



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 72D AIR BASE WING (AFMC)
TINKER AIR FORCE BASE OKLAHOMA

MEMORANDUM FOR SEE DISTRIBUTION (ANNEX S)

FROM: 72 ABW/CC

SUBJECT: Letter of Transmittal – Tinker AFB Plan 19-2, *Oil and Hazardous Substance Integrated Contingency Plan*

1. The long title of this plan is Tinker AFB Plan 19-2, *Oil and Hazardous Substance Integrated Contingency Plan*. The short title is TAFB Plan 19-2. This plan includes an Emergency Response Action Plan and locations of oil and hazardous substances on the installation. This plan replaces the TAFB Plan 19-2, dated July 2014.
2. The basic portion of this plan is unclassified and does not contain any sensitive information affecting national security. Although the plan is unclassified, it is “FOR OFFICIAL USE ONLY” and must be protected as such.
3. The office of primary responsibility for this plan is the 72 ABW Civil Engineer Directorate, Environmental Division. Suggestions or corrections to this plan should be emailed to the 72 ABW/CE Workflow.

8/1/2016

X Stephanie P. Wilson

STEPHANIE P. WILSON, Colonel, USAF
Commander

Signed by: WILSON.STEPHANIE.P.1063234377

Attachment:

TAFB Plan 19-2, Oil and Hazardous Substance Integrated Contingency Plan

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THE RED PLAN

Purpose

In the event of a spill of oil or hazardous substance at Tinker Air Force Base (AFB), **THE RED PLAN** serves as the “jump start” to get the right response actions on track at the earliest possible time. The Tinker AFB *Integrated Contingency Plan (ICP)* reinforces **THE RED PLAN** and provides in-depth information on response, notification, organization, duties, containment, cleanup, and remediation procedures. **THE RED PLAN** is used in the early stages of a spill, and the user is expected to transition to relevant portions of the *ICP*, after appropriate notifications and response actions are underway.

Initial Response Actions

If a spill occurs, the person discovering the spill will make every effort to take the following actions as soon as possible:

- (1) **STOP THE PRODUCT FLOW** – stop transfers, secure pumps, close valves.
- (2) **WARN PERSONNEL** – sound alarms, enforce safety and security measures.
- (3) **SHUT OFF IGNITION SOURCES** – motors, electrical circuits, open flames.
- (4) **CONTAIN THE SPILL** – secure valves, block drains, deploy absorbents.
- (5) **MAKE NOTIFICATIONS** – supervisor, fire department, environmental.
- (6) **BEGIN CLEANUP** – if within capabilities (see responsible unit actions).

If the spill is considered an emergency and there is a potential life, health, fire or other safety hazard, the fire department will be notified immediately.

Tinker AFB Fire Department 911

In the event of any spill, the Activity Supervisor/Manager or the Senior Fire Officer (SFO), Fire Department will notify the Base Civil Engineer (BCE) and the Environmental Management Branch Office. The Incident Commander (IC) will take action to notify and assemble needed members of the Spill Response Team (SRT). Initially, the SFO serves as the IC until the emergency subsides or another IC is designated. The Environmental Management Branch will provide technical support to the IC.

Responsible Unit/Activity Actions

Responsible Units/Activities will clean up small spills if it can be done safely and is within their capabilities to do so. Generally, a spill of only a few gallons will be recovered by the responsible unit/activity using absorbent materials or a spill kit located at the site. Recovered product and contaminated materials will be packaged and staged for disposal in accordance with the installation’s waste disposal procedures.

The fire department will be notified of all spills beyond the capability of the unit/activities. If the spill poses a fire, explosion, or exposure hazard, the responsible unit will isolate the area and standby at a safe distance to meet the fire department responding to the site.

Response Strategy/Incident Commander Actions

The fire department is the first responder to all spills requiring additional support on Tinker AFB. Upon arrival at the spill site, appropriate steps will be taken to ensure control of the spill and minimize or eliminate fire/explosion hazards. Every effort will be made to contain the spill at the site and prevent it from entering drainage systems where it could migrate off the installation to sensitive areas. The SFO will serve as the IC for the spill until relieved. The fire department can respond anywhere on Base within minutes of notification. Emergency medical and security forces personnel will be notified of the incident along with the fire department, and respond as necessary.

A spill at Tinker AFB will most likely be discovered by on-duty or other personnel in the area. Passersby or security forces personnel may also discover a spill. Upon notification of the spill, the fire department deploys to the scene with emergency and spill response vehicles and equipment. The fire department ensures that the Environmental Management Office is notified of the incident. Spill Response Team and Spill Management personnel will be alerted as required.

If possible, the resources of the responsible unit/activity, fire department, or spill response team resources will be used to clean up the spill after it has been contained. Large spills that exceed the installation's capabilities will require support from a spill response contractor or other outside support. The need for commercial spill response contractors or other outside support should be determined as soon as possible so timely calls for their services can be made.

After the IC has ensured that initial response actions have been taken and the spill is contained, with sensitive areas protected, the IC will begin transition from **THE RED PLAN** to the *Integrated Contingency Plan*. The IC will direct the Environmental Management Branch Office to fill-out the Discharge Report Sheet located at the end of **THE RED PLAN** and to make the mandatory and recommended notifications for reportable spills as per the Notification Checklist on the following pages or in Annex B. A reportable spill is any release that contaminates a body of water, is equal to or greater than 25 gallons of petroleum, oil, and lubricants (POL) or 1,000 gallons of sewage, is equal to or greater than the reportable quantity for the material, results in an injury, or acquires media attention. Mandatory notifications should be made within 30 minutes of discovery of the discharge.

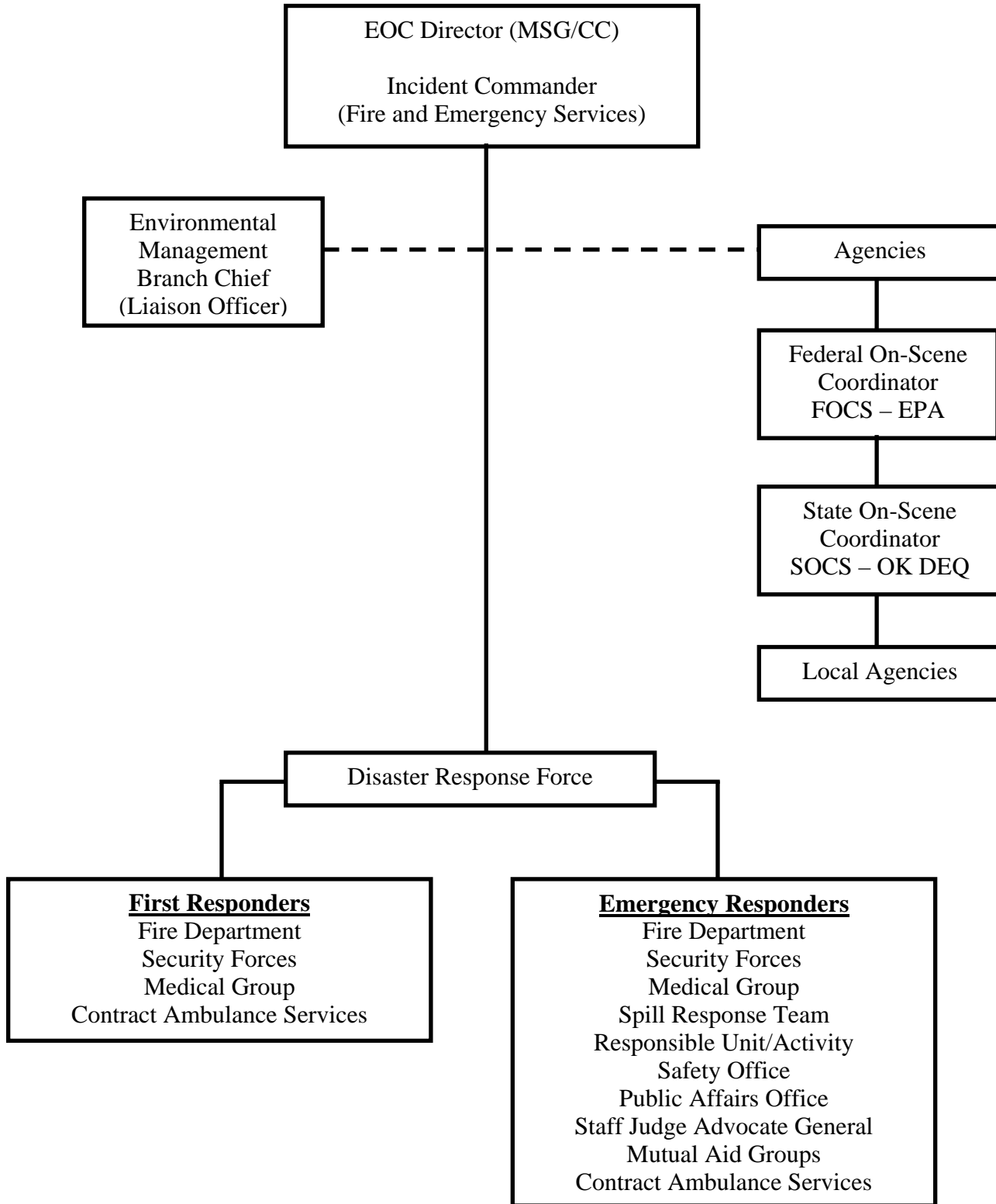


Figure RP.1: Tinker AFB Organization for Spill Response

<u>Emergency Notifications</u>		
Incident Commander/Qualified Individual	Number	Address
Mission Support Group Commander Tinker AFB Fire and Emergency Services Response Time 30 minutes	911	
<u>Mandatory Notifications</u>		
** Notifications can be made electronically through the Spill Incident Report Internet System (SIRIS) **		
Agency	Number	Who/When Contacted
National Response Center (NRC) (must call within 30 minutes)	(800) 424-8802 (202) 267-2675	Spill #:
State of Oklahoma Discharge Report and Response Center (DRRC)	1-800-522-0206 (24-hour)	
Oklahoma Department of Environmental Quality	1-800-256-2365	Spill #:
USAF, Headquarters, AFMC Environmental Office Command Post	DSN 787-5879 ⁽¹⁾ DSN 574-6314	
Oklahoma County Local Emergency Planning Committee (LEPC)	(405) 713-1360	
Oklahoma City Dispatch Public Service Midwest City Communications Dispatch Center Del City Dispatch	(405) 297-3430 (405) 732-2266 (405) 677-3344	
<u>Recommended Notifications</u>		
US EPA Region VI	(214) 665-2222	
Defense Energy Support Center (for spills from Bulk Storage Sites)	703-767-8420	
US Fish and Wildlife Service	(405) 608-5251	
Air Force Engineering Service Center	(904) 283-6167	
<u>Other Assistance</u>		
Oklahoma City Emergency Operation Center	(405) 297-2255	
U.S. Fish and Wildlife. Regional Spill Response Coordinator - Division of Endangered Species and Habitat Conservation	(505) 346-2525	
U.S. Fish and Wildlife. Field Spill Coordinator Oklahoma Ecological Services Field Office	(918) 581-7458	
National Weather Service	(405) 366-6583	
Oklahoma Department of Health Emergency Preparedness and Response Service (EPRS)	(405) 271-0900	
ODEQ Water Quality Division, Drinking Water	(405) 271-5205	
Oklahoma Department of Wildlife Conservation	(405) 521-3851 (day) (405) 737-8692 (night)	

<u>Emergency Notifications, continued</u>			
Agency	Number	Response Time	Who/When Contacted
<u>Key Base Personnel, Offices, and Response Team(s) Members</u>			
<u>Emergency Operations Center (EOC), Director</u> Commander 72 ABW/MSG	(405) 739-4109		
<u>Alternate EOC Director</u> Deputy Commander 72 ABW/MSG	(405) 739-4109		
<u>Second Alternate EOC Director</u> Base Civil Engineer 72 ABW/CE	(405) 734-3451		
Compliance Section	(405) 734-5199		
Bioenvironmental Engineering	(405) 734-7844		
Emergency Management	(405) 734-3515		
Security Forces	(405) 734-3737		
Liquid Fuels Maintenance	(405) 734-2753		
Staff Judge Advocate/Legal Officer	(405) 739-5811		
Public Affairs	(405) 739-2026		
Ground Safety	(405) 739-3263		
<u>Spill Cleanup Contractors</u>			
Dunamis Environmental Group	(405) 619-5744 (24-hours)	2 hours	
72 AW/CEO Environmental Office (Base Response Resources)	(405) 734-1150	1 hour	
US Navy Supervisor of Salvage (SUPSALV)	(202) 781-3889	12 hours	

NOTE

**For information on hazardous substances, contact
CHEMTREC (Chemical Transportation Emergency Center)
at 1-800-424-9300 (24-hour)**

Protection Priorities

The first priority in any spill is to protect human health and safety. These measures and environmental concerns are discussed in the Vulnerability Analysis in Annex E of this plan. The second priority is to prevent spills from reaching navigable waters. Most of the base drains toward the north to the North Canadian River by way of Crutch Creek, Kuhlman Creek and East and West Soldier Creeks. Action must be taken to ensure that drainage pathways (e.g., storm sewers and ditches) to these creeks are controlled or blocked with absorbent materials or booms. In some instances oil/water separators may be installed at drainage pathways to recover certain volumes of spilled product, but they can become easily overloaded and discharge oil. These devices must be checked during spill response activities. Early action to contain a spill and block drainage pathways is key to minimizing any environmental impact, on or off the installation, from a spill.

Recovery of Spills

Of the oils stored at Tinker AFB, fuels pose the greatest hazard, as they are relatively volatile. Large spills may result in significant vapor generation posing a fire or explosion hazard. Ignition sources in the area of the spill must be controlled or eliminated. Only trained response personnel will conduct spill recovery operations. Special spark-free and explosion-proof equipment should be used to recover pooled or contained fuels. Tinker AFB Fire Department and Spill Response Team personnel are trained to handle spill situations and have access to the required equipment. If a spill response exceeds their capabilities, outside support will be contracted.

Response Training, Equipment Testing and Deployment

All personnel who have responsibilities for handling oil or hazardous substances must complete awareness training and basic spill response training. The fire department and other personnel assigned to spill response teams receive additional training in operations, and selected personnel are trained at the technician level and on incident command. Key spill management personnel are trained in the execution of this plan. Training is conducted on an annual basis to comply with 40 CFR 112.7 requirements. EOC Directors are trained in their duties and responsibilities.

The fire department, response teams, and units/activities that control spill response equipment, must test and deploy the equipment for which they are responsible on a periodic basis. A simulation exercise is conducted at least annually for response personnel and includes equipment deployment. The fire department with their spill response equipment can respond to any location on the Base within approximately 5 minutes of notification. Special response teams can also respond on short notice. Additional equipment that is stored and stockpiled can be delivered to a spill site within 30 minutes during normal duty hours and within 2 hours after normal duty schedules. Heavy equipment that might be needed to support an emergency response can also be deployed to the scene of a spill through the Civil Engineer Directorate within the same time frames.

Installation Response Equipment and Locations

Various types of emergency response equipment are maintained at Tinker AFB. Equipment for containment and recovery of discharges and to protect personnel is available at most storage and handling locations as well as “using” activities. The fire department and response teams also maintain a considerable inventory of response equipment. The following abbreviated list is provided in detail in Annex F of this plan.

Equipment Items	Location/Responsible Organization
Personal Protective Equipment, Absorbent Materials, Tools, Overpack Containers for Disposal	Fuel Handling Units/Activities
Spill Response Trailer with miscellaneous Support Equipment	Fire Department
Heavy Equipment to support a response (trucks, loaders, pumps, compressors, etc)	Tinker Support Services Environmental Office Dunamis Environmental Group
Absorbent Materials, Overpack Supplies, Protective Gear, Disposal Preparations	Fire Department
Personal Protective Equipment, Absorbent Materials, Tools, & Overpack, Containers for Disposal (reserve stock)	Fire Department

Communications and Alarm Systems

Communications at Tinker AFB are extensive and allow the fire department, emergency medical personnel, and security forces to be fully functional on a 24-hour basis. Both the fire department and security forces have multi-channel radio capability augmented by cellular telephones, with backup telephone and radio systems at their dispatch centers. Other response and management personnel at spills have access to this communications equipment so all emergency responders can be in contact with each other.

Fire alarm pull boxes are located throughout the installation in buildings and at key operational sites for use in emergencies to alert the fire department.

Evacuation Plan

Because there are significant quantities of Jet A, diesel fuels, gasoline, and other hazardous substances stored at Tinker AFB, a catastrophic release at a storage site or during a transfer operation could pose a fire, explosion, or exposure hazard that affects personnel on the Base. The IC may determine that an evacuation is necessary to ensure the safety of Base personnel. See Annex C of this plan for a more complete discussion of evacuations. Annex A also provides area –specific evacuation information.

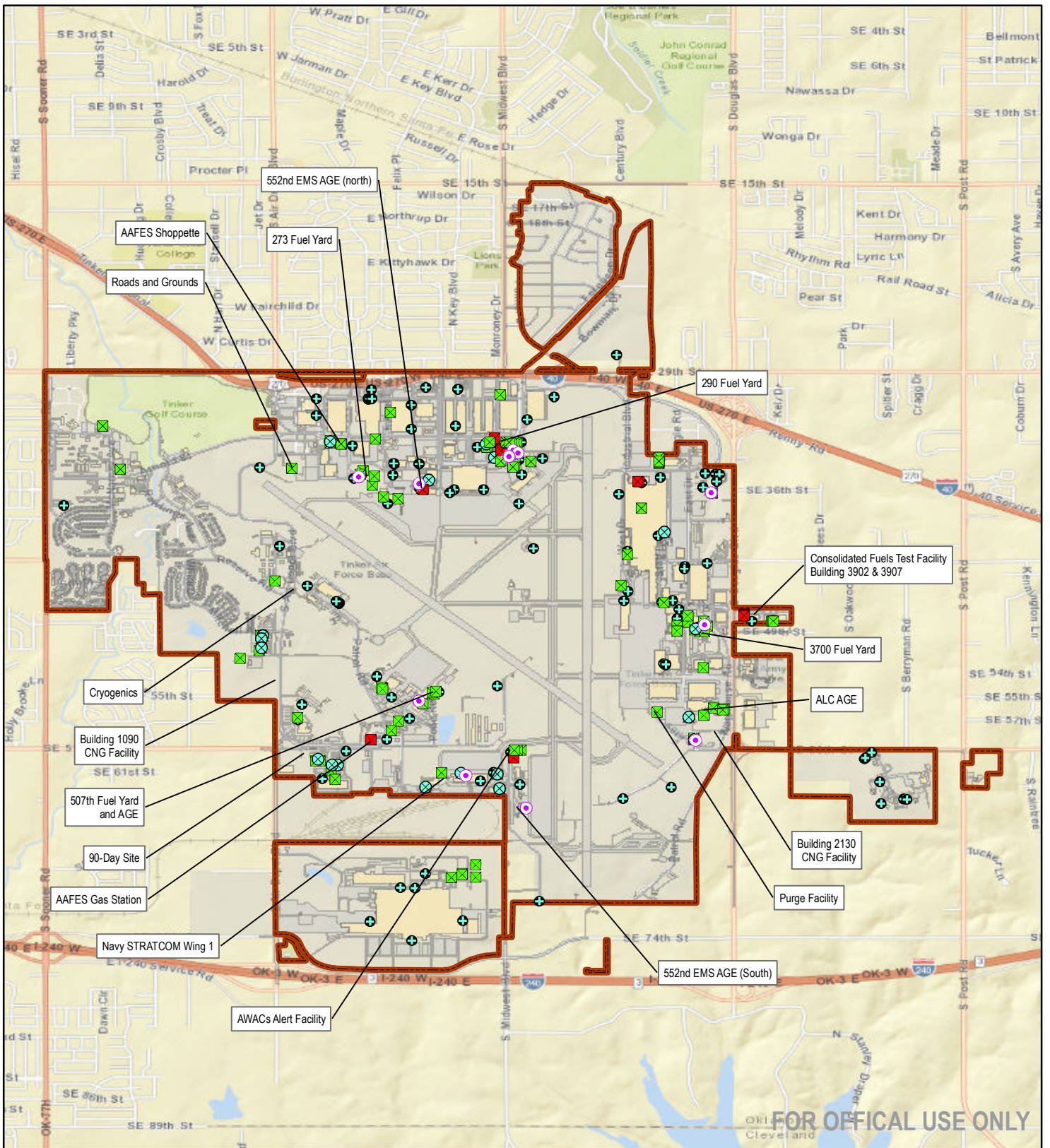
When directed by the IC, security forces will initiate evacuation of base personnel and residents and conduct traffic control as required. All personnel have been informed of procedures for responding to USAF standard alarm signals. Localized evacuations will be conducted in accordance with procedures established by the unit/activity where the incident occurred.

Installation Diagrams

Maps, diagrams, and photos of the bulk storage and handling sites are found throughout this plan. Refer to Annex A for detailed diagrams of Tinker AFB Bulk Fuels Facilities. For reference, the following diagrams are included in The Red Plan

- Tinker Air Force Base Major Oil Storage and Handling Sites
- Tinker Air Force Base General Evacuation Routes

For more detailed maps of those presented in the Red Plan, see Annex W.



- LEGEND**
- Aboveground Storage Tanks
 - Underground Storage Tanks
 - ⊗ Drum
 - ⊕ Bowser/Mobile Refueler
 - ▲ Drums
 - + Generators
 - Buildings
 - Base Boundary

0 3,000 6,000
Feet

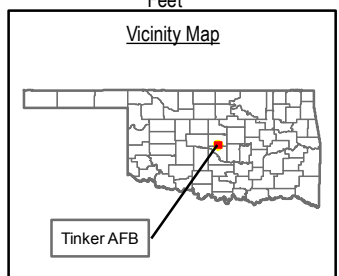
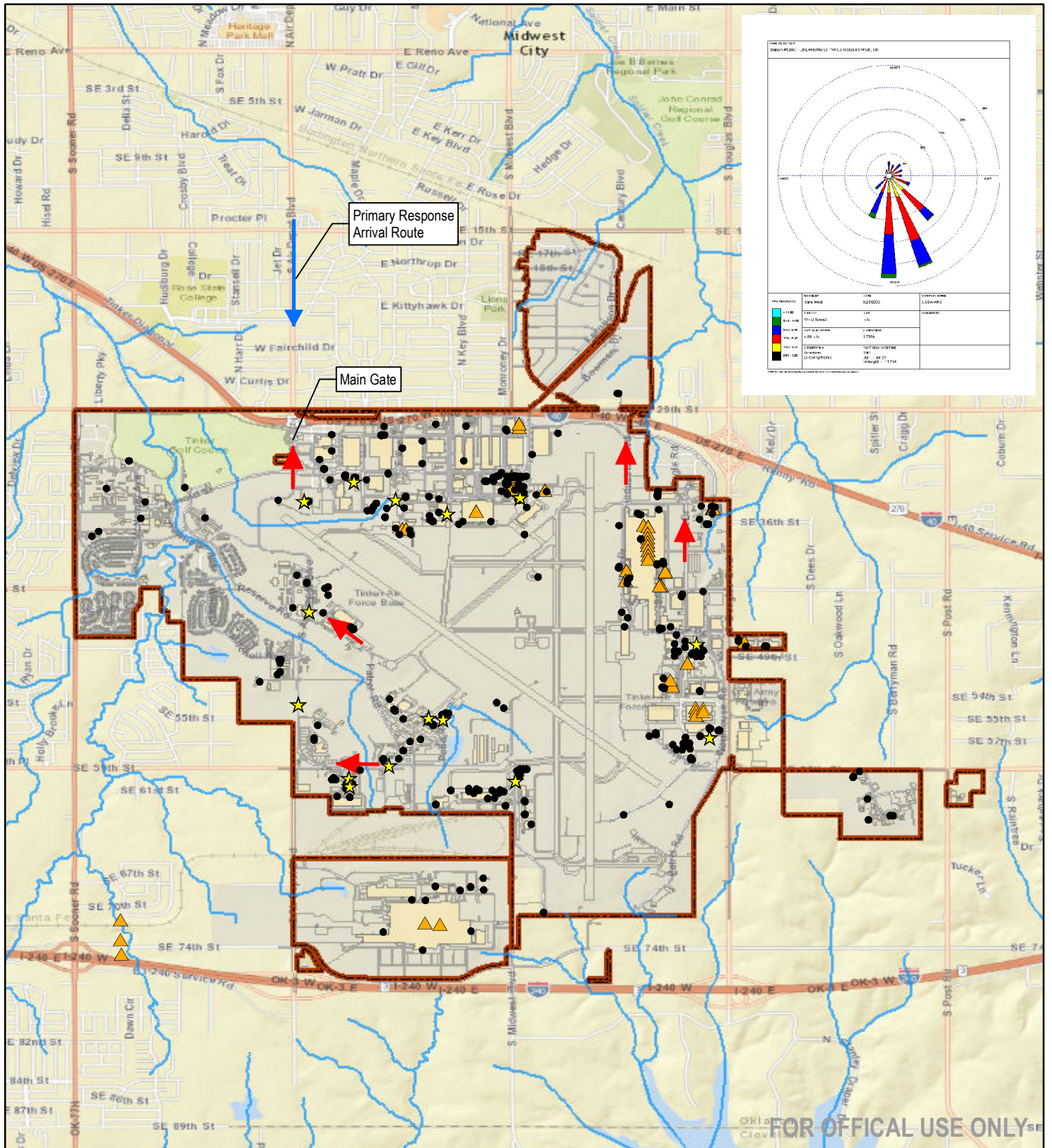


FIGURE RP.2
BULK STORAGE LOCATION MAP
TINKER AIR FORCE BASE
OKLAHOMA

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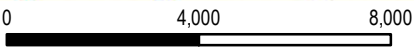
FIGURE RP.3

GENERAL EVACUATION ROUTES
TINKER AIR FORCE BASE, OKLAHOMA

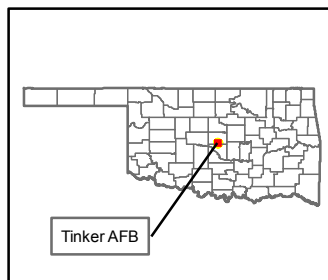
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LEGEND

- Tinker Tank
- ▲ Hazardous Substance
- ★ Muster Locations
- ➔ Evacuation Route
- Buildings
- ▭ Base Boundary



Feet



Tinker AFB



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<u>Oil and Hazardous Substance Discharge Report Sheet</u> <i>Do not delay making reports while waiting for complete or additional information.</i>	
1. <u>Name, location and mailing address of facility</u>	Tinker Air Force Base 72 ABW/CEIE 7735 5 th Street Tinker Air Force Base, OK 73145-9100
2. <u>Name and telephone number of QI (Contact for further information)</u>	Commander, 72nd Mission Support Group (72 ABW/MSG) Tinker Air Force Base (405) 739-2856
3. <u>Name and telephone number of person making report</u>	
4. <u>Name/type of product spilled</u>	
5. <u>Location of spill</u>	
6. <u>Date and time of spill & weather conditions</u>	
7. <u>Environment affected (especially any body of water)</u>	
8. <u>Cause and source of discharge</u>	
9. <u>Quantity or duration of discharge</u>	
10. <u>Remedial Action</u>	
11. <u>Injuries or property damage</u>	
12. <u>Known or Anticipated Health Risks</u>	
13. <u>Agencies Notified (From Contact Sheet)</u>	

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**OIL AND HAZARDOUS SUBSTANCE
INTEGRATED CONTINGENCY PLAN**

Prepared For:

US ARMY CORPS OF ENGINEERS

TULSA DISTRICT

(CONTRACT NO. W912BV-10-D-1004)

(TASK ORDER NO. 0007)

Prepared By:

**Science Applications International Corporation
(SAIC) (October 2007)**

Amended by WESTON Solutions, Inc. (August 2016)

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Executive Summary

The US Air Force and Tinker Air Force Base are concerned about the impact that day-to-day operations may have on the environment. Pollution caused by oil and hazardous substance spills may have adverse effects on human health and the environment if proper steps are not taken to prevent, contain, and effectively clean up such incidents in a timely and efficient manner. Tinker AFB is dedicated to the prevention of oil and hazardous substance spills. It is the policy of this installation to minimize the discharge or release of oil or hazardous substances from storage tanks, piping, transfer systems and equipment, and work spaces on Base and to provide efficient and prompt containment and cleanup procedures if a spill occurs.

A number of federal and state agencies have regulations pertaining to pollution prevention and emergency response requirements for oil and hazardous substance storage and transfer facilities. The *Tinker AFB Oil and Hazardous Substance Integrated Contingency Plan (ICP)* has been developed to address the basic tenets of spill prevention, discharge containment and cleanup, and emergency response actions. This ICP combines all of the Federal and State of Oklahoma regulatory requirements regarding the development of response plans into a single document. Included in this ICP is a regulatory compliance and cross-reference index that allows the user to quickly locate information required by applicable regulatory agencies.

This plan incorporates the requirements for a *Spill Prevention Control and Countermeasure Plan (SPCC)* and a *Facility Response Plan (FRP)*. This *Tinker AFB Oil and Hazardous Substance Integrated Contingency Plan (ICP)* addresses the emergency planning, notification, and response actions required by the US Environmental Protection Agency (EPA) and the State of Oklahoma's Department of Environmental Quality. Similar requirements directed by the *Resource Conservation and Recovery Act (RCRA)*, the *Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)*, and the *Emergency Planning and Community Right-to-Know Act (EPCRA)* are also included in this integrated plan. The comprehensive planning, spill prevention measures, and response actions provided in this plan make it an operational, single-source document to be used and referenced by Base personnel should a spill occur. The *Tinker AFB Oil and Hazardous Substance ICP* also serves as a statement of policy and intent for those concerned with the prevention and control of spills.

Tinker AFB will commit manpower, equipment, and the materials necessary to expeditiously control and remove any discharge. The Installation Commander is accountable for discharge prevention and emergency response measures and has the authority to commit resources.

Letter of Transmittal signed 1 August 2016, see page 1

STEPHANIE P. WILSON, Colonel, USAF
Commander

Date: 1 August 2016

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CERTIFICATION

I hereby certify that I am familiar with the provisions of Title 40, Code of Federal Regulations (CFR), Part 112, and that I have personally reviewed and examined the *Oil and Hazardous Substance Integrated Contingency Plan* and my agent has visited and examined the Tinker AFB oil storage and handling facilities. Based upon my review of information provided in this document and my agent's examination of the Tinker AFB oil storage facilities, I attest that this *Integrated Contingency Plan* is adequate for the facility and has been prepared in accordance with good engineering practices, including consideration of applicable industry standards and that procedures for required inspections and testing have been established.

This certification is contingent upon corrective action for the non-conformance items noted in Section 18.


Signature of Registered Professional Engineer



Nancy L. Koch, P.E.
Name of Registered
Professional Engineer

25 February 2016
Date

18739
Registration
Number

Oklahoma
State of
Registration

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Record of Review and Changes

Date	Page and Paragraph	Change Number	Signature of Person Posting Change	Administrative Change Description	Technical Change Description	Change Requires Submittal to EPA Y/N
2/2016	All pages of the Main ICP Plan, Majority of the pages in each Annex, and all tables and figures	NA		5-year review and evaluation resulted in Plan-wide changes	Additional bulk storage, oil-filled operational equipment, and hazardous materials were added to the plan. Documentation of secondary containment and other language describing conformance to the rule.	No
2/2017	Pg A-1-5	NA		Update Site Map	Updated map to show drainage from refueler parking going to storm sewer system.	No

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Tinker Air Force Base
Oil and Hazardous Substance Integrated Contingency Plan

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Oil and Hazardous Substance Integrated Contingency Plan

Tinker Air Force Base Oklahoma

This *Integrated Contingency Plan* is an operational, single-source document designed to meet the combined regulatory requirements for a US Environmental Protection Agency (EPA) *Facility Response Plan (FRP)*, an EPA *Spill Prevention Control and Countermeasure (SPCC) Plan*, and spill prevention and response planning for the State of Oklahoma. This plan also addresses the emergency planning, notification, and response actions directed by the *Resource Conservation and Recovery Act (RCRA)*, the *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*, and the *Emergency Planning and Community Right-to-Know Act (EPCRA)*. This plan is consistent with the *National Contingency Plan (NCP)* and *Region 6 Regional Contingency Plan, Volume 2: Inland Area Contingency Plan (ACP)*

1. RESPONSE PLANNING REQUIREMENTS

1.1 NATIONAL CONTINGENCY PLAN (NCP)

The *Clean Water Act (CWA)* and the *Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA)*, of 1980 as amended, require that Federal agencies make plans for emergency response to spills of oil and hazardous substances for which they are responsible. To comply with these acts, the EPA has published Title 40, Code of Federal Regulations (CFR) Part 300, *The National Oil and Hazardous Substances Pollution Contingency Plan*, commonly referred to as the *National Contingency Plan*. The Final Rule for 40 CFR Part 300 was published on 15 August 1994 with an effective date of 17 October 1994.

1.2 REGION 6 REGIONAL CONTINGENCY PLAN (RICP) AND INLAND AREA CONTINGENCY PLAN (ACP)

The *Oil Pollution Act of 1990* and Executive Order 12777 require that Area Contingency Plans (ACPs) be developed in accordance with the National Response Policy. The policy also requires that a pre-designated Federal On-Scene Coordinator (FOSC) be assigned to ensure effective and immediate removal of a discharge of oil or hazardous substances. The United States Coast Guard (USCG) designates FOSCs for the coastal zone of the US, and the EPA designates FOSCs for the inland zone.

EPA Region 6 has been pre-designated to carry out the duties of the FOSC for the inland portions of the Standard Federal Region 6. Tinker AFB operates within the guidelines of the EPA and the State of Oklahoma under the *Region 6 Regional Contingency Plan, Volume 2: Inland Area Contingency Plan (ACP)* published May 29, 2013.

1.3 SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN

The EPA's Oil Pollution Prevention regulation published in the Federal Register addresses non-transportation related facilities. 40 CFR Part 112 requires facilities to have a fully prepared and implemented SPCC Plan. This Plan is designed to establish spill prevention procedures, methods, and equipment requirements for non-transportation-related facilities with: (1) total aboveground, non-buried, oil storage capacity greater than 1,320 gallons; or (2) underground, buried, oil storage capacity greater than 42,000 gallons. Facilities meeting these criteria and because of their location, which could reasonably be expected to discharge oil into navigable waters of the United States or adjoining shorelines, require SPCC plans. Based upon its location, oil storage capacities, and operations, Tinker AFB meets the definition of a non-transportation-related facility and is required to prepare an SPCC plan.

1.4 FEDERAL FACILITY RESPONSE PLAN (FRP)

In response to the *Oil Pollution Act of 1990*, the EPA issued a Final Rule revising 40 CFR Part 112, *Oil Pollution Prevention; Non-Transportation-Related Onshore Facilities*. The Final Rule requires an FRP be prepared and submitted to the EPA Regional Administrator for any non-transportation-related facility that could reasonably be expected to cause substantial harm to the environment should a spill occur. The FRP requirement in the EPA Final Rule applies to Tinker AFB because the total oil storage capacity is greater than one million gallons and a discharge could be expected to cause substantial harm to fish and wildlife and sensitive environments that are located on or close to the installation.

1.5 STATE OF OKLAHOMA SPILL PREVENTION AND CONTROL REGULATIONS

The State of Oklahoma does not require submission of a separate SPCC Plan or FRP for review and approval if Federal plans have been prepared. The State requires that discharges or spills to navigable water be reported immediately upon knowledge of the incident. Reporting requirements are the same as for the applicable Federal regulatory agencies. The report is to be made to the ODEQ's Spill Reporting Hotline. The responsible party is required to take immediate actions to abate and contain the discharge and begin response actions to recover the discharged material and protect natural resources. Additionally, the State of Oklahoma updated in December 2009 the *State of Oklahoma Emergency Operations Plan (EOP)* which directs State departments and agencies to provide guidance, relief, and assistance to local communities to recover from the effects of a disaster.

1.6 US AIR FORCE INSTRUCTION 10-2501

Air Force Instruction 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations* establishes an overarching approach to emergency response actions on all Air Force installations. The instruction defines the Air Force EM program as a cross-functional program that integrates procedures and standards for planning; logistical requirements; emergency response actions; emergency response guidelines; exercises and evaluations; personnel training; detection, identification, and warning; notification; and enemy attack actions. It establishes responsibilities, procedures, and standards for Air Force mitigation and emergency response to physical threats resulting from major accidents (including releases of oil and hazardous substances); natural disasters; and conventional and terrorist attacks. Additionally, AFI 10-2501 aligns the Air Force with *Homeland Security Presidential Directive 5 (HSPD-5)*, the *National Incident Management System (NIMS)*, and the *National Response Plan (NRP)*. This instruction also implements the Air Force Incident Management System (AFIMS) based on the NIMS methodology and aligns Air Force EM planning and response with the NRP as directed by HSPD-5.

1.7 ADDITIONAL EMERGENCY RESPONSE PLANNING

Facilities that handle or store hazardous substances, the release of which could endanger health and human safety and adversely impact the environment, must comply with Federal regulations that govern emergency planning, notification, and response. The requirements that are potentially applicable to Tinker AFB include the following:

- **Emergency Planning and Notification.** 40 CFR 355 Emergency Planning and Notification does apply to Tinker AFB as they do store extremely hazardous

substances in an amount greater than the Threshold Planning Quantity. These substances include sulfuric acid and chlorine.

- **Designation, Reportable Quantities, and Notification.** 40 CFR 302 does apply, as Tinker AFB has the following chemicals in quantities that exceed the threshold planning quantity: chlorine, hydrofluoric acid, nitric acid, phenol (in paint stripper), and sulfuric acid. See Table A.6 in Annex A for chemicals listed as EHS.
- **Chemical Accident Prevention Provisions.** Under 40 CFR 68, these provisions apply to facilities that have more than a threshold quantity of a regulated substance in a process. 40 CFR 68 was reviewed, and it was determined that Tinker does not have a regulated substance greater than the threshold planning quantity (TPQ). Only hydrofluoric acid (70%) exceeds the TPQ of 1,000 pounds. Other chemicals were evaluated and compared to the TPQ's. The closest substances included approximately 300 pounds of compressed natural gas in a process (less than the 10,000 pounds TPQ), 150 pounds of chlorine in a process (less than the 2,500 TPQ), Sulfuric Acid (no TPQ), and fuels, none of which have TPQs. Tinker AFB is subject to 40 CFR 68 on the basis of hydrofluoric acid storage. See Table A.6 in Annex A.
- **Clean Air Act Accidental Release Prevention.** Under Section 112(r) of the Clean Air Act (CAA), certain chemicals are designated with a threshold quantity (TQ) for accidental release prevention. Some chemicals that are reportable under 40 CFR 302 are not designated with a TQ under 112(r), and the TQ applies to the quantity of a substance in a process, not at the facility as a whole. Chemicals listed in the Section 112(r) list include hydrofluoric acid and chlorine, but there is no process that contains the respective TQ. See Table A.6 in Annex A.
- **US Department of Transportation Response Plans for Onshore Oil Pipelines.** Under 49 CFR 194, certain pipelines that transport oil that could reasonably be expected to cause significant and substantial harm are required to have, and submit for approval, a Response Plan. Pipelines at Tinker AFB are not more than 6 5/8 inches in diameter, are not more than 10 miles in length, and they meet the exception criteria in 49 CFR 194.101(b); therefore a response plan in accordance with 49 CFR 194 is not required.

Other potential emergency response planning requirements are regulated by the Occupational Safety and Health Administration (OSHA) and are contained in 29 CFR Part 1910. These include the following:

- **The Employee Emergency Plans and Fire Prevention Plans, Part 1910.38(a).** 29 CFR 1910.34 states "Sections 1910.34 through 1910.29 apply to workplaces in general industry except mobile workplaces such as vehicles or vessels." As a result, 1910.38(a) applies to Tinker AFB.
- **Hazardous Waste Operations and Emergency Response, Part 1910.120.** These regulations pertain to hazardous substances at uncontrolled hazardous waste sites,

corrective actions involving cleanup at sites covered by RCRA, operations at hazardous waste treatment, storage or disposal facilities, and emergency response operations for release of, or substantial threats of releases of, hazardous substances. There are no uncontrolled hazardous waste sites or hazardous waste treatment storage or disposal facilities. Tinker AFB personnel do conduct emergency response where there may be the threat of release of a hazardous substance; therefore, this provision does apply.

- **Employee Alarm Systems, Part 1910.165.** Emergency response planning requirements from these regulations are not addressed in this plan.

1.8 INTEGRATED CONTINGENCY PLAN

On 5 June 1996, the National Response Team issued a Federal Register Notice on Integrated Contingency Plan (ICP) Guidance. It intended to provide a mechanism for consolidating multiple plans that facilities prepare to comply with various regulations into one functional emergency response plan or ICP. The Tinker AFB *Oil and Hazardous Substance Integrated Contingency Plan* is consistent with the *National Contingency Plan (NCP)*, *EPA Region 6 Regional Integrated Contingency Plan (RICP)* and *State of Oklahoma Emergency Operations Plan*.

This *Oil and Hazardous Substance Integrated Contingency Plan* recognizes the response phases of discovery and notification; preliminary assessment and initiation of action; containment, countermeasures, cleanup, and disposal; and documentation and cost recovery. Hazard identification, vulnerability, and risk analysis are also addressed to protect the public and response personnel, to avoid escalation of an incident, and to stabilize the situation. The FOSC has the final authority in response operations and will direct personnel and resources, as necessary, if spill response actions are not performed by the responsible party in a timely manner or in accordance with the appropriate response plan and consistent with the ACP.

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2. ADMINISTRATION AND POLICY

2.1 GENERAL

The Tinker AFB *Oil and Hazardous Substance Integrated Contingency Plan* satisfies the EPA requirement for an SPCC Plan and an FRP, as well as those requirements under CERCLA, EPCRA, RCRA, and the US Air Force. This plan is purposely designed to combine all Federal, State, and Air Force response plan requirements into an integrated, operational document that can be used by designated officials at Tinker AFB. A detailed cross-reference of applicable regulatory requirements is provided in Annex T for use by the regulatory agencies.

2.2 US AIR FORCE (USAF) POLICY

It is USAF policy that installations will be in full environmental compliance and that Federal and State regulations and requirements for spill prevention and response will be met. This ICP meets those requirements.

2.3 EFFECTIVE DATE

The Tinker AFB *Oil and Hazardous Substance Integrated Contingency Plan* is effective August 2016 and supersedes all previous Tinker AFB spill prevention and response plans.

2.4 PLAN SUBMISSION AND DISTRIBUTION

Based upon requirements in the Oil Pollution Act of 1990 and resultant regulatory guidance, this plan is submitted to the EPA for review and approval. It is also submitted to State and local authorities for information and coordination purposes. See Annex S (Plan Distribution).

2.5 PLAN REVIEW, AMENDMENT AND RESUBMISSION

2.5.1 Plan Reviews

Plan reviews will be conducted on a conditional and scheduled basis. Not all plan reviews will result in an amendment to the plan. Plan reviews may be conducted if the

plan fails in an emergency. Plans are also required to be reviewed every five years (40 CFR 112.5(b), 40 CFR 112.20(c)(4)). The scope of the five-year review follows.

This ICP will be reviewed annually by the Qualified Individual. The annual review is not driven by regulations, but is conducted as part of Tinker AFB policy. The scope of the annual review is addressed in Section 2.5.4. The purpose of the review is to (1) incorporate changes in data on economically important and environmentally sensitive areas, (2) address changes at the installation (design, construction, operation, or maintenance of facilities that materially affect the potential for a discharge), and (3) ensure compliance with any applicable changes to the National or Area Contingency Plans. Plan reviews are to be conducted within one month of the anniversary date of the approval of the original plan. The review will be preceded by at least one training exercise. Criteria to be addressed in the review are, at a minimum:

- Knowledge of the response plan;
- Proper notification procedures;
- Communications system;
- Coordination of Base personnel with responsibility for spill response;
- Knowledge of procedures to effectively coordinate spill response activity with the National Response System infrastructure; and
- Ability to access information in area contingency plans for location of areas, resources available within the area, unique conditions of the area, etc.

The same criteria shall also be reviewed and updated upon completion of any spill responses and cleanup actions.

If no changes to the plan are required after a review, the Record of Changes page located at the front of this plan should be so annotated.

2.5.2 Plan Amendment

The Plan is required to be amended when any of the follow occur:

- There are material changes at the facility that affect its potential for discharge (40 CFR 112.5(a)) or materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents (40 CFR 264.54). This includes changes in facility design, construction, operation, maintenance, and emergency equipment.

- There are regulatory changes. This plan will be amended whenever new regulations on spill prevention or contingency plans is handed down from DoD, HQ USAF, HQ AFMC, EPA, DOT, or any other Federal, State, or local agency.
- The plan fails in an emergency.

The plan may also be amended to address changes in personnel and phone numbers.

Technical amendment to the plan must be certified by a professional engineer in accordance with 40 CFR 112.5. Technical amendments shall be fully implemented as soon as possible, but no later than six months after such change occurs. Nontechnical changes, such as changes in contact numbers, do not need to be certified.

Amendments to the plan must be noted on the Record of Changes page.

2.5.3 Plan Submittal

Tinker AFB is required to resubmit revised portions of the response plan to EPA within 60 days of each facility change that materially may affect the response to a worst-case discharge. This includes any of the following changes:

- A change in the facility's configuration that materially alters the information included in the response plan.
- A change in the type of oil handled, stored, or transferred that materially alters the required response resources.
- A material change in the capabilities of the oil spill removal response organization, or the facility's spill prevention and response equipment, or emergency response procedures.
- Any other change that materially affects the implementation of the response plan.

For each technical amendment, the certifying engineer will determine whether portions of the plan are required to be submitted to EPA. This determination will be included on the Record of Changes page. When submitting revisions to EPA, include the EPA issued facility identification number (OK1571724391).

2.5.4 Notifications

Tinker AFB is required to notify the LEPC of any changes occurring at the facility that may be relevant to emergency planning to the LEPC within 30 days after the change has occurred.

2.6 PROPONENCY

The responsible office for the Tinker AFB *Oil and Hazardous Substance Integrated Contingency Plan* is:

Tinker Air Force Base
Compliance Branch
7535 5th Street
Tinker Air Force Base, Oklahoma 73145-9100
(405) 734-5199

2.7 TINKER AFB POLICY FOR RESPONDING TO OIL AND HAZARDOUS SUBSTANCE (OHS) AND HAZARDOUS WASTE SPILLS

- Operations at Tinker AFB will be conducted in a manner such as to minimize the occurrence of OHS and hazardous waste spills and discharges. An effective response to spill incidents will be developed and maintained. Response and cleanup actions will be taken, insofar as possible, to restore the environment to its condition before the spill occurred.
- Should an OHS or hazardous waste spill occur, the person(s) discovering the discharge must notify the Tinker AFB Fire and Emergency Service by calling:

911

- Supervisors and/or personnel responsible for petroleum or hazardous substance storage or handling at the bulk storage facilities on Base, who are trained in spill response and discover a spill, are required to take action to **Stop** the flow, **Warn Personnel**, and **Shut Off** ignition sources in the vicinity of the spill. If they are unable to safely and completely take these initial response actions, they shall **Notify** Tinker AFB Fire Department, Fire and Emergency Services (FES) immediately.
- Fire and Emergency Services (FES) serves as the first responder to all reported spills. The person reporting the spill or other responsible person on-scene will brief the Senior Fire Officer (SFO) on the situation upon arrival of FES at the spill site. The Base Fire Chief or SFO will act as the Incident Commander (IC) to direct and coordinate the initial spill response actions. The IC has the authority to utilize the expertise and resources of the SRT and the HAZMAT Response Team.

Mission Support Group Commander (MSG CC)

The MSG CC has been designated as the primary Emergency Operations Center (EOC) Director and the Qualified Individual (QI), having full authority to implement the *Integrated Contingency Plan*, to notify spill response contractors, and to direct and coordinate removal actions. The first alternate QI is the Deputy Mission Support Group Commander.

2.8 EMERGENCY RESPONSE ARRANGEMENTS

This section includes the arrangements agreed to by local police and fire departments, hospitals, contractors, and State and local emergency response teams to coordinate in an emergency. Tinker AFB essentially has its own fire department, police and hospital; therefore, specific arrangements are not necessary for a coordinated response. Tinker AFB has the majority of the equipment and personnel needed to comply with the requirements for oil spill response; however Tinker AFB does maintain contracts with the Dunamis Environmental Group and the US Navy Supervisor of Salvage (SUPSALV), as Oil Spill Removal Organizations (OSROs). Annex D, Section D.4 describes off-base resources that may be used, and Section D.5 describes the Air Force Emergency Management Program and the National Incident Management System.

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3. PLAN ORGANIZATION

3.1 EMERGENCY RESPONSE ACTION PLAN (THE RED PLAN)

This is an abbreviated, critical action plan that discusses key actions to be taken in the early stages of a response to an oil or hazardous substance spill. This operational plan is a concise, separate, stand-alone document that addresses essential and time-sensitive actions that should be followed for any type spill response. **THE RED PLAN** provides a “jump start” on the initial response actions and minimizes confusion in establishing organization for the installation’s spill response effort. After appropriate initial notifications and response actions are underway, transition to the more detailed *Oil and Hazardous Substance Integrated Contingency Plan* is directed. **THE RED PLAN** is printed on red paper and is the first section in the Tinker AFB *Oil and Hazardous Substance Integrated Contingency Plan*.

3.2 TINKER AFB OIL AND HAZARDOUS SUBSTANCE INTEGRATED CONTINGENCY PLAN

This is an in-depth response plan that addresses all aspects of prevention, response, organization, assessment, recommended cleanup methods, environmental considerations, establishment of priorities, training, preventive maintenance, and other required items. This plan provides essential guidance in addressing wide-ranging response actions and specific Federal, State, local, and USAF planning requirements. After key actions in **THE RED PLAN** have been initiated, the IC—in consultation with the SRT, spill response contractors, and regulators—develops a coordinated strategy for the cleanup and organizes the response, recovery, and mitigation efforts following the *Oil and Hazardous Substance Integrated Contingency Plan*.

3.3 SUPPORTING ANNEXES

The supporting annexes in the tabbed sections are for use with both of the above mentioned plans and contain detailed information on the installation, response guidance, and supporting data important to the overall management of spill prevention measures, spill response planning, and spill cleanup operations.

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4. FACILITY DESCRIPTION, LOCATION, ACCESS, AND OPERATIONS

4.1 MISSION AND ORGANIZATION

Tinker AFB was established in 1941 as an aircraft maintenance and supply depot. Its primary mission is the maintenance, repair, and modification of military aircraft. The Base is a multi-mission installation and the home of the Oklahoma City Air Logistics Complex, Tinker AFB, Oklahoma. Tinker AFB is one of three Air Logistics Complexes reporting to Headquarters, Air Force Sustainment Center, Tinker AFB, Oklahoma.

4.2 FACILITY LOCATION AND GENERAL INFORMATION

Tinker AFB is located in central Oklahoma in the southeastern portion of Oklahoma County. The Base is approximately 9 miles southeast of the central business district of Oklahoma City and adjacent to Midwest and Del City. Tinker AFB is bordered by Sooner Road to the west, Interstate 40 to the north, Douglas Boulevard to the east, and SE 74th Street to the south. Refer to Figure 4.1 for a regional location map of Oklahoma City/Tinker AFB. The Base is surrounded by residential and commercial development. Refer to Figure 4.2 for a Location Map of Tinker AFB. The population of Tinker AFB is approximately 30,000 with a land area, including satellite areas, of 5,424 acres. The Base has over 5,000,000 gallons of petroleum products (Jet A, diesel, heating oil, MOGAS), which are stored in aboveground storage tanks (ASTs), underground storage tanks (USTs), aircraft fueling lines, fuel truck storage and portable storage throughout the facility.

4.3 FACILITY ACCESS AND OPERATING HOURS

Tinker AFB may be accessed via Interstate 40 to the north or Interstate 240 from the south. The following table summarizes the access gates, their locations and hours.

Gate	Name	Location	Hours
1	Tinker	Air Depot Boulevard at I-40 and 29 th St	24 hours
2	Eaker	Ave F/Town Center at I-40 and 29 th St	0600-0800, M-F
3	Turnbull	Ave A at 29 th St	CLOSED
7	Hruskoey	Industrial Blvd at I-40 and 29 th St	0530-1730, M-F
20	Lancer	Bradley Ave at Douglas Blvd	24 hours (closed on Federal Holidays/Energy Days)

Gate	Name	Location	Hours
21	Liberator	Entrance A/SE 44 th St 5 Douglas Blvd	0530-1730, M-F
29	Marauder	59 th St at Douglas	CLOSED
30	Hope	50 th St at 38 th CEIG Area	0530-1730, M-F
31	Piazza Gate	Midwest Blvd at 74 th Street	0500-1730, M-F
33	Truck Gate	Air Depot Blvd at 59 th St	24 hours
34	Gott	Accessed off I-240 and Air Depot Boulevard	24 hours
39	Patriot	McNarney Ave	Pedestrian Traffic Only, M-F 0700-0915 1130-1315 1515-1730
40	Vance	Sooner Rd at Base Housing	0530-1730, M-F

4.4 STORAGE FACILITIES OVERVIEW

Major oil and hazardous substance storage/handling areas on Tinker AFB are listed below. For detailed information on these facilities, refer to Annex A.

- Fuel Yards
 - 290 Fuel Yard
 - 273 Fuel Yard and the Phillips System
 - 507th Fuel Yard
 - AWACS Alert Area
 - 3700 Fuel Yard
 - Road and Grounds Facility
- AGE and Fueling Facilities
 - 552nd Equipment Maintenance Squadron
 - Oklahoma City Air Logistics Center
 - 507th Air Refueling Wing
 - Navy STRATCOM Wing 1 (TACAMO)
- Other Major Oil Storage and Equipment Areas
 - Army-Air Force Exchange Service Stations
 - Barrel Yard Storage (Bldg 809)
 - Defense Reutilization and Marketing Office (Bldg 810 and 811)
 - Defense Information Systems Agency (Bldg 3900)
 - Purging Facility (Bldg 2112)
 - Consolidated Fuels Test Facility (Bldg 3902 and 3907)
 - TAC Area (9000-level Buildings)
 - Industrial Waste Treatment Plant (Bldg 62501, 62509, 62516, 62528)

- Used Cooking Grease/AFVO Storage (Various)
- Major Hazardous Substance Storage Areas
 - EHS/Warehouse Storage
 - 90-Day Hazardous Waste Accumulation Site
 - Cryogenics Facility
 - Compressed Natural Gas Fueling Facilities

4.5 FUEL AND HAZARDOUS SUBSTANCE TRANSFER OPERATIONS

Bulk petroleum products are stored, transferred, and used in significant quantities at various locations throughout the installation. Tinker AFB handles Jet A as the largest quantity bulk product. The fuel is received primarily from the Conoco Inc. owned and operated pipeline and stored in either the 290 or the 273 Fuel Yards. Jet A is transported on Base to various hydrant systems by pipeline. Jet A can also be loaded into R11 refuelers, each with a 6,000-gallon capacity. There are up to 14 ground refueling vehicles located in the 290 Fuel Yard. Ten of the R11 Ground Refuelers are used for fueling operations and four remain empty for use in defueling aircraft. There are up to five C-300 refuelers with a 1,200-gallon capacity used to transport and deliver MOGAS, diesel, and boiler fuel. There are also up to ten R-12 refuelers, with a 200-gallon capacity, used to transport and deliver Jet A. The biggest Jet a customers are AWACS, Navy E-6, and the 507th Reserve unit. Private vendors deliver all other petroleum products to the Base.

Diesel fuel and gasoline storage tanks for military and government operations are filled from deliveries by commercial tanker trucks. Other product storage tanks filled by commercial tanker trucks are the liquid oxygen and liquid nitrogen tanks at the Cryogenics Facility. The Compressed Natural Gas (CNG) fill stations are supplied with natural gas directly via Oklahoma Natural Gas pipelines.

Hazardous Materials are used in daily operations on Tinker AFB to perform and support its mission. These may include solvents, hydraulic fluid, antifreeze, paints, adhesives, pesticides, herbicides, fertilizers, and other substances. These products are delivered to the Base by commercial carriers and then distributed from a central warehouse or support activity. Hazardous Wastes may be generated from the use of these materials. See Annex U, Disposal Plan.

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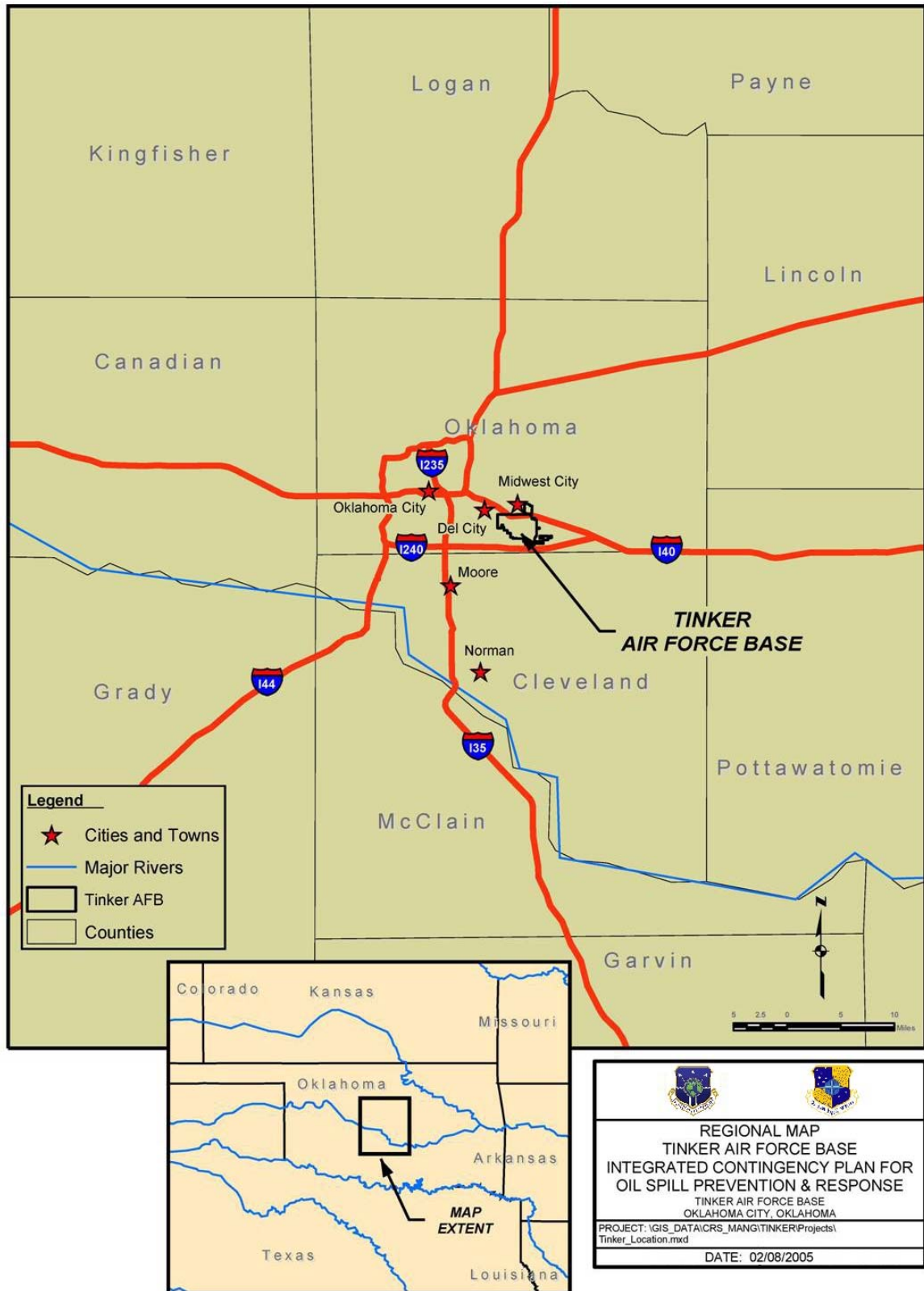


Figure 4.1: Regional Vicinity Map

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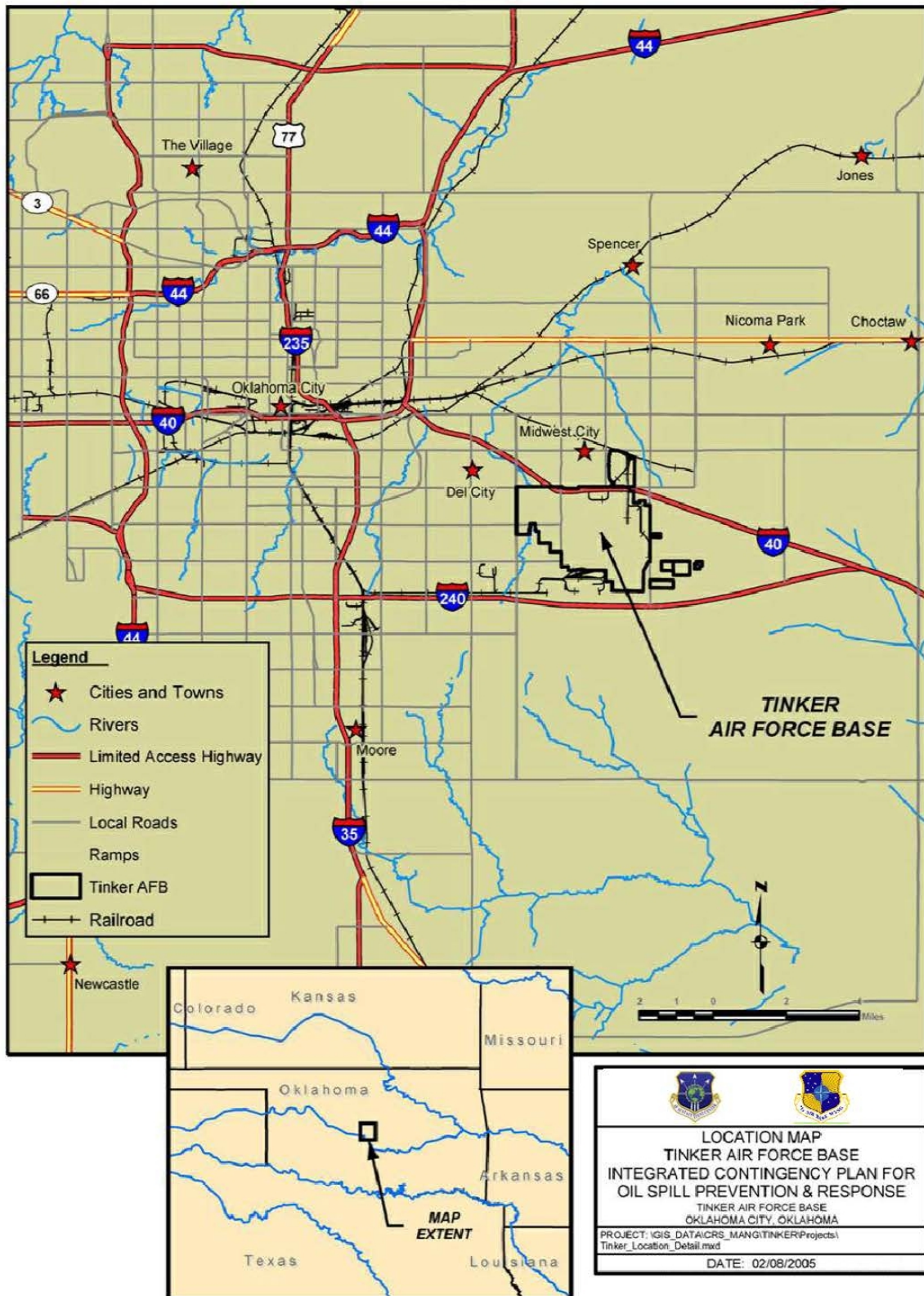


Figure 4.2: Tinker AFB Location Map

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5. FACILITY OWNER AND OPERATOR

Tinker Air Force Base (AFB)
72 ABW/CEI, 7535 5th Street
Tinker AFB, OK 73145-9100
Phone Number: (405) 734-5119
Facsimile: (405) 734-9302

Commander 72 Mission Support Group
72 ABW/MSG
Tinker Air Force Base, OK
73145-9100 Phone Number:
(405) 739-2856

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6. AUTHORITIES

6.1 EMERGENCY OPERATIONS CENTER DIRECTOR

The EOC Director is the Mission Support Group (MSG) Commander or other senior representative designated by the Installation Commander. The EOC Director provides oversight for the IC to support and control emergency response to incidents. The EOC Director can support multiple ICs simultaneously, while providing senior officer level C2 for sustained response and recovery operations. If senior military authority or assessment is required on scene, the EOC Director or designee can move from the EOC to the incident site. Before leaving the EOC, the EOC Director must appoint and brief a replacement. The replacement must meet the same training requirements as the EOC Director. On scene, the IC maintains legal authority and tactical control, including establishing a National Defense Area (NDA) with the advice of the Staff Judge Advocate General (SJA). The EOC Director serves as the senior military representative to maintain military command authority over military resources and required by law.

