FILTER DIFFERENTIAL PRESSURE ON SEPARATE FORM.

REMARKS:

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.01A
11/14/2008

FUEL FA‿ILITY CHECKS

STATION | FACILITY | MONTH | YEA

STORAGE TANK & PRODUCT RECLAMATION SUMP RESULTS

RECORD RESULTS - SEE NOTE #1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

FILTER SUMP RESULTS

RECORD RESULTS - SEE NOTE #1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

FILTER DIFFERENTIAL PRESSURE

RECORD DIFFERENTIAL PRESSURE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

NOTE #1 - RATING OF SUMP SAMPLES: SOLIDS - (1) CLEAR (2) SLIGHT (3) PARTICULATE (4) DIRTY; WATER-(A) BRIGHT (B) HAZY (C) CLOUDY (D) WET (E) SURFACTANTS

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.01B
11/9/05

FUEL FACILITY CHECKS

STATION | FACILITY | QUARTER | YEAR

QUARTERLY										
1. Emergency Shutoff System	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#
Date & Condition Code										
Checked by										
2. Water Defense System										
Date & Condition Code										
Checked by										
3. Tank High Level Controls										
Date & Condition Code										
Checked by										
4. Reclaim Tank Inspection										
Date & Condition Code										
Checked by										
Record Insp. Results on 103.07										
Checked by										

SEMI-ANNUAL (ONLY REQUIRED IF USING REUSEABLE COUPLINGS ON FUEL HOSES)										
1. Periodic Hose Press. Test	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#	ID#
Test Pressure (PSI)										
Date & Condition Code										
Checked by										

REMARKS:

Condition Code: S = Satisfatory C = Comment in REMARKS N/U = Not Used (unit is out of service) N/A = Not Applicable

ATA FORM 103.01C
11/9/2005

Retain on file for 12 months

ANNUAL FUEL FACILITY CHECKS

					STATION		FACILITY		YEAR	
1. STORAGE TANK INTERIORS	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #
DATE & CONDITION CODE										
CHECKED BY:										
2. DIFFERENTIAL PRESS GAUGES										
DATE & CONDITION CODE										
CHECKED BY:										
3. FILTER ELEMENTS										
DATE & CONDITION CODE										
CHECKED BY:										
4. FILTER/SEPARATOR HEATERS										
DATE & CONDITION CODE										
CHECKED BY:										
5. TANK VENTS										
DATE & CONDITION CODE										
CHECKED BY:										
6. CATHODIC PROTECTION										
DATE & CONDITION CODE										
CHECKED BY:										
7. LINE STRAINERS										
DATE & CONDITION CODE										
CHECKED BY:										
8. WATER DEFENSE SYSTEM										
DATE & CONDITION CODE										
CHECKED BY:										

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.01D
11/9/05

JET FUEL STORAGE FACILTY

RECORD OF RECEIPT BY TRANSPORT TRUCK

AIRPORT__________________ **FACILITY**__________________ **DATE**__________________

	RECEIPT NO.				
REQUIRED CHECKS	**1**	**2**	**3**	**4**	**5**
PRIOR TO RECEIPT					
DESIGNATE & SUMP RECEIVING TANK					
GAGE TANK & RECORD VOLUME					
SET VALVES FOR RECEIVING					
CONDITION OF OFF-LOAD HOSE					
BILL OF LADING/DELIVERY TICKET/NO.					
CORRECT DESTINATION					
CORRECT GRADE OF FUEL					
CORRECT VOLUME					
TRANSPORT TRUCK					
CONNECT GROUND CABLE					
COMPARTMENT SEALS					
CLEAR & BRIGHT TEST					
API GRAVITY, CORRECTED TO 60 ° F					
FUEL TEMP, ° F (OBSERVED)					
DURING RECEIPT					
DIFFERENTAL PRESS.REC.FILT (PSI)					
SYSTEM FOR LEAKS					
AFTER RECEIPT					
RE-POSITION VALVES					
DISCONNECT & STOW HOSE					
DISCONNECT GROUND CABLE					
GAGE TANK & RECORD VOLUME					
WHITE BUCKET CHECK–TANK SUMP					
WHITE BUCKET CHECK–FILTER SUMPS					
SIGNATURE OF PERSON PERFORMING CHECKS					

ü- SATISFACTORY **X-** UNSATISFACTORY (ENTER REMARK): __________________

____

____

____

[RETAIN THIS FORM ON FILE FOR 12 MONTHS]

ATA FORM NO. 103.02 **2/16/2004**

JET FUEL STORAGE FACILITY
RECORD OF RECEIPT BY PIPELINES

AIRPORT: ____________________ FACILITY: ____________________ DATE: ____________________

REQUIRED CHECKS			RECEIPT NO.____			RECEIPT NO.____		
			FRONT	MIDDLE	END	FRONT	MIDDLE	END
PRIOR TO RECEIPT								
DESIGNATE & SUMP RECEIVING TANK								
GAUGE TANK								
SET VALVES FOR RECEIVING								
PIPELINE COORDINATION								
CORRECT DESTINATION								
CORRECT GRADE OF FUEL								
CORRECT VOLUME								
DURING RECEIPT								
APPEARANCE								
API GRAVITY@ 60°F								
OBSERVED API GRAVITY								
OBSERVED FUEL TEMPERATURE, °F								
MEMBRANE FILTRATION TEST								
WATER TEST								
SYSTEM LEAKS								
DIFFERENTIAL PRESSURE	NO.							
	NO.							
	NO.							
	NO.							
[RECORD PSI]	NO.							
	NO.							
	NO.							
	NO.							
AFTER RECEIPT								
RE-POSITION VALVES								
GAUGE TANK								
APPEARANCE CHECK - TANK SUMP								
APPEARANCE CHECK - FILTER SUMPS								
SIGNATURE OF PERSON PERFORMING CHECKS								

S = SATISFACTORY C = COMMENT

REMARKS:

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.03
2/16/2004

AIRCRAFT FUELING EQUIPMENT CHECKS											STATION							EQUIPMENT ID#							MONTH YEAR						
DAILY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1. GENERAL CONDITION																															
2. FILTER SUMPS - RECORD RATINGS																															
3. FILTER DIFFERENTIAL PRESSURE - Record PSI																															
4. DEADMAN CONTROLS																															
5. SAFETY INTERLOCKS																															
6. NOZZLE FUELING PRESSURE - Record PSI																															
7. HOSES, NOZZLES & SWIVELS																															
8. STATIC REELS, CABLES & CLAMPS																															
9. LIFT PLATFORMS																															
10. FIRE EXTINGUISHERS																															
11. SURGE/WASTE TANKS																															
12. AIR TANKS																															
13. REFUELING TRUCK TROUGHS																															
14. REFUELING TRUCK SUMPS - RECORD RATINGS																															
15. REFUELING TRUCK BOTTOM LOADING PRE-CHECK																															
IDENDIFICATION OF PERSON PERFORMING TASKS OR PERSON ACCEPTING RESPONSIBILITY THAT TASKS WERE PERFORMED																															

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RATING OF SUMP SAMPLES: SOLIDS - 1 = CLEAN, 2 = SLIGHT, 3 = PARTICULATE, 4 = DIRTY; MOISTURE CONTENT - A = BRIGHT, B = HAZY, C = CLOUDY, D = WET (FREE WATER), E = SURFACTANTS

REMARKS:

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.04A
2/16/04

AIRCRAFT FUELING EQUIPMENT CHECKS		STATION	EQUIPMENT ID#	MONTH YEAR
MONTHLY	CONDITION CODE	DATE	CHECKED BY	
1. FILTRATION & FREE WATER TESTS				
2. STATIC SYSTEM CONTINUITY TEST (RECORD RESULTS IN OHMS)				
3. NOZZLE SCREENS				
4. FUEL HOSES				
5. SIGNS, LABELS & PLACARDS				
6. METER SEALS				
7. FIRE EXTINGUISHERS				
8. EMERGENCY SHUTDOWN SYSTEM				
9. DEADMAN CONTROL SYSTEM				
10. LIFT PLATFORMS				
11. REFUELING TRUCK INTERIORS				
12. REFUELING TRUCK VENTS & DOME COVERS				
13. REFUELING TRUCK TROUGH DRAINS				
14. CORRECTED DIFFERENTIAL PRESSURE				

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.04B
11/14/2008

QUARTERLY, SEMI-ANNUAL & ANNUAL AIRCRAFT FUELING EQUIPMENT CHECKS	STATION	EQUIPMENT ID#	YEAR

QUARTERLY CHECKS

		1ST QTR	2ND QTR	3RD QTR	4TH QTR
1. VEHICLE INSPECTION	CONDITION CODE				
	CHECKED BY & DATE:				
2. PRESSURE CONTROLS	CONDITION CODE				
	RECORD PRIMARY & SECONDARY FUEL PRESSURE SETTING (PSI)				
	CHECKED BY & DATE:				
3. WATER DEFENSE SYSTEM - EXTERNAL CHECK	CONDITION CODE				
	CHECKED BY & DATE:				
4. INTERNAL VALVE CHECK	CONDITION CODE				
	CHECKED BY & DATE:				
5. INTERLOCK OVERRIDE FUNCTION	CONDITION CODE				
	CHECKED BY & DATE:				

SEMI-ANNUAL CHECKS (ONLY REQUIRED IF USING REUSEABLE COUPLINGS ON FUEL HOSES)

1. PERIODIC HOSE PRESSURE TEST		ID #	ID #	ID #	ID #	ID #
	TEST PRESSURE (PSI)					
	CONDITION CODE					
	CHECKED BY & DATE:					

ANNUAL CHECKS

1. FILTER ELEMENT CHANGE	CONDITION CODE	
	CHECKED BY & DATE:	
2. FUELING & DIFFERENTIAL PRESSURE GAUGES	CONDITION CODE	
	CHECKED BY & DATE:	
3. METER CALIBRATION	CONDITION CODE	
	CHECKED BY & DATE:	
4. WATER DEFENSE SYSTEM INSPECTION & TEST	CONDITION CODE	
	CHECKED BY & DATE:	

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE
RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.04C
11/14/2008

DAILY HYDRANT SYSTEM CHECKS

Station: **Terminal:** **Date:**

PERFORM DAILY (USE APPLICABLE CONDITION CODES)

CONDITION CODES:

S = SATISFACTORY N/S = NOT IN SERVICE

C = COMMENT (COMMENTS REQUIRED IN REMARKS) N/A = NOT APPLICABLE

PIT #	Pit Leaks & Cleanliness	EFS Stations	PIT #	Pit Leaks & Cleanliness	EFS Stations	PIT #	Pit Leaks & Cleanliness	EFS Stations	PIT #	Pit Leaks & Cleanliness	EFS Stations

SIGNATURE: ______________________________

SIGNATURE OF PERSON PERFORMING TASKS

REMARKS: ______________________________

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RETAIN ON FILE FOR 12 MONTHS.

ATA Form 103.05A
2/16/04

MONTHLY HYDRANT SYSTEM CHECKS

Station: **Terminal:** **Date:**

(USE APPLICABLE CONDITION CODES)

CONDITION CODES:
S = SATISFACTORY
C = COMMENT (COMMENTS REQUIRED IN REMARKS)
N/S = NOT IN SERVICE
N/A = NOT APPLICABLE

VAULT, PIT, GATE OR LOW POINT DRAIN #	Isolation Valve Pits & Control Vaults	Hydrant Valve Assembly	Low Point Drains	Emergency Fuel Shutoff

VAULT, PIT, GATE OR LOW POINT DRAIN #	Isolation Valve Pits & Control Vaults	Hydrant Valve Assembly	Low Point Drains	Emergency Fuel Shutoff

VAULT, PIT, GATE OR LOW POINT DRAIN #	Isolation Valve Pits & Control Vaults	Hydrant Valve Assembly	Low Point Drains	Emergency Fuel Shutoff

SIGNATURE: ______________________________
SIGNATURE OF PERSON PERFORMING TASKS

REMARKS: ______________________________

RETAIN ON FILE FOR 12 MONTHS.

ATA Form 103.05B
2/16/04

QUARTERLY HYDRANT SYSTEM CHECKS				STATION		TERMINAL		QUARTER	YEAR
1. HIGH POINT VENTS	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #
DATE & CONDITION CODE									
CHECKED BY:									
2. SURGE ABSORBERS	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #	ID #
DATE & CONDITION CODE									
CHECKED BY:									
3. LEAK DETECTION & PIPING ISOLATION SYSTEMS									
DATE & CONDITION CODE									
CHECKED BY:									
4. CATHODIC PROTECTION (ANNUAL)									
DATE & CONDITION CODE									
CHECKED BY:									

REMARKS:

CONDITION CODES: S = SATISFACTORY; C = COMMENT (COMMENT REQUIRED IN REMARKS SECTION); N/U = NOT USED; N/A = NOT APPLICABLE

RETAIN ON FILE FOR 12 MONTHS

ATA FORM 103.05C
11/14/2008

FILTER VESSEL INSPECTION/CLEANING RECORD

Airport: ______________ Vessel ID: __________ Date: ____________________

EXTERIOR INSPECTION	RESULT
Vessel Nameplate secure and legible. Conversion data plate installed, if applicable.	
Verify that Similiarity Data Sheets are on file & have been updated to reflect API 1581 Latest Edition, if applicable	
Base mounting bolts secure.	
Air Eliminator check valve in good repair; drain clear of obstruction and not open to environment.	
Pressure Relief Valve not painted over; drain clear of obstruction and not open to environment.	
Manual Sump Drain clear of obstruction and free of leaks.	
Upstream & Downstream millipore connections present, covered, and installed with arrows in direction of flow.	
Direct Reading DP Gauge present; calibrated; and equipped w/ 3-way test valve.	

FILTER CHANGE/VESSEL INSPECTION	RESULT	VESSEL RETURN to SERVICE	RESULT
Shutdown and lockout pump.		Close drain valve(s)	
Close Inlet/Outlet valves and open vent.		Ensure Air Eliminator is open	
Drain Fuel		Remove Lock and Start Pump	
Open cover & verify elements are secure		Slightly open inlet valve to slowly fill vessel	
Remove elements & inspect their integrity		Fill vessel until air stops or fuel vents from AE	
Inspect interior for sediment, H^2O, microbial cont		Inspect for leaks. Repair as necessary.	
Wash interior with clean jet fuel		Fully open Inlet/Outlet valves	
Inspect epoxy coating and repair, if necessary		Record filter change date on record	
Test H^2O defense float for buoyancy, if applicab		Placard filter change date on vessel (month/year)	
Replace filter elements		Placard date of last H^20 defense check on vessel	
Tighten nuts on tie rods (washer should curl)		Circulate product at normal rate	
Replace cover gasket, close lid, torque lid bolts			

RATINGS: S = Satisfactory; C = Comment Required in Remarks Section; N/A = Not Applicable

Sampling Point	Membrane Filtration Test ASTM D-2276	Water Test
Prior to Filtration ☐ Clay ☐ Particulate ☐ Monitor ☐ Filter/Separato	Membrane Wet Rating ________ Dry Rating ________ Sample Size ___ Gal/Liter	Test Method Test Method ppm ______________
Sampling Point	**Membrane Filtration Test ASTM D-2276**	**Water Test**
After Filtration ☐ Clay ☐ Particulate ☐ Monitor ☐ Filter/Separato $\triangle p$ ________ psi GPM ________	Membrane Wet Rating ________ Dry Rating ________ Sample Size ___ Gal/Liter	Test Method Test Method ppm ______________

Identification of person performing tasks ________________________________

ANY REMARKS: NOTE ON BACK OF FORM

11/14/2008

RETAIN ON FILE 36 MONTHS FORM ATA 103.09 REV 1/30/08

JET FUEL FILTER VESSEL RECORD

AIRPORT ______________________ AGENCY ______________________

VESSEL MFG. ______________________ DATE LAST ELEMENT CHANGE ______________________

MODEL NO. ______________________ DATE LAST INTERIOR INSP. ______________________

FIXED UNIT NO. ______________________ P / N ELEMENTS INSTALLED ______________________

MOBILE UNIT NO. ______________________

RATED FLOW (GPM) ______________________ DATE WATER DEFENSE CHECK ______________________

DIFFERENTIAL PRESSURE RECORD

DIFFERENTIAL PRESSURE [psi]																															
20	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
19	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
18	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
17	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
16	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
15	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
14	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
13	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
12	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
11	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
10	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
9	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
8	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
7	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
6	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
5	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
4	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
3	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
2	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
1	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
0	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o	o
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
SIGNATURE																															

MONTH ____________ 20 ______

[RETAIN THIS FORM ON FILE FOR 12 MONTHS]

ATA Form 103-06

11/14/2008

STORAGE , RECLAMATION, AND REFEULER TANK

INSPECTION AND CLEANING RECORD

AIRPORT__________________________FACILITY__________________________

TANK NO._______________

DATE INSPECTED	CONDITION							ACTION			SIGNATURE
	1	2	3	4	S	R	M	CL	NC	MT	

PLACE AN "X" IN ALL BOXES APPLICABLE TO THE TANK CONDITION

CONDITION CODES: 1 – CLEAN 2 – TRACE 3 – MODERATE 4 - HEAVY

S –SEDIMENT R – RUST M – MICROBIAL GROWTH

PLACE AN "X" IN BOX INDICATING ACTION TAKEN OR "P" (PASS) "F" (FAIL) ON MICROBIAL TEST

ACTION CODES: CL – CLEANED NC – NOT CLEANED MT - MICROBIAL TEST

REMARKS: ____

____

____

____

____

* RECORD QUARTERLY VISUAL OR MICROBIAL TEST RESULTS FOR PRODUCT RECLAMATION TANKS ON THIS FORM

[RETAIN THIS FORM ON FILE INDEFINITELY]

ATA FORM NO. 103.07 11/9/2005

FUEL QUALITY TEST RECORD

AGENCY ____________________ DATE ____________________

AIRPORT ____________________ FACILITY ____________________

SAMPLING POINT	MEMBRANE FILTRATION TEST ASTM D-2276	WATER TEST
BEFORE FILTRATION ( ) PARTICULATE ( ) CLAY ( ) FILTER/SEPARATOR ( ) MONITOR ELEMENT △P _______ psi UNIT NO. ___________	MEMBRANE DRY RATING ____ SAMPLE SIZE _____ GAL	_____ PPM
AFTER FILTRATION ( ) PARTICULATE ( ) CLAY ( ) FILTER/SEPARATOR ( ) MONITOR ELEMENT △P _______ psi UNIT NO. ___________	MEMBRANE DRY RATING ____ SAMPLE SIZE _____ GAL	_____ PPM

NOTES:

[RETAIN THIS FORM ON FILE FOR 12 MONTHS]

ATA FORM NO. 103.08 11/14/2008

FUEL CONFIRMATION ORDER FORM

This form to be used if any of the following are valid:

Tick box

- [ ] No decals are visible adjacent to the aircraft tank orifice;
- [ ] Selective spout will not fit aircraft tank orifice;
- [ ] Aircraft equipped with a Diesel Engine

Aircraft Information and Confirmation of Requirements:

Pilot/Aircraft Operator to complete this section

Registration ____________ Aircraft ____________

Fuel Requirements

Fuel Grade	Colour	Quantity	
Jet Fuel / **Aviation Turbine Kerosene**	**BLACK**		Liters / USG
Avgas / **Aviation Gasoline**	**RED**		Liters / USG

Aircraft Pilot/Operator
Name ____________ Date ____________

Signature ____________ Time ____________

Selective Spout Replacement Confirmation:
Operator to complete this section

If you are using this form because of situation '2' above

PLEASE CONFIRM THAT YOU HAVE REPLACED THE SELECTIVE SPOUT ONTO THE NOZZLE

Signature ____________

11/14/2008 103.10

Annex 1.

References

[API 1529] *Aviation Fueling Hose*, American Petroleum Institute, (www.api.org), Washington, DC.

[API/IP 1540] *Design, Construction, Operation and Maintenance of Aviation Fueling Facilities*, American Petroleum Institute, (www.api.org), Washington, DC.

[API/IP 1542] *Identification Markings for Dedicated Aviation Fuel, Manufacturing and Distribution Facilities*, Airport Storage and Mobile, Fueling Equipment, American Petroleum Institute (www.api.org), Washington, DC.

[API/IP 1581] *Specification and Qualification Procedures for Aviation Jet Fuel Filter/Separators*, American Petroleum Institute (www.api.org), Washington, DC.

[API/IP 1582] *Similarity Calculations and Software for Aviation Jet Fuel Filter/Separators*, American Petroleum Institute (www.api.org), Washington, DC.

[IP 1583] *Specification and Qualification Procedures for Aviation Fuel Filter Monitors with Absorbent Type Elements*, Energy Institute (www.energyinst.org.uk), London, UK.

[API/IP 1590] *Specification and qualification procedures for aviation fuel microfilters*, American Petroleum Institute (www.api.org), Washington, DC.

[ASTM D56] *Standard Test Method for Flash Point by Tag Closed Tester*, ASTM D56-98a, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D86] *Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure*, D86-99ae1 American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D130] *Standard Test Method for Detection of Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D381] *Standard Test Method for Gum Content in Fuels by Jet Evaporation*, D381-99, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D1250] *Standard Guide for Petroleum Measurement Tables*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D1298] *Standard Test Method for Density (API Standard 2540, Chapter 9, Section 1) Relative Density (Specific Gravity) or API Gravity of Crude Petroleum and Liquid Petroleum Products by Hydrometer Method.* American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D1655] *Standard Specification for Aviation Turbine Fuels*, ASTM D1655-08a, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D2276] *Standard Test Method for Particulate Contaminant in Aviation Fuel by Line Sampling* , American Society for Testing and Materials American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D2386] *Standard Test Method for Freezing Point of Aviation Fuels*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D3828] *Standard Test Methods for Flash Point by Small Scale Closed Tester*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D3948] *Standard Test Method for Determining Water Separation Characteristics of Aviation Turbine Fuels by Portable Separometer*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D4306] *Standard Practice for Aviation Fuel Sample Containers for Tests Affected by Trace Contamination*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D5001] *Standard Test Method for Measurement of Lubricity of Aviation Turbine Fuels by the Ball-on-Cylinder Lubricity Evaluator (BOCLE)*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM D6469] *Standard Guide for Microbial Contamination in Fuels and Fuel Systems.* American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM MNL5] *Aviation Fuel Quality Control Procedures.* Edited by J. Gammon. American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM E1] *Standard Specification for ASTM Thermometers*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[ASTM E100] *Standard Specification for ASTM Hydrometers*, American Society for Testing and Materials (www.astm.org), West Conshohocken, Pennsylvania.

[NFPA 10] *Standard for Portable Fire Extinguishers*, NFPA, (www.nfpa.org), Quincy, MA

[NFPA 407] *Standard for Aircraft Fuel Servicing*, NFPA, (www.nfpa.org), Quincy, MA

AIR TRANSPORT ASSOCIATION

Air Transport Association of America, Inc.
1301 Pennsylvania Avenue, NW - Suite 1100
Washington, DC 20004-1707
USA
202-626-4000
www.airlines.org

Appendix 2

Spill Reporting Form

SIGNIFICANT SPILL REPORT

Facility Name: ____

Facility Phone: ____

Facility Address: ____

Location: ____

____

Date and Time of Occurrence: ____

Discovered By: ____

Report Prepared By: ____

Potential Hazards: ____

Evacuation Required: ____

Material Type & Volume: ____

Estimated Quantity Discharged into Local Waters: ______________________

Description of Affected Medium: ____

Cause of Spill: ____

____

____

Corrective Action Taken: ____

____

____

Damage and Injuries: ____

Agencies/Persons Contacted: ____

____

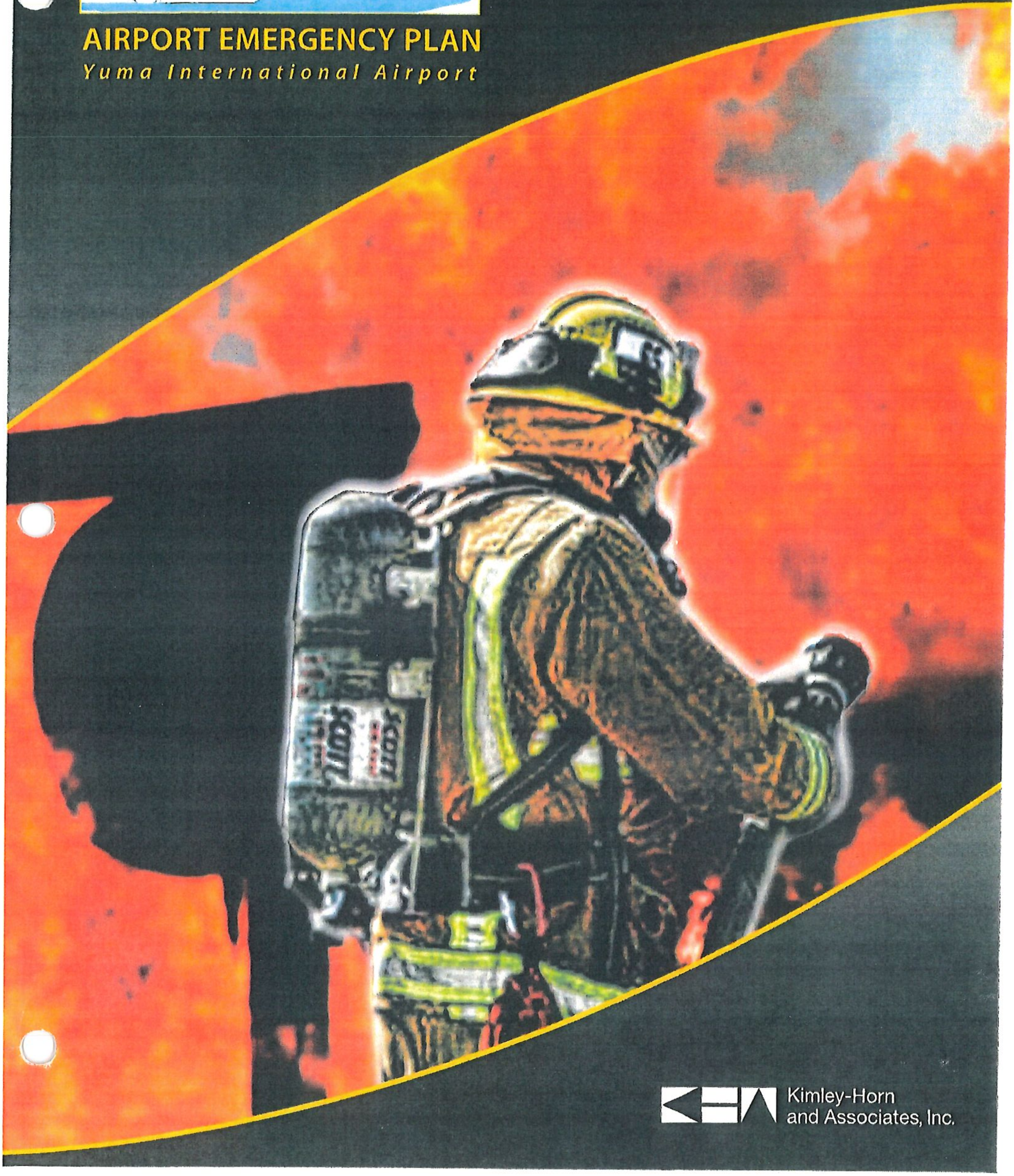
Appendix 3

Airport Emergency Plan

April 2011

AIRPORT EMERGENCY PLAN

Yuma International Airport



Kimley-Horn and Associates, Inc.

Yuma International Airport

Airport Emergency Plan (AEP)
Class IV Airport

To comply with CFR 14 Part 139.325

Craig Williams
Airport Director

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Promulgation Page

This page officially declares this document to be the existing Airport Emergency Plan (AEP) for Yuma International Airport. The AEP provides both authority and responsibility for organizations and personnel to perform assigned tasks during an emergency situation. Yuma International Airport remains committed to preparing itself for emergency situations and maintaining training programs and maintenance efforts to keep the airport as ready as possible.

______________________ Date: 5/3/2011

Craig Williams
Airport Director

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MAY 9 2011

Table of Contents

Section I. AEP Basic Plan

2 Functional Annexes

3 Hazard Specific Information and Procedures

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TG

MAY 3 2011

Signature Page

The following representatives have reviewed this document:

Name: Craig Williams Title: Airport Director

Signature: [signature] Date: 5/3/2011 Department: Airport

Name: GLADYS WIGGINS Title: OPERATIONS DIRECTOR

Signature: [signature] Date: 5/3/2011 Department: OPERATIONS

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MAY 9 2011

Record of Changes

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TG
MAY 3 2011

Section I. AEP Basic Plan

1.1 Introduction

Within the whole scope of comprehensive emergency management, a need exists for a plan to specifically handle response and initial recovery from incidents and accidents that occur on or around the airfield. This Airport Emergency Plan (AEP) is to focus primarily on those topics; response and initial recovery. This implies other planning will handle any mitigation, administrative, and long-term recovery issues associated with an emergency.

1.2 Purpose

The specific goals of this document are to:

- Assign responsibility to organizations and individuals for carrying out specific actions at projected times and places in responding to an emergency.
- Set forth lines of authority and organizational relationships, and show how all actions should be coordinated.
- Describe how people and property will be protected in emergencies and disasters.
- Identify personnel, equipment, facilities, supplies, and other resources available—within the airport or by agreement with communities—for use during response and recovery operations.
- As a public document, cite its legal basis, state its objectives, and acknowledge assumptions.
- Facilitate response and short-term recovery to set the stage for successful long-term recovery.