6.2 QUALIFIED INDIVIDUAL

Federal and State regulations require that a QI and at least one alternate QI be designated in petroleum-handling facility response plans. Further, these regulations require that the QI and alternate must:

- Speak fluent English;
- Be available 24-hours/day with reasonable response time to the facility;
- Be familiar with the implementation of the Facility Response Plan;
- Be trained in their responsibilities in the response plan; and,
- Have written authority to activate and contract with OSROs, to act as liaison with the pre-designated Federal On-Scene Coordinator, and to obligate funds required to carry out response activities.

The MSG Commander is designated as the primary EOC Director and QI. He is vested with full authority to mobilize the resources of the installation and to call upon outside assistance in response to an OHS spill on Base. He has full authority to implement the Tinker AFB *Integrated Contingency Plan*, to activate and contract with OSROs and to obligate funds for such services, and to implement spill removal operations and ensure compliance with all applicable waste disposal requirements.

Mission Support Group Commander
72nd Air Base Wing
Tinker Air Force Base, OK 73145-9100
(405) 739-2856

The first Alternate EOC Director is the Deputy Mission Support Group Commander. This individual has the same responsibilities and authority listed above for the EOC Director.

Deputy Mission Support Group Commander
72nd Air Base Wing
Tinker Air Force Base, OK 73145-9100
(405) 739-2856

The second Alternate EOC Director is the Base Civil Engineer. This individual has the same responsibilities and authority listed above for the EOC Director.

Base Civil Engineer
72 ABW/CE
7535 5th Street
Tinker Air Force Base, OK 73145-9100
(405) 734-3451

6.3 TINKER AFB FIRE AND EMERGENCY SERVICES

Fire and Emergency Services (FES) serves as the first responder to an oil or hazardous substance spill. Spill reports will normally be made to FES first. The Fire Chief/Senior Fire Officer serves as the IC, with full response authority. FES will remain on-scene to provide support as necessary until the emergency situation is stabilized and there is no longer any danger from vapors, fire, or explosion. FES maintains response equipment and provides equipment and personnel for the HAZMAT Response Team.

6.4 EMERGENCY COORDINATOR/EMERGENCY RESPONSE COORDINATOR

The Emergency Coordinator's duties under RCRA and Emergency Response Coordinator's duties under EPCRA for reporting, planning, and responding to hazardous waste and hazardous substance releases are the responsibility of the EOC Director.

7. OIL AND HAZARDOUS SUBSTANCES STORED AT TINKER AFB

7.1 PETROLEUM STORAGE

The following petroleum products are stored at Tinker Air Force Base:

- Jet Fuel (Jet A)
- Diesel Fuel (No. 2 D)
- Gasoline, Unleaded
- Bio-Diesel (BDI)
- No. 2 Heating Oil
- Hydraulic Fluid
- Motor Oil
- Solvent
- Lubricating Oil (LA6)
- Calibration Fluid
- 1010 Grade Oil

The location of each SPCC regulated container is shown in the maps in Appendix W.

7.2 HAZARDOUS SUBSTANCE STORAGE

An inventory of hazardous substances stored at Tinker AFB is maintained by each activity storing and using the hazardous substance. This inventory is updated annually and is used to provide information to Tinker AFB FES and the Local Emergency Planning Committee (LEPC). Site-specific spill emergency response plans have been developed for storage locations that would require responders to assume the highest levels of personal protection in the event of a release. Extremely hazardous substances (EHS) stored at Tinker AFB that exceed the specified TPQ have been reported to the State and local authorities in accordance with 40 CFR Part 355.

The locations of the hazardous substances are shown on Figures W.2 and W.3 in Appendix W.

7.3 SAFETY DATA SHEETS / MATERIAL SAFETY DATA SHEETS

Safety Data Sheet (SDS), formerly Material Safety Data Sheet (MSDS) information for the most common bulk petroleum products stored, transferred or handled at Tinker AFB is provided in Annex J. Each activity that uses any hazardous material also maintains as SDS/MSDS at the activity site.

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8. MAXIMUM OIL STORAGE AND HANDLING CAPACITIES

The maximum oil storage and handling capacity at Tinker AFB is an aggregate of all bulk storage containers. To calculate the maximum storage and handling capacity at Tinker AFB, the total storage capacities of the following bulk storage containers and equipment were calculated: ASTs, USTs, 55-gallon drums, transformers, pipelines, animal fat and vegetable oil containers, and mobile and portable containers. The total petroleum oil storage capacity at Tinker AFB is summarized in Table 8.1. For the purpose of determining the total oil volume used in the substantial harm criteria (40 CFR 112.12, Appendix C) the volume of oil in USTs and pipelines are excluded.

8.1 ABOVEGROUND STORAGE TANKS

There are 229 ASTs in service on Tinker AFB, used for bulk storage, fuel issue, and generator fuel supply. A listing of ASTs is provided in Table A.1 in Annex A. Tank Hazard Identification information is provided in Annex E, Tab 1.

8.2 GENERATORS

Various sized storage tanks are used to power emergency generators throughout Tinker AFB. Most generators are supplied by ASTs but a few are supplied by USTs. A detailed listing of generator tanks is provided in the latter portion of Table A.1 in Annex A; further discussion is also located in Tab A.36 of Annex A. The total generator capacity is 52,785 gallons (1,257 barrels).

8.3 MOBILE AND PORTABLE OIL CONTAINERS

Mobile and portable oil containers consist of refueling trucks and tanks carts (bowsers). There are up to 14 6,000-gallon R11 mobile refueler trucks, 10 200-gallon R12 refuelers, and 5 1,200-gallon C-300 refuelers. The Navy also possesses one refueler with a capacity of 800 gallons. The total storage capacity of the refueler truck fleet is 92,800 gallons (2,210 barrels). There are 21 bowsers in use on Tinker AFB, with capacity of 300, 3350, 400, and 600 gallons. The total capacity of the bowser fleet is 10,650 gallons (254 barrels).

8.4 DRUMS

Fifty-five (55)-gallon drums are used for storage and transfer of oil and waste oil at various locations at Tinker AFB. Locations and numbers of 55-gallon drums were noted

during the field data collection. Drums associated with major petroleum storage and handling sites are discussed within the appropriate tabs to Annex A. Additionally, Initial Accumulation Point (IAP) sites, which make up most of the drum storage at Tinker AFB, are listed in Table A.2 and described in Tab A.37 of Annex A.

8.5 ANIMAL FATS AND VEGETABLE OIL STORAGE

Several food service facilities, each of which generates used cooking oil, operate on the Base. For regulatory purposes, EPA refers to this type of material as “Animal Fats and Vegetable Oil” (AFVO). For detailed discussion of AFVO and locations on Base, see Table A.3 and Tab A.42 of Annex A. The total AFVO capacity is 1,750 gallons (42 barrels).

8.6 OIL-FILLED OPERATIONAL EQUIPMENT

Oil-filled operational equipment is equipment that includes an oil-storage container in which the oil is present solely to support the function of the apparatus or device. Oil-filled operational equipment at Tinker AFB varies in type, size, and function. For a full list of equipment at the base, see Table A.5 in Annex A. Further discussion of certain equipment may also be found in the appropriate tabs of Annex A.

The high-voltage electrical grid for the installation contains several hundred oil-containing transformers containing dielectric (mineral) oil. Transformers containing an oil volume of 55 gallons or greater are included in the installation oil storage capacity. Electrical Transformers are discussed in detail in Tab A.39 of Annex A, and are included at the latter portion of Table A.5 in Annex A. The total oil capacity of these transformers is approximately 69,024 gallons (2,173 barrels).

8.7 UNDERGROUND STORAGE TANKS (USTS)

There are 43 USTs in service on Tinker AFB. A listing of USTs is provided in Table A.4 in Annex A, and tanks hazard information is provided in Annex E, Tab 1.

8.8 PIPELINE VOLUME

There are several transfer lines used to move fuel from various bulk storage areas to the flightline. The on-base transfer lines contain a total static capacity (line volume) of 210,790 gallons (5,019 barrels). This volume does not include small diameter piping, such as transfer lines between shop-fabricated tanks and generators, for example.

Table 8.1: Summary of Oil Storage at Tinker AFB

Storage Type	Total Capacity	
	Gallons	Barrels
Aboveground Storage Tanks	6,682,731	159,113
Generators	52,809	1,257
Mobile and Portable Tanks	103,450	2,463
Drums	39,930	951
Used Cooking Oil Containers	1,750	42
Underground Storage Tanks	291,150	6,932
Oil-Filled Operational Equipment (except transformers)	82,319	1,960
Transformers	69,024	1,643
Pipelines	210,790	5,019
Facility Totals	7,534,000	179,380
Total for Substantial Harm	7,032,060	167,429

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9. SPILL PREVENTION

9.1 INSPECTIONS

Tinker AFB's spill prevention program incorporates inspection procedures that are planned, systematic, and integrated into the various activities at the installation. Annex N (Facility and Equipment Inspections and Records) provides an overview of inspection, maintenance, and testing procedures and guidelines contributing to an effective spill prevention program. Most operational systems and equipment are checked daily to ensure proper state of repair and working order.

9.2 MATERIAL HANDLING PROCEDURES

Spill prevention is enhanced with good safety practices. Standard Operating Procedures (SOPs) and checklists are followed during any fuel transfers conducted on the installation.

9.3 TRAINING

The latest spill prevention equipment and practices are used at Tinker AFB, and the procedures are incorporated into the facility's personnel training program. Training requirements from the various regulatory agencies and USAF are highlighted in Annex M (Training, Drills, Exercises, and Records). A description of the installation's training program is included to show compliance with the requirements, including drills and exercises. Forms for documenting personnel training and installation exercises are also included.

9.4 SECONDARY CONTAINMENT

Spill prevention also encompasses secondary containment and/or diversionary structures that may keep discharged product from reaching navigable waters or drainage to navigable waters. Surface drainage control and planning will assist in preventing a discharge from migrating off-site and in limiting the threat of harm to human health and the environment. Annex A (Facility Information and Site Diagrams) and Annex E (Hazard Evaluation) provide information on containment and surface drainage planning. Annex A also provides a summary of the secondary containment documentation for bulk storage containers.

9.5 PIPING

The piping at the facility is general limited between the storage tanks and the fill stands; there are no long runs of piping containing oil. The piping has been properly designed with pipe supports, as needed, to minimize abrasion and corrosion and to allow for expansion and contraction.

The only buried piping at the facility is associated with underground storage tanks. The piping is installed with a protective wrapping and coating. If a section of buried piping is exposed for any reason, Tinker AFB will inspect the line for its general condition. If there is damage or deterioration, corrective action will be taken.

Terminal connections will be capped or blank-flanged when the piping is not in service or is in standby service for an extended period of time.

10. DISCHARGE DETECTION SYSTEMS

Discharge detection generally relies upon the vigilance of operating personnel present during all fuel or hazardous substance transfer operations. Daily checks of equipment and systems and security checks of the fuel storage and handling sites also help ensure detection of a discharge. Discharges can occur during transfer operations or from equipment failure. A designated number of operators will be in attendance during any transfer operation and should quickly detect any discharge. Equipment failures resulting in a discharge should be detected by attending personnel working in the area or during routine security rounds. Regulated USTs meet the performance standards described in 40 CFR 280, Subpart B and the release detection requirements in 40 CFR 280, Subpart D.

Aboveground Storage Tanks (ASTs): Leaks typically occur in one of three ways: during off-loading of fuel from a tank truck; during transfer of fuel from a storage tank; or tank shell, piping, or fixture connection failure. During the first two activities, manual interactions inherent in these operations require the attendance of personnel. Any leak should be detected and immediately reported. Leaks resulting from tank failure have been determined for the bulk storage facility to be a low probability occurrence. Gradual failures due to corrosion or tank foundation deterioration would again be detected during routine tank gauging, inspections, and/or maintenance activities. Sudden failures would again be rapidly detected and reported by personnel working in the area. An extended delay in detection and reporting is anticipated to occur either during a severe natural phenomenon such as violent weather or during non-duty hours when a facility may not be under constant surveillance. Documentation how bulk storage containers meet overflow protection requirements of 40 CFR 112.8(c)(8) is presented in Table A.1.

Underground Storage Tanks (USTs): Leaks in USTs are more difficult to promptly detect. Severe leaks should be detected by operations personnel during routine inventory checks. Gradual leaks would be detected by the UST tightness testing program, visual monitoring and other forms of leak detection devices such as the following:

- Groundwater Monitoring Wells
- Vapor Monitoring Wells
- Interstitial Monitors

10.1 DISCHARGE DETECTION BY PERSONNEL

Bulk fuels personnel conduct checks of storage sites, transfer equipment, and transfer systems on a routine basis during both duty and non-duty hours. During fuel issue or receipt operations involving tanker trucks, ground refueling vehicles, or storage tanks, fuels operations specialists are always present.

Security Forces personnel who patrol the installation may also discover a discharge. If a leak or discharge is detected by a patrol, it will be reported immediately to FES. The security patrol will isolate the spill area and control traffic and provide further assistance as directed by FES or the IC.

Daily inventory verifications and routine inspections of the Jet A and large bulk storage tanks is a means of discharge detection. Refer to Section 15.0 for an overview of inventory control procedures. Facility checks and inspections are conducted during operations and on a periodic basis as discussed in Annexes K (Safety and Health Plan) and N (Facility/Equipment Inspections and Records).

Outside the fuels operations, Security Forces personnel, and the specific inventory verifications, informal visual inspections are conducted by personnel as they work in and around the bulk storage containers and oil-filled equipment. The majority of the oil stored at the base is located at regularly manned areas and discharges would be readily apparent in the normal course of operations. Personnel discovering discharges have been trained to contact FES.

Similarly, if a discharge is discovered and reported by an outside party or contractor working on the installation, it will immediately be investigated to determine the source and the appropriate response actions will be taken.

10.2 AUTOMATED DISCHARGE DETECTION

Large bulk storage tanks containing Jet A or other fuels are manually gauged daily, and readings are compared to remote gauging devices on the tanks where installed. Once each month (first Tuesday), the automatic tank gauging (ATG) is compared to the liquid level/sight gauge on the tanks. When the liquid level/sight gauge is more than eight inches different than the ATG system, a physical inventory will be performed using a tape and bob to determine which system is malfunctioning. For vaulted ASTs, the vault sensor is checked monthly. USTs are inventoried daily and tested for leaks every month. Tanks using a RONAN leak detection system are to be programmed for a leak test on the first Wednesday of each month. During the tests, tanks cannot be used to dispense products. All results are filed in the tank management continuity folder. Failed tests must be re-tested on the day of the original test. The hydrant systems on Base have audible alarms.

10.3 MONITORING WELLS

All monitoring wells at Tinker AFB have been installed under requirements from the State of Oklahoma Department of Environmental Quality (DEQ) and the Oklahoma Water Resources Board (OWRB) regulations. The gauging of groundwater monitoring wells, measurement, recording of static water levels, and the measurement of free product

thickness are performed periodically for the approximately 1,200 monitoring wells on Base. Static water levels and the use of interface probes are done twice per year.

The monitoring wellhead space is tested periodically to determine the presence of petroleum vapors. Groundwater is sampled periodically and analyzed for BTEX and TPH depending on the individual monitoring well and its location. The Environmental Restoration Branch ensures that the required actions are conducted in accordance with both the State of Oklahoma and EPA regulations.

All observations and data gathered are maintained by the Environmental Restoration Branch, compiled into a summary, and submitted to the DEQ periodically. Fuel contamination is handled through the Oklahoma Corporation Commission (OCC).

Tinker AFB's Environmental Restoration Branch currently collects and analyzes groundwater samples from Base supply wells near the northeast quadrant once per year for a complete suite of analytes—including volatile organics, semi-volatile organics, seven metals, pesticides, and PCBs. Bioenvironmental also monitors the wells periodically. This sampling regime exceeds the requirements of the Safe Drinking Water Act.

Tinker AFB has nearly 200 monitoring wells located in the northeast quadrant of the Base and just off-Base that are sampled on an annual basis. Approximately 175 of these are sampled twice yearly. These wells have been sampled annually since 1992.

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11. DISCOVERY, IMMEDIATE ACTIONS, NOTIFICATIONS, AND RESPONSE COUNTERMEASURES

11.1 DISCOVERY

A discharge during normal operational hours will likely be discovered quickly because of the number of military and civilian workers at and around the activity or in attendance at any transfer operation in progress. If an oil or hazardous substance spill occurs, operational activities at the site will be shut down immediately to stop the flow of product and to isolate the spill. Personnel who discover a discharge will immediately notify **Tinker AFB Fire and Emergency Services at 911** and the supervisor of the activity. Immediate spill response actions and notifications will be conducted as outlined in subsequent paragraphs and/or in **THE RED PLAN**. Personnel will take defensive response actions within their capability and training, with the equipment they have available, which are safe to perform without exposure to the product or vapors.

A spill occurring after normal duty hours may be discovered by watch standers for the activity or security force personnel. In this instance, the individual discovering the spill will immediately notify the **Tinker AFB Fire and Emergency Services at 911**. No attempt should be made to stop the flow, unless the source is obvious and that person is familiar with the activity and available response equipment. Response time by FES will be a matter of minutes, depending upon the location of the incident.

11.2 IMMEDIATE ACTIONS TO A SPILL

Personnel who discover a discharge will notify the activity supervisor and FES as soon as possible. The following emergency actions will be taken to the maximum extent possible and if safe to do so, with the help of other available personnel.

- **Stop the Product Flow:** Stop transfers, secure pumps, close valves, etc.
- **Warn Personnel:** Sound alarm, enforce safety/security measures, And make the site “off limits” to unauthorized personnel; initiate evacuation if necessary.
- **Secure Ignition Sources:** Shut off motors, secure electrical circuits, and extinguish open flames.
- **Initiate Containment:** Secure drain valves or block drains, and deploy absorbent materials, oil boom, or other containment equipment where possible.

- **Make Notifications:** Call **Tinker AFB Fire and Emergency Services at 911**, the activity supervisor, and any other Installation offices as necessary or as directed.

11.3 NOTIFICATIONS

When a spill or a threat of a spill occurs, Tinker AFB FES will be notified immediately. If any other Base personnel receive notification of a spill, they must ensure that FES has been notified.

Tinker AFB Fire and Emergency Services

911

When reporting a spill or incident, the person calling should provide as much information about the incident as possible, including, but not limited to the following:

- | | |
|---------------------|---------------------------|
| ▪ Name | ▪ Time of incident |
| ▪ Location of spill | ▪ Any injuries involved |
| ▪ Substance spilled | ▪ Extent of area impacted |
| ▪ Amount spilled | ▪ Potential hazards |
| ▪ Rate of discharge | ▪ Actions taken |

Incident Commander

The Fire Chief/Senior Fire Officer responding to a spill will immediately assume the duties as Incident Commander (IC) and will relinquish these duties only when relieved by the designated alternate as listed in this plan.

11.3.1 Fire and Emergency Services

When a spill or the threat of a spill occurs and there may be imminent danger to life or property, or there is fire or threat of a fire, Tinker AFB FES will receive notification and respond to the site of the incident. FES in turn will notify other designated individuals and offices. These include the following:

- Contract Base Civil Engineering Program Manager
- Environmental Branch
- Bioenvironmental Engineering
- Control CE Operations Branch
- Aircraft Maintenance Operations Center
- Base Medical Group (if injuries reported)
- Contract Ambulance Services (if injuries reported)

- Security Forces (for site control support)
- HAZMAT Response Team (if needed)
- Chief of Operations (if Spill Response Team needed)
- Mutual Aid (if required)

FES will record notification of the incident and provide a copy to the Environmental Management Branch with an update.

11.3.2 Federal, State, Local, and USAF Spill/Discharge Notification Requirements

All mandatory notifications are listed in **THE RED PLAN** and in **Annex B** (Notification Checklist and Reporting Forms). An “Initial Spill Response Notification Report” sheet is provided for compiling information that will be requested by the regulatory or response agency being called. There are potential civil and criminal penalties for not notifying the appropriate agencies of the Federal and State governments immediately when a discharge occurs. Mandatory notifications to Federal, State, and local authorities will generally be made by Environmental Management.

11.3.2.1 Oil

The EPA has established oil spill reporting requirements. Any discharge of oil into navigable waters that causes a film or sheen upon or discoloration of the surface of the water or adjoining shorelines as a discharge of a harmful quantity must be reported to the National Response Center (NRC, 1-800-424-8802) as soon as there is knowledge of a discharge (or within 30 minutes of its discovery).

Navigable water is defined as:

- All navigable waters of the United States, as defined in judicial decisions prior to the passage of the 1972 Amendments of the Federal Water Pollution Control Act (FWPCA) (Pub. L. 92-500), also known as the CWA, and tributaries of such waters as:
 - Interstate waters;
 - Intrastate lakes, rivers, and streams utilized by interstate travelers for recreational or other purposes; and
 - Intrastate lakes, rivers, and streams from which fish or shellfish are taken and sold in interstate commerce.

All waters with a “significant nexus” to “navigable waters” are covered under the CWA, and the phrase “significant nexus” remains open to interpretation.

For reporting purposes, navigable waters at Tinker AFB include Kuhlman, Crutch, East Soldiers, and West Soldiers Creeks, as they could be considered a significant nexus to the Canadian River. Spills that create a sheen on the creeks listed above must be reported to the NRC.

The State of Oklahoma has adopted spill reporting requirements that match those of EPA. Reports must be made to the ODEQ Hotline at 1-800-522-0206. If the spill is going to impact the immediate off-Base area, the following should be called depending on the location of the spill: Midwest City Communications 911 Dispatch at (405) 732-2266; Del City Dispatch at (405) 677-3344; or Oklahoma City Public Service Dispatch at (405) 297-3430.

11.3.2.2 Hazardous Substances

Discharges of a substance other than oil must be reported when the quantity discharged is greater than the reportable quantity (RQ). RQs may be found in 40 CFR Part 302.4 Table 302.4. In the case of fuels, calculations must be made to determine whether components in the fuel exceed the RQ; however, it is most likely that the reporting requirements for “oil” will be triggered before an RQ is exceeded for a fuel constituent.

11.4 SPECIFIC SPILL RESPONSE COUNTERMEASURES

At a minimum, the following spill response actions shall be taken at Tinker AFB. A more detailed outline of specific responsibilities is provided in Annex D (Spill Response Organization and Duties).

11.4.1 Responsible Unit/Activity

For the purposes of this plan, the spilling unit or activity at Tinker AFB is the organization responsible for the operation, area, or equipment that caused the spill. Because many of the units and activities continuously provide maintenance and support of aircraft, vehicles, and other equipment, small discharges from hydraulic lines, fuel cells, etc. are considered routine and are immediately cleaned up by personnel performing the work. These operations are continuously monitored to ensure such discharges are minimized, do not endanger personnel or the environment, and do not generate excessive waste. However, if work is in progress and a spill of operational significance occurs, the spilling activity will report the spill to the nearest supervisor immediately available. The spill will also be reported to Tinker AFB FES. The spilling activity will take action to control and contain the spilled material and conduct cleanup of the spill if it can be done safely and adequate equipment is available to do so. If the spill is beyond the control and cleanup capability of the activity, the area should be isolated with a responsible person standing by at a safe location to meet FES responding to the

spill site. The activity should be prepared to provide support for the emergency responders as directed.

11.4.2 Tinker AFB Fire and Emergency Services

FES is the first responder to spills and incidents where materials present a fire hazard, may reach a waterway, or present a situation beyond the capability of the spilling activity to control and clean up. The Fire Chief/Senior Fire Officer will notify individuals and offices listed in Section 11.3.1 as necessary based on the situation posed by the spill. FES will provide emergency assistance to injured or exposed personnel, take actions to minimize the fire or explosion hazard, determine the size and extent of the spill, and take action to control and contain the spill ensuring that it does not enter waterways, sewer lines, or storm water drainage. The FES has authority to request personnel and equipment support to spill incidents from other activities on the Base and has a mutual aid agreement with the following neighboring cities: Midwest City, Del City, Oklahoma City, and Choctaw.

11.4.3 Incident Commander(s)

The Senior Fire Officer at the spill site will serve as the IC until the emergency subsides or an alternate IC is designated. The 72nd MSG Commander is the EOC Director; the Deputy MSG Commander and Deputy Base Civil Engineer are the alternates. In addition to coordinating spill response activities, EOC Director for the incident also becomes the Qualified Individual (QI), responsible under Federal regulations to execute the *Integrated Contingency Plan* and commit resources and funds to address the emergency situation. The EOC Director or designee will also make or direct mandatory notifications to off-Base regulators and response agencies.

11.4.4 Deputy Base Civil Engineer (BCE)

The Deputy BCE serves as an Alternate EOC Director responsible for directing and coordinating all spill response actions. When it is within his capability, he will provide personnel and equipment (through 72 ABW/CECO) for spill containment, control, and cleanup due to spills of oils and hazardous substances that exceed the capability of the Base agency responsible for the spill. He will also approve supply and equipment requests relative to this plan. The Contract BCE will also ensure that the Contract Civil Engineering representatives of the SRT are properly trained and equipped.

11.4.5 Environmental Branch

This office provides an Environmental Engineer/Planner to furnish technical expertise relative to pollution control techniques. This office has the responsibility of reporting spills to Federal, State, and local regulatory agencies, as required.

11.4.6 Defense Logistics Agency (DLA)

The DLA is responsible for expediting requests for supplies and equipment to support this plan. The agency will develop procedures to ensure the safe movement of chemicals and other potentially hazardous materials and maintains procedures for hazardous material spill control. DLA will re-drum/repack any hazardous materials/waste located in DLA facilities or under DLA control where the original container has deteriorated below standards and when material is received in severely damaged or leaking containers.

11.4.7 Security Forces Squadron

A Security Forces patrol(s) will respond to the incident along with FES. The patrol(s) will isolate the spill area and control traffic in the area as directed by the IC.

11.4.8 Medical Group

The Base medical group will provide medical service as necessary for minor injuries/exposures. The medical group can also identify and quantify hazards of the incident and determine personnel exposures.

11.4.9 Personnel Division

The police department is provided with information from the Tinker AFB Command Post and will take appropriate action to record casualty data, notify next-of-kin and render assistance to families of any casualties.

11.4.10 Office of Public Affairs

A Public Affairs Officer (PAO) will respond when requested by the IC. The PAO will be provided with information about the spill and response actions so that accurate information can be disseminated to Base personnel and the media. Press releases will be coordinated with the Installation Commander or designated representative.

11.4.11 Off-Base Organizations

Tinker AFB presently has mutual support agreements with several surrounding communities to assist or receive aid from other agencies in the event of a spill. Other significant off-Base spill response resources can be incorporated into the SRT, as needed, and are discussed in the paragraphs below:

- Air Force Civil Engineer Center: This agency is assigned the responsibility to provide technical guidance and assistance to major commands and bases in contingency operations and environmental planning. Technical expertise can be provided to the IC on hazardous material identification, control, cleanup, and disposal.
- Regional Response Team: Planning and response resources available under the National Oil and Hazardous Substances Contingency Plan can be requested through the Department of Defense representative to the Regional Response Team (RRT), the EPA co-chairman of the RRT, or the Region 6 Regional Response Center.
- State of Oklahoma Response Team: Serves as the lead by the Oklahoma Department of Pollution Control and consists of representatives of various state agencies.
- Midwest City Police and Fire Departments: The Midwest City Police and Fire Departments may be contacted for assistance.
- Oil Spill Removal Organizations (OSRO): Private contractors are included in the response organization primarily to conduct cleanup and restoration work when Base resources are insufficient to conduct these activities. These groups are commercial spill cleanup contractor(s). Their services, including response personnel and equipment, must be arranged through the EOC Director and a Contracting Officer for the Base. Their services may be arranged when the spill incident and response requirements exceed the capabilities of on-Base response resources. The services of a local or regional OSRO may be sought or the US Navy Supervisor of Salvage (SUPSALV) may be contacted for assistance. See Annex G (Spill Response Contract Support).

11.5 RESPONSE COUNTERMEASURES AT POTENTIAL SPILL SITES

The major bulk oil and hazardous substance storage/handling areas listed in Section 4.4 are also the areas where there is the greatest potential for a spill. A person discovering a spill at these or any other sites will take immediate response actions as outlined in Section 11.2 or in **THE RED PLAN**. At a minimum, any person discovering a spill on Tinker AFB will notify FES immediately. FES will respond to the spill site and take actions to mitigate the incident and the IC will coordinate the overall spill response.

11.5.1 Spill Countermeasures at the 290 Fuel Yard

A discharge from one of the aboveground storage tanks at the storage area may result from failure of a tank wall/shell, tank bottom, piping, or a control valve. Accidental overfilling of a tank would also cause a discharge. The secondary containment around most of the aboveground tanks was constructed to control the loss of the entire contents of each tank plus sufficient freeboard for precipitation. Tanks 330, 331, 337, and 341

currently do not have adequate secondary containment; see Section 18. Containment drainage valves are kept closed and locked when not in use. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. Should a spill be detected during transfer operations to or from a storage tank, emergency shutdown switches are located at the manifold and pump stations to secure the pumps. Control valves must then be closed manually to isolate the transfer system. Equipment to remove the spilled Jet A into temporary storage will need to be identified. Only trained and certified response personnel will recover large quantities of spilled Jet A and the operation will be monitored by FES for fire or explosion hazards. Spill response procedures would be instituted as previously discussed. Provisions to remove large amounts of contaminated soils and debris will need to be addressed.

The 290 Fuel Yard is equipped with two Jet A fillstands (#344 and 345). This facility houses fifteen R11 refuelers with a 6,000-gallon capacity. Four of the refuelers are dedicated for defueling Jet A. This facility also accommodates four C300 1,200-gallon MOGAS and diesel tanker trucks for ground products. Also, up to ten R12 refuelers with a 200-gallon capacity are housed here. These trucks service various sites on Base from 0830 to 1525 hours each weekday.

Emergency shutdown devices at the fillstands will stop the transfer if a problem arises. The fillstands are also equipped with a Scully[®] Overfill Protection system. Control valves on the transfer system from the storage tanks must be closed manually. The fillstands are not protected by any secondary containment, so a spill would flow to the south end and enter the storm drain system. The system flows to the drainage ditch that travels along the southern perimeter of the facility. There are limited quantities of absorbent materials in spill kits at the Fill Stations that can be used to control small spills. There are five storm drain drop inlets in the fuel truck parking area that should be blocked to prevent spilled fuel from entering it. If fuel enters the storm drain, fuels personnel will close the diversion drain valve at the south end of the parking area. This will divert the fuel into the holding tank located at the south end of the parking area. Other response actions will be followed as previously discussed, such as calling FES and getting spill response support from other personnel, groups, and equipment on Base.

Fuel migrating from the 290 Fuel Yard area may enter drainage leading to an oil/water separator. Fuels operators will turn the valve located at the south end of the refueling parking area, which will divert any fuel that entered the storm drainage lines north of the valve into Tank 271. A large spill will overwhelm the separator and Jet A would flow to a drainage ditch outfall south of the storage area. Emergency actions will be taken by FES and other Base support personnel, as necessary, to block the flow, as long as it can be done safely without posing a fire or explosion hazard. If the response actions exceed the capability of Base personnel and response teams, the EOC Director will engage an OSRO to complete spill containment and recovery.

11.5.2 Spill Countermeasures at the Phillips System

A discharge from one of the aboveground storage tanks at the Phillips System may result from failure of a tank wall/shell, tank bottom, piping, or a control valve. Accidental overfilling of a tank would also cause a discharge. The secondary containment around each of the aboveground tanks should be constructed to control the loss of the entire contents of each tank plus sufficient freeboard for precipitation. Tanks 483 and 484 do not currently have adequate secondary containment. Containment drainage valves are kept closed and locked when not in use. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. Should a spill be detected during transfer operations to or from a storage tank, emergency shutdown switches are located at the manifold and pump stations to secure the pumps. Control valves must then be closed manually to isolate the transfer system. Equipment to remove the spilled Jet A into temporary storage will need to be identified. Only trained and certified response personnel will recover large quantities of spilled Jet A and the operation will be monitored by FES for fire or explosion hazards. Spill response procedures would be instituted as previously discussed. Provisions to remove large amounts of contaminated soils and debris will need to be addressed.

Fuel migrating from the Phillips System area may enter west to the sanitary sewer outside the diked area or to the east to the intermittent stream between Tanks 273/274 and Tanks 484/483 flowing south toward Taxiway K. A large spill will overwhelm the oil/water separator, and Jet A will flow to a drain at the southwest corner of the large tank berm. Surface runoff will also flow toward this drain that continues on to the southern perimeter of the Base and eventually into Crutch Creek. This drain can be easily accessed, and any available material and equipment should be used to block the drain until the product can be recovered. FES and other Base support personnel will take emergency actions, as necessary, to block the flow, as long as it can be done safely without posing a fire or explosion hazard. If the response actions exceed the capability of Base personnel and response teams, the IC will engage an OSRO to complete spill containment and recovery.

11.5.3 Spill Countermeasures at the 273 Fuel Yard

A discharge from one of the aboveground storage tanks at the 273 Fuel Yard may result from failure of a tank wall/shell, tank bottom, piping, or a control valve. Accidental overfilling of a tank would also cause a discharge. The secondary containment around each of the aboveground tanks should be constructed to control the loss of the entire contents of each tank plus sufficient freeboard for precipitation. Tank 273 does not currently have adequate secondary containment. Containment drainage valves are kept closed and locked when not in use. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. Should a spill be detected during transfer operations to or from a storage tank, emergency shutdown switches are located at the manifold and pump

stations to secure the pumps. Control valves must then be closed manually to isolate the transfer system. Equipment to remove the spilled Jet A into temporary storage will need to be identified. Only trained and certified response personnel will recover large quantities of spilled Jet A, and the operation will be monitored by FES for fire or explosion hazards. Spill response procedures would be instituted as previously discussed. Provisions to remove large amounts of contaminated soils and debris will need to be addressed.

Fuel migrating from the 273 Fuel Yard area may enter east to the sanitary sewer outside the diked area or to the west to the intermittent stream between Tanks 273/274 and Tanks 484/483 flowing south towards Taxiway K. A large spill will overwhelm the oil/water separator, and Jet A will flow to a drainage ditch outfall south of the storage area. Surface runoff will also flow toward the drainage ditch that continues on to the southern perimeter of the Base and eventually into Crutch Creek. The drainage ditch can be easily accessed, and any available material and equipment should be used to block the ditch until the product can be recovered. FES and other Base support personnel will take emergency actions, as necessary, to block the flow, as long as it can be done safely without posing a fire or explosion hazard. If the response actions exceed the capability of Base personnel and response teams, the IC will engage an OSRO to complete spill containment and recovery.

11.5.4 Spill Countermeasures at the 507th Fuel Yard

A discharge from one of the aboveground storage tanks at the 507th Fuel Yard may result from failure of a tank wall/shell, tank bottom, piping, or a control valve. Accidental overfilling of a tank would also cause a discharge. The secondary containment around each of the aboveground tanks consists of concrete dikes and was constructed to control the loss of the entire contents of each tank plus sufficient freeboard for precipitation. Containment drainage valves for the release of accumulated storm water located in the containment basin are kept closed and locked when not in use. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. A concrete berm around the perimeter of the pump shed provides containment in the event of spills and leaks. There are no storm drains located onsite. Should a spill be detected during transfer operations to or from a storage tank, emergency shutdown switches are located at the manifold and pump stations to secure the pumps. Control valves must then be closed manually to isolate the transfer system. Equipment to remove the spilled Jet A into temporary storage will need to be identified. Only trained and certified response personnel will recover large quantities of spilled Jet A and the operation will be monitored by FES for fire or explosion hazards. Spill response procedures would be instituted as previously discussed. Provisions to remove large amounts of contaminated soils and debris will need to be addressed.

A discharge from UST 21093 may result from failure of a tank wall/shell, tank bottom, piping, or control valve. Accidental overfilling may also cause a discharge at the fill

connections or vents. Backfill around the tanks could be expected to absorb and hold much of any spilled product near the tanks. Jet A would leach and migrate to the north toward the airfield. Recovery wells or collection trenches, down gradient, would need to be installed to recover the spilled product. The leaking tank would need to have product removed as soon as possible to limit the discharge. Removal could be accomplished by pipeline transfer or discharging into tanker trucks from a hydrant.

A discharge from a connecting pipeline, pump, valve pit, or hydrant may be caused by a rupture or structural failure of the equipment. Only the valve pit constitutes any secondary containment in the system, which could contain a small spill at that location. Any transfer operation in progress will immediately be shut down and all valves closed to relieve pressure to the system. Storm drain drop inlets near the hydrants should be blocked by absorbents or any other material readily available to prevent possible discharge of fuel to drainage into Crutch Creek. Limited spill containment materials are kept on the ground refueling vehicles.

As with spills in other locations, operating personnel in the area will take actions to control the discharge, and FES will be called. Emergency actions will be taken by FES and other Base support personnel, as necessary, to block the flow of product and recover it in a safe manner. Response assistance will be arranged from an OSRO if the spill exceeds the response capability of Base personnel and if the IC determines it is required.

11.5.5 AWACS Alert Area Spill Countermeasures

A discharge from one of the aboveground storage tanks at the AWACS Alert Area may result from failure of a tank wall/shell, tank bottom, piping, or a control valve. Accidental overfilling of a tank would also cause a discharge. The secondary containment around each of the aboveground tanks consists of concrete dikes and was constructed to control the loss of the entire contents of each tank plus sufficient freeboard for precipitation. Containment drainage valves are located on the south end of each containment basin and are used for the release of accumulated storm water. They are kept closed and locked when not in use. Post valves control the drainage from the containment structures. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. A concrete berm around the perimeter of the pump shed provides containment in the event of spills and leaks. The pump shed is drained to Tank 10996 north of the shed. A diesel generator and a 200-gallon diesel AST are located west of Building 995. Most of the facility is gravel with paved driveways. Storm water runoff from the facility flows to storm drains on the southeast side of the facility and then northeast through the plumbed storm drains. Should a spill be detected during transfer operations to or from a storage tank, emergency shutdown switches are located at the manifold and pump stations to secure the pumps. Control valves must then be closed manually to isolate the transfer system. Equipment to remove the spilled Jet A into temporary storage will need to be identified. Only trained and certified response personnel will recover large quantities of spilled Jet A, and the operation will be

monitored by FES for fire or explosion hazards. Spill response procedures would be instituted as previously discussed. Provisions to remove large amounts of contaminated soils and debris will need to be addressed.

A discharge from a connecting pipeline, pump, valve pit, or hydrant may be caused by a rupture or structural failure of the equipment. Only the valve pit constitutes any secondary containment in the system, which could contain a small spill at that location. Any transfer operation in progress will immediately be shut down and all valves closed to relieve pressure to the system. Storm drain drop inlets near the hydrants should be blocked by absorbents or any other material readily available to prevent possible discharge of fuel to drainage into Crutch Creek. Limited spill containment materials are kept on the ground refueling vehicles.

As with spills in other locations, operating personnel in the area will take actions to control the discharge, and FES will be called. Emergency actions will be taken by FES and other Base support personnel, as necessary, to block the flow of product and recover it in a safe manner. Response assistance will be arranged from an OSRO if the spill exceeds the response capability of Base personnel and if the IC determines it is required.

11.5.6 Spill Countermeasures at the 3700 Fuel Yard

A discharge from one of the aboveground storage tanks at the storage area may result from failure of a tank wall/shell, tank bottom, piping, or a control valve. Accidental overfilling of a tank would also cause a discharge. The secondary containment around each of the aboveground tanks should be constructed to control the loss of the entire contents of each tank plus sufficient freeboard for precipitation. Tank 3718 does not currently have adequate containment; see Section 18. Containment drainage valves are kept closed and locked when not in use. Post valves control the drainage from the containment structures. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. If a spill is detected during transfer operations to or from a storage tank, emergency shutdown switches are located at the manifold and pump stations to secure the pumps. Control valves must then be closed manually to isolate the transfer system. Spills or leaks from the pump shed are collected by an UST (slop tank) located north of Building 3715.

Equipment to remove the spilled Jet A into temporary storage will need to be identified. Only trained and certified response personnel will recover large quantities of spilled Jet A, and the operation will be monitored by FES for fire or explosion hazards. Spill response procedures would be instituted as previously discussed. Provisions to remove contaminated soils and debris will need to be addressed.

The truck fueling, and off-loading area is located north of Tank 3718. The area is paved with concrete, bermed, and sloped toward a drain connected to an oil/water separator.

Grade 1010 oil is stored in an AST south of the Fillstand. This area is bermed. The remainder of the facility is unpaved and covered with gravel.

Fuel migrating north from the 3700 Fuel Yard area may enter drainage leading to an oil/water separator. A large spill will overwhelm the separator and Jet A would flow to the sanitary sewers near the truck off-loading area. Emergency actions will be taken by FES and other Base support personnel, as necessary, to block the flow, as long as it can be done safely without posing a fire or explosion hazard. If the response actions exceed the capability of Base personnel and response teams, the IC will engage an OSRO to complete spill containment and recovery.

11.5.7 Roads and Grounds Spill Countermeasures

Road and grounds have single-walled tanks that are installed below grade in a vault. Although they are installed underground, these tanks are classified as ASTs for the purpose of this plan. A discharge from one of the vaulted tanks may result from failure of a tank wall/shell, tank bottom, piping, or a control valve. Accidental overfilling may also cause a discharge at the fill connections or vents. The diesel fuel or gasoline would be held close to the tank by the fill material. Eventual migration of the fuel would cause leaching into drainage ditches at the southwest portion of the Base. The discharge should be discovered by inventory control procedures. Recovery wells or collection trenches, down gradient, would need to be installed to recover the spilled product. The leaking tank would need to have product removed as soon as possible to limit the discharge. Removal could be accomplished by discharging into tanker trucks. The leaking tank and contaminated soil would have to be removed. This operation would probably be accomplished by commercial contract as determined by the EOC Director. A discharge could also occur as a result of improper fueling of vehicles. This type spill could be expected to remain small because the dispensing nozzle would stop the transfer when released, or the transfer pump can be shut down by an emergency switch.

The entire parking area is uncovered and uncontained on a concrete pad. The parking area has floodlights that adequately illuminate the entire area. The supporting service station is unmanned and operates in the automated mode using the Automated Service Station System. There is a daily inventory and inspection of the entire facility.

Emergency actions will be taken by FES and other Base support personnel, as necessary, to block the flow, as long as it can be done safely without posing a fire or explosion hazard. If the response actions exceed the capability of Base personnel and response teams, the IC will engage an OSRO to accomplish full spill containment and recovery.

Equipment to remove the spilled fuel into temporary storage will need to be identified. Only trained and certified response personnel will recover large quantities of spilled MOGAS and diesel and the operation will be monitored by FES for fire or explosion hazards. Spill response procedures would be instituted as previously discussed. Provisions to remove contaminated soils and debris will need to be addressed.

11.5.8 Spills in Other Areas

Discharges could occur at other locations on the Base where petroleum products and hazardous materials are transferred and stored. The operator would discover a spill at one of these sites or activities quickly. When transferring Jet A between the fuel yards and other areas, a reduction in line pressure could indicate a large leak or rupture. The transfer operation would be shut down, and the amount of product issued and received would be reconciled. Both automatic gauge readings and manual gauging of the tanks will be conducted. If product appears to have been lost, appropriate investigative and response action will then be taken. The pipeline will be surveyed, pressure tested if necessary, and excavated and repaired as required. Contaminated soil will be removed. During the refueling or de-fueling of aircraft, a discharge could occur during hookup/disconnect, from overfilling, or as a result of equipment failure. The operator or maintenance personnel would ensure the transfer is stopped and would deploy absorbent materials to control the spill. FES will be notified of the spill and respond as required.

11.5.9 Discharges within Diked Areas

Diked areas in which bulk storage containers are located are frequently visually observed during the normal course of operations. Should oil be discovered in a diked area, it will be promptly removed. Additionally, the source of the oil will be identified and corrective action will be taken if necessary.

12. RESPONSE PLANNING AND DISCHARGE SCENARIOS

This section presents the discharge scenarios and classifications for both Tinker AFB and EPA. Generally, Tinker AFB classifications are predicated on immediately determined information related to the size and quantity of the immediate spill. EPA classifications are predicated on the volume of oil that reaches a navigable water. The response planning to these spills is presented in this section.

12.1 TINKER AFB SPILL CLASSIFICATIONS

Oil and hazardous substance spill incidents at Tinker AFB are classified under three categories and are based on the magnitude of the spill, potential impact, and the type of substance spilled.

Class I Spill (Minor Spills): A Class I fuel spill covers an area less than two feet in any plane dimension. This is a “nuisance” type spill incidental to normal equipment/system maintenance or operations and within the cleanup capability of the responsible unit/activity. The spill will typically be less than one gallon and will not move from the immediate area where the spill occurs. For a hazardous material, this type spill would be considered minor and less than the reportable quantity. The responsible party will determine if the spill creates a fire hazard to aircraft or equipment and will post a fireguard. FES will be notified of the spill and advised that it can be cleaned up with no adverse effects or impact. FES may respond to evaluate the spill and cleanup and to advise the IC and support personnel as necessary.

Class II Spill (Medium Spills) [EPA small discharge]: A Class II fuel spill covers an area of not more than 10 feet in any plane dimension, not more than 50 square feet in area, and is not of a continuing nature. This is a spill of up to 25 gallons, but will not migrate beyond the boundaries of the Base. If hazardous material is spilled, it may pose a hazard to personnel in the area and may be above the reportable quantity. The responsible party must post area fireguards. The spill may be within the responsible unit/activity’s safe cleanup and remediation capability, but FES must be notified. FES will respond to the spill to ensure or assist in a safe and complete cleanup action. The EOC will be notified of the spill, and Base response resources may be called upon as needed or as directed by the EOC. Outside response assistance may be necessary depending on the product involved.

Class III Spill (Major Spills) [EPA small, medium or worst case discharge]: A Class III fuel spill involves an area greater than ten feet in any plane direction, more than 50 square feet in area, or is of a continuing nature. Whether an oil or hazardous material is spilled, it poses a threat to personnel or the environment and may affect areas beyond the boundaries of the Base. It may be beyond the cleanup capability of Base resources. The

responsible party must post fireguards and FES will be notified of the spill immediately. FES will respond with at least one major fire vehicle and take action to control the hazard condition. FES should assist with emergency containment and diking until potential hazards no longer exist. Base contract equipment will then be used to clean up and remove the spill material. The IC will coordinate the response and determine if additional resources from outside the Base are needed.

12.1.1 EPA Response Scenario Requirements

The EPA Final Rule, effective 30 August 1994 revising 40 CFR Part 112, requires a scenario discussion of response planning levels for onshore facilities. The discharge planning levels are listed below and planning volumes are presented in detail in Annex I.

- **Small Discharge:** a discharge of 2,100 gallons or less.
- **Medium Discharge:** a discharge greater than 2,100 gallons and less than or equal to 36,000 gallons or 10% of the design capacity of the largest aboveground tank at the facility (10% x 2,330,748 gallons = 233,075 gallons at Tinker AFB), whichever is less, provided that this amount is less than the worst case discharge. Therefore, a discharge of up to 36,000 gallons will be used for this discharge planning level.
- **Worst Case Discharge:** a discharge of the design capacity of the largest aboveground oil storage tank within a common, adequate secondary containment area, or the largest aboveground oil storage tank within a single, adequate secondary containment area, whichever is greater. For Tinker AFB, the largest aboveground storage tank is Tank 273, having a capacity of 2,330,748 gallons.

12.1.2 Worst Case Planning Factors

Federal worst-case planning factors are addressed in the EPA regulations. These planning factors and required calculations are provided in Annex I (Federal Worst Case Planning Volumes). For multiple tank facilities, each with separate secondary containment and that are adjacent to navigable waters, the worst-case discharge is calculated by determining 100% of the capacity of the largest single aboveground storage tank. The EPA worst-case discharge for Tinker AFB is calculated to be 2,330,748 gallons.

12.1.3 Discharge Determinations

EPA regulations define the worst-case discharge for non-transportation-related onshore facilities as the largest foreseeable discharge in adverse weather. Adverse weather means weather conditions that make it difficult for response equipment and personnel to clean up and remove spilled oil, and that will be considered when identifying response systems

and equipment in a response plan for the applicable operating environment. Factors include significant wave height, ice conditions, temperatures, visibility, and currents. In determining discharge scenarios and response planning levels, these conditions must be taken into consideration.

12.2 EPA RESPONSE PLANNING SCENARIOS

Three possible spill scenarios at Tinker AFB meeting EPA criteria are presented in this section. These scenarios do not indicate an order of probability, nor are they inclusive of all possible types of incidents that may lead to a spill. They simply serve to comply with regulatory requirements and provide guidance by illustrating possible incidents, and stressing the procedures and methodology for effective planning, and execution of the response plan. The scenarios selected and discussed in this section are as follows:

Scenario	Type	Quantity	Location
Case #1	EPA Small Discharge	Less than or equal to 2,100 gallons (1,800 gallons)	R11 Ground Refueler in 290 Fuel Yard
Case #2	EPA Medium Discharge	Greater than 2,100 gallons and less than or equal to 36,000 gallons or 10% of the capacity of the largest AST, whichever is less (22,000 gallons)	AWACS Alert Area
Case #3	EPA Worst Case Discharge	Equal to the capacity of the largest AST within a single secondary containment area (2,330,748 gallons)	Tank 273 273 Fuel Yard

* These three scenarios were selected to capture a representative sampling of various types of operations at Tinker AFB. Case #1 was chosen to demonstrate truck refueler operations in the 290 Fuel Yard area. Case #2 was selected to incorporate piping operations and contractors working in and around transfer facilities. Case #3 was specifically directed at Tank 273, the largest AST capable of causing the most damage to fish and wildlife and sensitive environments.

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12.2.1 Case #1 - EPA Small Discharge Scenario

A representative EPA small discharge scenario for Tinker AFB involves the release of approximately 1,800 gallons of Jet A from four R11 Ground Refueling Vehicles damaged in an accident in the parking lot. See Figure 12.1 for an illustration of the incident from the immediate area.

The discharge occurs late on a Friday afternoon. An operator is returning to the parking lot from a refueling operation. As he enters the parking area, the steering on his truck malfunctions and he has a temporary loss of control, colliding with several other refueling vehicles. The tank on his vehicle and three other parked vehicles are damaged and begin leaking Jet A from the bottom portion of the 6,000-gallon capacity tanks. Two other operators in the area, witnessing the accident, run to see if the driver is injured. Seeing the leaking fuel, one operator immediately goes to the Fuels Office to notify FES. The other operator gets the driver out of the refueling vehicle and moved to a safe distance, then he closes the diversion valve located at the south end of the parking lot, and the leaking fuel flows to the center of the parking area and to a storm drain at the east side of the lot. A valve can be opened to divert fuel to Tank 271.

It is determined that the damage to the tanks on the vehicles cannot be easily repaired to stop the leaks. Personnel are directed to block the storm drain if possible. When FES arrives, the operators brief the IC on the incident and actions taken to control the spill.

The IC directs firefighters to recheck ways to block the storm drain and outfall. He notifies the EOC and the Environmental Management Office and calls for the Spill Response Team. Security Forces are requested to isolate the area and control traffic on "A" Street and 1st Street.

FES continues to attempt to contain the spill at the immediate sites while monitoring the fire and explosion hazard. Evaluations are made on how the damaged vehicular tanks might be plugged to at least slow the rate of leaking Jet A. When the designated Base support personnel, defined as "Emergency Responders" by AFI 10-2501, arrive at the site, they are briefed on the actions taken and current situation. It is decided that contained and standing fuel will be recovered, when it is safe to do so, utilizing pumps and portable tanks from Base spill response resources. The IC determines that because of the extent of the spill and potential impact off-Base, a commercial cleanup contractor will be engaged to assist and complete the cleanup actions.

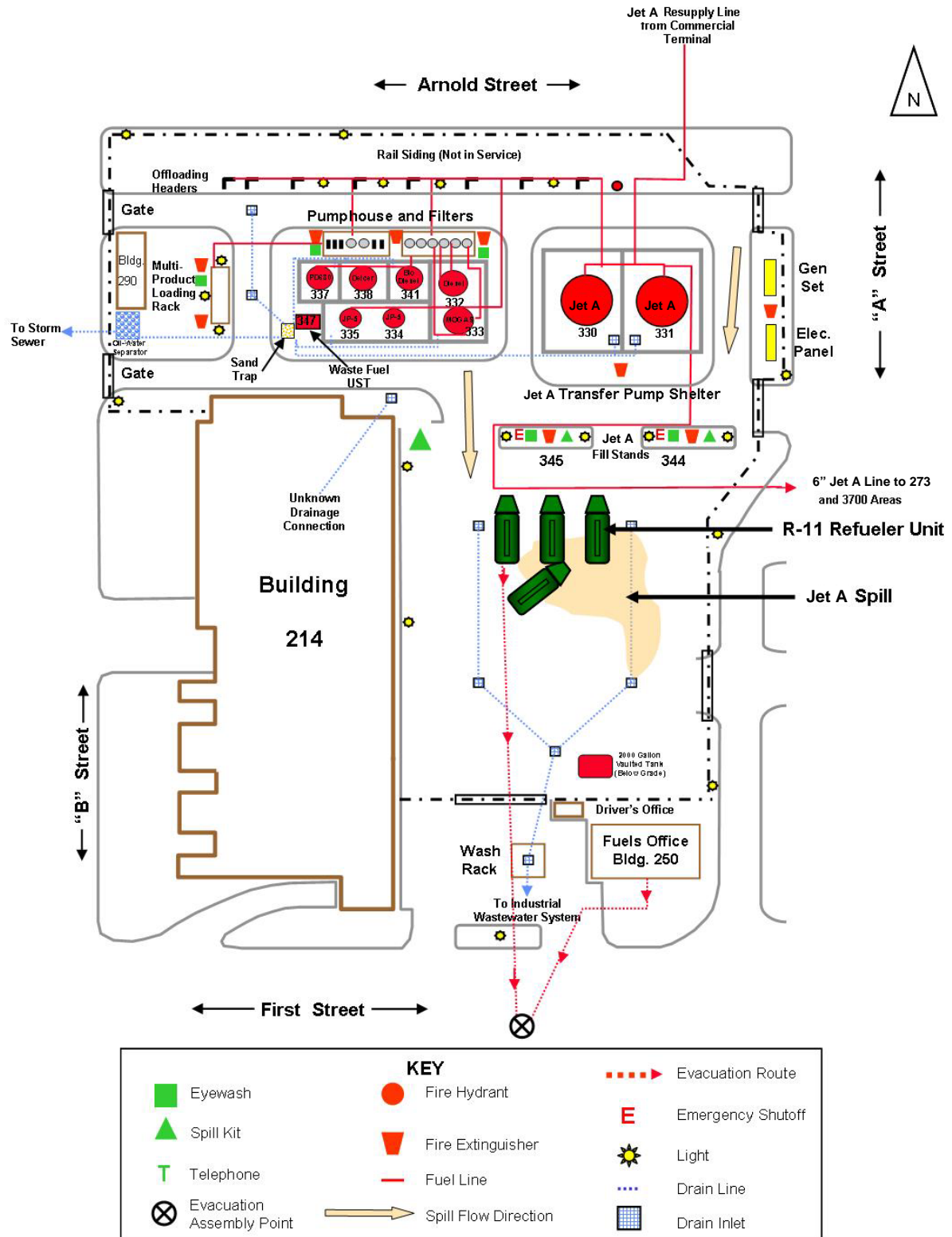


Figure 12.1: EPA Small Discharge Scenario
290 Fuel Yard

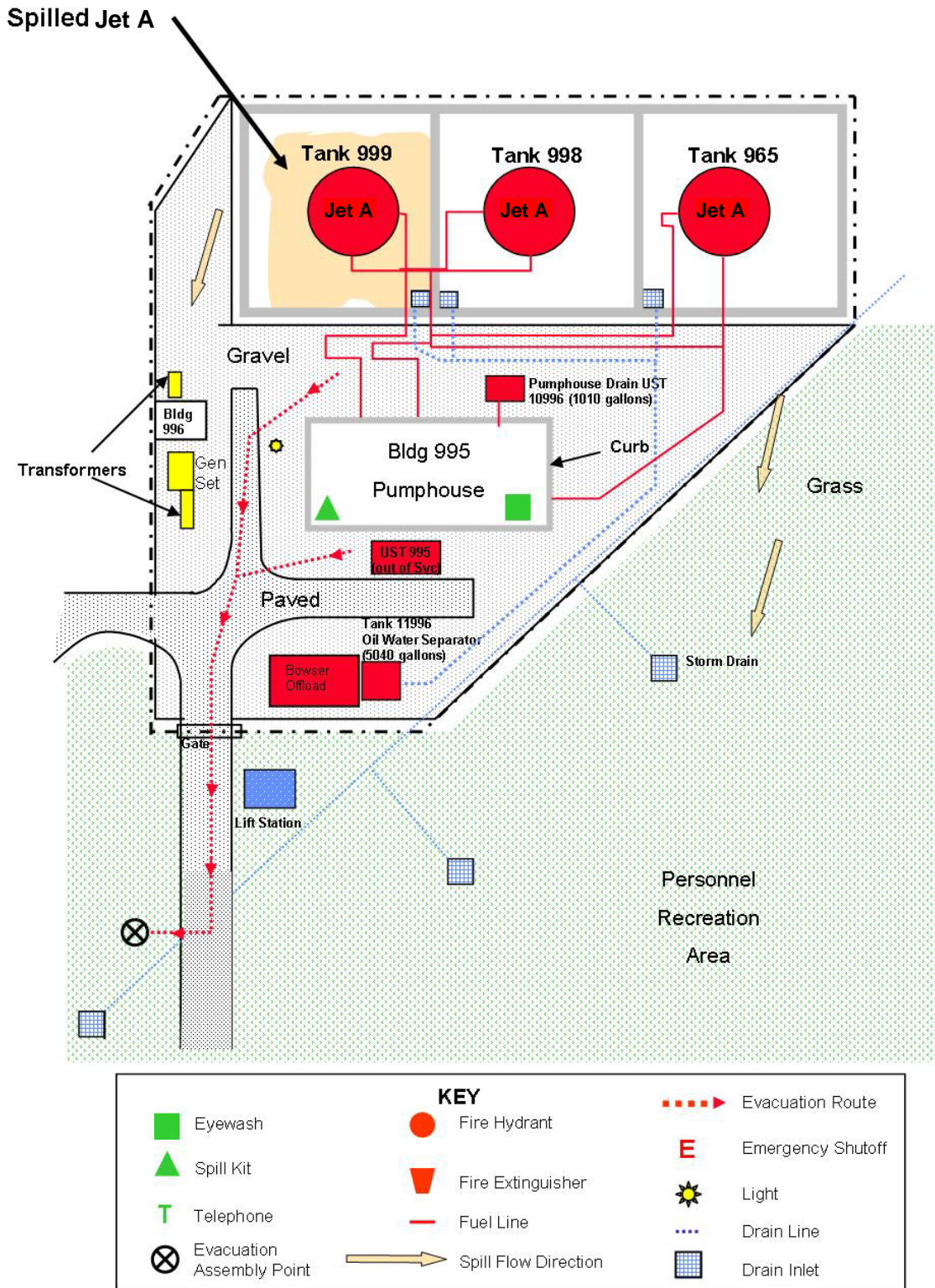
12.2.2 Case #2 - EPA Medium Discharge Scenario

The EPA medium discharge for Tinker AFB involves the release of approximately 22,000 gallons of Jet A fuel at the AWACS Alert Area with a release from Tank 999. See Figure 12.2 for an illustration of the incident.