Yuma International Airport, being certificated under 14 CFR Part 139, intends to follow the recommendations set forth by AC 150/5200-31C to the maximum extent practicable. This document contains the recommended information and will be updated as required when deficiencies are identified during drills, exercises, actual responses, plan reviews, etc., to more efficiently manage responses to incidents/emergencies.

This AEP will follow a functional approach and will be organized into the following four parts:

1) Basic Plan
2) Functional Sections or Annexes
3) Hazard-specific Sections
4) Standard Operating Procedures (SOPs) and Checklists

This approach avoids duplication of the planning effort for every hazard, and for every task, by dividing the AEP into four levels (Basic Plan, Functional Annexes, Hazard-specific Sections, and SOPs). It provides an easy-to-use mechanism for organizing all pertinent information. This format serves in all-hazard situations, even unanticipated ones, by organizing the AEP around

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performance of "generic" functions. It also permits emphasis on hazards that pose the greatest risk to an airport and surrounding communities, through use of Hazard-Specific Sections.

The Basic Plan provides an overview of the airport's emergency response organization and its policies. It is an overall sequence and scope of the planned emergency response. The Basic Plan is designed to meet the regulatory requirements of 14 CFR Part §139.325 with a minimal amount of detailed information. The details are contained in the Hazard-Specific Sections, Standard Operating Procedures and Checklists found later in this document. Another important purpose of the Basic Plan portion of the AEP is to meet the informational needs of the airport's executive body and other agency heads. It serves as a mechanism for outlining what hazards this AEP addresses without getting bogged down in detail.

1.3 Citation of Legal Authority for Emergency Operations

Yuma International Airport (the Airport) is under the Yuma County Airport Authority (YCAA) which is an independent public entity under Arizona Law. The Airport Emergency Plan (AEP) is founded on a spectrum of ordinances and statues and is promulgated by the Airport Director. The Airport will provide or request aid from other agencies or facilities. The Airport is listed as having assisting responsibilities for three emergency support functions; transportation, resource support, and public information.

1.4 Assumptions & Situations Included in the AEP

The following assumptions and statements are to be considered for this document:

- Yuma International Airport does not own any emergency vehicles. The Airport has limited capability to provide support in any emergency situation affecting the Airport.
- The main goal of the Airport is to provide expertise to responding agencies, such as Marine Corps Air Station (MCAS) Yuma, the City of Yuma or other responders, and to act as a conduit of information to the public.
- Natural and accidental events will occur within Yuma County and around the airport that create emergency situations and pose the potential damage to property and loss of life that could reach disastrous proportions.
- The threat of Terrorism and the use of weapons of mass disruption/destruction will remain constant for the foreseeable future.
- There will be insufficient forewarning of any disaster to allow for planning efforts beyond real-time response and response times may be delayed in proportion to the number of decisions required.
- A properly designed and implemented Airport Emergency Plan will provide procedures to help minimize loss of life, minimize illness and injury, and preserve property and community integrity.
- Provisions of Homeland Security Statutes and regulations will govern certain response activities. The recovery of losses and costs from Federal resources will require specific preparations and compliance with specific regulations.

- The Airport Emergency Plan will be in operation during and after any disaster affecting the airport or surrounding community.
- The Airport will normally exercise a supporting role to the Incident Command Center operated by MCAS Yuma in the management of a major disaster or multi-jurisdictional emergency. The Airport will not knowingly develop or endorse conflicting policies or procedures.
- The demand by the public for information will be very high and accentuated in certain types of disasters. The management of public reaction will require the distribution of needed information.
- Certain emergency support functions will be required for different emergencies, and certain assets and resources are critical to the emergency support effort.
- The MCAS Yuma Incident Command System will normally facilitate communication, resource management, and real-time planning of response actions in the complex jurisdiction environment of the Yuma County Airport Authority and Yuma International Airport.
- Airport employees with assigned functions will perform their duties to the best of their ability. Provisions may be made for employees to address family needs in the event of conflicting priorities. In such a circumstance the airport will make all reasonable efforts to assign other qualified personnel to carry out those duties during an emergency situation.
- Helicopter operations are common at the airport.
- FAA guidelines and relationships established with MCAS Yuma for air traffic control will be followed to the maximum extent practicable when responding to disasters or emergency situations.
- Critical operating capacities of the airport will be evaluated for operational effectiveness after an event such as the condition of the runway, communications, power, etc.
- Yuma International Airport has four runways and is therefore expected to remain functional to some degree during most emergency situations. It is likely that the airport's operational capacities will be reduced during these periods but will retain some capacity to accommodate the movement of personnel and material into the county.
- The airport has two access points into the public terminal area that are geographically close together. Nevertheless, for planning purposes it is reasonable to assume that one of the major access points will remain operable and passable to allow access to the facility.
- Air traffic control, fueling, maintenance and other normal airport operations are expected to continue at reduced levels during emergency situations.
- Adequate security safeguards will be requested to protect airport assets from intentional or accidental compromise.

The areas covered by this plan and threats that are likely to arise are as follows:

- Aircraft Accidents
- Off-Airport Aircraft Accidents/Incidents
- Bomb Incidents – Aircraft
- Bomb Incidents – Other than Aircraft
- Hijacking
- Natural Disasters

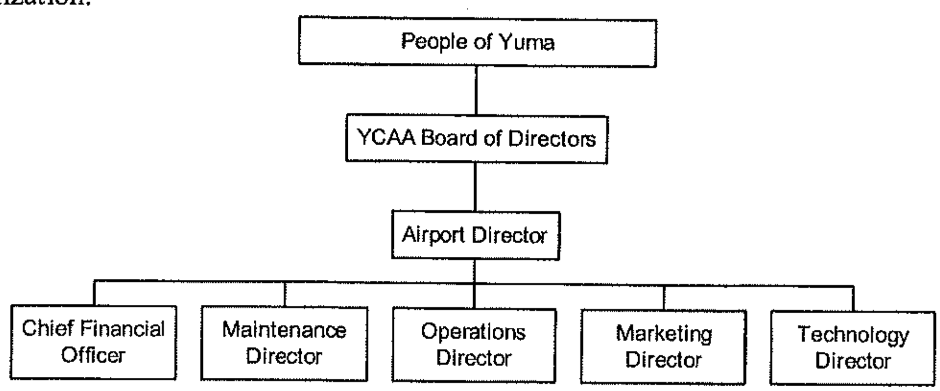
- Structural Fires
- Fuel Farm Fires
- Power Failure for Movement Area Lighting
- Radiological Materials Incidents
- Hazardous Material Spills
- Sabotage
- Crowd Control
- Removal of Disabled Aircraft

Although unknown hazards inherently exist, this AEP is meant to be implemented for any emergency situation and to encompass many possibilities for disaster. A Hazard Analysis Program is intended to identify those hazards, which create the greatest vulnerability to the airport and its surrounding area. In addition, it determines what characteristics of the airport may affect response activities; and what information used in the preparing the AEP must be treated as assumption rather than fact.

1.5 General Concept of Emergency Operations

Yuma International Airport is owned and operated by the Yuma County Airport Authority. Funding for the Airport comes from the airport's users and not the general revenue tax dollars. Commercial flights are offered through the airport.

In order to perform the above tasks, the Director has organized Yuma International Airport into a flat organization:



In an emergency situation, the following diagram depicts the organizational structure of the airport. Airport staff will provide support to MCAS Yuma emergency responders, firefighters or medical providers.

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MAY 3 2011

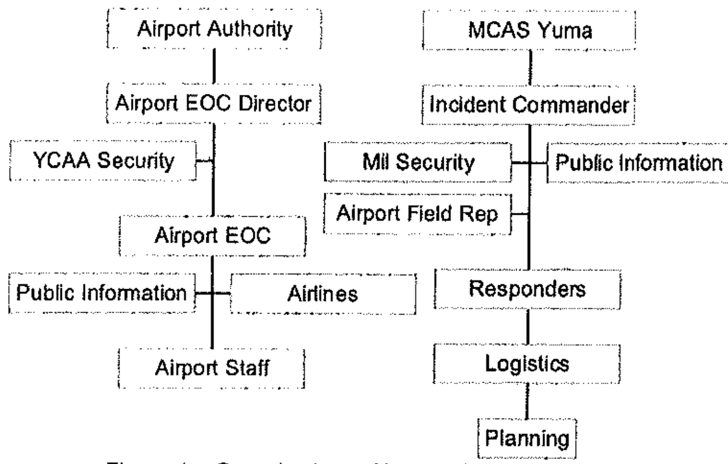

Figure 1 – Organizational Chart during Emergencies

** The airport will respond to requests for information or support from the Incident Commander via the Airport Field Rep. While on the scene with the Incident Commander the Airport Field Rep will report to the Airport EOC Director.

1.5.1 Types of Alerts

General response procedures and actions for implementation of the AEP at Yuma International are as follows:

- ALERT I: Any incident involving an aircraft in flight that may result in an emergency on landing or crash.
- ALERT II: Any incident involving an aircraft that has impacted the ground or any other structure, or impact with another object while in flight.
- Other: Bomb, hijack, or other related incident/emergency information.

1.5.2 Implementation of the AEP during routine weekday business hours

In the event of a disaster, the Airport Director, Airport Operations Manager, Maintenance Manager, or the Director's designee shall have the authority to initiate the AEP, either in its entirety or in a portion determined to be sufficient to handle the situation at hand.

1.5.3 Implementation of the AEP during non-business hours

During non-business hours, it shall be the responsibility of the Airport personnel on duty to declare a disaster and to initiate the AEP after they have consulted with the Airport Director, Airport Operations Manager, or Maintenance Manager.

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Based on the specific disaster and associated needs, the first Airport Manager on the scene or Airport Operations staff member will begin making notifications to the various departments and agencies that will need to be involved during the emergency response.

All of the agencies responding will be coordinated under the direction of the On-Site Commander. Coordination and cooperation between the agencies and personnel will be continuous until such time as the incident has been terminated. The On-Site Commander may differ depending on the type of emergency.

1.6 Agencies Involved in the AEP

The following agencies and personnel can be expected to be contacted for assistance or as a matter of procedure in the event of a disaster occurring at Yuma International Airport. This list does not necessarily include all of those who will be notified and at the same time it may not be necessary to notify all of these in the event of a disaster.

The order in which they are listed is not necessarily the order in which the Airport or IC will make notification. All phone numbers will be contained in this AEP.

- ARFF (MCAS Yuma)
- Yuma Fire Department (YFD)
- Yuma Police Department (YPD)
- Department of Public Safety (DPS)
- Yuma County Sheriff's Office
- Rural Metro
- Yuma Regional Medical Center
- Airport Personnel
- Air Traffic Control Tower (MCAS Yuma)
- Federal Aviation Administration (FAA)
- National Transportation Safety Board (NTSB)
- US Post Office, if carriage of mail is involved
- Clergy- to comfort injured or deceased
- Drug Enforcement Agency (DEA)
- Arizona Public Services (APS)
- Yuma County Emergency Management Office
- American Red Cross/Red Cross Disaster Team
- Transportation Security Administration
- Federal Bureau of Investigation (FBI)
- Southwest Gas
- Water and Sewer
- Rental Car Agencies
- Airline Representatives
- Homeland Security

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In the event of a disaster or aircraft accident occurring at Yuma International Airport, any or all of the above listed personnel/agencies, may be notified to respond to the airport. All responding personnel and agencies will be coordinated under the direction of the On-Site Commander or designee. Coordination and cooperation between all agencies will be continuous until such time that the incident is terminated.

Personnel and agencies noted above and in the Assignment of Responsibilities section of the AEP will be contacted by the Airport no less than once per year to verify and/or amend their response capabilities.

1.7 *Organizations and Assignment of Responsibilities*

1.7.1 Operational Lines of Succession

In the event of an emergency, the Operational Line of Succession for the Airport is as follows:

- Airport Director (Airport 1)
- Operations Director (Ops 1)
- Maintenance Director (Mike 1)
- Airport Operations Supervisor (Ops 2)
- Airport Operations Officers (Ops 3-10)
- Maintenance Personnel (Mike 2-10)

1.7.2 Assignment of Responsibility

Airport emergencies involving aircraft or airside operations will be conducted in accordance with MCAS Yuma ARFF procedures.

The MCAS Yuma Air Traffic Control Tower will notify MCAS Base Operations of the following conditions. MCAS Base Operation will in turn notify YCAA Airport Operations of the following conditions:

- Alert 1
- Alert 2
- Other, such as Bomb, hijack, or other related incident/emergency information

YPD may receive initial notification of hazardous conditions not known to MCAS Tower. Such instances are conveyed to MCAS Base Operations and Airport Operations from YPD. This information will be conveyed to the MCAS Tower by MCAS Base Operations and YCAA Airport Operations. In the event additional fire fighting services are required, MCAS ARFF will notify the Yuma Fire Department through mutual aid agreements.

1.7.3 Communications

Communications between organizations will be via the following:

1. Commercial Telephone.
2. Tower frequency of 119.30

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3. Ground Control Frequency of 121.90
4. Other means as required and determined by the Incident Commander.

Location of accidents or emergencies off airport will normally be given street addresses or nearby landmarks.

No vehicle, emergency or otherwise, may enter the aircraft movement area without prior clearance from MCAS Yuma Air Traffic Control. In the event that a non-air traffic control radio equipped vehicle must traverse this area, it will be escorted by a vehicle so equipped, unless the area concerned is closed to air traffic.

Any person needing emergency assistance or having knowledge of an emergency situation should call 911 and report the emergency.

1.7.4 Responsibilities by Organization

The following provides a brief synopsis of the procedures and/or responsibilities of the named organizations during an emergency at Yuma International Airport.

1.7.4.1 Air Carrier(s) / Aircraft Operator(s)

- Provide full details of aircraft related information, as appropriate, to include number of persons, fuel and dangerous goods on board.
- Coordinate transportation, accommodations and other arrangements for uninjured passengers.
- Coordinate utilization of their personnel and other supplies and equipment for all types of emergencies related to their aircraft occurring at the airport.

1.7.4.2 MCAS Yuma Air Traffic Control

- Contact YCAA Airport Operations regarding civil aircraft accidents/incidents and provide them with information relevant to the emergency.
- Provide for safe and expeditious movement of non-support aircraft away from aircraft movement areas on the airport that may be involved in an emergency.
- Provide for safe and expeditious movement of support equipment to the emergency site, when applicable.

1.7.4.3 Airport Authority/Airport Director

- Assume responsibility for overall response and recovery operations of civil aircraft, as appropriate. Responsible for airport facilities and operating surfaces under the jurisdiction of YCAA.
- Establish, promulgate, coordinate, maintain and implement the AEP, to include assignment of responsibilities.
- Gather, coordinate and release factual information to News Media.
- Perform duties in accordance with the air carrier Aviation Disaster Family Assistance Act Plan.

1.7.4.4 Airport Tenants

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- Coordinate the use of their available equipment and supplies.
- Coordinate the use of their manpower that may have knowledge of the airport, aircraft and other technical knowledge.

1.7.4.5 Clergy

- Clergy must coordinate with the American Red Cross, NTSB, and air carriers to avoid conflicts or duplication of effort from within these agencies under the Aviation Disaster Family Assistance Act.

1.7.4.6 Emergency Medical Services

- Provide emergency medical services to the airport during emergency conditions to include triage, stabilization, first aid, medical care and the transportation of the injured.
- Coordinate planning, response, and recovery efforts with hospitals, fire departments, police departments, American Red Cross, Airport Operator, etc.

1.7.4.7 Coroner

- Coordinate and provide body identification and other investigative activities.

1.7.4.8 Federal Aviation Administration (FAA)

- Provide investigative services as needed.

1.7.4.9 Federal Bureau of Investigation (FBI)

- Investigate any alleged or suspected activities that may involve federal criminal offenses.
- Assumes command in response to certain hijack and other criminal situations.

1.7.4.10 National Transportation Safety Board (NTSB)

- Conduct and control all accident investigations involving civil aircraft, or civil and military aircraft, within the United States.

1.7.4.11 MCAS Yuma Crash, Fire and Rescue (CFR)

- Through a Letter of Agreement (LOA) with YCAA MCAS Yuma CFR will, within the limits of the capabilities of MCAS Yuma CFR, respond to crash and fire rescue emergencies involving commercial air carrier aircraft and civil aviation aircraft aboard MCAS Yuma/Yuma International Airport landing facilities and land areas, and other land adjacent to MCAS Yuma/NYL.
- MCAS Yuma CFR equipment capability meets or exceeds FAA Index E requirements.
- Note: MCAS Yuma has no obligation to maintain any ARFF organization, to conduct training or inspection, or to maintain any ARFF equipment to meet FAA inspection criteria.

1.7.4.12 Yuma International Airport Operations Department

- Will assist the Airport Director as necessary in response to any aircraft emergency, to include information gathering, coordination with military and FAA officials, media liaison, airfield security or other duties as required.

1.7.4.13 Yuma Fire Department (YFD)

- Respond to civil aviation disasters or emergencies within the city limits, as required or requested by MCAS Yuma under any automatic assistance agreements in place.

1.7.4.14 Yuma Regional Medical Center

- Coordinate the hospital disaster plan with the airport.

1.7.4.15 United States Postal Service

- Ensure the security of the mail, protect postal property and restore service.

1.7.4.16 Yuma Police Department (YPD)

- Manage law enforcement resources and direct traffic control and law enforcement operations during an emergency.

1.7.4.17 National Weather Service

- Provide alert and warning process, particularly weather related emergencies.

1.7.4.18 All Responding Individuals / Organizations

Upon notification, the agencies and organizations listed above will respond to emergencies at Yuma International Airport. These agencies (except YFD and YPD support) will receive notification from the Airport Operations Control Center through the activation of a call roster. For off-airport emergencies, all agencies may report directly to the emergency site.

All tasked individuals or cooperating/responding organizations including, but not limited to, those listed above would be responsible for the following.
a. Maintain current internal personnel notification rosters and SOP's to perform assigned tasks.
b. Analyze need and determine specific communications equipment and supplies.
c. Identify potential sources of additional equipment and supplies.
d. Provide for continuity of operations by taking action to:
   1. Ensure that lines of succession for key management positions are established to ensure continuous leadership and authority for emergency actions and decisions in emergency conditions. Protect records, facilities and organizational equipment deemed essential for sustaining operational capabilities and conducting emergency operations.
   2. Protect emergency staff:
      a. Provide appropriate protective clothing and equipment.
      b. Ensure adequate training.
      c. Provide security.
      d. Make stress counseling available.
      e. Ensure the functioning of communication and equipment.

1.7.4.18 The United States Border Patrol and the Arizona National Guard
These agencies may be participating agencies, depending on the scope of the emergency.

1.8 Administration and Logistics

1.8.1 Availability of Services and Support

The availability of services and support for emergencies can be located in the organization and assignment of responsibilities section, AEP Hazard Specifics section, and the exhibits included in this AEP. It is up to each individual department and involved agency to appropriately manage, monitor, and request additional resources as needed.

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1.8.2 Mutual Aid Agreements

- All MCAS Yuma Fire and EMS Mutual Aid Agreements with other departments are maintained by the MCAS Yuma Fire Chief.

- All Law Enforcement Mutual Aid Agreements are maintained by their respective department chief, either Yuma Police Chief, Yuma County Police Chief, or Yuma County Office of Emergency Management.

1.8.3 Staffing – Assignments, Re-Assignments, and Volunteer Solicitation

- All Airport personnel will be expected to report to their respective stations during a major disaster or emergency to ensure the fullest extent of Airport Operational Capability. Many Airport personnel will have numerous primary or support responsibilities during an emergency.

- Airport Management will consult with incident-command and assign Airport personnel to specific duties that may not coincide with their normal day-to-day responsibilities.

- When required, translation duties will be carried out by the Airport's Title VI coordinator or members of the Administrative Staff.

- Un-trained volunteers will be taken as a last resort type option. Areas such as sandbagging for impending flood waters, preparing food for disaster workers, and collecting clothing for survivors are the type of responsibilities a volunteer may expect.

1.8.4 General Policies for Managing Resources, Record Keeping, Reporting, and Tracking Resources

In the event that Airport Finance cannot stage its operations out of the Airport Administration Building, the Maintenance Building or a Terminal area will be designated. If necessary, an immediate freeze of all non-essential supplies and service purchases will be implemented in the event of a major emergency or disaster. The freeze will restrict those purchases to emergency items only and those items absolutely necessary to ensure the safe and efficient operation of the Airport.

The Airport Finance Department will be responsible for all Airport resource procurement and record keeping. All other agencies supporting the Yuma International Airport during a major disaster/emergency will be responsible for their own record keeping and resources procurement unless they request such assistance from the Airport.

Airport Managers are authorized to make purchases with their Airport Credit Cards. Receipts are provided to the Finance Department for auditing purposes.

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1.9 Plan Development and Maintenance

Personnel should periodically review AEP policies, procedures, and related information. Training that covers changes in policies, procedures, resource availability, etc. will be provided to ensure that all personnel stay familiar with current information. The schedules for some of the key elements are:

- Telephone numbers contained in the AEP will be reviewed quarterly for accuracy by actually calling the individuals/ organizations listed. Changes will be noted, particularly in the procedures of the individual(s)/organization(s) tasked with making the calls during an emergency.
- Radio frequencies used in support of the AEP will be tested at least monthly.
- Emergency resources will be inspected routinely. The frequency of inspection may vary depending on the type of equipment and supplies. The Airport Self-Inspection Program includes these resources on either daily or periodic inspection schedules.
- Personnel assignments to include descriptions of duties and responsibilities will be reviewed semi-annually.
- Mutual aid agreements will be reviewed annually or as specified in the agreement.
- Off-airport activity will be reviewed on an on-going basis. Maintain an open dialogue with off-airport agencies, such as utilities, public works departments, etc. to learn of activity that may affect the airport's emergency response effort, i.e. road construction and closures, major utility work, etc.
- An important part of plan maintenance and validation comes from the overall training, drill, and exercise program. As training, drills, and exercises are conducted, it is important that a functional critique/feedback program be in place. These "lessons learned" will be incorporated back into the planning process.

1.10 Authorities and References

There are numerous documents that are used by the Airport to manage emergencies, security issues and day-to-day operations, included but not limited to:

- Joint Use Agreement between Marine Corps Air Station (MCAS) Yuma and YCAA (JUA)
- Airport Security Plan (ASP)
- Airport Certification Manual (ACM)
- Airport Layout Plan (ALP)
- Emergency Response Checklist (ERC)

1.11 Terms, Definitions, and Abbreviations

Term/abbreviation	Definition/Meaning
Airport operations officer	A sworn police aide, employed by the YCAA Operations Department
Alerts	A priority system for activating and deploying appropriate
Alert 1	Any incident involving an aircraft in flight that may result in an emergency on landing or crash.

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Alert 2	Any incident involving an aircraft that has impacted the ground or any other structure, or impact with another object while in flight.
ASC	Airport Security Coordinator or Alternate
ATCT	Air Traffic Control Tower
CFR	Crash, Fire, and Rescue Department of MCAS Yuma
Codes	A priority system for activating and deploying appropriate airport support personnel in response to categories of emergency conditions not involving an aircraft incident or accident.
Code Bravo	A bomb threat against aircraft, baggage on the aircraft, or baggage to be loaded on board the aircraft.
Code Red	Bomb threat to a structure or anything other than aircraft.
Code Black	Hijacking-Aircraft or Terminal
Code Charlie	Incident or Emergency, not involving aircraft or structures, that requires immediate assistance of all available personnel.
Crisis management	Managing in a crisis, to prevent or contain a crisis situation from escalating, jeopardizing safety and facilities, inhibiting normal operations, creating a negative public image and adversely affecting the organization's viability.
EOC	Emergency Operations Center: The central gathering point for all essential personnel during an emergency situation. For incidents involving commercial air carriers this location, unless otherwise posted, will be the 2nd Floor Conference Room of Yuma International Airport
Emergency frequency	A common UHF or VHF frequency on which responding personnel communicate during an emergency.
FBI	Federal Bureau of Investigation
FBO	Fixed Based Operator. A commercial entity located on the airport which provides aircraft fuel, maintenance, repairs and storage.
Incident commander	Individual who assumes overall command of personnel and equipment at an incident. His/Her role is to direct and coordinate all fire/ground operations.
Movement area	Areas of the airport which are used for taxiing, takeoff and landing of aircraft, exclusive of loading ramps and aircraft parking areas.
NOTAM	Notices to Airmen. A notice containing information concerning the airport environment, condition or change in any aeronautical facility, service, procedure, or hazard. The timely knowledge of these notices is essential to personnel concerned with flight operations.
Operations Control Center	A dispatch center located in the airport operations office, located on the first floor of the Yuma International Airport, F.C. Braden Passenger Terminal.
TSA	Transportation Security Administration; agency within the Department of Homeland Security (DHS)
YCAA	Yuma County Airport Authority
YFD	Yuma Fire Department
YPD	Yuma Police Department

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2 Functional Annexes

Many of the duties and responsibilities of individuals or specific positions are documented in the Basic Plan of this AEP. The purpose of the Functional Annexes is to categorize some of the appropriate duties and responsibilities by function. This methodology implies the use of Incident Command Systems (ICS) as a component of FEMA National Incident Management System (NIMS) during an emergency situation to promote efficient, clearly defined duties and responsibilities by function. ***Incorporated by reference is the Airport's Emergency Response Checklist (ERC), which will be used by airport personnel as a checklist for readily available information.***

Core functions and monitoring of emergency management practices include the following:

- Command and Control
- Communications
- Alert Notification and Warning
- Emergency Public Information
- Protective Actions
- Law Enforcement and Security
- Firefighting and Rescue Monitoring
- Health and Medical Monitoring
- Resource Management
- Airport Operations and Maintenance

2.1 Command and Control

2.1.1 Purpose

The individual responsible for command and control of an emergency situation at MCAS Yuma/Yuma International Airport is the MCAS Incident Commander. On the "civilian side" of the airport, employees of YCAA provide a supporting role. Within the YCAA organization this support is provided by the Airport Director, Operations Director, Maintenance Director, Airport Operations Supervisor, Airport Operations Officers, and Maintenance Personnel. Airport personnel will support the emergency responders with information, coordination, etc. as deemed appropriate for the safe and expeditious management of the emergency situation.

The Airport Authority/Airport Director or representative as identified in the paragraph above would assume responsibility for

- Airport-owned facilities and operating surfaces under the jurisdiction of YCAA
- Establish, promulgate, coordinate, maintain and implement the AEP, to include assignment responsibilities
- Gather, coordinate and release factual information to the news media
- Perform duties in accordance with air carrier Aviation Disaster Family Assistance Act

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2.1.2 Situation and Assumptions

Upon notification of an incident or emergency, Airport personnel would respond to the scene to provide support to the Incident Commander with information, coordination, etc. as deemed appropriate for the safe and expeditious management of the emergency situation.

2.1.3 Operations

The Airport Director or his designated representative will be in charge of YCAA-related responsibilities during each phase of an emergency.
The following duties or responsibilities are assigned to the Airport Director:

- Activate the EOC
- Provide administrative support during aircraft emergencies within the jurisdiction of YCAA
- Oversee coordination of the investigation activities, and arrange necessary meetings
- Activate the emergency notification procedure as necessary, including
    - Notify the appropriate airlines/tenants involved
    - Assist in obtaining passenger information and number of injured for the area hospitals
    - Develop and implement a schedule to support 24/7 operations, if necessary
    - Direct the efforts of all subordinate staff members

The following duties or responsibilities are assigned to the Airport Operations Director:

- Respond to on-scene command post and provide airport management representation
- Assist in the establishment of an on-scene command post with MCAS ARFF personnel
- Coordinate the designation of the appropriate staging location and establish the closest entry from the surrounding roadway system with MCAS ARFF Incident Commander
- Oversee photography and video documentation of the emergency
- Assume duties/responsibilities as directed by the Airport Director

2.1.4 Authorities and References

The Airport maintains a Joint Use Agreement with MCAS to cover operational matters including a Letter of Agreement (LOA) for Aircraft Rescue and Fire Fighting. This LOA is included as an appendix to the Airport Certification Manual.

2.2 Communications

All individuals responding to and supporting the management of an emergency situation are responsible for being diligent, alert and responsive to communicating efficiently. This functional area describes the communications mechanisms used and provides information on establishing, using, maintaining, augmenting, and providing redundancy for all types of communication devices needed during emergency response operations

The primary emergency communication system is through the commercial telephone system and cellular telephone equipment carried by key personnel. Augmenting the primary commercial and cellular communications systems is a UHF, 2-way, portable/mobile radio communications

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system which links the Airport Control Center, Airport Operations, maintenance and other key management personnel in the event commercial or cellular equipment fails.

All airport vehicles have the capability of communicating with Air Traffic Control, via 2-way, AM/VHF mobile radios. All personnel will monitor the Ground Control frequency of 121.90 MHZ when operating within the Airport Operations Area.

In the event of a communications equipment failure, the Incident Commander will designate the type of communication equipment to be utilized in lieu of the failed equipment.

2.3 Alert and Warning

2.3.1 Purpose

Airport emergencies involving aircraft or airside operations will be conducted in accordance with MCAS Yuma CFR procedures. The MCAS Yuma Air Traffic Control Tower will notify MCAS Base Operations of the following conditions. MCAS Base Operations will in turn notify YCAA Airport Operations of the following conditions:

- Alert 1
- Alert 2
- Bomb, hijack, or other related incident/emergency information

2.3.2 Operations

YPD may receive initial notification of hazardous condition not known to MCAS Tower. Such instances are conveyed to MCAS Base Operations and Airport Operations from YPD. This information will be conveyed to the MCAS Tower by MCAS Base Operations and YCAA Airport Operations.

In the event additional fire fighting services are required, MCAS CFR will notify the Yuma Fire Department through mutual aid agreements. Location of accidents or emergencies off airport will normally be given street addresses or nearby landmarks.

No vehicles, emergency or otherwise, may enter the aircraft movement area without prior clearance from Air Traffic Control. In the event of a non-air traffic control radio equipped vehicle must traverse this area, it will be escorted by a vehicle so equipped, unless the area concerned is closed to air traffic.

Any person needing emergency assistance or having knowledge of an emergency situation should call 911 and report the emergency.

2.3.3 Organization and Assignment of Responsibilities

The following provides a brief synopsis of the procedures and/or responsibilities of the named organization during an emergency at Yuma International Airport.

2.3.3.1 Air Carrier (s) / Aircraft Operator(s)

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- Provide full details of aircraft related information, as appropriate, to include number of persons, fuel and dangerous goods on board
- Coordinate transportation, accommodation and other arrangements for uninjured passengers
- Coordinate utilization of their personnel and other supplies and equipment for all types of emergencies related to their aircraft occurring at the Airport

2.3.3.2 MCAS Yuma Air Traffic Control

- Contact YCAA Airport Operations regarding civil aircraft accidents/incidents and provide them with information relevant to the emergency
- Provide for safe and expeditious movement of non-support aircraft away from aircraft movement areas on the airport that may be involved in an emergency
- Provide for safe and expeditious movement of support equipment to the emergency site, when applicable

2.3.3.3 Airport Authority / Airport Director

- Responsible for airport facilities and operating surfaces under the jurisdiction of YCAA,
- Establish, promulgate, coordinate, maintain and implement the AEP, to include assignment of responsibilities
- Gather, coordinate and release factual information to news media
- Perform duties in accordance with the air carrier Aviation Disaster Family Assistance Act Plan

2.3.3.4 Airport Tenants

- Coordinate the use of their available equipment and supplies
- Coordinate the use of their manpower that may have knowledge of the airport, aircraft and other technical knowledge

2.3.3.5 Clergy

- Clergy must coordinate with the American Red Cross, NTSB, and air carriers to avoid conflicts or duplication of effort from within these agencies under the Aviation Disaster Family Assistance Act

2.3.3.6 Emergency Medical Services

- Provide emergency medical services to the airport during emergency conditions to include triage, stabilization, first aid, medical care and the transportation for the injured
- Coordinate planning, response, and recovery efforts with hospitals, fire departments, police departments, America Red Cross, airport operations, etc.

2.3.3.7 Coroner

- Coordinate and provide body identification and other investigative activities

2.3.3.8 Federal Aviation Administration (FAA)

- Provide investigative services as needed

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2.3.3.9 Federal Bureau of Investigation (FBI)
- Investigate any alleged or suspected activities that may involve federal criminal offenses
- Assumes command in response to certain hijack and other criminal situations

2.3.3.10 National Transportation Safety Board (NTSB)
- Conduct and control all accident investigation involving civil aircraft, or civil and military aircraft, within the United States

2.3.3.11 MCAS Yuma Crash, Fire and Rescue (CRF)
- Through a Letter of Agreement (LOA) with YCAA, MCAS Yuma CFR will, within the limits of the capabilities of MCAS Yuma ARFF, respond to crash and fire rescue emergencies involving commercial air carrier aircraft and civil aviation aircraft aboard MCAS Yuma/Yuma International Airport landing facilities and land areas, and other land adjacent to MCAS Yuma/Yuma International Airport
- MCAS Yuma CFR equipment capability meets or exceeds FAA Index E requirements
- MCAS Yuma has no obligation to maintain any ARFF organization, to conduct training or inspection, or to maintain and ARFF equipment to meet FAA inspection criteria

2.3.3.12 Yuma International Airport Operations Department
- Assist with the Airport Director as necessary in response to any aircraft emergency, to include information gathering, coordination with military and FAA officials, media liaison, airfield security or other duties as required

2.3.3.13 Yuma Fire Department (YFD)
- Respond to civil aviation disasters or emergencies within the city limits, as required or requested by MCAS Yuma under and automatic assistance agreements in place

2.3.3.14 Yuma Regional Medical Center
- Coordinate the hospital disaster plan with the Airport

2.3.3.15 Unites States Postal Service
- Ensure the security of the mail, protect postal property and restore service

2.3.3.16 Yuma Police Department (YPD)
- Manage law enforcement resources and direct traffic control and law enforcement operations during an emergency

2.3.3.17 National Weather Service
- Provide alert and warning process, particularly weather-related emergencies

2.3.3.18 All Responding Individuals / General
- All tasked individuals should maintain current internal personnel notification rosters and SOPs to perform assigned tasks.
- Analyze the need and determine specific communications equipment and supplies
- Identify potential sources of additional equipment and supplies

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- Provide for continuity of operation by taking action to ensure lines of succession for key management positions are established.
- Provide appropriate protective clothing and equipment for emergency staff
- Ensure adequate training
- Provide security
- Upon notification, the agencies and organizations listed above will respond to emergencies at Yuma International Airport. These agencies (except YPD and YFD) will receive notification from the Yuma International Airport Operations Control Center through activation of a call roster. For off-airport emergencies, all agencies may report directly to the emergency site.

2.4 Emergency Public Information

2.4.1 Purpose

Yuma International Airport has strict security requirements as defined by TSA Regulation 1542. YCAA must have total cooperation from media personnel in the event of an emergency in order to maintain security standards.

2.4.2 Operations

2.4.2.1 Briefing and Escort to the Scene

All media personnel will be directed to the Airport Director. Media personnel will be briefed by the Airport Director and airline personnel. Airport Operation will conduct escorts to the emergency site after coordination with MCAS Yuma Public Information Office. At no time will the media be allowed to enter the airfield without proper escort. All media vehicles escorted onto the airfield must have the station logo conspicuously displayed on the vehicle(s). Vehicles will not travel to any area other than where the escort vehicle takes them. Media vehicles will remain under escort while in the designates area at the emergency site. Escort to the scene will be dictated by the Airport Director, Federal Aviation Administration and National Transportation Safety Board personnel.

2.4.2.2 Media Aircraft Operations

Communications are of the utmost importance in an emergency. Noise and downdrafts associated with helicopter operations greatly reduce the ability of rescue operation and communication during an emergency. Therefore, it will be the decision of the Airport Director or Incident Commander whether to allow media aircraft operations near the crash site. Request for permission to fly near or land at the crash site will be made to the Air Traffic Control Tower.

2.4.4.3 Interviewing and Obtaining Information

Once on the airfield, media representatives shall not obstruct rescue procedure or interfere with any employees' duties at the site. YCAA recognizes and understands the importance of the media's role in an emergency situation and will make every reasonable effort to accommodate media personnel. Questions concerning the YCAA's involvement in an emergency will be referred to the Airport Director or designated representative. Airport Authority employees are not authorized to make statements to the press and will refer members of the media to airport operation or management. Questions regarding the involved airline/aircraft must be coordinated with the airline or the operator. The YCAA will assist the media in this effort. For off-airport emergencies, media personnel will coordinate their activities with the proper agency having jurisdiction of the incident/accident site.

2.5 Protective Actions

2.5.1 Purpose

Yuma International Airport staff will provide adequate facilities to accommodate/protect people, responders and others during an emergency situation from environmental elements in a shelter such as the terminal building, a maintenance facility or a hangar as deemed necessary as determined by the number of individuals, location and nature of the emergency. In certain circumstances the Airport staff will coordinate an evacuation route from the exposed environment and facilitate the safe and orderly evacuation of people.

2.5.2 Situation and Assumptions

It is assumed that those involved in an emergency involving civil aircraft would be accommodated within YCAA-owned facilities, or those occupied by their tenants. In the event that a larger facility is necessary the Airport Director would coordinate as appropriate with others for appropriate facilities (i.e. MCAS Yuma, City of Yuma, etc.) as discussed through regular emergency coordination meetings or LOAs.

The YCAA will provide staff as necessary to facilitate the preparation of the facilities and the safe and orderly transportation of individuals to the facilities.

2.5.3 Operations

In the event of an emergency at Yuma International Airport, Airport Operations Officer will assist in crowd control at the scene. YPD Officers will be responsible for screening traffic at all entrances to the Airport, so as to prevent sightseers from entering the Airport. In those cases where a large amount of traffic is expected, additional assistance may be requested. Priority will be given to emergency medical and MCAS ARFF units as the emergency scene and any airport entrances.

2.5.3.1 Yuma Police Department (YPD)

The Dispatcher will:

- Notify YPD Shift Commander

The YPD Shift Commander shall:

- Respond as the situation requires according to YPD Emergency Action Procedures

YPD Officers shall:

- For an aircraft crash, the responding units report to the On-Scene Commander.
- One assigned unit will control ingress to the scene. All assigned officers will ensure that only personnel with specific duties have access to the emergency site.
- One officer will be directed to each airport entrance, subject to availability.

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- Units assigned to airport entrances will direct outside agencies and media to the appropriate location. Persons not participating in the emergency or not meeting an arriving or departing flight shall be denied access until the emergency is terminated.

2.5.3.2 Airport Operations
Airport Operations Officers shall maintain crowd control landside and monitor airside activities.

2.6 Law Enforcement

2.6.1 Purpose
Yuma International Airport staff will respond to the scene of an emergency, assess the situation (in coordination with MCAS Yuma CFR in the case of an aircraft emergency) and coordinate with local law enforcement agencies as necessary.

2.6.2 Situation and Assumptions
The procedure for law enforcement personnel and activities as outlined in this Airport Emergency Plan should not conflict with those procedures as outlined in the Airport Security Plan. In the case where there is a question, the Airport Security Program will preside.

For emergency situations that are primarily law enforcement related, such as bomb incidents and highjackings, refer to the Yuma International Airport Security Program.

2.6.3 Operations
In the event of an emergency at Yuma International Airport, Airport Operations Officer will be coordinate and monitor law enforcement activities to ensure compliance with the Yuma International Airport Security Program

2.6.3.1 Yuma Police Department (YPD)
YPD will respond and manage law enforcement resources and direct traffic control and law enforcement operations during an emergency. In the case of an aircraft emergency, YPD shall:

- Ensure ingress and egress routes remain open and clear for emergency response vehicles from public roadways.
- Notify dispatch, and if necessary, request additional police personnel and outside law enforcement agencies for assistance
- Coordinate with MCAS Provost Marshall or Incident Command Post
- Provide on scene command post with Watch Commander or other high level officer with agency decision making authority
- Coordinate other law enforcement activities as required.

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2.7 *Firefighting and Rescue Monitoring*

2.7.3 Purpose

The Airport Director or designated representative will respond to the emergency site to monitor and provide support. Through the Joint Use Agreement with YCAA, MCAS Yuma CFR will, within the limits of the capabilities of MCAS Yuma ARFF, respond to crash and fire rescue emergencies involving commercial air carrier aircraft and civil aviation aircraft aboard MCAS Yuma/Yuma International Airport landing facilities and land areas, and other land adjacent to MCAS Yuma/Yuma International Airport. MCAS Yuma has no obligation to maintain any ARFF organization, to conduct training or inspection, or to maintain and ARFF equipment to meet FAA inspection criteria.

2.8 *Health and Medical Monitoring*

2.8.1 Purpose

Emergency medical response procedures involving aircraft accidents or other mass casualty incidents will be conducted by MCAS Yuma CFR, or through City of Yuma Emergency Response personnel through Mutual Aid agreements with MCAS Yuma. YCAA will monitor and provide support where appropriate.

2.8.2 Operations

2.8.2.1 Medical Facilities/Medical Personnel Data
All mass casualty patients will be transported to the Yuma Regional Medical Center (YRMC) after triage has been conducted on scene. The Yuma Regional Medical Center has the capability of receiving 37 patients. The maximum number of patients able to be received will be determined by severity of injuries and medical staff available. The YRMC is not designated as a trauma level facility. Overflow patients will be transported to one of several trauma facilities located in Phoenix, Arizona or facilities in El Centro or San Diego, California.

2.8.2.2 Medical Transport Inventory
Medical transport will be conducted by either Rural Metro Fire Department or by the City of Yuma Fire Department. If needed, both agencies will be available to provide medical transport equipment. Rural Metro is currently equipped with 10 full time ambulances with EMS personnel, with the capability through mutual aid agreements to utilize surrounding cities EMS equipment, such as San Luis and Somerton, Arizona, as well as Imperial County EMS equipment and personnel should more resources be required. This agency has a mutual aid agreement for incidents on the airport with the Marine Corps Air Station Yuma, the agency responsible for Incident Command duties in the event of a mass casualty incident or accident involving civil aircraft.

2.8.2.3 Transportation of Uninjured/Injured/Deceased
Uninjured persons will be transported to the air carrier terminal facility, where family members may meet them. Actual locations in the air carrier terminal will be determined based on the number of uninjured persons. Injured persons will be transported by one of the agencies listed above to the Yuma Regional Medical Center. Minor injuries will be treated on scene by

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emergency response personnel. Deceased persons will be transported to the designated holding facilities on the airport to await transport or refrigerated storage. The deceased holding facilities will be the Ernest Love Hangar, located on the West GA Ramp.

2.9 *Resource Management*

2.9.1 Purpose

To identify the procedures by which the YCAA and Airport Director will provide staff and resources to manage an emergency situation as applicable with available resources.

2.9.2 Operations

Given that the Airport does not own or operate emergency equipment, the Airport will support MCAS Yuma when as needed. Although not exhaustive, the YCAA has the following resources to offer if the situation deems necessary:

- Approximately 15 personnel to assist as needed, included operations, maintenance and administrative support personnel
- Several sedans and trucks
- Maintenance equipment including trailers and heavy equipment
- Communication equipment including hand-held radios and/or cellular telephones
- Supplies for providing assistance to uninjured victims, such as blankets, potable water, first aid supplies and lighting

2.10 *Airport Operations and Maintenance*

2.10.1 Purpose

Airport Operations and maintenance personnel are critical to the efficient management of emergency operations and incidents at the Airport.

2.10.2 Operations

2.10.2.1 Airport Operations Duties

Airport Operations personnel will perform the following during an emergency situation:

- Respond to the scene command post and provide airport management representation
- Assist in the establishment of an on-scene command post with MCAS ARFF personnel
- Coordinate the designation of the appropriate staging location and establish the closest entry to the airfield from the surrounding roadway system with MCAS Yuma ARFF Incident Commander
- Oversee photography and video documentation of the emergency
- Assume duties and/or responsibilities as directed by the Airport Director
- When appropriate, announce termination of the alert of other emergency response activities

2.10.2.2 Airport Maintenance Duties

Airport Maintenance personnel will perform the following during an emergency situation:

- Call in any airport maintenance personnel, as required
- Coordinate use of any maintenance equipment to assist in the ingress and egress of emergency response units
- Assist the airlines/tenant involved, assisting the rapid removal of aircraft and debris after release by governmental agencies
- Oversee the airport maintenance function at the scene, if under YCAA jurisdiction
- Assist the Airport Operations Director with inspection and reopening of the airport, and taxiways or other affected areas of the airport that were closed
- Assume duties and/or responsibilities as directed by the Airport Director

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3 Hazard Specific Information and Procedures

The Airport's Emergency Response Checklist (ERC), included at the end of this document, will be used by airport personnel as a checklist for readily available information.

3.1 Aircraft Accidents

3.1.1 Alert Procedures

The following describes the typical procedures for ALERTS 1 & 2

3.1.1.1 Declaration

Aircraft emergencies are normally declared by:

- Aircraft in difficulty
- Air Traffic Control Tower personnel or a Flight Service Station Specialist
- Aircraft owner or operator
- City of Yuma 911 Dispatch
- A witness to an accident, through any of the above

3.1.1.2 Alerting Systems

Emergency Alerting Systems (during MCAS Yuma ATCT hours of operation)

- MCAS ARFF is alerted by MCAS Yuma Tower (ATCT) through established procedures
- MCAS Base Operations contacts YCAA Airport Operations via landline communications

Emergency Alerting Systems (after MCAS Yuma ATCT hours of operations)

- The Yuma International Airport Operations department personnel provide alert status to MCAS ARFF personnel via VHF communication on the Common Traffic Advisory Frequency (CTAF) of 119.30
- The Yuma International Airport Operations department personnel provide alert status to MCAS ATC Approach personnel via VHF communication on the approach frequency of 124.70 or departure frequency of 125.55

3.1.1.3 Alert Reports

Alert Reports should contain as much of the following information as is pertinent and available:

- Alert category
- Aircraft identification – including type of aircraft
- Nature of the emergency
- Runway to be used for landing
- Distance from the airport
- Estimated time of touchdown
- Number of occupants, passengers and crew
- Presence of hazardous cargo or explosives
- Quantity of fuel on board

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- Location of the aircraft on the ground, if appropriate (See Exhibit A, Emergency Grid Map)

3.1.2 Alert Responsibilities

The following describes the actions and responsibilities during alerts for various personnel.

3.1.2.1 Alert 1 – During ATCT Operating Hours

Airport Operations Personnel will:

- Initiate notification sequence:
  1) Airport Director
  2) Airport Operations Director
  3) Airport Operations Supervisor
- Standby and await further instructions from supervisory airport personnel

Airport Operations Director will:

- Proceed to staging location A, B or C (Exhibit B - Staging Locations
-) as required for the best response and await further instructions from MCAS ARFF personnel
- If no accident occurs and aircraft is clear of the runway coordinate, alert termination with MCAS ARFF personnel and airport operations personnel. If accident occurs, see ALERT 2 actions.

3.1.2.2 Alert 1 – During ATCT Non-operating Hours

Airport Operations Personnel will

- Receive notification of emergency situation via CTAF telephone.
- Initiate notification sequence:
  1) MCAS ARFF via VHF communication on CTAF, 119.30
  2) MCAS ATC Approach Control via VHF communication on 124.7 or departure frequency of 125.55
  3) Airport Director
  4) Airport Operations Director
  5) Airport Operations Supervisor
- Proceed to staging location A, B or C (Exhibit B - Staging Locations
-) for the best response and await further instructions from airport supervisory personnel or MCAS ARFF personnel

Airport Operations Supervisor and/or Director will

- Respond to staging location A, B or C (Exhibit B - Staging Locations
-) for the best response and await further instruction from MCAS ARFF personnel
- Prepare to initiate notification sequence should ALERT 2 occur
- If no accident occurs and aircraft clears the runway, coordinate Alert termination with MCAS ARFF personnel. Perform a debris inspection
- Provide and arrange for any additional assistance as required by the emergency situation
- If ALERT 2 occurs, see ALERT 2 Actions

3.1.2.3 Alert 2

MCAS Air Traffic Control Tower (during operating hours)
- Activate Alert
- Notify MCAS ARFF units of situation, broadcasting on ground control frequency 121.90
- Coordinate with MCAS Base Operations and YCAA Airport Operations

MCAS Yuma ARFF
- Respond to the scene of the accident

YCAA Airport Operations Personnel
- Initiate Notification sequence:
  1) MCAS ARFF via VHF Communication on CTAF, 119.30 (during ATCT non-operating hours)
  2) MCAS Approach Control via VHF communication on 124.7 or 125.55 (during ATCT non-operating hours)
  3) Airport Director
  4) Airport Operations Supervisor and/or Director
- Respond to staging location A, B or C for the best response and provide assistance as requested by MCAS ARFF personnel; otherwise, await further instructions from YCAA airport supervisory personnel

Airport Operations Supervisor and/or Director
- Initiate notification sequence:
  1) Airport Director
  2) Airport Maintenance Director
- Coordinate emergency response with MCAS ARFF personnel and Incident Commander at the on-scene command post
- Close affected areas as necessary
- Provide and arrange for any additional assistance as required by the emergency situation.
- Relay information through the EOC

Airport Director
- Activate the EOC

Airport Maintenance Director
- Report to the EOC and perform functions as required

Airport Cargo Operations/Foreign Trade Zone (FTZ) Director
- Report to the EOC and perform functions as required

Airport Finance and Administration Director
- Report to the EOC and perform functions as required

Airport Maintenance Staff

- Await instruction from Airport Maintenance Director

3.1.2.4 Organization Assignment of Responsibilities

MCAS Yuma Air Traffic Control Tower

- Activate the appropriate alarm
- Control aircraft and ground vehicle operations on the airport in support of the emergency response, if the airport remains open
- Control airspace in the vicinity of the incident/accident to ensure other aircraft do not interfere with emergency response activities

MCAS ARFF personnel

- Control and direct the on-scene command post during the fire suppression and rescue activities. All mutual aid agencies, if notified, will report to the appropriate staging location as directed by the MCAS ARFF Incident Commander.
- Extinguish fires, extract passengers and crew from the aircraft
- Assist in identifying the injured passengers and crew and identify the location of the dead passengers and crew
- Watch for re-ignition of fires
- Assign a fire marshal to marshal responding medical units
- Exercise direct control over any fire or aircraft emergency scene within the boundary of the airport until relieved by a higher ranking officer or until fire suppression and rescue has been completed
- Notify dispatch to initiate emergency calls for additional supports as needed

Each airline and Fixed Base Operator:

- Supply emergency contact information and keep it current and correct
- Contact additional personnel, as required
- Provide passenger count
- Provide information pertaining to any presence of dangerous goods
- Ensure that only authorized representatives report for escort to the scene of the emergency
- Remove disabled aircraft and/or provide means for immediate removal, when removal is authorized by the FAA or NTSB
- Ensure employees are aware their help may be required until additional emergency personnel become available

Airport Director

- Activate the EOC
- Exercise administrative control over all aircraft emergencies within the jurisdiction of YCAA
- Oversee coordination of the investigation activities, and arrange necessary meetings.
- Activate the emergency notification procedure as necessary:
  1) Notify the appropriate airlines/tenants involved.

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2) Assist in obtaining passenger information and number of injured for the area hospitals.
3) Develop and implement a schedule to support 24/7 ops, if necessary.
4) Direct the efforts of all subordinate staff members.

Airport Operations Director

- Respond to on scene command post and provide airport management representation.
- Assist in the establishment of an on-scene command post with MCAS ARFF personnel.
- Coordinate the designation of the appropriate staging location and establish the closest entry to the airfield from the surrounding roadway system with MCAS ARFF Incident Commander.
- Oversee photography and video documentation of the emergency.
- Assume duties and/or responsibilities as directed by the Airport Director.
- When appropriate, announce termination of the alert or other emergency response activities.

Yuma Police Department

- Ensure ingress and egress routes remain open and clear for emergency response vehicles from public access roadways.
- Notify dispatch, and if necessary, request additional police personnel and outside law enforcement agencies for assistance
- Coordinate with MCAS Provost Marshal or Incident Command Post
- Provide on scene command post with Watch Commander or other high level officer with agency decision making authority
- Coordinate any other law enforcement activities as required

Airport Maintenance Director

- Call in any airport maintenance personnel, as required
- Coordinate use of any maintenance equipment to assist in the ingress and egress of emergency response units
- Assist the airlines/tenants involved, assuring the rapid removal of aircraft and debris after the release by governmental agencies
- Oversee the airport maintenance function at the scene, if under YCAA jurisdiction.
- Assist the Airport Operations Director with inspection and reopening of the airport, and taxiways or other affected areas of the airport that were closed
- Assume duties and/or responsibilities as directed by the Airport Director

Emergency Operations Center (EOC):

- Maintain the "logs/checklists" during the emergency situation.
- Coordinate any other emergency resources as requested.
- Activate emergency notifications as necessary
- Commence setup of the Conference Room to a Media Room
  1) Send media to the Conference Room / Media Room
  2) Oversee the coordination of the media coverage during the emergency.
- Coordinate investigation activities when appropriate

- Coordinate the establishment of additional building space with airport tenants as necessary

Emergency Medical Resources: Triage, Transportation, Hospitals and Morgue

- Triage activity at the scene:
  1) MCAS ARFF and City of Yuma and/or Rural Metro EMS personnel will initially scan the victims to categorize their conditions and identify the deceased
  2) Deceased will remain in place until released by cognizant authority
  3) Once released, remains will be transported to the morgue
  4) Continued assessment and triage of injured persons and transport to area hospitals will continue until alert has been terminated
- Transportation of survivors will be arranged by YCAA Airport Management through the on-scene Incident Commander
  1) Injured survivors will be transported to Yuma Regional Medical Center, via Rural Metro or City of Yuma ambulance
  2) Uninjured survivors will be transported to the Yuma International Airport terminal building
  3) EMS personnel will maintain an accurate list of casualties and their respective destination treatment facilities
- Affected Airline
  1) Coordinate activities with Incident Command and Airport Director
  2) Provide EOC and Command Post with passenger manifest.
  3) Provide a Public Information Officer to coordinate media activities.
  4) Maintain accurate accounting of passenger dispositions.
  5) Assist family members/friends in the terminal area.
  6) Arrange transportation to reunite family members/friends with uninjured passengers in the terminal building or an alternate location.

3.1.2.5 Coordination of Airport and Air Traffic Control Tower functions relating to emergency situations.

Airport closure is NOT automatic during any emergency or accident situation. All airfield movements must be coordinated with the ATCT. Emergency Response Vehicles will have priority over airport ground and air operations. All emergency response vehicles will be escorted to the scene by YCAA Airport Operations personnel or other designated escort.

If only a portion of the airport is closed during an aircraft emergency response, rescue vehicles must be given first priority for ingress and egress.

3.2 Off-Airport Aircraft Accidents/Incidents

The Airport Director may activate the EOC and/or make facilities available for media purposes, family information, or staging.

3.3 Bomb Incidents – Aircraft

Refer to the Yuma International Airport Security Program

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3.4 Bomb Incidents – Other than Aircraft

Refer to the Yuma International Airport Security Program

3.5 Hijacking

Refer to the Yuma International Airport Security Program

3.6 Natural Disasters

The purpose of this section is to ensure that damage to life and property at Yuma International Airport is kept to a minimum in the event of a natural disaster, such as severe weather and lightning storms.

3.6.1 MCAS Yuma Tower

Notify YCAA Airport Operations of any lightning strike or damage to runways, taxiways or ramps.

3.6.2 Airport Operations

- Monitor weather conditions
- When there is a forecast of or observed storm with winds in excess of 50 mph, Airport Operations will initiate the notification sequence.
    - Operations Director, and/or Airport Director
    - Airlines
    - Fixed Base Operators
- Have personnel remain inside structured buildings.
- Keep people away from doors and windows to avoid flying glass.
- Provide any needed security in the terminal building, parking lots and on the airport non-movement areas after the storm has passed.
- Conduct airfield inspection after storm has passed. Immediately report all discrepancies to the Director of Maintenance.

3.6.3 Airport Director

- Determine any requirement to evacuate the Airport Terminal.
- Ensure precautions have been taken if severe weather conditions persist.
- Direct Airport personnel to assist as required.
- Monitor Cable TV for announcements or other information.
- Activate the EOC if necessary.

3.6.4 Yuma Police Department Airport Officer

- Provide assistance to Airport Operations personnel in securing personnel in the terminal building.
- Provide additional security in the terminal building, parking lots, or where as needed.
- Provide up to date information from police dispatch to Airport Director.

3.6.5 Airport Maintenance Personnel

- Insure that all equipment is secured prior to passage of a potentially damaging storm front.
- Inspect all airport facilities and the AOA areas for damage after the storm has passed.

3.7 Structural Fires

3.7.1 General

- All airport personnel must immediately report all fires to City of Yuma Fire Department and Police Departments at 911.
- Notify Airport Operations at (928) 726-5882 ext. 160 or (928) 941-2396.

3.7.2 Responsibilities

Airport Operations Personnel

- Notify or confirm 911 emergency call.
- Notify tenant(s), and Airport Operations Director and/or Airport Director.
- Obtain information on contents of burning facility for YFD.
- Coordinate evacuation of any burning building.

Yuma Fire Department

- Respond to burning facility.
- Assist in evacuations.
- Contain the fire.
- Establish Incident Command until Battalion Chief arrives.
- Replenish any depleted fire extinguishing agents as soon as additional units arrive.

Airport Director

- Activate the EOC if necessary.
- Confirm 911 has been notified.
- Direct Airport Operations and other personnel.

3.8 Fuel Farm Fires

3.8.1 General

- All airport personnel must immediately report all Fuel Farm Fires to City of Yuma Fire Department and Police Departments at 911.
- Notify Airport Operations at (928) 726-5882 ext. 160 or (928) 941-2396.

3.8.2 Responsibilities

Airport Operations Personnel

- Notify or confirm 911 emergency call
- Notify tenant(s), and Airport Operations Director and/or Airport Director
- Obtain information on contents of burning facility for YFD

- Coordinate evacuation of nearby burning building
- For fuel farm fires, in coordination with YPD, establish a Police/Fire line

Yuma Fire Department
- Respond to burning facility
- Assist in evacuations
- Contain the fire
- Establish Incident Command until Battalion Chief arrives
- Replenish any depleted fire extinguishing agents as soon as additional units arrive

Airport Director
- Activate the EOC if necessary
- Confirm 911 has been notified
- Direct Airport Operations and other personnel

3.9 *Power Failure for Movement Area Lighting*

This section applies to any power failure, communications failure, or major utility system failure affecting the aircraft movement area, non-movement areas or the terminal area.