As part of a construction project at the AWACS Alert Area, Tank 999 is being prepared for a major overhaul, and the final 22,000 gallons are being transferred to Tank 998. During this particularly busy day at the facility, a contractor's backhoe inadvertently hits the product recovery system shearing off the drain valve on Tank 999. Fuel immediately leaks from the drain valve flowing freely into the secondary containment area. The leak surprises the construction workers, and in the process, they are saturated by the fuel and overcome by the Jet A vapors. Other employees arrive and realize that their only option is to let the remaining fuel drain into the secondary containment area. The fuels office is immediately notified. At least two individuals at the site are soaked in Jet A, and the fuels office calls FES for assistance. Because of the Jet A vapors and the fire hazard, the contractor's backhoe is left in position until FES arrives.

When FES arrives at the site, the SFO assumes duties of the IC and directs response to the spill and emergency notifications. FES personnel complete blocking the storm drain inlet and then follow the drain line to the drainage ditch outfall. Absorbent materials are deployed to contain the fuel from further movement toward the drainage ditch.

For the pooled Jet A in the secondary containment area, FES will request spill recovery equipment from other Base spill response resources. A pneumatic pump can be used to transfer the recovered Jet A to a tank trailer for recycling or disposal. Absorbent materials can be used to recover the remaining fuel. If the cleanup and recovery exceed the capability of the Base resources, the OSRO will be engaged.



**Figure 12.2: EPA Medium Discharge Scenario
AWACS Alert Area**

12.2.3 Case #3 - EPA Worst-Case Discharge Scenario

The EPA worst-case discharge for Tinker AFB Bulk Fuels Facilities involves the catastrophic collapse of Tank 273 in the 273 Fuel Yard. Following EPA guidelines, this discharge amount equals the maximum “shell” capacity of the largest storage tank, i.e., 2,330,748 gallons. See Figure 12.3 for an illustration of the incident.

The spill occurs on a Sunday morning of a three-day, holiday weekend. There have been thunderstorms on and off for the past several days. The grounds in and around the Base are quite saturated, and there is water accumulation inside the secondary containment. There is continuous surface water runoff to the storm drainage system and outfalls leading to Kuhlman Creek.

A crack develops on Tank 273 in a vertical weld on the lowest row of shell plating. This occurs on the south-facing portion of the tank shell. Jet A begins to stream out of the crack. The hydraulic pressure in the tank and the brittleness of the steel cause the crack to migrate further up the side of the tank, resulting in a catastrophic fracture and collapse of the tank. There is a sudden and complete loss of the contents of the tank. The surge of fuel spilling from the tank sends a wave of fuel over the containment dike into the open area. Thousands of gallons of Jet A begin flowing to the west into the main drainage ditch between Tanks 484/483 and Tanks 273/274.

Minutes later, a security patrol on Sentry Road notices the collapsed tank and can smell the strong odor of jet fuel. A call is placed immediately to the dispatcher and FES. The security patrol proceeds to block off Sentry Road and requests that H Avenue be closed. FES responds to the site and establishes a command post near the 552 Air Control Wing Headquarters. After assessing the situation, the IC directs personnel to attempt the containment of fuel in the drainage ditch with absorbent materials or block it by other available means. A recall of available firefighters is initiated. Emergency Responders from the Base are activated to provide support for the emergency operations.

Upon notification of the incident, the IC determines that the response is beyond the capability of the Base response resources and directs the notification of the OSRO and/or SUPSALV.

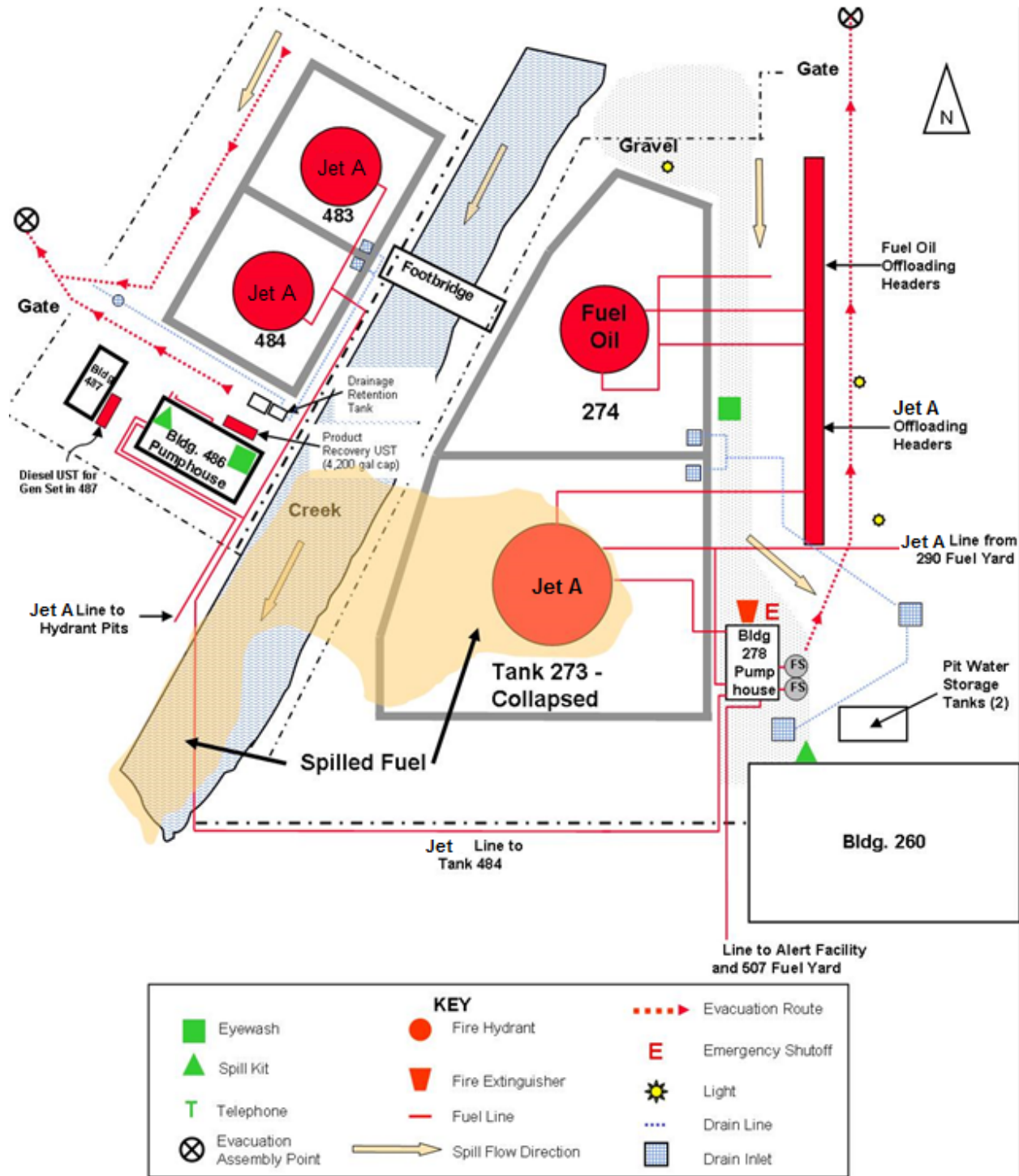


Figure 12.3: EPA Worst Case Discharge Scenario
273 Fuel Yard

12.2.4 Other Operations and Planning Scenarios

The scenarios described in previous sub-sections for small and medium discharges at Tinker AFB Bulk Fuel Facilities are not the only possible scenarios for fuel discharges of those sizes. Other operations and storage locations could experience failures that would lead to discharges.

A small discharge of 2,100 gallons or less could result during other fuel and product deliveries, tank-to-tank transfers, or maintenance on pumps, valves, or transfer lines. A structural failure in any of the equipment could lead to a discharge until that area can be isolated by shutting down the operation and closing all valves. A small leak at a tank may be stopped or controlled limiting it to a small discharge. In almost all locations, these discharges would be contained inside secondary containment or near the source, thus preventing the spilled material from traveling offsite. Absorbent materials are readily available to all locations and operations to quickly contain and recover any spilled product.

A medium discharge (up to 36,000 gallons) could occur from one of the bulk storage tanks or one of the transfer lines during operations. A discharge at one of the pumps, manifolds, or valve pits would be contained, for the most part, inside secondary containment at those areas. The USTs and the transfer piping have no secondary containment, thus a discharge from these systems could reach surface drainage and migrate toward drainage channels leading off-Base. Base personnel will have to take immediate action to block drainage ditches and channels to prevent the flow of product off-site and the potential impact on sensitive areas near the Base.

12.2.5 Response Capabilities, Times, and Qualifications

EPA rules require the facility owner or operator to have available oil recovery devices with an effective daily recovery rate equal to the amount of oil discharged in a small spill within two hours of the detection of an oil discharge. Additionally, EPA requires a daily storage capacity equivalent to twice the effective daily recovery capacity required on-scene.

For a medium discharge, EPA requires that oil recovery devices arrive on-scene within 12 hours of the detection of an oil discharge, with an effective daily recovery rate equal to 50% of the planning volume.

For a worst-case discharge Tier 1 assets must be on the scene within 12 hours, Tier 2 assets must be onsite within 36 hours and Tier 3 assets must be onsite within 60 hours. Tier 1 on-water recovery rates are 832 barrels (bbl)/day, Tier 2 recovery rates are 1,387 bbl/day and Tier 3 recovery rates are 2,220 bbl/day. As outlined in Annex I, Tinker AFB can meet the response times and planning volumes for each discharge scenario. A summary of the Tier 1, Tier 2, and Tier 3 response requirements is presented in Table 12.1.

Qualifications of Tinker AFB response personnel are outlined in Annex D (Spill Response Organization and Duties) and Annex M (Training, Drills, Exercises, and Records). Qualifications of OSRO personnel is provided in Annex G (Spill Response Contract Support).

Table 12.1
Summary of Response Requirements

	Tier 1 Assets	Tier 2 Assets	Tier 3 Assets
Small Discharge			
Response time	2	--	--
Storage Capacity	4,200 gallons onsite	--	--
Medium Discharge			
Response Time	2	12	--
Storage Capacity	4,200 gallons onsite	29,127 gallons (50% of the planning volume)	--
Worst Case Discharge			
Response Time	12 hours	36 hours	60 hours
Oil Recovery Device (contracted)	1.875 bbl/day	3.75 bbl/day	7.5 bbl/day
Total oil recovery amount identified	832 bbl/day	1,387 bbl/day	2,220 bbl/day

12.3 ADDITIONAL RESPONSE PLANNING, TRAINING, AND SUPPORT

Tinker AFB emergency response action planning and guidance for all Base personnel is covered in **THE RED PLAN**, found at the front of this plan. Key Base personnel, supervisors, and operational sites are provided a copy of this document to have information readily available to begin an emergency response at the Base. **THE RED PLAN** is used during training sessions for personnel with responsibilities in oil and hazardous substance use or supervision at the Base and during annual training sessions. The annual training for supervisors and managers includes tabletop exercises that test response to various discharge scenarios. Environmental management reviews this Plan annually and records in a log their completion of the review. Emergency response team personnel are required to attend additional training and courses to remain current in response techniques and capabilities as provided in their position descriptions. Training

to be completed by emergency responders and other support personnel on Tinker AFB is listed and described in the discussion of training and exercise programs provided in Annex M.

The OSROs—or commercial spill response contractors, referred to in the body of this plan and Annex G (Spill Response Contract Support)—are a source of additional spill response assistance for Tinker AFB when the incident exceeds the capabilities of Tinker AFB FES and Base response teams. Mutual aid support is available through Midwest City, Del City, and Oklahoma City Fire Departments. Emergency HAZMAT response support is also available through the mutual aid system. The US EPA and Oklahoma State Department of Environmental Quality (ODEQ) have emergency response personnel who investigate spills and provide support to responsible parties.

Environmental Branch provides the LEPC with information on operations, emergency response resources, and capabilities. A facility representative who will participate in the local emergency planning process as a facility emergency response coordinator was submitted with the Annual Tier II Report to the Oklahoma Department of Environmental Quality.

Tinker AFB is also part of the Community Action Board (CAB) designed to promote community awareness with the citizens of Oklahoma County and the surrounding communities in an effort to obtain constructive community review and comment on environmental actions associated with Tinker AFB. The Base has also developed a Community Relations Plan (CRP) that outlines the community involvement program in accordance with the CERCLA and the *Resource Conservation and Recovery Act (RCRA)*.

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13. PROTECTION AND CLEANUP PRIORITIES, METHODS, AND TECHNIQUES

13.1 RECOVERY STRATEGY FOR SPILLS

The recovery strategy for spills at Tinker AFB is driven by policy, practicality, and the need to protect natural resources. Regulations require that spills be contained and mechanically recovered as appropriate and as soon as possible. There are provisions that allow for other cleanup methods (dispersants, bioremediation, etc.) to be considered and/or used under certain conditions, provided that prior approval is granted by the FOSC and the Oklahoma Department of Environmental Quality.

Tinker AFB's initial response strategy for a spill of any type oil or hazardous substance is to contain the spill in a defined area and focus spill response assets on the protection of sensitive areas near the spill site. Given the availability of response equipment and trained personnel at the Base, this strategy is potentially feasible and achievable for most small and medium sized spills. It is dependent upon quick action by Base personnel to stop the discharge, rapidly assess the potential impact of a discharge, and if possible, block the flow of product off-Base. For a worst-case discharge, resources and services of an OSRO will need to be deployed.

The most likely spills at Tinker AFB would occur with non-persistent oils (Jet A, diesel/heating fuel, and gasoline) that make up the bulk of the Base's storage capacity and almost all of the routine transfer activities. These low-viscosity products are relatively lightweight, will spread over water, and volatilize more quickly than heavier, more viscous oils. These products also pose some solubility potential that may present adverse toxicological effects to aquatic life in areas affected by the spill. The warmer the temperatures, the more quickly the products will dissipate. The spilled products will also generate vapors that can pose fire and explosion hazards.

The various hazardous and extremely hazardous substances stored and handled at Tinker AFB each pose distinct risks and dangers should a release occur. Response actions taken must be carefully considered and properly executed to protect all persons involved. Only trained emergency response personnel should attempt to recover large volumes of spilled fuels or any significant quantities of hazardous substances.

Fuel spills of less than 25 gallons (Class I or Class II) and confined to concrete or paved areas will generally be recovered by the responsible activity or by FES using on-hand stocks of absorbent materials. The contaminated material will be collected into approved drums and sealed. It will then be turned over to the Hazardous Waste Facility for recycling or disposal at the Barrel Yard. If the spilled product escapes the immediate area and contaminates soil, the soil must be recovered into approved containers and handled as hazardous waste.

Large quantities of contained hazardous materials on land or water should be recovered by a spill response contractor trained and equipped to handle volatile fuels or other hazardous substances. Contractors have specially-designed vacuum trucks, pumps, and large quantities of connecting hose that can be safely used in recovery operations. Response personnel are trained in the proper use of this equipment and proper safety procedures for spill response. The recovered fuel will be transferred to tank trucks and hauled to a recycling or disposal site, as determined by the Hazardous Waste Manager, if it cannot be recycled onsite. When large quantities of pooled oil are being recovered, FES will be present for the operation.

Spilled/released materials that enter drainage ditches leading to waterways off-Base will be contained and recovered as much as possible to satisfy Federal and State regulators. Environmentally sensitive areas will be protected, if possible, by booming or other diversionary methods. Light fuels tend to break up, evaporate, and disperse quickly, and often the best mitigation strategy is to let the fuel dissipate because of the safety hazard posed by the vapors. Any on-water recovery operations will be determined by a site-specific hazard evaluation.

Contaminated debris recovered during an oil or hazardous substance spill will be placed in approved containers or staged as directed and treated as hazardous waste. The Hazardous Waste Manager will arrange for disposal as required by Federal and State regulations. All hazardous waste must be properly characterized, sealed, and labeled to meet disposal and shipping requirements. Contaminated debris includes, but is not limited to the following: recovered product, contaminated soil, personal protective equipment, decontamination solutions, absorbent materials, and spent chemicals.

13.2 PROTECTION PRIORITIES

The **first priority** in any spill is always human health and safety. This priority remains paramount throughout all phases of the response effort. Protecting the public, Base personnel, and response personnel during a spill at Tinker AFB is achieved by timely evacuation (if required), effective containment or diversion of the spill to areas away from housing areas and workplaces, and adhering to response safety guidelines.

The **second priority** is to minimize the environmental impact. At Tinker AFB, every effort will be made to contain the spill onsite and prevent it from migrating into drainage leading to Kuhlman, Soldier, and Crutch Creek. Environmentally sensitive areas on or near the Base have been identified that need to be protected in the event of a discharge. Refer to Annex E, Tab 2 (Vulnerability Analysis) for more details and information.

The **third priority** is minimizing the economic and public impact. Actions taken to protect human life and health and the environment will also achieve this goal. Containing the spilled oil to the smallest possible area will keep the impact to a minimum. If evacuations, or highway, railroad, and waterway closures can be avoided,

the less impact there will be on the public and businesses. The smaller the area to clean up, the less impact there will be on the environment and the less the cleanup will cost.

13.3 CLEANUP, PROTECTION, AND BOOMING

Vegetation, fish, game, and wildlife within the immediate area of a spill can be exposed to high toxicity levels from petroleum products handled at Tinker AFB. See Annex E (Hazard Evaluation) for more details.

Clean up of spills reaching wetland areas will be difficult, particularly during adverse weather. Response actions will be focused on preventing these areas from becoming contaminated in the event of a discharge. Use of dispersants will be impractical, due to the potential environmental impact and little likelihood of securing EPA and State approval. Booming may be difficult due to currents, channel configurations, and access to the affected areas.

Spill response contractor assets, if retained, will be directed to areas where containment and recovery of spilled fuel can be best achieved. Also, sensitive areas will be afforded protection strategies. Booming strategies will be coordinated with Federal and State response officials. OSRO personnel are trained in operating the latest containment and recovery equipment, planning removal operations, and preparing recovered material for disposal.

Long term remediation actions will be developed, if necessary, after emergency cleanup has been conducted and a damage assessment has been performed. The IC must coordinate with State and Federal officials on any Tinker AFB plan to clean up sensitive areas, before cleanup is initiated. Some cleanup and remediation efforts can do more harm to the impacted area than the spill itself, and this must be avoided.

The IC will normally have to rely on Base environmental and response personnel and spill response contractors to help develop and implement a proper large-scale sensitive area cleanup strategy. The IC must still authorize contractor cleanup work before it is initiated. The spill impact on wildlife may also require the establishment of bird or animal cleaning stations and additional augmentation of environmental specialists. If any bioremediation of the spill is to be considered, the IC must seek approval from EPA and the State of Oklahoma before implementation. USAF environmental specialists may also be available to provide guidance on cleanup actions. Any plan to clean up sensitive areas beyond initial response actions should be coordinated and approved by all parties involved in the cleanup and having oversight responsibilities.

13.4 PRIORITIZED RESPONSE PROCEDURES IN THE EVENT OF A SPILL

The following prioritized procedures are applicable to spills originating from hose failures, piping ruptures or leaks, pump malfunctions, tank overfills, and a tank failure, or an explosion or fire:

- Alert onsite personnel and supervisor by voice or hand-held transceiver. Undertake actions as outlined in **THE RED PLAN**.
- Shut down all pumps and on-going transfer operations.
- Isolate the rupture (or leak) by closing valves on either side of a break. Initiate containment if possible without undue risk to personnel.
- Restrict or eliminate all sources of ignition.
- Notify FES, IC/QI, and the Environmental Management Office.
- Evacuate non-essential personnel to safe areas. Secure the spill scene.
- Continuously check for safety hazards. Monitor for additional leaks, pressure buildup, vapor generation, or ruptures in valves, pipes, or other equipment.
- Responsible activity representative meets IC/QI and briefs on incident and situation.
- FES determines safety zones and if further evacuations are needed.
- IC directs emergency response to contain spill and begin recovery as soon as possible, if not already undertaken.
- IC activates the SRT, HAZMAT Response Team, and/or the spill cleanup team as necessary.
- Spill response contractors are alerted for deployment, if required.
- IC completes spill notification form and makes all external and required notifications.
- IC monitors and oversees all on-scene response operations, such as:
 - Boom deployment or containment methods;
 - Recovery methods and equipment;
 - Decontamination sites and methods;
 - Collection of contaminated soil and debris; and
 - Hazardous waste recycling or disposal procedures.
- IC ensures no waste that may be incompatible with released material is treated, stored, or disposed of until cleanup procedures are completed.

- IC works with the Federal and State On-Scene Coordinators to ensure acceptable response actions are being planned and undertaken.
- IC provides required situation reports to the EPA, State, and local authorities, as well as USAF.
- IC completes spill response responsibilities outlined in **THE RED PLAN** and transitions to the broader and more detailed Tinker AFB *Integrated Contingency Plan* and with response personnel, develops a strategy for long term response, recovery, and mitigation.
- IC initiates post discharge review procedures to include:
 - Investigation of the cause of the spill;
 - Plans for preventing future spills; and
 - Provide plan updates as required.
- Ensure replacement of used oil spill response equipment and resources.

13.5 DISPOSAL PROCEDURES

It is the responsibility of the IC to ensure that all waste generated during a spill response, whether hazardous or not, is disposed of properly. The RCRA lists requirements for the disposal of hazardous waste. Tinker AFB has been assigned RCRA Part B permit number OK1571724391 and a Disposal Plan #55066. The Hazardous Waste Manager for the Base will contract for the transportation and disposal of contaminated oil or hazardous waste. Only approved waste transporters and disposal sites will be used. Procedures in the Tinker AFB *Hazardous Waste Management Instruction* will be followed. This instruction is available through the Environmental Restoration Branch. A summary of waste management procedures during a spill response is provided in the following subsections.

13.5.1 EPA Requirements

Guidance for the classification and disposal of hazardous substances is provided in 40 CFR Part 261. To determine the appropriate and acceptable disposal methods, a sample of the spilled product may have to be characterized through laboratory analysis.

13.5.2 State of Oklahoma Requirements

Oklahoma regulates used or recovered oil or oily debris as hazardous waste unless it meets certain purity standards and is not mixed with any other hazardous waste. It must be recycled or disposed of at an approved site. If the recovered oil or debris is

contaminated with another substance, the recovered material must be treated as a hazardous waste and may have to be characterized before it can be transported to an approved treatment or disposal site. Federal requirements must still be met for proper treatment or disposal.

13.5.3 Waste Disposal

The policies in this plan address the disposal of all classes of waste and apply to small, medium, and worst-case discharges. Following an oil spill or hazardous substance release, Environmental Management and the OSRO (if the spill requires their services) will ensure disposal of all recovered oil, hazardous substances, contaminated debris, and water in compliance with Federal and State guidelines. The IC will coordinate the collection, product sampling, analysis, staging, and disposal of all waste materials from the spill response. All disposal actions will be carried out in accordance with Federal, State, and local regulations. Environmental Management is the point of contact on all Tinker AFB disposal actions.

Recycling, incineration, and land filling may be acceptable methods of disposal, pending EPA and State approval. Recovered products will be subjected to laboratory analysis to identify potentially hazardous waste and then disposed of in accordance with the findings of that analysis. Laboratory tests will be conducted for hazardous waste constituents, including volatile organic compounds, if applicable. The tests on the oil phase will include a test for flash point, total halogens, metals, and PCBs. The tests on the water phase will include a test for total halogens and metals. The Treatment, Storage, and Disposal Facility (TSDF) used by Tinker AFB must be a site that is approved by Federal and State regulatory agencies.

13.5.4 Recovered Product

In some cases, recovered petroleum products can be recycled. Fuel that is not contaminated or determined to be hazardous waste will be returned to a storage tank or other suitable containers at or near the spill site. Fuel that is determined to be contaminated per 40 CFR 261 Subpart C will be transferred to a TSDF through the Hazardous Waste Storage Facility. The EPA provides specific guidance in 40 CFR Part 266 relating to TSDF marketers who handle contaminated petroleum products for recycling as energy recovery through incineration. Off-specification waste oil in 40 CFR 266 Subpart E, can be incinerated even if it exhibits a hazardous characteristic under the parameters of 40 CFR Part 261 Subpart C. As part of the cleanup and recovery operation, the IC may direct response personnel or the OSRO to transfer recovered oil to a commercial vendor, and that the funds received by the OSRO for this transaction will be credited toward Tinker AFB's financial obligation for the cleanup or to the OSRO for supporting the cleanup response.

13.5.5 Oil Contaminated Water

A significant amount of water can be collected with the recovered product. This water will quickly decrease the storage capacity for recovered product. It may be possible to request an emergency discharge permit from the State to drain water from the bottom of a spill recovery tank. Some treatment or filtering of the water may be required. A portable oil/water separator can also be employed, if approved. If removal of any water from the recovery operations is not approved, then it must be shipped with the oil for treatment or disposal.

13.5.6 Contaminated Equipment and Materials

Cleanup operations can be expected to generate a considerable amount of contaminated personal protective and cleanup equipment. Protective clothing will be cleaned for reuse at a decontamination site or packaged for disposal. Based upon the contaminant, showers for response personnel may be required. Water used for decontamination must be retained and tested before discharging. It is possible the water can be discharged into the sewer system if there is no significant contamination requiring treatment. Otherwise, the water will have to be sent for treatment or disposal through a TSDF. The IC, response personnel, and OSRO will work with the State and EPA on this issue. A common solution used for decontaminating equipment is water with 5% sodium carbonate or 5% tri-sodium phosphate. The IC will ensure that all emergency equipment and supplies used during the response operation are cleaned or replaced prior to resuming normal operations. The Base response equipment inventory must be returned to the level indicated in the plan.

13.5.7 Contaminated Debris

During cleanup operations, oily debris including contaminated absorbent materials, soil, vegetation, and flotsam, will be collected at cleanup sites. The contaminated debris will be tested for proper waste classification and disposal. The debris will be loaded into drums, bags, dumpsters, or trucks pending shipment for off-site disposal.

13.5.8 Hazardous Substance Disposal

Recovered material regulated as a hazardous waste will be disposed of at a TSDF. The disposal facility must hold a current State and Federal permit. This can be verified by contacting the State of Oklahoma and obtaining a copy of the TSDF permit that will include the appropriate EPA identification number.

Hazardous substance disposal arrangements should also include the intended method of disposal and the final destination of the waste. It should be made absolutely clear to prospective contractors that Tinker AFB hazardous waste disposal will be handled in a

manner that includes the required documentation demonstrating full compliance with regulations. To that end, the selected contractor will be required to provide Tinker AFB with disposal documentation in the form of a Certificate of Destruction. This documentation and the laboratory analysis will be kept on file with other important documentation related to the spill cleanup and response actions.

14. SAFETY PRECAUTIONS FOR HAZARDOUS SUBSTANCE SPILLS

The Tinker AFB *Hazard Communication Program* provides guidance for the safe handling and use of hazardous substances. Identification of operations and activities where hazardous substances are used or stored, correct labeling, safe storage and disposition of hazardous substances, availability of appropriate Safety Data Sheets, and safe handling and use of hazardous substances are topics covered during training under the program. Specific safety precautions to be followed in the event of a spill depend on the characteristics of the hazardous substance(s) involved and must be determined on a case-by-case basis. Base activities using hazardous substances and response personnel aware of any suspected or actual release of a substance will follow these general procedures:

- Approach spill cautiously; do not rush in.
- **Identify and evaluate all hazards** using all available information, e.g., labels, shipping documents, SDS/MSDS sheets, and knowledgeable personnel.
- **Control the site** without entering the immediate hazard area.
- **Obtain help:** notify Fire and Emergency Services and request assistance from trained response personnel (HAZMAT Response Team or outside response contractors trained and equipped for HAZMAT response).
- **Determine appropriate personal protective equipment** to be used before any personnel enter the affected area.
- **Continue to act cautiously** and avoid contact with or possible exposure to the hazardous substance.

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15. OIL INVENTORY CONTROL PROCEDURES

Inventory control procedures are designed to ensure full accountability of government-owned fuel and to permit the early detection of a discharge. Procedures at Tinker AFB are in accordance with petroleum industry standards, USAF policy, and Base SOPs.

Jet A and other large bulk storage tanks are manually gauged daily and readings compared to remote gauging devices on the tanks where installed. Tanks that will be in use are gauged before and after transfer operations for the day to reconcile fuel receipt or issue. During the day, fuel is issued to flightline tanks and transferred to aircraft as required. All transfers are metered and volumes recorded. Logs are maintained at Bldg. 250. Any inconsistencies in volumes will cause an investigation. Tanks will be re-gauged, transfers re-calculated, and tanks and transfer systems inspected for leaks.

Jet A is delivered to the Base via pipeline from the Conoco terminal. The Bulk Fuels supervisor requests fuel via telephone on an as-needed basis. Conoco generates a Government Bill of Lading (DD 250), which is e-mailed to the DESC Quality Assurance Representative. If the variance between the volume shipped and the volume received exceeds 0.25%, an investigation is initiated. If a problem is discovered, the pipeline will not be used until corrective actions are completed. During pipeline shutdown, Jet A will be received via tanker truck and offloaded at the receipt headers at the 290 Yard.

Diesel fuel and gasoline for Base activities are delivered by commercial tanker trucks to the bulk storage tanks at the 290 Yard. Before transferring the fuels, the Government Bill of Lading and seals must be checked. After unloading of tanker trucks is complete, the Fuels Operator verifies that the tankers are empty to ensure the amount of product added to inventory will be correct and can be reconciled.

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16. SECURITY

Security at Tinker AFB is an important part of preventing spills and acts of vandalism that could lead to spills. The security of oil and hazardous substance storage areas on the Base prevents unauthorized access and maintains physical integrity and consists of automatic, mechanical, and manual methods.

16.1 ENTRY AND CONTROL OF PERSONNEL AND VEHICLES

Tinker AFB is a controlled access installation restricted by fences, gates, and security patrols. Access gates to the Base are manned by either military or civilian security forces when open to traffic. Main gates are open 24 hours a day. Only authorized military and civilian personnel and their dependents with proper identification are readily given entry to the Base. Warning signs are posted. Visitors must present satisfactory proof of identification and a statement of purpose for their visit prior to issuance of a temporary pass for access.

The 72nd Security Forces Squadron provides patrols that check the perimeter of the Base, the airfield, and key operational sites on a regular basis around the clock. The main bulk fuel storage sites and vehicle parking areas are checked routinely by the security patrols, and any unusual activity or conditions are investigated. Because of the potential damage that vehicles pose for damage to piping, transfer, and storage facilities, strict controls are imposed on traffic in those areas. Warning signs are posted and oral instructions are given to drivers entering those areas for the safe operation of their vehicles.

16.2 PHYSICAL SECURITY

Tinker AFB is surrounded by chain link fencing topped with barbed wire. The Bulk Fuel Facilities (290 Fuel Yard, 273 Fuel Yard and Phillips System, the 507th facility, the AWACS alert area, the 3700 Fuel Yard, and Roads and Grounds) are also enclosed with limited access gates. Operators at the sites control access. Signs are posted indicating authorized personnel only are allowed into the sites, and personnel must check in at the activity's office.

16.3 LIGHTING

The main bulk storage and transfer sites are adequately illuminated at night to deter unauthorized entry and to enable security patrols to check for any unusual activity and for an oil or hazardous substance discharge. Outside lighting consists of 400-watt, high-pressure floodlights. Floodlights are located throughout the activities and at the ASTs,

pump and manifold sites, valve pits, piping areas, parking lots, and office buildings. The lighting is controlled by electric photocells. Security patrols carry flashlights. Portable lighting is available through the civil engineers or FES should it be needed in an emergency.

16.4 VALVES, PUMPS, CUT-OFFS, AND ALARMS

Storage tank valves are kept closed and, where necessary, chained and locked when the tank is not being used in a transfer. The control valves for the USTs are located internally on flanges at the tank wall and are manually operated at the tank top. There are also control valves in a concrete vault on the transfer lines to the flight line hydrants. Control valves (manual) for the ASTs are located on flanges at the exterior tank wall. All valves on the transfer pipelines are kept closed and locked when not in use.

Transfer pumps on the pipelines have emergency shutdown capability. They are operated locally or at the manifold site near the Bulk Storage Tanks. Alarms will be activated at the pump sites to warn personnel if a pump shuts down and an emergency condition is detected. Emergency shut-off switches are also located at the Ground Refueling Vehicle Fill Stands and are tied into a ground fault interrupt system between the vehicles and the pumps.

Valves controlling drainage from secondary containment and surface water collection areas are manually operated. Valves on secondary containment structures are kept in the closed position to prevent inadvertent discharge of oil or contaminated water. Valves controlling runoff from surface drainage areas generally remain open to allow normal storm water runoff, but can be closed quickly in the event of a fuel discharge to the area. Valves also control drains that can divert runoff to oil/water separators.

The bulk fuel storage tanks are equipped with sensors that will activate alarms if fuel reaches low-level or high-level set points. Manually operated fire alarms are located throughout the storage and transfer sites that can be used to warn facility personnel of an emergency situation.

16.5 COMMUNICATIONS

In addition to telephones located at all the operational sites and offices, hand-held two-way radios are available for use on the Base by operators and drivers. Immediate communications are maintained between operators and supervisors during transfer operations. The Fuels Management Flight Office has the capability to monitor radio communications. All fuels management personnel are trained in handling emergency communications. FES and security forces personnel have shared communications capability for emergency situations. Radios will be provided to other response personnel as needed.

17. POST-EVENT REVIEW PROCEDURES AND PLAN REVIEW/UPDATE

17.1 POST-EVENT REQUIREMENTS

17.1.1 Post-Event Review

A formal Post-Discharge Review will be conducted on reportable oil spills that are equal to or greater than 42 gallons or that impact navigable waters. A review will also be conducted for hazardous substance releases that exceed mandated RQs.

The activity responsible for an oil or hazardous substance spill shall conduct an informal review to determine preventative measure strategies and submit the report to the Environmental Management Office. The spill event will be reviewed at the periodic Discharge Prevention Meetings. A notice will be issued to report the cause of the spill, effectiveness of the response effort, any follow-up measures required, and any recommended changes to this *Integrated Contingency Plan*.

As appropriate, the post-discharge review should address the following areas:

- Detection
- Notification
- Mobilization
- Spill Response Organization
- Response Resources Used
- Response Strategy
- Response Effectiveness
- Public Relations
- Assessment/Evaluation
- Measurement
- State Follow-up Tasks
- Mitigation Results
- Effectiveness of *ICP*

17.1.2 Post-Event Reports

When the post-discharge review is completed, a written report concerning the circumstances, effects, notifications, response, and mitigation of the spill will be prepared and submitted to USAF, Headquarters, Air Force Civil Engineer Center.

Follow-up spill reports must be submitted to the EPA Regional Administrator within 60 days per 40 CFR 112.4(a) if Tinker AFB has had a single reportable spill greater than 1,000 gallons or two reportable spills greater than 42 gallons within one year. Reports must include the information in Annex B.

For compressed natural gas releases, a report shall be prepared in accordance with 29 CFR 1910.119(m)(4) including the date of the incident, a description of the incident, factors that contributed to the incident, and recommendations resulting from the investigation.

17.1.3 Plan Review and Update

The post discharge review may lead to recommended changes in equipment or operational procedures at the facility. An *Integrated Contingency Plan* review and update must be accomplished if significant changes are implemented or if the potential for a discharge at the facility is affected by the changes. See Section 2.5 for more details.

17.2 POST-EVENT REQUIREMENTS

Conduct a critique of the response for non-oil spill/discharge events such as fires in accordance with 1910.120(p)(8)(ii)(J) for events at permitted hazardous waste storage areas and 1910.120(q)(2)(x) for events elsewhere at the Base.

18. CONFORMANCE WITH REQUIREMENTS

The preparation, implementation, and periodic review of this Plan are intended to demonstrate Tinker AFB's full compliance with the requirements set forth at 40 CFR §112. Information regarding conformance with the requirements is located throughout this document; the cross reference checklist to the rule is provided as Annex T. Specifically, documentation of conformance with the secondary containment requirements is presented in Annex A.

In general, this Plan does not deviate from the applicable requirements with the exception of:

- Non-conformance items are noted in Table 18.1. Most non-conformance items are related to inadequate secondary containment.

Other deviations from applicable requirements consist of equivalent protection being used for some bulk storage containers as outlined below:

- Equivalent overfill protection is provided for drums and totes based on a wide fill port (for drums) or clear container walls (for totes) serving as a direct vision gauge. Additionally, most drums of new product are never filled, but only emptied during product use.
- Equivalent overfill protection is provided for the plastic bins that store used cooking oil based on the wide-grated opening into which the grease is poured. The level of oil in the bin is immediately visible through this opening.
- Equivalent overfill protection is provided for tanks 62501-1, -2, -3, and -4 at the IWTP.
- Equivalent overfill protection is provided for several tanks using dipsticks to measure the liquid level before, during, and after filling.

Table 18.1
Non-Conformance Items

Building/ Location	Inside/ Outside/ Covered	Tank # / OCC	Contents	Tank Capacity (gallons)	Effective Secondary Containment Method and Volume (gallons)
General Aboveground Storage Tanks					
260	Inside	260	Used Oil	280	Spill Pallet: 66
273 Fuel Yard	Outside	273 / 211	Jet A	2,330,748	Concrete Berm: 2,131,365
290 POL Fuel Yard	Outside	330 / 212	Jet A	212,463	Concrete Berm: 205,752
290 POL Fuel Yard	Outside	331 / 213	Jet A	212,168	Concrete Berm: 205,752
290 POL Fuel Yard	Outside	337	Solvent PD-680	46,935	Concrete Berm: 31,785
290 POL Fuel Yard	Outside	341 / 218	Jet A	42,468	Concrete Berm: 31,785
Phillips System	Outside	483 / 224	Jet A	426,052	Concrete Berm: 356,135
Phillips System	Outside	484 / 225	Jet A	426,108	Concrete Berm: 356,676
1130 Motor Pool	Inside	1130-1	Used Oil	325	Spill Pallet: 73
1130 Motor Pool	Inside	1130-2	Used Oil	265	Spill Pallet: 73
3700 Fuel Yard	Outside	3718 / 202	Jet A	445,964	Concrete Berm: 354,469
9303 TAC Area	Outside	9303-FP-1	Diesel	320	Concrete Berm (tank not fully within berm): 313
9303 TAC Area	Outside	9303-FP-2	Diesel	320	Concrete Berm (tank not fully within berm): 313
Generators					
NAVY, Bldg 829	Outside	820-1	Diesel	1,150	Concrete Berm: 229
NAVY, Bldg 829	Outside	820-2	Diesel	1,150	Concrete Berm: 229
Bldg 13	Outside	3307-P-7	Diesel	90	None
Bldg 13	Outside	3307-P-8	Diesel	90	None

Table 18.1
Non-Conformance Items

Building/ Location	Inside/ Outside/ Covered	Tank # / OCC	Contents	Tank Capacity (gallons)	Effective Secondary Containment Method and Volume (gallons)
AFVO					
Burger King, Bldg 473	Outside	473-VO	Used Cooking Oil	250	None
New BX, Bldg 685	Outside	685-VO	Used Cooking Oil	250	None
Cafeteria, Bldg 3001	Outside	3001-VO	Used Cooking Oil	250	None
Officer's Club, Bldg 5603	Outside	5603-VO	Used Cooking Oil	250	None
Bowling Alley, Bldg 5703	Outside	5703-VO	Used Cooking Oil	250	None
Dining Facility, Bldg 5907	Outside	5907-VO	Used Cooking Oil	250	None
Golf Course Grill, Bldg 6601	Outside	6601-VO	Used Cooking Oil	250	None

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ANNEX A

FACILITY INFORMATION, SUMMARY TABLES, AND SITE DIAGRAMS

<u>Facility Name:</u>	Tinker Air Force Base (AFB)
Address:	7535 5 th Street
City:	Tinker AFB, OK 73145-9100
County:	Oklahoma County
Phone Number:	(405) 734-4111
Facsimile:	(405) 734-4210
Latitude:	35 Degrees 26 Minutes 0 Seconds (North)
Longitude:	97 Degrees 23 Minutes 30 Seconds (West)
<u>Wellhead Protection Area:</u>	Portions of Tinker AFB are within designated Wellhead Protection Areas, and Wellhead Protection Plans are required. Refer to: Shaw Environmental, Inc., 2003, <i>Final Wellhead Protection Plan Report</i> , Tinker Air Force Base, December.
<u>Owner/Operator:</u>	Tinker Air Force Base (AFB)
Address:	7535 5 th Street
City:	Tinker AFB, OK 73145-9100
County:	Oklahoma County
Phone Number:	(405) 734-4111
Facsimile:	(405) 734-4210
<u>Qualified Individual:</u>	
Name/Position:	Mission Support Group Commander
Work Address:	72 nd /ABW/MSG, 7460 Arnold Street, Suite 234 Tinker Air Force Base, OK 73145-9100
Phone Number:	(405) 734-2101
Emerg. Phone:	(405) 739-2856 After hours, contact the fire department at 911
<u>QI's Specific Training Experience:</u>	<ul style="list-style-type: none"> • Air Force Incident Management Course Training • HAZWOPER Training • Military engineering experience
<u>Date of Oil Storage Start-up:</u>	August 1941
<u>Current Operations:</u>	Tinker Air Force Base is primarily a depot air logistics center. The mission of this facility is aircraft overhaul and maintenance.

NAICS Code: 9711 - Military Installation

Dunn & Bradstreet Number: 007206337

EPA ID #: OK1571724391

**Dates and Types of
Substantial Expansions:**

1987	290 Fuel Yard completed. USTs converted to ASTs.
1987	3700 Fuel Yard USTs taken out of service.
1992	Tank 955 and Navy ramp built as an addition to the alert facility.
1993	UST upgrades take effect.
1995	Phillip Hydrant System pump-house renovated.
1997	507 th Hydrant System constructed.
2006	New Tank installed at 3700 Fuel Yard

Largest AST: 2,330,748 gallons

Number of ASTs: 212

Maximum Storage Capacity: 7,534,000 gallons

Last Update: August 2016

A.1 Tinker Air Force Base: Tinker AFB is the home of the Oklahoma City Air Logistics Center and a number of associated organizations with primary missions of performing aircraft overhaul and maintenance. The Base serves the Air Force, Navy, and Department of Defense organizations. Tinker AFB is located in the southeastern portion of Oklahoma County, which is in the central part of the State of Oklahoma. The Base is approximately 9 miles southeast of the central business district of Oklahoma City and adjacent to Midwest and Del City. The population of Tinker AFB exceeds 30,000 with a land area, including satellite areas, of 4,996 acres. The Base stores approximately 7.5 million gallons of petroleum products (Jet A, diesel, heating oil, MOGAS, boiler fuel, waste fuel, and PD-680) in ASTs, USTs, aircraft fueling lines, fuel truck storage and portable storage throughout the facility. Tinker AFB bulk fuel storage facilities consist of 229 ASTs (including generator tanks) ranging from 75 gallons to 2,330,748 gallons and 43 USTs ranging from 500 gallons to 26,000 gallons.

Tinker AFB may be accessed from several gates with varying hours. For more details on the access gates, their locations and hours, see Section 4.3 in the ICP. Many activities are conducted after normal duty hours and on weekends. Duty hours may vary depending upon missions and other operational requirements. Essential Tinker AFB activities, facilities and services are manned on a 24-hour basis.

Petroleum products and hazardous substances are stored, transferred, and used in significant quantities at various locations throughout the installation. Jet A is the largest of the bulk fuel products stored and handled at the installation. The fuel is received primarily from Conoco pipeline and stored in either the 290 Fuel Yard or the 273 Fuel Yard. Jet A is then loaded into R11 Refuelers, each with a 6,000-gallon capacity. There are typically 15 (but up to 24) ground refueling vehicles located in the 290 Fuel Yard. Eleven of the R11 Ground Refuelers are loaded with petroleum products and four remain empty for defueling aircraft. There are four to five C300 refuelers with a 1,200-gallon capacity used to move MOGAS, diesel, and boiler fuel. The primary Jet A customers are AWACS, Navy E-6, and the 507th Reserve unit. Petroleum products other than Jet A are delivered by commercial tanker trucks.

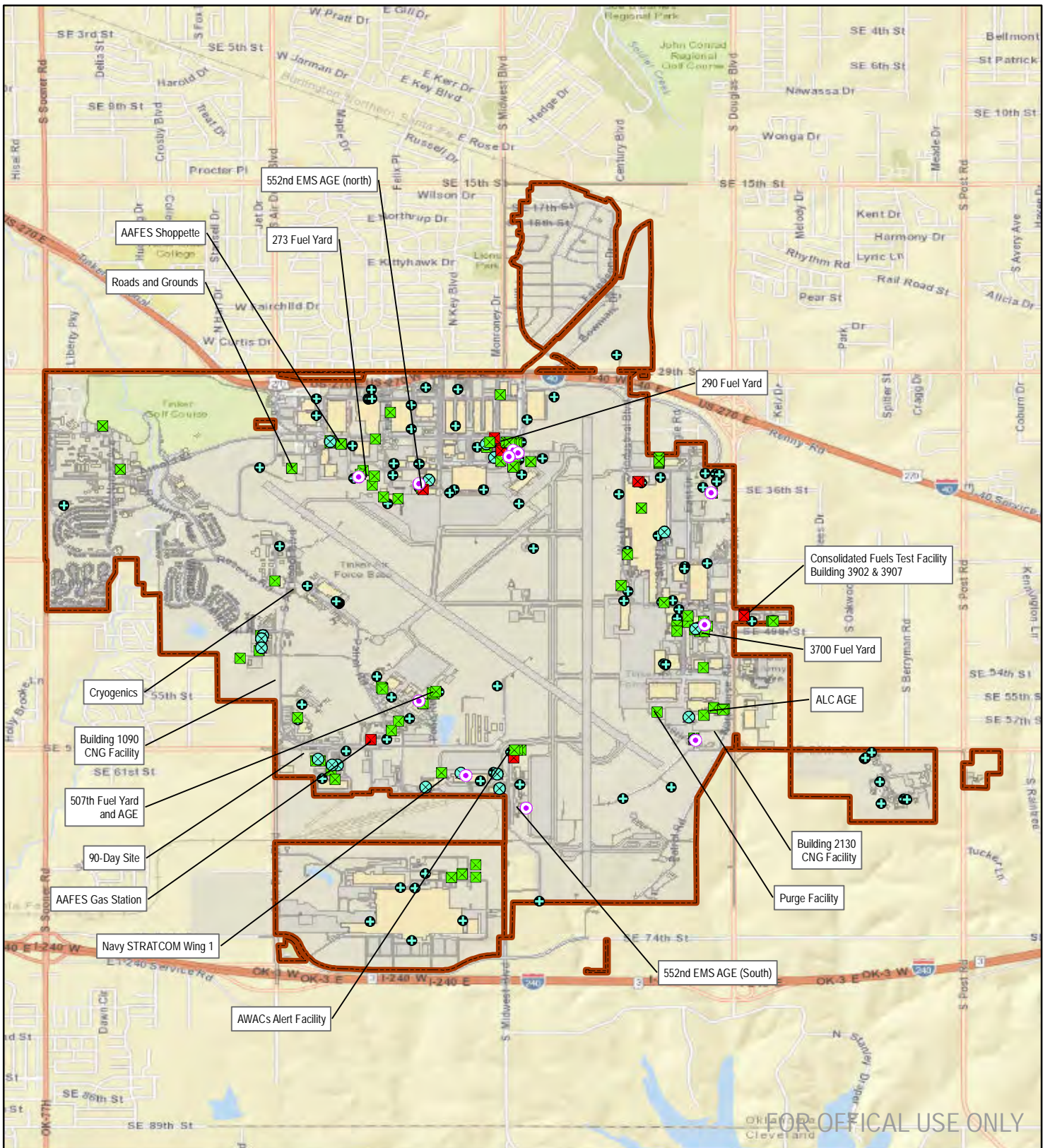
A.2 Geology, Topography, and Climate: Tinker AFB is located in the Central Redbed Plains section of the Central Lowland Physiographic Province which is characterized by level to gently rolling hills, broad flat plains, and bottomlands bisected by small to medium-sized water courses. Elevations range from 1,200 feet above mean sea level (MSL) at Crutch Creek in the northeastern portion of the Base to 1,310 MSL in the southeastern section.

Tinker AFB climate is classified as warm subhumid with pronounced day-to-day changes and gradual seasonal changes, although the changes of seasonal weather conditions are very dramatic. Summer temperatures above 90 degrees Fahrenheit (F) are not uncommon, occurring on the average of 71 days during the year. The average high temperature is 60-70 degrees (Fahrenheit) with a high of 92 degrees in July and August to a low of 40 degrees in December. The average low temperature is 50 degrees with a low of 27 degrees in January and a high of 72 degrees in July. Temperatures in the spring and fall are generally mild with warm days and cool nights. The average humidity is 72%. Precipitation averages 35-40 inches per year with the heaviest rains occurring during May and June. Snowfall averages about 10 inches per year with

the heaviest snows during January and February. Winds average from 12-14 MPH and the predominant direction is from the south-southeast.

A.3 Installation Oil Storage and Handling Sites: Bulk oil storage and handling sites are located throughout the Base and are discussed in detail in separate Tabs to this Annex (see Figure A.1). See Tables A.1 and A.2 for a listing of petroleum storage tanks at Tinker AFB.

A.4 Emergency Power: Permanently installed auxiliary power generators are located throughout the Base. These tanks are managed by the Power Production Shop. Refer to Table A.1 for a listing of emergency generators. In the event of power failure at Facility 3714 (Jet A hydrant/storage area), the BCE will restore power by portable generator within two hours after notification by the FCC.



LEGEND

- Aboveground Storage Tanks
- Underground Storage Tanks
- Drum
- Bowser/Mobile Refueler
- Drums
- Generators
- Buildings
- Base Boundary

0 3,000 6,000
Feet

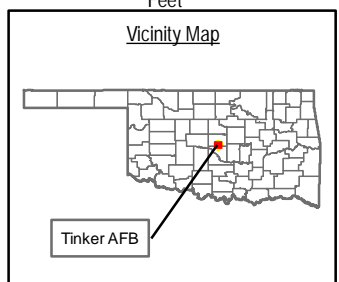
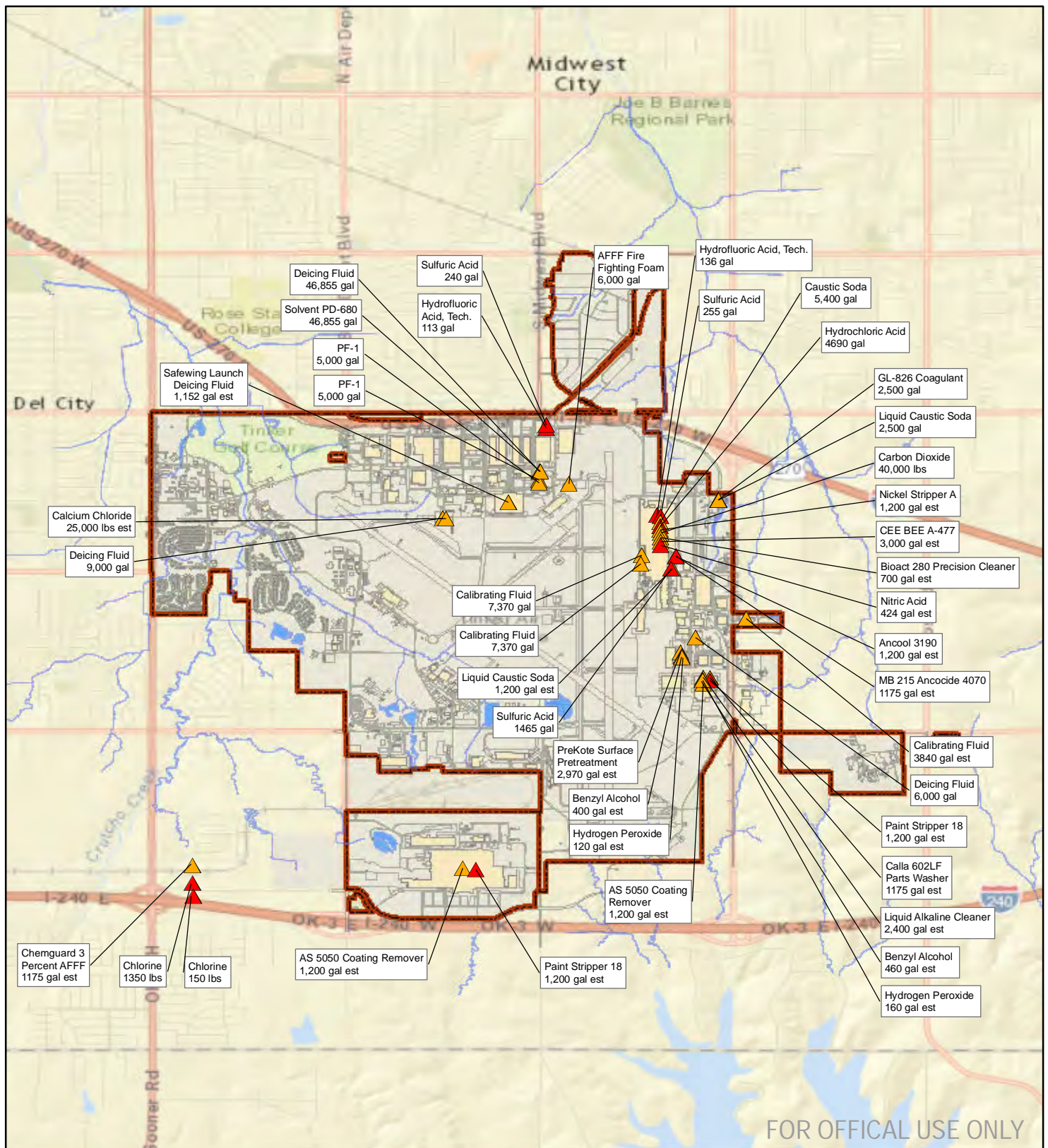


FIGURE A.1
BULK STORAGE LOCATION MAP
TINKER AIR FORCE BASE
OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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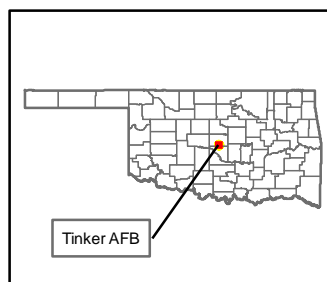
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LEGEND

- Hazardous Substance
- Extremely Hazardous Substance
- Pond Areas
- Creek Areas
- Base Boundary
- Existing Buildings



Feet



**FIGURE A.2
HAZARDOUS STORAGE
LOCATION MAP
TINKER AIR FORCE BASE
OKLAHOMA**

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
General Aboveground Storage Tanks								
11	72 ABW/CEO Sprinkler Shop	11-FP	285	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
117	72ABW/CEO - Pavement	117	1,500	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.35
200, Room 178 - Air Driven Accessories Test	550CMMXS/MS DPAB	200A	750	New Calibration Fluid	AST – Not in Use	Double-walled	N/A – Tank not in use	Tab A.11
200, Room 178 - Air Driven Accessories Test	550CMMXS/MS DPAB	200B	750	Waste Calibration Fluid	AST	Double-walled	Direct Vision Gauge	Tab A.11
200, Room 178 - Air Driven Accessories Test	550 CMMXS/MXDP	200-S1	140	Waste Calibration Fluid	AST - Vaulted	Vault	Automatic high-level pump 112.8(c)(8)(ii)	Tab A.11
200, Room 178 - Air Driven Accessories Test	550 CMMXS/MXDP	200-S2	140	Waste Calibration Fluid	AST - Vaulted	Vault	Automatic high-level pump 112.8(c)(8)(ii)	Tab A.11
200, Cleaning Area	550CMMXS/MS DPAB	200-drum1	2 x 55	Solvent	drum	Building	Empty only	Tab A.11
200, Hydraulic Test Area	550CMMXS/MS DPAB	200-drum2	2 x 55	Calibration fluid	drum	Building	Empty only	Tab A.11
213	550CMMXS/MS DPAB	213	40 x 55	Various Oils	drum	Concrete Berm: 93.5 gal per 4 drums	Empty only	Tab A.35
Bldg 220	552 EMS	220-drum-1	7 x 55	Various Oils	drum	Spill pallet >55	Empty only	Tab A.6

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
241, Fire Pump Near Transient Alert	All 72ABW/CEO	241-FP	500	Diesel	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.34
Fire Pump Near Transient Alert	All 72ABW/CEO	241-DT-1**	50**	Diesel	AST	N/A	N/A	Tab A.34
Fire Pump Near Transient Alert	All 72ABW/CEO	241-DT-2**	50**	Diesel	AST	N/A	N/A	Tab A.34
260	Motor Pool	260	280	Used Oil	AST	Inadequate Spill Pallet	Equivalent Protection (Wide-grated mouth)	Tab A.35
260	72 ABW/CEO Sprinkler Shop	260-FP	200	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
552nd AGE, near 289	552 EMS	264R	15,000	Jet A	AST - Vaulted	Vault	Ronan/HLA	Tab A.34
290 POL Fuel Yard	72MSG/LRDF	271	5,941	Waste Fuel	AST - Vaulted	Vault	High-level alarms	Tab A.1
273 Fuel Yard	72MSG/LRDF	273 / 211	2,330,748	Jet A	AST	Inadequate Concrete Berm: 2,497,556	High-level alarms	Tab A.2
273 Fuel Yard	72MSG/LRDF	274	1,051,870	Fuel Oil	AST	Concrete Berm: 1,605,016	High-level alarms	Tab A.2
Fire Pump Near Transient Alert	All 72ABW/CEO	286	1,000	Jet A	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.14
Fire Pump Near Transient Alert	All 72ABW/CEO	287	1,000	Mogas	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.14

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
Bldg 214, SW corner	AFCEC	290 West	2,000	Waste Fuel	AST	Metal containment enclosure	High-level alarms	Tab A.35
3700 Fuel Yard	72MSG/LRDF	327	12,000	Lubricating Oil LA6	AST	Double-walled	High-level alarms	Tab A.5
290 POL Fuel Yard	72MSG/LRDF	330 / 212	212,463	Jet A	AST	Inadequate Concrete Berm: 227,461	High-level alarms	Tab A.1
290 POL Fuel Yard	72MSG/LRDF	331 / 213	212,168	Jet A	AST	Inadequate Concrete Berm: 227,461	High-level alarms	Tab A.1
290 POL Fuel Yard	72MSG/LRDF	332 / 223	42,418	Diesel	AST	Concrete Berm: 91,884	High-level alarms	Tab A.1
290 POL Fuel Yard	72MSG/LRDF	333 / 214	42,353	MOGAS	AST	Concrete Berm: 91,884	High-level alarms	Tab A.1
290 POL Fuel Yard	72MSG/LRDF	334 / 215	46,915	Jet A	AST	Concrete Berm: 86,213	High-level alarms	Tab A.1
290 POL Fuel Yard	72MSG/LRDF	335 / 216	46,915	Jet A	AST	Concrete Berm: 86,213	High-level alarms	Tab A.1
290 POL Fuel Yard	72MSG/LRDF	337	46,935	Solvent PD-680	AST	Inadequate Concrete Berm: 36,890	High-level alarms	Tab A.1
290 POL Fuel Yard	72MSG/LRDF	341 / 218	42,468	Diesel	AST	Inadequate Concrete Berm: 36,890	High-level alarms	Tab A.1
416	72 ABW/CEO Sprinkler Shop	416-FP-1	175	Diesel	AST	Building	Stick gauge 112.8(c)(8)(iii)	Tab A.34
416	72 ABW/CEO Sprinkler Shop	416-FP-2	175	Diesel	AST	Building	Stick gauge 112.8(c)(8)(iii)	Tab A.34

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
467	72 ABW/CEO Sprinkler Shop	467-FP	611	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
472 - AAFES Service Station	AAFES Gas Station	472-1	12,000	Unleaded Gasoline	AST - Vaulted	Vault	Fill cutoff valve 112.8(c)(8)(ii)	Tab A.16
472 -AAAFES Service Station	AAFES Gas Station	472-2	12,000	Unleaded Gasoline	AST - Vaulted	Vault	Fill cutoff valve 112.8(c)(8)(ii)	Tab A.16
472 -AAAFES Service Station	AAFES Gas Station	472-3	12,000	Unleaded Plus Gasoline	AST - Vaulted	Vault	Fill cutoff valve 112.8(c)(8)(ii)	Tab A.16
472 -AAAFES Service Station	AAFES Gas Station	472-4	12,000	Unleaded Super Gasoline	AST - Vaulted	Vault	Fill cutoff valve 112.8(c)(8)(ii)	Tab A.16
472 - AAFES Firestone	AAFES	472-FS1	280	Waste Oil	AST	Double-walled	Direct Vision Gauge	Tab A.16
472 - AAFES Firestone	AAFES	472-FS2	275	Motor Oil	AST	Double-walled	Direct Vision Gauge	Tab A.16
472 - AAFES Firestone	AAFES	472-drum	7 x 55	Various Oils	drum	Building	Equivalent Protection (Empty only)	Tab A.16
Phillips System	72MSG/LRDF	483 / 224	426,052	Jet A	AST	Concrete Berm: 417,933	High-level alarms	Tab A.2
Phillips System	72MSG/LRDF	484 / 225	426,108	Jet A	AST	Concrete Berm: 418,473	High-level alarms	Tab A.2
809	72ABW/CEI	809-1	4,000	Used Oil	AST	Double-walled	Direct Vision Gauge	Tab A.17

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
808 Warehouse	72ABW/CEI	809-drum-1	80 x 55	Various Oil	drum	Impoundment: 2,000	Equivalent Protection (Empty only)	Tab A.17
808 Warehouse	72ABW/CEI	809-drum-2	8 x 55	Various Oil	drum	Impoundment: 1,000	Equivalent Protection (Empty only)	Tab A.17
808 Warehouse	72ABW/CEI	809-tote	330	Various Oil	tote	Impoundment: 2,000	Equivalent Protection (Empty only)	Tab A.17
810	72ABW/CEO - Sprinkler Shop	810-FP	75	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
810	72ABW/CEO - Sprinkler Shop	810-FP-DT	120	Diesel	AST	Building	Direct Vision Gauge	Tab A.34
810	72ABW/CEI	810-drum	80 x 55	Various Oil	drum	Building	Equivalent Protection (Empty only)	Tab A.18
812	72 ABW/CEO Sprinkler Shop	812-FP-1	200	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
812	72 ABW/CEO Sprinkler Shop	812-FP-2	200	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
817	Navy	817-drum	60 x 55	Various Oil	drum	Building	Equivalent Protection	Tab A.10
817A	Navy	817A-drum	48x55	Various Oil	drum	Building	Equivalent Protection	Tab A.10
820, Navy STRATCOM	Navy	NA001	4,000	Jet A	AST	Double-walled	Direct Vision Gauge	Tab A.10
820, Navy STRATCOM	Navy	NA002	1,000	Mogas	AST	Double-walled	Direct Vision Gauge	Tab A.10

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
820, Navy STRATCOM	Navy	820-drum	4 x 55	Various Oil	drum	Overpack > 55	Equivalent Protection (Empty only)	Tab A.10
825	Navy	825-drum	4 x 55	Various Oil	drum	Spill pallet >55	Equivalent Protection (Empty only)	Tab A.10
825	Navy	825-DU	5 x 55	Various Oil	drum	Double-walled	Direct Vision Gauge	Tab A.10
830	Navy	830-drum	3 x 55	Hydraulic Fluid	drum	Building	Equivalent Protection (Empty only)	Tab A.10
Roads and Grounds	72MSG/LRDF	886 / 230	3,000	Unleaded Gasoline	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.19
Roads and Grounds	72MSG/LRDF	887 / 210	12,000	Bio-Diesel	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.19
976 - AWACS Alert Area	72MSG/LRDF	965 / 207	107,520	Jet A	AST	Concrete Berm: 184,109	High-level Alarms	Tab A.4
976 - AWACS Alert Area	72MSG/LRDF	998 / 205	106,472	Jet A	AST	Concrete Berm: 168,860	High-level Alarms	Tab A.4
976 - AWACS Alert Area	72MSG/LRDF	999 / 206	106,489	Jet A	AST	Concrete Berm: 168,860	High-level Alarms	Tab A.4
1020	72 ABW/CEO Sprinkler Shop	1020-FP	180	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
1032	All 72ABW/CEO	1032-FP-DT-1**	25**	Diesel	AST	N/A	N/A	Tab A.34
1032	All 72ABW/CEO	1032-FP-DT-2	75	Diesel	AST	No containment	Equivalent Protection	Tab A.34

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
1032	All 72ABW/CEO	1032-FP-DT-3	75	Diesel	AST	No containment	Equivalent Protection	Tab A.34
1032	All 72ABW/CEO	1032-FP-DT-4**	25**	Diesel	AST	N/A	N/A	Tab A.34
Southeast of 1032	All 72ABW/CEO	1032-FP	564	Diesel	AST - Vaulted	Vault	Ronan, HLA	Tab A.34
Behind 1070	507th MXS	1060 / 192	5,000	MOGAS/ Unleaded	AST - Vaulted	Vault	Ronan, HLA	Tab A.8
Behind 1070	507th MXS	1061 / 193	5,000	Jet A	AST - Vaulted	Vault	Ronan, HLA	Tab A.8
Behind 1070	507th MXS	1062 / 194	6,000	Diesel	AST - Vaulted	Vault	Ronan, HLA	Tab A.8
1070	507th MXS	1070-drum	7 x 55	Various Oil	drum	Building	Equivalent Protection (Empty only)	Tab A.8
1073 - 507th ARW	72MSG/LRDF	21090	108,454	Jet A	AST	Concrete Berm: 250,197	High-level alarms	Tab A.3
1073 - 507th ARW	72MSG/LRDF	21091	108,903	Jet A	AST	Concrete Berm: 250,197	High-level alarms	Tab A.3
1073 - 507th ARW	72MSG/LRDF	21093	4,000	Used Jet A	AST - Vaulted	Vault	High-level alarms	Tab A.3
1083	72 ABW/CEO Sprinkler Shop	1083-FP	120	Diesel	AST	Metal containment: 280	Direct Vision Gauge	Tab A.34
1094	72 ABW/CEO Sprinkler Shop	1094-FP	180	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
1122 Pavement Shop	Road and Grounds Equipment	1122	1,000	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.35

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
1130 Motor Pool	Motor Pool	1130-1	325	Used Oil	AST	Inadequate Spill Pallet	Equivalent Protection (Wide-grated mouth)	Tab A.21
1130 Motor Pool	Motor Pool	1130-2	265	Used Oil	AST	Inadequate Spill Pallet	Equivalent Protection (Wide-grated mouth)	Tab A.21
1130 Motor Pool	Motor Pool	1130-drum	16 x 55	Various Oils	drum	Pit in Building: 2,132	Equivalent Protection (Empty only)	Tab A.21
1130 Motor Pool	Motor Pool	1130-GP-drum	4 x 55	Various Oils	drum	Building	Equivalent Protection (Empty only)	Tab A.21
1130 Motor Pool	Motor Pool	1130-SP-drum	5 x 55	Various Oils	drum	Building	Equivalent Protection (Empty only)	Tab A.21
1137 TRACE Grounds Maintenance	TRACE	1137-1	1,000	Mogas	AST combined	Double-walled	Direct Vision Gauge	Tab A.35
1137 TRACE Grounds Maintenance	TRACE	1137-2	500	Diesel	AST combined	Double-walled	Direct Vision Gauge	Tab A.35
ALC AGE	ALC AGE	2101D	6,000	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.7
ALC AGE	ALC AGE	2101JM	6,000	Jet A and MOGAS	AST	Double-walled	Direct Vision Gauge	Tab A.7
ALC Drum Storage Area	ALC AGE	2101-drum	27 x 55 gal	Various Oils	Drum	Concrete Berm >55 gal	Equivalent Protection (Empty only)	Tab A.7

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
2110	Motor Pool	2110	230	Used Oil	AST	Grated pit: 720	Equivalent Protection (Wide-grated mouth)	Tab A.35
2110	Motor Pool	2110-drum	3 x 55	Various Oils	drum	Grated pit: 720	Equivalent Protection (Empty only)	Tab A.35
2111 Purging Facility	76 AMXG	2117	2,000	JP-5/water	AST - Vaulted	Vault	Ronan, HLA	Tab A.23
2119	72ABW/CEO - Sprinkler Shop	2119-FP-1	250	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
2119	72ABW/CEO - Sprinkler Shop	2119-FP-2	250	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
2123	72 ABW/CEO Sprinkler Shop	2123A / 203	2,000	Diesel	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.34
2123	72 ABW/CEO Sprinkler Shop	2123B / 204	2,000	Diesel	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.34
2123	72 ABW/CEO Sprinkler Shop	2123-DT	110	Diesel	AST	Metal containment: 142	Auto fill from vaulted ASTs 112.8(c)(8)(ii)	Tab A.34
2210 - Fuel Accessories Unit	552 CMMXS/MSDPAC	2210	1,445	Mil-C-7808	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.35
3001	776 MXSS	3001-PD680	1,500	Solvent PD-680	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.35

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
3001, Post T-81W	545 PMXS/MXDP	3001-F100-1	80	Lube Oil	AST	Building 3001	Direct Vision Gauge	Tab A.35
3001, Post T-81W	545 PMXS/MXDP	3001-F100-3	80	Dewatering Oil	AST	Building 3001	Direct Vision Gauge	Tab A.35
3105	776 AMXG	3105-NDI	80	Penetrant Oil	AST	Drains to IWTP	Equivalent Protection (Open Top)	Tab A.35
3202	72ABW/CEO - Sprinkler Shop	3202-FP	180	Diesel	AST - Vaulted	Vault	Equivalent Protection (Ronan)	Tab A.34
3234, cell 11 & 12	76 PMXG	3234-A North	600	Flush Oil	AST	Oil/Water Separator: 3,000	Direct Vision Gauge	Tab A.35
3234, cell 11 & 12	76 PMXG	3234-B North	300	Flush Oil	AST	Oil/Water Separator: 3,000	Direct Vision Gauge	Tab A.35
3234, cell 11 & 12	76 PMXG	3234-C North	200	Lube Oil	AST	Oil/Water Separator: 3,000	Direct Vision Gauge	Tab A.35
3234, cell 9 & 10	76 PMXG	3234-A South	600	Flush Oil	AST	Oil/Water Separator: 3,000	Direct Vision Gauge	Tab A.35
3234, cell 9 & 10	76 PMXG	3234-B South	300	Flush Oil	AST	Oil/Water Separator: 3,000	Direct Vision Gauge	Tab A.35
3234, cell 9 & 10	76 PMXG	3234-C South	200	Lube Oil	AST	Oil/Water Separator: 3,000	Direct Vision Gauge	Tab A.35
3703, cell 1 & 2	76 PMXG	3703-A	260	Flush Oil	AST	Oil/Water Separator: 3,300	Direct Vision Gauge	Tab A.35
3703, cell 1 & 2	76 PMXG	3703-B	260	Flush Oil	AST	Oil/Water Separator: 3,300	Direct Vision Gauge	Tab A.35
3703, cell 7 & 8	76 PMXG	3703-C	260	Flush Oil	AST	Oil/Water Separator: 3,300	Direct Vision Gauge	Tab A.35

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
3700 Fuel Yard	72MSG/LRDF	3710	205,000	Jet A	AST	Concrete Berm: 252,568	High-level alarms	Tab A.5
3700 Fuel Yard	72MSG/LRDF	3716 / 201	207,165	Jet A	AST	Concrete Berm: 355,521	High-level alarms	Tab A.5
3700 Fuel Yard	72MSG/LRDF	3718 / 202	445,964	Jet A	AST	Inadequate Concrete Berm: 403,649	High-level alarms	Tab A.5
3772	72 ABW/CEO	3772	1,000	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.35
3772	72 ABW/CEO	3772-drum	28 x 55	Release Fluid	drum	Berm: 1,600	Equivalent Protection (Empty only)	Tab A.35
3900 - DISA	DISA	3900-1	20,000	Diesel	AST	Double-walled	Equivalent Protection (Ronan)	Tab A.22
3900 - DISA	DISA	3900-DT-1	600	Diesel	AST	Double-walled	Direct Vision Gauge and Auto-cutoff	Tab A.22
3900 - DISA	DISA	3900-DT-2	600	Diesel	AST	Double-walled	Direct Vision Gauge and Auto-cutoff	Tab A.22
3900 - DISA	DISA	3900-DT-3	600	Diesel	AST	Double-walled	Direct Vision Gauge and Auto-cutoff	Tab A.22
3900 - DISA	DISA	3900-DT-4	600	Diesel	AST	Double-walled	Direct Vision Gauge and Auto-cutoff	Tab A.22

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
South side of 3907 - Consolidated Fuels Test Facility	552 CMMXS/MSDP AC	3907-1200	10,000	Calibration Fluid	AST	Concrete Berm: 15,062	High-level alarms	Tab A.28
South side of 3907 - Consolidated Fuels Test Facility	552 CMMXS/MSDP AC	3907-1201	10,000	Calibration Fluid	AST	Concrete Berm: 15,062	High-level alarms	Tab A.28
South side of 3907 - Consolidated Fuels Test Facility	552 CMMXS/MSDP AC	3907-2200	10,000	Water, Used Calibration Fluid	AST	Concrete Berm: 15,062	High-level alarms	Tab A.28
South side of 3907 - Consolidated Fuels Test Facility	552 CMMXS/MSDP AC	3907-2201	10,000	Water, Used Calibration Fluid	AST	Concrete Berm: 15,062	High-level alarms	Tab A.28
Golf Course Maintenance	Golf Course Maint.	5935-1	550	Diesel	AST	Plastic Berm: 1,615	Stick gauge 112.8(c)(8)(iii)	Tab A.30
Golf Course Maintenance	Golf Course Maint.	5935-2	550	Unleaded Gasoline	AST	Plastic Berm: 1,615	Stick gauge 112.8(c)(8)(iii)	Tab A.30
Auto Hobby Shop	Auto Hobby Shop	6002	700	Used Oil	AST	Metal containment: 870	Equivalent Protection (Wide-grated mouth)	Tab A.29
7017	72 ABW/CEO Sprinkler Shop	7017-FP	115	Diesel	AST	Double-walled	Direct Vision Gauge	Tab A.34
TAC Area, T-9 Test Cell	76 PMXG	9302-1	12,000	Jet A	AST	Double-walled	High-level alarms	Tab A.31
TAC Area, T-9 Test Cell	76 PMXG	9302-2	12,000	Jet A	AST	Double-walled	High-level alarms	Tab A.31
9303 TAC Area	72 ABW/CEO Sprinkler Shop	9303-FP-1	320	Diesel	AST	Inadequate: 490	Direct Vision Gauge	Tab A.34

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
9303 TAC Area	72 ABW/CEO Sprinkler Shop	9303-FP-2	320	Diesel	AST	Inadequate: 490	Direct Vision Gauge	Tab A.34
TAC Area, T-9 Test Cell	76 PMXG	9403	10,000	Jet A	AST	Double-walled	High-level alarms	Tab A.31
TAC Area, T-9 Test Cell	76 PMXG	9404	10,000	Jet A	AST	Double-walled	High-level alarms	Tab A.31
62501 - Industrial Waste Treatment Plant	DEG	62501-1	21,000	Used Oil	AST	Concrete Berm: 44,829	Equivalent Protection 112.8(c)(8)(iii)	Tab A.33
62501 - Industrial Waste Treatment Plant	DEG	62501-2	21,000	Used Oil	AST	Concrete Berm: 44,829	Equivalent Protection 112.8(c)(8)(iii)	Tab A.33
62501 - Industrial Waste Treatment Plant	DEG	62501-3	21,000	Used Oil	AST	Concrete Berm: 44,829	Equivalent Protection 112.8(c)(8)(iii)	Tab A.33
62501 - Industrial Waste Treatment Plant	DEG	62501-4	21,000	Used Oil	AST	Concrete Berm: 44,829	Equivalent Protection 112.8(c)(8)(iii)	Tab A.33
Generators								
1, Outside North Loading Dock	PowerPro	1	100	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
18, Southwest Side of Bldg	PowerPro	18	60	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
42, Inside, South Side of Bldg	PowerPro	42-DT**	10**	Diesel	Generator AST Daytank	N/A	N/A	N/A
117, Fire Station 1, Outside, SE Corner	PowerPro	117-G	500	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
208, Outside, East Side of Facility	PowerPro	208	595	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
230, Outside, SW Corner	PowerPro	230	185	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
230, Eastside of Bldg	PowerPro	230E	113	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
240, West Side of Bldg	PowerPro	240	1,480	Diesel	Generator AST - Vaulted	Vault	Ronan/HLA	Tab A.36
250, Base Fuels, Outside, East of Bldg	PowerPro	250	100	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
255, Outside, West Side of Facility	PowerPro	255	750	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
260, Inside Stand-Alone Bldg	PowerPro	260-DT	275	Diesel	Generator AST Daytank	Drain to IWTP	Direct Vision Gauge	Tab A.36
280, Outside, SE Corner of Bldg	PowerPro	280-DT	100	Diesel	Generator AST Daytank	Double-walled	Direct Vision Gauge	Tab A.36
281, SE of Bldg 280	PowerPro	281	100	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
284, Inside Mech Rm	PowerPro	284-DT	350	Diesel	Generator AST Daytank	Double-walled	Direct Vision Gauge	Tab A.36
290, Outside, NE Corner of Fuel Yard	PowerPro	290	75	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.1, Tab A.36
414, Outside, North of Bldg	PowerPro	414	450	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
416, Outside, Se Corner of Bldg	PowerPro	416-SE	143	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
416, Outside, NE Side of Facility	PowerPro	416-NE	312	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
469, Supply Distribution, Outside, West of Bldg	PowerPro	469	150	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
504, Inside Stand-Alone Bldg	PowerPro	504-A-DT	275	Diesel	Generator AST Daytank	Building	Direct Vision Gauge	Tab A.36
504, Inside Stand-Alone Bldg	PowerPro	504-B-DT	275	Diesel	Generator AST Daytank	Building	Direct Vision Gauge	Tab A.36
591, Security Forces, Outside, North of Bldg	PowerPro	591	55	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
685, Outside, East Side of Facility	PowerPro	685	145	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
690, Outside, North of Bldg	PowerPro	690	240	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
807, Outside, South Side	PowerPro	807	355	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
812, Outside, South Side	PowerPro	812	240	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
820-1, In Front of 829	PowerPro	820-1	1,150	Diesel	Generator AST	1310	Audible Air Vent 112.8(c)(8)(i)	Tab A.10, Tab A.36
820-2, In Front of 829	PowerPro	820-2	1,150	Diesel	Generator AST	1310	Audible Air Vent 112.8(c)(8)(i)	Tab A.10, Tab A.36
906, AWACS Flight Line, Inside	PowerPro	906	268	Diesel	Generator AST	1256.64	Stick Gauge 112.8(c)(8)(iii)	Tab A.36
928, Localizer 35, Inside, Stand-Alone Bldg	PowerPro	928	300	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
930, Glideslope Flight Line, Inside, Stand-Alone Bldg	PowerPro	930	300	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
933, 17 Glidescope Stand-Alone Bldg	PowerPro	933	300	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
935, Control Tower, Inside	PowerPro	935	140	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
942, Localizer 17, Inside, Stand-Alone Bldg	PowerPro	942	300	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
951, 12 Approach Bak-12 on South Side of Barrier Shed	PowerPro	951	80	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
955, Outside, End of Runway, Nw/ILS	PowerPro	955	125	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
988, East of Guard Gate, Inside, Stand-Alone Bldg	PowerPro	988	200	Diesel	Generator AST - Vaulted	Vault	Ronan/HLA	Tab A.36
988-DT, East of Guard Gate, Inside, Stand-Alone Bldg	PowerPro	988-DT**	20**	Diesel	Generator AST Daytank	N/A	N/A	N/A
996, AWACS, Inside Temp Stand-Alone Bldg	PowerPro	996	706	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.4, Tab A.36
1002, SW Side of Bldg, Outside	PowerPro	1002	150	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
1029, Telephone Switch	PowerPro	1029	145	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
1066, Outside, SW Corner	PowerPro	1066	250	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
1082, 507th	PowerPro	1082	150	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
1083, B-2 Units	PowerPro	1083-1	12,500	Diesel	Generator AST	Double-walled	High-Level Alarm	Tab A.36
1083, B-2 Units	PowerPro	1083-2	12,500	Diesel	Generator AST	Double-walled	High-Level Alarm	Tab A.36
71083, B-2 Unit #1	PowerPro	71083	250	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
71084, B-2 Unit #2	PowerPro	71084	250	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
71085, B-2 Unit #3	PowerPro	71085	250	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
1086, SP Armory, Outside, South Side	PowerPro	1086	200	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
1091, 507th Fuel Yard	PowerPro	1091	350	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
1094, Behind Hospital	PowerPro	1094-G	275	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
1105, Inside, South Side of Bldg, Transmitter Site	PowerPro	1105	275	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
1115, East of Bldg	PowerPro	1115	244	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
2280, Paint Hangar, Outside, West of Bldg	PowerPro	2280	150	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
3001, North Annex	PowerPro	3001-N	521	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
3001, North Annex	PowerPro	3001-G	400	Diesel	Generator AST Daytank	Double-walled	Direct Vision Gauge	Tab A.36
3001, Inside Boiler Room	PowerPro	3001-D	1,000	Diesel	Generator AST - Vaulted	Vault	Ronan/HLA	Tab A.36
3001, 3001E, Inside Boiler Room	PowerPro	3001-D-DT	135	Diesel	Generator AST Daytank	Metal Containment: 1,683	Direct Vision Gauge	Tab A.36
3001, 3001E, Inside Boiler Room	PowerPro	3001-D-drum	55	Diesel	drum	Overpack: 60	Equivalent Protection (Empty only)	Tab A.36
3001, West Side of Alley, Outside	PowerPro	3001-W	150	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
3102, Fire Station, Outside, North of Bldg	PowerPro	3102	100	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
3105, SE Corner Hangar	PowerPro	3105	75	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
3202, Northwest Side	PowerPro	3202	155	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
3202,	PowerPro	3202-DT**	10**	Diesel	Generator AST Daytank	N/A	N/A	N/A
3220, Door 146, Inside, SW Corner of Bldg	PowerPro	3220-DT**	10**	Diesel	Generator AST Daytank	N/A	N/A	N/A
3221, Inside Bldg, NE	PowerPro	3221-DT	159	Diesel	Generator AST	Drain to IWTP	Level sensor	Tab A.36

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
3225, Outside, East of Bldg	PowerPro	3225	200	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
3228, Outside, East Side of Facility	PowerPro	3228	106	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
3705, Outside, East Side of Facility	PowerPro	3705	100	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
3714, NW Corner of Fuel Yard	PowerPro	3715	204	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
3902, SE Corner of Bldg, Outside	PowerPro	3902	258	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.28, Tab A.36
3907, South Side of Bldg	PowerPro	3907	308	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.28, Tab A.36
4000, South Side of Bldg	PowerPro	4000	135	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
4002, South Side of Bldg	PowerPro	4002	60	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
Parked at 4002 Currently, East of Bldg	PowerPro	4002-2	75	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
4006, East of Bldg 4006	PowerPro	4006	200	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
4029, EIG, Outside, SW Corner of Bldg	PowerPro	4029	280	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
4032, LSOC Facility, Outside, West of Bldg	PowerPro	4032	75	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
4058, SW of FAA Control Tower	PowerPro	4058	300	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
5811, Stand-Alone Bldg	PowerPro	5811	130	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
9001, East of Bldg	PowerPro	9001-A	500	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.31, Tab A.36
9001, North of Bldg	PowerPro	9001-B	500	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.31, Tab A.36
9001, North of Bldg	PowerPro	9001-C	500	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.31, Tab A.36
9001, West of Bldg	PowerPro	9001-D	500	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.31, Tab A.36
9001, South Side of Bldg	PowerPro	9001-S	138	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.31, Tab A.36
9301, Boiler Plant	PowerPro	9301	1504	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.31, Tab A.36
22125, Lift Station, Outside, East of Bldg	PowerPro	22125	400	Diesel	Generator AST	Double-walled	Direct Vision Gauge	Tab A.36
61289,	PowerPro	61289	200	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
IWTP, Outside, NW End	PowerPro	62501A	500	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.33, Tab A.36
IWTP, Outside, NE End	PowerPro	62501B	520	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.33, Tab A.36
IWTP, Outside, SE End	PowerPro	62501C	500	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.33, Tab A.36
IWTP, Outside, SW End	PowerPro	62501D	100	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.33, Tab A.36
IWTP, Outside, NW End	PowerPro	62501E	215	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.33, Tab A.36

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
Bldg 13	PowerPro	3307-P-7	90	Diesel	Generator AST	No Containment	Stick Gauge 112.8(c)(8)(iii)	Tab A.36
Bldg 13	PowerPro	3307-P-8	90	Diesel	Generator AST	No Containment	Stick Gauge 112.8(c)(8)(iii)	Tab A.36
Bldg 13	PowerPro	3307-P-10	135	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
5905: Dining Facility	PowerPro	5905-P-12	520	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
2280	PowerPro	3307-P-13	200	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
1053; 2280, 2283	PowerPro	3307-P-14	135	Diesel	Generator Belly Tank	Double-walled	Direct Vision Gauge	Tab A.36
Mobile Refuelers								
290 Fuel Yard, Parking Area	72MSG/LRDF	R11 Refuelers	6,000 gal, 14 units	Jet A	Mobile Refueler	Drains to sump; spill kits	Direct Vision Gauge	Tab A.1
290 Fuel Yard, Parking Area	72MSG/LRDF	R12 Refuelers	200 gal, 10 units	Jet A	Mobile Refueler	Drains to sump; spill kits	Direct Vision Gauge	Tab A.1
290 Fuel Yard, Parking Area	72MSG/LRDF	C300 Tank Truck	1,200 gal, 5 units	Jet A	Mobile Refueler	Drains to sump; spill kits	Direct Vision Gauge	Tab A.1
290 Fuel Yard, Parking Area	72MSG/LRDF	Bowser (300 gal)	300	Jet A	Mobile Refueler	Drains to sump; spill kits	Direct Vision Gauge	Tab A.1
290 Fuel Yard, Parking Area	72MSG/LRDF	Bowser (400 gal)	400	Jet A	Mobile Refueler	Drains to sump; spill kits	Direct Vision Gauge	Tab A.1
290 Fuel Yard, Parking Area	72MSG/LRDF	Bowser (600 gal)	600	Jet A	Mobile Refueler	Drains to sump; spill kits	Direct Vision Gauge	Tab A.1
3700 Fuel Yard	72MSG/LRDF	Bowser (400 gal)	400	Jet A	Mobile Refueler	Drains to IWTP; spill kits	Direct Vision Gauge	Tab A.5

Table A.1: Tinker AFB Bulk Storage Summary of Aboveground Storage Tanks (ASTs)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾	ICP Locations: Annex A
Phillips System	72MSG/LRDF	Bowser (400 gal)	400	Jet A	Mobile Refueler	Concrete curb; spill kits	Direct Vision Gauge	Tab A.2
2110	552 MXG	Bowser (300 gal)	300	Diesel	Mobile Refueler	Concrete curb; spill kits	Direct Vision Gauge	Tab A.35
220 AGE Yard	552 MXG	Bowser (600 gal)	600 gal, 8 units	Jet A	Mobile Refueler	Parked on grated sump	Direct Vision Gauge	Tab A.6
820 AGE	Navy	Bowser (350 gal)	350 gal, 3 units	Jet A	Mobile Refueler	Building; spill kits	Direct Vision Gauge	A.10
976 AGE Yard	552 MXG	Bowser (600 gal)	600	Jet A	Mobile Refueler	Concrete curb; spill kits	Direct Vision Gauge	Tab A.6
1070, AGE Yard	507 ARW	Bowser (600 gal)	600 gal, 3 units	Jet A	Mobile Refueler	Concrete curb; spill kits	Direct Vision Gauge	Tab A.8
Bldg 801 Secure Parking Area	Navy	Mobile Refueler	800	Diesel	Mobile Refueler	Double-walled	Direct Vision Gauge	Tab A.10

** This tank has a capacity of less than 55 gallons and is included here only as a reference to demonstrate that it is not subject to SPCC rules.

(1) Equivalent Protection is provided as follows:

- Ronan system: Provides tank level information on a digital readout before and after filling, showing how much product will need to be added during filling.
- Wide-grated mouth: Allows the filler to directly see the level and contents of the tank.
- Empty only: For many drums and totes of new product, oil is never added to the container, only removed until empty.

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
1	Tanks	EM0007	72 ABW/CEIEC	Used Oils and Fuel	110 (2 drums x 55 gal)
1: 3001	Environmental	EM0008	72 ABW/CEIEA	Naphtha	55
1: Post F-1	Paint Shop	DD0016	DLA/DDOO-WMM	Used Oils and Fuel	55
1: SR D, DR58	Maintenance Branch	DD0010	DLA/DDOO-WMF	Used Oils and Fuel	55
13: SW Pad	Zone A - HVAC	CE0005	72 ABW/CECOAH	Used Oils and Fuel	110 (2 drums x 55 gal)
16: NE Corner	Chemical Storage Section	DD0005	DLA/DDOO-SFB	Used Oils and Fuel	110 (2 drums x 55 gal)
101: SE Corner	Plant Maintenance	CE0011	72 ABW/CECOPM	Used Oils and Fuel	110 (2 drums x 55 gal)
117: West Wall	Fire Department	CE0022	72 ABW/CEF	Diesel Fuel	55
200: B-1	Turbine, Drives, & PBA Sub Unit	LI0001	550 CMMXS/MXDPAAP	Used Oils and Fuel	55
200: M-1	Regulator S/U	LI0006	550 CMMXS/MXDPAAB	Used Oils and Fuel	55
200: Room 119	Air Accessory Test S/U	LI0011	550 CMMXS/MXDPAAP	Used Oils, Fuel, Calibrating Fluid, and Naphtha	165 (3 drums x 55 gal)
200: Room 119	Hydraulic Sub Unit	LI0002	550 CMMXS/MXDPAAV	Used Oils, Fuel, and Naphtha	220 (4 drums x 55 gal)
201: SW	Flying Training Squadron	ZZ0019	559 ACSS	Used Oils and Fuel	55
208: S/C/Upstairs	Steam Plant	CE0012	72 ABW/CECOPO	Used Oils and Fuel	55
210: Comp. Room	Area A Plant Maintenance	TI0010	76 MXSS/MXDVAAP	Used Oils and Fuel	110 (2 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
214: North Bay	Cruise Missile Shop	LI0003A	550 CMMXS/MXDPAC	Used Oils and Fuel	55
214: North/South Bay	Cruise Missile S/U	LI0003	550 CMMXS/MXDPAC	Used Oils, Fuel, and Jet Fuel	220 (4 drums x 55 gal)
220: North Side	AGE North	AW0003	552 EMS/MXMGS	Used Oils Fuel, and Jet Fuel	220 (4 drums x 55 gal)
220: NW Corner	Metals Tech	AW0025	552 EMS/MXMFM	Used Oils and Fuel	55
230	Electro-Envir	AW0019	552 CMS/MXMCE	Used Oils and Fuel	55
230: Dock 4	ISO - Phase	AW0005	552 EMS/MXMTC	Used Oils and Fuel	55
230: North Side	SIMS	BO0003	HUGHES TRNG	Used Oils and Fuel	55
230: Post C-22	Engine Electronic S/U	LI0041	550 CMMXS/MXDPBB	Used Oils and Jet Fuel	110 (2 drums x 55 gal)
230: SW 145	CMS Hydraulics Shop	AW0001	552 MXS/MXMCP	Used Oils and Fuel	55
230: SW 168	AMXS-North WSA	AW0010	552 AMXS/MXAX	Used Oils and Fuel	110 (2 drums x 55 gal)
230: T-12/Z-10	Cable Manufacturing & Rep	LI0026	552 CMMXS/MXDPA A	Used Oils, Fuel, and Jet Fuel	110 (2 drums x 55 gal)
240	Transient Alert Contract	ZZ0003	72 OSS/OS3	Used Oils and Fuel	55
240: Dock 3 & 4	KC135 Lean Cell 5	LA0001	564 AMXS/MXDPAE	Used Oils and Fuel	165 (3 drums x 55 gal)
250: North Side	Fuel Management Branch	LG0003	72 MSG/LRDF	Used Oils, Fuel, and Jet Fuel	220 (4 drums x 55 gal)
260: East Side	Smack Packaging	CB0002	559 CBSS/GBLAA	Used Oils and Fuel	55
260: Post A-19	.	LA0260	564 AMXS/MXDPAE	Used Oils and Fuel	110 (2 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
260: Post B-7	Tenant Engine Group	ZZ0007	OCALC/OLTK L30	Used Oils, Fuel, Jet Fuel, and Petroleum Distillates	165 (3 drums x 55 gal)
267	AAR	BO0002	HUGHES TRNG/AAR	Used Oils and Fuel	55
400	Construction Contracts	CE0008	72 ABW/CEN	Used Oils and Fuel	110 (2 drums x 55 gal)
413: East of Bldg	Cemas (Inside)	CE0026	72 ABW/CECRL	Used Oils and Fuel	55
414	Eng. Construction Mgt.	CE0002	72 ABW/CECXE	Used Oils and Fuel	55
740: North	Service Station	AA0001	AAFES/SVC STATION	Used Oils and Fuel	55
809: Outside	Barrel Yard	EM0012	72 ABW/CEIEC	Used Oils, Fuel, and Jet Fuel	165 (3 drums x 55 gal)
817: HGB/4	Waste Staging Area	NA0001	NAVY	Used Oils, Fuel, and Jet Fuel	165 (3 drums x 55 gal)
817: Navy	Navy Expired Materials	NA0099	NAVY	Used Oils and Fuel	55
860/1: ABDR Pad	ABDR Training Pad	CL0002	654 CLSS/LGMAB	Used Oils and Fuel	55
985	AGE South	AW0014	552 EMS/MXMGS	Used Oils, Fuel, and Jet Fuel	110 (2 drums x 55 gal)
986	AMXS-South WSA/Blue AMU	AW0009	552 AMXS/MXAX	Used Oils and Fuel	55
1010: South of Bldg	.	CY0001	31 CCS/CYCP	Used Oils and Fuel	220 (4 drums x 55 gal)
1017: 2nd Floor	Contractor (Authorized Smaller Containers)	LK0001	546 ACSS/GSLN	Naphtha	55
1023: NW/Shed	Combat Arms/Security Force	SP0001	72 SFS/SFTC	Used Oils and Fuel	110 (2 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
1030: NW SIDE	A Flight	TF0002	507 AGS/LGGA	Used Oils and Fuel	55
1030: West End	ISO Dock	TF0001	507 MS/LGMI	Used Oils and Fuel	55
1041: North End	Hydraulic Shop	TF0008	507 MS/LGRAP	Used Oils and Fuel	55
1055: I-2	Area A Plant Maintenance	LI0005	76 MXSS/MXDVAA	Used Oils and Fuel	55
1055: Vac Room	Vacuum Room	TI0014	OC-ALC/MADPPA14	Used Oils and Fuel	110 (2 drums x 55 gal)
1070: North End	Powered Support	TF0009	507 MS/LGGMG	Used Oils, Fuel, and Jet Fuel	330 (6 drums x 55 gal)
1083: R117	B-2 Software/Tech Support	LA0014	OC-ALC/LALM	Used Oils and Fuel	55
1083: Room 108NW	B-2 Software/Tech Support	LA0021	OC-ALC/LALM21	Used Oils and Fuel	55
1104: South Side	ATCALs Maintenance	CE0015	72 ABW/CECOCC	Used Oils and Fuel	55
1105	ATCALs Maintenance	ZZ0002	72 OSS/OSMA	Used Oils and Fuel	55
1122: North Side, East of Bay Door	Roads	CE0006	72 ABW/CECOIG	Used Oils and Fuel	165 (3 drums x 55 gal)
1130: Lube Bay	Motor Pool	TP0003	72 MSG/LRDVM	Used Oils and Fuel	110 (2 drums x 55 gal)
1130: South End	Motor Pool	TP0004	72 MSG/LRDVM	Used Oils and Fuel	165 (3 drums x 55 gal)
1137: NE Corner	Grounds Maintenance	CE0029	72 ABW/CE/TRACE	Used Oils and Fuel	165 (3 drums x 55 gal)
1139: South 40	Outside Drum Storage	DD0009	DLA/DDOO-SFB	Used Oils, Fuel, and Jet Fuel	165 (3 drums x 55 gal)
1156	.	SV0002	72 SPTG/SVFQ	Used Oils and Fuel	165 (3 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
2101: AST	AST	LA0030	76 AMXG/QIQ	Used Oils, Fuel, Naphtha	220 (4 drums x 55 gal)
2110: East Side	Motor Pool	TP0007	72 MSG/LRDVM	Used Oils and Fuel	55
2111: Fuel Dump	Fuel Containment Area	LA0013	566 AMXS/MXDVAC	Used Jet Fuel	55
2121: B-52	B-52 A/C Maintenance	LA0024	565 AMXS/MXDRAB	Used Oils and Fuel	55
2122: B-1	B-1A Maintenance	LA0009	565 AMXS/MXDPAB	Used Oils and Fuel	55
2122: B-1	B-1 A/C Maintenance	LA0017	565 AMXS/MXDPAB	Used Oils and Fuel	220 (4 drums x 55 gal)
2122: Center Dock	A/C Depaint	LA0008	566 AMXS/MXDVAB	Used Oils and Fuel	55
2136: Post E-3	E-3 A/C Maintenance	LA0015	566 AMXS/MXDPAB	Used Oils and Fuel	110 (2 drums x 55 gal)
2210: Post A-4	CSD Test Cell 3 West	LI0057	552 CMMXS/MXDPAC	Used Oils and Fuel	55
2210: Post A-6	CSD Test Sub-Unit 3 Cell 1	LI0010	552 CMMXS/MXDPAC	Used Oils and Fuel	55
2210: Post B-4	CSD Subunit #2	LI0009	552 CMMXS/MXDPAC	Used Oils and Fuel	55
2210: Post B-4	CSD Cell 3	LI0056	552 CMMXS/MXDPAC	Used Oils and Fuel	55
2210: Post E-7	CSD Sub-Unit 3 Tire Shop	LI0061	552 CMMXS/MXDPAC	Used Oils and Fuel	55
2211: Various	Composite Unit	LI0008	551 CMMXS/MXDPBC	Used Oils and Fuel	55
2212: West Side	Steam Plant	CE0017	72 ABW/CECOPO17	Used Oils and Fuel	55
2280: Paint	A/C Paint/Corrosion Cont	LA0012	566 AMXS/MXDVAB	Used Oils and Fuel	55
2283: M-13	KC-135 PDM Dock	LA2283	576 MXSS/MXDEB	Used Oils and Fuel	110 (2 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
3001: 97-102 XY	F119 Heavy Maintenance Center	PW0002	544 PMXS/MXDPB	Used Oils and Fuel	55
3001: B-83	Seal Shop Subunit	LP0073	548 PMXS/MXDRCA	Used Oils and Fuel	110 (2 drums x 55 gal)
3001: B-95, N-77	Tool Repair And Prototype	LP0054	547 PMXS/MXDRB	Used Oils and Fuel	55
3001: C-85	Gen Welding Subunit #1	LP0071	548 PMXS/MXDRCA	Used Oils and Fuel	55
3001: D-107	GE Rotor Subunit	LP0040	548 PMXS/MXDPA	Used Oils and Fuel	55
3001: F-79	Heat Treat	LP0037	548 PMXS/MXDRDB	Used Oils and Fuel	55
3001: F-89	CNC Machining	LP0075	548 PMXS/MXDRCB	Used Oils and Fuel	55
3001: F-93	Lean Cell/ Rubber Room	LP0055	548 PMXS/MXDRAB	Used Oils and Fuel	55
3001: G-79-2	RCRA Lab	EM0001	72 ABW/CEVIEA	Naphtha	55
3001: I-63	Metallurgy Lab	TI0025	76 MXSS/MXDTC	Used Oils and Fuel	55
3001: I-67	Laboratory	TI0001	76 MXSS/MXDTC	Used Oils, Fuel, and Jet Fuel	165 (3 drums x 55 gal)
3001: K-73	Welding Unit	LI0039	552 CMMXS/MXDRAE	Used Oils and Fuel	55
3001: K-97	TF33 Rotor Shop	LP0045	548 PMXS/MXDPA	Used Oils and Fuel	55
3001: KC-135	Lean Cell # 2	LA0035	564 AMXS/MXDPAE	Used Oils and Fuel	220 (4 drums x 55 gal)
3001: KC-50	Tank & Cooler S/U	LI0029	552 CMMXS/MXDRA	Used Oils, Fuel, and Naphtha	165 (3 drums x 55 gal)
3001: L-75	Paint Subunit	LP0039	548 PMXS/MXDRA	Used Oils and Fuel	55
3001: L-95	Hourglass & Shaft	LP0056	548 PMXS/MXDPA	Used Oils and Fuel	55

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
3001: N-57	Bearings Subunit	LI0022	552 CMMXS/MXDPAA	Used Oils, Fuel, and Naphtha	220 (4 drums x 55 gal)
3001: N-65	Grinding Sub-Unit	LI0033	552 CMMXS/MXDRAC	Used Oils and Fuel	55
3001: O-43	Fuel Control Subunit	LI0023	552 CMMXS/MXDPAA	Used Jet Fuel	55
3001: P-57	Tooling & Mod S/U	LI0027	552 CMMXS/MXDRAC	Used Oils and Fuel	55
3001: P-87	F100 Core Cluster	LP0041	544 PMXS/MXDPAA	Used Oils and Fuel	55
3001: R-31	NC Manufacturing, Mod & Repair Unit	LI0031	552 CMMXS/MXDRAC	Used Oils and Fuel	55
3001: R-39	Electrical Pumps & Access (Manifolds & Nozzles)	LI0019	552 CMMXS/MXDPBB	Used Oils, Fuel, and Jet Fuel	110 (2 drums x 55 gal)
3001: R-43	Electrical Valves S/U	LI0017	552 CMMXS/MXDPBB	Used Oils, Fuel, Jet Fuel, and Naphtha	165 (3 drums x 55 gal)
3001: S-102	GEarbox Assy/DIssy	LP0036	548 PMXS/MXDRBA	Used Oils and Fuel	110 (2 drums x 55 gal)
3001: S-39	Electrical S/U	LI0018	552 CMMXS/MXDPBB	Naphtha	55
3001: S-53	Sheet Metal Manufacture	LI0032	552 CMMXS/MXDRAD	Used Oils and Fuel	110 (2 drums x 55 gal)
3001: S-59	F-135 Engine Shop	LP0081	544 PMXS/MXDPC	Used Jet Fuel	55
3001: V-71	PMEL	TI0004	76 MXSS/MXDVACC	Used Oils, Fuel, Naphtha	110 (2 drums x 55 gal)
3001: V-71	Predictive Maintenance: PPM Oil Lab	TI0005	76 MXSS/MXDEA	Used Oils and Fuel	110 (2 drums x 55 gal)
3001: W-45	Oil Accessories	LI0020	552 CMMXS/MXDPBA	Used Oils and Fuel	110 (2 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
3001: W-45	Welding Unit	LI0039A	552 CMMXS/MXDRAE	Used Oils and Fuel	55
3001: W-71	F100 Fan Drive Assy/Dissy	LP0019	544 PMXS/MXDPAB	Used Oils and Fuel	55
3001: W-95	Turbine Shaft Subunit	LP0062	548 PMXS/MXDRAB	Used Oils and Fuel	55
3001: X-55	F-108-100/200 Engine Rep.	LP0051	546 PMXS/MXDPA A	Used Oils and Fuel	55
3001: X-58	F117 Maintenance Line (2Nd)	LP0080	544 PMXS/MXDPBB	Used Oils and Fuel	55
3001: X-59	General Machining	LP0069	548 PMXS/MXDRAA	Used Oils and Fuel	55
3001: X-65	F117 Maintenance Line	LP0079	544 PMXS/MXDPC	Used Oils and Fuel	55
3001: Y-107	Lean Cell #7	LA0041	564 AMXS/MXDPAE	Used Oils and Fuel	55
3001: Y-26	Lean Cell #4 KC-135	LA0038	564 AMXS/MXDPAE	Used Oils and Fuel	165 (3 drums x 55 gal)
3001: Y-65	A/C Plant/Steam	CE0010	72 ABW/CECOPO10	Used Oils and Fuel	110 (2 drums x 55 gal)
3001G: NE Wall	Communications Squadron	SC0002	72 CS/SCMP	Used Oils and Fuel	55
3001G: Room 102	Engine Elect. Control S/U	LI0025	550 CMMXS/MXDPBB	Used Oils and Fuel	55
3105: NDI	Non Destructive Inspections	LA0026	76 AMXG/QII	Used Oils and Fuel	55
3108: A-26--G-32	Fuel Control Test	LI0021	552 CMMXS/MXDPAB	Used Oils, Fuel, Calibrating Fluid, and Naphtha	165 (3 drums x 55 gal)
3108: Center West	Fuel Control Test Stand	MA0004	76 MXSS/MXDCAB	Used Oils and Fuel	55
3118: Post L-56	Cart Maintenance	TI0011	OC-ALC/MADPPB	Used Oils and Fuel	110 (2 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
3125: South Bay	Coolant Recovery Contract	TI0022	OC-ALC/MADWRS22	Used Oils and Fuel	110 (2 drums x 55 gal)
3220: Room 101/109	Laboratory	TI0013	448MSUG/GBMTE	Used Oils and Fuel	55
3220: Room 101/109	Test Lab	EN0002	76 MXSS/MXDEBA	Used Oils and Fuel	55
3221: Post L-3	Heat Treat/Plasma Blade	LP0061	548 PMXS/MXDRDB	Used Oils and Fuel	55
3225: Paint	A/C Paint/Corrosion Control	LA0010	566 AMXS/MXDVAB	Used Oils	55
3234: Test Cell	Engine Test Subunit	LP0065	548 PMXS/MXD TAA	Used Oils and Fuel	55
3307: East Inside Fenced Area	Power Pro	CE0001	72 ABW/CECOUIE	Used Oils and Fuel	165 (3 drums x 55 gal)
3307: South Overhead Door	Liquid Fuels	CE0013	72 ABW/CECOUF	Used Jet Fuel	55
3703: Test Cell	Engine Test Subunit 2	LP0063	548 PMXS/MXD TAA	Used Oils and Fuel	55
3705: Bay C A-18	Tubing & Cable S/U	LI0035	552 CMMXS/MXDRAD	Used Oils and Fuel	55
3705: Door 13	AST #2	LA0044	76 AMXG/QIQ	Used Oils, Fuel, and Naphtha	220 (4 drums x 55 gal)
3705: F-4	TF33 JEIM Field Level Maintenance	LP0068	545 PMXS/MXD PAN	Used Oils, Fuel, and Jet Fuel	110 (2 drums x 55 gal)
3705: NW Corner	TDR Unit	LP0050	OC-ALC/MXPATBC	Used Oils and Fuel	55
3705: SW End	Horizontal & Vertical Shop	LA0036	564 AMXS/MXDPAE	Used Jet Fuel	55
3708: Room 141	Common Avionics Unit	LI0037	550 CMMXS/MXD PBC	Used Oils and Fuel	55
3900: South End	Defense Information Systems Agency WLAS	ZZ0010	DISA DEFM	Used Oils and Fuel	110 (2 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
3902: Room C122	Fuel Control Test	LI0024	552 CMMXS/MXDPBC	Used Oils, Fuel, Calibrating Fluid, and Naphtha	165 (3 drums x 55 gal)
3907: Post 2F6	Governor And Accessory	LI0055	552 CMMXS/MXDPBA	Used Oils and Fuel	110 (2 drums x 55 gal)
5802: East Side	Steam Plant	CE0007	72 ABW/CECOPO7	Used Oils and Fuel	55
6002: Auto Shop	Skills & Development Cent	SV0001	72 SPTG/SVRS	Used Oils and Fuel	110 (2 drums x 55 gal)
7003: Inside Bldg: Door 10	Vehicle Maintenance Shop	CY0009	3 CCSS/CYSM	Used Oils and Fuel	110 (2 drums x 55 gal)
7016: NW Rollup Door	RF Transmission Shop	CB0003	35 CBCS/SCM	Used Oils and Fuel	110 (2 drums x 55 gal)
B808	Expired Material & Batteries	LP0099	76 MXW/QPE	Used Oils and Fuel	110 (2 drums x 55 gal)
9001: A-69	Installation Support	TI0002	776 MXSS/MXDVAA	Used Oils and Fuel	55
9001: AA39	TF33 QEC Lean Cell Unit	LP0002	546 PMXS/MXDPABA	Used Oils and Fuel	55
9001: BB-36	F-110-100/129 Eng.	LP0049	546 PMXS/MXDPAA	Used Oils, Fuel, and Jet Fuel	110 (2 drums x 55 gal)
9001: C-44	Boom Shop S/U	LI0030	551 CMMXS/MXDPAC	Used Oils and Fuel	55
9001: C-67	Installation Support	TI0003	776 MXSS/MXDVAAB	Used Oils and Fuel	55
9001: C-67	I-Branch Equipment Support	TI0037	776 MXSS/MXDVAA	Used Oils and Fuel	55
9001: CC41	P7/P100 Engine Subunit	LP0046	545 PMXS/MXPAAAB	Used Oils and Fuel	110 (2 drums x 55 gal)
9001: DD36	Augmentor/Exhaust Nozzle	LP0047	546 PMXS/MXDPAAD	Used Oils and Fuel	110 (2 drums x 55 gal)

Table A.2: Tinker AFB IAP Site Drum Storage Summary

Building: Location	Site Description	Site Code	Organization	Contents	Capacity (gallons)
9001: E-33	General Machine S/U	LI0034	552 CMMXS/MXDRAC	Used Oils and Fuel	110 (2 drums x 55 gal)
9001: E-33	General Machine S/U #2	LI0034A	552 CMMXS/MXDRAC	Used Oils and Fuel	110 (2 drums x 55 gal)
9001: M-29	A/C Structural Unit	LI0036	551 CMMXS/MXDPAA	Used Oils and Fuel	55
9001: P-50	Cart Maintenance	TI0036	OC-ALC/MADPPB	Used Oils and Fuel	110 (2 drums x 55 gal)
9001: V-44	Pharmacy - Bldg 9001	TI0035	MXSS/MXDVAB1	Used Oils and Fuel	55
9001: X-44	TF33 JEIM	LP0068A	545 PMXS/MXDPABA	Used Oils, Fuel, and Jet Fuel	110 (2 drums x 55 gal)
9001: X-47	TDR Unit	LP0025	547 PMXS/MXDTAB	Used Oils and Fuel	55
9301: Post D12/D13	TAC Power House	CE0032	72 ABW/CECOU	Used Oils and Fuel	110 (2 drums x 55 gal)
62516: IWTP	IWTP (Maintenance)	CE0009	72 ABW/CECOPI	Used Oils and Jet Fuel	110 (2 drums x 55 gal)
62516: IWTP/AES	HW Contracts	CE0004	72 ABW/CEES	Used Oils, Jet Fuel, and Calibrating Fluid	165 (3 drums x 55 gal)
Hanger 2: NW Corner - Tool Crib A-21	MROTC Center Hanger Navy SLEP Maintenance Repair	LA0043	566 AMXS/MXDPA	Used Oils and Fuel	55
MROTC: West Side Hanger	MROTC Center Hanger B1 Maintenance Repair	LA0046	565 AMXS/MXDPAB	Used Oils and Fuel	110 (2 drums x 55 gal)
MROTC: West Side/Back, Center Hanger	MROTC Center Hanger B1 Maintenance Repair	LA0045	565 AMXS/MXDPAB	Used Oils and Fuel	110 (2 drums x 55 gal)
Total Volume					15,730 gallons (286 drums x 55 gal)

**All drums at IAP sites are located on spill pallets under cover and/or indoors.

Table A.3: Tinker AFB Summary of Animal Fats and Vegetable Oils (Used Cooking Grease)

Building/Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Type	Secondary Containment (Method or Volume in gal)	Overfill Protection ⁽¹⁾
Burger King, Bldg 473	AAFES	473-VO	250	Used Cooking Oil	Plastic Grease Bin	No Containment	Equivalent Protection (Wide-grated mouth)
New BX, Bldg 685	AAFES	685-VO	250	Used Cooking Oil	Plastic Grease Bin	No Containment	Equivalent Protection (Wide-grated mouth)
Cafeteria, Bldg 3001	Aramark	3001-VO	250	Used Cooking Oil	Plastic Grease Bin	No Containment	Equivalent Protection (Wide-grated mouth)
Officer's Club, Bldg 5603	72 FSS	5603-VO	250	Used Cooking Oil	Plastic Grease Bin	No Containment	Equivalent Protection (Wide-grated mouth)
Bowling Alley, Bldg 5703	72 FSS	5703-VO	250	Used Cooking Oil	Plastic Grease Bin	No Containment	Equivalent Protection (Wide-grated mouth)
Dining Facility, Bldg 5907	72 FSS	5907-VO	250	Used Cooking Oil	Plastic Grease Bin	No Containment	Equivalent Protection (Wide-grated mouth)
Golf Course Grill, Bldg 6601	72 FSS	6601-VO	250	Used Cooking Oil	Plastic Grease Bin	No Containment	Equivalent Protection (Wide-grated mouth)
Total			1,750 gallons				

(1) A wide-grated mouth allows the filler to directly see the level and contents of the tank.