3.9.1 Movement Areas

Responsibility for utility, power and communication system back-up and restoration of runways and those taxiways under their control lies solely with MCAS Yuma.

MCAS Yuma Base Operations will notify Airport Operations of any power failure relating to aircraft movement areas under MCAS Yuma jurisdiction.

3.9.2 Taxiway Zulu, Defense Contractor Complex, General Aviation areas and Terminal Apron

Airport Operations
- Coordinate with Airport Maintenance to determine if other agencies should be notified, i.e. Southwest Gas, Arizona Public Services (APS), or Department of Public Works.
- Notify tenants of the problem and approximate time of repair.
- Notify ATC, Tower, Base Operations, the Airport Operations and Maintenance Directors.

Airport Maintenance
- Inform Airport Operations of the problem and estimated repair time.
- Determine cause of problem and call electrical contractors if required.

3.9.3 Terminal Complex and Airport Maintenance Ramp

Airport Operations
- Coordinate with Airport Maintenance to determine if other agencies should be notified, i.e. Southwest Gas, Arizona Public Services (APS), or Department of Public Works.
- Notify tenants of the problem and approximate time of repair.
- Notify the Airport Operations and Maintenance Directors.

Airport Maintenance

- Inform Airport Operations of the problem and estimated repair time.
- In the event of a major power failure affecting the Passenger Terminal, an AC Generator assumes the load of all essential electrical related systems. This generator (specifications listed below) runs continuously, until normal power has been restored to the terminal. GENERAC AC GENERATOR MODEL #97A 05393S: 13.3L Diesel Rated at 200 kW 277/480 volts, 3-phase, 60 Hz Broad Range 1800 RPM.

3.10 Radiological Materials Incidents

The transportation of hazardous materials (including fissionable materials) on civil aircraft operating in the United States air space is governed by the Department of Transportation Hazardous Materials Regulations (49 CFR 175). When packages of radiological material in transit are damaged, a radiation hazard is possible. The Joint Nuclear Accident Coordinating Center (JNACC) may be contacted at (505)-845-4667 for an additional resource, if required. A radiological aircraft emergency exists when an aircraft accident occurs within the boundaries of the airport, and it is known that radioactive materials were aboard. Perform the following actions if broken radioactive material containers are found:

Airport Operations Personnel

- Initiate Notification Sequence
  a. YFD HAZMAT Team
  b. MCAS Base Operations/CFR
  c. Airport Operations Director
  d. Airport Director
- DO NOT enter the contaminated site.
- Ensure all personnel are upwind of the accident site.
- Establish a fire line upwind of the accident site.
- Evacuate all buildings within 500 feet or more, ensuring evacuations occur upwind of the site.

Airport Director

- If radioactivity is smoke borne, close all doors and windows of buildings where smoke is blowing and shut off all venting and air conditioning systems.
- Request the YFD for decontamination activities in the area, affected buildings, emergency equipment, personnel, aircraft, etc.
- Ensure HAZMAT response team is in place or enroute to accident site.

Yuma Fire Department (HAZMAT)

- Utilize breathing apparatus
- All approaches to the aircraft must be from upwind to reduce radiation contamination.
- Cordon off the entire area.
- Ensure that personnel avoid walking through contaminated areas to prevent further contamination.
- Communicate decontamination and cleanup efforts to Airport Management.

MCAS Yuma ATCT

- Notify Airport Operations of any in-flight radiation emergencies on aircraft intending to land at the airport.
- Advise military authorities or local operator of the aircraft, if requested by the pilot.
- Do NOT authorize aircraft to land, take off, or taxi through the contaminated area to avoid spreading the contamination.
- Direct the aircraft to the best location based on wind direction and strength.

Aircraft Operator/Owner

- Immediately provide YFD and MCAS ARFF personnel with all known information of the shipment, such as origin, location in the aircraft, destination, contents, size, amount, material, etc.
- Assist decontamination teams only as directed and when requested to perform such activities.
- Provide assistance in the cleanup and decontamination efforts.

3.11 Hazardous Material Spills

During any Hazardous Materials/Dangerous Goods Incident on the airport, the following steps will be taken once Airport Management is advised of a significant spill or incident:

Airport Operations Personnel

- Respond to the scene
- Identify the type of hazardous material
- Establish a perimeter to ensure safety of personnel (if required)
- Determine what action is required to secure the area
- Initiate the notification sequence

Airport Director

- Ensure safe operations are in place
- Notify upper agencies as required
- Ensure documentation is completed

Airport Operations Director and/or Maintenance Director

- Supervise the establishment of a boundary line
- Remain on scene until the spill no longer poses a threat
- Photograph the incident area
- Gather all pertinent information
- Quantity: Use the following guidance
    a. Is the spill smaller than a breadbox? If so, treat the spill with absorbent and begin documentation
    b. Is the spill bigger than a breadbox? If so, Refer to the Hazardous Materials Emergency Response Guidebook (DOT P5800.4)
    c. Notify HAZMAT Rep if necessary, or as directed by the YCAA Operations Director.

Airport Operations Supervisor

- Issue NOTAM if necessary

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- Advise affected tenant(s), airlines and others
- Help keep unauthorized persons out of the area
- Arrange for cleanup and decontamination activities, in coordination with YCAA Operations Director

3.12 Sabotage

Refer to the Yuma International Airport Security Program

3.13 Crowd Control

In the event of an emergency at Yuma International Airport, Airport Operations Officers will be responsible for crowd control at the scene. YPD officers will be responsible for screening traffic at all entrances to the airport, so as to prevent sightseers from entering the airport. In those cases where a large amount of traffic is expected, additional assistance may be requested. Priority will be given to emergency medical and MCAS ARFF units at the emergency scene and any airport entrances.

Yuma Police Department (YPD)

- Support the Airport in accordance with YPD policies.
- Maintain Communication with the Airport as required.

Airport Operations

- Operations Director - Request support from YPD, Customs and Border Protection (CBP), and TSA as necessary.
- Operations Officers - Maintain crowd control landside and monitor airside activities.

3.14 Removal of Disabled Aircraft

3.14.1 Preservation of Wreckage and Records

The owner/operator of an aircraft is responsible for preserving, to the extent possible, any aircraft wreckage, cargo, and mail aboard the aircraft; all records, including tapes of flight recorders and voice recorders pertaining to the operation and maintenance of the aircraft and to the airmen involved in an incident.

Prior to the time the governing Federal entity or its authorized representative takes custody of the aircraft wreckage; mail, or cargo, such wreckage, mail, or cargo may not be disturbed or moved except to the extent necessary:

- To remove persons injured or trapped;
- To protect the wreckage from further damage; or,
- To protect the public from injury.

When it is necessary to disturb or move aircraft wreckage, mail, or cargo, sketches, descriptive notes, and photographs shall be made, if possible, of the accident locale including original position and condition of the wreckage and any significant impact marks. The cargo manifest should be checked for hazardous cargo requiring special handling.

The owner/operator of an aircraft involved in an accident or incident shall retain all records and reports, including all internal documents and memoranda dealing with the accident or incident, until authorized by the governing Federal entity.

3.14.2 Responsibility for Aircraft Recovery Operations

Depending on the location of the aircraft on airport runways and the nature of military air operations going on at the time, MCAS Yuma may, in the interests of safety, elect to move the aircraft from the runway environment in an expeditious manner. In such case due care will be taken to preserve the aircraft and its contents, but cannot be guaranteed.

Under normal operations the following procedures will apply during Aircraft Recovery:

- A recovery operation is defined as the tasks necessary to lift or move a disabled aircraft from the scene of an accident to a suitable repair or storage area as quickly as practical with a minimum of secondary damage. A recovery operation will be initiated anytime the Airport Director or his/her designated representative determines it necessary and/or clearance has been received from the NTSB, National Transportation Safety Board.
- As quoted from FAA Advisory Circular 150/5200-31: "The responsibility for removing a disabled aircraft as well as providing or arranging for equipment and crews necessary for its removal, and the determination of the extent of damage prior to removal rests with the aircraft owner or operator. If the registered owner or operator cannot remove the aircraft or is dilatory in doing so, airport management should have the authority to act for him/her with minimum delay."

References

- NTSB Investigation Regulation Part 830, Rules Pertaining to Aircraft Accidents
- FAA Order Number 8020.11A & Change 1, Aircraft Accident & Incidents Notification, Investigation & Reporting
- Federal Aviation Regulation Parts: 21, 45, 61, 91, 121, 135, 139 & 159
- FAA Advisory Circulars 150/5200-12, Fire Department Responsibility in Protecting evidence at the Scene of an Accident and 150/5200-31 & Airport Emergency Plan respectively.
- Aeronautical Information Manual, Chapters 3, 4, 6 &7

3.14.3 Responsibility for Removing Disabled Aircraft:

The airline or aircraft owner/operator is responsible for choosing the procedures to remove disabled aircraft for the AOA, Airport Operations Area, and for the cost of recovery. In addition, the airline or aircraft owner/operator must make every effort to expedite the recovery of their aircraft. (The location of the disabled aircraft on or close to a runway or taxiway out of service shall not justify delay or minimized removal operations). If the aircraft is not being removed expeditiously, the Airport Director, or Director of Operations may order its removal at the sole expense of the airline or aircraft owner/operator.

3.14.4 NTSB Responsibilities

The NTSB, a Federal Agency, takes custody of the aircraft and its contents from the time the accident occurs to the completion of the investigation or written release. In most cases, the NTSB will issue a "Permission to Move the Aircraft" to the airline or aircraft owner/operator following the initial investigation of the accident. This permission to move allows the aircraft to be moved only from the location of the accident to a selected area for further investigation. The NTSB retains custody.

Upon completion of its investigation, or as determined by the board, the NTSB will issue a "Release" of the aircraft to the aircraft owner/operator. This "Release" permits the operator to move the aircraft as desired for repairs, etc. (Note-Removal or recovery of the aircraft or component parts cannot be initiated until clearance has been received from the principal Safety Board representative).

The pilot or operator of an aircraft involved in an on-airport accident is responsible for immediate notification to the NTSB. Where this is not possible due to injuries or fatality, the Airport Director or Operations Director (Airside Operations Officer) will make such notification by contact with the Communications Center and through Air Traffic Control Tower.

NTSB Regulation 831.11, Paragraph (b) states: "Under no circumstances shall accident information be released to, or discussed with unauthorized persons whose knowledge thereof might adversely affect the investigation." All requests for information should be channeled through NYL Airport Operations.

3.14.15 Preservation of Wreckage, Mail, Cargo and Records

The operator of an aircraft is responsible for preserving any aircraft wreckage, cargo and mail aboard the aircraft, and all records, including tapes of light recorders and voice recorders pertaining to the operation and maintenance of the aircraft and to the airmen involved in an accident or incident for which notification must be given until the Board takes custody thereof or a release is granted.

Prior to the time the Board or its authorized representative takes custody of the aircraft wreckage; mail and cargo may be disturbed or moved only to the extent necessary:

- to remove persons injured or trapped;
- to protect wreckage from further damage; or,
- to protect the public from injury.

Where it is necessary to disturb or move aircraft wreckage, mail or cargo, sketches, descriptive notes, photographs or videos shall be made, if possible, of the accident locale including original position and condition of the wreckage or any significant impact marks.

The operator of an aircraft involved in an accident or incident shall retain all records and reports, including all internal documents and memoranda dealing with the accident or incident, until authorized by the NTSB to the contrary.

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Exhibit A – Emergency Grid Map

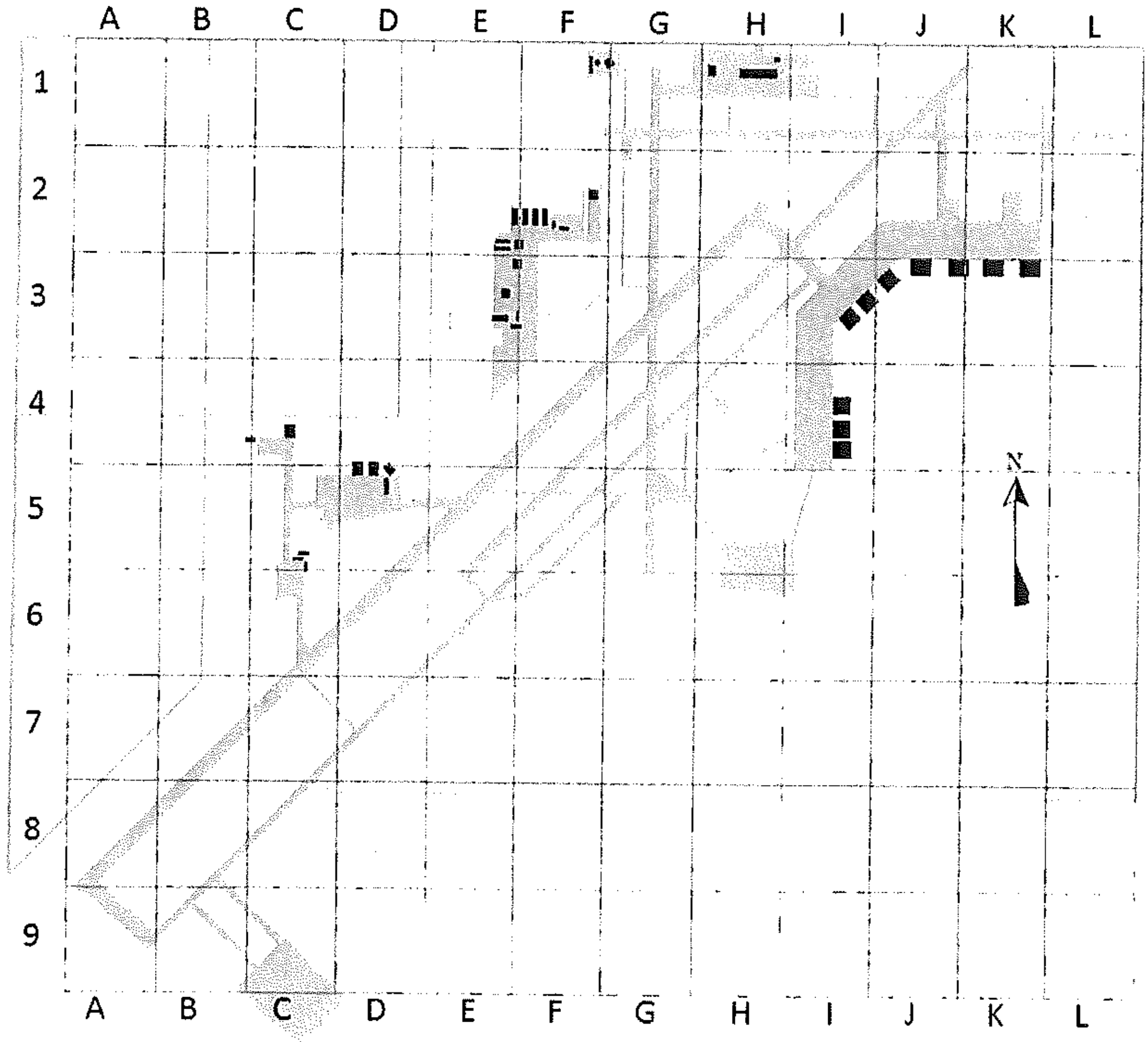

Exhibit B - Staging Locations

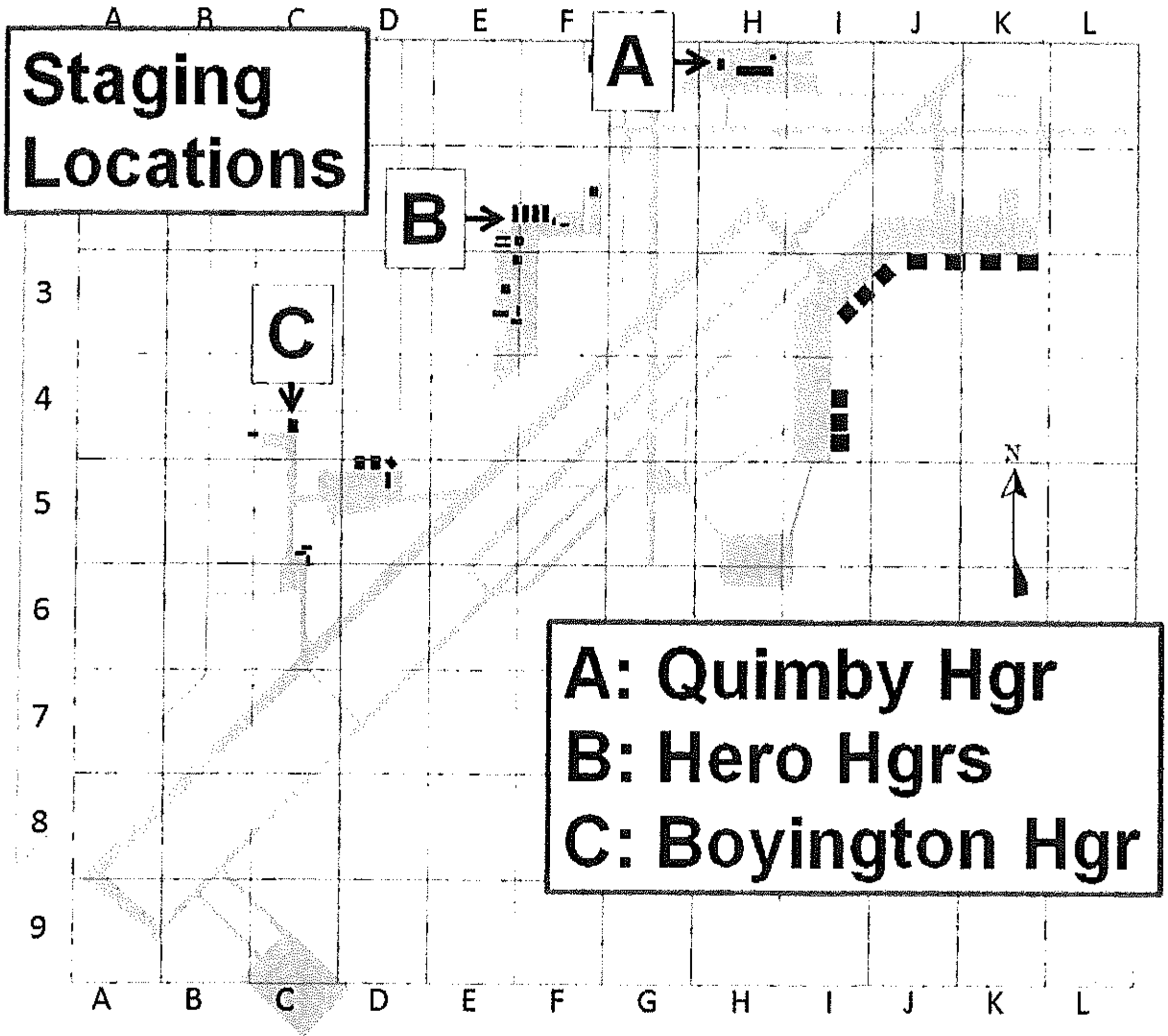

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Exhibit C - Emergency Checklists

The Airport uses an AIRPORT EMERGENCY RESPONSE GUIDE containing Emergency Response Checklists. These checklists are maintained in a separate document and are updated after each airport disaster response as determined necessary during the after action reviews. These updates include contact and procedural information.

The AIRPORT EMERGENCY RESPONSE GUIDE will be used for all civil aviation emergencies.

Airport Response procedures do not cover military incidents. In the event of a military incident YCAA response will be limited to responding to requests from MCAS and working with MCAS to prevent civilians from becoming involved or interfering with the military.

Contact Airport Operations or the Airport Director for the latest version of the guide.

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AIRPORT EMERGENCY RESPONSE GUIDE

Yuma International Airport
(NYL)

In-Flight Emergency
Minor Incident
Major Incident

2191 E 32nd St, Suite 218
Yuma, Arizona 85365

Includes Version 8, March 20, 2011

STEP ONE
Confim you have the current version of this guide by calling the EOC at 726-5882

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Distribution

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Gladys Wiggins - Airport Ops Director
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Christopher Humphrey - Airport Maintenance Supervisor
Gen Grosse – Corporate Account Manager
Andrea Lopez - Executive Assistant
Adriana Alcalde - Customer Service Representative
Gabby Reyes - Office Manager
Maria Gonzales - Book Keeper

Revisions

Original Publication, Jan 14, 2007
Change 1, May 14, 2008 – Added General Rules
Change 2, Mar 21, 2009 – Updated Contacts
Change 3, Nov 10, 2009 – Updated Contacts and minor changes
Change 4, Aug 18, 2010 – Updated Contacts
Change 5, Jan 25, 2011 – Updated Contacts
Change 6, Feb 1, 2011 – Added Step One, Confirm current version
Change 7, Feb 22, 2011 - Updated procedures after Exercise
Change 8, Mar 20, 2011 - Updated procedures after review

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I. USE

This guide will be used for all civil aviation emergencies.

This guide does not cover military incidents. In the event of a military incident YCAA response will be limited to responding to requests from MCAS and working with MCAS to prevent civilians from becoming involved or interfering with the military.

II. ALERT SYSTEM DEFINITIONS

The FAA has defined three types of emergency alerts:

1. ALERT 1 (STANDBY) – An aircraft approaching the airport has reported, or is suspected to be, encountering difficulties.
2. ALERT 2 (EMERGENCY) – An aircraft approaching the airport is suffering an operational fault that affects normal/safe flight operations and it is in danger of experiencing an accident.
3. ALERT 3 (ACCIDENT) – An aircraft is involved in an accident/incident on or in the vicinity of the airport, or an accident is imminent.

The FAA categories correspond roughly with the three categories at MCAS-Yuma/YCAA:

1. **In-Flight Emergency (IFE)** – An aircraft approaching the airport has reported difficulties.

Example: The pilot of a Cessna 210 reports that his landing gear will not deploy.

2. **Minor Incident** – An aircraft has landed at or near the airport with only minor problems.

Example: The Cessna 210 has a smooth gear up landing with no further complications.

3. **Major Incident** – An aircraft has had a severe accident.

Example: The Cessna 210 has a poor gear up landing and catches fire.

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III. AIRPORT DUTIES

In the event of an **IFE** or **Minor Incident**, the Operations Department will work in cooperation with MCAS-Yuma Base Ops. There is little, if any, that non-Operations staff must do.

In the event of a **Major Incident**, the entire Airport Staff must mobilize to help the Operations Department maintain a sense of order around the airport until the Airline "Go Team" and the National Transportation Safety Board (NTSB) investigation team arrives.

The Airport has two major responsibilities during a Major Incident:

1. Protect the Incident Scene until the NTSB arrives and takes control;
2. Protect families of victims from unwanted Media attention.

The vast majority of "on the ground" emergency response is taken care of by MCAS-Yuma CFR, the Airlines, and the NTSB. The Airport must be in the loop and maintain order until these organizations arrive on scene and, if asked, assist them to achieve their objectives.

IV. 10 GENERAL RULES

1. DON'T PANIC

2. Stay in the loop, but stay out of the way.

Be present to see, hear and understand the situation. Be present to help if asked. But do not insert yourself into the situation.

3. Do not talk to the media.

Everything you say will be distorted. We must convey a clear, unified, message to the media, and only the Airport Director can do that. Airport employees must politely decline to speak with the media by saying, "I'm sorry, but I don't know enough about the incident. Please speak with the Airport Director. He can answer your questions better than I can."

4. Do not talk to the families about the incident.

The incident is too sensitive a topic for you to discuss with family. The airlines and the NTSB have trained professionals who will counsel families. Be polite. Ask if they need more coffee, or show them the way to the bathroom, but *never* discuss the incident.

5. Do not talk to members of the Board of Directors.

Again, we want to convey a very clear, unified, message. The Airport Director is the messenger. Be polite, but decline to answer all questions about the incident and refer the Board member to the Airport Director.

6. Do not call MCAS-Yuma, Airlines, or Operations Director.

They are busy. They will call us when they need to relay information.

7. Log everything you do.

Make a note of everything you do, everyone you speak with and what was said. Record the time. This is to help us understand the flow of activity and information. Also, something you heard or did may be very useful, and we would like to know that.

8. Use your emergency checklist.

The emergency checklist is a list of tasks and how to do them. Follow the checklist and you can be confident that you are accomplishing something useful. When you finish the tasks on your checklist, report back to the Control Center and await further instructions. Remember to log the tasks you completed, making note of the times and names of people you dealt with.

9. Be flexible.

Incidents are chaotic. What you expect to happen likely won't happen. What you don't expect to happen likely will. Things that you never imagined could happen, might happen. Understand the fluid nature of incidents. Accept the fact that you must adapt and overcome. Then roll with it.

10. DON'T PANIC

It bears repeating.

V. DESIGNATED LOCATIONS

Some locations are designated for specific purposes. Everyone must be familiar with those locations so that you will understand who belongs where.

The Military Comfort Center (MCC) becomes the "Friends and Family Reception Center".

Family can be directed to the MCC where they be protected from the media. It has a dumbwaiter to easily provide them with food and drinks, it is near the upstairs bathrooms, and police can control access to and from the room.

The Conference Room becomes the "Media Center".

Newspaper, radio and television reporters can set up in the conference room. The Airport Director can enter and exit from the door leading to the main office. There is a computer and screen for any presentations, and there is ample access to electrical outlets and phone jacks. Most importantly, it allows us to segregate the media from the families.

The Main Office becomes the "Control Center".

Everyone reports here.

The Operations Office becomes the "Security Center".

The Taxilane stub off of A2 near 17 becomes the "Standby Point".

This spot has clear lines of sight of the approaches and surfaces, and easy physical access to the entire airfield.

The Quimby Hangar Ramp becomes "Staging Area A".

Personnel or gear can be staged here for activity on the north end of the airport. It can be accessed by Gate 3T near the Terminal.

The Hero Hangar Ramp becomes "Staging Area B".

Personnel or gear can be staged here for activity on the southwest side of the airport. It can be accessed by Gate 7W off of 36th Street.

The Boyington Hangar Ramp becomes "Staging Area C".

Personnel or gear can be staged here for activity on the south side of the airport. It can be accessed by Gate 3C off of 4th Avenue.

Million Air FBO (at gate 11W) becomes the "Survivors' Gathering Location".

Survivors of Major Incidents can be centrally located, accounted for, protected from the media, have access to a bathroom and cafeteria.

The Love Hangar (at gate 12W) becomes the "Temporary Morgue".

Vacate the building of all aircraft and make sure it is clean.

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VI. DESIGNATED PERSONNEL

Airport Director

- Located in Control Center
- In command. Oversees all activities
- Liaison to Airline Go Team and other family assistance organizations (e.g. Red Cross)
- Point of Contact for City, County, State and Federal Officials

Finance Director

- Located in Control Center
- Chief of Staff
- Oversees Friends and Family Gathering Center and Media Center
- Oversees and authorizes all procurement and logistics
- Filters phone calls to ensure genuine needs are met and nonsense dealt with swiftly

Operations Director

- Located at Incident Command Center (on-scene)
- Liaison to all on-scene emergency response organizations
- Gathers information and reports back to Airport Director

Corporate Account Manager

- Located in Control Center
- Acts as Public Information Officer (PIO)
- Reports to Airport Director

Maintenance Director

- Located at Control Center
- Ensures all Designated Locations are unlocked and clean
- Ensures all gates are functional and guarded (if necessary)
- Helps secure incident scene after rescue phase
- Examines airfield for FOD, etc., after rescue phase.

Operations Supervisor

- Located at Security Center
- Monitors radios, phone and security cameras and **logs *everything***
- Ensures Ops Specialists perform emergency duties
- Reports to Chief of Staff

Executive Assistant

- Located in Control Center
- Maintains Master checklist
- Filters people trying to see or talk to Airport Director
- Reports to Airport Director

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Customer Service Representative

- Located at Control Center
- Answers all phone calls and acts as primary phone call filter
- LOGS *EVERYTHING*
- Reports to Chief of Staff

Admin Staff

- Located in Control Center
- Sets up Friend and Family Gathering Center and Media Center
- Helps Receptionist and Executive Assistant answer phones and maintain logs
- Run errands as assigned
- Report to Chief of Staff

Operations Specialists

- Located at Security Center until assigned to duty
- Guard gates, Gathering Centers and other sensitive locations until YPD arrives
- Protect incident scene until NTSB arrives
- Run errands for Operations Director
- Report to Operations Director (Ops Dir *may* detach Ops Spec and assign them to Chief of Staff or Maintenance Director.)

Maintenance Supervisor

- Located in Control Center until assigned to duty
- Leads Maintenance staff in completing all duties as directed.
- Reports to Maintenance Director

Maintenance Staff

- Located at Control Center until assigned to duty
- Sets up Friends and Family Gathering Center and Media Center with Admin Staff
- Unlocks all Designated Locations and ensures cleanliness
- Guard gates, Gathering Centers and other sensitive locations until YPD arrives
- Protect incident scene until NTSB arrives
- Run errands for Maintenance Director
- Report to Maintenance Supervisor.

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VII. VEHICLE ASSIGNMENTS

Vehicle	Operator	Purpose
YC-01	Ops Specialists	Run Errands on-airport
YC-02	Maintenance Director	Airfield/Incident Scene
YC-04	Maintenance Supervisor	Completion of Duties
YC-05	Admin Staff	Run Errands off-airport
YC-06	Operations Director	Report to Incident
Golf Carts	Maintenance Staff	Run Errands around Terminal Area

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IN-FLIGHT EMERGENCY CHECKLIST

You MUST use this form during every Airfield Emergency

DATE: ____________ **TIME:** ____________

FROM: ____________________

AIRLINE:

NONE	SKYWEST	MESA

OTHER____________

A/C Type: ____________ **CALLSIGN:** ____________________

Nature of Emergency (Circle Applicable)

Engine Out **No Power** **Low Fuel** **Gear Up** **Other (explain)**

____

____

____

Landing Runway:

21L-3R	21R-3L	17-35	8-26

PERSONS ON BOARD: ______ **FUEL ON BOARD:** ________

ETA: _______

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Person Stand By Location (phone)	**Contact Time**	**Has Info?**	**Stand By Time**
AIRPORT DIRECTOR Director's Office x217			
OPERATIONS DIRECTOR At Standby Point 941-2394			
OPERATIONS SUPERVISOR SECURITY CENTER 160			

Wait for call from Operations Director. She will say one of three things:

STAND DOWN	**MINOR**	**MAJOR**
Fill out info below	Go to page 11	Go to page 12

STAND DOWN TIME: ________ Debrief Begin: ________

End: _____

This IFE is officially over without further incident.

____

Ops Director Signature

MINOR INCIDENT CHECKLIST

This form must be used as a continuation of the IFE Checklist.

At this point, the Airport Director and Operations Supervisor are on Stand by.

Person Action / Location	Time Completed
OPERATIONS DIRECTOR Arrived @ Incident Location and makes contact with CFR	
OPERATIONS DIRECTOR Filled out Aircraft Incident Information Form	
OPERATIONS DIRECTOR Called Airport Director to brief.	
OPERATIONS DIRECTOR Called NTSB/FAA.	
OPERATIONS DIRECTOR Called FAA Operations Control Center (310) 725-3300	
OPERATIONS DIRECTOR Verified MCAS "Combat Camera" took photos of incident scene. Also, takes photos of our own	
NTSB Gave Ops Director permission to remove aircraft from airfield	
OPERATIONS DIRECTOR Coordinated aircraft removal with MCAS and on-duty FBO	
AIRPORT DIRECTOR Debriefed Operations Director and any others involved.	

STAND DOWN TIME: ________ Debrief Begin: _______

End: _____

This Minor Incident is officially over. ________________

Ops Director Signature

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MAJOR INCIDENT CHECKLIST

This form must be used as a continuation of the IFE Checklist.

Action Details	**Time Completed**
Notified of Major Incident Name & Title of caller: __________________________________ Caller's Contact info: __________________________________ Type of Aircraft: __________________________________ Nature of Incident: __________________________________ GRID Location: __________________________________ Location in Plain English: ____ __________	
If available, get DIMU: Dead ______ Injured ______ Missing ______ Uninjured ______	
Make announcement over PA system Dial **771**. Zone is **81**. Say slowly and clearly twice, "Would all airport employees please report to the Conference Room." Press **#** and hang up.	

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ALL AIRPORT EMPLOYEES Report to Conference Room ☐ Craig Williams ☐ Junior Hinkle ☐ Lynn Hall ☐ Gabby Reyes ☐ Gen Grosse ☐ Andrea Lopez ☐ Maria Gonzales ☐ Jason Frost ☐ Elizabeth Campbell ☐ Christopher Humphrey ☐ Juan Zavala ☐ Jerardo Sanchez ☐ Robert Nelson ☐ Miguel Linares ☐ Samuel Whitfield ☐ Russell Wright ☐ Craig Blomdahl ☐ Gary Broad ☐ Dale Simmons ☐ Adriana Alcalde (remains at Switchboard) ☐ Juan Trasvina (remains at Security Center) ☐ Gladys Wiggins (remains at Incident Command Post)	
INITIAL RESPONSE	
Call 911, if directed Give "NAPP" **N**ame **A**ddress **P**roblem **P**hone number	
When directed, call Yuma Regional Medical Center – 336-7100 (Emergency Room) Ask for *Resource Coordinator* or *Charge Nurse* Tell him or her: • # of patients • Type of incident • Incident Command Post Information (if available) • Triage on site? • If hazardous material involved, it is *critical* they know.	

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Call FAA Scottsdale FSDO, if directed **(480) 419-0111** They will likely ask for the information collected on Aircraft Incident Information Form. Get from OPSDIR before calling. Ask if we need to call FAA Operations Control Center also (310) 725-3300	
Call NTSB (800) 683-9369 They will likely ask for the information collected on Aircraft Incident Information Form. Get from OPSDIR before calling.	
Call County Emergency Management Office 782-1317 POC: Gretchen Robinson (580-6537 24-hour recall) Give same info given to YRMC Luis will start making calls to pertinent individuals. *Will County open EOC?* (If in doubt, ask Luis to call OPSDIR)	
Call Yuma Police Department 373-4754 POC: Lt. Susan Otero Request four officers to the Airport *immediately* 1. Guard Stairs to Family Gathering Area 2. Patrol Curb 3. Guard Survivor Gathering Area 4. Roaming foot patrol	
Call Medical Examiner/Coroner 336-7019 POC: Robert Virgil Cell **210-8624** Give same info as given to YRMC *Bodies must NOT be moved without Coroner's approval.*	
Call Red Cross 782-0660 Give same info as given to YRMC Find out ETA	
Call LOCAL Airline station manager Try to get an ETA for their "Go Team" Sky West (Joe)**Cell 210-2588 Home 344-1033** Mesa (Brenda)**Cell 271-0612 Home 329-6553**	

If criminal activity involved, call FBI 344-3050 POC: Matthew Alexander, Special Agent	
If terrorism suspected, call TSA (520) 799-9300 POC: Cynthia Hernandez, Federal Security Director (cell: 520-444-0480)	
Call BBR (Byrne, Benesch & Rice, Airport Legal Firm**) ask for Wayne Benesch 782-1805** Ask to come to airport, if necessary.	
Call Pancrazi Insurance Company 783-3345 ext 116 Ask agent to come to airport, if necessary.	
Call Gilberto Garza of Garza Aviation 581-4904	

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AIRPORT COMMAND POST & ACCOMODATIONS	
If MCAS-Yuma CFR relinquishes control of Incident OPSDIR becomes Incident Commander until NTSB arrives	
OPSDIR calls to brief Airport Director	
Airport Director briefs airport staff	
All cell phones on, charged and set on LOUD	
Staff given specific duties and depart conference room Time for everyone to do their job and report back to Control Center when finished.	
Set up Conference Room for Media Power strips, phone/Ethernet connections, etc	
Set up Event Center for Families Coffee, water, cups, food, Kleenex, etc.	
Erect barrier on balcony Prevents Media from accessing Family	
Post guard at bottom of west stairs Allow ONLY family, airline employees and government officials upstairs to Friend and Family Gathering Center Stay until replaced by YPD *KEEP THE MEDIA AWAY FROM THE FAMILIES!!!*	
Designated Locations Unlocked and Cleaned ☐ Survivors' Gathering Location ☐ Triage Center ☐ Temporary Morgue	
Airline Go Team arrive? Record # of people, time arrived and POC +phone number	

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Airline Establishes Family Assistance Center (FAC) Which hotel? Previous contact info still good?	
Airport Staff relieved of all family-related duties. Clean up Family and Media centers. Direct any late-comers to Airline's FAC at the hotel.	
FAA Team arrived? Record # of people, time arrived and POC +phone number	
NTSB Investigation Team arrived? Record # of people, time arrived and POC +phone number	
NTSB takes charge of accident scene Operations Director relieved of Incident Command NOTE: Airport Ops still must provide security to ensure no unauthorized persons enter the scene	

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AIRPORT STATUS – DAMAGE ASSESSMENT	
Damage Report Maintenance Director and MCAS Base Ops survey damage	
Airfield or Runway closure? Which Runway? MCAS-Yuma Operations Officer makes determination	
When is the airfield/runway expected to re-open?	
MCAS-Yuma Issued NOTAM? Look for it on the fax machine	
After Hours radio announcement ready? Announce on FBO UNICOM (131.22) and Tower (119.3) Frequencies: *MCAS-Yuma and Yuma International Airport has an emergency in progress and the field (or runway XX) is closed to all traffic until further notice.*	

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AFTER ACTION	
NTSB clears accident scene Hands authority back to OPSDIR	
On-duty FBO removes wreckage	
Incident area policed and runway swept Coordinated with MCAS Base Ops	
Airfield/runway re-opened Coordinated with MCAS Base Ops	
Airport Staff Debrief Airport Director de-briefs all airport staff members	
Major debrief meeting with all stakeholders Involve Airline, MCAS-Yuma, Red Cross, YPD, YRMC, etc... May be held at a later date	
After Action Reports OPSDIR to Airport Director Airport Director to Airport Board of Directors	
Stand Down Note time the incident is now officially over	

STAND DOWN TIME: ________ Debrief Begin: _______

End: _____

This Major Incident is officially over.

____

Airport Director Signature

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Phone Directory

Title	Name	Number
EMERGENCY		911
Airport Director	Craig Williams	Cell 941-2386
Airport CFO	Junior Hinkle	Cell 941-2390
Airport Ops Director	Gladys Wiggins	Cell 941-2394
Airport Ops Supervisor	Juan Trasvina	Cell 750-6778
Airport Ops Specialist	Craig Blomdahl	Cell 941-1326
Airport Ops Specialist	Gary Broad	Cell 446-6618
Airport Maintenance Director	Lynn Hall	Cell 941-2392
Airport Maintenance Supervisor	Christopher Humphrey	Cell 304-9409
Airport Corporate Account Manager	Gen Grosse	Cell 750-0442
Airport Executive Assistant	Andrea Lopez	Cell 580-9189
Airport Customer Service Rep.	Adriana Alcalde	Cell 287-5280
Airport Office Manager	Gabby Reyes	Cell 941-6055
Airport Book Keeper	Maria Gonzales	Cell 304-2565
Maint. Specialist	Juan Zavala	Cell 271-3358
Maint. Specialist	Jerardo Sanchez	Cell 271-7359
Maint. Specialist	Robert Nelson	Cell 257-9650
Maint. Specialist	Miguel Linares	928-550-3686
Maint. Specialist	Samuel Whitfield	928-581-7718
Maint. Technician	Russell Wright	Cell 503-0868
Jason Frost	IT Specialist	928-580-8124

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Elizabeth Campbell Garza Aviation	Project Specialist	636-223-2166 928-581-4904
PHI	24 hour duty	928-344-3667
Garza Aviation	Gill Garza	928-581-4904
Republic Parking	Rita Motley	Office 314-3965 Cell 580-9401
TSA	Steve Petrokovitch	Cell 210-1216 Office
U.S. Airways	Brenda Stewart	Cell 271-0612 Office 341-1276
United Express	Joe Catanzaro	Cell 210-2588 Office 344-4227
Care Flight	Tauni Hinesley	24 Hr 800-800-0900 Office 928-377-1210
Million Air	Manny Garibay	Cell 941-3422 Office 247-9571
Pappy Boyington Hangar	Justin Wearing	979-997-3112
AVIS	Monica Brown	Office 726-5737 Cell 210-9715
Budget	Monica Brown	Office 344-1822 Cell 210-9715
Enterprise	Mia Valenzuela	Office 726-9923 Cell 261-6337
Hertz	Steve Cauble	Office 726-5160 Cell 941-2654
FedEx	Brandi Hyatt	Office 314-4770
Red Barron Caffee	Evelyn Malo	928-246-9911
Customs and Border Protection	Headquarters	928-726-8501

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Notes:

<u>**Appendix 4**</u>

Material Safety Data Sheets (MSDS)

(Located in Separate Binder/Location)

Appendix 5

Facility Policies and Procedures and Stormwater Pollution Prevention Provisions Logsheets

Facility Policies and Procedures and Stormwater Pollution Prevention Provisions Logsheets

My signature below certifies that I have read, understand and agree to comply with the provisions established within the Facility Policies, Procedures and Stormwater Pollution Prevention Measures for Yuma International Airport located at the intersection of Pacific Avenue and 32nd Street, Yuma, AZ. I also agree to comply with the provisions established within the Stormwater Prevention Control and Countermeasure (SPCC) Plan.

Printed Name of Worker	Supervisor's Signature	Date

Printed Name of Worker	Supervisor's Signature	Date

Appendix 6

40 Code of federal regulation Part 112 Oil Pollution Prevention

engine on a public vessel) and any discharges of such oil accumulated in the bilges of a vessel discharged in compliance with MARPOL 73/78, Annex I, as provided in 33 CFR part 151, subpart A;

(b) Other discharges of oil permitted under MARPOL 73/78, Annex I, as provided in 33 CFR part 151, subpart A; and

(c) Any discharge of oil explicitly permitted by the Administrator in connection with research, demonstration projects, or studies relating to the prevention, control, or abatement of oil pollution.

[61 FR 7421, Feb. 28, 1996]

§ 110.6 Notice.

Any person in charge of a vessel or of an onshore or offshore facility shall, as soon as he or she has knowledge of any discharge of oil from such vessel or facility in violation of section 311(b)(3) of the Act, immediately notify the National Response Center (NRC) (800-424-8802; in the Washington, DC metropolitan area, 202-426-2675). If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or EPA predesignated On-Scene Coordinator (OSC) for the geographic area where the discharge occurs. All such reports shall be promptly relayed to the NRC. If it is not possible to notify the NRC or the predesignated OCS immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the person in charge of the vessel or onshore or offshore facility notifies the NRC as soon as possible. The reports shall be made in accordance with such procedures as the Secretary of Transportation may prescribe. The procedures for such notice are set forth in U.S. Coast Guard regulations, 33 CFR part 153, subpart B and in the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR part 300, subpart E.

(Approved by the Office of Management and Budget under control number 2050-0046)

[52 FR 10719, Apr. 2, 1987. Redesignated and amended at 61 FR 7421, Feb. 28, 1996; 61 FR 14032, Mar. 29, 1996]

PART 112—OIL POLLUTION PREVENTION

Sec.

Subpart A—Applicability, Definitions, and General Requirements For All Facilities and All Types of Oils

112.1 General applicability.
112.2 Definitions.
112.3 Requirement to prepare and implement a Spill Prevention, Control, and Countermeasure Plan.
112.4 Amendment of Spill Prevention, Control, and Countermeasure Plan by Regional Administrator.
112.5 Amendment of Spill Prevention, Control, and Countermeasure Plan by owners or operators.
112.6 [Reserved].
112.7 General requirements for Spill Prevention, Control, and Countermeasure Plans.

Subpart B—Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)

112.8 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities).
112.9 Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil production facilities.
112.10 Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil drilling and workover facilities.
112.11 Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities.

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

112.12 Spill Prevention, Control, and Countermeasure Plan requirements for onshore facilities (excluding production facilities).
112.13 Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil production facilities.

112.14 Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil drilling and workover facilities.
112.15 Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities.

Subpart D—Response Requirements

112.20 Facility response plans.
112.21 Facility response training and drills/exercises.
APPENDIX A TO PART 112—MEMORANDUM OF UNDERSTANDING BETWEEN THE SECRETARY OF TRANSPORTATION AND THE ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY
APPENDIX B TO PART 112—MEMORANDUM OF UNDERSTANDING AMONG THE SECRETARY OF THE INTERIOR, SECRETARY OF TRANSPORTATION, AND ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY
APPENDIX C TO PART 112—SUBSTANTIAL HARM CRITERIA
APPENDIX D TO PART 112—DETERMINATION OF A WORST CASE DISCHARGE PLANNING VOLUME
APPENDIX E TO PART 112—DETERMINATION AND EVALUATION OF REQUIRED RESPONSE RESOURCES FOR FACILITY RESPONSE PLANS
APPENDIX F TO PART 112—FACILITY-SPECIFIC RESPONSE PLAN

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.

SOURCE: 38 FR 34165, Dec. 11, 1973, unless otherwise noted.

EDITORIAL NOTE: Nomenclature changes to part 112 appear at 65 FR 40798, June 30, 2000.

Subpart A—Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils

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

§ 112.1 General applicability.

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

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

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

(1) Any aboveground container;

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

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

(4) Any "bunkered tank" or "partially buried tank" as defined in § 112.2, or any container in a vault, each of which is considered an aboveground storage container for purposes of this part.

(c) As provided in section 313 of the Clean Water Act (CWA), departments, agencies, and instrumentalities of the Federal government are subject to this part to the same extent as any person.

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

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

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

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

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

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

(i) The completely buried storage capacity of the facility is 42,000 gallons or less of oil. For purposes of this exemption, the completely buried storage capacity of a facility excludes the capacity of a completely buried tank, as defined in § 112.2, and connected underground piping, underground ancillary equipment, and containment systems, that is currently subject to all of the technical requirements of part 280 of this chapter or all of the technical requirements of a State program approved under part 281 of this chapter. The completely buried storage capacity of a facility also excludes the capacity of a container that is "permanently closed," as defined in § 112.2.

(ii) The aggregate aboveground storage capacity of the facility is 1,320 gallons or less of oil. For purposes of this exemption, only containers of oil with a capacity of 55 gallons or greater are counted. The aggregate aboveground storage capacity of a facility excludes the capacity of a container that is "permanently closed," as defined in § 112.2.

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

(4) Any completely buried storage tank, as defined in § 112.2, and connected underground piping, underground ancillary equipment, and containment systems, at any facility, that is subject to all of the technical requirements of part 280 of this chapter or a State program approved under part 281 of this chapter, except that such a tank must be marked on the facility diagram as provided in § 112.7(a)(3), if the facility is otherwise subject to this part.

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

(6) Any facility or part thereof used exclusively for wastewater treatment and not used to satisfy any requirement of this part. The production, recovery, or recycling of oil is not wastewater treatment for purposes of this paragraph.

(e) This part establishes requirements for the preparation and implementation of Spill Prevention, Control, and Countermeasure (SPCC) Plans. SPCC Plans are designed to complement existing laws, regulations, rules, standards, policies, and procedures pertaining to safety standards, fire prevention, and pollution prevention rules. The purpose of an SPCC

Plan is to form a comprehensive Federal/State spill prevention program that minimizes the potential for discharges. The SPCC Plan must address all relevant spill prevention, control, and countermeasures necessary at the specific facility. Compliance with this part does not in any way relieve the owner or operator of an onshore or an offshore facility from compliance with other Federal, State, or local laws.

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

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

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

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

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

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

§ 112.2 Definitions.

For the purposes of this part:

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

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

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

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

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

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

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

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

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

Contract or other approved means means:

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

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

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

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

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

Facility means any mobile or fixed, onshore or offshore building, structure, installation, equipment, pipe, or pipeline (other than a vessel or a public vessel) used in oil well drilling operations, oil production, oil refining, oil storage, oil gathering, oil processing, oil transfer, oil distribution, and waste treatment, or in which oil is used, as described in Appendix A to this part. The boundaries of a facility depend on several site-specific factors, including, but not limited to, the ownership or operation of buildings, structures, and equipment on the same site and the types of activity at the site.

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

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

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

Navigable waters means the waters of the United States, including the territorial seas.

(1) The term includes:

(i) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;

(ii) All interstate waters, including interstate wetlands;

(iii) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce including any such waters:

(A) That are or could be used by interstate or foreign travelers for recreational or other purposes; or

(B) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or,

(C) That are or could be used for industrial purposes by industries in interstate commerce;

(iv) All impoundments of waters otherwise defined as waters of the United States under this section;

(v) Tributaries of waters identified in paragraphs (1)(i) through (iv) of this definition;

(vi) The territorial sea; and

(vii) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraph (1) of this definition.

(2) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds which also meet the criteria of this definition) are not waters of the United States. Navigable waters do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with EPA.

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

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

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

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

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

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

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

Permanently closed means any container or facility for which:

(1) All liquid and sludge has been removed from each container and connecting line; and

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

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

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

Production facility means all structures (including but not limited to wells, platforms, or storage facilities), piping (including but not limited to flowlines or gathering lines), or equipment (including but not limited to workover equipment, separation equipment, or auxiliary non-transportation-related equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of oil, or associated storage or measurement, and located in a single geographical oil or gas field operated by a single operator.

Regional Administrator means the Regional Administrator of the Environmental Protection Agency, in and for the Region in which the facility is located.

Repair means any work necessary to maintain or restore a container to a condition suitable for safe operation, other than that necessary for ordinary, day-to-day maintenance to maintain the functional integrity of the container and that does not weaken the container.

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

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

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

United States means the States, the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, Guam, American Samoa, the

U.S. Virgin Islands, and the Pacific Island Governments.

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

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

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

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

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

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

(a) If your onshore or offshore facility was in operation on or before August 16, 2002, you must maintain your Plan, but must amend it, if necessary to ensure compliance with this part, on or before August 17, 2004, and must implement the amended Plan as soon as possible, but not later than February 18, 2005. If your onshore or offshore facility becomes operational after August 16, 2002, through February 18, 2005, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare a Plan on or before February 18, 2005 , and fully implement it as soon as possible, but not later than February 18, 2005.

(b) If you are the owner or operator of an onshore or offshore facility that becomes operational after February 18, 2005, and could reasonably be expected to have a discharge as described in § 112.1(b), you must prepare and implement a Plan before you begin operations.

(c) If you are the owner or operator of an onshore or offshore mobile facility, such as an onshore drilling or workover rig, barge mounted offshore drilling or workover rig, or portable fueling facility, you must prepare, implement, and maintain a facility Plan as required by this section. This provision does not require that you prepare a new Plan each time you move the facility to a new site. The Plan may be a general plan. When you move the mobile or portable facility, you must locate and install it using the discharge prevention practices outlined in the Plan for the facility. You may not operate a mobile or portable facility subject to this part unless you have implemented the Plan. The Plan is applicable only while the facility is in a fixed (non-transportation) operating mode.

(d) A licensed Professional Engineer must review and certify a Plan for it to be effective to satisfy the requirements of this part.

(1) By means of this certification the Professional Engineer attests:

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

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

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

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

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

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

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

(1) Maintain a complete copy of the Plan at the facility if the facility is

normally attended at least four hours per day, or at the nearest field office if the facility is not so attended, and

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

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

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

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

(ii) A full discussion of actions being taken or contemplated to minimize or mitigate such delay; and

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

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

[67 FR 47140, July 17, 2002, as amended at 68 FR 1351, Jan. 9, 2003; 68 FR 18894, Apr. 17, 2003]

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

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

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

(1) Name of the facility;

(2) Your name;

(3) Location of the facility;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(b) Notwithstanding compliance with paragraph (a) of this section, complete a review and evaluation of the SPCC Plan at least once every five years from the date your facility becomes subject to this part; or, if your facility was in operation on or before August 16, 2002, five years from the date your last review was required under this part. As a result of this review and evaluation, you must amend your

SPCC Plan within six months of the review to include more effective prevention and control technology if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in § 112.1(b) from the facility. You must implement any amendment as soon as possible, but not later than six months following preparation of any amendment. You must document your completion of the review and evaluation, and must sign a statement as to whether you will amend the Plan, either at the beginning or end of the Plan or in a log or an appendix to the Plan. The following words will suffice, "I have completed review and evaluation of the SPCC Plan for (name of facility) on (date), and will (will not) amend the Plan as a result."

(c) Have a Professional Engineer certify any technical amendment to your Plan in accordance with § 112.3(d).

§ 112.6 [Reserved]

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

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

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

(2) Comply with all applicable requirements listed in this part. Your Plan may deviate from the requirements in paragraphs (g), (h)(2) and (3), and (i) of this section and the requirements in subparts B and C of this part, except the secondary containment requirements in paragraphs (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), 112.12(c)(11), 112.13(c)(2), and 112.14(c), where applicable to a specific facility, if you provide equivalent environmental protection by some other means of spill prevention, control, or countermeasure. Where your Plan does not conform to the applicable requirements in paragraphs (g), (h)(2) and (3), and (i) of this section, or the requirements of subparts B and C of this part, except the secondary containment requirements in paragraphs (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), 112.12(c)(11), 112.13(c)(2), and 112.14(c), you must state the reasons for nonconformance in your Plan and describe in detail alternate methods and how you will achieve equivalent environmental protection. If the Regional Administrator determines that the measures described in your Plan do not provide equivalent environmental protection, he may require that you amend your Plan, following the procedures in § 112.4(d) and (e).

(3) Describe in your Plan the physical layout of the facility and include a facility diagram, which must mark the location and contents of each container. The facility diagram must include completely buried tanks that are otherwise exempted from the requirements of this part under § 112.1(d)(4). The facility diagram must also include all transfer stations and connecting pipes. You must also address in your Plan:

(i) The type of oil in each container and its storage capacity;

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

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

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

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

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

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

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

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

(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in § 112.1(b). The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not escape the containment system before cleanup occurs. At a minimum, you must use one of the following prevention systems or its equivalent:

(1) For onshore facilities:

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

(ii) Curbing;

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

(iv) Weirs, booms, or other barriers;

(v) Spill diversion ponds;

(vi) Retention ponds; or

(vii) Sorbent materials.

(2) For offshore facilities:

(i) Curbing or drip pans; or

(ii) Sumps and collection systems.

(d) If you determine that the installation of any of the structures or pieces of equipment listed in paragraphs (c) and (h)(1) of this section, and §§ 112.8(c)(2), 112.8(c)(11), 112.9(c)(2), 112.10(c), 112.12(c)(2), 112.12(c)(11), 112.13(c)(2), and 112.14(c) to prevent a discharge as described in § 112.1(b) from any onshore or offshore facility is not practicable, you must clearly explain in your Plan why such measures are not practicable; for bulk storage containers, conduct both periodic integrity testing of the containers and periodic integrity and leak testing of the valves and piping; and, unless you have submitted a response plan under § 112.20, provide in your Plan the following:

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

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

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

(f) *Personnel, training, and discharge prevention procedures.* (1) At a minimum, train your oil-handling personnel in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules, and regulations; general facility operations; and, the contents of the facility SPCC Plan.

(2) Designate a person at each applicable facility who is accountable for discharge prevention and who reports to facility management.

(3) Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges as described in §112.1(b) or failures, malfunctioning components, and any recently developed precautionary measures.

(g) *Security (excluding oil production facilities).* (1) Fully fence each facility handling, processing, or storing oil, and lock and/or guard entrance gates when the facility is not in production or is unattended.

(2) Ensure that the master flow and drain valves and any other valves permitting direct outward flow of the container's contents to the surface have adequate security measures so that they remain in the closed position when in non-operating or non-standby status.

(3) Lock the starter control on each oil pump in the "off" position and locate it at a site accessible only to authorized personnel when the pump is in a non-operating or non-standby status.

(4) Securely cap or blank-flange the loading/unloading connections of oil pipelines or facility piping when not in service or when in standby service for an extended time. This security practice also applies to piping that is emptied of liquid content either by draining or by inert gas pressure.

(5) Provide facility lighting commensurate with the type and location of the facility that will assist in the:

(i) Discovery of discharges occurring during hours of darkness, both by operating personnel, if present, and by non-operating personnel (the general public, local police, etc.); and

(ii) Prevention of discharges occurring through acts of vandalism.

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

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

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

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

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

Subpart B—Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)

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

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

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

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

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

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

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

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

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

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

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

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

(i) Normally keep the bypass valve sealed closed.

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

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

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

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

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

(6) Test each aboveground container for integrity on a regular schedule, and whenever you make material repairs. The frequency of and type of testing must take into account container size and design (such as floating roof, skid-mounted, elevated, or partially buried). You must combine visual inspection with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or another system of non-destructive shell testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph.

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

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

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

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

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

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

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

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

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

(11) Position or locate mobile or portable oil storage containers to prevent a discharge as described in § 112.1(b). You must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

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

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

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

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

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

§ 112.9 Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil production facilities.

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

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

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

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

(c) *Oil production facility bulk storage containers.* (1) Not use a container for the storage of oil unless its material and construction are compatible with the material stored and the conditions of storage.

(2) Provide all tank battery, separation, and treating facility installations with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must safely confine drainage from undiked areas in a catchment basin or holding pond.

(3) Periodically and upon a regular schedule visually inspect each container of oil for deterioration and maintenance needs, including the foundation and support of each container that is on or above the surface of the ground.

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

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

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

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

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

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

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

(3) Have a program of flowline maintenance to prevent discharges from each flowline.

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

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

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

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

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

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

§112.11 Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities.

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

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

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

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

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

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

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

(3) Installing parallel redundant dump valves.

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

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

(g) Equip containers with suitable corrosion protection.

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

(i) Conduct testing and inspection of the pollution prevention equipment and systems at the facility on a scheduled periodic basis, commensurate with the complexity, conditions, and circumstances of the facility and any other appropriate regulations. You must use simulated discharges for testing and inspecting human and equipment pollution control and countermeasure systems.

(j) Describe in detailed records surface and subsurface well shut-in valves and devices in use at the facility for each well sufficiently to determine their method of activation or control, such as pressure differential, change in fluid or flow conditions, combination of pressure and flow, manual or remote control mechanisms.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(5) Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two

"lift" pumps and permanently install at least one of the pumps. Whatever techniques you use, you must engineer facility drainage systems to prevent a discharge as described in §112.1(b) in case there is an equipment failure or human error at the facility.

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

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

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

(i) Normally keep the bypass valve sealed closed.

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

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

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

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

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

(6) Test each aboveground container for integrity on a regular schedule, and whenever you make material repairs. The frequency of and type of testing must take into account container size and design (such as floating roof, skid-mounted, elevated, or partially buried). You must combine visual inspection with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustic emissions testing, or another system of non-destructive shell testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph.