Table A.4: Tinker AFB Summary of Underground Storage Tanks (USTs)

Building/ Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Construction	Year Installed/Upgraded
42, Inside, South Side of Bldg	72ABW/CEO - Power Pro	42X	550	Diesel	Steel	1989/1995
200, Room 178 - Air Driven Accessories Test	550CMMXS/MSD PAB	200UST / 261	1,000	Hydraulic Fluid	DW-FG	2003/2007
Bldg 214, Missile Test Cell Facility	550 CMMXS	214-1 / 262	10,000	JP-10	DW-FG	2008
Bldg 214, Missile Test Cell Facility	550 CMMXS	214-2 / 263	10,000	JP-10	DW-FG	2008
Bldg 214, Missile Test Cell Facility	550 CMMXS	214-3A / 264	5,000	PF-1	DW-FG	2008
Bldg 214, Missile Test Cell Facility	550 CMMXS	214-3B / 264	5,000	PF-1	DW-FG	2008
260, Inside Stand-Alone Bldg	72ABW/CEO - Power Pro	260 / 56	6,000	Diesel	DW-FG	1985/1995
552nd AGE	552 EMS	269 / 85	3,000	Jet A	Steel	1980/1995
280, Outside, SE Corner of Bldg	72ABW/CEO - Power Pro	20281 / 184	1,000	Diesel	Steel	1980/1995
284, NW Corner of Bldg 284	72ABW/CEO - Power Pro	284 / 45	10,000	Diesel	DW-FG	Unk/1995
504, West of Bldg	72ABW/CEO - Power Pro	504A / 2	8,000	Diesel	DW-FG	1985/1995
504, West of Bldg	72ABW/CEO - Power Pro	504B / 3	8,000	Diesel	DW-FG	1985/1995
821 - Navy Steam Plant		821	10,000	Boiler Fuel	Steel	Unknown
829, Inside Equipment Bldg, SW of 829	72ABW/CEO - Power Pro	829 / 219	1,000	Diesel	DW-FG	1993/NA
552nd AGE	552 EMS	972 TOU / 112	1,000	Jet A	Steel	1984/1995

Table A.4: Tinker AFB Summary of Underground Storage Tanks (USTs)

Building/ Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Construction	Year Installed/Upgraded
552nd AGE	552 EMS	973 TOU / 113	1,000	Jet A	Steel	1984/1995
552nd AGE	552 EMS	974 TOU / 114	2,000	Jet A	Steel	1984/1995
1094	72 MDSS/SGSM	1094	2,500	Boiler Fuel	Steel	Unknown
2111 Purging Facility	76 AMXG	2114 / 220	26,000	JP-5	UK	1970/1996
2111 Purging Facility	76 AMXG	2115 / 221	26,000	JP-6	UK	1970/1997
2111 Purging Facility	76 AMXG	22110	UK	JP-5/water	UK	Unknown
2111 Purging Facility	76 AMXG	22111 / 185	15,000	Used Fuel	DW-FG	1995
3001	72 CCS (AUTODIN POWER PLANT)	3001-B	20,000	Boiler Fuel	Steel	Unknown
N3001, Annex G alleyway	72ABW/CEO - Power Pro	3401 / 186	20,000	Diesel	DW-FG	1995
3220, Door 146, Inside, SW Corner of Bldg	72ABW/CEO - Power Pro	3220X / 168	550	Diesel	DW-FG	1989/1995
N of Bldg 3714	72MSG/LRDF	3714R / 15	1,000	Fuel from pump slab	DW-FG	unk/1995
3902	552 CMMXS/MSDPAC	1B3902 / 188	10,000	Calibration Fluid	DW-FG	Unknown
3902	552 CMMXS/MSDPAC	2B3902 / 189	10,000	Calibration Fluid	DW-FG	Unknown
3902	552 CMMXS/MSDPAC	3B3902 / 190	10,000	Water, Used Calibration Fluid	DW-FG	Unknown
3902	552 CMMXS/MSDPAC	4B3902 / 191	10,000	Water, Used Calibration Fluid	DW-FG	Unknown

Table A.4: Tinker AFB Summary of Underground Storage Tanks (USTs)

Building/ Location	Organization	Tank # / OCC	Capacity (gallons)	Contents	Tank Construction	Year Installed/Upgraded
3902	552 CMMXS/MSDPAC	5B3902	12,000	Water, Used Calibration Fluid	DW-FG	Unknown
976 - AWACS Alert Area	AWACS Alert Area	10996	1,010	Waste Jet A	Unknown	Unknown
1094		11101	2,500	Emergency Boiler Fuel	Steel	Unknown
976 - AWACS Alert Area	AWACS Alert Area	11996	5,040	OWS	Unknown	Unknown
AAFES mini mall	AAFES	21107 / 227	12,000	Mogas (Unleaded)	DW-FG	1996/NA
AAFES mini mall	AAFES	21108 / 228	12,000	Mogas (Mid Grade)	DW-FG	1996/NA
AAFES mini mall	AAFES	21109 / 229	12,000	Mogas (Premium)	DW-FG	1996/NA
23221, Inside Bldg, NE	72ABW/CEO - Power Pro	23221 / 50	1,000	Diesel	DW-FG	1990/1996
Total Number of Tanks =			38			
Total Volume =			291,150			

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
Oil-Filled Operational Equipment								
72 LRS/LGLOC	290 Fuel Yard	Filter Separator	Jet A	Concrete Dike	300	2	600	A.1
72 LRS/LGLOC	290 Fuel Yard	Filter Separator	Jet A	Concrete Dike	150	4	600	A.1
72 LRS/LGLOC	290 Fuel Yard	Filter Separator	Jet A	Concrete Dike	150	2	300	A.1
72 LRS/LGLOC	290 Fuel Yard	Filter Separator	Jet A	Concrete Dike	150	2	300	A.1
72 LRS/LGLOC	290 Fuel Yard	Filter Separator	Jet A	Concrete Dike	100	4	400	A.1
72 LRS/LGLOC	273 Fuel Yard	Filter Separator	Jet A	Concrete Dike	200	2	400	A.2
72 LRS/LGLOC	Phillips System	Filter Separator	Jet A	Concrete Dike	300	2	600	A.2
72 LRS/LGLOC	Phillips System	Filter Separator	Jet A	Concrete Dike	200	3	600	A.2
72 LRS/LGLOC	507th Fuel Yard	Filter Separator	Jet A	Concrete Dike	200	5	1,000	A.3
72 LRS/LGLOC	976 - AWACS Alert Area	Filter Separator	Jet A	Concrete Dike	200	6	1,200	A.4
72 LRS/LGLOC	3700 Fuel Yard	Filter Separator	Jet A	Concrete Dike	300	2	600	A.5
72 LRS/LGLOC	3700 Fuel Yard	Filter Separator	Jet A	Concrete Dike	200	4	800	A.5
552 MXG	220, 240, 260, or 976 AGE Yards	Dash 60	Diesel	Concrete Dike or Grated Trench	190	12	2,280	A.6
552 MXG	220, 240, 260, or 976 AGE Yards	Diesel Generator, Trilectron	Diesel	Concrete Dike or Grated Trench	147	21	3,087	A.6
552 MXG	220, 240, 260, or 976 AGE Yards	Diesel Ace Air Conditioner	Diesel	Concrete Dike or Grated Trench	127	31	3,937	A.6
552 MXG	220, 240, 260, or 976 AGE Yards	Dash 95	Diesel	Concrete Dike or Grated Trench	80	2	160	A.6
76 AMXG AGE	2101B, ALC AGE Yard	Air Conditioners, Various	Diesel	Drain to OWS	175 max, 150 avg	65	9,750	A.7

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
76 AMXG AGE	2101B, ALC AGE Yard	Generator, GTC	Jet A	Drain to OWS	195	4	780	A.7
76 AMXG AGE	2101B, ALC AGE Yard	Liquid Cooling System, ACE	Diesel	Drain to OWS	127	5	635	A.7
76 AMXG AGE	2101B, ALC AGE Yard	Cabin Press Starter	Diesel	Drain to OWS	95	10	950	A.7
76 AMXG AGE	2101B, ALC AGE Yard	Hydraulic Test Stands	Diesel	Drain to OWS	95	6	570	A.7
76 AMXG AGE	2101B, ALC AGE Yard	Generator, MEP	Diesel	Drain to OWS	90	9	810	A.7
76 AMXG AGE	2101B, ALC AGE Yard	Air Starter	Jet A	Drain to OWS	80	20	1,600	A.7
76 AMXG AGE	2101B, ALC AGE Yard	Generator, MD	Mogas	Drain to OWS	75	4	300	A.7
76 AMXG AGE	2101B, ALC AGE Yard	Air Conditioner, MA-3D100	Diesel	Drain to OWS	60	62	3,720	A.7
76 AMXG AGE	2101B, ALC AGE Yard	Cabin Press Starter	Diesel	Drain to OWS	50	4	200	A.7
507 ARW	1070, AGE Yard	Trailer-Mounted Compressor	Jet A/Diesel	Berm	80	6	480	A.8
507 ARW	1070, AGE Yard	Trailer-Mounted Air Conditioner	Jet A/Diesel	Berm	60	7	420	A.8
NAVY	Navy, Bldg 820	Diesel Ace Air Conditioner	Diesel	Drain to OWS	130	8	1,040	A.10
NAVY	Navy, Bldg 820	Diesel Generator, Trilectron	Diesel	Drain to OWS	120	8	960	A.10
NAVY	Navy, Bldg 830	Maintenance Trainer, Hydraulic Reservoir	Hydraulic Fluid	Drain to OWS	500	1	500	A.10

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
NAVY	Navy, Bldg 830	Flight Trainer, Hydraulic Reservoir	Hydraulic Fluid	Drain to OWS	375	1	375	A.10
NAVY	Navy, Bldg 830	Trainer, Hydraulic Reservoir	Hydraulic Fluid	Drain to OWS	155	1	155	A.10
550 MXDPAA	200, Room 123	Hydraulic Test Stand	Hydraulic Fluid	Drain to waste tank	120	1	120	A.11
550 MXDPAA	200, Room 151, cell 18	Test Stand	Calibration Fluid	Drain to waste tank	300	1	300	A.11
550 MXDPAA	200, Room 151, cell 20	Test Stand	Calibration Fluid	Drain to waste tank	500	1	500	A.11
544 PMXS/MXDPA	3001, Post P-107	Intensifier Pump	Hydraulic Fluid	Spill kits, Building	100	2	200	A.26
544 PMXS/MXDPA	3001, Post P-107	Intensifier Pump	Hydraulic Fluid	Spill kits, Building	100	2	200	A.26
544 PMXS/MXDPA	3001, Post R-107	Intensifier Pump	Hydraulic Fluid	Spill kits, Building	100	2	200	A.26
544 PMXS/MXDPA	3001, Post S-107	Intensifier Pump	Hydraulic Fluid	Spill kits, Building	100	2	200	A.26
544 PMXS/MXDPA	3001, Post S-107	Intensifier Pump	Hydraulic Fluid	Spill kits, Building	100	2	200	A.26
552 MXDPAA	3907, Room 231	PD-680 Spray Booth	PD-680	Floor drains to IWTP and spill kits	125	1	125	A.28
552 MXDPAB/PBC	3902	Hydraulic Test Stand	Calibration Fluid	Drains to waste tank	500 gal max, 400 gal avg	40	16,000	A.28
552 MXDPAB/PBC	3902	Pump Module	Calibration Fluid	Drains to waste tank	2000	3	6,000	A.28

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
552 MXDPAB/PBC	3907	Hydraulic Test Stand	Calibration Fluid	Drains to waste tank	500 gal max, 400 gal avg	8	3,200	A.28
552 MXDPAB/PBC	3907	Pump Module	Calibration Fluid	Drains to waste tank	800	1	800	A.28
552 MXDPBB	3907, Post B-7	Manifold Flush Stand	PD-680	Floor drains to IWTP and spill kits	55	1	55	A.28
544 PMXS	3001, Post J-93	Vertical Turret Lathe	Hydraulic Fluid	Spill kits, Building	60	1	60	A.38
544 PMXS/MXDRB	3001, Post X-67	Test Stand	Motor Oil	Spill kits, Building	55	1	55	A.38
544 PMXS/MXDXAB	3001, Post W-85	Vertical Turret Lathe	Hydraulic Fluid	Spill kits, Building	90	1	90	A.38
545 PMXS/MXDP	3001, Post T-81W	Degreaser	PD-680	Spill kits, Building	80	2	160	A.38
545 PMXS/MXDPAN	9001, Post AA30	Degreaser	Solvent	Spill kits, Building	150	1	150	A.38
547 PMXS/MXDTAA	3234, Cell 11 & 12	Fuel Filter	Test Fuel	Drain to OWS	100	3	300	A.38
547 PMXS/MXDTAA	3234, Cell 11 & 12	Hydraulic Fluid Reservoir	Hydraulic Fluid	Drain to OWS	67	2	134	A.38
547 PMXS/MXDTAA	3234, Cell 9 & 10	Hydraulic Fluid Reservoir	Hydraulic Fluid	Drain to OWS	235	1	235	A.38
547 PMXS/MXDTAA	3234, Cell 9 & 10	Fuel Filter	Test Fuel	Drain to OWS	100	3	300	A.38
547 PMXS/MXDTAA	3234, Cell 9 & 10	Hydraulic Fluid Reservoir	Hydraulic Fluid	Drain to OWS	80	1	80	A.38
547 PMXS/MXDTAA	3234, Cell 9 & 10	Hydraulic Fluid Reservoir	Hydraulic Fluid	Drain to OWS	67	2	134	A.38
547 PMXS/MXDTAA	3703, Cell 1 & 2	Fuel Filter	Test Fuel	Drain to OWS	70	3	210	A.38

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
547 PMXS/MXD TAA	3703, Cell 7 & 8	Hydraulic Fluid Reservoir	Hydraulic Fluid	Drain to OWS	80	1	80	A.38
547 PMXS/MXD TAA	3703, Room 5 & 6	Hydraulic Loading Eq System	Hydraulic Fluid	Drain to IWTP	57	1	57	A.38
547 PMXS/MXD TAA	3703, Room 7 & 8	Hydraulic Loading Eq System	Hydraulic Fluid	Drain to IWTP	57	1	57	A.38
548 PMXS/MXD XA	3001, Post N-87	5-Axis Machining Center	Hydraulic Fluid	Spill kits, Building	60	1	60	A.38
548 PMXS/MXD XA	3001, Post N-89	Vertical CNC Grinder	Hydraulic Fluid	Spill kits, Building	107	1	107	A.38
550 CMMXS/MXD PAA	210	Centrifugal Compressor	Hydraulic Fluid	Spill kits, Building	144	2	288	A.38
550 CMMXS/MXD PAA	210A	Centrifugal Air Compressor	Hydraulic Fluid	Spill kits, Building	144	1	144	A.38
551 CMMXS/MXD PAA	3705, Post A-16	CNC Bender	Hydraulic Fluid	Spill kits, Building	60	1	60	A.38
551 CMMXS/MXD RAC	3001, Post R-65	CNC Surface Grinder	Hydraulic Fluid	Spill kits, Building	60	1	60	A.38
551 CMMXS/MXD RAC	3001, Post U-33	5-Axis Machining Center	Hydraulic Fluid	Spill kits, Building	90	2	180	A.38
551 CMMXS/MXD RAC	3001, Post U-35	Center Machining N10	Hydraulic Fluid	Spill kits, Building	80	1	80	A.38
551 CMMXS/MXD RAC	3001, Post V-33	Pallet Changer	Hydraulic Fluid	Spill kits, Building	65	1	65	A.38
551 CMMXS/MXD RAC	3001, Post W-35	5-Axis Machining Center	Hydraulic Fluid	Spill kits, Building	90	2	180	A.38
551 CMMXS/MXD XAB	9001, Post B-24	Four-Post Hydraulic Press	Hydraulic Fluid	Spill kits, Building	214	1	214	A.38

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
551 CMMXS/MXDXAB	9001, Post B-24	CNC Press	Hydraulic Fluid	Spill kits, Building	200	1	200	A.38
551 CMMXS/MXDXAB	9001, Post B-25	300-ton Press	Hydraulic Fluid	Spill kits, Building	700	1	700	A.38
551 CMMXS/MXDXAB	9001, Post B-26	Elastomer Cyril Bath Press	Hydraulic Fluid	Spill kits, Building	350	1	350	A.38
551 CMMXS/MXDXAB	9001, Post B-27	Fluid Cell Press	Hydraulic Fluid	Spill kits, Building	200	1	200	A.38
551 CMMXS/MXDXAB	9001, Post C-24	12-ft Brake Press	Hydraulic Fluid	Spill kits, Building	203	1	203	A.38
551 CMMXS/MXDXAB	9001, Post C-28	Shear	Hydraulic Fluid	Spill kits, Building	70	1	70	A.38
551 CMMXS/MXDXAB	9001, Post D-28	12-ft Hydraulic Shear	Hydraulic Fluid	Spill kits, Building	79	1	79	A.38
552 MXDPBA	3001, Post O-57	Agitation Tank	Motor oil, preservation oil	Trough inside room	110	2	220	A.38
552 MXDPBA	3001, Post P-45	Test Stands	Turbine Oil	Spill materials	100	3	300	A.38
567 AMXS/MXDPAI	3001, Post J-105	Intensifier Pump	Hydraulic Fluid	Spill kits, Building	100	2	200	A.38
76 AMXG	3001, Post Y-13	Hydraulic Shear	Hydraulic Fluid	Spill kits, Building	61	1	61	A.38
76 AMXG	3001, Post Y-38	Shear	Hydraulic Fluid	Spill kits, Building	57	1	57	A.38
776 SMXG/OBM	9001, Post D-53	Supercomputer with Coolant	Paraffin coolant	Vinyl berm, building	250	1	250	A.38
776 AMXG	2122	Test Stand	Hydraulic Fluid	Metal containment, Building	120 x 4 each	16	7,680	A.52

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
Transformers								
ISS Contractor	Substation 2	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	9,000	1	9,000	A.39
ISS Contractor	Substation 2	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	3,400	1	3,400	A.39
ISS Contractor	Substation 2	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	3,400	1	3,400	A.39
ISS Contractor	Substation 3	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	4,500	1	4,500	A.39
ISS Contractor	Substation 4	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	6,707	1	6,707	A.39
ISS Contractor	Substation 4	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	6,707	1	6,707	A.39
ISS Contractor	Substation 4	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	2,740	1	2,740	A.39
ISS Contractor	Substation 5	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	6,500	1	6,500	A.39
ISS Contractor	Substation 5	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	6,500	1	6,500	A.39
ISS Contractor	Substation 5	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	6,500	1	6,500	A.39
ISS Contractor	Substation 5	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	Substation 5	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	Substation 5	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
ISS Contractor	Substation 5	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	Substation 5	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 5	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 5	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 5	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 5	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 5	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 5	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 5	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 5	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 5	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 5	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 5	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 2500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	1,000	1	1,000	A.39

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
ISS Contractor	Substation 6	Transformer - 1000 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	400	1	400	A.39
ISS Contractor	Substation 6	Transformer - 1000 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	400	1	400	A.39
ISS Contractor	Substation 6	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	Substation 6	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	Substation 6	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	Substation 6	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	Substation 6	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	Substation 6	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	Substation 6	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	Substation 6	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	Substation 6	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 6	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	Substation 6	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	3001 Metal Yard	Transformer	Mineral Oil	Alt. Requirements 112.7(k)(2)	400	1	400	A.39
ISS Contractor	5703	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	5802	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	5802	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	5802	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	5810	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	400	1	400	A.39
ISS Contractor	5902	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	5903, Midkiff Hall	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	5904, Butler Hall	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	5905, Vanway Dining Hall	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	5908	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	5909	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39

Table A.5: Tinker AFB Summary of Oil-Filled Operational Equipment (Including Transformers)

Organization	Building/ Location	Equipment Type	Product Stored	Secondary Containment	Size (gallons)	Quantity	Total Capacity (gallons)	ICP Locations, Annex A & W
ISS Contractor	5910, Rough Hall	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	5913	Transformer - 225 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	90	1	90	A.39
ISS Contractor	5929	Transformer - 1000 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	400	1	400	A.39
ISS Contractor	5930	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	5931	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	5942	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	5946	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	5947	Transformer - 750 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	300	1	300	A.39
ISS Contractor	6001	Transformer - 500 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	200	1	200	A.39
ISS Contractor	6002	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
ISS Contractor	6004	Transformer - 300 KVA	Mineral Oil	Alt. Requirements 112.7(k)(2)	120	1	120	A.39
Total Pieces of Equipment =				540				
Total Volume of Equipment =				151,028 gallons				

Table A.6: Tinker AFB Summary of Hazardous and Extremely Hazardous Substances (EHS)

Location	EHS	Threshold Quantity [CAA 112(r)] ⁽¹⁾	Substance	Physical State	Max Quantity in Largest Container	Container	Total Quantity
Bldg 16, Warehouse	EHS	1,000 lb	Hydrofluoric Acid, 70% wt	Liquid	10.25 lb	Glass bottles	113 gal (1,150 lb)
Bldg 16, Warehouse	EHS	-	Sulfuric Acid, 93% wt	Liquid	195 lb	Poly Drum	240 gal (3,686 lb)
Bldg 117	-	-	AFFF Fire Fighting Foam	Liquid	54,000 lb	UST	6,000 gal
Bldg 230, AWACS Hangar	-	-	Safewing Launch Deicing Fluid (Potassium Acetate, 50% vol)	Liquid	2,294 lb	Tote Bin	1,152 gal
Bldg 260, Roads and Grounds	-	-	Calcium Chloride	Solid	80 lb	Bag	25,000 lbs
Bldg 260-3	-	-	Deicing Fluid (Potassium Acetate, 50% vol)	Liquid	78,813 lb	AST	9,000 gal
290 Fuel Yard	-	-	Deicing Fluid (Potassium Acetate 50% vol)	Liquid	410,309 lb	AST	46,855 gal
Bldg 1090, CNG Station	-	-	Compressed Natural Gas	Gas	102 lb	Cylinder	306 lbs
Bldg 2122, Depaint Facility	-	-	AS 5050 Coating Remover	Liquid	482 lb	Poly Drum	1,200 gal
Bldg 2122, Depaint Facility	-	-	Calla 602LF Parts Washer	Liquid	459 lb	Steel Drum	1,175 gal
Bldg 2122, Paint Hangar	-	-	Liquid Alkaline Cleaner	Liquid	454 lb	Steel Drum	2,400 gal
Bldg 2122, Post 2D35	EHS	-	Paint Stripper (Phenol 16% wt, Dichloromethane 30% wt, Chromic acid 1% wt)	Liquid	523 lb	Poly Drum	1,200 gal (10,000 lb)
Bldg 2122, Wash Rack	-	-	Benzyl Alcohol	Liquid	480 lb	Poly Drum	460 gal
Bldg 2122, Wash Rack	-	-	Hydrogen Peroxide	Liquid	509 lb	Poly Drum	160 gal
Bldg 2280, Paint Facility	-	-	PreKote Surface Pretreatment	Liquid	2,602 lb	Tote Bin	2,970 gal
Bldg 2280, Paint Hangar	-	-	Benzyl Alcohol	Liquid	480 lb	Poly Drum	400 gal
Bldg 2280, Paint Hangar	-	-	Hydrogen Peroxide	Liquid	509 lb	Poly Drum	120 gal

Table A.6: Tinker AFB Summary of Hazardous and Extremely Hazardous Substances (EHS)

Location	EHS	Threshold Quantity [CAA 112(r)] ⁽¹⁾	Substance	Physical State	Max Quantity in Largest Container	Container	Total Quantity
Bldg 3001, Blasting Unit	-	-	Carbon Dioxide	Gas	40,000 lb	Cylinder	40,000 lbs
Bldg 3001, Chemical Cleaning	-	-	CEE BEE A-477 (2-Amino Ethanol, 50% wt)	Liquid	482 lb	Steel Drum	3,000 gal
Bldg 3001, Electroplating Facility	-	-	Nickel Stripper A	Liquid	477 lb	Steel Drum	1,200 gal
Bldg 3001, Electroplating Facility	-	-	Bioact 280 Precision Cleaner	Liquid	390 lb	Steel Drum	700 gal
Bldg 3001, Electroplating Facility	EHS	-	Nitric Acid, 70% wt	Liquid	638 lb	Poly Drum	424 gal (5,000 lb)
Bldg 3001, Plating Shop	EHS	1,000 lb	Hydrofluoric Acid, 70% wt	Liquid	10.25 lb	Glass bottles	136 gal (1,389 lb)
Bldg 3001, Plating Shop	EHS	-	Sulfuric Acid, 93% wt	Liquid	195 lb	Poly Drum	255 gal (3,900 lb)
Bldg 3001, Plating Shop	-	-	Caustic Soda (NaOH, 28% wt; NaCL 1% wt)	Liquid	45,000 lb	AST	5,400 gal
Bldg 3001, Plating Shop	-	-	Hydrochloric Acid, 33.3% vol	Liquid	45,000 lb	AST	4,690 gal
Bldg 3001, PLS Chemical Cleaning	-	-	J84AL Alkaline Cleaner (Sodium Hydroxide, 45% wt)	Liquid	628 lb	Poly Drum	55 gal
Bldg 3001, Rework Facility	-	-	Hydrogen Peroxide, 40%	Liquid	610 lb	Poly Drum	300 gal
Bldg 3308, Warehouse	-	-	Ancool 3190 (Sodium Hydroxide, 100%)	Liquid	545 lb	Fiber Drum	1,200 gal
Bldg 3308, Warehouse	-	-	MB 215 Ancodie 4070	Liquid	468 lb	Fiber Drum	1,175 gal
Bldg 3320, Boiler Plant	-	-	Liquid Caustic Soda (NaOH 50% vol)	Liquid	382 lb	Poly Drum	1,200 gal

Table A.6: Tinker AFB Summary of Hazardous and Extremely Hazardous Substances (EHS)

Location	EHS	Threshold Quantity [CAA 112(r)] ⁽¹⁾	Substance	Physical State	Max Quantity in Largest Container	Container	Total Quantity
Bldg 3320, Pumped to Bldg 3001	EHS		Sulfuric Acid, 100% wt	Liquid	22,500 lb	AST	1,465 gal (22,600 lb)
Bldg 3772-2	-	-	Deicing Fluid (Potassium Acetate, 50% vol)	Liquid	52,452 lb	AST	6,000 gal
Bldg 9001	-	-	AS 5050 Coating Remover	Liquid	2,890 lb	Tote Bin	1,200 gal
Bldg 9001, Paint Services	-	-	UCON Quenchant A	Liquid	501 lb	Steel Drum	1,098 gal
Bldg 9001, Post K-44	EHS	-	Paint Stripper (Phenol 16% wt, Dichloromethane 30% wt, Chromic acid 1% wt)	Liquid	523 lb	Poly Drum	1,200 gal (10,000 lb)
Bldg 62528	-	-	GL-826 Coagulant (2% HCl)	Liquid	22,000 lb	AST	2,500 gal
Bldg 62528, IWTP	-	-	Liquid Caustic Soda (NaOH 50% vol)	Liquid	22,000 lb	AST	2,500 gal
Bldg 62533, IWTP	EHS	2,500 lb	Chlorine, 100% wt	Gas	150 lb	Cylinder	1,350 lbs
Base Water Wells	EHS	2,500 lb	Chlorine, 100% wt	Gas	150 lb	Cylinder	150 lbs
CE Supply Resources	-	-	Chemguard 3 Percent AFFF Fire Fighting Foam	Liquid	464 lb	Fiber Drum	1,175 gal

(1) Threshold quantity for accidental release prevention is based on the Clean Air Act, Section 112(r), and applies to quantities within a process, not the total at the entire facility.

A.5 Maximum Petroleum Storage and Handling Capacities: To determine the maximum storage and handling capacity, the holding capacities of all containers must be calculated. The total facility storage capacity is as follows:

Storage Type	Total Capacity	
	Gallons	Barrels
Aboveground Storage Tanks	6,682,731	159,113
Generators	52,809	1,257
Mobile and Portable Tanks	103,450	2,463
Drums	39,930	951
Used Cooking Oil Containers	1,750	42
Underground Storage Tanks	291,150	6,932
Oil-Filled Operational Equipment (except transformers)	82,319	1,960
Transformers	69,024	1,643
Pipelines	210,790	5,019
Facility Totals	7,534,000	179,380

A.6 Containment and Drainage Planning and Information

A.6.1 Containment: Secondary containment, i.e., dikes, curbs, oil/water separators, drip pans, floating booms, flow diversion basins, sumps, ponds, etc. at storage and transfer sites help control any discharge and hold most spills on-site preventing a discharge from reaching the outfalls. Five streams exit the Base: Crutcho Creek, Soldier Creek, Kuhlman Creek, East Elm Creek, and Hog Creek. Three streams (Crutcho Creek, Kuhlman Creek, and Soldier Creek) have permanently installed flow control structures (weirs) located downstream from the industrial areas.

A.6.2 Drainage Routes: An accidental oil, hazardous substance, or hazardous waste spill could leave the Base via storm or sanitary sewer conveyances. Water leaving the Base flows into Crutcho, Kuhlman and Soldier Creeks, which flow into the North Canadian River, thence into the Arkansas and Mississippi rivers, and eventually the Gulf of Mexico. The eastern half of the Base is served by a secondary Industrial Wastewater Treatment Plant. The western half of the Base is served by the Oklahoma City domestic sewage treatment plant.

Surface drainage at Tinker AFB consists of five primary drainage basins: (1) Crutcho Creek Drainage Basin, (2) Soldier Creek Drainage Basin, (3) Kuhlman Creek Drainage Basin, (4) Elm Creek Drainage Basin, and (5) Hog Creek Drainage Basin. These are further divided into ten sub-basins or watersheds. The Creek Drainage Basin flows to the north into the North Canadian River. Kuhlman Creek and Soldier Creek flow into Crutcho Creek after exiting from the northern end of the Base. The Elm Creek and Hog

Creek Drainage Basins flow to the south of the Base into the Little River, which forms confluences with the South Canadian River and Arkansas and Mississippi Rivers. All Base creek flows are the result of storm water runoff. No significant point source industrial discharges currently are made to any waterway on Base. There are 13 small man-made retention ponds and two detention basins located on Base. A 10-acre floodwater detention basin is located adjacent to Landfill 5 northeast of the Navy complex and is used to reduce downstream flooding. A small basin is located to the east of the Hazardous Waste Processing Facility (B-808) and serves as a sediment catchment structure and provides some floodwater storage. A complete discussion of drainage can be found in the *Tinker Air Force Base Integrated Natural Resources Management Plan* and the *Storm Water Pollution Prevention Plan*. Drainage from the secondary containment structures associated with the storage tanks may also be directed to the drainage system or ditches leading off the Base. In several cases, the runoff must pass through an oil/water separator first. Containment structure drainage valves are kept closed and locked unless the area is being drained. The containment area is drained only as necessary, the storm water is without contaminant, and under the direction of a designated supervisor. Refer to Figure A.2 for a generalized diagram of Tinker AFB drainage.

A.6.3 Surface Water: Besides the creeks and manmade ponds described in Section A.6.2, no other major surface water features exist at Tinker AFB. East Elm Creek and Hog Creek flow to Stanley Draper Lake, just southwest of the Base, before continuing on.

A.6.4 Drainage Pattern: Extensive ditching and modification of natural drainage patterns has occurred throughout Tinker AFB. Surface runoff is controlled primarily by a curb and gutter system, which includes drop inlets and storm sewers. Surface water drainage is directed through contoured drainage swales into a network of ditches, and exits the Base at several points on the north, west, and south boundaries of the property. Crutch Creek originates south of Tinker AFB and flows northward through the Base toward the North Canadian River. The creek receives drainage from the western and southern sections of the Base, including the main instrument runway. Kuhlman Creek, a tributary of Crutch Creek, originates in the northern portion of the Base and is fed by storm sewer outfalls that drain the northern portion of the Base.

A.6.5 Groundwater: The primary subsurface water zones identified at Tinker AFB include the Hennessey Water Bearing Zone, the Upper Saturated Zone, the Lower Saturated Zone, and the Producing Zone. The Base is located in a recharge area for these water-bearing zones; groundwater is derived primarily from precipitation and from infiltration of surface streams.

The approximate direction of groundwater flow in the Garber-Wellington Aquifer is south and southwest across the southern one-half of the Base and west to northwest across the northern one-half. Shallow groundwater may discharge to surface streams (gaining stream) or be recharged by stream (losing stream). The overall trend of processes of the hydrologic cycle on Tinker AFB is downward and the trend of water

quality is stable. Over 55,000 people use the Garber-Wellington Aquifer as a source of drinking water. Groundwater is used extensively in the area as a source of drinking water. Wells in the Kimsey residential area are within 50 yards of Tinker AFB.

A.6.6 Industrial Wastewater: Tinker AFB has an *Industrial Wastewater Emergency Response and Control Plan* (TAFB PLAN 19-3) which outlines management, surveillance (monitoring), contingency, and curtailment actions necessary for the Base to prevent and respond to emergency conditions at the Industrial Wastewater Treatment Plant (IWTP) which would tend to result in noncompliance with discharge permit conditions or damage plant equipment. This plan also provides a systematic approach to overall industrial wastewater activities to assist the Base to operate the IWTP at maximum efficiency and to meet the City of Oklahoma City limits to the maximum extent possible. This plan is intended to fulfill the requirements of the Tinker AFB discharge permit with the City of Oklahoma City and 40 CFR Part 403.8 that stipulate that a contingency plan shall be developed and implemented.

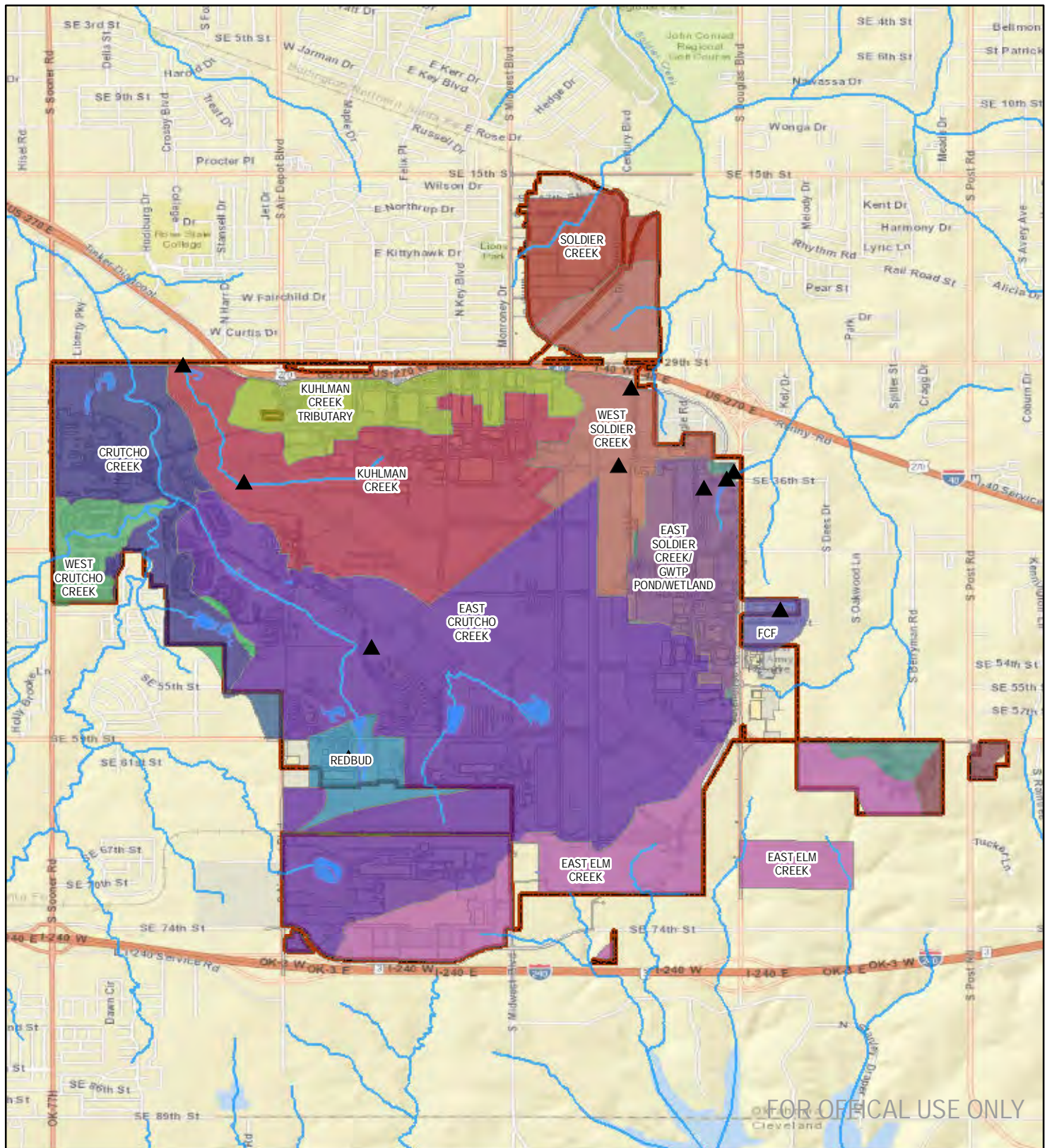
A.6.7 Public and Private Water Wells: The Base supply wells in use are in compliance with the Safe Drinking Water Act.

A.6.8 Water Supply: Drinking water at Tinker AFB is obtained from two sources. The first is from on-Base groundwater wells. Water is pumped out, chlorinated, and fluoridated at the pumps stations. This comprises about 90 percent of the total amount of drinking water consumed on Base. The second source is purchased water from Oklahoma City.

A.6.9 Cleanup Materials: Emergency response equipment is maintained at or near activities that store or handle oil or hazardous substances. A complete listing of equipment and capabilities is provided at **Annex F**.

A.7 Firefighting Capabilities: Standard fire safety equipment is located at various facilities and activities on Base. Each of the bulk fuel sites listed in Annex A are fitted with a foam suppression line that the fire department can tie into in the event of a fire. Sprinkler systems are installed in buildings where hazardous materials are stored or handled. The Tinker AFB Fire Department is centrally located on the Base and is ready for immediate response to a fire or emergency situation.

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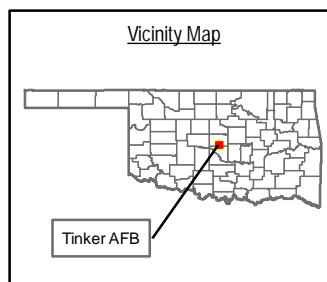
LEGEND

- ▲ Stormwater Outfalls
- River/Stream
- Pond Areas
- ▭ Base Boundary

SOURCE:



Feet



**FIGURE A.3
GENERAL DRAINAGE MAP
TINKER AIR FORCE BASE
OKLAHOMA**

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TAB 1 TO ANNEX A

290 FUEL YARD

A.1.1 General: The 290 Fuel Yard is a multi-product storage yard built in 1986 and upgraded in 1999 and is located on the northern portion of the Base adjacent to Building 250. The facility houses Base-wide fuel operations with the fuels laboratory and the Fuels Control Center (FCC) located in Building 250. The FCC is secured by a combination locking system to prevent unauthorized entry. A concrete paved parking area for fuel trucks is located north of Building 250. Mobile refueling equipment for Jet A is serviced by bottom loading at two fill-stands. A portable reclaimed jet fuel tank is also located in the parking area. Seven flammable lockers are located next to Building 251. Three 55-gallon drums for absorben-contaminated fuel are located in overpacks on the west side of the parking area. Refer to Figures A.1.1A and B for diagrams of the 290 Fuel Yard and to photographs at the end of this Tab. Also see Annex P for secondary containment documentation and Annex W for additional maps.

A.1.2 Description and Operations: Personnel are on duty 24 hours a day. The bulk storage tanks are filled by Jet A fuel transfers from Conoco pipeline. Other petroleum products are delivered by private vendor. Fuel can then be moved by pipeline or truck to various sites on Base. Upon receiving a request for fuel, the FCC will dispatch a fuel truck/operator with the appropriate grade of fuel to the designated aircraft/vehicle. Two-way radio communication is maintained between the FCC and the fuel truck operator to permit coordination of fuels operation, directing truck/operator to other aircraft requiring service, and to provide fuels services as efficiently as possible.

A.1.3 Oil Bulk Storage and Handling: The 290 Fuel Yard is operated by contractors. The area consists of 10 aboveground storage tanks, 1 underground storage tank (see table below) and fuel transfer piping. The ASTs are filled to no more than 29 feet or 95% capacity.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
271	Waste Fuel	Vaulted AST	5,941
290	Diesel	AST – Generator	75
330	Jet A	AST	212,463
331	Jet A	AST	212,168
332	Diesel	AST	42,418
333	Mogas	AST	42,353
334	Jet A	AST	46,915
335	Jet A	AST	46,915
337	Solvent (PD680)	AST	46,935

Tank Number	Product Stored	Type	Shell Capacity (gallons)
341	Diesel	AST	42,468
347 (not in use)	Waste Fuel	UST	3,914
Total Volume			702,490

The 290 Fuel Yard is equipped with two loading areas of Jet A fill-stands (#344 and 345) and eight offloading headers for Jet A, MOGAS, and diesel fuel. This facility houses between 8 and 14 R11 refuelers with a 6,000-gallon capacity. Four of the refuelers are dedicated for defueling operations. Between 5 and 10 R12 refuelers are also present, each with a 200-gallon capacity. This facility also operates between 4 and 5 C300 1,200-gallon Refueler trucks. The trucks are used to deliver Jet A, MOGAS, biodiesel and diesel to various sites on Base.

During loading or unloading operations, the vehicle operator engages the parking brakes to prevent vehicle movement before transfer lines are completely disconnected. Drains, outlets, and valves are inspected prior to filling and departure of a tank truck to prevent discharge while in transit.

The dispensing capability of assigned mobile equipment varies according to the type of fuel being dispensed. Using all mobile refueling equipment available, a maximum of eleven aircraft can be refueled simultaneously on a one-to-one basis. Some aircraft serviced at Tinker AFB require more than one refueling unit, thus the maximum number of aircraft that can be refueled at one time via mobile equipment depends upon the type of aircraft and the fuel load required.

A.1.4 Oil- Filled Operational Equipment: Oil-filled operational equipment stored at the 290 Fuel Yard includes the following:

- (1) 300-gallon Bowser
- (1) 400-gallon Bowser
- (1) 600-gallon Bowser
- (2) 300-gallon filter separators
- (8) 150-gallon filter separators
- (4) 100-gallon filter separators

A.1.5 Secondary Containment and Drainage: Concrete secondary containment structures have been installed around the tanks, manifolds, and pumps. Post valves control the drainage from the containment structures. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. Secondary containment at the manifolds and pumps consists of a curbed concrete pad with a control valve on the drain. The ground refueling vehicle fill stands are not protected by any immediate secondary containment. Instead, the parking lot is paved and sloped to completely drain to five drop inlets. Shutoff valves to stop the flow are located on the south side of the parking lot. These valves are configured to allow diversion of runoff to Tank 271 in the event of a spill. A containment pit is located next to Building 290 which is connected to the

drainage of the pump pad containment and offloading driveway. The containment pit is connected to the storm drain and checked for a sheen prior to discharge.

A.1.6 Communications: The FCC is the focal point for all radio communications. There are twelve portable radios for supervisors/operators. All refueling vehicles and most of the general-purpose vehicles have mobile radios.

A.1.7 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 330 (212,463 gallons) flowing out of the containment area to a drainage ditch outfall south of the storage area to Kuhlman Creek leaving at Outfall A3 as described in the SWPPP.

A.1.8 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.1.9 Posting Requirements: This site-specific contingency plan shall be posted in prominent locations at each of the fuel yards described in this tab as approved by shop supervisor.

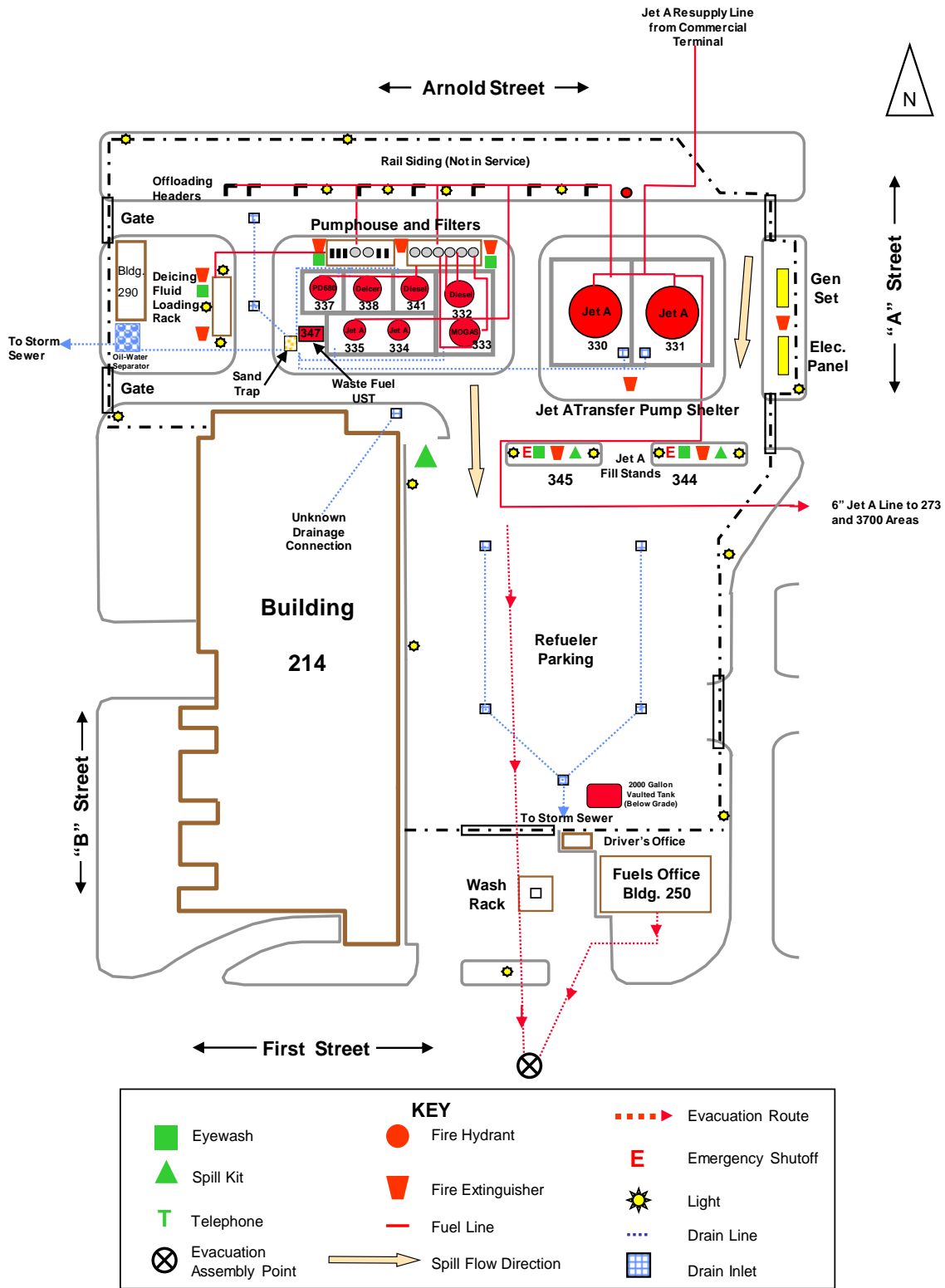


Figure A.1.1A: 290 Fuel Yard

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Drainage from this location flows into Kuhlman Creek. See Figure A-3 General Drainage Map for more information

LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- Aboveground Storage Tanks
- Underground Storage Tanks
- Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings

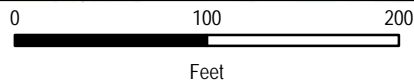


FIGURE A.1.1B
290 FUEL YARD

TINKER AIR FORCE BASE, OKLAHOMA

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290 Fuel Yard
Tanks 337, 335, 338, 334, 341, 332, 333, 331, 330 (from left to right)
R-11 Fill-stand (foreground)
Filter Separators (in front of Tanks 331, 330)



290 Fuel Yard
Multi-Product Loading Rack



**290 Fuel Yard
R-11 Refuelers at Jet A Fill-stand**



**290 Fuel Yard
Bowser**

TAB 2 TO ANNEX A

273 FUEL YARD & PHILLIPS SYSTEM

A.2.1 General: The 273 Fuel Yard and Phillips System is located on Sentry Road across from the 552 Air Control Wing Headquarters. Refer to Figures A.2.1A and B for diagrams of the 273 Fuel Yard and to photographs at the end of this Tab. Also see Annex P for secondary containment documentation and Annex W for additional maps.

The 273 Yard consists of two ASTs, six offloading headers, and two filter separators. The Phillips System consists of two ASTs, two USTs, and five filter separators.

A.2.2 Description and Operations: Personnel are available 24 hours a day to man these sites. The storage tanks are filled by fuel transfers by pipeline on a regular basis. The Phillips Type III Hydrant System at Building 486 has the capability of dispensing jet fuel at a rate of 2,400 GPM from 13 outlets. There are five hose trucks assigned, thus five aircraft can be serviced simultaneously. This system has an emergency power generator that can be used as a result of a power failure. In the event of a complete hydrant system failure, mobile refueling equipment will be used to support refueling requirements.

A.2.3 Oil Bulk Storage and Handling: This facility is operated by contractors. The area consists of a pump and equipment pads with associated aboveground and underground fuel piping, fire foam lines, four ASTs and fuel transfer piping. The ASTs are filled to no more than 29 feet or 95% capacity.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
273	Jet A	AST	2,330,748
274	Fuel Oil	AST	1,051,870
483	Jet A	AST	426,052
484	Jet A	AST	426,108
Total Volume			4,238,978

The 273 Fuel Yard has six offloading headers, three for Jet A and three for heating oil. However, a maximum of only three trucks are able to offload at one time. During offloading operations, wheel chocks or brake interlock system are used to prevent vehicle movement before transfer lines are completely disconnected.

A.2.4 Oil-Filled Operational Equipment: Oil-filled operational equipment present at this area includes the following:

- A. At the 273 Fuel Yard:
 - (2) 200-gallon filter separators at the 273 Fuel Yard

- B. At the Phillips System:
- (3) 200-gallon filter separators
 - (2) 300-gallon filter separators
 - (1) 400-gallon Bowser

All the filter separators are located in a covered equipment area that is surrounded by a concrete berm. The Bowser is typically parked near the loading area.

A.2.5 Secondary Containment and Drainage: Concrete secondary containment structures have been installed around the tanks, manifolds, pumps, and filters. Post valves control the drainage from the containment structures. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. Secondary containment at the manifolds and pumps consists of a curbed concrete pad with a control valve on the drain. The bulk storage tanks are surrounded by concrete dikes. The equipment pad for filters at the Phillips System drains its water to a pit and then to a tank at Building 488; this tank is serving as secondary containment and is therefore not considered bulk storage. The refueling vehicle fill stands are not protected by a containment dike, but the entire loading area is sloped such that any spill will stay in this area.

A.2.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- C. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- D. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- E. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- F. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge

- Any damages or injuries involved
- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS/SDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex NAFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 273 (2,330,748 gallons) flowing out of the containment area. Discharges from the 273 Fuel Yard outside of the diked area to the east may enter the sanitary sewer system. Discharges to the west would enter the intermittent stream flowing south toward drainage ditch to Kuhlman Creek leaving at Outfall A3 as described in the SWPPP.

A.2.7 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.2.8 Posting Requirements: This site-specific contingency plan shall be posted in prominent locations at each of the fuel yards described in this tab as approved by shop supervisor.

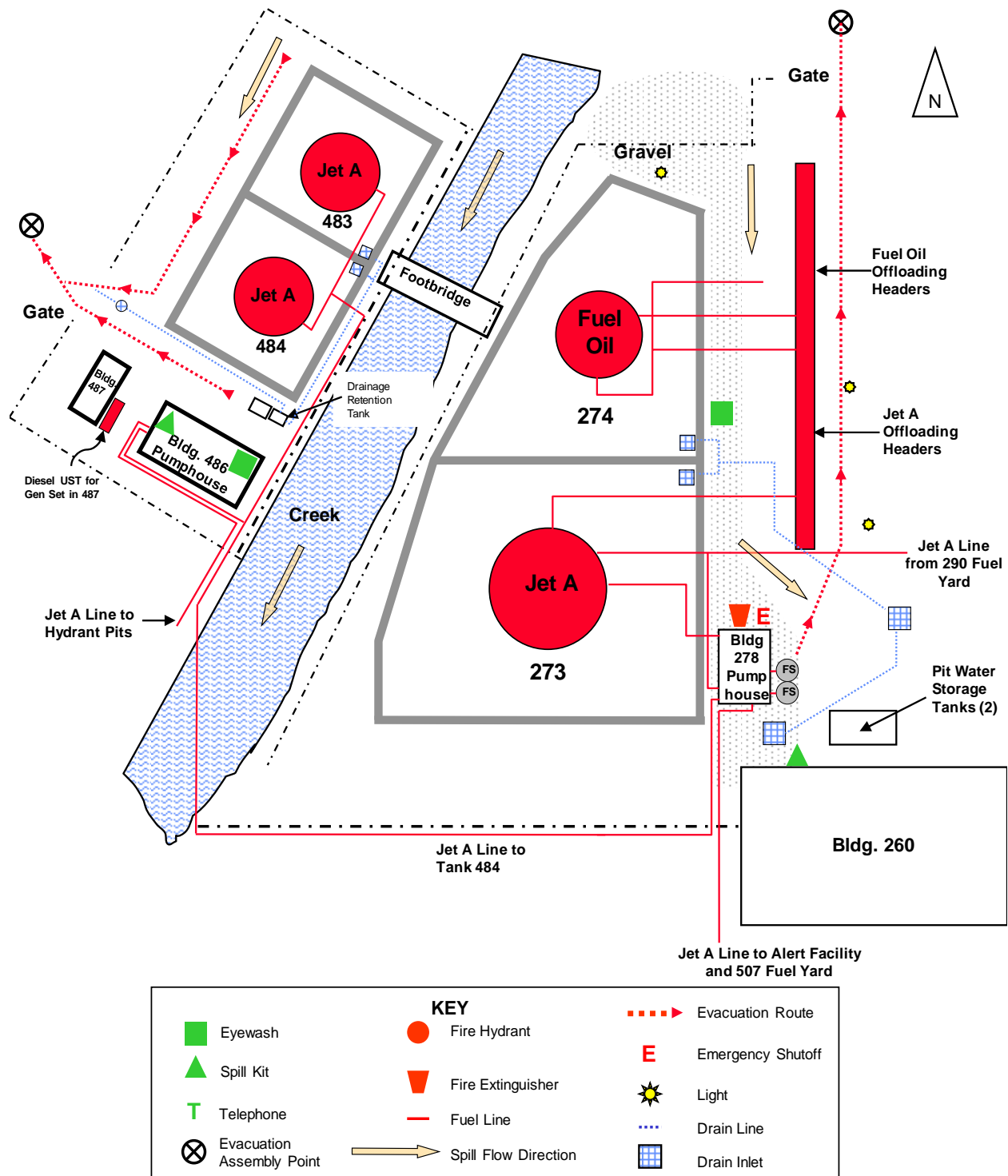
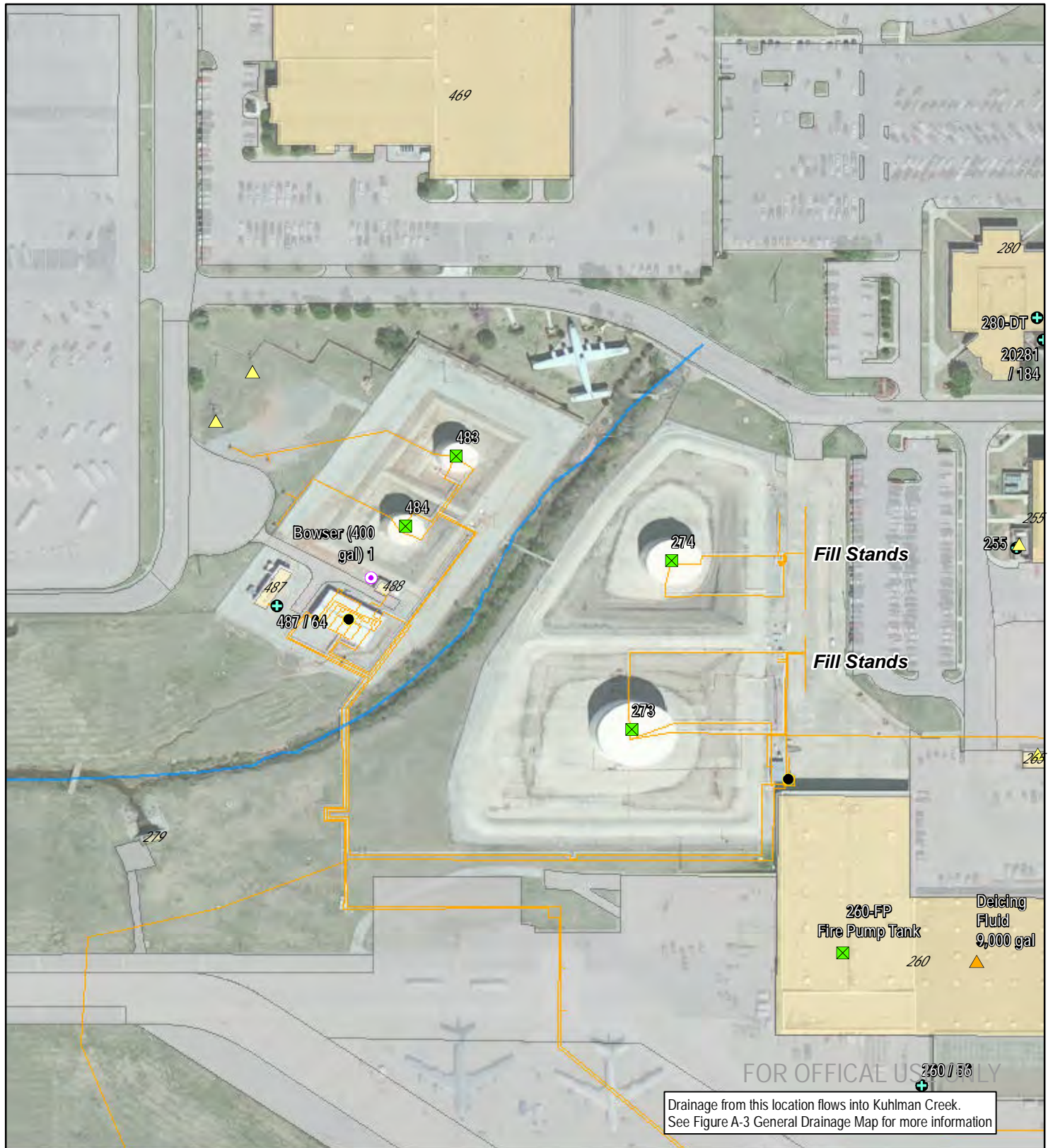


Figure A.2.1A: 273 Fuel Yard

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Drainage from this location flows into Kuhlman Creek.
See Figure A-3 General Drainage Map for more information

- LEGEND**
- Oil Filled Equipment
 - ▲ Electrical Transformer
 - ▲ Hazardous Substance
 - Aboveground Storage Tanks
 - Bowser/Mobile Refueler
 - ⊕ Generators
 - Fuel Lines
 - ▭ Base Boundary
 - River/Stream
 - ▭ Existing Buildings

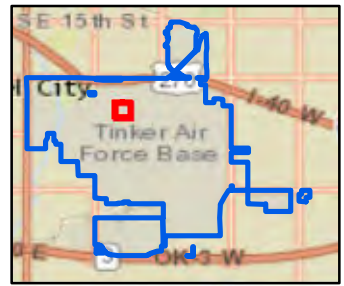
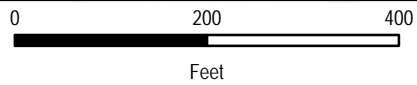


FIGURE A.2.1B
273 FUEL YARD AND PHILLIPS SYSTEM
TINKER AIR FORCE BASE, OKLAHOMA

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**273 Fuel Yard
Jet A and Fuel Oil Offloading Headers**



Tank 273



**Building 486 Pumphouse
Filter Separators inside
Fuel lines to Phillips System at upper left corner**



Phillips System - Tanks 483 & 484

TAB 3 TO ANNEX A**507TH FUEL YARD**

A.3.1 General: The 507th Fuel Yard is located in the South Forty Area of Tinker AFB on Pond Road north of the Fire Training Area and southwest of Building 1075. Refer to Figures A.3.1A and B for diagrams of the 507th Fuel Yard and to photographs at the end of the Tab. Also see Annex P for secondary containment documentation and Annex W for additional maps.

The fuel yard consists of two Jet A ASTs and one UST. The pump shed (Building 1091) is located northeast of the ASTs. The station is covered and open on all sides. There is a Jet A fill-stand located on the west side of Building 1091. A fence surrounds the entire facility.

A.3.2 Description and Operations: This facility provides fuel to the 507th Air Refueling Wing. The 507th Fuel Yard is supported by a Phillips Type III Hydrant System located at Building 1091, with a dispensing capability of 1,800 GPM from ten outlets. This hydrant system shares the eight hydrant vehicles assigned to the fuels management office. This system has an emergency power generator that can be used in the event of a power failure. If there were a complete hydrant system failure, mobile refueling equipment can be used to support refueling requirements.

A.3.3 Oil Bulk Storage and Handling: This 507th Fuel Yard is operated by contractors. The area consists of a pump and equipment pads with associated aboveground and underground fuel piping and aboveground fuel transfer piping. The ASTs are filled to no more than 29 feet or 95% capacity.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
21090	Jet A	AST	108,454
21091	Jet A	AST	108,903
21093	Waste Jet A	AST-Vaulted	4,000
Total Volume			221,357

The 507th Fuel Yard has a single fill-stand for Jet A at its loading area. The fill-stand area slopes to a trench drain connected to an oil/water separator. During loading or unloading operations, the vehicle operator engages the parking brakes to prevent vehicle movement before transfer lines are completely disconnected. Drains, outlets, and valves are inspected prior to filling and departure of a tank truck to prevent discharge while in transit.

A.3.4 Oil-Filled Operational Equipment: The 507th Fuel Yard has five (5) 200-gallon filter separators in the Building 1091 pumphouse. This building is a covered area surrounded by a concrete dike, and it drains to the oil/water separator.

A.3.5 Containment and Drainage: Secondary containment for the ASTs consists of concrete dikes. A containment valve is located in the containment basin for release of accumulated storm water. Any storm water collected after a storm event is inspected and released only if no oil is detected in the water. A concrete berm around the perimeter of the pump shed provides containment in the event of spills and leaks. There are no storm drains located on-site.

A.3.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex NAFTA Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 21091 (108,903 gallons) flowing out of the containment area. No storm drains are located on-site. Spills during transfer operations may reach nearby storm drain drop inlets draining to East Soldier Creek leaving at Outfall A10 as described in the SWPPP.

A.3.7 Emergency Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.3.8 Posting Requirements: This site-specific contingency plan shall be posted in prominent locations at each of the fuel yards described in this tab as approved by shop supervisor.