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

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

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

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

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

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

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

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

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

(11) Position or locate mobile or portable oil storage containers to prevent a discharge as described in § 112.1(b). You must furnish a secondary means of containment, such as a dike or catchment basin, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.

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

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

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

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

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

§ 112.13 Spill Prevention, Control, and Countermeasure Plan requirements for onshore oil production facilities.

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

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

(b) *Oil production facility drainage.* (1) At tank batteries and separation and treating areas where there is a reasonable possibility of a discharge as described in § 112.1(b), close and seal at all times drains of dikes or drains of equivalent measures required under § 112.7(c)(1), except when draining uncontaminated rainwater. Prior to drainage, you must inspect the diked area and take action as provided in § 112.12(c)(3)(ii), (iii), and (iv). You must remove accumulated oil on the rainwater and return it to storage or dispose of it in accordance with legally approved methods.

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

(c) *Oil production facility bulk storage containers.* (1) Not use a container for the storage of oil unless its material and construction are compatible with the material stored and the conditions of storage.

(2) Provide all tank battery, separation, and treating facility installations with a secondary means of containment for the entire capacity of the largest single container and sufficient freeboard to contain precipitation. You must safely confine drainage from undiked areas in a catchment basin or holding pond.

(3) Periodically and upon a regular schedule visually inspect each container of oil for deterioration and maintenance needs, including the foundation and support of each container that is on or above the surface of the ground.

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

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

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

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

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

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

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

(3) Have a program of flowline maintenance to prevent discharges from each flowline.

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

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

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

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

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

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

§ 112.15 Spill Prevention, Control, and Countermeasure Plan requirements for offshore oil drilling, production, or workover facilities.

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

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

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

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

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

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

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

(3) Installing parallel redundant dump valves.

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

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

(g) Equip containers with suitable corrosion protection.

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

(i) Conduct testing and inspection of the pollution prevention equipment and systems at the facility on a scheduled periodic basis, commensurate with the complexity, conditions, and circumstances of the facility and any other appropriate regulations. You must use simulated discharges for testing and inspecting human and equipment pollution control and countermeasure systems.

(j) Describe in detailed records surface and subsurface well shut-in valves and devices in use at the facility for each well sufficiently to determine their method of activation or control, such as pressure differential, change in fluid or flow conditions, combination of pressure and flow, manual or remote control mechanisms.

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

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

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

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

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

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

Subpart D—Response Requirements

§ 112.20 Facility response plans.

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

(1) For the owner or operator of a facility in operation on or before February 18, 1993 who is required to prepare and submit a response plan under 33 U.S.C. 1321(j)(5), the Oil Pollution Act of 1990 (Pub. L. 101–380, 33 U.S.C. 2701 *et seq.*) requires the submission of

a response plan that satisfies the requirements of 33 U.S.C. 1321(j)(5) no later than February 18, 1993.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(1) Promptly review the facility response plan;

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

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

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

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

(i) A change in the facility's configuration that materially alters the information included in the response plan;

(ii) A change in the type of oil handled, stored, or transferred that materially alters the required response resources;

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

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

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

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

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

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

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

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

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

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

(A) The facility does not have secondary containment for each aboveground storage area sufficiently large to contain the capacity of the largest aboveground oil storage tank within each storage area plus sufficient freeboard to allow for precipitation;

(B) The facility is located at a distance (as calculated using the appropriate formula in Appendix C to this part or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments. For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III of the "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan prepared pursuant to section 311(j)(4) of the Clean Water Act;

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

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

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

(A) Type of transfer operation;

(B) Oil storage capacity;

(C) Lack of secondary containment;

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

(E) Proximity to drinking water intakes;

(F) Spill history; and

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

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

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

(i) Frequency of past discharges;

(ii) Proximity to navigable waters;

(iii) Age of oil storage tanks; and

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

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

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

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

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

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

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

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

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

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

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

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

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

(viii) A diagram of the facility.

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

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

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

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

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

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

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

(vi) A description of the facility's response equipment, the location of the equipment, and equipment testing;

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

(viii) A diagram of evacuation routes; and

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

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

(B) Notify all response personnel, as needed;

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

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

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

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

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

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

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

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

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

(5) *Response planning levels.* The response plan shall include discussion of specific planning scenarios for:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(10) *Security systems.* The response plan shall include a description of facility security systems.

(11) *Response plan cover sheet.* The response plan shall include a completed response plan cover sheet provided in Section 2.0 of Appendix F to this part.

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

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

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

[59 FR 34098, July 1, 1994, as amended at 65 FR 40798, June 30, 2000; 66 FR 34560, June 29, 2001; 67 FR 47151, July 17, 2002]

§ 112.21 Facility response training and drills/exercises.

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

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

(1) The owner or operator shall be responsible for the proper instruction of facility personnel in the procedures to respond to discharges of oil and in applicable oil spill response laws, rules, and regulations.

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

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

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

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

Appendix A to Part 112—Memorandum of Understanding Between the Secretary of Transportation and the Administrator of the Environmental Protection Agency

Section II—Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX B TO PART 112—MEMORANDUM OF UNDERSTANDING AMONG THE SECRETARY OF THE INTERIOR, SECRETARY OF TRANSPORTATION, AND ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY

PURPOSE

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

BACKGROUND

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

RESPONSIBILITIES

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

1. To EPA, DOI redelegates responsibility for non-transportation-related offshore facilities located landward of the coast line.

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

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

EFFECTIVE DATE

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

LIMITATIONS

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

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

MODIFICATION AND TERMINATION

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

Dated: November 8, 1993.

Bruce Babbitt,
Secretary of the Interior.

Dated: December 14, 1993.

Federico Peña,
Secretary of Transportation.

Dated: February 3, 1994.

Carol M. Browner,
Administrator, Environmental Protection Agency.

[59 FR 34102, July 1, 1994]

APPENDIX C TO PART 112—SUBSTANTIAL HARM CRITERIA

1.0 Introduction

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

1.1 Definitions

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

1.1.2 Higher Volume Port Areas include

(1) Boston, MA;
(2) New York, NY;
(3) Delaware Bay and River to Philadelphia, PA;
(4) St. Croix, VI;
(5) Pascagoula, MS;
(6) Mississippi River from Southwest Pass, LA to Baton Rouge, LA;
(7) Louisiana Offshore Oil Port (LOOP), LA;
(8) Lake Charles, LA;
(9) Sabine-Neches River, TX;
(10) Galveston Bay and Houston Ship Channel, TX;
(11) Corpus Christi, TX;
(12) Los Angeles/Long Beach Harbor, CA;
(13) San Francisco Bay, San Pablo Bay, Carquinez Strait, and Suisun Bay to Antioch, CA;
(14) Straits of Juan de Fuca from Port Angeles, WA to and including Puget Sound, WA;
(15) Prince William Sound, AK; and
(16) Others as specified by the Regional Administrator for any EPA Region.

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

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

2.0 Description of Screening Criteria for the Substantial Harm Flowchart

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

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

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

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

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

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

3.0 Certification for Facilities That Do Not Pose Substantial Harm

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

4.0 References

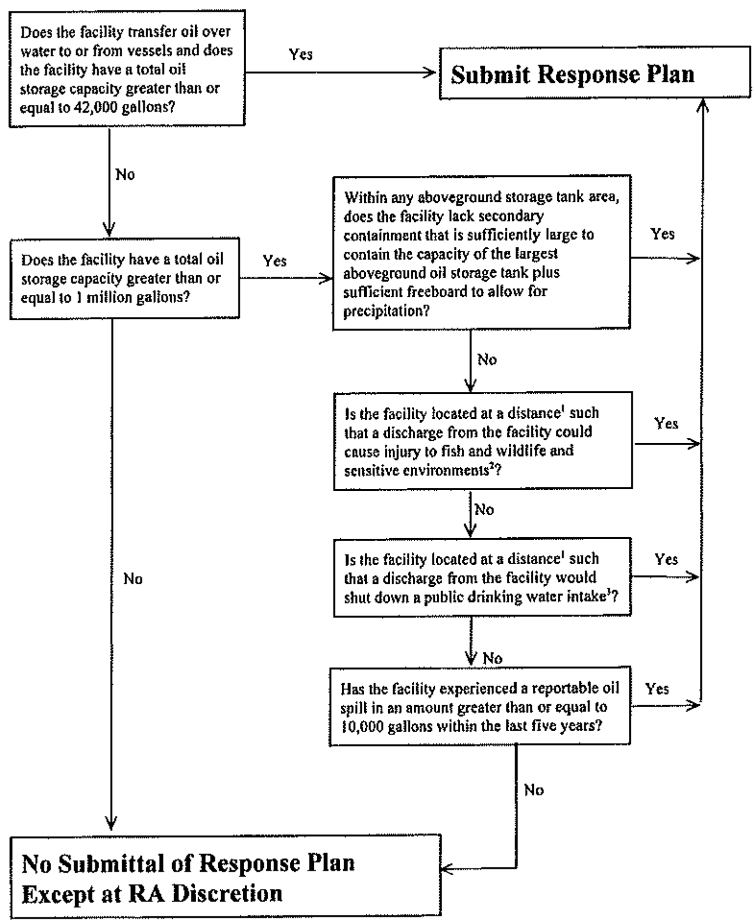
Chow, V.T. 1959. Open Channel Hydraulics. McGraw Hill.

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

ATTACHMENTS TO APPENDIX C

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).

ATTACHMENT C-II—CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

Facility Name: ____________

Facility Address: ____________

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes ____ No ____

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

Yes ____ No ____

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula [1]) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan.

Yes ____ No ____

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula [1]) such that a discharge from the facility would shut down a public drinking water intake [2]?

Yes ____ No ____

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes ____ No ____

Certification

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

____
Signature

____
Name (please type or print)

____
Title

____
Date

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

[2] For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

ATTACHMENT C-III—CALCULATION OF THE PLANNING DISTANCE

1.0 Introduction

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

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

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

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

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

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

2.0 Oil Transport on Moving Navigable Waters

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

d=v×t×c; where

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

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

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

c: constant conversion factor 0.68 sec∙mile/hr∙ft (3600 sec/hr ÷ 5280 ft/mile).

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

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

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

n=Manning's Roughness Coefficient from Table 1 of this attachment;

r=the hydraulic radius; the hydraulic radius can be approximated for parabolic channels by multiplying the average mid-channel depth of the river (in feet) by 0.667

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

(sources for obtaining the mid-channel depth are listed in Table 2 of this attachment); and

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

TABLE 1—MANNING'S ROUGHNESS COEFFICIENT FOR NATURAL STREAMS

[NOTE: Coefficients are presented for high flow rates at or near flood stage.]

Stream description	Roughness coefficient (n)
Minor Streams (Top Width <100 ft.)	
Clean:	
Straight	0.03
Winding	0.04
Sluggish (Weedy, deep pools):	
No trees or brush	0.06
Trees and/or brush	0.10
Major Streams (Top Width >100 ft.)	
Regular section:	
(No boulders/brush)	0.035
Irregular section:	
(Brush)	0.05

TABLE 2—SOURCES OF R AND S FOR THE CHEZY-MANNING EQUATION

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

Distribution Branch
(N/CG33)
National Ocean Service
Riverdale, Maryland 20737-1199
Phone: (301) 436-6990

There will be a charge for materials ordered and a VISA or Mastercard will be accepted.

The mid-channel depth to be used in the calculation of the hydraulic radius (r) can be obtained directly from the following sources:

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

Charts and Maps of Lower Mississippi River (Gulf of Mexico to Ohio River and St. Francis, White, Big Sunflower, Atchafalaya, and other rivers):
U.S. Army Corps of Engineers
Vicksburg District
P.O. Box 60
Vicksburg, Mississippi 39180
Phone: (601) 634-5000

Charts of Upper Mississippi River and Illinois Waterway to Lake Michigan:
U.S. Army Corps of Engineers
Rock Island District
P.O. Box 2004
Rock Island, Illinois 61204
Phone: (309) 794-5552

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

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

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

Charts of Black Warrior River, Alabama River, Tombigbee River, Apalachicola River and Pearl River:
U.S. Army Corps of Engineers
Mobile District
P.O. Box 2288
Mobile, Alabama 36628-0001
Phone: (205) 690-2511

The average slope of the river (s) may be obtained from topographic maps:
U.S. Geological Survey
Map Distribution
Federal Center
Bldg. 41
Box 25286
Denver, Colorado 80225

Additional information can be obtained from the following sources:

1. The State's Department of Natural Resources (DNR) or the State's Aids to Navigation office;
2. A knowledgeable local marina operator; or
3. A knowledgeable local water authority (e.g., State water commission)

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

(1) Locate the facility on the map.

(2) Find the Normal Pool Elevation at the point of discharge from the facility into the water (A).

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

(4) If the Normal Pool Elevation is not available, the elevation contours can be used to find the slope. Determine elevation of the water at the point of discharge from the facility (A). Determine the elevation of the

water at the appropriate distance downstream (B). The formula presented below can be used to calculate the slope.

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

(6) Use the following formula to find the slope, which will be a unitless value: Average Slope=[(A−B) (ft)/C (miles)] × [1 mile/5280 feet]

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

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

TABLE 3—SPECIFIED TIME INTERVALS

Operating areas	Substantial harm planning time (hrs)
Higher volume port area.	12 hour arrival+3 hour deployment=15 hours.
Great Lakes ...	24 hour arrival+3 hour deployment=27 hours.

TABLE 3—SPECIFIED TIME INTERVALS—Continued

Operating areas	Substantial harm planning time (hrs)
All other rivers and canals, inland, and nearshore areas.	24 hour arrival+3 hour deployment=27 hours.

2.6 *Example of the Planning Distance Calculation for Oil Transport on Moving Navigable Waters.* The following example provides a sample calculation using the planning distance formula for a facility discharging oil into the Monongahela River:

(1) Solve for v by evaluating n, r, and s for the Chezy-Manning equation:

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

$n=0.035$.

Find slope, s, where A=727 feet, B=710 feet, and C=25 miles.

Solving:

$s=[(727\ \text{ft}-1710\ \text{ft})/25\ \text{miles}]\times[1\ \text{mile}/5280\ \text{feet}]=1.3\times10^{-4}$

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

Solving:

$r=0.667\times20\ \text{feet}=13.33\ \text{feet}$

Solve for v using:

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

$v=[1.5/0.035]\times(13.33)^{2/3}\times(1.3\times10^{-4})^{1/2}$

$v=2.73$ feet/second

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

(3) Solve for planning distance, d:

$d=v\times t\times c$

d=(2.73 ft/sec)×(27 hours)×(0.68 secω mile/hrω ft)

d=50 miles

Therefore, 50 miles downstream is the appropriate planning distance for this facility.

3.0 Oil Transport on Still Water

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

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

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

$A_1=10^5 \times V^{3/4} \times C$

$C=0.1643$

$A_1=10^5 \times (2{,}000{,}000 \text{ gallons})^{3/4} \times (0.1643)$

$A_1=8.74 \times 10^8 \text{ ft}^2$

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

(3) The area of a circle=$\dagger\ r^2$

(4) To account for the assumption that oil will spread in a semi-circular shape, the area of a circle is divided by 2 and is designated as A_2.

$A_2=(\dagger\ r^2)/2$

Solving for the radius, r, using the relationship $A_1=A_2 \leqq 8.74 \times 10^8 \text{ ft}^2=(\dagger^2)/2$

Therefore, r=23,586 ft

r=23,586 ft+5,280 ft/mile=4.5 miles

Assuming a 20 knot wind under storm conditions:

1 knot=1.15 miles/hour

20 knots×1.15 miles/hour/knot=23 miles/hr

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

23 miles/hour×0.03=0.69 miles/hour

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

For example:

For Higher Volume Port Areas: 15 hrs×0.69 miles/hr=10.4 miles

For Great Lakes and all other areas: 27 hrs×0.69 miles/hr=18.6 miles

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

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

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

4.0 Oil Transport on Tidal-Influence Areas

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

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

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

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

d=v×t×c

d=(0.5 ft/sec)×(27 hours)×(0.68 secmile/hrft)

d=9.18 miles.

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

5.0 Oil Transport Over Land

5.1 Facility owners or operators must evaluate the potential for oil to be transported over land to navigable waters of the United States. The owner or operator must evaluate the likelihood that portions of a worst case discharge would reach navigable

[2] Huang, J.C. and Monastero, F.C., 1982. *Review of the State-of-the-Art of Oil Pollution Models.* Final report submitted to the American Petroleum Institute by Raytheon Ocean Systems, Co., East Providence, Rhode Island.

[3] *Oil Spill Prevention & Control.* National Spill Control School, Corpus Christi State University, Thirteenth Edition, May 1990.

waters via open channel flow or from sheet flow across the land, or be prevented from reaching navigable waters when trapped in natural or man-made depressions excluding secondary containment structures.

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

For open concrete channels:
maximum velocity=25 feet per second
minimum velocity=3 feet per second
For storm drains:
maximum velocity=25 feet per second
minimum velocity=2 feet per second

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

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

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

D1=Distance from the nearest opportunity for discharge, X_1, to a storm drain or an open concrete channel leading to navigable water.
D2=Distance through the storm drain or open concrete channel to navigable water.
D3=Distance downstream from the outfall within which fish and wildlife and sensitive environments could be injured or a public drinking water intake would be shut down as determined by the planning distance formula.
D4=Distance from the nearest opportunity for discharge, X_2, to fish and wildlife and sensitive environments not bordering navigable water.

5.5 A facility owner or operator whose nearest opportunity for discharge is located within 0.5 mile of a navigable water must complete the planning distance calculation (D3) for the type of navigable water near the facility or use a comparable formula.

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

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

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

[4] The design velocities were obtained from Howard County, Maryland Department of Public Works' Storm Drainage Design Manual.

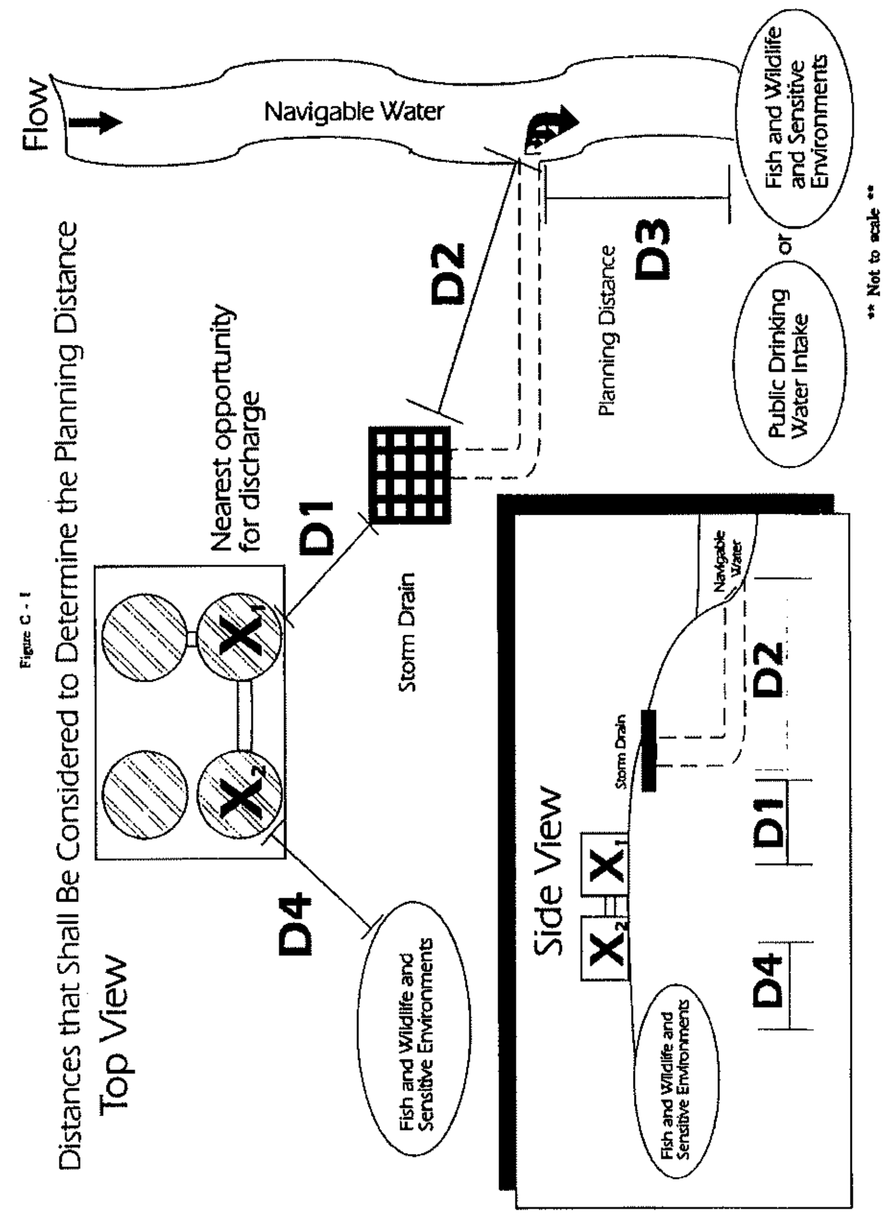


Figure C - 1
Distances that Shall Be Considered to Determine the Planning Distance
Top View
Flow
Navigable Water
Nearest opportunity for discharge
D1
D2
D3
D4
Storm Drain
Planning Distance
Fish and Wildlife and Sensitive Environments
Public Drinking Water Intake
or
Fish and Wildlife and Sensitive Environments
** Not to scale **
Side View
Storm Drain
Navigable Water
Fish and Wildlife and Sensitive Environments

[59 FR 34102, July 1, 1994, as amended at 65 FR 40798, June 30, 2000; 67 FR 47152, July 17, 2002]

APPENDIX D TO PART 112—DETERMINATION OF A WORST CASE DISCHARGE PLANNING VOLUME

1.0 Instructions

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

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

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

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

PART A: WORST CASE DISCHARGE PLANNING VOLUME CALCULATION FOR ONSHORE STORAGE FACILITIES[1]

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

A.1 SINGLE-TANK FACILITIES

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

(1) FINAL WORST CASE VOLUME: ______ GAL

(2) Do not proceed further.

[1] "Storage facilities" represent all facilities subject to this part, excluding oil production facilities.

A.2 SECONDARY CONTAINMENT—MULTIPLE-TANK FACILITIES

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

_______ (Y/N)

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

(1) FINAL WORST CASE VOLUME: _______ GAL

(2) Do not proceed further.

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

_______ GAL

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

FINAL WORST CASE VOLUME:[3] _______ GAL

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

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

B.1 SINGLE-TANK FACILITIES

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

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

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

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

(1) FINAL WORST CASE VOLUME: _______ GAL

(2) Do not proceed further.

B.2 SECONDARY CONTAINMENT—MULTIPLE-TANK FACILITIES

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

_____ (Y/N)

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

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

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

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

(A) FINAL WORST CASE VOLUME: _______ GAL

(B) Do not proceed further.

[2] Secondary containment is described in 40 CFR part 112, subparts A through C. Acceptable methods and structures for containment are also given in 40 CFR 112.7(c)(1).

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

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

_______ GAL

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

(1) FINAL WORST CASE VOLUME:[4] _______ GAL

(2) Do not proceed further.

ATTACHMENTS TO APPENDIX D

ATTACHMENT D-I—METHODS TO CALCULATE PRODUCTION VOLUMES FOR PRODUCTION FACILITIES WITH EXPLORATORY WELLS OR PRODUCTION WELLS PRODUCING UNDER PRESSURE

1.0 Introduction

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

2.0 Description of Methods

2.1 Method A

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

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

Production volume=30 days × rate of well.

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

Production volume=45 days × rate of well.

2.2 Method B

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

Production volume=discharge $volume_1$ + discharge $volume_2$

2.2.2 The first term represents the volume of the oil discharged from the well between the time of the blowout and the time the response resources are on scene and recovering oil (discharge $volume_1$).

Discharge $volume_1$=(days unattended+days to respond) × (rate of well)

2.2.3 The second term represents the volume of oil discharged from the well after the response resources begin operating until the discharge is stopped, adjusted for the recovery rate of the response resources (discharge $volume_2$).

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

Discharge $volume_2$=[30 days−(days unattended + days to respond)] × (rate of well) × (rate of well/rate of recovery)

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

Discharge $volume_2$=[45 days−(days unattended + days to respond)] × (rate of well) × (rate of well/rate of recovery)

3.0 Example

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

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

10 barrels per day/20 barrels per day=0.5 Because the ratio is less than one, the facility operator will use Method B to calculate the production volume.

(2) The first term of the equation is:

Discharge $volume_1$=(7 days + 2 days) × (10 barrels per day)=90 barrels

(3) The second term of the equation is:

Discharge $volume_2$=[30 days—(7 days + 2 days)] × (10 barrels per day) × (0.5)=105 barrels

(4) Therefore, the production volume is:

Production volume=90 barrels + 105 barrels=195 barrels

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

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

30 days × 10 barrels per day=300 barrels

[59 FR 34110, July 1, 1994; 59 FR 49006, Sept. 26, 1994, as amended at 65 FR 40800, June 30, 2000; 67 FR 47152, July 17, 2002]

APPENDIX E TO PART 112—DETERMINATION AND EVALUATION OF REQUIRED RESPONSE RESOURCES FOR FACILITY RESPONSE PLANS

1.0 Purpose and Definitions

1.1 The purpose of this appendix is to describe the procedures to identify response resources to meet the requirements of §112.20. To identify response resources to meet the facility response plan requirements of 40 CFR 112.20(h), owners or operators shall follow this appendix or, where not appropriate, shall clearly demonstrate in the response plan why use of this appendix is not appropriate at the facility and make comparable arrangements for response resources.

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

2.1 All equipment identified in a response plan must be designed to operate in the conditions expected in the facility's geographic area (i.e., operating environment). These conditions vary widely based on location and season. Therefore, it is difficult to identify a single stockpile of response equipment that will function effectively in each geographic location (i.e., operating area).

2.2 Facilities handling, storing, or transporting oil in more than one operating environment as indicated in Table 1 of this appendix must identify equipment capable of successfully functioning in each operating environment.

2.3 When identifying equipment for the response plan (based on the use of this appendix), a facility owner or operator must consider the inherent limitations of the operability of equipment components and response systems. The criteria in Table 1 of this appendix shall be used to evaluate the operability in a given environment. These criteria reflect the general conditions in certain operating environments.

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).

2.4 Table 1 of this appendix lists criteria for oil recovery devices and boom. All other equipment necessary to sustain or support response operations in an operating environment must be designed to function in the same conditions. For example, boats that deploy or support skimmers or boom must be capable of being safely operated in the significant wave heights listed for the applicable operating environment.

2.5 A facility owner or operator shall refer to the applicable Area Contingency Plan (ACP), where available, to determine if ice, debris, and weather-related visibility are significant factors to evaluate the operability of equipment. The ACP may also identify the average temperature ranges expected in the facility's operating area. All equipment identified in a response plan must be designed to operate within those conditions or ranges.

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.

2.7 In identifying equipment, the facility owner or operator shall list the storage location, quantity, and manufacturer's make and model. For oil recovery devices, the effective daily recovery capacity, as determined using section 6 of this appendix, must be included. For boom, the overall boom height (draft and freeboard) shall be included. A facility owner or operator is responsible for ensuring that the identified boom has compatible connectors.

3.0 Determining Response Resources Required for Small Discharges—Petroleum Oils and Non-Petroleum Oils Other Than Animal Fats and Vegetable Oils

3.1 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. 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.

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;

3.3.2 Oil recovery devices with an effective daily recovery capacityequal 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 an oil discharge; and

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

4.1 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 oil 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.

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."

4.3 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.

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.

5.1 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.

5.2 Complexes that are regulated by EPA and the USCG must also consider planning for the worst case discharge at the transportation-related portion of the facility. The USCG requires that transportation-related facility owners or operators use a different calculation for the worst case discharge in the revisions to 33 CFR part 154. Owners or operators of complex facilities that are regulated by EPA and the USCG must compare both calculations of worst case discharge derived by EPA and the USCG and plan for whichever volume is greater.

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.

5.4 The effective daily recovery capacity for oil recovery devices identified in the response plan must be determined using the criteria in section 6 of this appendix. A facility owner or operator shall identify the storage locations of all response resources used for each tier. The owner or operator of a facility whose required daily recovery capacity exceeds the applicable contracting caps in Table 5 of this appendix shall, as appropriate, identify sources of additional equipment, their location, and the arrangements made to obtain this equipment during a response. The owner or operator of a facility whose calculated planning volume exceeds the applicable contracting caps in Table 5 of this appendix shall, as appropriate, identify sources of additional equipment equal to twice the cap listed in Tier 3 or the amount necessary to reach the calculated planning volume, whichever is lower. The resources identified above the cap shall be capable of arriving on-scene not later than the Tier 3 response times in section 5.3 of this appendix. No contract is required. While general listings of available response equipment may be used to identify additional sources (i.e., "public" resources vs. "private" resources), the response plan shall identify the specific sources, locations, and quantities of equipment that a facility owner or operator has considered in his or her planning. When listing USCG-classified oil spill removal organization(s) that have sufficient removal capacity to recover the volume above the response capacity cap for the specific facility, as specified in Table 5 of this appendix, it is not necessary to list specific quantities of equipment.

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.

5.6 When selecting response resources necessary to meet the response plan requirements, the facility owner or operator shall, as appropriate, ensure that a portion of those resources is capable of being used in close-to-shore response activities in shallow water. For any EPA-regulated facility that is required to plan for response in shallow water, at least 20 percent of the on-water response equipment identified for the applicable operating area shall, as appropriate, be capable of operating in water of 6 feet or less depth.