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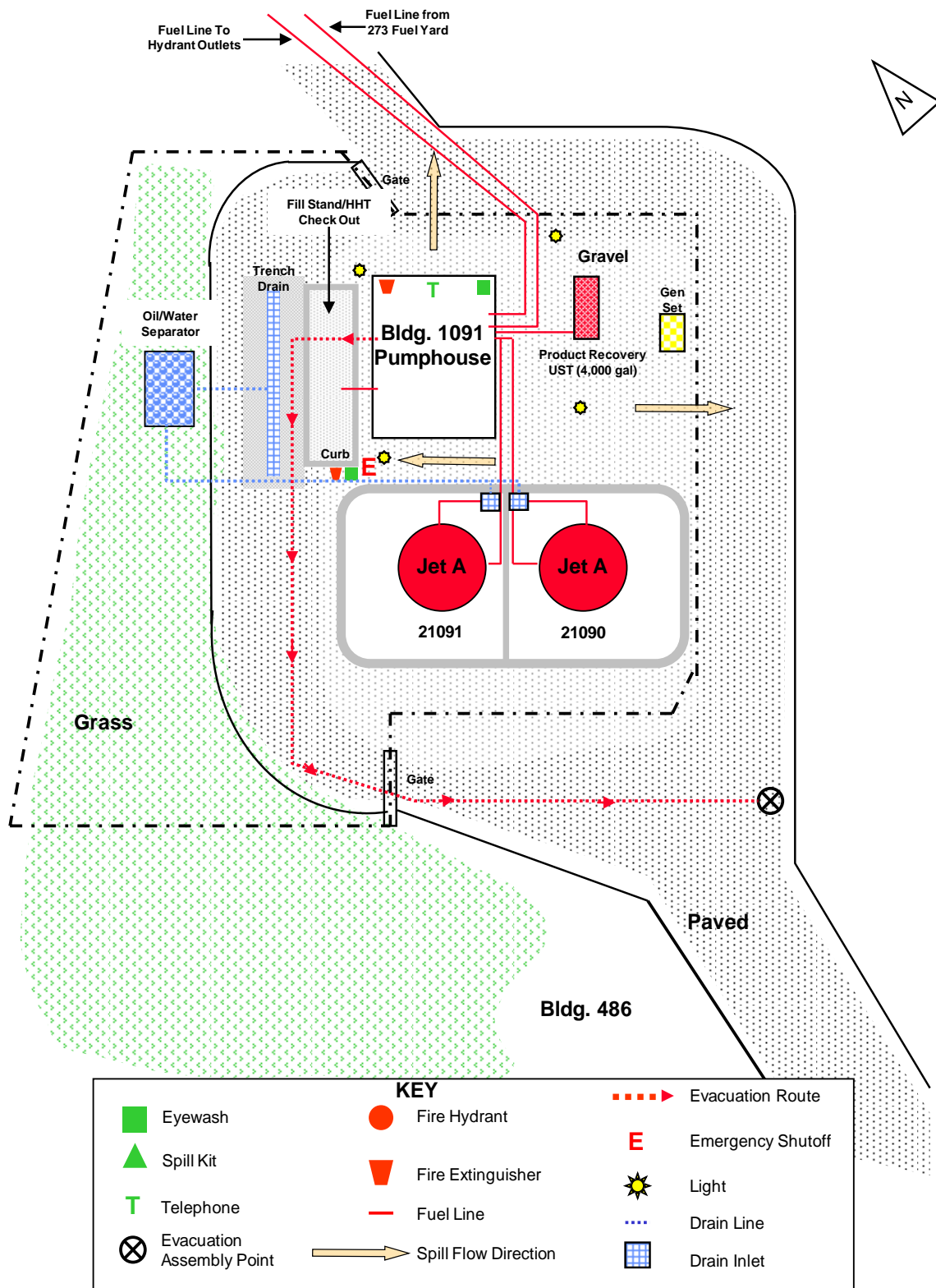
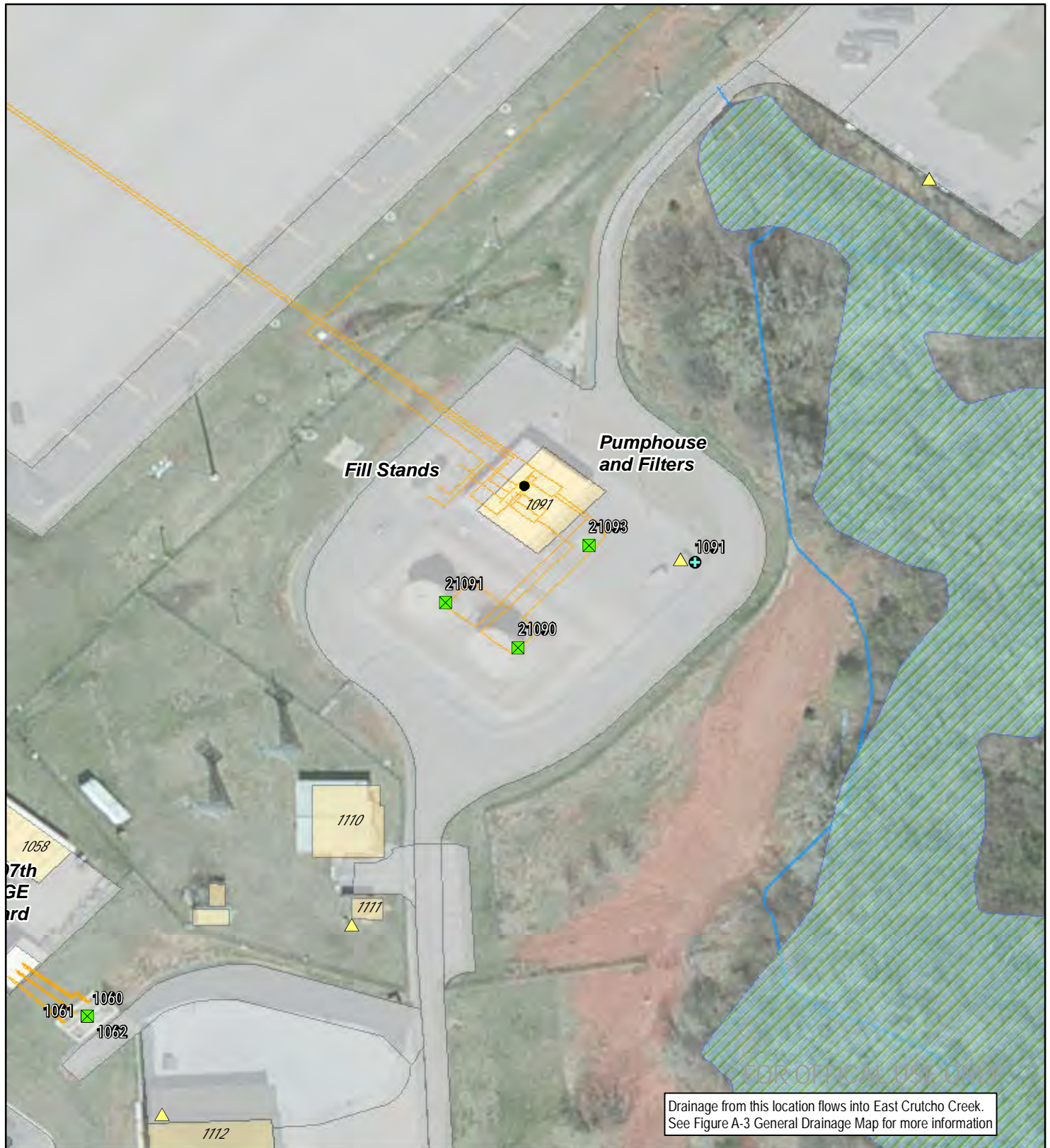


Figure A.3.1A: 507th Fuel Yard

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Drainage from this location flows into East Crutcho Creek.
See Figure A-3 General Drainage Map for more information

- LEGEND**
- Oil Filled Equipment
 - ▲ Electrical Transformer
 - Aboveground Storage Tanks
 - ⊕ Generators
 - Fuel Lines
 - ▭ Base Boundary
 - ▨ Wetland Areas
 - River/Stream
 - ▭ Existing Buildings

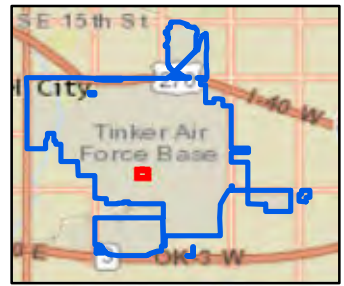
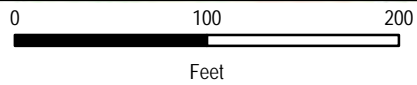


FIGURE A.3.1B
507TH FUEL YARD

TINKER AIR FORCE BASE, OKLAHOMA

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**507th Fuel Yard
Emergency Shutoff Switch at Foreground**



507th Fuel Yard

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TAB 4 TO ANNEX A**AWACS ALERT AREA**

A.4.1 General: The AWACS Alert Area is located in the South Forty Area of Tinker AFB southeast of the intersection of Tower Road and Patrol Road. The facility is used to provide jet fuel for the alert facility and to Navy aircraft. Refer to Figures A.4.1A and B for diagrams of the AWACS Alert Area and to photographs at the end of this Tab. Also see Annex P for secondary containment documentation and Annex W for additional maps.

A.4.2 Description and Operations: Three jet fuel ASTs are located at the north end of the facility (Tanks 999, 998 and 965). There are three USTs at this location: Tank 995 is an out-of-service waste fuel tank, Tank 10996 is a drain tank for the pumphouse, and Tank 11996 is associated with the oil water separator. The pump shed (Building 995) is located south of the ASTs. The pump shed is covered and open on all sides. The AWACS Alert Facility is supported by a Phillips Type III Hydrant System located at Building 995 with a dispensing capability of 3,000 GPM from 19 outlets. This system has an emergency power generator, which can be used in the event of a power failure. Should there be a complete hydrant system failure, mobile refueling equipment will be used to support refueling requirements. Personnel are available 24 hours a day as required. The storage tanks are filled by fuel transfers by pipeline.

A.4.3 Oil Bulk Storage and Handling: This facility is operated by contractors. The ASTs are filled to no more than 29 feet or 95% capacity.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
965	Jet A	AST	107,520
998	Jet A	AST	106,472
999	Jet A	AST	106,489
996	Diesel	Generator Belly Tank	706
995 (not in use)	Waste Jet A	UST	2,047 (not in service)
10996	Waste Jet A	UST	1,010
11996	Oil/Water Separator	UST	5,040
Total Volume			327,237

A.4.4 Oil-Filled Operational Equipment: Oil-filled operational equipment stored in the AWACS Alert Area includes the following

- (6) 200-gallon filter separators within the Bldg 995 Pumphouse.

A.4.5 Secondary Containment and Drainage: Concrete secondary containment structures have been installed around the tanks, manifolds, and pumps. Secondary containment at the

manifolds and pumps consists of a curbed concrete pad with a control valve on the drain. Concrete dikes surround the bulk storage tanks. Containment valves are located at the south end of each containment basin to release accumulated storm water. Storm water can be discharged directly to surface drainage channels if there is no visible fuel or sheen, but only under the direction of a supervisor.

A concrete berm around the perimeter of the pump shed is designed to contain spills and leaks. The pump shed is drained to Tank 10996. A diesel generator and a 200-gallon diesel AST are located west of Building 995. Most of the facility is gravel with paved driveways. Storm water runoff from the facility flows to drains on the southeast side of the facility that connect to a sanitary sewer lift station.

A.4.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard

presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex NAFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 965 (107,520 gallons) flowing out of the containment area. Storm water runoff from the facility flows to storm drains on the southeast side of the facility that connect to a sanitary sewer lift station.

A.4.7 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.4.8 Posting Requirements: This site-specific contingency plan shall be posted in prominent locations at each of the fuel yards described in this tab as approved by shop supervisor.

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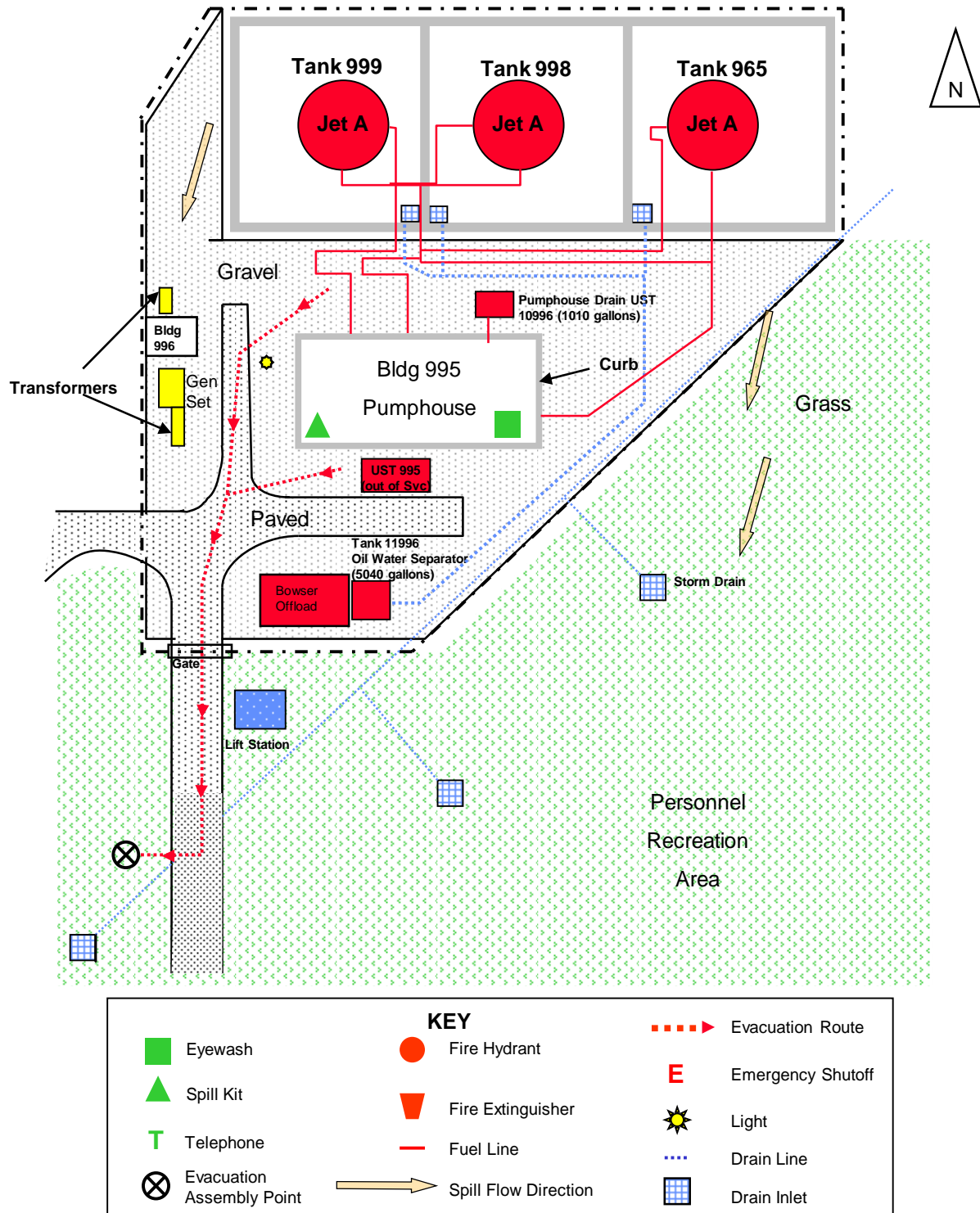
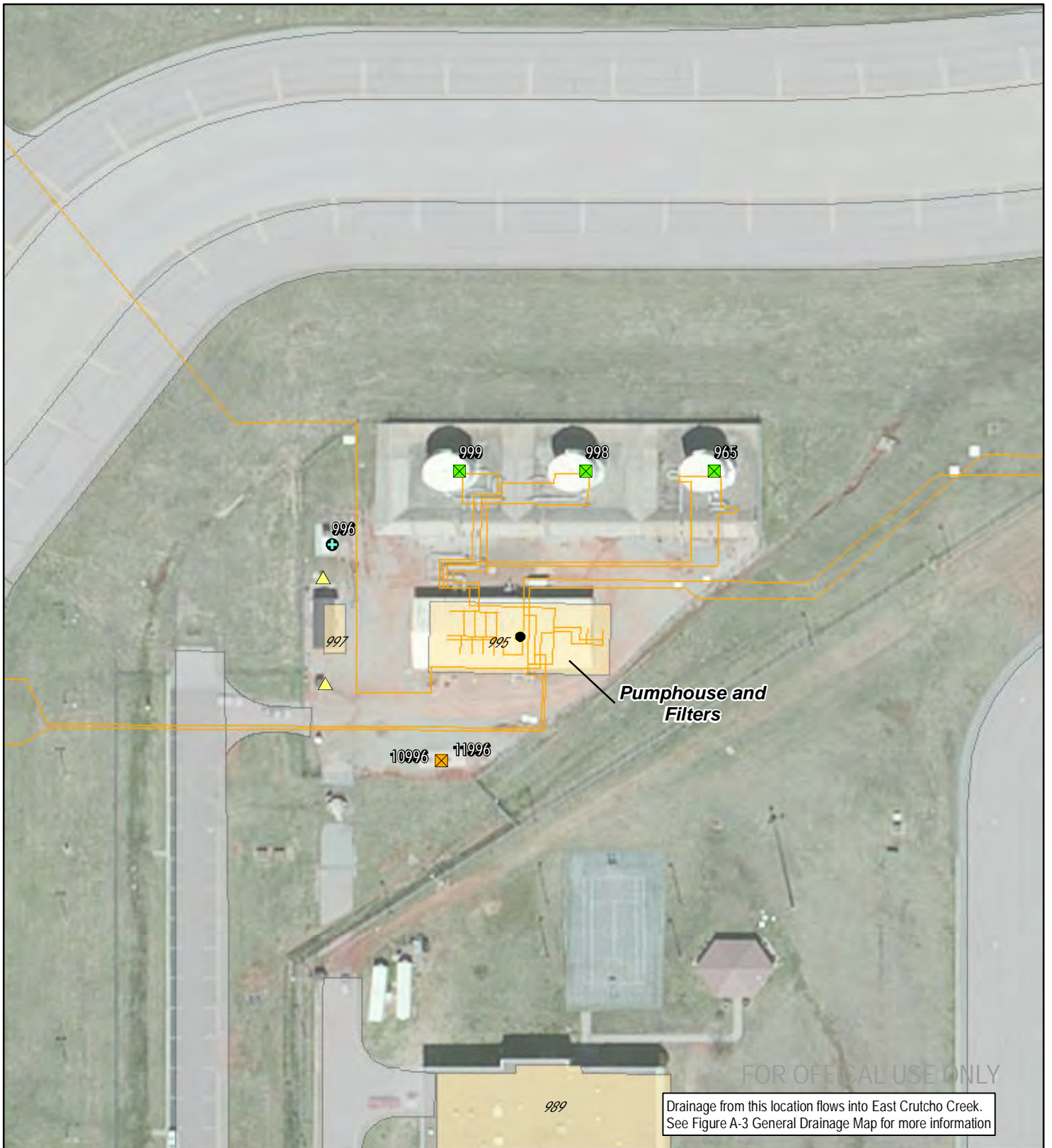


Figure A.4.1A: AWACS Alert Area

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- LEGEND**
- Oil Filled Equipment
 - ▲ Electrical Transformer
 - Aboveground Storage Tanks
 - Underground Storage Tanks
 - ⊕ Generators
 - Fuel Lines
 - ▭ Base Boundary
 - ▭ Existing Buildings



FIGURE A.4.1B
AWACS ALERT AREA

TINKER AIR FORCE BASE, OKLAHOMA

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**AWACS Alert Area
Tanks 999, 998, 965 (left to right)**



**AWACS Alert Area
Building 995 Pumphouse
Filter Separators located inside**

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TAB 5 TO ANNEX A**3700 FUEL YARD**

A.5.1 General: The 3700 Fuel Yard is located in the Eastside Depot Maintenance area of Tinker AFB, west of Warehouse Road and south of Building 3703. The facility provides fuel to the engine test cells at Building 3703 and 3234. The facility is used to provide jet fuel for the alert facility. Refer to Figures A.5.1A and B for diagrams of the 3700 Fuel Yard and to photographs at the end of this Tab. Also see Annex P for secondary containment documentation and Annex W for additional maps.

A.5.2 Description and Operations: The fuel yard consists of two ASTs (Tanks 3716 and 3718) for JP-5 aviation fuel and one newly constructed AST (Tank 3710) for Jet A aviation fuel. There is a pump shed (Building 3715) located north of Tanks 3716 and 3718. An additional pump shed (building number currently unassigned) is located east of Tank 3710. The station is covered and open on all sides. The truck filling and loading area is located north of Tank 3718. Grade 1010 oil is stored in an AST south of the truck off-loading area. This area is paved with concrete, bermed and sloped toward a drain connected to an oil/water separator. The remainder of the facility is unpaved and covered with gravel.

A.5.3 Oil Bulk Storage and Handling: This facility is operated by contractor personnel. The facility consists of the following tanks:

Tank Number	Product Stored	Type	Shell Capacity (gallons)
327	Lube Oil - LA6	AST	12,000
3710	Jet A	AST	205,000
3716	Jet A	AST	207,165
3718	Jet A	AST	445,964
3715	Waste Jet A	UST	1,009
Total Volume			871,138

A.5.4 Oil-Filled Operational Equipment: Oil-filled operational equipment stored in the 3700 Fuel Yard includes the following:

- (1) 400-gallon Bowser, typically parked by the offloading header
- (2) 300-gallon filter separators in the covered area north of Tanks 3716 and 3718
- (4) 100-gallon filter separators north of Tank 3710

A.5.5 Secondary Containment and Drainage: Concrete secondary containment structures have been installed around the tanks, manifolds, and pumps. Post valves control the drainage from the containment structures. Storm water can be discharged directly to surface drainage

channels if there is no visible fuel or sheen, but only under the direction of a designated supervisor. Secondary containment at the manifolds and pumps consists of a curbed concrete pad with a control valve on the drain. Concrete dikes surround the bulk storage tanks. A concrete berm around the perimeter of the pump shed provides containment in the event of spills and leaks. Spills or leaks from the pump shed are collected in Tank 3715 located north of Building 3715.

Storm water runoff from the facility flows north to storm drain inlets, which then flows to East Soldier Creek.

A.5.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard

presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex NAFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 3718 (445,964 gallons) flowing out of the containment area. Storm water runoff from the facility flows north to storm drain inlets which then flow to East Soldier Creek leaving at Outfall A10 as described in the SWPPP.

A.5.7 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.5.8 Posting Requirements: This site-specific contingency plan shall be posted in prominent locations at each of the fuel yards described in this tab as approved by shop supervisor.

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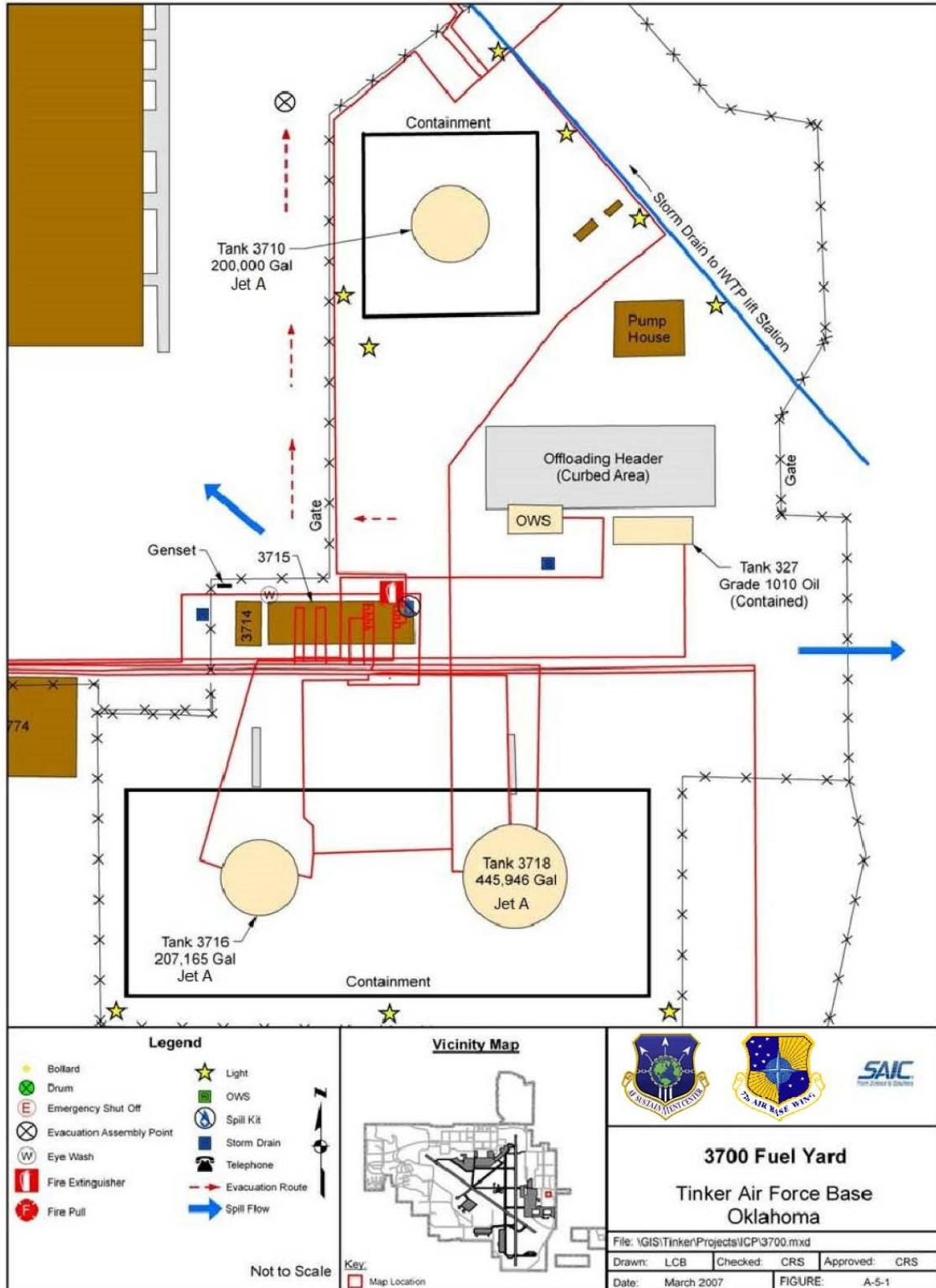
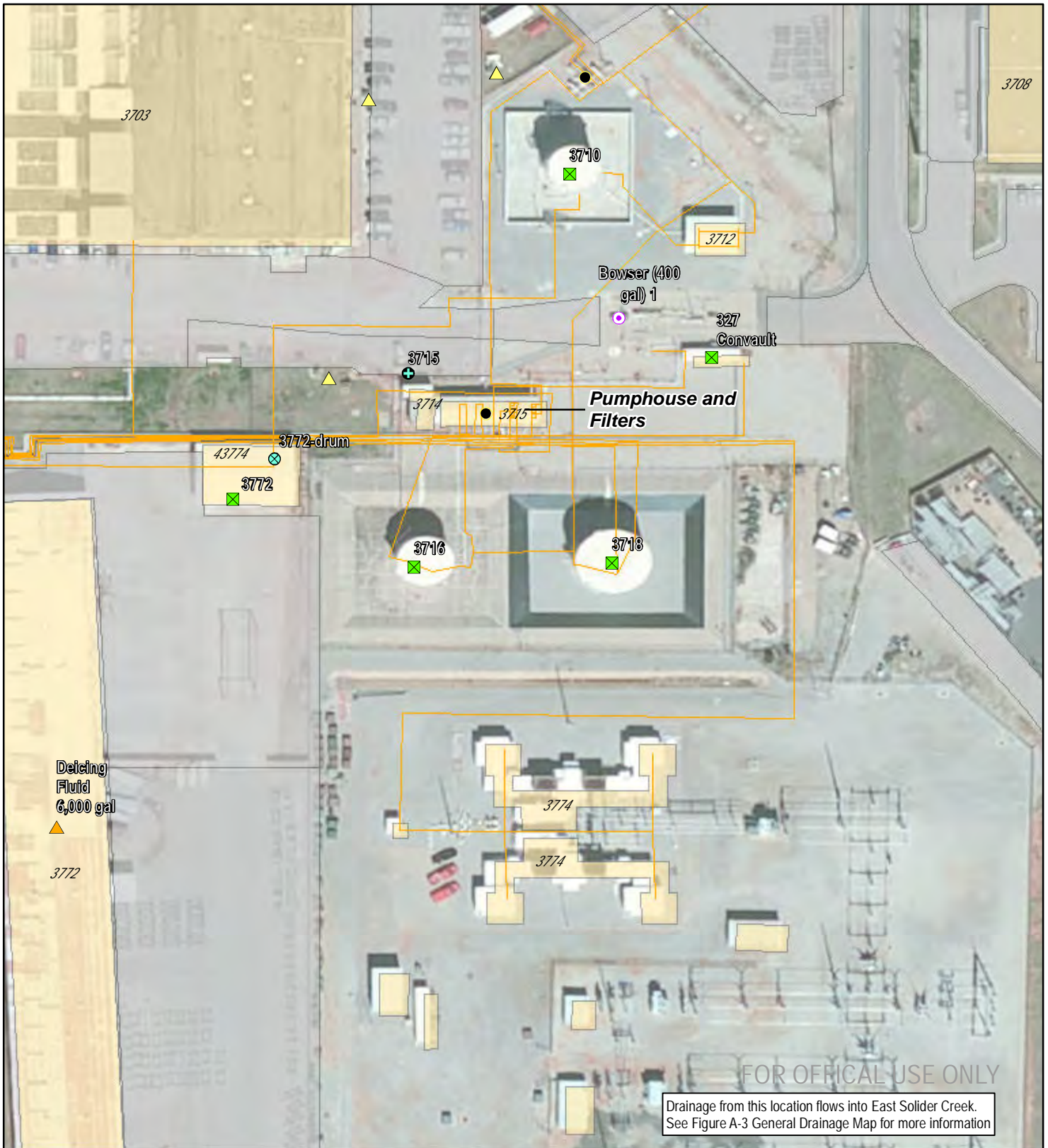


Figure A.5.1A: 3700 Fuel Yard

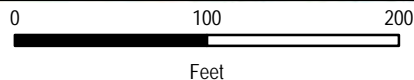
Figure updated from 2007 ICP with current AF emblems and tank contents

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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- ⊗ Aboveground Storage Tanks
- ⊗ Drum
- ⊗ Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings



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 Drainage from this location flows into East Solider Creek.
 See Figure A-3 General Drainage Map for more information



FIGURE A.5.1B
 3700 FUEL YARD

TINKER AIR FORCE BASE, OKLAHOMA

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**3700 Fuel Yard: Tank
3716 (right), Tank 3718
(left)**



**3700 Fuel Yard: Pump
Shed north of Tanks
3716 and 3718**



**3700 Fuel Yard: Tank
3710 200,000-gallon AST**

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TAB 6 TO ANNEX A**552ND EQUIPMENT MAINTENANCE SQUADRON AEROSPACE GROUND EQUIPMENT AND FUELING FACILITY**

A.6.1 General: The 552nd Equipment Maintenance Squadron (EMS) is a unit of the 552nd Maintenance Group, 552nd Air Control Wing (ACW), and is responsible for the maintenance of non-powered and powered aerospace ground equipment (AGE) and selected aircraft components.

A.6.2 Description and Operations: There are two AGE facilities associated with the 552nd EMS, the first facility is located in the northern portion of the Base, west of Building 220 adjacent to the flightline and the second is located near Building 985 in the southern portion of the base.

A.6.3 North EMS Facility: At the northern EMS facility there is a vaulted AST and one 3,000 gallon steel UST, which store fuel for AGE (see table below). Each tank contains Jet-A. The vaulted AST has a sensor at the lowest point of the vault. The sensor is part of the Ronan system and has an ATG and audible and visual alarms. Liquid Fuels Maintenance (LFM) is responsible for inspection of these tanks on a monthly basis. LFM has a checklist that they use and they keep all records. All repairs to piping and alarms are performed by LFM. The UST is fitted with audible/visual overfill alarms and automatic shut-off. Fuel is transferred to equipment and vehicles from a dispenser island, which is under a canopy. The tanks are filled by Bulk Fuels Operations (Phoenix Management Corp.) on an as-needed basis. An emergency shutoff switch is installed along the western wall of Building 289.

The northern AGE fueling operation uses 55-gallon drums for the storage of petroleum products. Due to the transient nature of such containers, it is not practical to obtain an exact, accurate count and inventory. A survey was conducted to determine the average number of 55-gallon drums in use at the northern EMS facility. The average number of drums in use at the northern EMS facility is given below and typically includes drums of motor oil, hydraulic oil, used oil, and waste oil. The drums are stored on a concrete pad.

Refer to Figures A.6.2A and B for diagrams of the northern 552nd EMS AGE facility and to photographs at the end of this Tab.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
264R	Jet-A	Vaulted AST	15,000
269	Jet-A	UST	3,000
220-drum-1	Various Oils	Drums	7 x 55 gallons
Total Volume			18,385

The northern AGE facility is used to provide fuel to a variety of ground equipment including portable generators, diesel air conditioners, and fuel bowsers. A summary of the different equipment types and total capacities is listed below. This equipment is shared with the southern 552nd AGE facility.

Equipment storage is distributed between the 220, 240, 260, and 976 AGE Yards and consists of the following. See Figure A.6.1 for locations of the 220, 240, and 260 AGE Yards.

Equipment Type	Number	Gallons	Total Gallons
Fuel Bowsers	8	600	4,800
Diesel Air Conditioner	31	127	3,937
Diesel Generators (Trilectron)	21	147	3,087
Diesel Generators (Dash-60)	12	190	2,280
Diesel Generators (Dash-95)	2	80	160
Totals	74	--	14,264

A.6.4 South EMS Facility: At the southern EMS facility, there are three USTs which store Jet-A for AGE located near Building 985 (see table listed below). The tanks have a Ronan continuous monitoring system for the tank interstitial spaces and piping. The tanks are fitted with audible/visual overfill alarms and automatic shut-off. The tanks are filled by Bulk Fuels Operations (Phoenix Management Corp.) on an as-needed basis. Refer to Figures A.6.3A and B for diagrams of the southern 552nd EMS AGE facility and to photographs at the end of this Tab.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
972	Jet-A	UST	1,000
973	Jet-A	UST	1,000
974	Jet-A	UST	2,000
		Total Volume	4,000



A.6.5 Containment and Drainage: The vaulted AST at the northern EMS facility is contained in a concrete basin. The fuel bowsers at the northern EMS facility are stored on a steel grated concrete containment area. There is no secondary containment around the vehicle fill areas. There are spill kits located behind the pump island. The fill area is sloped toward one grated drop inlet and is discharged to the base storm drain system to the south. Storm water runoff flows to storm drains to the south, eventually leaving Tinker at Outfall A3.

Storm water runoff from the southern EMS facility flows north to storm drains located along the north end of the facility, eventually leaving Tinker at outfall A2.



Drainage from this location flows into Kuhlman Creek.
See Figure A-3 General Drainage Map for more information

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- LEGEND**
-  Base Boundary
 -  Existing Buildings

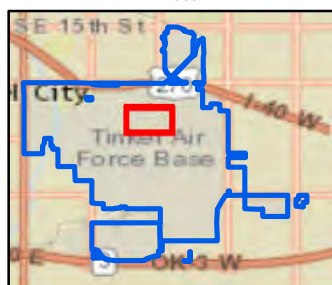
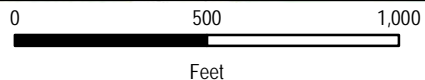


FIGURE A.6.1
552ND EQUIPMENT MAINTENANCE
SQUADRON AEROSPACE GROUND
EQUIPMENT AND FUELING FACILITY
TINKER AIR FORCE BASE, OKLAHOMA

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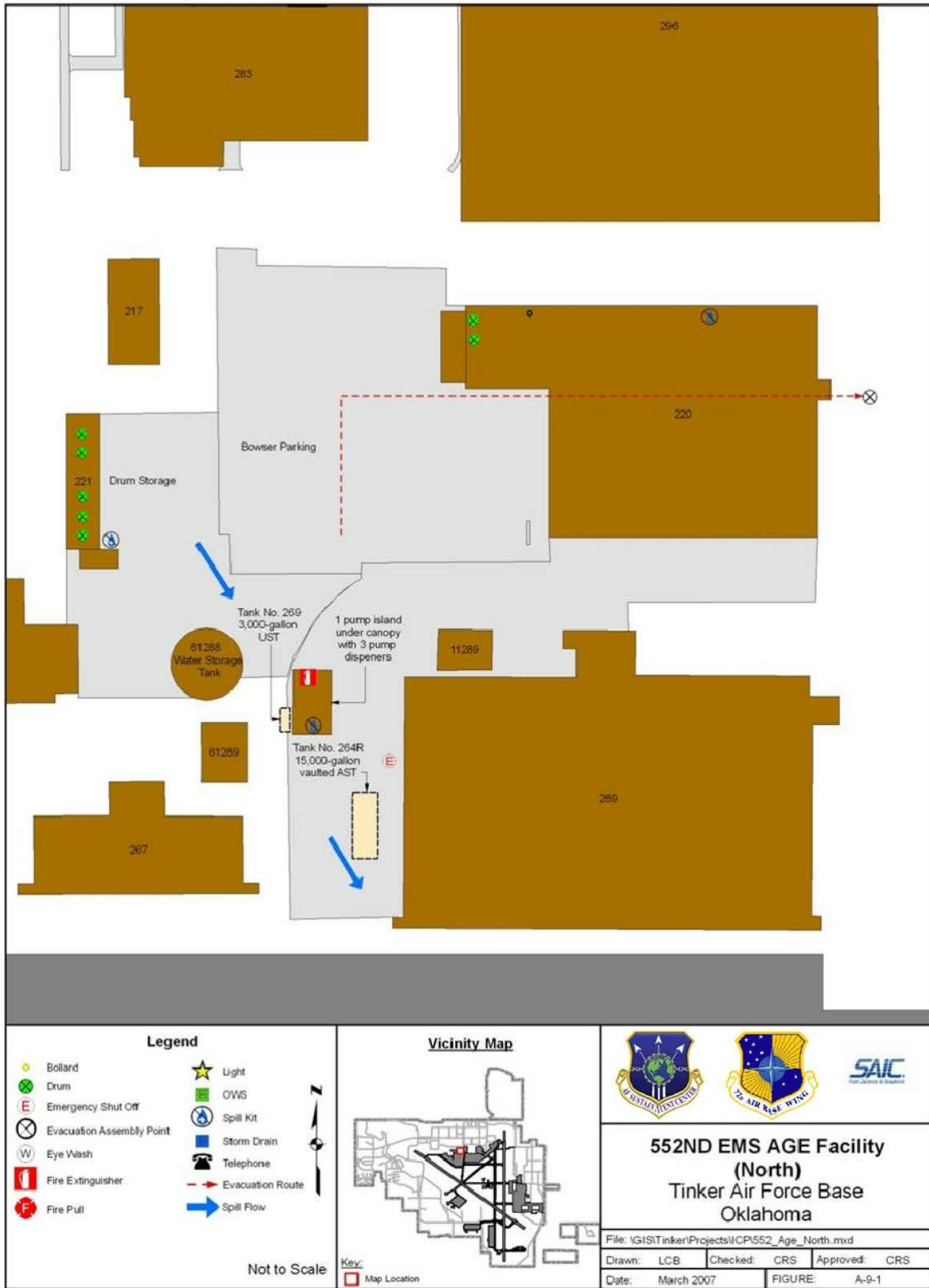


Figure A.6.2A: Northern Equipment Maintenance Squadron Aerospace Ground Equipment and Fueling Facility

Figure updated from 2007 ICP with current AF emblems and tank contents

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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ⊠ Aboveground Storage Tanks
- ⊗ Drum
- ⊕ Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings



FIGURE A.6.2B
 NORTHERN EQUIPMENT MAINTENANCE
 SQUADRON AEROSPACE GROUND
 EQUIPMENT AND FUELING FACILITY
 TINKER AIR FORCE BASE, OKLAHOMA

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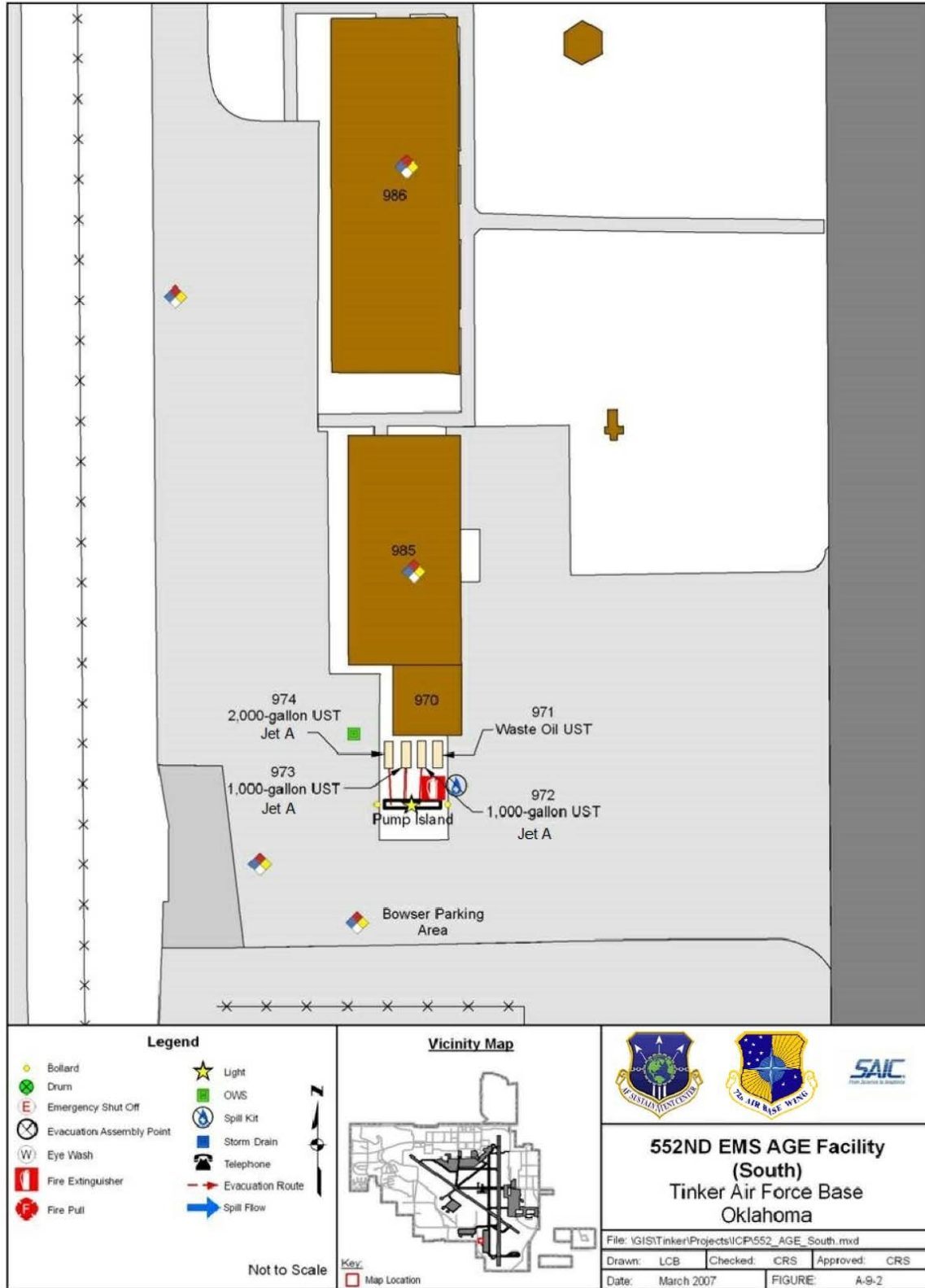


Figure A.6.3A: Southern Equipment Maintenance Squadron Aerospace Ground Equipment and Fueling Facility

Figure updated from 2007 ICP with current AF emblems and tank contents

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- LEGEND**
- Oil Filled Equipment
 - ▲ Electrical Transformer
 - Bowser/Mobile Refueler
 - Fuel Lines
 - ▭ Base Boundary
 - ▭ Existing Buildings

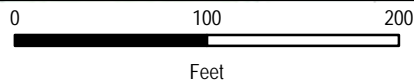


FIGURE A.6.3B
 SOUTHERN EQUIPMENT MAINTENANCE
 SQUADRON AEROSPACE GROUND
 EQUIPMENT AND FUELING FACILITY
 TINKER AIR FORCE BASE, OKLAHOMA

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552nd Northern EMS Fuel Pumps



552nd Northern EMS Bowser Pad



552nd Northern EMS Drum Storage Area



**552nd Northern EMS AGE
Dash-60 Diesel Generator**



**552nd Northern EMS AGE
Trilectron Diesel Generator**



**552nd Northern EMS AGE
Diesel Air Conditioner**



552nd Southern EMS Fuel Pumps



552nd Southern EMS Bowser Parking Area



552nd Southern EMS Hazardous Materials Storage Area

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TAB 7 TO ANNEX A

OKLAHOMA CITY AIR LOGISTICS CENTER (ALC) AEROSPACE GROUND
EQUIPMENT AND FUELING FACILITY
(76AMXG AGE)

A.7.1 General: The Oklahoma City Air Logistics Center (ALC) Aerospace Ground Equipment (AGE) fueling operation is located south of Building 2136. Tank and equipment IDs are referenced as Building 2101; this building is no longer present, but tanks and equipment are in the area it used to occupy. The AGE team is tasked with the repair, maintenance, and fueling of ground support equipment.

A.7.2 Description and Operations: There are two ASTs, located south of Building 2136, which store fuel for use in AGE equipment (see table below). Both tanks are double-walled ASTs with a Ronan continuous monitoring system for the tanks interstitial space and piping. The first tank is for diesel fuel and is identified as Tank 2101D; the second is divided into two compartments that are identified as Tanks 2101J and 2101M. The tanks are fitted with audible/visual overfill alarms and automatic shut-off. The dispensers for each tank are attached to the tanks. The fill ports for the tanks are located within steel boxes on the ground. The tanks, dispensers, and fill boxes are protected from physical damage by concrete-filled steel bollards. Fuel is delivered via tanker truck by Bulk Fuels Operations (Phoenix Management Corp.) on an as-needed basis. Fuel inventory control is performed using a manual system maintained by AGE personnel. The site is adequately illuminated for operation during hours of darkness. Refer to Figures A.7.1A and B for diagrams of the AGE fuel tanks and to photographs at the end of this Tab.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
2101D	Diesel	AST	6,000
2101J	Jet A	AST	3,000
2101M	MOGAS	AST	3,000
		Total	12,000

The AGE fueling operation uses 55-gallon drums for the storage of petroleum products. Due to the transient nature of such containers, it is not practical to obtain an exact, accurate count and inventory. A survey was conducted to determine the average number of 55-gallon drums in use at the ALC facility. The drums are stored on a concrete pad with a rollover berm. A breakdown of the different types of petroleum stored at the ALC AGE facility is listed below.

Storage ID: 2101-drum			
Product Stored	Name	Number of 55-gallon Drums	Total Drum Storage Capacity (gallons)
Solvent	PD-680	4	220

Storage ID: 2101-drum			
Product Stored	Name	Number of 55-gallon Drums	Total Drum Storage Capacity (gallons)
Lubricating Oils	Engine Oil	6	330
Lubricating Oils	Hydraulic Fluid	15	825
Fuel	Waste Fuel	2	110
Totals		27	1,485

The MWX/ALC AGE site is used to provide fuel to a wide variety of ground equipment including portable generators, materials handling equipment, air conditioners, and vehicles. A summary of the different equipment types and total capacities is listed below.

Equipment Type	Number	Gallons / Equipment	Total Gallons
Air Conditioner, MA-3D100	62	60	3,720
Air Conditioners, Various	65	175 max, 150 avg	9,750 avg
Air Starter	20	80	1,600
Cabin Press Starter	4	50	200
Cabin Press Starter	10	95	950
Generator, GTC	4	195	780
Generator, MEP	9	90	810
Generator, MD	4	75	300
Hydraulic Test Stands	6	95	570
Liquid Cooling System, ACE	5	127	635
Totals	189	--	19,315

A.7.3 Containment and Drainage: Both of the ASTs are double walled. There is no secondary containment around the vehicle fill areas. Although there is no curbing around the pump islands, the fill area is sloped toward one grated drop inlet that is connected to an oil/water separator. After water passes through the separator, it is discharged to the base storm drain system to Crutcho Creek and ultimately to Outfall A2. There are spill kits and a trailer filled with spill materials adjacent to tanks 2101D, J, and M.

Drums at the drum storage area are provided containment either with covered spill pallets or by the concrete berm surrounding the area. See **Annex P** for more information on secondary containment.

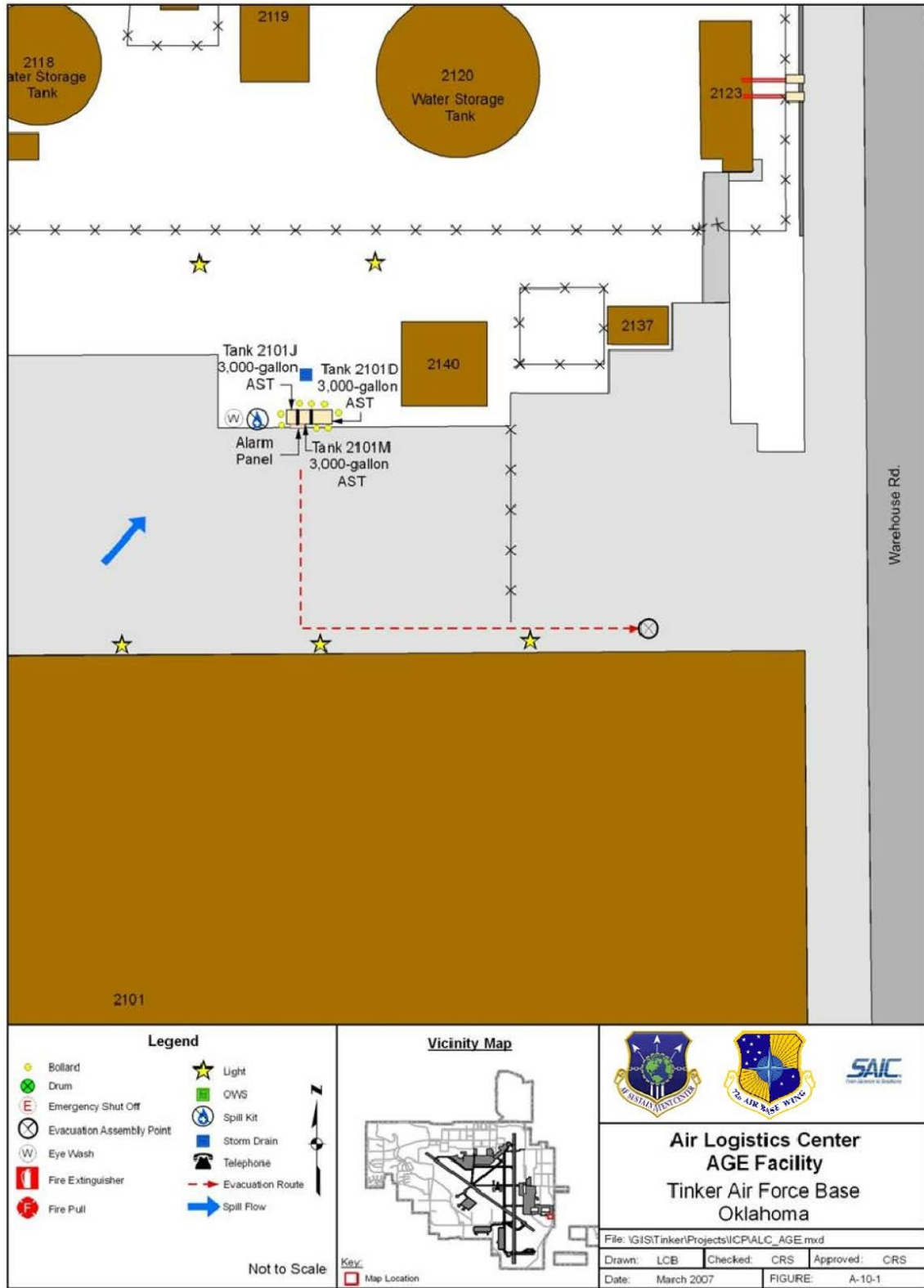


Figure A.7.1A: Oklahoma City Air Logistics Center Aerospace Ground Equipment and Refueling Facility Diagram

Figure updated from 2007 ICP with current AF emblems and tank contents

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- LEGEND**
- ▲ Electrical Transformer
 - Aboveground Storage Tanks
 - ⊗ Drum
 - ⊙ Bowser/Mobile Refueler
 - ⊕ Generators
 - Fuel Lines
 - ▭ Base Boundary
 - ▭ Existing Buildings



FIGURE A.7.1B
 OKLAHOMA CITY AIR LOGISTICS CENTER
 AEROSPACE GROUND EQUIPMENT
 AND REFUELING FACILITY DIAGRAM
 TINKER AIR FORCE BASE, OKLAHOMA

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ALC Age Fuel Tanks: Tank 2101D (right). Tank 2101M (middle). Tank 2101J (left). Photograph showing all three dispenser pumps.



ALC Age Fuel Tanks: Tank 2101D (left). Tank 2101M (middle). Tank 2101J (right). Photograph showing all fill ports.



Drum storage area 2101-drum, located just west of the MWX/ALC AGE site at the former location of Bldg 2101

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TAB 8 TO ANNEX A

507TH AIR REFUELING WING AEROSPACE GROUND EQUIPMENT AND FUELING
FACILITY
BUILDING 1070 (507 ARW)

A.8.1 General: The 507th Air Refueling Wing Aerospace Ground Equipment (AGE) fueling operation is located southeast of Building 1070. The AGE team is tasked with the repair, maintenance, and fueling of ground support equipment.

This shop may be reached by contacting the facility manager at 734-4460. The tank custodian may be reached at 734-7848. The Unit Environmental Coordinator may be reached at 734-2994. An alternate tank custodian may be reached at 734-4576.

A.8.2 Description and Operations: There are three vaulted ASTs which store fuel for use in AGE equipment (see table below). All of the vaulted ASTs have a vault sensor at the lowest point of the vault. The sensor is part of the Ronan system and has an ATG and audible and visual alarms. Liquid Fuels Management (LFM) is responsible for inspection of these tanks on a monthly basis. LFM has a checklist that they use and they keep all records. All repairs to piping and alarms are performed by LFM. Pressure testing of the tanks is conducted on an annual basis. The tanks are fitted with audible/visual overfill alarms and automatic shut-off. Fuel is transferred to equipment and vehicles from a dispenser island, which is under a canopy. Fuel is delivered via tank truck by Bulk Fuels Operations (Phoenix Management Corp.) on an as-needed basis. Fuel inventory control is performed using a manual system maintained by AGE personnel. The site is adequately illuminated for operation during hours of darkness. Refer to Figures A.8.1A and B for diagrams of the AGE fuel tanks and to photographs at the end of this Tab.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
1060	MOGAS/Unleaded	Vaulted AST	5,000
1061	Jet A	Vaulted AST	5,000
1062	Diesel	Vaulted AST	6,000
		Total	16,000

The AGE fueling operation uses 55-gallon drums for the storage of petroleum products. Due to the transient nature of such containers, it is not practical to obtain an exact, accurate count and inventory. A survey was conducted to determine the average number of 55-gallon drums in use at this facility. The drums are stored inside the building at all times. An inventory of the different types of petroleum stored at the 507th ARW AGE facility is listed below.

Product Stored	Number of Drums (55 Gallons)	Total Gallons
Oil	2	110
Hydraulic Fluid	2	110
PD-680	1	55
Used Oil	1	55
Used Fuel	1	55
Totals	7	385

This AGE Site is used to provide fuel to a wide variety of ground equipment including air conditioners, compressors, and bowsers. A summary of the different equipment types and total capacities is listed below.

Equipment Type	Number of Units	Fuel Capacity per Equipment (Gallons)	Total Gallons
Trailer-Mounted Air Conditioner	7	60	420
Trailer-Mounted Compressor	6	80	480
Fuel Bowser	3	400	1,200
Totals	16	--	2,100

A.8.3 Containment and Drainage: Each of the three ASTs are located in a concrete basin. There is no secondary containment around the vehicle fill areas and AGE equipment storage areas. Although there is no curbing around the pump islands and storage areas, the fill area and storage area is sloped toward one grated drop inlet that is connected to an oil/water separator. After water passes through the separator, it is discharged to the base storm drain system and ultimately to the base industrial wastewater treatment plant. There are spill kits located behind the pump island.

The trailer-mounted air conditioners and compressors are stored in the staging area east of Building 1070 that will drain to the oil/water separator. The fuel bowsers are stored in a concrete berm with a 700-gallon capacity.

A.8.4 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.

- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Worst Case Release Scenario – Total contents of Tank 1062 (6,000 gallons) flowing out of the tank. Leakage may contaminate water table.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex NAFTA Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

A.8.5 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.8.6 Posting Requirements: This site-specific contingency plan shall be posted in a prominent location approved by shop supervisor.

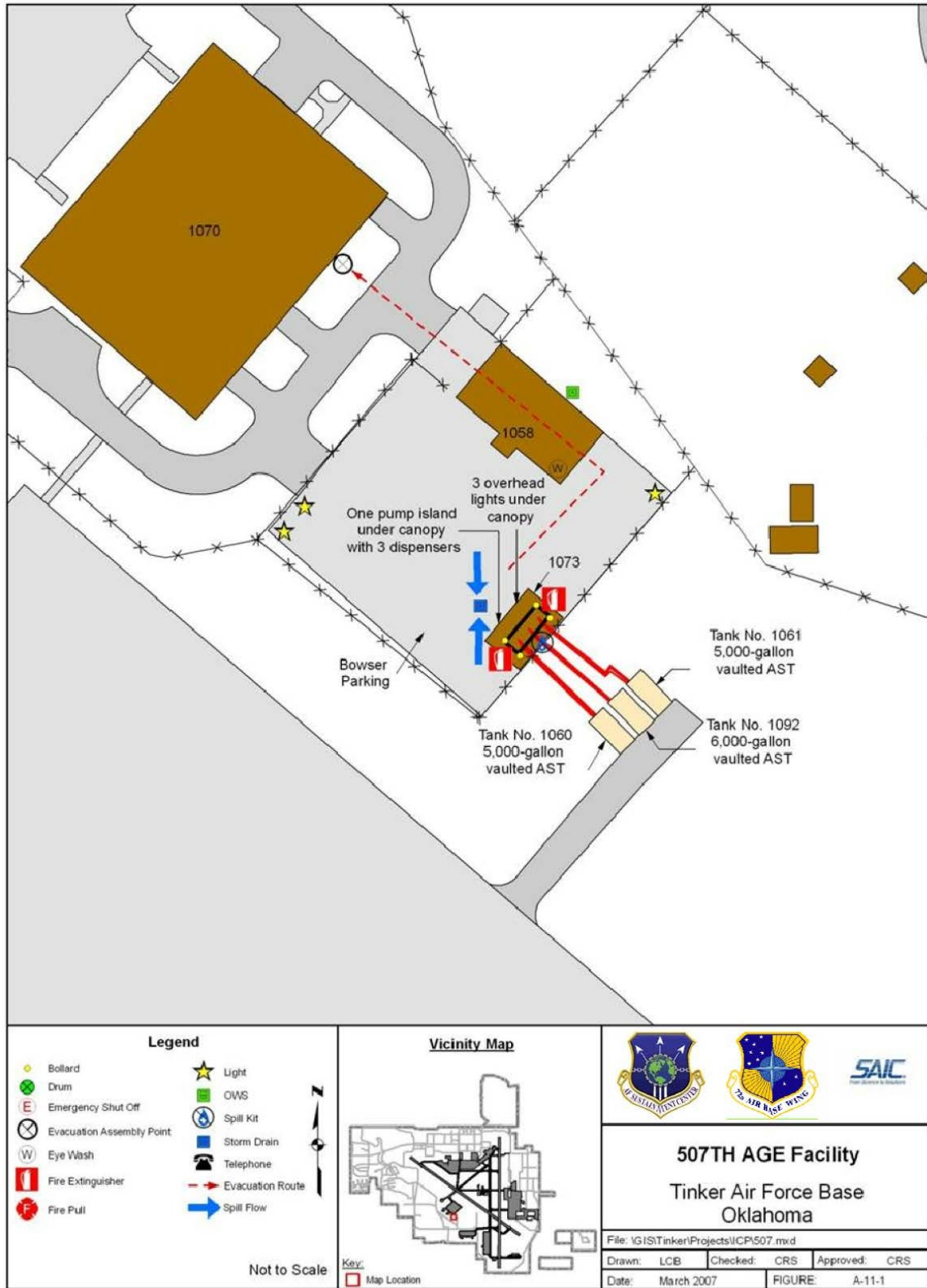


Figure A.8.1A: 507th Air Refueling Wing Aerospace Ground Equipment and Fueling Facility Diagram

Figure updated from 2007 ICP with current AF emblems and tank contents

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LEGEND

- Electrical Transformer
- Aboveground Storage Tanks
- Bowser/Mobile Refueler
- Fuel Lines
- Base Boundary
- Existing Buildings

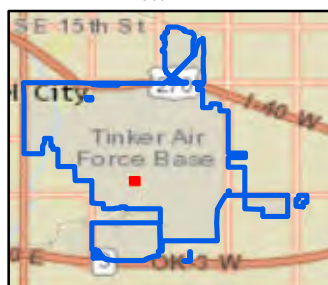
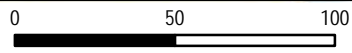


FIGURE A.8.1B
507TH REFUELING WING AEROSPACE
GROUND EQUIPMENT AND
FUELING FACILITY DIAGRAM
TINKER AIR FORCE BASE, OKLAHOMA

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507th ARW AGE Vaulted ASTs.



507th ARW AGE dispenser pumps.

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TAB 9 TO ANNEX A

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TAB 10 TO ANNEX A

**HAZMINCEN (NAVY) AND
STRATCOM WING ONE AEROSPACE GROUND EQUIPMENT
AND FUELING FACILITY
BUILDINGS 817, 819, AND 820 (SCW-1/N415)**

A.10.1 General: The US Navy Strategic Communications Wing One Aerospace Ground Equipment (AGE) fueling operation is located near Building 820. The AGE team is tasked with the repair, maintenance, and fueling of ground support equipment.