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

6.1 Oil recovery devices identified by a facility owner or operator must be identified by the manufacturer, model, and effective daily recovery capacity. These capacities must be used to determine whether there is sufficient capacity to meet the applicable planning criteria for a small discharge, a medium discharge, and a worst case discharge to the maximum extent practicable.

6.2 To determine the effective daily recovery capacity of oil recovery devices, the formula listed in section 6.2.1 of this appendix shall be used. This formula considers potential limitations due to available daylight, weather, sea state, and percentage of emulsified oil in the recovered material. The RA may assign a lower efficiency factor to equipment listed in a response plan if it is determined that such a reduction is warranted.

6.2.1 The following formula shall be used to calculate the effective daily recovery capacity:

$$R = T \times 24 \text{ hours} \times E$$

where:

R—Effective daily recovery capacity;

T—Throughput rate in barrels per hour (nameplate capacity); and

E—20 percent efficiency factor (or lower factor as determined by the Regional Administrator).

6.2.2 For those devices in which the pump limits the throughput of liquid, throughput rate shall be calculated using the pump capacity.

6.2.3 For belt or moptype devices, the throughput rate shall be calculated using the speed of the belt or mop through the device, assumed thickness of oil adhering to or collected by the device, and surface area of the belt or mop. For purposes of this calculation, the assumed thickness of oil will be ¼ inch.

6.2.4 Facility owners or operators that include oil recovery devices whose throughput is not measurable using a pump capacity or belt/mop speed may provide information to support an alternative method of calculation. This information must be submitted following the procedures in section 6.3.2 of this appendix.

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.

6.3.2 A facility owner or operator submitting a response plan shall provide data that supports the effective daily recovery capacities for the oil recovery devices listed. The following is an example of these calculations:

(1) A weir skimmer identified in a response plan has a manufacturer's rated throughput at the pump of 267 gallons per minute (gpm).

267 gpm=381 barrels per hour (bph)

R=381 bph×24 hr/day×0.2=1,829 barrels per day

(2) After testing using ASTM procedures, the skimmer's oil recovery rate is determined to be 220 gpm. The facility owner or operator identifies sufficient resources available to support operations for 12 hours per day.

220 gpm=314 bph

R=314 bph×12 hr/day=3,768 barrels per day

(3) The facility owner or operator will be able to use the higher capacity if sufficient temporary oil storage capacity is available. Determination of alternative efficiency factors under section 6.2 of this appendix or the acceptability of an alternative effective daily recovery capacity under section 6.3 of this appendix will be made by the Regional Administrator as deemed appropriate.

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.

7.2.2 The on-water oil recovery volume shall, as appropriate, be adjusted using the appropriate emulsification factor found in Table 3 of this appendix. Facilities that handle, store, or transport oil from different petroleum 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.

7.2.3 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 an oil discharge. For all other rivers and canals, inland, nearshore areas, and the Great Lakes, these tiers are 12, 36, and 60 hours.

7.2.4 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 2 of this appendix. The facility owner or operator shall identify and ensure the availability, by contract or other approved means as described in §112.2, of sufficient oil spill recovery devices to provide the effective daily oil recovery capacity required. If the required capacity exceeds the applicable cap specified in Table 5 of this appendix, then a facility owner or operator shall ensure, by contract or other approved means as described in §112.2, only for the quantity of resources required to meet the cap, but shall identify sources of additional resources as indicated in section 5.4 of this appendix. The owner or operator of a facility whose planning volume exceeded the cap in 1993 must make arrangements to identify and ensure the availability, by contract or other approved means as described in §112.2, for additional capacity to be under contract by 1998 or 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 total oil storage capacity.

7.3 The procedures discussed in sections 7.3.1–7.3.3 of this appendix must be used to calculate the planning volume for identifying shoreline cleanup capacity (for Group 1 through Group 4 oils).

7.3.1 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 [persistent (Groups 2, 3, or 4) or non-persistent (Group 1)]; 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 2 of this appendix must be used to determine the percentages of the total volume to be used for shoreline cleanup resource planning.

7.3.2 The shoreline cleanup planning volume must be adjusted to reflect an emulsification factor using the same procedure as described in section 7.2.2 of this appendix.

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

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 The following is an example of the procedure described above in sections 7.2 and 7.3 of this appendix: A facility with a 270,000 barrel (11.3 million gallons) capacity for #6 oil (specific gravity 0.96) is located in a higher volume port area. The facility is on a peninsula and has docks on both the ocean and bay sides. The facility has four aboveground oil storage tanks with a combined total capacity of 80,000 barrels (3.36 million gallons) and no secondary containment. The remaining facility tanks are inside secondary containment structures. The largest aboveground oil storage tank (90,000 barrels or 3.78 million gallons) has its own secondary containment. Two 50,000 barrel (2.1 million gallon) tanks (that are not connected by a manifold) are within a common secondary containment tank area, which is capable of holding 100,000 barrels (4.2 million gallons) plus sufficient freeboard.

7.5.1 The worst case discharge for the facility is calculated by adding the capacity of all aboveground oil storage tanks without secondary containment (80,000 barrels) plus the capacity of the largest aboveground oil storage tank inside secondary containment. The resulting worst case discharge volume is 170,000 barrels or 7.14 million gallons.

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 The procedures discussed in sections 7.6.1–7.6.3 of this appendix must be used to determine appropriate response resources for facilities with Group 5 oils.

7.6.1 The owner or operator of a facility that handles, stores, or transports Group 5 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.

7.6.2 Response resources identified in a response plan for a facility that handles, stores, or transports Group 5 oils under section 7.6.1 of this appendix shall be capable of being deployed (on site) within 24 hours of discovery of a discharge to the area where the facility is operating.

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 nearshore 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.

7.7.4 Response resources identified in a response plan according to section 7.7.3 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.

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 animal fats and vegetable 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. 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, nearshore areas, and the Great Lakes, these tiers are 12, 36, and 60 hours.

10.2.4 The resulting on-water oil recovery capacity in barrels per day for each tier is used to identify response resources necessary to sustain operations in the applicable operating area. The equipment shall be capable of sustaining operations for the time period specified in Table 6 of this appendix. The facility owner or operator shall identify and ensure, 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 Nearshore/Inland/Great Lakes): Inland, Group B is 20%

Emulsion factor (from Table 7): 2.0

Planning volumes for on-water recovery: 21,000,000 gallons × 0.2 × 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/Nearshore/Great Lakes)

Inland Operating Area	Tier 1	Tier 2	Tier 3
Mobilization factor by which you multiply planning volume	.15	.25	.40
Estimated Daily Recovery Capacity (bbls)	30,000	50,000	80,000

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

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

Worst case discharge: 21 million gallons (500,000 barrels) of Group B vegetable oil

Operating Area: Inland

Planned percent recovered floating vegetable oil from onshore (from Table 6, column Nearshore/Inland/Great Lakes): Inland, Group B is 65%

Emulsion factor (from Table 7): 2.0

Planning volumes for shoreline recovery:

21,000,000 gallons × 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 nearshore areas.

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

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

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

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

(1) Ice conditions;

(2) Debris;

(3) Temperature ranges; and

(4) Weather-related visibility.

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

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

(2) Oil recovery devices appropriate for the type of animal fat or vegetable oil carried; and

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

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

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

11.0 Determining the Availability of Alternative Response Methods

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

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

12.0 Additional Equipment Necessary to Sustain Response Operations

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

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

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.

TABLE 1 TO APPENDIX E—RESPONSE RESOURCE OPERATING CRITERIA

Oil Recovery Devices

Operating environment	Significant wave height [1]	Sea state
Rivers and Canals	≤ 1 foot	1
Inland	≤ 3 feet	2
Great Lakes	≤ 4 feet	2–3
Ocean	≤ 6 feet	3–4

Boom

Boom property	Use			
	Rivers and canals	Inland	Great Lakes	Ocean
Significant Wave Height [1]	≤ 1	≤ 3	≤ 4	≤ 6
Sea State	1	2	2–3	3–4
Boom height—inches (draft plus freeboard)	6–18	18–42	18–42	≥ 42
Reserve Buoyancy to Weight Ratio	2:1	2:1	2:1	3:1 to 4:1
Total Tensile Strength—pounds	4,500	15,000–20,000.	15,000–20,000.	≥ 20,000
Skirt Fabric Tensile Strength—pounds	200	300	300	500
Skirt Fabric Tear Strength—pounds	100	100	100	125

[1] Oil recovery devices and boom *shall* be at least capable of operating in wave heights up to and including the values listed in Table 1 for each operating environment.

TABLE 2 TO APPENDIX E—REMOVAL CAPACITY PLANNING TABLE FOR PETROLEUM OILS

Spill location	Rivers and canals			Nearshore/Inland/Great Lakes		
Sustainability of on-water oil recovery	3 days			4 days		
Oil group [1]	Percent natural 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 3 TO APPENDIX E—EMULSIFICATION FACTORS FOR PETROLEUM OIL GROUPS [1]

Non-Persistent Oil:	
Group 1	1.0
Persistent Oil:	
Group 2	1.8
Group 3	2.0
Group 4	1.4
Group 5 oils are defined in section 1.2.7 of this appendix; the response resource considerations are outlined in section 7.6 of this appendix.	

[1] See sections 1.2.2 and 1.2.7 of this appendix for group designations for non-persistent and persistent oils, respectively.

TABLE 4 TO APPENDIX E—ON-WATER OIL RECOVERY RESOURCE MOBILIZATION FACTORS

Operating area	Tier 1	Tier 2	Tier 3
Rivers and Canals	0.30	0.40	0.60
Inland/Nearshore Great Lakes	0.15	0.25	0.40

Note: These mobilization factors are for total resources mobilized, not incremental response resources.

TABLE 5 TO APPENDIX E—RESPONSE CAPABILITY CAPS BY OPERATING AREA

	Tier 1	Tier 2	Tier 3
February 18, 1993:			
All except Rivers & Canals, Great Lakes	10K bbls/day	20K bbls/day	40K bbls/day.

TABLE 5 TO APPENDIX E—RESPONSE CAPABILITY CAPS BY OPERATING AREA—Continued

	Tier 1	Tier 2	Tier 3
Great Lakes	5K bbls/day	10K bbls/day	20K bbls/day.
Rivers & Canals	1.5K bbls/day	3.0K bbls/day	6.0K bbls/day.
February 18, 1998:			
All except Rivers & Canals, Great Lakes	12.5K bbls/day	25K bbls/day	50K bbls/day.
Great Lakes	6.35K bbls/day	12.3K bbls/day	25K bbls/day.
Rivers & Canals	1.875K bbls/day	3.75K bbls/day	7.5K bbls/day.
February 18, 2003:			
All except Rivers & Canals, Great Lakes	TBD	TBD	TBD.
Great Lakes	TBD	TBD	TBD.
Rivers & Canals	TBD	TBD	TBD.

Note: The caps show cumulative overall effective daily recovery capacity, not incremental increases.
TBD=To Be Determined.

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

Spill location	Rivers and canals			Nearshore/Inland/Great Lakes		
Sustainability of on-water oil recovery	3 days			4 days		
Oil group [1]	Percent natural loss	Percent recovered floating oil	Percent recovered oil from onshore	Percent natural loss	Percent recovered floating oil	Percent recovered oil from onshore
Group A	40	15	45	50	20	30
Group B	20	15	65	30	20	50

[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 sections 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 sections 1.2.1 and 1.2.9 of this appendix; the response resource procedures are discussed in section 10.6 of this appendix.

ATTACHMENTS TO APPENDIX E

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

Part 1 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 <u>On-Water Oil Recovery Capacity</u> (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 <u>Shoreline Cleanup Volume</u> (barrels) . . . . [ ]

Step (E2) x Step (F)

Part IV <u>On-Water Response Capacity By Operating Area</u>
(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 <u>On-Water Amount Needed to be Identified, but not Contracted for in Advance</u> (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 $\frac{\text{Step (D2)} \times \text{Step (A)}}{100}$ — **85,000** (E1)

Step (E2) Shoreline Recovery $\frac{\text{Step (D3)} \times \text{Step (A)}}{100}$ — **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 $\frac{\text{Step (D2)} \times \text{Step (A)}}{100}$ ______ (E1)

Step (E2) Shoreline Recovery $\frac{\text{Step (D3)} \times \text{Step (A)}}{100}$ . . . ______ (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 <u>On-Water Oil Recovery Capacity</u> (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 <u>Shoreline Cleanup Volume</u> (barrels) . . . . [ ]

Step (E2) x Step (F)

Part IV <u>On-Water Response Capacity By Operating Area</u>
(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 <u>On-Water Amount Needed to be Identified, but not Contracted for in Advance</u> (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/Inland 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 $\frac{\text{Step (D2)} \times \text{Step (A)}}{100}$ 100,000 (E1)

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

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

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

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

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

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

Part II <u>On-Water Oil Recovery Capacity</u> (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 <u>Shoreline Cleanup Volume</u> (barrels) 500,000

Step (E2) x Step (F)

Part IV <u>On-Water Response Capacity By Operating Area</u>
(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 <u>On-Water Amount Needed to be Identified, but not Contracted for in Advance</u> (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.

[59 FR 34111, July 1, 1994; 59 FR 49006, Sept. 26, 1994, as amended at 65 FR 40806, 40807, June 30, 2000; 65 FR 47325, Aug. 2, 2000; 66 FR 47325, Aug. 2, 2000; 66 FR 35460, 35461, June 29, 2001]

APPENDIX F TO PART 112—FACILITY-SPECIFIC RESPONSE PLAN

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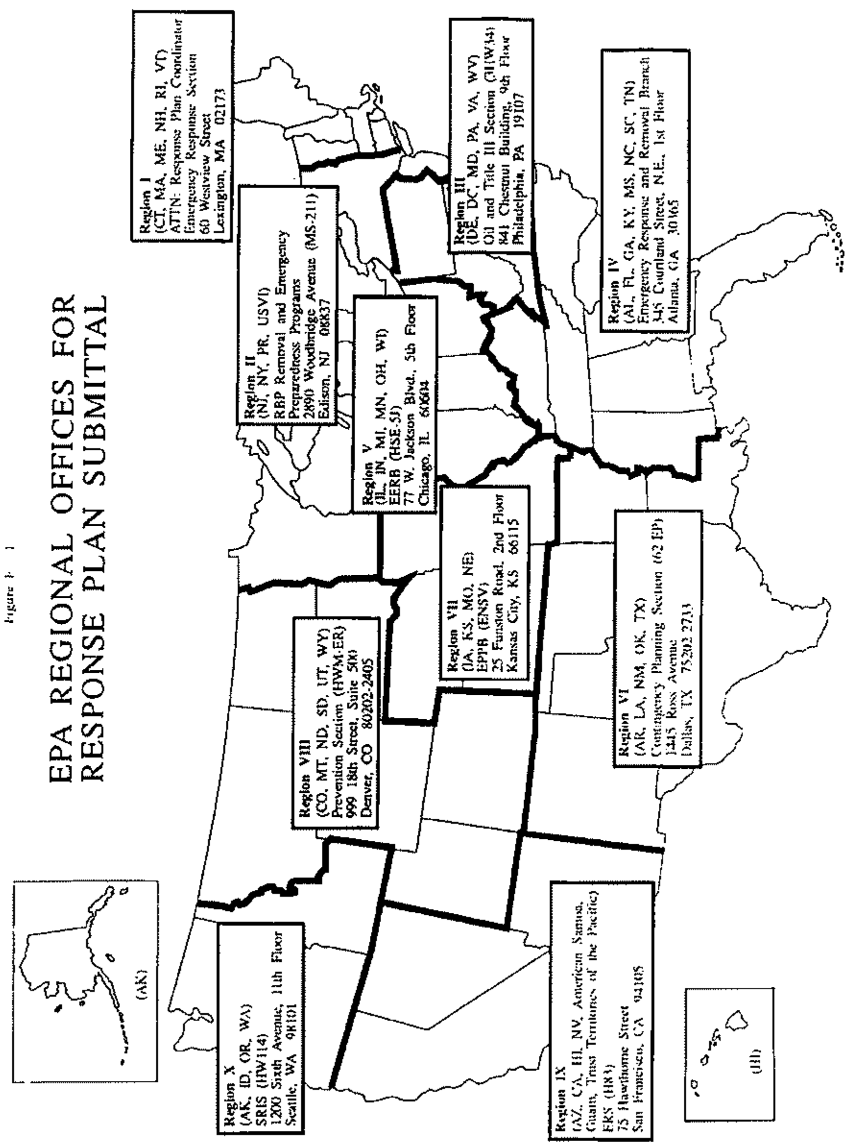
1.0 Model Facility-Specific Response Plan

(A) Owners or operators of facilities regulated under this part which pose a threat of substantial harm to the environment by discharging oil into or on navigable waters or adjoining shorelines are required to prepare and submit facility-specific response plans to EPA in accordance with the provisions in this appendix. This appendix further describes the required elements in § 112.20(h).

(B) Response plans must be sent to the appropriate EPA Regional office. Figure F-1 of this Appendix lists each EPA Regional office and the address where owners or operators must submit their response plans. Those facilities deemed by the Regional Administrator (RA) to pose a threat of significant and substantial harm to the environment will have their plans reviewed and approved by EPA. In certain cases, information required in the model response plan is similar to information currently maintained in the facility's Spill Prevention, Control, and Countermeasures (SPCC) Plan as required by 40 CFR 112.3. In these cases, owners or operators may reproduce the information and include a photocopy in the response plan.

(C) A complex may develop a single response plan with a set of core elements for all regulating agencies and separate sections for the non-transportation-related and transportation-related components, as described in § 112.20(h). Owners or operators of large facilities that handle, store, or transport oil at more than one geographically distinct location (e.g., oil storage areas at opposite ends of a single, continuous parcel of property) shall, as appropriate, develop separate sections of the response plan for each storage area.



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

1.2 Facility Information

The facility information form is designed to provide an overview of the site and a description of past activities at the facility. Much of the information required by this section may be obtained from the facility's existing SPCC Plan.

1.2.1 *Facility name and location:* Enter facility name and street address. Enter the address of corporate headquarters only if corporate headquarters are physically located at the facility. Include city, county, state, zip code, and phone number.

1.2.2 *Latitude and Longitude:* Enter the latitude and longitude of the facility. Include degrees, minutes, and seconds of the main entrance of the facility.

1.2.3 *Wellhead Protection Area:* Indicate if the facility is located in or drains into a wellhead protection area as defined by the Safe Drinking Water Act of 1986 (SDWA).[1] The response plan requirements in the Wellhead Protection Program are outlined by the State or Territory in which the facility resides.

1.2.4 *Owner/operator:* Write the name of the company or person operating the facility and the name of the person or company that owns the facility, if the two are different. List the address of the owner, if the two are different.

1.2.5 *Qualified Individual:* Write the name of the qualified individual for the entire facility. If more than one person is listed, each individual indicated in this section shall have full authority to implement the facility response plan. For each individual, list: name, position, home and work addresses (street addresses, not P.O. boxes), emergency phone number, and specific response training experience.

1.2.6 *Date of Oil Storage Start-up:* Enter the year which the present facility first started storing oil.

1.2.7 *Current Operation:* Briefly describe the facility's operations and include the North American Industrial Classification System (NAICS) code.

1.2.8 *Dates and Type of Substantial Expansion:* Include information on expansions that have occurred at the facility. Examples of such expansions include, but are not limited to: Throughput expansion, addition of a product line, change of a product line, and installation of additional oil storage capacity. The data provided shall include all facility historical information and detail the expansion of the facility. An example of substantial expansion is any material alteration of the facility which causes the owner or operator of the facility to re-evaluate and increase the response equipment necessary to adequately respond to a worst case discharge from the facility.

Date of Last Update: _____

FACILITY INFORMATION FORM

Facility Name: ____________________
Location (Street Address): ____________
City: _____ State: _____ Zip: _____
County: _____ Phone Number: ( ) _____
Latitude: _____ Degrees _____ Minutes _____ Seconds
Longitude: _____ Degrees _____ Minutes _____ Seconds
Wellhead Protection Area: ____________
Owner: ____________________
Owner Location (Street Address): _______
(if different from Facility Address)
City: _____ State: _____ Zip: _____
County: _____ Phone Number: ( ) _____
Operator (if not Owner): ______________
Qualified Individual(s): (attach additional sheets if more than one)
Name: ____________________
Position: ____________________
Work Address: ____________________
Home Address: ____________________
Emergency Phone Number: ( ) _______

[1] A wellhead protection area is defined as the surface and subsurface area surrounding a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield. For further information regarding State and territory protection programs, facility owners or operators may contact the SDWA Hotline at 1-800-426-4791.

Date of Oil Storage Start-up: ____________
Current Operations: ____________________

____

Date(s) and Type(s) of Substantial Expansion(s): ____________________

(Attach additional sheets if necessary)

1.3 Emergency Response Information

(A) The information provided in this section shall describe what will be needed in an actual emergency involving the discharge of oil or a combination of hazardous substances and oil discharge. The Emergency Response Information section of the plan must include the following components:

(1) The information provided in the Emergency Notification Phone List in section 1.3.1 identifies and prioritizes the names and phone numbers of the organizations and personnel that need to be notified immediately in the event of an emergency. This section shall include all the appropriate phone numbers for the facility. These numbers must be verified each time the plan is updated. The contact list must be accessible to all facility employees to ensure that, in case of a discharge, any employee on site could immediately notify the appropriate parties.

(2) The Spill Response Notification Form in section 1.3.1 creates a checklist of information that shall be provided to the National Response Center (NRC) and other response personnel. All information on this checklist must be known at the time of notification, or be in the process of being collected. This notification form is based on a similar form used by the NRC. Note: Do not delay spill notification to collect the information on the list.

(3) Section 1.3.2 provides a description of the facility's list of emergency response equipment and location of the response equipment. When appropriate, the amount of oil that emergency response equipment can handle and any limitations (e.g., launching sites) must be described.

(4) Section 1.3.3 provides information regarding response equipment tests and deployment drills. Response equipment deployment exercises shall be conducted to ensure that response equipment is operational and the personnel who would operate the equipment in a spill response are capable of deploying and operating it. Only a representative sample of each type of response equipment needs to be deployed and operated, as long as the remainder is properly maintained. If appropriate, testing of response equipment may be conducted while it is being deployed. Facilities without facility-owned response equipment must ensure that the oil spill removal organization that is identified in the response plan to provide this response equipment certifies that the deployment exercises have been met. Refer to the National Preparedness for Response Exercise Program (PREP) Guidelines (see Appendix E to this part, section 13, for availability), which satisfy Oil Pollution Act (OPA) response exercise requirements.

(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.

(B) The information provided in the emergency response section will aid in the assessment of the facility's ability to respond to a worst case discharge and will identify additional assistance that may be needed. In addition, the facility owner or operator may want to produce a wallet-size card containing a checklist of the immediate response and notification steps to be taken in the event of an oil discharge.

1.3.1 Notification

Date of Last Update: ____________

EMERGENCY NOTIFICATION PHONE LIST WHOM TO NOTIFY

Reporter's Name: ______
Date: ______
Facility Name: ______
Owner Name: ______
Facility Identification Number: ______
Date and Time of Each NRC Notification: ______

Organization	Phone No.
1. National Response Center (NRC):	1–800–424–8802
2. Qualified Individual:	
Evening Phone:	
3. Company Response Team:	
Evening Phone:	
4. Federal On-Scene Coordinator (OSC) and/or Regional Response Center (RRC):	
Evening Phone(s):	
Pager Number(s):	
5. Local Response Team (Fire Dept./Co operatives):	
6. Fire Marshall:	
Evening Phone:	
7. State Emergency Response Commis sion (SERC):	
Evening Phone:	
8. State Police:	
9. Local Emergency Planning Committee (LEPC):	
10. Local Water Supply System:	
Evening Phone:	
11. Weather Report:	
12. Local Television/Radio Station for Evacuation Notification:	
13. Hospitals:	

SPILL RESPONSE NOTIFICATION FORM

Reporter's Last Name: ______
First: ______
M.I.: ______
Position: ______
Phone Numbers:
Day ( ) -
Evening ( ) -
Company: ______
Organization Type: ______
Address: ______
______
City: ______
State: ______
Zip: ______
Were Materials Discharged? ______ (Y/N) Confidential? ______ (Y/N)
Meeting Federal Obligations to Report? ______ (Y/N) Date Called: ______
Calling for Responsible Party? ______ (Y/N) Time Called: ______

Incident Description

Source and/or Cause of Incident: ______
______
______
______
______
Date of Incident: ______
Time of Incident: ______ AM/PM
Incident Address/Location: ______
______
Nearest City: ______ State: ______ County: ______ Zip: ______
Distance from City: ______ Units of Measure: ______ Direction from City: ______
Section: ______ Township: ______ Range: ______ Borough: ______
Container Type: ______ Tank Oil Storage Capacity: ______ Units of Measure: ______
Facility Oil Storage Capacity: ______ Units of Measure: ______
Facility Latitude: ______ Degrees ______ Minutes ______ Seconds
Facility Longitude: ______ Degrees ______ Minutes ______ Seconds

Material

CHRIS Code	Discharged quantity	Unit of measure	Material Discharged in water	Quantity	Unit of measure

CHRIS Code	Discharged quantity	Unit of measure	Material Discharged in water	Quantity	Unit of measure

Response Action

Actions Taken to Correct, Control or Mitigate Incident:

______

______

______

______

Impact

Number of Injuries: ______ Number of Deaths: ______

Were there Evacuations? ______ (Y/N) Number Evacuated: ______

Was there any Damage? ______ (Y/N)

Damage in Dollars (approximate): ______

Medium Affected: ______

Description: ______

More Information about Medium: ______

______

______

Additional Information

Any information about the incident not recorded elsewhere in the report:

______

______

______

Caller Notifications

EPA? ______ (Y/N) USCG? ______ (Y/N) State? ______ (Y/N)

Other? ______ (Y/N) Describe: ______

1.3.2 Response Equipment List

Date of Last Update:______

FACILITY RESPONSE EQUIPMENT LIST

1. Skimmers/Pumps—Operational Status: __
Type, Model, and Year: ______

______

Type Model Year
Number: ______
Capacity: ______ gal./min.
Daily Effective Recovery Rate: ______
Storage Location(s): ______
Date Fuel Last Changed: ______

2. Boom—Operational Status: ______
Type, Model, and Year: ______
Type Model Year
Number: ______
Size (length): ______ ft.
Containment Area: ______ sq. ft.
Storage Location: ______

3. Chemicals Stored (Dispersants listed on EPA's NCP Product Schedule)

Type	Amount	Date purchased	Treatment capacity	Storage location

Were appropriate procedures used to receive approval for use of dispersants in accordance with the NCP (40 CFR 300.910) and the Area Contingency Plan (ACP), where applicable?______ (Y/N).

Name and State of On-Scene Coordinator (OSC) authorizing use: ______ .

Date Authorized: ______ .

4. Dispersant Dispensing Equipment—Operational Status: ______ .

Type and year	Capacity	Storage location	Response time (minutes)

Type and year	Capacity	Storage location	Response time (minutes)

5. Sorbents—Operational Status: ______
Type and Year Purchased: ______
Amount: ______
Absorption Capacity (gal.): ______
Storage Location(s): ______

6. Hand Tools—Operational Status: ______

Type and year	Quantity	Storage location

7. Communication Equipment (include operating frequency and channel and/or cellular phone numbers)—Operational Status: ______

Type and year	Quantity	Storage location/ number

8. Fire Fighting and Personnel Protective Equipment—Operational Status: ______

Type and year	Quantity	Storage location

Type and year	Quantity	Storage location

9. Other (e.g., Heavy Equipment, Boats and Motors)—Operational Status: ______

Type and year	Quantity	Storage location

1.3.3 Response Equipment Testing/Deployment

Date of Last Update:______

Response Equipment Testing and Deployment Drill Log

Last Inspection or Response Equipment Test Date: ______
Inspection Frequency: ______
Last Deployment Drill Date: ______
Deployment Frequency: ______
Oil Spill Removal Organization Certification (if applicable): ______

1.3.4 Personnel

Date of Last Update:______

EMERGENCY RESPONSE PERSONNEL

Company Personnel

Name	Phone [1]	Response time	Responsibility during response action	Response training type/date
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

[1] Phone number to be used when person is not on-site.

EMERGENCY RESPONSE CONTRACTORS

Date of Last Update: ______

Contractor	Phone	Response time	Contract responsibility [1]
1.			
2.			

EMERGENCY RESPONSE CONTRACTORS—Continued

Date of Last Update: ______

Contractor	Phone	Response time	Contract responsibility[1]
3.			
4.			

[1] Include evidence of contracts/agreements with response contractors to ensure the availability of personnel and response equipment.

FACILITY RESPONSE TEAM

Date of Last Update:______

Team member	Response time (minutes)	Phone or pager number (day/evening)
Qualified Individual:		/
		/
		/
		/
		/
		/
		/
		/
		/
		/
		/

		/
		/
		/
		/
		/
		/
		/

Note: If the facility uses contracted help in an emergency response situation, the owner or operator must provide the contractors' names and review the contractors' capacities to provide adequate personnel and response equipment.

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.

1.3.5.2 One resource that may be helpful to owners or operators in preparing this section of the response plan is The *Handbook of Chemical Hazard Analysis Procedures* by the Federal Emergency Management Agency (FEMA), Department of Transportation (DOT), and EPA. *The Handbook of Chemical Hazard Analysis Procedures* is available from: FEMA , Publication Office, 500 C. Street, S.W., Washington, DC 20472, (202) 646-3484.