This shop may be reached by contacting the facility manager and/or the tank custodian at 739-3376. The Unit Environmental Coordinator may be reached at 739-7978. The contact may also be notified to obtain a current inventory list. An alternate tank custodian may be reached at 739-3588.

Relevant HAZMINCEN Spill Response Team (SRT) numbers include: HAZMINCEN SRT
Duty Phone: (405) 831-4259.

Refer to Figures A.10.1A and B for diagrams of the area that includes Buildings 817, 819, 820, 825 and 830. Also see photographs at the end of this Tab, Annex P for secondary containment documentation, and Annex W for additional maps.

A.10.2 Oil Bulk Storage and Handling: There is one double-walled self-contained AST that is divided into two compartments: Tanks NA001 and NA002 (see table below). The tanks have a Ronan continuous monitoring system for the tank interstitial spaces and piping. The tanks are fitted with audible/visual overfill alarms and automatic shut-off. Fuel is delivered via tank truck by commercial vendor on an as-needed basis. Typical throughput is 2,500 gallons per week (Jet A), and 500 gallons every 3 months for MOGAS. Fuel inventory control is performed using a manual system maintained by AGE personnel.

This location also contains two fuel tanks for an emergency generator, and one UST. The generator tanks are equipped with an audible fill port that whistles when full, and the UST is equipped with a Ronan continuous monitoring system for the tank interstitial spaces and piping as well as with overfill alarm and automatic shut-off.

The AGE fueling operation uses 55-gallon drums for the storage of petroleum products. The drums are primarily stored in Building 817. Various oils, including engine oil, hydraulic fluid, used oils and fuels, and solvents are stored here. Drums are also located in Buildings 820, 825, and 830. The Support Equipment Facility (Building 825) supports maintenance activities for Strategic Communicates Wing One. Building 830 houses flight and maintenance trainers that each have a hydraulic oil reservoir; drums of hydraulic fluid are stored in this building for equipment service.

See Figures A.10.1A and B for diagrams of the AGE fuel tanks (photographs are not available).

Tank Number	Product Stored	Type	Shell Capacity (gallons)
NA001	Jet A	AST	4,000
NA002	Mogas	AST	1,000
820-1	Diesel	Generator AST	1,150
820-2	Diesel	Generator AST	1,150
825-DU	Various Oils	Drum	325 (5 drums x 65 gal each)
829 / 219	Diesel	UST	1,000
817-drum	Various Oils	Steel drum	3,300 (60 drums x 55 gal each)
817A-drum	Various Oils	Steel drum	2,640 (48 drums x 55 gal each)
820-drum	Various Oils	Steel drum	220 (4 drums x 55 gal each)
825-drum	Various Oils	Steel drum	220 (4 drums x 55 gal each)
830-drum	Hydraulic Fluid	Steel drum	165 (3 drums x 55 gal each)
Total			12,530

A.10.3 Oil-Filled Operational Equipment:

The AGE Site is assigned 3 fuel bowzers for use during defueling operations. Building 830 houses flight and maintenance trainers that each has a hydraulic oil reservoir; these are considered oil-filled operational equipment. These items are summarized below.

Equipment Type	Number of Units	Fuel Capacity (Gallons)	Total Gallons
Bowser	3	350	1,050
Flight Trainer, Hydraulic Reservoir	1	375	375
Maintenance Trainer, Hydraulic Reservoir	1	500	500
Totals	5	--	1,925

A.10.4 Containment and Drainage: Each AST is double-walled. There is no secondary containment around the vehicle fill areas, but the area is sloped to the west and is eventually discharged to the base storm drain system and ultimately to Outfall A2. There are spill kits adjacent to the pump island and behind the Diesel and MOGAS ASTs.

Building 817 is sloped towards a sump, which provides ample containment for a 55-gallon drum. The drums in Building 820 are each stored on a spill pallet in a containment cabinet; these drums are located in independent locations throughout this hangar.

The Browsers at this location are parked empty.

The oil dispensers in Building 825 are located on racks and are double-walled dispensers. Additionally, the building itself should contain any spill inside.

The oil-filled operational equipment in Building 830 is located sufficiently inside the building to contain any spill from this equipment. The drums are located on spill pallets.

A.10.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor. The SRT identified for the HAZMINCEN in this Tab shall also be notified.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Aboveground Storage Tank Response Procedures

Spill Response Team (SRT) – The members of the SRT for the HAZMINCEN (Navy) are identified at the beginning of this Tab.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex NAFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Worst Case Release Scenario – Total contents of Tank NA001 (4,000 gallons) flowing out of the containment shell to storm drains. Storm water runoff here would leave Tinker AFB at Outfall A2 as described in the SWPPP.

A.10.6 Special Precautionary Measures:

- A. The hazardous waste material are segregated for compatibility and stored in enviropacks in Building 817.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials. MSDSs are located in individual work centers and the Unit Environmental Coordinator's office.
- C. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- D. Safety equipment is contained in spill response kit. Under no circumstances will workers be exposed to a material before it is identified and hazards are known.

A.10.7 Containment, Cleanup, and Disposal:

- A. Every effort shall be taken to prevent a spill from entering a flight line or hangar drain.
- B. Special diking may be used to contain spills such as absorbent mats, speedy dry, spill pillows.
- C. Spill residues shall be placed in drums and disposed of in accordance with standard disposal procedures.
- D. Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.10.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent place in Buildings 817, 819, and 820, with the responsible organization's supervisor and the site monitor.

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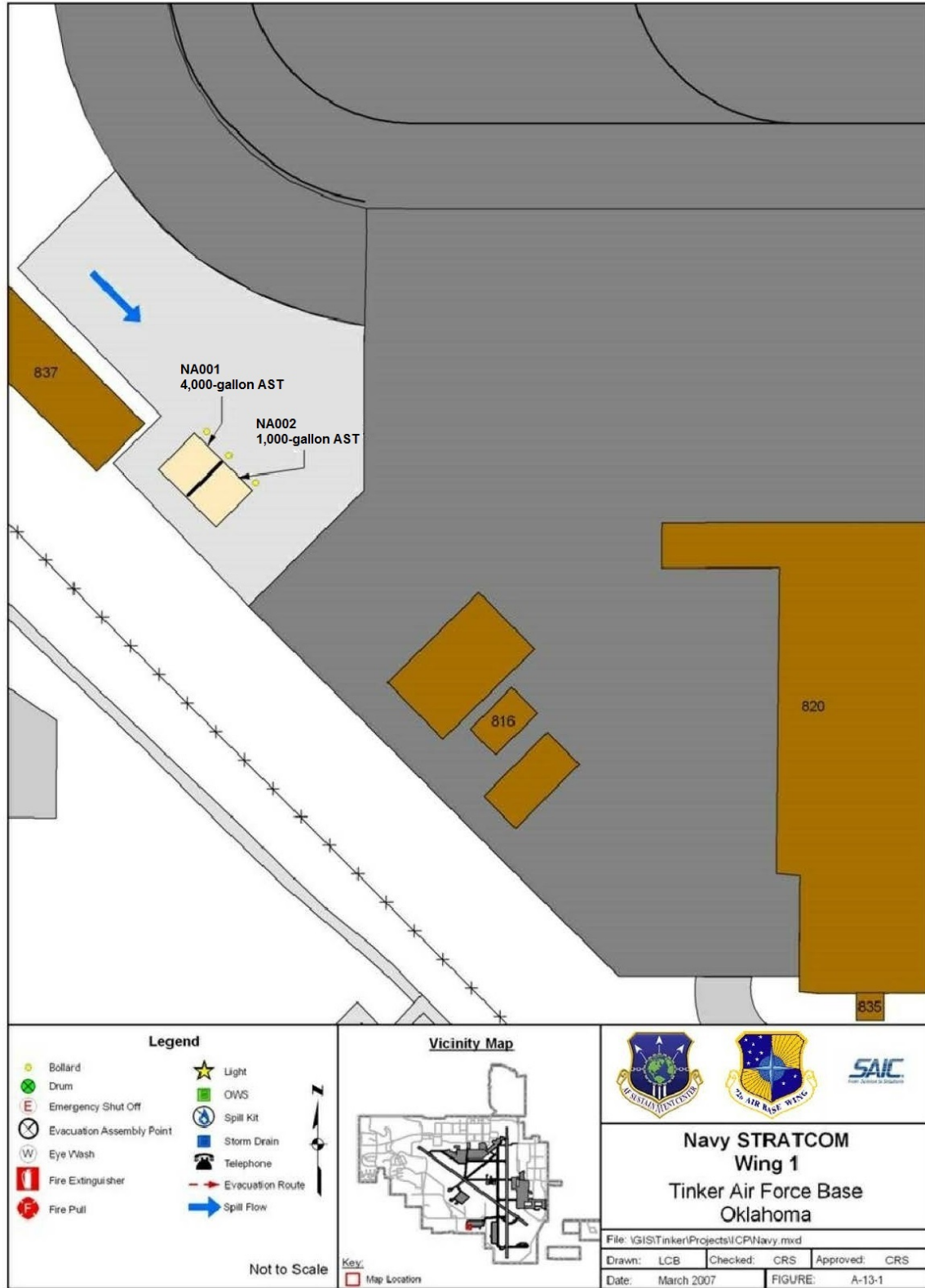
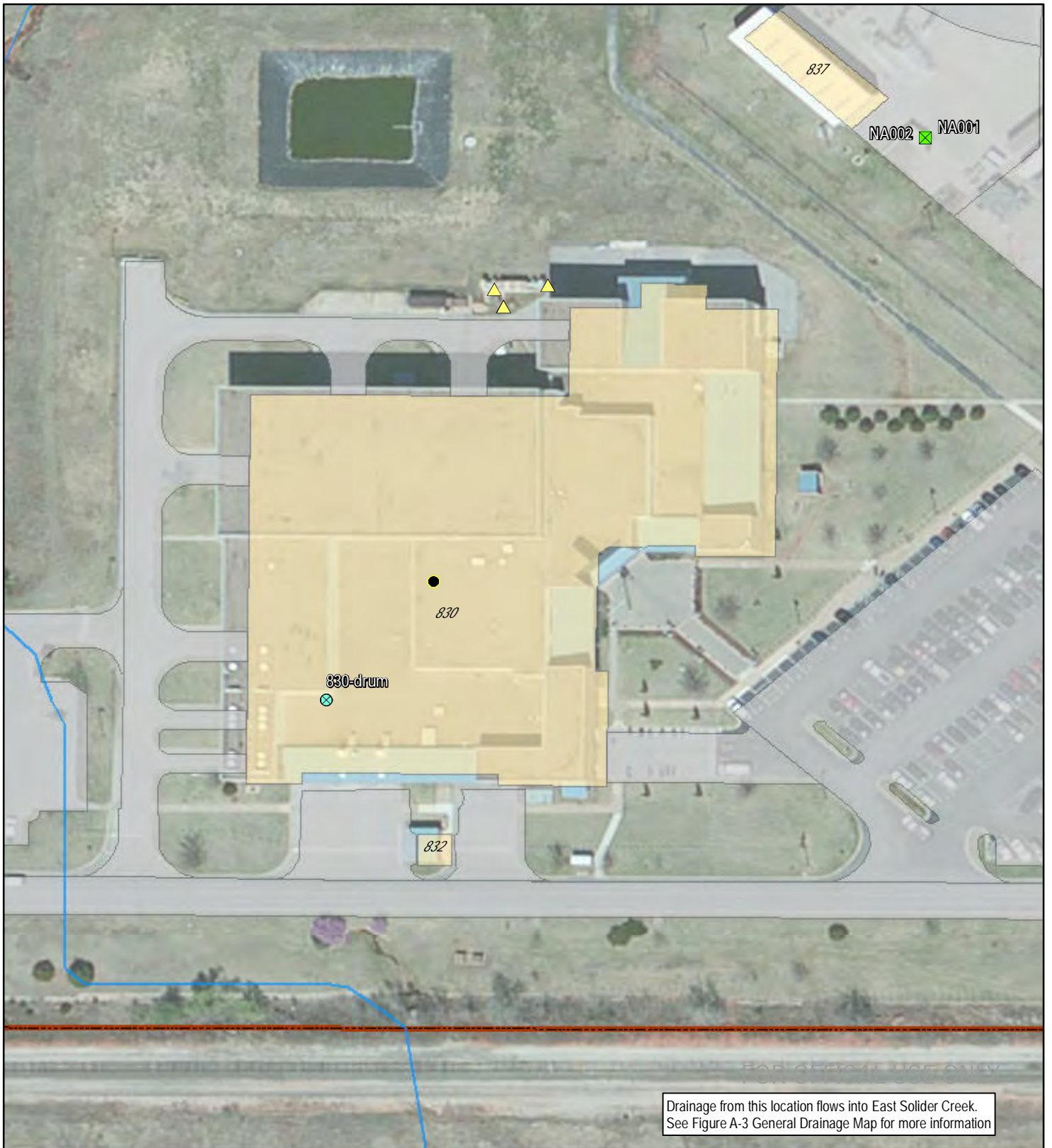


Figure A.10.1A: Strategic Communications Wing ONE Aerospace Ground Equipment and Fueling Facility Diagram

Figure updated from 2007 ICP with current AF emblems and tank contents

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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- Aboveground Storage Tanks
- ⊗ Drum
- ▭ Base Boundary
- River/Stream
- Existing Buildings

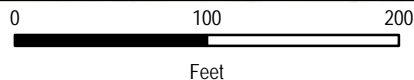


FIGURE A.10.1B
HAZMINCEN AND STRATCOM WING ONE
AEROSPACE GROUND EQUIPMENT AND
FUELING FACILITY DIAGRAM
TINKER AIR FORCE BASE, OKLAHOMA

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**Navy Stratcom AGE Equipment
and Fueling Facility:
Fuel Tanks NA001 and NA002.**



**Navy Stratcom AGE Equipment
and Fueling Facility:
Drum storage (817-drum) in
Building 817**



**Navy Stratcom AGE Equipment
and Fueling Facility:
Drum storage (820-drum) in
Building 820**

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TAB 11 TO ANNEX A

AIR DRIVEN ACCESSORIES TEST
BUILDING 200, ROOMS 178 (550 CMMXS/MXDP)

A.11.1 General: Air Driven Accessories Test operations are housed in Building 200, Room 178. Tanks and equipment are also present in rooms 123 and 151. This shop may be reached by contacting the facility manager at 736-2744 or 736-5919 or the Unit Environmental Coordinator at 582-4810. The contact may also be reached to obtain a current inventory list.

A.11.2 Description and Operations: Testing, calibration, and maintenance done in this area. New and used calibration fluid and solvent are stored here in drums. The tank for new calibration fluid, 200A, is not currently used and never has been. New calibration fluid and solvent are stored in drums inside the building. Once the calibration fluid has been used, it is pumped to either of 2 vaulted ASTs, then pumped to the waste calibration fluid tank, 200B, which is located just outside the building.

A.11.3 Oil Bulk Storage and Handling: The bulk storage at this area consists of 2 aboveground storage tanks, 2 vaulted storage tanks, and 4 drums of new calibration fluid and solvent. AST 200A, originally designed for new calibration fluid, is not in use and likely will not be in the future, but it is included here for reference. When tank 200B is pumped out, the parking brake is set before any calibration fluid is transferred. Vaulted ASTs 200-S1 and -S2 are located in Room 151, Cells 19 and 22, respectively.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
200A (Not in Use)	New Calibration Fluid	AST	750
200B	Waste Calibration Fluid	AST	750
200-S1	Waste Calibration Fluid	Vaulted AST	140
200-S2	Waste Calibration Fluid	Vaulted AST	140
200-drum1	Solvent	Steel Drum	Total = 110 (2 drums x 55 gal)
200-drum2	Calibration Fluid	Steel Drum	Total = 110 (2 drums x 55 gal)
Total Volume			2,000

A.11.4 Oil-Filled Operational Equipment: Oil-filled operational equipment stored at Building 200 includes the following:

Location	Equipment Type	Number of Units	Fuel Capacity (Gallons)	Total Gallons
Room 151, Cell 18	Hydraulic Test Stand	1	300	300
Room 151, Cell 20	Hydraulic Test Stand	1	500	500
Room 123	Hydraulic Test Stand	1	120	120
	Totals	3	--	920

A.11.5 Secondary Containment and Drainage: Tanks 200A and 200B are double-walled tanks that also have concrete containment berms installed with over 1,000 gallons of capacity. Spill kits are located inside the building. Tanks 200-S1 and 200-S2 are double-walled and are also located in vaults within Building 200.

Equipment in the building has drip pans within the equipment housing. Floor drains within the building all drain to Tank 200B, the waste calibration fluid tank.

Any spills that were to reach area storm drains would flow to Kuhlman Creek leaving Tinker AFB at Outfall A3.

A.11.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill

- Substance spilled
- Amount spilled and rate of discharge
- Any damages or injuries involved
- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

A.11.7 Special Precautionary Measures: Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.

A.11.8 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- Manual fire extinguishers located at the storage site
- Manual alarms at each exit door
- Wet sprinkler system
- Absorbent materials
- Eye wash stations

A.11.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in the Supervisor's Office.

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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- Aboveground Storage Tanks
- Underground Storage Tanks
- ⊗ Drum
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings

0 100 200

Feet



FOR OFFICIAL USE ONLY

Drainage from this location flows into Kuhlman Creek.
See Figure A-3 General Drainage Map for more information



FIGURE A.11.1
AIR DRIVEN ACCESSORIES TEST
BUILDING 200
TINKER AIR FORCE BASE, OKLAHOMA

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**Building 200, Air Driven Accessories Test
Tank 200A – New Calibration Fluid Supply Tank
Not in Use**



**Building 200, Air Driven Accessories Test
Tank 200B – Waste Calibration Fluid**

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TAB 12 TO ANNEX A

CRUISE MISSILE ENGINE UNIT
BUILDING 214 (550 CMMXS/MXDPAC)

A.12.1 General: This shop may be reached by contacting the facility manager at 736-7483. The tank custodian may also be reached at 736-7483. An alternate tank custodian may be reached at 734-4576. The Unit Environmental Coordinator may be reached at 582-4810.

A.12.2 Oil Bulk Storage and Handling:

This location contains five USTs as shown on Figure A.12.1. UST 21407 TOU is used to capture wastewater from drains in this location.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
214-1	JP-10	UST	10,000
214-2	JP-10	UST	10,000
214-3A	PF-1	UST	5,000
214-3B	PF-1	UST	5,000
21407 TOU	Waste Fuel	UST	2,000
Total Volume			32,000

A.12.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.12.4 Secondary Containment and Drainage: The tanks are fully enclosed in a subsurface engineered vault, which allows visual inspection of the entire tank enclosure.

A.12.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.

- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
- Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex NAFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e->

publishing.af.mil. Liquid flows shall be monitored with flow meter and pressure gauges. Access to vaulted tanks is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 21408 (500 gallons) flowing out of the tank. Leakage may contaminate water table.

A.12.6 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.12.7 Posting Requirements: This site-specific contingency plan shall be posted in a prominent location approved by shop supervisor.

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Drainage from this location flows into Kuhlman Creek.
See Figure A-3 General Drainage Map for more information

LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- Aboveground Storage Tanks
- Underground Storage Tanks
- ⊗ Drum
- ⊙ Bowser/Mobile Refueler
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings



FIGURE A.12.1
CRUISE MISSILE ENGINE UNIT
BUILDING 214
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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TAB 13 TO ANNEX A

AWEMS/AGEN
BUILDING 220 (552 MXS/MXMGS)

A.13.1 General: This shop may be reached by contacting the facility manager at 734-4434. The tank custodian may be reached at 734-5479. An alternate tank custodian may be reached at 734-5479. The number to reach the Unit Environmental Coordinator is 734-3107.

A.13.2 Oil Bulk Storage and Handling: Bulk storage at the facility consists of a Vaulted AST of Jet-A fuel and several drums of various lube oils. The location of the equipment is shown on Figure A.13.1. Handling of oil includes loading of the vaulted AST, the use of the fuel pump that the AST serves, and the use of drums when servicing equipment.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
264R	Jet A	Vaulted AST	15,000
220-drum-1	Various Oils	Steel Drums	385 (7 drums x 55 gal each)
IAP AW0003	Various Oils	Steel Drums	220 (4 drums x 55 gal each)
Total Volume			3,605

A.13.3 Oil-Filled Operational Equipment: The 220 AGE Yard holds several pieces of oil-filled operational equipment, including Bowsers, diesel ACE air conditioners, Trilectron diesel generators, Dash 60s, and Dash 95s. The equipment may be present at any of 4 AGE Yards. See Tab 6 to Annex A for a full AGE inventory at these AGE Yards.

A.13.4 Secondary Containment and Drainage: The tanks are fully enclosed in a subsurface engineered vault, which allows visual inspection of the entire tank enclosure.

The drums are located on spill pallets, and drains are also located in the building and wash rack that go to a sump.

A.13.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.

- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
- Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Worst Case Release Scenario – Total contents of Tank 264R (3,000 gallons) flowing out of the tank. Leakage may contaminate water table.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://static.e-publishing.af.mil/production/1/afto/form/afto39/afto39.xfdl>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

A.13.6 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.13.7 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.

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FOR OFFICIAL USE ONLY

Drainage from this location flows into Kuhlman Creek.
See Figure A-3 General Drainage Map for more information

- LEGEND**
- Oil Filled Equipment
 - ▲ Electrical Transformer
 - Aboveground Storage Tanks
 - Underground Storage Tanks
 - ⊗ Drum
 - ⊕ Bowser/Mobile Refueler
 - ⊕ Generators
 - Fuel Lines
 - ▭ Base Boundary
 - ▭ Existing Buildings

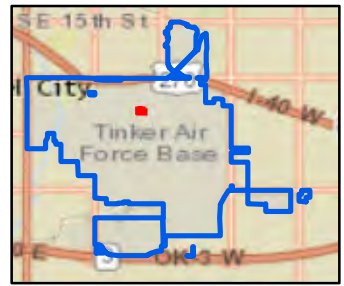
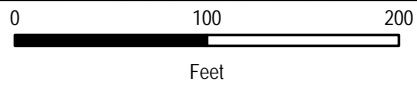


FIGURE A.13.1
AWEMS/AGEN
BUILDING 220
TINKER AIR FORCE BASE, OKLAHOMA

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**AWEMS/AGEN
Tank 264R and fuel pumps**



**AWEMS/AGEN
Various oil drums – 220-drum-1**



**AWEMS/AGEN
IAP AW0003**

TAB 14 TO ANNEX A

TRANSIENT ALERT
BUILDING 241 (72 OSS/OS)

A.14.1 General: This shop may be reached by contacting the facility manager at 734-2044. The tank custodian may be reached at 734-2417 or 734-3231. An alternate tank custodian may be reached at 734-4576.

A.14.2 Oil Bulk Storage and Handling: Bulk storage and handling of oil consists of the vaulted AST fuel tanks and the fuel pumps that they service. Tank locations are shown on Figure A.14.1.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
286	Jet A	Vaulted AST	1,000
287	Mogas	Vaulted AST	1,000
Total Volume			2,000

**Capacity not included in total volume because it is less than 55 gallons.

A.14.3 Oil-Filled Operational Equipment: No oil-filled operational equipment is currently stored at this location.

A.14.4 Secondary Containment and Drainage: The tanks are fully enclosed in a subsurface engineered vault, which allows visual inspection of the entire tank enclosure.

A.14.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.

- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
- Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Worst Case Release Scenario – Total contents of Tank 286 (1,000 gallons) flowing out of the tank. Leakage may contaminate water table.

Aboveground Storage Tank Response Procedures

Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex N of this plan.

The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

A.14.6 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.14.7 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.

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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- Aboveground Storage Tanks
- Underground Storage Tanks
- Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings

0 100 200

Feet



FIGURE A.14.1
TRANSIENT ALERT
BUILDING 241

TINKER AIR FORCE BASE, OKLAHOMA

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**Transient Alert
Tanks 286 and 287**



**Transient Alert
Fuel Pumps served by Tanks 286 and 287**

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TAB 15 TO ANNEX A**AIRCRAFT STRUCTURAL MAINTENANCE
BUILDING 289 (552 EMS)**

A.15.1 General: Building 289 is utilized for aircraft maintenance, including stripping, painting, and washing. Materials include both POLs and hazardous materials.

This shop may be reached by contacting the facility manager at 734-2450 or 734-3342 or the Unit Environmental Coordinator at 734-5588. The contact may also be reached to obtain a current inventory list. Building 289 and the vicinity are shown on Figure A.15.1.

A.15.2 Oil Bulk Storage and Handling: There is no bulk storage of oil over 55 gallons at this location.

A.15.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment present at this location.

A.15.4 Secondary Containment and Drainage:

- A. Spills in the storage enclosure will be contained by a temporary sandbag wall until a permanent concrete containment wall can be constructed.
- B. Spills outside the storage enclosure will pool in the general area of the spill on the asphalt driveway.
- C. Floor drains from the indoor wash rack drain to an oil/water separator to the IWTP.
- D. Spills to area storm drains would enter Kuhlman Creek to the west.

A.15.5 Emergency Response Procedures:

LIQUID SPILLS CONTAINED IN DIKED AREA (Example: Overflowing or leaking drum)

- A. Any person recognizing a hazardous substance or hazardous waste spill shall immediately:
 - 1) Activate emergency alarms, if any.
 - 2) Evacuate area.
 - 3) Call 911 asking for Tinker AFB Fire Department and give your name, the type of hazardous incident (e.g. hazardous waste/material spill, fire explosion), location of the incident and the estimated quantity of the spill.
 - 4) Immediately notify the supervisor in charge.
- B. Supervisor will:

- 1) Make sure an employee roll call is conducted to discover whether any personnel are trapped in the affected area.
- 2) Restrict all sources of ignition when flammable substances are involved.
- 3) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

MAJOR LIQUID SPILLS OUTSIDE THE DIKED AREA (Example: overturned drum or ruptured drum)

- A. Any person recognizing a hazardous substance or hazardous waste spill shall immediately:
- 1) Activate emergency alarms, if any.
 - 2) Evacuate area.
 - 3) Call 911 asking for the Tinker AFB Fire Department and give your name, the type of hazardous incident (e.g. hazardous waste/material spill, fire, explosion), location of the incident and the estimated quantity of the spill.
 - 4) Immediately notify the supervisor in charge.
- B. Supervisor will:
- 5) Make sure an employee roll call is conducted to discover whether any personnel are trapped in the affected area.
 - 6) Initiate containment action, if it can be done safely.
 - 7) Restrict all sources of ignition when flammable substances are involved.
 - 8) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

MINOR (LESS THAN 5 GALLONS) LIQUID SPILL OUTSIDE THE DIKED AREA (Slow-leaking drum, etc.)

- A. Any person recognizing a hazardous substance or hazardous waste spill shall immediately:
- 1) Call 911 asking for the Tinker AFB Fire Department and give your name, the type of hazardous incident (e.g. hazardous waste/material spill, fire, explosion), location of the incident and the estimated quantity of the spill.
 - 2) Immediately notify the supervisor in charge.
- B. Supervisor will:
- 1) Make sure an employee roll call is conducted to discover whether any personnel are trapped in the affected area.
 - 2) Initiate containment action reorienting the drum, and shoveling and mopping the spill. The leaking drum shall be placed inside a recovery drum.
 - 3) Restrict all sources of ignition when flammable substances are involved.

- 4) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

A.15.6 Special Precautionary Measures:

- A. At least one recovery drum will be kept on hand at the storage site for leaking drums.
- B. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials. Refer to Material Safety Data Sheets (MSDSs) located at the site for particular hazards and precautionary measures for specific chemical materials. Any leaking drums will be repackaged and labeled according to EPA and DOT regulations.

A.15.7 Containment, Cleanup, and Disposal:

- A. A square end shovel and absorbent material suitable for paint cleanup will be kept inside the storage enclosure for spills.
- B. Spill residues shall be placed in a drum and disposed of at the regular disposal interval.

A.15.8 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- Fire extinguisher
- Shovel
- Containment drum for spill residue
- Absorbent material
- Broom and dustpan

A.15.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in the following locations:

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Drainage from this location flows into Kuhlman Creek.
See Figure A-3 General Drainage Map for more information

LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- Aboveground Storage Tanks
- Underground Storage Tanks
- ⊗ Drum
- ⊕ Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings

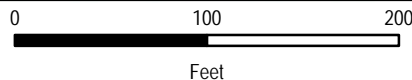


FIGURE A.15.1
AIRCRAFT STRUCTURAL MAINTENANCE
BUILDING 289
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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TAB 16 TO ANNEX A

ARMY-AIR FORCE EXCHANGE SYSTEM (AAFES)
AAFES SHOPETTE (BLDG 472) AND GAS STATION (BLDG 1107)

A.16.1 General: The Army-Air Force Exchange System (AAFES) operates two service stations that store gasoline in bulk for retail sales to military and dependent personnel and other authorized customers.

This shop and tank custodian may be reached by contacting the facility manager at 733-3445. The Unit Environmental Coordinator may be reached at 732-5205. An alternate tank custodian may be reached at 734-4576.

A.16.2 Description and Operations: The AAFES Shoppette is located at Building 472, northwest of the intersection of Patrol Road and Rapcon Road in the southern portion of the base. The AAFES Shoppette contains service bays, a tire shop, and dispenser islands. The station operates 24 hours a day, 7 days a week.

The AAFES Gas Station is located at Building 1107 at the intersection of Arnold Road and H Avenue in the northern portion of the base. The AAFES Gas Station contains dispenser islands and the station operates 24 hours a day, 7 days a week. See Tables in the following sections below for summary of petroleum storage at AAFES.

A.16.3 AAFES Shoppette: There are four 12,000-gallon gasoline vaulted ASTs at the AAFES Shoppette. These ASTs are in compliance with current design and monitoring requirements. The tanks are equipped with a Veeder – Root TLS 350R monitoring system. Two oil water separators are located at Building 472 and each oil/water separator has a high level alarm. The alarm panel is located inside the closet, along the north wall of the storage room area. A commercial vendor (tanker truck) fills the tanks as ordered by AAFES. The AAFES Shoppette currently receives deliveries 3 times a day (8,500 gallons per delivery). To prevent a major spill, each dispenser is set to dispense up to a pre-set amount of product. Emergency cut-off switches for the pumps are located near each set of dispenser islands. Additionally, there is an emergency shut-off switch near the cashier's office. Refer to Figures A.16.1A and B for diagrams of this facility and to photographs at the end of this Tab.

Building 472 also contains a 280-gallon waste oil AST and a 275-gallon AST of new motor oil, both located in the repair bay. Up to seven 55-gallon drums of motor oil are also located in the repair bay. No oil-filled operational equipment is present at this location.

Tank ID	Tank Type	Contents	Capacity (Gallons)
472-1	Vaulted AST	Gasoline	12,000
472-2	Vaulted AST	Gasoline	12,000
472-3	Vaulted AST	Gasoline	12,000
472-4	Vaulted AST	Gasoline	12,000
472-FS1	AST	Waste Oil	280

Tank ID	Tank Type	Contents	Capacity (Gallons)
472-FS2	AST	Motor Oil	275
472-drum	55-gallon drums	Various Oils	385 (7 x 55 gal)
Totals			48,940

A.16.4 AAFES Gas Station: There are three 12,000-gallon USTs at the AAFES Gas Station. No oil-filled operational equipment is present at this location. The USTs are in compliance with current design and monitoring requirements. The tanks are equipped with a Veeder – Root 350 TLS 350R monitoring system. The alarm panel is located inside Building 1107. A commercial vendor (tanker truck) delivers 8,500 gallons of gasoline every other day. To prevent a major spill each dispenser is set to dispense up to a pre-set amount of product. Station personnel complete daily inspections consisting of checking the hoses and dispensers. An emergency shut-off switch is located on the south wall near the main entrance. Refer to Figures A.16.2A and B for diagrams of this facility and to photographs at the end of this Tab.

All driveways, service areas, and parking areas for both AAFES service stations are concrete pad construction. See Figures A.16.1A and B and A.16.2A and B for diagrams of the AAFES service stations.

Tank ID	Tank Type	Contents	Capacity (Gallons)
21107	UST	Gasoline	12,000
21108	UST	Gasoline	12,000
21109	UST	Gasoline	12,000
Totals			36,000

A.16.5 Containment and Drainage: Drainage at the AFFES Shoppette flows to two oil/water separators, identified as the East Pit and the West Pit. A grated trench drain is located at the pump islands and drains to the East Pit. The floor drains located inside the service bay drain to the West Pit.

There are no secondary containment structures installed at or around the AAFES Gas Station (Bldg. 1107) vehicle filling areas. In the event of a discharge, a spill kit and absorbent materials are available to control the situation and prevent the product from spreading and entering the storm water drainage system. Storm water runoff from the AAFES Gas Station flows to the west and eventually leaves Tinker at Outfall A2.

A.16.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.

- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Access to vaulted tanks is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 738 (12,000 gallons) flowing out of the tank. Leakage may contaminate water table.

A.16.7 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.16.8 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.

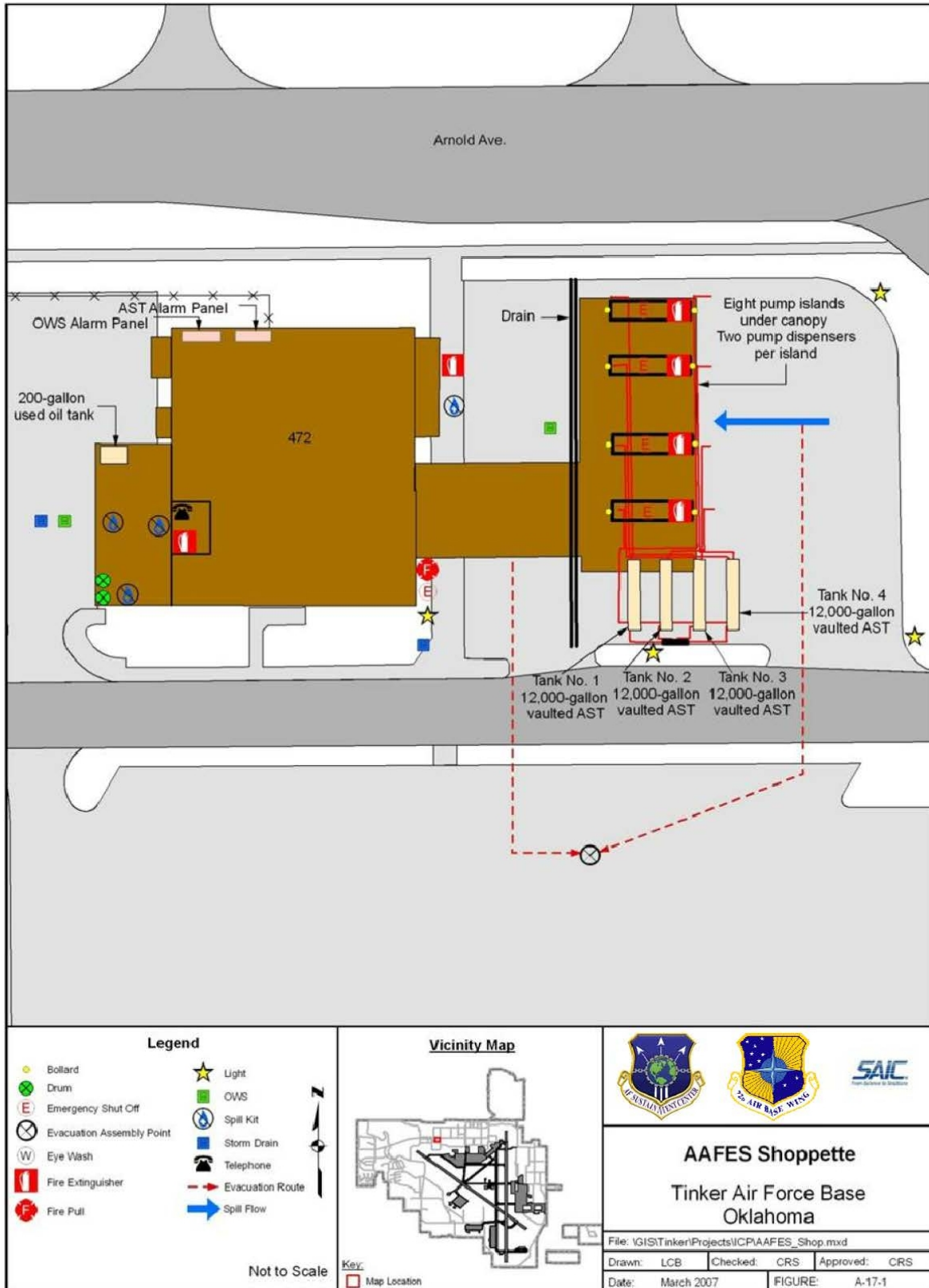


Figure A.16.1A: AAFES Shoppette

Figure updated from 2007 ICP with current AF emblems and tank contents

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LEGEND

- ▲ Electrical Transformer
- Aboveground Storage Tanks
- ⊗ Drum
- Fuel Lines
- Base Boundary
- Existing Buildings



FIGURE A.16.1B
AAFES
SHOPPETTE
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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**AAFES Shoppette Vaulted ASTs
to supply fuel pumps.**



**AAFES Shoppette Vent Stand
and Alarm Panel.**



AAFES Shoppette Pump Island.



**AAFES Shoppette Firestone
Shop – Waste Oil Tank: 472-FS1**



**AAFES Shoppette Firestone
Shop – Motor Oil Tank: 472-FS2**



**AAFES Shoppette Firestone
Shop – Drums: 472-drum**

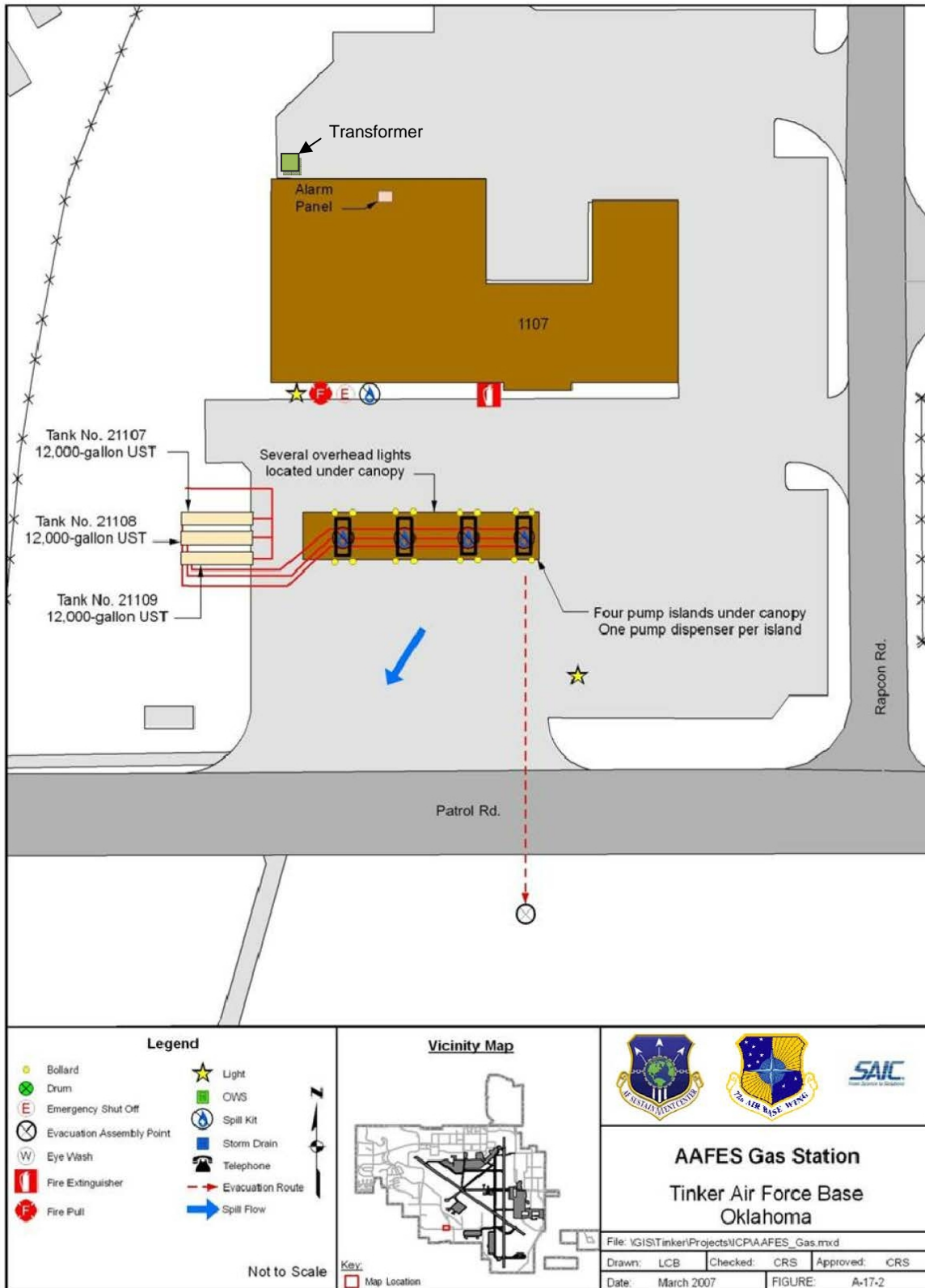


Figure A.16.2A: AAFES Gas Station

Figure updated from 2007 ICP with current AF emblems and tank contents

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Drainage from this location flows into East Crutcho Creek.
See Figure A-3 General Drainage Map for more information

LEGEND

- Electrical Transformer
- Underground Storage Tanks
- Fuel Lines
- Base Boundary
- Existing Buildings

0 50 100

Feet

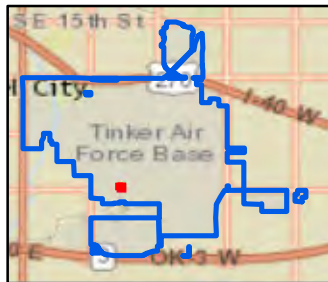


FIGURE A.16.2B
AAFES
GAS STATION
TINKER AIR FORCE BASE, OKLAHOMA

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**AFFES Gas Station Pump
Islands.**



AFFES Gas Station USTs.

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TAB 17 TO ANNEX A

BARREL YARD STORAGE
BUILDINGS 808 AND 809 (72 ABW/CEIEC)

A.17.1 General: This shop may be reached by contacting the facility manager/Unit Environmental Coordinator at 734-3278. The contact may also be notified to obtain a current inventory list.

Barrel yard storage is a permitted hazardous waste drum storage facility that stores hazardous wastes prior to off-site disposal. It is located at Buildings 808 and 809 as shown on Figures A.17.1A and B.

A.17.2 Oil Bulk Storage and Handling: Bulk storage at Building 809 consists of one used oil AST, several drums, and one tote. The only loading or unloading of oil occurs at the used Oil AST, 809-1. The drums and the tote are only stored here, not filled or emptied.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
809-1	Used Oil	AST	4,000
809-drum-1	Various Oils	Steel drum	4,400 (80 drums x 55 gal each)
809-drum-2	Various Oils	Steel drum	440 (8 drums x 55 gal each)
809-tote	Various Oils	Steel Tote	330
Total Volume			9,170

A.17.3 Oil-Filled Operational Equipment: Buildings 808 and 809 do not currently have any oil-filled operational equipment.

A.17.4 Secondary Containment and Drainage: All materials spilled inside the barrel yard storage area will flow into drains that exit into segregated spill containment tanks. Materials will be pumped from these tanks and drummed for proper disposal. Materials spilled on the parking lots or loading/unloading areas will flow into storm drains which exit into a storm water containment tank. Water in this tank will be tested, and if within water quality standards and applicable permit limits, will be released into the adjacent creek.

A.17.5 Emergency Response Procedures:

ANY SPILL IN THE BARREL YARD COMPOUND (Example: Overflowing or leaking barrel, etc.)

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:

- 1) Call 911 asking for Tinker AFB Fire Department and give your name, the type of hazardous material spilled, the location of the spill and the estimated quantity of the spill.
 - 2) Immediately notify supervisor.
- B. Supervisor will:
- 1) Evacuate/secure the area.
 - 2) Initiate containment action if it can be done safely.
 - 3) Conduct an employee roll call to ensure that no personnel are trapped in the affected area.
 - 4) Report to the Incident Commander (IC) until spill team arrival and provide assistance until team is fully operational.
 - 5) Restrict all sources of ignition.

A.17.6 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots, and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific materials.

A.17.7 Containment, Cleanup, and Disposal: The drum storage building has two covered loading areas on the north side. Any spills that occur may be flushed to the detention basin on the east side of the building. The detention basin is separated to contain storm water runoff separately from discharge from the drum storage building. The detention basin is lined and uncovered. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.17.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent place in Buildings 808 and 809, with the responsible organization's supervisor and the site monitor.

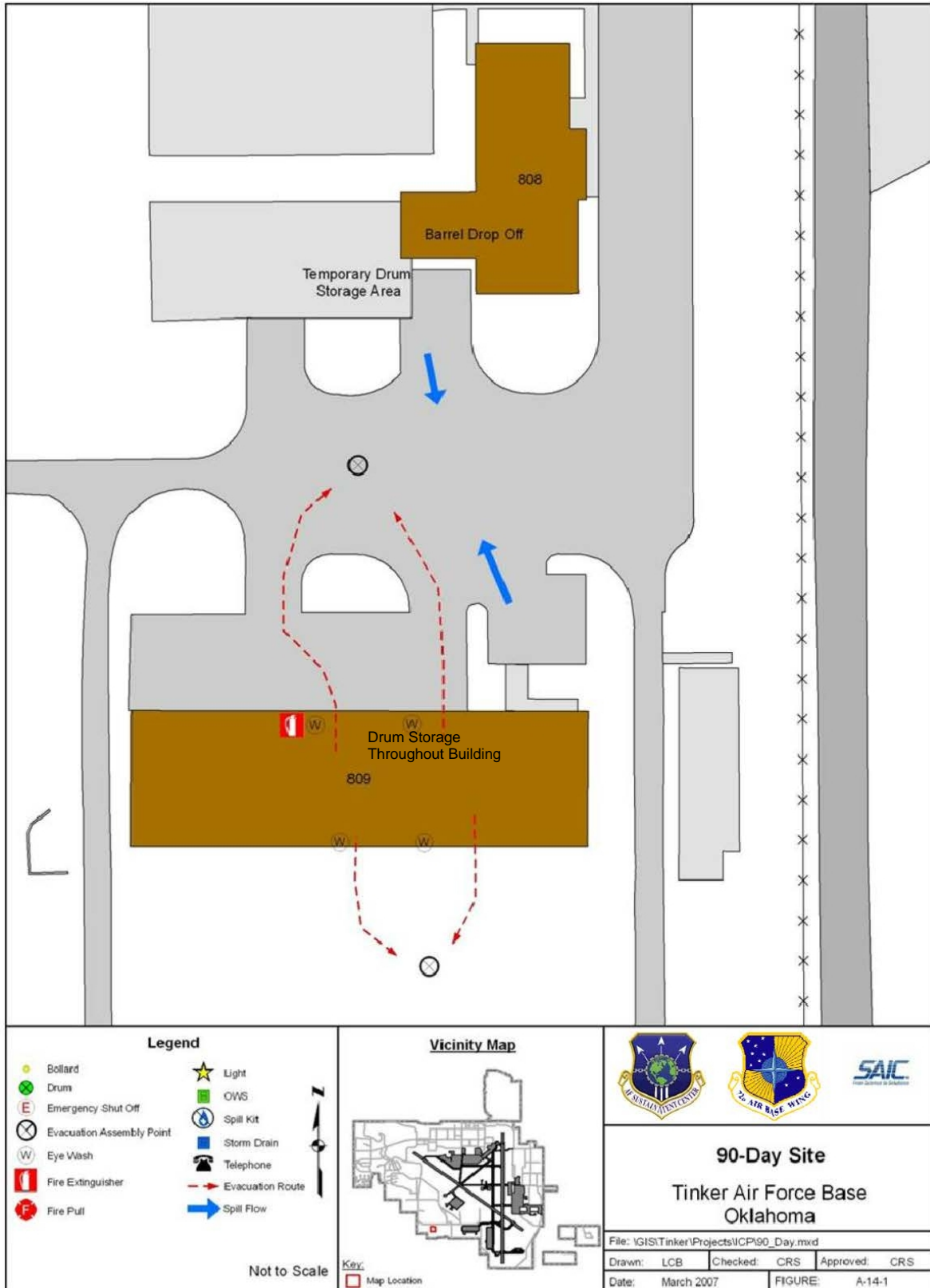


Figure A.17.1A: Barrel Storage Yard and 90-Day Haz Waste Accumulation Site

Figure updated from 2007 ICP with current AF emblems and tank contents

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LEGEND

- Electrical Transformer
- Aboveground Storage Tanks
- Drum
- Generators
- Base Boundary
- Pond Areas
- Existing Buildings

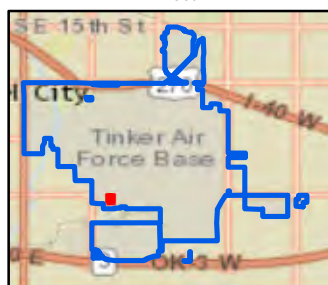


FIGURE A.17.1B
BARREL YARD STORAGE
PERMITTED HAZARDOUS WASTE STORAGE
FACILITY, BUILDING 808 AND 809
TINKER AIR FORCE BASE, OKLAHOMA

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**Barrel Yard Storage
Tank 809-1**



**Barrel Yard Storage
Drum Storage 809-drum-1 and 809-tote**



**Barrel Yard Storage
Drum Storage 809-drum-2**

TAB 18 TO ANNEX A

DISPOSITION SERVICES
BUILDINGS 810 AND 811, HAZARDOUS WASTE STORAGE (DRMS)

A.18.1 General: This shop may be reached by contacting the facility manager at 739-7033. The Unit Environmental Coordinator may be reached at 734-3278. The contact may also be notified to obtain a current inventory list.

Disposition Services is located at Buildings 810 and 811 as shown on Figure A.18.1. It is utilized to store hazardous wastes generated by Base activities prior to off-site management and also stores hazardous materials. The inventory has a high turnover and the UEC should be contacted to determine the current inventory when needed.

A.18.2 Oil Bulk Storage and Handling: The only bulk storage of oil products is in drums at the drum storage building. Drums are only stored, and are not filled or emptied.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
810-drum	Various Oils	Steel drum	4,400 (80 drums x 55 gal each)
Total Volume			4,400

A.18.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.18.4 Secondary Containment and Drainage: Within the drum storage building, the floor is sloped towards the center, so any drum spill or rupture would be contained within the building.

Spills outside the building will flow to storm drains with runoff leaving Tinker AFB at Outfall A2 as described in the SWPPP.

A.18.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.

- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the Environmental Coordinator at 739-7033, the Chief at 739-7380, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
- Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.18.6 Special Precautionary Measures: Proper safety equipment shall be worn when handling hazardous substance as prescribed by DRMS-M 6050.1, Chapter 8, Section V, Chemical handling Procedures.

A.18.7 Containment, Cleanup, and Disposal:

- A. If possible, spill will be contained by creating dikes using absorbent material.
- B. Small spill cleanup of material or waste shall be performed by Disposition Services personnel, once material/waste is determined to be a level D cleanup by the appropriate office.

A.18.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent place in Buildings 810 and 811, with the responsible organization's supervisor and the site monitor.



LEGEND

-  Aboveground Storage Tanks
-  Drum
-  Base Boundary
-  Existing Buildings



FIGURE A.18.1
 DEFENSE REUTILIZATION AND MARKETING
 BUILDING 810 AND 811
 TINKER AIR FORCE BASE, OKLAHOMA

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Disposition Services, Building 810-drum

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TAB 19 TO ANNEX A

ROADS AND GROUNDS FACILITY
BUILDING 885 (72 MSG/LRDF)

A.19.1 General: The Roads and Grounds area is located east of Air Depot Boulevard and south of 1st Street. The mission of this facility is to provide ground fuels to essential vehicles, emergency power generators and other mission essential equipment by three ground fuels mobile refueling trucks. Refer to Figures A.19.1A and B for diagrams of the Roads and Grounds Facility and to photographs at the end of this Tab. Also see Annex P for secondary containment documentation and Annex W for additional maps.

A.19.2 Description and Operations: The service station located at Building 885 was renovated in 1995 and consist of two pumps each for gasoline and bio-diesel. There is no equipment available for defueling of ground fuels therefore ground fuels must be drained into bowsers when required. The parking lot is a secure area with fencing and limited access gates, and a spill kit is present next to the pumps. The entire parking area is a concrete pad. The parking area is illuminated by streetlights. This service station is unmanned and operates using a key lock system. There is a daily inventory and inspection of the entire facility.

A.19.3 Oil Bulk Storage and Handling: This facility is operated by contractor personnel. This area consists of two vaulted ASTs:

Tank Number	Product Stored	Type	Shell Capacity (gallons)
886	Unleaded Gasoline	Vaulted AST*	3,000
887	Bio-diesel	Vaulted AST*	12,000
Total Volume			15,000

*Note: Per 40 CFR Part 280.12, these tanks do not meet the definition of an "Underground Storage Tank" and are therefore considered ASTs.

A.19.4 Oil-Filled Operational Equipment: No oil-filled operational equipment is present at the Roads and Grounds area.

A.19.5 Secondary Containment and Drainage: Tanks 886 and 887 are fully enclosed in a subsurface engineered vault, which allows visual inspection of the entire tank enclosure. Storm water runoff from the facility flows south into Kuhlman Creek.

A.19.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.

- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 887 (12,032 gallons) flowing out of the tank. Leakage may contaminate water table.

A.19.7 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.19.8 Posting Requirements: This site-specific contingency plan shall be posted in prominent locations at each of the fuel yards described in this tab as approved by shop supervisor.

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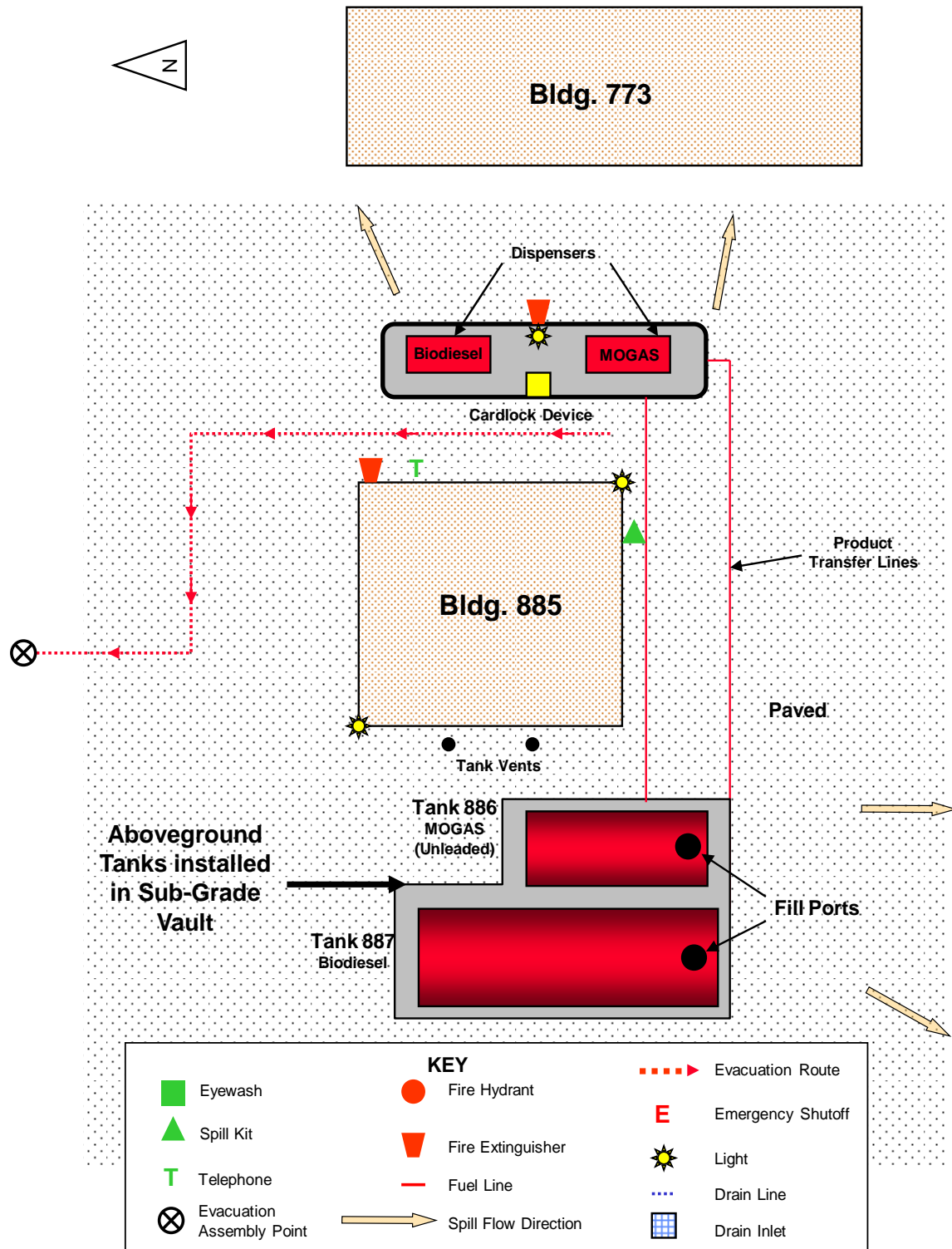
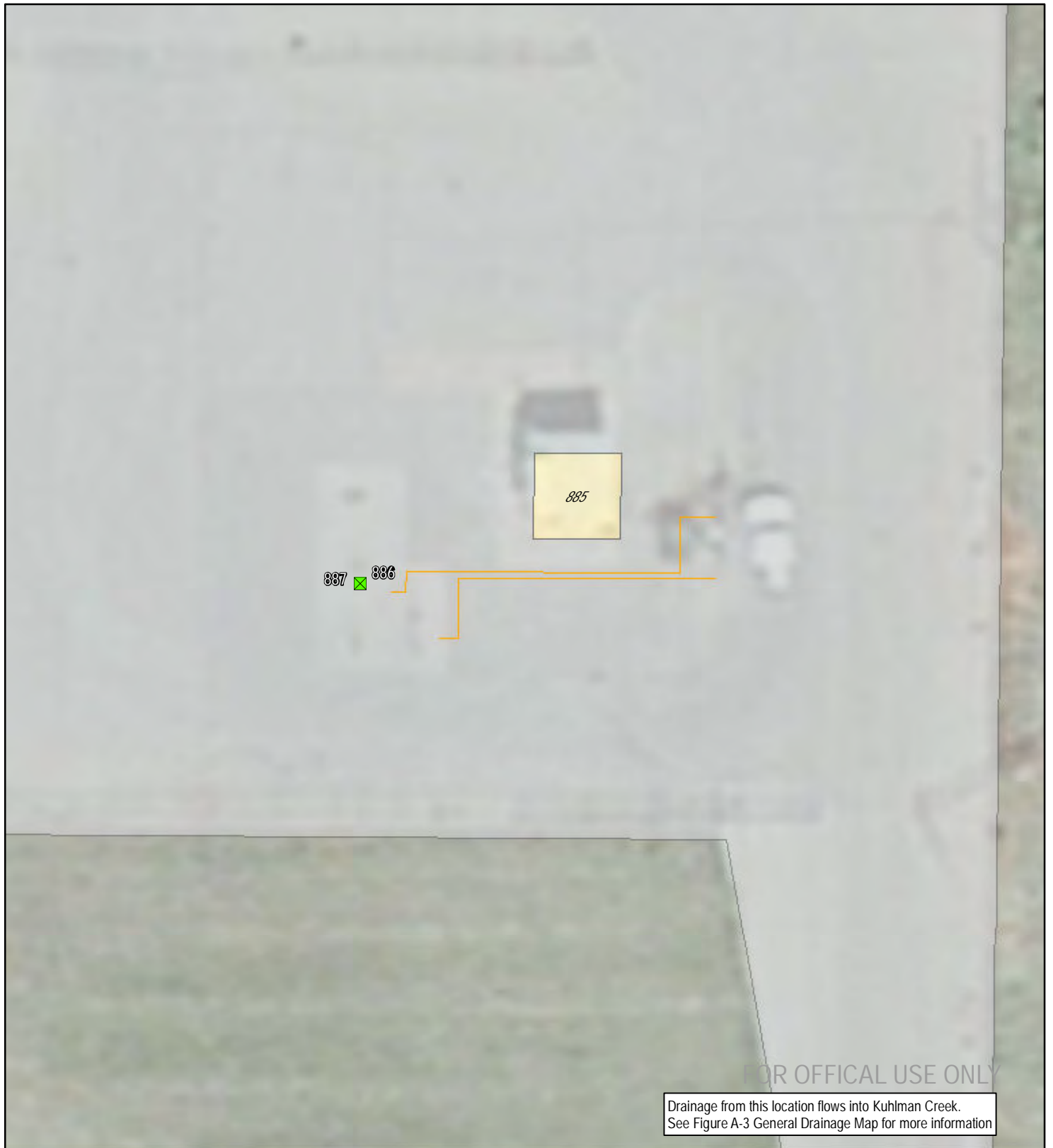


Figure A.19.1A: Roads and Grounds Facility

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LEGEND

- Aboveground Storage Tanks
- Fuel Lines
- Base Boundary
- Existing Buildings

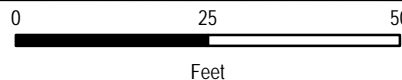


FIGURE A.19.1B
ROADS AND GROUND FACILITY
BUILDING 885
TINKER AIR FORCE BASE, OKLAHOMA

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Roads and Grounds

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TAB 20 TO ANNEX A**FABRICATION SHOP
BUILDING 1068 (507 MXS)**

A.20.1 General: This facility is utilized for general aircraft maintenance, including fuel cell repair and corrosion control. Materials generally stored at this facility include POLs and solvents and are stored inside the building under cover. Refer to Figure A.20.1 for a diagram of the Fabrication Shop. Also see Annex W for additional maps.