1.3.5.3 As specified in §112.20(h)(1)(vi), the facility owner or operator must reference existing community evacuation plans, as appropriate.

1.3.6 Qualified Individual's Duties

The duties of the designated qualified individual are specified in §112.20(h)(3)(ix). The qualified individual's duties must be described and be consistent with the minimum requirements in §112.20(h)(3)(ix). In addition, the qualified individual must be identified with the Facility Information in section 1.2 of the response plan.

1.4 Hazard Evaluation

This section requires the facility owner or operator to examine the facility's operations closely and to predict where discharges could occur. Hazard evaluation is a widely used industry practice that allows facility owners or operators to develop a complete understanding of potential hazards and the response actions necessary to address these hazards. *The Handbook of Chemical Hazard Analysis Procedures*, prepared by the EPA, DOT, and the FEMA and the *Hazardous Materials Emergency Planning Guide* (NRT-1), prepared by the National Response Team are good references for conducting a hazard analysis. Hazard identification and evaluation will assist facility owners or operators in planning for potential discharges, thereby reducing the severity of discharge impacts that may occur in the future. The evaluation also may help the operator identify and correct potential sources of discharges. In addition, special hazards to workers and emergency response personnel's health and safety shall be evaluated, as well as the facility's oil spill history.

1.4.1 Hazard Identification

The Tank and Surface Impoundment (SI) forms, or their equivalent, that are part of this section must be completed according to the directions below. ("Surface Impoundment" means a facility or part of a facility which is a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials), which is designed to hold an accumulation of liquid wastes or wastes containing free liquids, and which is not an injection well or a seepage facility.) Similar worksheets, or their equivalent, must be developed for any other type of storage containers.

(1) List each tank at the facility with a separate and distinct identifier. Begin aboveground tank identifiers with an "A" and belowground tank identifiers with a "B", or submit multiple sheets with the aboveground tanks and belowground tanks on separate sheets.

(2) Use gallons for the maximum capacity of a tank; and use square feet for the area.

(3) Using the appropriate identifiers and the following instructions, fill in the appropriate forms:

(a) Tank or SI number—Using the aforementioned identifiers (A or B) or multiple reporting sheets, identify each tank or SI at the facility that stores oil or hazardous materials.

(b) Substance Stored—For each tank or SI identified, record the material that is stored therein. If the tank or SI is used to store more than one material, list all of the stored materials.

(c) Quantity Stored—For each material stored in each tank or SI, report the average volume of material stored on any given day.

(d) Tank Type or Surface Area/Year—For each tank, report the type of tank (e.g., floating top), and the year the tank was originally installed. If the tank has been refabricated, the year that the latest refabrication was completed must be recorded in parentheses next to the year installed. For each SI, record the surface area of the impoundment and the year it went into service.

(e) Maximum Capacity—Record the operational maximum capacity for each tank and SI. If the maximum capacity varies with the season, record the upper and lower limits.

(f) Failure/Cause—Record the cause and date of any tank or SI failure which has resulted in a loss of tank or SI contents.

(4) Using the numbers from the tank and SI forms, label a schematic drawing of the facility. This drawing shall be identical to any schematic drawings included in the SPCC Plan.

(5) Using knowledge of the facility and its operations, describe the following in writing:

(a) The loading and unloading of transportation vehicles that risk the discharge of oil or release of hazardous substances during transport processes. These operations may include loading and unloading of trucks, railroad cars, or vessels. Estimate the volume of material involved in transfer operations, if the exact volume cannot be determined.

(b) Day-to-day operations that may present a risk of discharging oil or releasing a hazardous substance. These activities include scheduled venting, piping repair or replacement, valve maintenance, transfer of tank contents from one tank to another, etc. (not including transportation-related activities). Estimate the volume of material involved in these operations, if the exact volume cannot be determined.

(c) The secondary containment volume associated with each tank and/or transfer point at the facility. The numbering scheme developed on the tables, or an equivalent system, must be used to identify each containment area. Capacities must be listed for each individual unit (tanks, slumps, drainage traps, and ponds), as well as the facility total.

(d) Normal daily throughput for the facility and any effect on potential discharge volumes that a negative or positive change in that throughput may cause.

HAZARD IDENTIFICATION TANKS [1]

Date of Last Update: ________

Tank No.	Substance Stored (Oil and Hazardous Substance)	Quantity Stored (gallons)	Tank Type/Year	Maximum Capacity (gallons)	Failure/Cause

[1] Tank = any container that stores oil.
Attach as many sheets as necessary.

HAZARD IDENTIFICATION SURFACE IMPOUNDMENTS (SIS)

Date of Last Update: ________

SI No.	Substance Stored	Quantity Stored (gallons)	Surface Area/Year	Maximum Capacity (gallons)	Failure/Cause

HAZARD IDENTIFICATION SURFACE IMPOUNDMENTS (SIs)—Continued

Date of Last Update: ______

SI No.	Substance Stored	Quantity Stored (gallons)	Surface Area/Year	Maximum Capacity (gallons)	Failure/Cause

Attach as many sheets as necessary.

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. Attachment C-III to Appendix C to this part provides a method that owners or operators shall use to determine appropriate distances from the facility to fish and wildlife and sensitive environments. Owners or operators can use a comparable formula that is considered acceptable by the RA. If a comparable formula is used, documentation of the reliability and analytical soundness of the formula must be attached to the response plan cover sheet. This analysis must be prepared for each facility and, as appropriate, must discuss the vulnerability of:

(1) Water intakes (drinking, cooling, or other);
(2) Schools;
(3) Medical facilities;
(4) Residential areas;
(5) Businesses;
(6) Wetlands or other sensitive environments;[2]
(7) Fish and wildlife;
(8) Lakes and streams;
(9) Endangered flora and fauna;
(10) Recreational areas;
(11) Transportation routes (air, land, and water);
(12) Utilities; and
(13) Other areas of economic importance (e.g., beaches, marinas) including terrestrially sensitive environments, aquatic environments, and unique habitats.

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 discharge 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 the oil discharge history at the facility.

1.4.4 Facility Reportable Oil Spill History

Briefly describe the facility's reportable oil spill[3] history for the entire life of the facility to the extent that such information is reasonably identifiable, including:

(1) Date of discharge(s);
(2) List of discharge causes;
(3) Material(s) discharged;
(4) Amount discharged in gallons;
(5) Amount of discharge that reached navigable waters, if applicable;
(6) Effectiveness and capacity of secondary containment;
(7) Clean-up actions taken;
(8) Steps taken to reduce possibility of recurrence;
(9) Total oil storage capacity of the tank(s) or impoundment(s) from which the material discharged;
(10) Enforcement actions;
(11) Effectiveness of monitoring equipment; and
(12) Description(s) of how each oil discharge was detected.

[2] Refer to the DOC/NOAA "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (See appendix E to this part, section 13, for availability).

[3] As described in 40 CFR part 110, reportable oil spills are those that: (a) violate applicable water quality standards, or (b) cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

The information solicited in this section may be similar to requirements in 40 CFR 112.4(a). Any duplicate information required by §112.4(a) may be photocopied and inserted.

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.

1.5.2 Worst Case Discharge

1.5.2.1 In this section, the owner or operator must identify the worst case discharge volume at the facility. Worksheets for production and non-production facility owners or operators to use when calculating worst case discharge are presented in Appendix D to this part. When planning for the worst case discharge response, all of the aforementioned factors listed in the small and medium discharge section of the response plan shall be addressed.

1.5.2.2 For onshore storage facilities and production facilities, permanently manifolded oil storage tanks are defined as tanks that are designed, installed, and/or operated in such a manner that the multiple tanks function as one storage unit (i.e., multiple tank volumes are equalized). In this section of the response plan, owners or operators must provide evidence that oil storage tanks with common piping or piping systems are not operated as one unit. If such evidence is provided and is acceptable to the RA, the worst case discharge volume shall be based on the combined oil storage capacity of all manifold tanks or the oil storage capacity of the largest single oil storage tank within the secondary containment area, whichever is greater. For permanently manifolded oil storage tanks that function as one storage unit, the worst case discharge shall be based on the combined oil storage capacity of all manifolded tanks or the oil storage capacity of the largest single tank within a secondary containment area, whichever is greater. For purposes of the worst case discharge calculation, permanently manifolded oil storage tanks that are separated by internal divisions for each tank are considered to be single tanks and individual manifolded tank volumes are not combined.

1.6 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 Discharages

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) Emergency plans for spill response;
(2) Additional response training;
(3) Additional contracted help;
(4) Access to additional response equipment/experts; and
(5) Ability to implement the plan including response training and practice drills.

1.7.1.2A recommended form detailing immediate actions follows.

OIL SPILL RESPONSE—IMMEDIATE ACTIONS

1. Stop the product flow	Act quickly to secure pumps, close valves, etc.
2. Warn personnel	Enforce safety and security measures.
3. Shut off ignition sources.	Motors, electrical circuits, open flames, etc.
4. Initiate containment	Around the tank and/or in the water with oil boom.
5. Notify NRC	1–800–424–8802
6. Notify OSC	
7. Notify, as appropriate	

Source: FOSS, Oil Spill Response—Emergency Procedures, Revised December 3, 1992.

1.7.2 Disposal Plans

1.7.2.1 Facility owners or operators must describe how and where the facility intends to recover, reuse, decontaminate, or dispose of materials after a discharge has taken place. The appropriate permits required to transport or dispose of recovered materials according to local, State, and Federal requirements must be addressed. Materials that must be accounted for in the disposal plan, as appropriate, include:

(1) Recovered product;
(2) Contaminated soil;
(3) Contaminated equipment and materials, including drums, tank parts, valves, and shovels;
(4) Personnel protective equipment;
(5) Decontamination solutions;
(6) Adsorbents; and
(7) Spent chemicals.

1.7.2.2 These plans must be prepared in accordance with Federal (e.g., the Resource Conservation and Recovery Act [RCRA]), State, and local regulations, where applicable. A copy of the disposal plans from the facility's SPCC Plan may be inserted with this section, including any diagrams in those plans.

Material	Disposal facility	Location	RCRA permit/manifest
1.			
2.			
3.			
4.			

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) The available volume of containment (use the information presented in section 1.4.1 of the response plan);

(2) The route of drainage from oil storage and transfer areas;

(3) The construction materials used in drainage troughs;

(4) The type and number of valves and separators used in the drainage system;

(5) Sump pump capacities;

(6) The containment capacity of weirs and booms that might be used and their location (see section 1.3.2 of this appendix); and

(7) Other cleanup materials.

In addition, a facility owner or operator must meet the inspection and monitoring requirements for drainage contained in 40 CFR part 112, subparts A through C. A copy of the containment and drainage plans that are required in 40 CFR part 112, subparts A through C may be inserted in this section, including any diagrams in those plans.

NOTE: The general permit for stormwater drainage may contain additional requirements.

1.8 Self-Inspection, Drills/Exercises, and Response Training

The owner or operator must develop programs for facility response training and for drills/exercises according to the requirements of 40 CFR 112.21. Logs must be kept for facility drills/exercises, personnel response training, and spill prevention meetings. Much of the recordkeeping information required by this section is also contained in the SPCC Plan required by 40 CFR 112.3. These logs may be included in the facility response plan or kept as an annex to the facility response plan.

1.8.1 Facility Self-Inspection

Under 40 CFR 112.7(e), you must include the written procedures and records of inspections for each facility in the SPCC Plan. You must include the inspection records for each container, secondary containment, and item of response equipment at the facility. You must cross-reference the records of inspections of each container and secondary containment required by 40 CFR 112.7(e) in the facility response plan. The inspection record of response equipment is a new requirement in this plan. Facility self-inspection requires two-steps: (1) a checklist of things to inspect; and (2) a method of recording the actual inspection and its findings. You must note the date of each inspection. You must keep facility response plan records for five years. You must keep SPCC records for three years.

1.8.1.1. Tank Inspection

The tank inspection checklist presented below has been included as guidance during inspections and monitoring. Similar requirements exist in 40 CFR part 112, subparts A through C. Duplicate information from the SPCC Plan may be photocopied and inserted in this section. The inspection checklist consists of the following items:

TANK INSPECTION CHECKLIST

1. Check tanks for leaks, specifically looking for:
   A. drip marks;
   B. discoloration of tanks;
   C. puddles containing spilled or leaked material;
   D. corrosion;
   E. cracks; and
   F. localized dead vegetation.
2. Check foundation for:
   A. cracks;
   B. discoloration;
   C. puddles containing spilled or leaked material;
   D. settling;
   E. gaps between tank and foundation; and
   F. damage caused by vegetation roots.
3. Check piping for:
   A. droplets of stored material;
   B. discoloration;
   C. corrosion;
   D. bowing of pipe between supports;
   E. evidence of stored material seepage from valves or seals; and
   F. localized dead vegetation.

TANK/SURFACE IMPOUNDMENT INSPECTION LOG

Inspector	Tank or SI#	Date	Comments

TANK/SURFACE IMPOUNDMENT INSPECTION LOG—Continued

Inspector	Tank or SI#	Date	Comments

1.8.1.2 Response Equipment Inspection

Using the Emergency Response Equipment List provided in section 1.3.2 of the response plan, describe each type of response equipment, checking for the following:

Response Equipment Checklist

1. Inventory (item and quantity);
2. Storage location;
3. Accessibility (time to access and respond);
4. Operational status/condition;
5. Actual use/testing (last test date and frequency of testing); and
6. Shelf life (present age, expected replacement date).

Please note any discrepancies between this list and the available response equipment.

RESPONSE EQUIPMENT INSPECTION LOG

[Use section 1.3.2 of the response plan as a checklist]

Inspector	Date	Comments

RESPONSE EQUIPMENT INSPECTION LOG—Continued

[Use section 1.3.2 of the response plan as a checklist]

Inspector	Date	Comments

1.8.1.3 Secondary Containment Inspection

Inspect the secondary containment (as described in sections 1.4.1 and 1.7.2 of the response plan), checking the following:

Secondary Containment Checklist

1. Dike or berm system.
   A. Level of precipitation in dike/available capacity;
   B. Operational status of drainage valves;
   C. Dike or berm permeability;
   D. Debris;
   E. Erosion;
   F. Permeability of the earthen floor of diked area; and
   G. Location/status of pipes, inlets, drainage beneath tanks, etc.
2. Secondary containment
   A. Cracks;
   B. Discoloration;
   C. Presence of spilled or leaked material (standing liquid);
   D. Corrosion; and
   E. Valve conditions.
3. Retention and drainage ponds
   A. Erosion;
   B. Available capacity;
   C. Presence of spilled or leaked material;
   D. Debris; and
   E. Stressed vegetation.

The tank inspection checklist presented below has been included as guidance during inspections and monitoring. Similar requirements exist in 40 CFR part 112, subparts A through C. Similar requirements exist in 40 CFR 112.7(e). Duplicate information from the SPCC Plan may be photocopied and inserted in this section.

1.8.2 Facility Drills/Exercises

(A) CWA section 311(j)(5), as amended by OPA, requires the response plan to contain a description of facility drills/exercises. According to 40 CFR 112.21(c), the facility owner or operator shall develop a program of facility response drills/exercises, including evaluation procedures. Following the PREP guidelines (see Appendix E to this part, section 13, for availability) would satisfy a facility's requirements for drills/exercises under this part. Alternately, under §112.21(c), a facility owner or operator may develop a program that is not based on the PREP guidelines. Such a program is subject to approval by the Regional Administrator based on the description of the program provided in the response plan.

(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.

(C) Section 112.20(h)(8)(ii) requires the facility owner or operator to provide a description of the drill/exercise program to be carried out under the response plan. Qualified Individual Notification Drill and Spill Management Team Tabletop Drill logs shall be provided in sections 1.8.2.1 and 1.8.2.2, respectively. These logs may be included in the facility response plan or kept as an annex to the facility response plan. See section 1.3.3 of this appendix for Equipment Deployment Drill Logs.

1.8.2.1 Qualified Individual Notification Drill Logs

Qualified Individual Notification Drill Log

Date: ______
Company: ______
Qualified Individual(s): ______
Emergency Scenario: ______

Evaluation: ______

Changes to be Implemented: ______

Time Table for Implementation: ______

1.8.2.2 Spill Management Team Tabletop Exercise Logs

Spill Management Team Tabletop Exercise Log

Date: ______
Company: ______
Qualified Individual(s): ______
Emergency Scenario: ______

Evaluation: ______

Changes to be Implemented: ______

Time Table for Implementation: ______

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 (202) 267-4085. 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.

1.8.3.1 Personnel Response Training Logs

PERSONNEL RESPONSE TRAINING LOG

Name	Response training/date and number of hours	Prevention training/date and number of hours

1.8.3.2 Discharge Prevention Meetings Logs

DISCHARGE PREVENTION MEETING LOG

Date: ______
Attendees: ______

Subject/issue identified	Required action	Implementation date

1.9 Diagrams

The facility-specific response plan shall include the following diagrams. Additional diagrams that would aid in the development of response plan sections may also be included.

(1) The Site Plan Diagram shall, as appropriate, include and identify:
(A) the entire facility to scale;
(B) above and below ground bulk oil storage tanks;
(C) the contents and capacities of bulk oil storage tanks;
(D) the contents and capacity of drum oil storage areas;
(E) the contents and capacities of surface impoundments;
(F) process buildings;
(G) transfer areas;
(H) secondary containment systems (location and capacity);
(I) structures where hazardous materials are stored or handled, including materials stored and capacity of storage;
(J) location of communication and emergency response equipment;
(K) location of electrical equipment which contains oil; and
(L) for complexes only, the interface(s) (i.e., valve or component) between the portion of the facility regulated by EPA and the portion(s) regulated by other Agencies. In most cases, this interface is defined as the last valve inside secondary containment before piping leaves the secondary containment area to connect to the transportation-related portion of the facility (i.e., the structure used or intended to be used to transfer oil to or from a vessel or pipeline). In the absence of secondary containment, this interface is the valve manifold adjacent to the tank nearest the transfer structure as described above. The interface may be defined differently at a specific facility if agreed to by the RA and the appropriate Federal official.

(2) The Site Drainage Plan Diagram shall, as appropriate, include:
(A) major sanitary and storm sewers, manholes, and drains;
(B) weirs and shut-off valves;
(C) surface water receiving streams;
(D) fire fighting water sources;
(E) other utilities;
(F) response personnel ingress and egress;
(G) response equipment transportation routes; and
(H) direction of discharge flow from discharge points.

(3) The Site Evacuation Plan Diagram shall, as appropriate, include:
(A) site plan diagram with evacuation route(s); and
(B) location of evacuation regrouping areas.

1.10 Security

According to 40 CFR 112.7(g) facilities are required to maintain a certain level of security, as appropriate. In this section, a description of the facility security shall be provided and include, as appropriate:

(1) emergency cut-off locations (automatic or manual valves);
(2) enclosures (e.g., fencing, etc.);
(3) guards and their duties, day and night;
(4) lighting;
(5) valve and pump locks; and
(6) pipeline connection caps.

The SPCC Plan contains similar information. Duplicate information may be photocopied and inserted in this section.

2.0 Response Plan Cover Sheet

A three-page form has been developed to be completed and submitted to the RA by owners or operators who are required to prepare and submit a facility-specific response plan. The cover sheet (Attachment F-1) must accompany the response plan to provide the Agency with basic information concerning the facility. This section will describe the Response Plan Cover Sheet and provide instructions for its completion.

2.1 General Information

Owner/Operator of Facility: Enter the name of the owner of the facility (if the owner is the operator). Enter the operator of the facility if otherwise. If the owner/operator of the facility is a corporation, enter the name of the facility's principal corporate executive. Enter as much of the name as will fit in each section.

(1) *Facility Name:* Enter the proper name of the facility.

(2) *Facility Address:* Enter the street address, city, State, and zip code.

(3) *Facility Phone Number:* Enter the phone number of the facility.

(4) *Latitude and Longitude:* Enter the facility latitude and longitude in degrees, minutes, and seconds.

(5) *Dun and Bradstreet Number:* Enter the facility's Dun and Bradstreet number if available (this information may be obtained from public library resources).

(6) North American Industrial Classification System (NAICS) Code: Enter the facility's NAICS code as determined by the Office of Management and Budget (this information may be obtained from public library resources.)

(7) *Largest Oil Storage Tank Capacity:* Enter the capacity in GALLONS of the largest aboveground oil storage tank at the facility.

(8) *Maximum Oil Storage Capacity:* Enter the total maximum capacity in GALLONS of all aboveground oil storage tanks at the facility.

(9) *Number of Oil Storage Tanks:* Enter the number of all aboveground oil storage tanks at the facility.

(10) *Worst Case Discharge Amount:* Using information from the worksheets in Appendix D, enter the amount of the worst case discharge in GALLONS.

(11) *Facility Distance to Navigable Waters:* Mark the appropriate line for the nearest distance between an opportunity for discharge (i.e., oil storage tank, piping, or flowline) and a navigable water.

2.2 Applicability of Substantial Harm Criteria

Using the flowchart provided in Attachment C-I to Appendix C to this part, mark the appropriate answer to each question. Explanations of referenced terms can be found in Appendix C to this part. If a comparable formula to the ones described in Attachment C-III to Appendix C to this part is used to calculate the planning distance, documentation of the reliability and analytical soundness of the formula must be attached to the response plan cover sheet.

2.3 Certification

Complete this block after all other questions have been answered.

3.0 Acronyms

ACP: Area Contingency Plan
ASTM: American Society of Testing Materials
bbls: Barrels
bpd: Barrels per Day
bph: Barrels per Hour
CHRIS: Chemical Hazards Response Information System
CWA: Clean Water Act
DOI: Department of Interior
DOC: Department of Commerce
DOT: Department of Transportation
EPA: Environmental Protection Agency
FEMA: Federal Emergency Management Agency
FR: Federal Register
gal: Gallons
gpm: Gallons per Minute
HAZMAT: Hazardous Materials
LEPC: Local Emergency Planning Committee
MMS: Minerals Management Service (part of DOI)
NAICS: North American Industrial Classification System
NCP: National Oil and Hazardous Substances Pollution Contingency Plan
NOAA: National Oceanic and Atmospheric Administration (part of DOC)
NRC: National Response Center
NRT: National Response Team
OPA: Oil Pollution Act of 1990
OSC: On-Scene Coordinator
PREP: National Preparedness for Response Exercise Program
RA: Regional Administrator
RCRA: Resource Conservation and Recovery Act
RRC: Regional Response Centers
RRT: Regional Response Team
RSPA: Research and Special Programs Administration
SARA: Superfund Amendments and Reauthorization Act
SERC: State Emergency Response Commission
SDWA: Safe Drinking Water Act of 1986
SI: Surface Impoundment
SPCC: Spill Prevention, Control, and Countermeasures
USCG: United States Coast Guard

4.0 References

CONCAWE. 1982. Methodologies for Hazard Analysis and Risk Assessment in the Petroleum Refining and Storage Industry. Prepared by CONCAWE's Risk Assessment Adhoc Group.

U.S. Department of Housing and Urban Development. 1987. Siting of HUD-Assisted Projects Near Hazardous Facilities: Acceptable Separation Distances from Explosive and Flammable Hazards. Prepared by the Office of Environment and Energy, Environmental Planning Division, Department of Housing and Urban Development. Washington, DC.

U.S. DOT, FEMA and U.S. EPA. Handbook of Chemical Hazard Analysis Procedures.

U.S. DOT, FEMA and U.S. EPA. Technical Guidance for Hazards Analysis: Emergency

Planning for Extremely Hazardous Substances.

The National Response Team. 1987. Hazardous Materials Emergency Planning Guide. Washington, DC.

The National Response Team. 1990. Oil Spill Contingency Planning, National Status: A Report to the President. Washington, DC. U.S. Government Printing Office.

Offshore Inspection and Enforcement Division. 1988. Minerals Management Service, Offshore Inspection Program: National Potential Incident of Noncompliance (PINC) List. Reston, VA.

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, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington D.C. 20503.

GENERAL INFORMATION

Owner/Operator of Facility:

____

Facility Name: __________________________

Facility Address (street address or route):

____

____

City, State, and U.S. Zip Code:

____

Facility Phone No.: ______________________

Latitude (Degrees: North):

____

degrees, minutes, seconds

Dun & Bradstreet Number:[1]

____

Largest Aboveground Oil Storage Tank Capacity (Gallons):

____

[1] These numbers may be obtained from public library resources.

Number of Aboveground Oil Storage Tanks:

____

Longitude (Degrees: West):

____

degrees, minutes, seconds __________________

North American Industrial Classification System (NAICS) Code:[1] _________________

____

Maximum Oil Storage Capacity (Gallons): __

Worst Case Oil Discharge Amount (Gallons):

Facility Distance to Navigable Water. Mark the appropriate line. ________________

0–¼ mile ____ ¼–½ mile ____ ½–1 mile ____ >1 mile ____

APPLICABILITY OF SUBSTANTIAL HARM CRITERIA

Does the facility transfer oil over-water[2] to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes ____________________________________

No _____________________________________

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and, within any storage area, does the facility lack secondary containment[2] that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation?

Yes ____________________________________

No _____________________________________

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance[2] (as calculated using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?[3]

Yes ____________________________________

No _____________________________________

Does the facility have a total oil storage capacity greater than or equal to 1 million

[2] Explanations of the above-referenced terms can be found in Appendix C to this part. If a comparable formula to the ones contained in Attachment C-III is used to establish the appropriate distance to fish and wildlife and sensitive environments or public drinking water intakes, documentation of the reliability and analytical soundness of the formula must be attached to this form.

[3] 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.

gallons and is the facility located at a distance[2] (as calculated using the appropriate formula in Appendix C or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?[2] ________

Yes ________

No ________

Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill[2] in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes ________

No ________

CERTIFICATION

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

Signature: ________

Name (Please type or print): ________

Title: ________

Date: ________

[59 FR 34122, July 1, 1994; 59 FR 49006, Sept. 26, 1994, as amended at 65 FR 40816, June 30, 2000; 65 FR 43840, July 14, 2000; 66 FR 34561, June 29, 2001; 67 FR 47152, July 17, 2002]

PART 113—LIABILITY LIMITS FOR SMALL ONSHORE STORAGE FACILITIES

Subpart A—Oil Storage Facilities

Sec.
113.1 Purpose.
113.2 Applicability.
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AUTHORITY: Sec. 311(f)(2), 86 Stat. 867 (33 U.S.C. 1251 (1972)).

SOURCE: 38 FR 25440, Sept. 13, 1973, unless otherwise noted.

Subpart A—Oil Storage Facilities

§ 113.1 Purpose.

This subpart establishes size classifications and associated liability limits for small onshore oil storage facilities with fixed capacity of 1,000 barrels or less.

§ 113.2 Applicability.

This subpart applies to all onshore oil storage facilities with fixed capacity of 1,000 barrels or less. When a discharge to the waters of the United States occurs from such facilities and when removal of said discharge is performed by the United States Government pursuant to the provisions of subsection 311(c)(1) of the Act, the liability of the owner or operator and the facility will be limited to the amounts specified in § 113.4.

§ 113.3 Definitions.

As used in this subpart, the following terms shall have the meanings indicated below:

(a) *Aboveground* storage facility means a tank or other container, the bottom of which is on a plane not more than 6 inches below the surrounding surface.

(b) *Act* means the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1151, *et seq.*

(c) *Barrel* means 42 United States gallons at 60 degrees Fahrenheit.

(d) *Belowground* storage facility means a tank or other container located other than as defined as "Aboveground".

(e) *Discharge* includes, but is not limited to any spilling, leaking, pumping, pouring, emitting, emptying or dumping.

(f) *Onshore Oil Storage Facility* means any facility (excluding motor vehicles and rolling stock) of any kind located in, on, or under, any land within the United States, other than submerged land.

(g) *On-Scene Coordinator* is the single Federal representative designated pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan and identified in approved Regional Oil and Hazardous Substances Pollution Contingency Plans.

(h) *Oil* means 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.

Appendix 7

Arizona – Oil & Spill Pollution Cleanup Contractors Directory

US CONTRACTORS

Arizona

Clean Harbors Environmental
Chandler, AZ 85226
Tel +1 (480) 545-2777
Tel +1 (800) 645-8265
Fax +1 (480) 813-4434
Web
Land and water emergency response, containment, recovery, cleanup, disposal

Environmental Response Inc
Tempe, AZ 85281
Tel +1 (480) 967-2802
Fax +1 (480) 967-2735
Web
24Hr Emergency response to Hazmat, spills in the Southwest

Heritage Environmental Services
Coolidge, AZ 85128
Tel +1 (520) 723-4167
Tel +1 (877) 436-8778
Fax +1 (520) 723-4190
Web
Oil and hazmat spill response services including transportation and disposal

H2O Environmental
Chandler, AZ 85249
Tel +1 (480) 855-5676
Tel +1 (866) 426-6770
Fax +1 (602) 258-3266
Web

Kary Environmental Services, Inc
Mesa, AZ 85210
Tel +1 (480) 945-0009
Fax +1 (480) 945-8599
Web
Affordable 24 hour emergency response

MP Environmental Services, Inc
Phoenix, AZ 85043
Tel +1 (800) 833-7602
Fax +1 (602) 278-2884
Web

Southwest Hazard Control Inc
Tucson, AZ 85745
Tel +1 (520) 622-3607
Tel +1 (800) 279 -5266
Fax +1 (520) 622-3643
Web

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