This shop may be reached by contacting the facility manager at 734-5306 or the Unit Environmental Coordinator at 734-2994. The contact may also be reached to obtain a current inventory list.

A.20.2 Oil Bulk Storage and Handling: There is no bulk storage or handling of oil at this location.

A.20.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment stored at this location.

A.20.4 Secondary Containment and Drainage: Spills may be contained by creating dikes using absorbent clay, rags, etc. Spills that reach area storm drains would enter Crutch Creek to the west.

A.20.5 Emergency Response Procedures:

MAJOR LIQUID SPILL (EXAMPLE: Overturned or ruptured drum).

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:
- 1) Activate emergency alarms, if any.
 - 2) Evacuate area.
 - 3) Call 911 asking for Tinker AFB Fire Department and give your name, the type of chemical spilled, the location of the spill and the estimated quantity of the spill.
 - 4) Restrict all sources of ignition when flammable substances are involved.
 - 5) Immediately notify supervisor in charge.
- B. Supervisor will:
- 1) Secure the area.
 - 2) Make sure an employee roll call is conducted to discover whether any personnel are trapped in the affected area.
 - 3) Initiate containment action, if it can be done safely (See below).

- 4) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

MINOR (less than 5 gal) LIQUID SPILL (EXAMPLE: Slow leaking drum, etc.)

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:
 - 5) Call 911 asking for Tinker AFB Fire Department and give your name, the type of chemical spilled, the location of the spill and the estimated quantity of the spill.
 - 6) Restrict all sources of ignition when flammable substances are involved.
 - 7) Immediately notify supervisor in charge.
- B. Supervisor will:
 - 8) Secure the area.
 - 9) Initiate containment action, if it can be done safely, by repositioning the drum, use of absorbent clay, etc. (See below)
 - 10) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

A.20.6 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to technical orders for particular hazards and precautionary measures for specific chemical materials. Technical orders are maintained in the supervisor's office in the Corrosion Control Shop at 734-2861.

A.20.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, rags, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.20.8 Emergency Equipment: Emergency equipment consists of the following:

- Twelve fire extinguishers
- Absorbent clay located in Building 1068
- Eye wash stations
- Safety equipment located in Paint Shop.

A.20.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in the paint shop work area.



- LEGEND**
- ▲ Electrical Transformer
 - Bowser/Mobile Refueler
 - Fuel Lines
 - Base Boundary
 - Existing Buildings

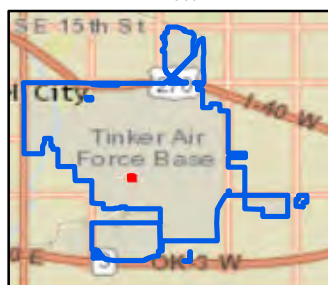


FIGURE A.20.1
FABRICATION SHOP
BUILDING 1068

TINKER AIR FORCE BASE, OKLAHOMA

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TAB 21 TO ANNEX A**MOTOR POOL
BUILDING 1130 (72 MSG/LRDV)**

A.21.1 General: The Motor Pool is used for vehicle maintenance. A vehicle wash rack is located at the north end of the shop and washwater flows to the oil/water separator. Refer to Figure A.21.1 for a diagram of the Motor Pool and to photographs at the end of this Tab. Also see Annex P for secondary containment documentation and Annex W for additional maps.

This shop may be reached by contacting the facility manager at 734-3385 or the Unit Environmental Coordinator at 734-2655. The contact may also be reached to obtain a current inventory list.

A.21.2 Description and Operations: The Motor Pool performs vehicle maintenance and so stores new and used oil on site. Drums of new oil are delivered and stored in Bay E-8. There are typically 4 drums in the south, general purpose section of the building, where they are moved around as needed during maintenance. In the north side of the shop, the special purpose area, there are typically 5 drums present, which are used as needed and replaced when empty. The used oil tanks at the shop are filled with used oil that is removed from vehicles.

A.21.3 Oil Bulk Storage and Handling: Bulk storage at the Motor Pool consists of 2 aboveground storage tanks for used oil and several drums of new oil (engine oil, hydraulic fluid, and transmission fluid), which are located in different areas of the shop. The used oil is pumped out by a tank contractor on a regular basis.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
1130-1	Used Oil	AST	325
1130-2	Used Oil	AST	265
1130-drum	Various Oils	Steel Drum	Total = 880 (16 drums x 55 gal)
1130-GP-drum	Various Oils	Steel Drum	Total = 220 (4 drums x 55 gal)
1130-SP-drum	Various Oils	Steel Drum	Total = 275 (5 drums x 55 gal)
Total Volume			1,965

A.21.4 Oil-Filled Operational Equipment: The Motor Pool does not currently have any oil-filled operational equipment.

A.21.5 Secondary Containment and Drainage: The main storage area for drums (Bay E-8) has a large pit that would contain any oil spilled by drums in this area. The drums that are located in the rest of the shop are provided secondary containment by the building.

The used oil tanks are not currently provided with sufficient containment.

A.21.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.21.7 Special Precautionary Measures: Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.

A.21.8 Containment, Cleanup, and Disposal:

- A. Spill may be contained by creating dikes using absorbent sand.

- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.21.9 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- Manual fire extinguishers located at the storage site
- Manual alarms at each exit door
- Wet sprinkler system

A.21.10 Posting Requirements: This site-specific contingency plan shall be posted prominently in the following locations:

- A. Quality Control Office
B. Supervisor's Office.

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LEGEND

- Electrical Transformer
- Aboveground Storage Tanks
- Drum
- Base Boundary
- Existing Buildings

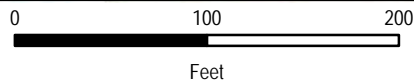


FIGURE A.21.1
MOTOR POOL
BUILDING 1130

TINKER AIR FORCE BASE, OKLAHOMA

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**Motor Pool, Building 1130
Used Oil Tank 1130-1**



**Motor Pool, Building 1130
Used Oil Tank 1130-2**



**Motor Pool, Building 1130
1130-drum – Drum storage area**



**Motor Pool, Building 1130
Drums in shop area**

TAB 22 TO ANNEX A

DEFENSE INFORMATION SYSTEMS AGENCY (DISA)
BUILDING 3900 (DISA)

A.22.1 General: The contractor operating at this facility and the tank custodian may be reached at 739-2774. An alternate tank custodian may be reached at 736-2736. The Unit Environmental Coordinator may be reached at 379-3064.

The contractor operating at this facility operates the aboveground tanks identified in the Tank Inventory. Refer to Figure A.22.1 for a diagram of the DISA facility and to photographs at the end of this Tab.

A.22.2 Oil Bulk Storage and Handling: Bulk storage at this location consists of one diesel fuel tank with four day tanks nearby. Handling includes loading of fuel into the large fuel tank by a tanker truck.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
3900-1	Diesel	AST	20,000
3900-DT-1	Diesel	AST	600
3900-DT-2	Diesel	AST	600
3900-DT-3	Diesel	AST	600
3900-DT-4	Diesel	AST	600
Total Volume			22,400

A.22.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.22.4 Secondary Containment and Drainage: The steel tanks are all double-walled.

A.22.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.

- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
- Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter

and pressure gauges. The area is restricted to authorized personnel only, and valves and pump controls are locked and secured.

Worst Case Release Scenario – Total contents of Tank 3900-1 (20,000 gallons) flowing out of the shell to the ground toward West Soldier Creek leaving at Outfall 011.

A.22.6 Containment, Cleanup, and Disposal: Facility personnel shall respond to spills by containing the spilled substance within containment area. Additional temporary diking may be employed to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.22.7 Emergency Equipment: Emergency equipment available at the storage area consists of a spill kit nearby the tanks.

A.22.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent location approved by shop supervisor.

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LEGEND

- Electrical Transformer
- Aboveground Storage Tanks
- Fuel Lines
- Base Boundary
- Existing Buildings

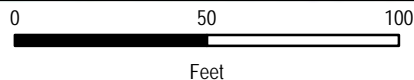


FIGURE A.22.1
DISA
BUILDING 3900
TINKER AIR FORCE BASE, OKLAHOMA

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**DISA
Tank 3900-1**



**DISA
Tanks 3900-DT-1, 2, and 3**

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TAB 23 TO ANNEX A

PURGING SYSTEM (PURGING FACILITY)
BUILDING 2112 (76 AMXG)

A.23.1 General: The purging system is located on the eastern side of the base at Building 2111. The facility consists of a fuel pumping house (Building 2112), underground pipelines that connect the flightline hydrant system to the facility, five USTs, an R-11 parking area, and a bowser parking area. The Purging Facility is fully fenced and can be accessed from the flightline or from an access road. The bowser parking area also contains a small wash rack and OWS. Refer to Figures A.23.1A and B for diagrams of the Purging Facility and to photographs at the end of this Tab.

A.23.2 Operations: Personnel are on duty during times of fuel transfer. The Purging Facility stores fuel, which is removed from aircraft in the maintenance area adjacent to Purging Facility. Deplaned fuel can be pumped to the Purging Facility via the underground pipeline, or delivered via R-11 or bowser.

A.23.3 Oil Bulk Storage and Handling: The Purging Facility consists of 5 USTs, a fuel pumping house, and an underground piping system (see table below). In addition, there is an R-11 parking area, which can hold 9 R-11 tanker trucks and a bowser parking area that typically has 16 bowsers of varying size. The Purging Facility has two fill stands, which are used to pump fuel into and out of Tanks 2114 and 2115.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
2114	JP-5	UST	26,000
2115	JP-6	UST	26,000
2117	JP-5/Water	Vaulted AST	2,000
22111	JP-5/Jet A/Water	UST	15,000
22110	JP-5/Water	UST	unknown
Total Volume			69,000

Container Type	Product Stored	Size (gallons)	Number	Total Capacity (gallons)
R-11	Used Fuel	6,000	9	54,000
Bowser	Used Fuel	300	4	1,000
Bowser	Used Fuel	100	3	300
Total			16	55,300

A.23.4 Secondary Containment and Drainage: Tanks 2114 and 2115 have cathodic protection and are fitted with a high level alarm. Tank 22111 is a double-walled fiberglass UST fitted with a Ronan ATG system and a high level alarm. The truck off-loading area and the bowser parking area are concrete and curbed. Any spills in these areas would generally flow to the center of the containment area. Should a spill occur outside these areas or escape the containment areas, the product would follow the natural drainage pattern or would flow to the storm water sewer system.

A.23.5 Communications: All refueling vehicles and most of the general-purpose vehicles have mobile radios.

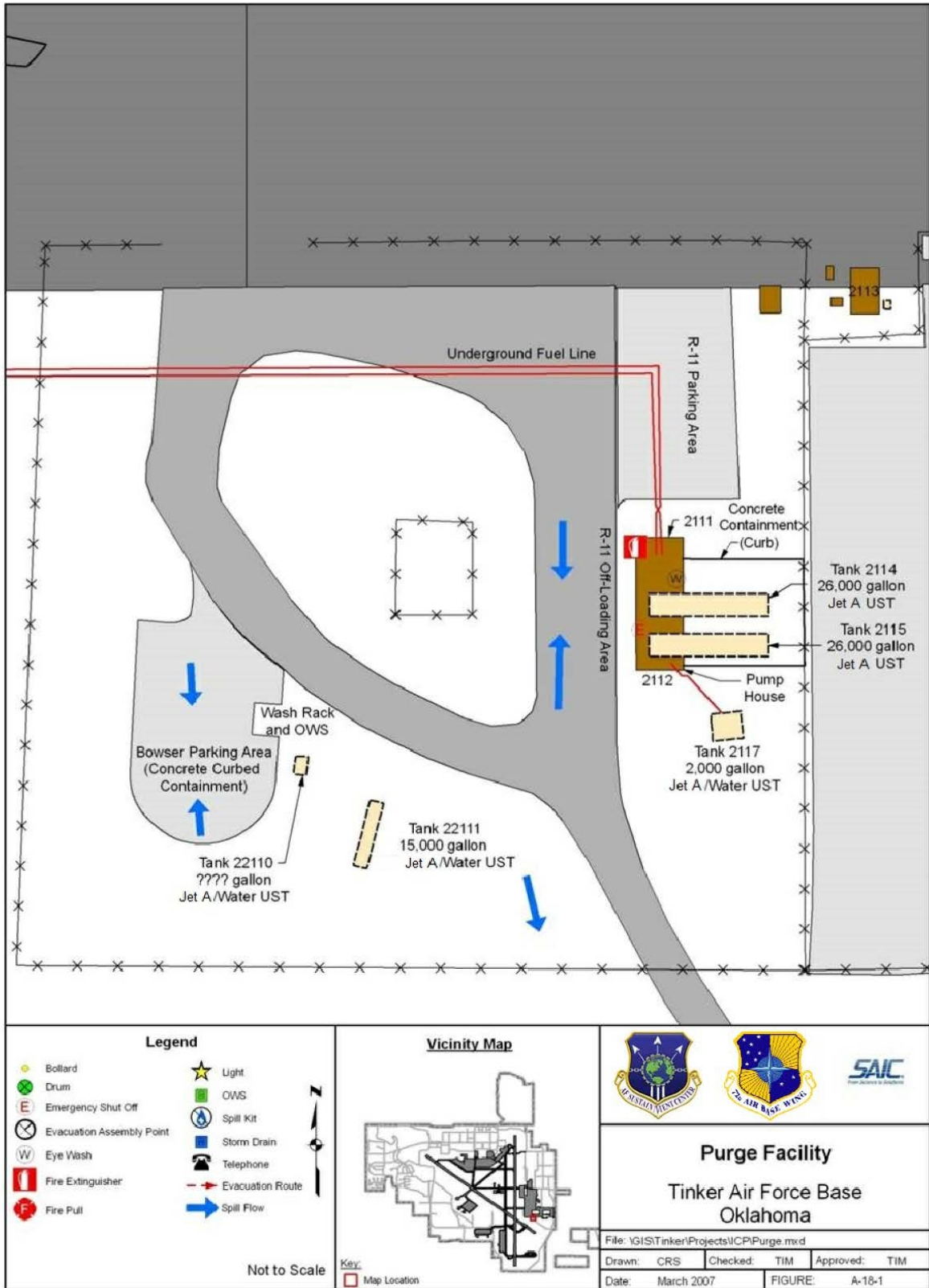


Figure A.23.1A: Purge Facility

Figure updated from 2007 ICP with current AF emblems and tank contents

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LEGEND

- Electrical Transformer
- Aboveground Storage Tanks
- Fuel Lines
- Base Boundary
- Existing Buildings

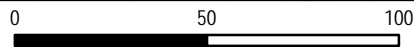


FIGURE A.23.1B
PURGE FACILITY

TINKER AIR FORCE BASE, OKLAHOMA

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Purge Facility Pump House (Building 2112) and Truck Loading Area



Purge Facility Bowser Parking Area



Purge Facility Pump House (Building 2112) and Truck Loading Area. UST area in background.

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TAB 24 TO ANNEX A

ENGINE CLEANING
BUILDING 3001, POST G-101

A.24.1 General: This shop may be reached by contacting the facility manager at 736-7925 or the Unit Environmental Coordinator at 582-4811. The contact may also be reached to obtain a current inventory list.

A.24.2 Oil Bulk Storage and Handling: There is no bulk storage or handling of oil at this location.

A.24.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.24.4 Secondary Containment and Drainage: Any drums stored in this area are located on spill pallets. Any spill that is not contained by a pallet would be contained within Building 3001.

A.24.5 Emergency Response Procedures:

ANY LIQUID SPILL CONTAINED IN THE PIT AREA (EXAMPLE: Overflowing or leaking process tank, etc.)

NOTE: The water flowing from the chemical cleaning system into the industrial waste sewer is monitored for temperature. Water enters a temporary holding tank for cooling purposes, and then is automatically pumped to the industrial waste sewer. All chemical tanks are plumbed to individual waste tanks grouped by like chemistry. Visual and audible alarms will trigger if there are any faults in the valves or levels in each tank in the control room, and all valves fail close in the event of an alarm.

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:
- 1) Activate emergency alarm at column.
 - 2) Call 911 asking for Tinker AFB Fire Department and give your name, the type of chemical spilled, the location of the spill and the estimated quantity of the chemical spilled.
 - 3) Immediately notify supervisor in charge. If not available, notify computer operator.
- B. Supervisor will:
- 1) Evacuate/secure the area.
 - 2) Make sure an employee roll call is conducted to discover whether any personnel are trapped in the affected area.

- 3) Restrict all sources of ignition when flammable substances are involved.
- 4) Notify the Industrial Waste Treatment Plant at 734-3892 or 734-3114. Give your name, type of chemical spilled, spill location and estimated quantity.
- 5) Notify Environmental Management at 734-4111.
- 6) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

MAJOR LIQUID SPILL OUTSIDE THE PIT AREA (EXAMPLE: Overturned drum, ruptured pump truck, etc.)

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:
 - 1) Activate emergency alarms, if any.
 - 2) Call 911 asking for Tinker AFB Fire Department and give your name, the type of chemical spilled, the location of the spill and the estimated quantity of the chemical spilled.
 - 3) Immediately notify supervisor in charge. If not available, notify computer operator.
- B. Supervisor will:
 - 1) Evacuate/secure the area.
 - 2) Initiate containment action, if it can be done safely.
 - 3) Make sure an employee roll call is conducted to discover whether any personnel are trapped in the affected area.
 - 4) Restrict all sources of ignition when flammable substances are involved.
 - 5) If the spill enters a floor drain, notify the Industrial Waste Treatment Plant at 734-3892 or 734-3114. Give your name, type of chemical spilled, spill location and estimated quantity.
 - 6) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

MINOR (LESS THAN 5 GAL.) LIQUID SPILL OUTSIDE THE PIT AREA
(EXAMPLE: Slow leaking drum, etc.)

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:
 - 1) Activate emergency alarms, if any.
 - 2) Call 911 asking for Tinker AFB Fire Department and give your name, the type of chemical spilled, the location of the spill and the estimated quantity of the chemical spilled.

- 3) Immediately notify supervisor in charge. If not available, notify computer operator.
- B. Supervisor will:
- 1) Evacuate/secure the area.
 - 2) Initiate containment action, if it can be done safely, by reorienting the drum, use of absorbent clay, etc. If possible, the contents of the leaking drum shall be added to an appropriate process tank. Otherwise, the leaking drum shall be placed inside a recovery drum.
 - 3) Restrict all sources of ignition when flammable substances are involved.
 - 4) If the spill enters a floor drain, notify the Industrial Waste Treatment Plant at 734-3892 or 734-3114. Give your name, type of chemical spilled, spill location and estimated quantity.
 - 5) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

ANY POWDERED SPILL (EXAMPLE: Overturned drum of dry powdered material)

- A. Any person recognizing a hazardous substance or hazardous waste spill shall immediately:
- 1) Activate emergency alarms, if any.
 - 2) Call 911 asking for Tinker AFB Fire Department and give your name, the type of chemical spilled, the location of the spill and the estimated quantity of the chemical spilled.
 - 3) Immediately notify supervisor in charge. If not available, notify computer operator.
- B. Depending on existing conditions, supervisor will:
- 1) Evacuate/secure the area.
 - 2) Initiate containment/cleanup action. If the material remains dry, the powder shall be scooped back into the drum.
 - 3) If the material becomes wet, follow the liquid spill procedures outlined above.
 - 4) Restrict all sources of ignition when flammable substances are involved.
 - 5) If the spill enters a floor drain, notify the Industrial Waste Treatment Plant at 734-3892 or 734-3114. Give your name, type of chemical spilled, spill location and estimated quantity.
 - 6) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

A.24.6 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets (MSDSs) for particular hazards and precautionary measures for specific chemical materials. The MSDSs are maintained in the supervisor's office.

A.24.7 Containment, Cleanup, and Disposal:

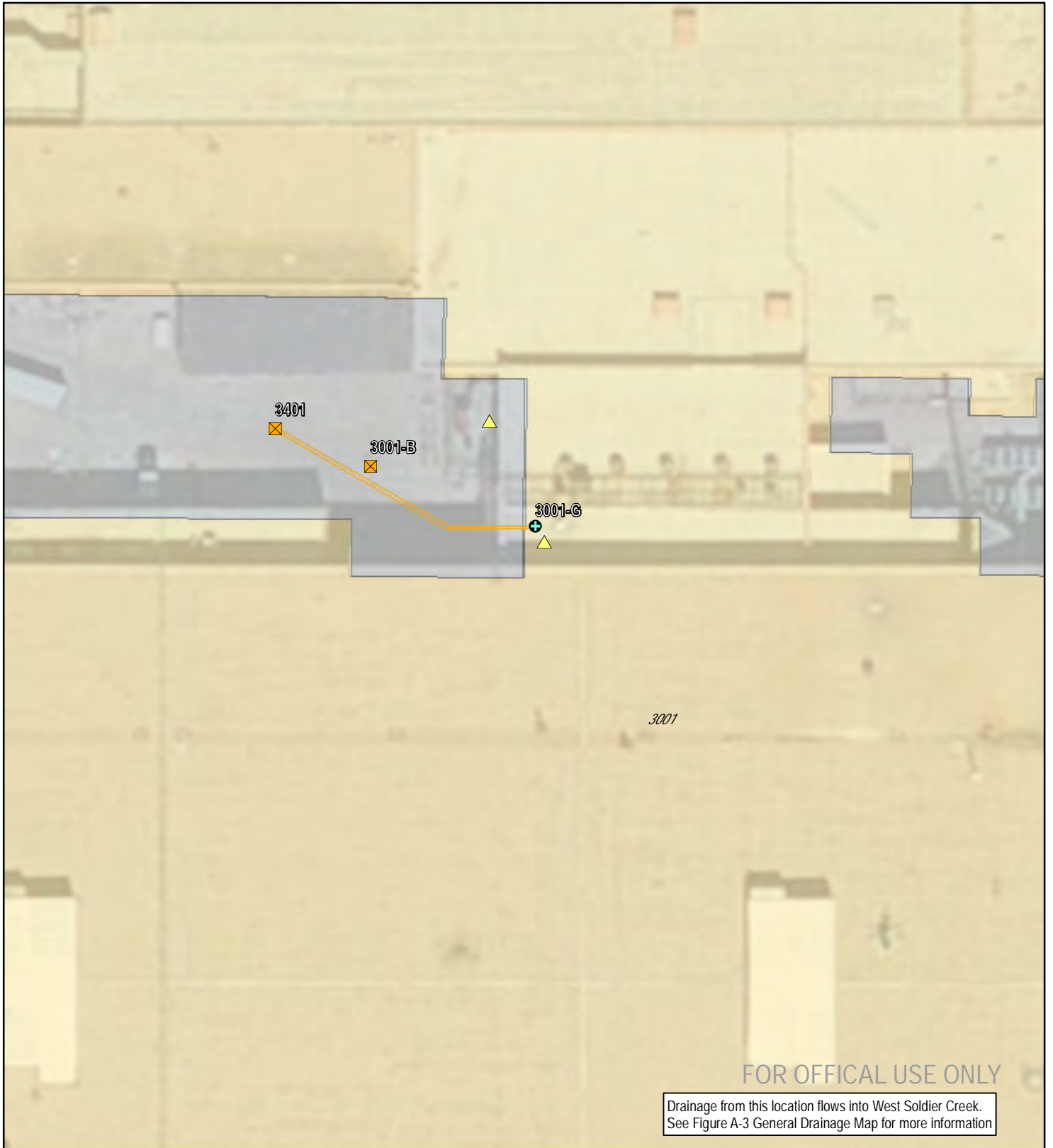
- A. Spills may be contained by creating dikes using absorbent clay, spill "pillows", etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.24.8 Emergency Equipment: : Emergency equipment available at or near the site consists of the following:

- Fire extinguishers, manual, located throughout the shop
- Eye wash/showers
- Fire alarms, located at Posts D-103, D-101, H-103, H-101, L-103, K-101 (control room and electrical room)

A.24.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in the following locations:

- A. Chemical waste area, Post C-130
- B. Control room, Post J-101, Up stairs
- C. Supervisor's office, Post C-105



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Drainage from this location flows into West Soldier Creek.
See Figure A-3 General Drainage Map for more information

LEGEND







-  Electrical Transformer
-  Underground Storage Tanks
-  Generators
-  Fuel Lines
-  Base Boundary
-  Existing Buildings



FIGURE A.24.1
ENGINE CLEANING
BUILDING 3001, POST G-101
TINKER AIR FORCE BASE, OKLAHOMA

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TAB 25 TO ANNEX A

ENGINE PLATING
BUILDING 3001, POST P-61 (76 PMXG/MSPCCAAH)

A.25.1 General: This shop may be reached by contacting the facility manager at 736-7039 or the Unit Environmental Coordinator at 582-4811. The contact may also be reached to obtain a current inventory list.

Refer to Figure A.25.1 for a diagram of the Engine Plating Facility.

A.25.2 Oil Bulk Storage and Handling: There is no bulk storage or handling of oil at this location.

A.25.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.25.4 Secondary Containment and Drainage: Any drums stored in this area are located on spill pallets. Any spill that is not contained by a pallet would be contained with spill kits and/or within Building 3001.

A.25.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill

- Substance spilled
- Amount spilled and rate of discharge
- Any damages or injuries involved
- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted.

A.25.6 Special Precautionary Measures:

- A. Protective equipment needed by all personnel being exposed to releases include chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus.
- B. Refer to Material Safety Data Sheets (MSDSs) for particular hazards and precautionary measures for specific chemical properties.
- C. Other equipment needs include sampling and monitoring devices, gas tube samplers and or photoionizing detectors for air, colorimetric kits for water.
- D. Air emission spill procedures are to knock down emissions with water mists. The resultant runoff must be contained and analyzed.

A.25.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill “pillows”, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.25.8 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- Fire Extinguishers:
 - Post P-61, one, Post 20-61
 - Post S-61, one
 - Post 55-1KB, 40’ South
 - Post 55-1GA
 - Post 55-1KB, 20’ North
 - Post 55-7LE
 - Post 58-7KB, 30’ East
 - Post M-61
 - Post R-63
 - Post Q-59, 22’ North
 - Post 2R-59, 10’ East, 8’ North
 - Post 2P-59, 10’ East, 15’ North

- Post 2S-59
- Post 54-5GA, 10' South
- Fire Hose and Lines:
 - P-61, fire hose
 - 5-59, fire poles and water line, no hose
- Chemical Eye Wash and Showers
 - One located at both ends of each line
- Fire Alarms
 - One located on west wall of annex by the exit door (north)
 - One located on west wall of annex by the exit door near chrome line (south-most exit door)
 - One located on southeast exit door of annex going to the D.I. Room

A.25.9 Hazard Analysis Summary:

- A. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Sulfuric Acid
 - 2) Location: Building 3001, Plating Shop
 - 3) Properties: Poison - causes severe burns, reacts violently with water. Harmful if swallowed or inhaled, contact with other material may cause fire.
 - 4) Consequences of Environmental Exposure: Damage to surrounding fauna. Runoff would occur into West Soldier Creek.
- B. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Nitric Acid
 - 2) Location: Building 3001, Plating Shop
 - 3) Properties: Poison; spillage may cause fire or liberate dangerous gas. Harmful if inhaled and may cause delayed lung injury. Strong oxidizer, vapor may cause severe burns.
 - 4) Consequences of Environmental Exposure: Damage to surrounding fauna. Runoff would occur into West Soldier Creek.
- C. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Hydrofluoric Acid
 - 2) Location: Building 3001, Plating Shop
 - 3) Properties: Corrosive; spillage may cause fire or liberate dangerous gas. Harmful if inhaled and may cause severe burns.
 - 4) Consequences of Environmental Exposure: Damage to surrounding fauna. Runoff would occur into West Soldier Creek.
- D. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Hydrochloric Acid

- 2) Location: Building 3001, Plating Shop
- 3) Properties: Corrosive; spillage may cause fire or liberate dangerous gas. Harmful if inhaled or swallowed and may cause severe burns.
- 4) Consequences of Environmental Exposure: Damage to surrounding fauna. Runoff would occur into West Soldier Creek.

A.25.10 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.



LEGEND

- ▲ Electrical Transformer
- ▲ Hazardous Substance
- Aboveground Storage Tanks
- + Generators
- Fuel Lines
- Base Boundary
- Existing Buildings

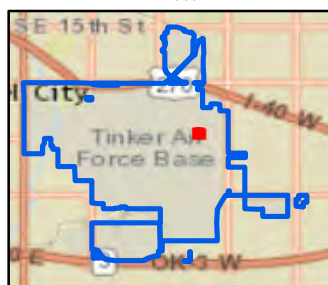


FIGURE A.25.1
ENGINE PLATING
BUILDING 3001, POST P-61
TINKER AIR FORCE BASE, OKLAHOMA

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TAB 26 TO ANNEX A**ABRASIVE BLASTING
BUILDING 3001, POSTS P-107, R-107, S-107 (76 PMXG/MXPCIA)**

A.26.1 General: Waste blasting media (aluminum oxide, silicon carbide and glass bead mixture) is collected at the generating locations and then temporarily stored in hoppers north of Building 3001. Refer to Figure A.26.1 for a diagram of the Purging Facility.

This shop may be reached by contacting the facility manager at 736-3568 or the Unit Environmental Coordinator at 582-4811. The contact may also be reached to obtain a current inventory list.

A.26.2 Oil Bulk Storage and Handling: There is no bulk storage or handling of oil in this location.

A.26.3 Oil-Filled Operational Equipment:

Equipment Type	Product Stored	Size (gallons)	Number	Total Capacity (gallons)
Ultra High Pressure Water Pump	Hydraulic Fluid	100	4	400
Intensifier Pump	Hydraulic Fluid	100	6	600
Total			10	1,000

A.26.4 Secondary Containment and Drainage: Any oil leaks from the pumps would be contained using spill kits located in the shop. The building would contain any other material. Solid blasting media would collect on the ground in the immediate area of the spill. Runoff would enter East Soldier Creek.

A.26.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.

- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.26.6 Special Precautionary Measures: The blasting media waste may contain traces of cadmium. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling this material.

A.26.7 Containment, Cleanup, and Disposal:

- A. Spills of the solid blasting media will collect on the ground for cleanup with a scoop.
- B. Spill residues shall be placed in hoppers and disposed of in accordance with standard disposal requirements or special instruction from Environmental Management and Operations.

A.26.8 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- A. Fire Extinguishers:
 - 1) Posts H-77, I-75, H-79, H-81
 - 2) Posts H-75, I-71, H-71, H-73
 - 3) Post F-79 (five)
 - 4) Posts P-87, P-85, S-89
 - 5) Posts S-107, V-107, R-110, V-109, V-111, P-107
 - 6) Post Y-53, Y-52
 - 7) Post X-57, Y-57

A.26.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.

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Drainage from this location flows into East Solider Creek.
See Figure A-3 General Drainage Map for more information

LEGEND

- Electrical Transformer
- Hazardous Substance
- Extremely Hazardous Substance
- Fuel Lines
- Base Boundary
- Existing Buildings

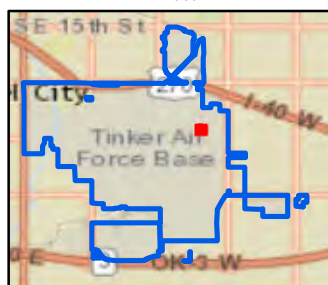


FIGURE A.26.1
ABRASIVE BLASTING
BUILDING 3001, POST S-107
TINKER AIR FORCE BASE, OKLAHOMA

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TAB 27 TO ANNEX A

TANKER PRODUCTION PDM DOCKS
BUILDING 3001 (564 AMXS/MAB)

A.27.1 General: The areas covered under this tab are post locations Y-17, Y-26, and Y-48 in Building 3001. The full organization name varies with location. Generally, the materials covered include POLs. The inventories vary, and an updated list should be obtained from the Unit Environmental Coordinator to determine quantities and container sizes being used at a specific time or location.

This shop may be reached by contacting the Unit Environmental Coordinator at 582-4809 or the facility manager at 736-7039. The contact may also be reached to obtain a current inventory list.

A.27.2 Oil Bulk Storage and Handling: Bulk storage and handling of oil consists of an IAP site. All drums are stored on spill pallets with a spill kit nearby.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
IAP LA0038	Used Oils and Fuel	Drums	Total = 165 (3 drums, 55 gal each)
Total Volume			165

A.27.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.27.4 Secondary Containment and Drainage: Any drums stored in this area are located on spill pallets. Any spill that is not contained by a pallet would be contained with spill kits and/or within Building 3001. Any material reaching area storm drains would enter East Soldier Creek.

A.27.5 Emergency Response Procedures:

ANY LIQUID SPILL CONTAINED IN THE DIKED AREA (EXAMPLE:
Overflowing or leaking barrel, etc.).

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:
- 1) Call 911 asking for the Tinker AFB Fire Department and give your name, the type of hazardous waste spilled, the location of the spill and the estimated quantity of the spill.
 - 2) Immediately notify supervisor in charge of the type of hazardous waste spilled, the location of the spill, and the estimated quantity of the spill.

B. Supervisor will:

- 1) Evacuate/secure area.
- 2) Make sure an employee roll call is conducted to discover whether any personnel are trapped in the affected area.
- 3) Restrict all sources of ignition.
- 4) Report to the Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

MAJOR LIQUID SPILL OUTSIDE THE DIKED AREA (EXAMPLE: Overturned drum, ruptured drum, etc.).

A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:

- 1) Call 911 asking for Tinker AFB Fire Department and give your name, the type of hazardous waste spilled, the location of the spill and the estimated quantity of the spill.
- 1) Immediately notify supervisor in charge and the Maintenance Control Center at 736-2500. The Maintenance Control Center shall notify Environmental Management at 734-4111.

B. Supervisor will:

- 1) Evacuate/secure area.
- 1) Initiate containment action, if it can be done safely.
- 2) Make sure an employee roll call is conducted to discover whether any personnel are trapped in the affected area.
- 3) Restrict all sources of ignition when flammable substances are involved.
- 4) If the spill enters a floor drain, notify the IWTP at 734-3892 or 734-3114. Give your name, type of chemical spilled, spill location and estimated quantity.
- 5) Report to the Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

MINOR (LESS THAN 5 GAL<)> LIQUID SPILL OUTSIDE THE DIKED AREA (EXAMPLE: Slow leaking drum, etc.).

A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:

- 1) Call 911 asking for Tinker AFB Fire Department and give your name, the type of hazardous waste spilled, the location of the spill and the estimated quantity of the spill.

- 2) Immediately notify supervisor in charge and the Maintenance Control Center at 736-2500. The Maintenance Control Center shall notify Environmental Management at 734-4111.
- B. Supervisor will:
- 1) Evacuate/secure area.
 - 2) Initiate containment action if it can be done safely, by reorienting the drum, use of absorbent clay, etc. If possible, the contents of the leaking drum shall be added to an appropriate empty drum. Otherwise, the leaking drum shall be placed inside a recovery drum.
 - 3) Restrict all sources of ignition when flammable substances are involved.
 - 4) If the spill enters a floor drain, notify the IWTP at 734-3892 or 734-3114. Give your name, type of chemical spilled, spill location and estimated quantity.
 - 5) Report to acting Incident Commander (IC) upon spill response team arrival and provide assistance until spill response team is fully operational.

A.27.6 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets (MSDSs) for particular hazards and precautionary measures for specific chemical materials.

A.27.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.27.8 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- Fire extinguishers
- Spill control equipment (sand bags)
- Personal protective equipment including goggles

A.27.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.

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TAB 28 TO ANNEX A

CONSOLIDATED FUELS TEST FACILITY
BUILDINGS 3902 & 3907 (552 CMMXS/MXDP)

A.28.1 General: Buildings 3902 and 3907 house operations for hydraulic test stand maintenance, repair, and calibration. These buildings are fully fenced and gated, and access to the interior of the building is restricted as well. Refer to Figure A.28.1 and to Annex W for tank locations. Also see photographs at the end of this Tab and Annex P for further secondary containment documentation.

A.28.2 Operations: Personnel are on duty during times of material transfer. Buildings 3902 and 3907 store new and used calibration fluid, which is piped into and out of the building as needed through a system of tanks, piping, sumps, and equipment.

A.28.3 Oil Bulk Storage and Handling: Bulk storage at these buildings consists of five USTs, four ASTs, piping into the building, and two emergency generators. All piping and tanks are support for the maintenance and calibration of the hydraulic test stands.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
1B3902	Calibration Fluid	UST	10,000
2B3902	Calibration Fluid	UST	10,000
3B3902	Water, Used Calibration Fluid	UST	10,000
4B3902	Water, Used Calibration Fluid	UST	10,000
5B3902	Water, Used Calibration Fluid	UST	12,000
3902	Diesel	Generator Belly Tank	258
3907-1200	Calibration Fluid	AST	10,000
3907-1201	Calibration Fluid	AST	10,000
3907-2200	Water, Used Calibration Fluid	AST	10,000
3907-2201	Water, Used Calibration Fluid	AST	10,000
3907	Diesel	Generator Belly Tank	308
		Total Volume	92,566

A.28.4 Oil-Filled Operational Equipment: Buildings 3902 and 3907 contain of several hydraulic test stands. The table below summarizes the typical quantities and capacities of the test stands present in these buildings.

Building 3902

Equipment Type	Product Stored	Size (gallons)	Number	Total Capacity (gallons)
Hydraulic Test Stand	Calibration Fluid	500 gal max, 400 gal average	40	16,000
Pump Module	Calibration Fluid	2,000	3	6,000
Total			43	22,000

Building 3907

Equipment Type	Product Stored	Size (gallons)	Number	Total Capacity (gallons)
Hydraulic Test Stand	Calibration Fluid	500 gal max, 400 gal average	8	3,200
Pump Module	Calibration Fluid	800	1	800
Manifold Flush Stand	PD-680	55	1	55
PD-680 Spray Booth	PD-680	125	1	125
Total			11	4,180

A.28.5 Secondary Containment and Drainage: Tanks 3907-1200, -1201, -2200, and -2201 are co-located in a concrete containment berm. After accounting for the displacement of the other tanks in the berm, and a 25-year, 24-hour rain event, the berm currently provides inadequate containment for the contents of a single tank. Should a spill occur outside the containment or escape the containment area, the calibration fluid would follow the natural drainage pattern or would flow to the storm water sewer system.

Any spills during loading at the USTs at Building 3902 or ASTs at Building 3907 would be contained in the concrete containment of the loading areas.

A.28.6 Communications: All loading vehicles and the personnel working at Buildings 3902 and 3907 have mobile radios.



- LEGEND**
- Oil Filled Equipment
 - ▲ Electrical Transformer
 - ▲ Hazardous Substance
 - ⊠ Aboveground Storage Tanks
 - ⊠ Underground Storage Tanks
 - ⊕ Generators
 - Fuel Lines
 - ▭ Base Boundary
 - ▭ Pond Areas
 - River/Stream
 - ▭ Existing Buildings

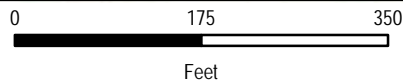


FIGURE A.28.1
 CONSOLIDATED FUELS TEST FACILITY
 BUILDING 3902 AND 3907
 TINKER AIR FORCE BASE, OKLAHOMA

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**USTs and UST Loading Area at
Building 3902**



**Tanks 3907-1200, 3907-1201,
3907-2200, and 3907-2201**



Loading area for AST at Building 3907

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TAB 29 TO ANNEX A

SKILLS DEVELOPMENT CENTER
BUILDING 6002 (72 MSG/SVRS)

A.29.1 General: This shop, which is also known as the Auto Hobby Shop, may be reached by contacting the facility manager at 734-5615 or 734-5616. The Unit Environmental Coordinator may be reached at 734-2467. The contact may also be notified to obtain a current inventory list.

Building 6002 is part of the auto maintenance facility and is used by military personnel to maintain their personal vehicles. Materials include POLs and solvents. Refer to Figure A.29.1 for a diagram of the Skills Development Center and to photographs at the end of this Tab. The UEC should be contacted to obtain a current inventory list.

A.29.2 Description and Operations: The Skills Development Center, also known as the Auto Hobby Shop, is used by military personnel to maintain their personal vehicles.

A.29.3 Oil Bulk Storage and Handling: Most oil at this location is stored in small containers. The only tank is for used oil.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
6002	Used Oil	AST	700
Total Volume			700

A.29.4 Oil-Filled Operational Equipment: The Skills Development Center does not currently have any oil-filled operational equipment.

A.29.5 Secondary Containment and Drainage: Secondary containment for the used oil tank is provided by a metal containment structure as well as a covered concrete berm. Spills occurring at this facility outside this containment area will discharge to Crutch Creek leaving at Outfall A2 as described in the SWPPP.

A.29.6 Emergency Response Procedures:

- A. Any person recognizing a hazardous substance spill shall immediately:
- 1) Activate emergency alarms.
 - 2) Call 911 asking for Tinker AFB Fire Department and give your name, the type of chemical spilled, the location of the spill and the estimated quantity of the chemical spilled.
 - 3) Immediately notify supervisor in charge.
- B. Supervisor will:
- 1) Evacuate/secure the area.

- 2) Make sure employee roll call is conducted to discover whether any personnel are trapped in the affected area.
- 3) Restrict all sources of ignition when flammable substances are involved.
- 4) Notify the Industrial Waste Treatment Plant at 734-3892 or 734-3114.
- 5) Report to the Incident Commander (IC) until spill team arrival and provide assistance until team is fully operational.

A.29.7 Special Precautionary Measures:

- A. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials.
- B. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.

A.29.8 Containment, Cleanup, and Disposal: The following guidance is provided for responding to releases from this facility:

- A. Protective equipment needed by all personnel being exposed to releases include:
 - 1) Chemical resistant clothing with full body coverage and positive pressure
 - 2) Self-contained breathing apparatus (SCBA).
- B. Other protective equipment needs include:
 - 1) Sampling and monitoring devices: Gas tube samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water.
- C. Air emission spill procedures are to knock down emissions with water mists. The resultant runoff must be contained and analyzed.
- D. Special Hazards during explosion/fire: When phenol or cresylic acid is in contact with flame or intense heat, phosgene may be generated.





A.29.9 Posting Requirements: This site-specific contingency plan shall be posted in a prominent place in Building 6002, with the responsible organization's supervisor and the site monitor.



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Drainage from this location flows into Crutcho Creek.
See Figure A-3 General Drainage Map for more information

LEGEND

-  Electrical Transformer
-  Aboveground Storage Tanks
-  Base Boundary
-  Existing Buildings

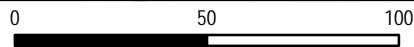


FIGURE A.29.1
SKILLS DEVELOPMENT CENTER
BUILDING 6002

TINKER AIR FORCE BASE, OKLAHOMA

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**Skills Development Center
Used Oil Tank 6002**

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TAB 30 TO ANNEX A

TINKER GOLF COURSE MAINTENANCE
BUILDING 5935 (72 SPTG/SVBG)

A.30.1 General: This shop may be reached by contacting the facility manager and/or the tank custodian at 734-2072. The Unit Environmental Coordinator may be reached at 734-2467. These contacts may also be notified to obtain a current inventory list. An alternate tank custodian may be reached at 734-4576.

This facility consists of a fenced yard and maintenance building. The facility operates two aboveground storage tanks and also stores pesticides. Refer to Figure A.30.1 for a diagram of Tinker Golf Course Maintenance and to photographs at the end of this Tab.

A.30.2 Oil Bulk Storage and Handling: Storage and handling consists of the two fuel tanks and the loading and unloading of each.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
5935-1	Diesel	AST	550
5935-2	Unleaded Gasoline	AST	550
Total Volume			1,100

A.30.3 Oil-Filled Operational Equipment: The golf course maintenance building does not currently have any oil-filled operational equipment.

A.30.4 Secondary Containment and Drainage: A concrete secondary containment structure has been installed around tanks 5935-1 and 5935-2. Spills occurring at this facility will discharge to Kuhlman Creek leaving at Outfall A3 as described in the SWPPP.

A.30.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.

- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
- Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Aboveground Storage Tank Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The facility manager and/or tank custodian for this shop shall be members of the SRT in addition to those identified in the Red Plan.

Contingency – Facility personnel shall keep the fuel yard maintained in a clean and orderly state. Aboveground piping, valves, pumps and motors, etc. shall be inspected daily in accordance with AFTO Form 39 checklist included in Annex N of this plan. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. Liquid flows shall be monitored with flow meter and pressure gauges. Tanks are within fenced compound and in a concrete containment area. The area is restricted to authorized personnel only.

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Worst Case Release Scenario – Total contents of Tank 5935-1 (550 gallons) flowing out of the containment area west to Kuhlman Creek leaving at Outfall A3 as described in the SWPPP.

Emergency Response Procedures for Hazardous Substances

- A. Any person recognizing a hazardous substance spill shall immediately:
 - 1) Activate emergency alarms.
 - 2) Call 911 asking for Tinker AFB Fire Department and give your name, the type of chemical spilled, the location of the spill and the estimated quantity of the chemical spilled.
 - 3) Immediately notify supervisor in charge.
- B. Supervisor will:
 - 1) Evacuate/secure the area.
 - 2) Make sure employee roll call is conducted to discover whether any personnel are trapped in the affected area.
 - 3) Restrict all sources of ignition when flammable substances are involved.
 - 4) Notify the Industrial Waste Treatment Plant at 734-3892 or 734-3114.
 - 5) Report to the Incident Commander (IC) until spill team arrival and provide assistance until team is fully operational.

A.30.6 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials.

A.30.7 Containment, Cleanup, and Disposal: The materials stored at this facility are inside and under cover.

A.30.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent place in Building 5935, with the responsible organization's supervisor and the site monitor.

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Drainage from this location flows into Crutch Creek.
See Figure A-3 General Drainage Map for more information

LEGEND

- ✕ Aboveground Storage Tanks
- Base Boundary
- Existing Buildings



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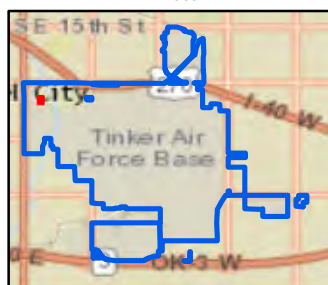


FIGURE A.30.1
TINKER GOLF COURSE MAINTENANCE
BUILDING 6020
TINKER AIR FORCE BASE, OKLAHOMA

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**Tinker Golf Course Maintenance
Tanks 5935-1 and 5935-2
(Tanks on the right are obsolete as of the time of this photo)**

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TAB 31 TO ANNEX A

SHOP, AIRCRAFT, AND ENGINE ACCESS OVERHAUL DEPOT (OR, TAC AREA)
9000-LEVEL BUILDINGS

A.31.1 General: The TAC Area was purchased and integrated into Tinker AFB. This facility is used to remove and reinstall repaired accessory components from aircraft engines that are undergoing programmed depot maintenance. Numerous shops (electromechanical, machine & welding, bearing & manifold, etc.) support this facility. There is also an engine test cell building and a fire pump building on site. The perimeter is fenced and gated. Refer to Figure A.31.1 and to Annex W for a map of the TAC Area and to the end of this Tab for photographs.

A.31.2 Operations: The TAC Area has fuel storage for the engine test cell, two fire pumps, and several generators. Personnel are present during any fuel transfer, either because the test cell is in operation, the fire pumps are being tested and refueled, or the generators are being tested and refueled.

A.31.3 Oil Bulk Storage and Handling: The TAC Area consists of 12 ASTs. The fuel test cell also has fuel pumps and underground piping between the day tanks and the main fuel storage tanks. The fire pump tanks also accompany 2 fire pumps and some aboveground piping inside the fire pump building. There is no oil-filled equipment stored at the TAC area.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
General Aboveground Storage Tanks			
9302-1	Jet A	AST	12,000
9302-2	Jet A	AST	12,000
9303-FP-1	Diesel	AST	320
9303-FP-2	Diesel	AST	320
9403	Jet A	AST	10,000
9404	Jet A	AST	10,000
Generators			
9001-A	Diesel	AST	500
9001-B	Diesel	AST	500
9001-C	Diesel	AST	500
9001-D	Diesel	AST	500
9001-S	Diesel	AST	138
9301	Diesel	AST	1,504
Total Volume			48,282

A.31.4 Secondary Containment and Drainage: Almost all the tanks at the TAC area are double-walled. The fire pump tanks at 9303 are single-walled tanks, but are scheduled for replacement and are not currently in use. The engine test cell fuel tanks and their day tanks are large tanks with automatic level alarms. The day tanks feed the main tanks automatically with automatic cut-off sensors. The day tanks are filled manually. The generator tanks are all equipped with direct vision level gauges. Any personnel filling the tanks are also equipped with spill materials in case of a spill during loading. Should a spill occur outside containment, the product would follow the natural drainage pattern or would flow to the storm water sewer system.

A.31.5 Communications: All refueling vehicles and most of the general-purpose vehicles have mobile radios.



LEGEND

- ▲ Electrical Transformer
- ▲ Hazardous Substance
- ▲ Extremely Hazardous Substance
- ⊠ Aboveground Storage Tanks
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▨ Wetland Areas
- ▭ Pond Areas
- River/Stream
- ▭ Existing Buildings

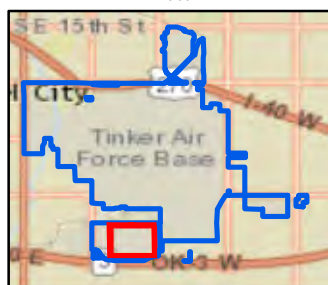
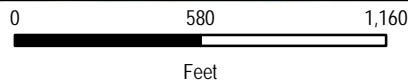


FIGURE A.31.1
TAC AREA
BUILDING 9001
TINKER AIR FORCE BASE, OKLAHOMA

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TAC Area T-9 Test Cell Fuel Daytank



TAC Area T-9 Test Cell Fuel Tanks



TAC Area Representative Generator

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TAB 32 TO ANNEX A**SOUTH 40 (DLA/DDOO-DOP)**

A.32.1 General: The South 40 is a general storage area for both POLs and hazardous materials. Buildings included are 1118, 1119, 1132, 1134-1136, and 1139-1146. Refer to Figure A.32.1 for a diagram of the South 40 Area.

This area may be reached by contacting the facility manager at 739-4222 or the Unit Environmental Coordinator at 734-8597. The contact may also be reached to obtain a current inventory list.

A.32.2 Oil Bulk Storage and Handling: There is no bulk oil storage or handling at this location.

A.32.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.32.4 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge

- Any damages or injuries involved
- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

A.32.5 Special Precautionary Measures:

- A. No spill cleanup should be attempted until the personnel conducting the cleanup have put on the following personal protective equipment: Chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus (SCBA).
- B. Other equipment needed includes sampling and monitoring devices, gas tube samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water. Plugging and patching devices are needed for leaks from drums and cylinders.
- C. Air emissions should be combated with water mist and runoff contained and analyzed. Cylinder patching and plugging should be one of the first procedures initiated when possible. Successful patching and plugging of leaks will depend upon several factors: The hazard in approaching the leaking container, the size of the holes, the hydraulic head, etc.
- D. Special Hazards - Ammonia is a material which is incompatible with conventional, water-based foams due to exothermic reaction with water, alkalinity, and low boiling point. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.

A.32.6 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements. The following information and guidance is provided for response and cleanup to ammonia releases.

A.32.7 Hazard Analysis Summary:

- A. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Ammonia
 - 2) Location: South 40, Shed 1143
 - 3) Properties: Poisonous; may be fatal if inhaled. Vapors cause irritation to eyes and respiratory tract. Liquid will burn skin and eyes. Contact with liquid may cause frostbite. Effects may be delayed.

- 4) Consequences of Environmental Exposure: Possible damage to flora and fauna. Resultant runoff will discharge to Crutcho Creek.

A.32.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent place at the South 40, with the responsible organization's supervisor and the site monitor.

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LEGEND

- Electrical Transformer
- Fuel Lines
- Base Boundary
- River/Stream
- Existing Buildings

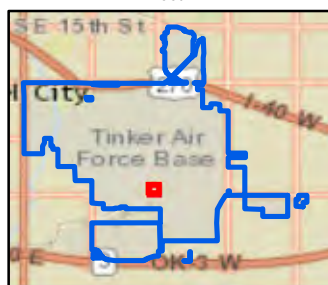
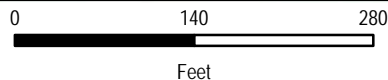


FIGURE A.32.1
SOUTH 40

TINKER AIR FORCE BASE, OKLAHOMA

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TAB 33 TO ANNEX A

INDUSTRIAL WASTE TREATMENT PLANT (IWTP)
BUILDINGS 62501, 62509, 62516, 62528 (72 ABW/CECOPI)

A.33.1 General: The IWTP has several locations storing extremely hazardous substances. The following notification procedures should be used in the event of a spill. The CERCLA drum storage building is located north of Building 62526 and is used to store 55-gallon drums of oil. Refer to Figure A.33.1 for a diagram of the IWTP and to the photographs at the end of this Tab.

This shop may be reached by contacting the facility manager at 734-3114 or the Unit Environmental Coordinator at 734-9804. The contact may also be reached to obtain a current inventory list.

A.33.2 Oil Bulk Storage and Handling: Tanks 62501-1, -2, -3, and -4 are filled from tank trucks that empty the used oil out of the oil/water separator sump. The Treatment Plant also has five emergency generators on site that are serviced by PowerPro.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
62501-1	Used Oil	AST	21,000
62501-2	Used Oil	AST	21,000
62501-3	Used Oil	AST	21,000
62501-4	Used Oil	AST	21,000
62501A	Diesel	Generator Belly Tank	500
62501B	Diesel	Generator Belly Tank	520
62501C	Diesel	Generator Belly Tank	500
62501D	Diesel	Generator Belly Tank	100
62501E	Diesel	Generator Belly Tank	215
IAP CE0004 (in Bldg 62516)	Used Oil, Used Jet Fuel, Calibration Fluid	Drum	Total = 165 (3 drums x 55 gal each)
IAP CE0008 (in Bldg 62516)	Used Oil, Used Jet Fuel	Drum	Total = 110 (2 drums x 55 gal each)
Total Volume			86,110

A.33.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.33.4 Secondary Containment and Drainage: Tanks 62501-1, -2, -3, and -4 are surrounded by a concrete berm that provides 44,829 gallons of gross secondary containment.

The drums at the IAP sites are located on spill pallets, with spill kits nearby as well. Spilled material originating from the IWTP area that escapes containment will discharge via storm drains to East Soldier Creek.

A.33.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.33.6 Special Precautionary Measures:

- A. Protective equipment needed by all personnel being exposed to releases from the IWTP include Chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus.
- B. Other equipment needed includes equipment to repair leaks (chlorine B kit), plugging and/or patching devices, sampling and monitoring devices, gas tube

samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water.

- C. Neutralizing materials: Fly ash, cement ponds, activated carbon, soda ash, and caustic soda.
- D. Air emissions should be combated with water mist and runoff contained. For cylinders patching and plugging should be one of the first procedures initiated when possible. Successful patching and plugging of leaks will depend upon several factors: The hazard in approaching the leaking container, the size of the holes, the hydraulic head, etc.
- E. The CERCLA drum storage building is covered and contained.

A.33.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.33.8 Hazard Analysis Summary:

A. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Potassium Permanganate
- 2) Location: IWTP, Building 62509
- 3) Properties: Poisonous; may be fatal if inhaled. Vapors cause irritation to eyes and respiratory tract. Liquid will burn skin and eyes. Contact with liquid may cause frostbite. Effects may be delayed.
- 4) Consequences of environmental exposure: Possible damage to flora and fauna. Resultant runoff will discharge to East Soldier Creek.

B. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Sodium Hydroxide 50%
- 2) Location: IWTP, Building 62528
- 3) Properties: Poisonous; may be fatal if inhaled. Vapors cause irritation to eyes and respiratory tract. Liquid will burn skin and eyes. Contact with liquid may cause frostbite. Effects may be delayed.
- 4) Consequences of environmental exposure: Possible damage to flora and fauna. Resultant runoff will discharge to East Soldier Creek.

A.33.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.

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LEGEND

- ▲ Electrical Transformer
- ▲ Hazardous Substance
- ⊕ Generators
- ▭ Base Boundary
- River/Stream
- ▭ Existing Buildings

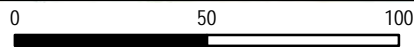


FIGURE A.33.1
 IWTP
 BUILDINGS 62509, 62516 AND 62528
 TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

- ▲ Electrical Transformer
- Aboveground Storage Tanks
- Bowser/Mobile Refueler
- ⊕ Generators
- ▭ Base Boundary
- ▨ Wetland Areas
- ▭ Pond Areas
- ▬ River/Stream
- ▭ Existing Buildings

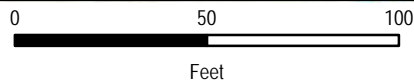


FIGURE A.33.2
IWTP MAINTENANCE
BUILDING 6512
TINKER AIR FORCE BASE, OKLAHOMA

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**Industrial Waste Treatment Plant (IWTP)
Used Oil Tanks 62501-1, -2, -3, and -4**

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TAB 34 TO ANNEX A

FIRE PUMP TANKS

VARIOUS BUILDINGS (TANKS MANAGED BY 72 ABW/CEO SPRINKLER SHOP)

A.34.1 General: Fire pump tanks are present at 16 buildings on the base. These tanks provide fuel for pumps that convey fire water in the event of a fire. The facilities housing the fire pump tanks also contain the pumps and several water lines. Refer to Annex W for fire pump tank locations. Also refer to Table A.1 and Annex P for more detailed tank information and secondary containment documentation.

A.34.2 Operations: Fire pump tanks are inspected and filled at least once per month. They are also run to ensure proper operation and to keep everything in good working condition.

A.34.3 Oil Bulk Storage and Handling: Some buildings contain one fire pump tank to accompany each fire pump. Other buildings consist of a main tank that services one or more day tanks for the operation of one or more fire pumps. The following table lists all fire pump tanks on the base.

Building Number	Tank Number	Product Stored	Type	Shell Capacity (gallons)
11	11-FP	Diesel	AST	285
241	241-FP	Diesel	AST – Vaulted	500
	241-DT-1**	Diesel	AST	50
	241-DT-2**	Diesel	AST	50
260	260-FP	Diesel	AST	200
264	264R	Jet A	AST – Vaulted	15,000
416	416-FP-1	Diesel	AST	175
	416-FP-2	Diesel	AST	175
467	467-FP	Diesel	AST	611
810	810-FP	Diesel	AST	75
	810-FP-DT	Diesel	AST	120
812	812-FP-1	Diesel	AST	200
	812-FP-2	Diesel	AST	200
1020	1020-FP	Diesel	AST	180
1032	1032-FP	Diesel	AST – Vaulted	564
	1032-FP-DT-1**	Diesel	AST	25
	1032-FP-DT-2	Diesel	AST	75
	1032-FP-DT-3	Diesel	AST	75
	1032-FP-DT-4**	Diesel	AST	25

Building Number	Tank Number	Product Stored	Type	Shell Capacity (gallons)
1083	1083-FP	Diesel	AST	120
1094	1094-FP	Diesel	AST	180
2119	2119-FP-1	Diesel	AST	250
	2119-FP-2	Diesel	AST	250
2123	2123A-FP	Diesel	AST – Vaulted	2,000
	2123B-FP	Diesel	AST – Vaulted	2,000
	2123-FP-DT	Diesel	AST	110
3202	3202-FP	Diesel	AST - Vaulted	180
7017	7017-FP	Diesel	AST	115
9303	9303-FP-1	Diesel	AST	320
	9303-FP-2	Diesel	AST	320
Total Volume				25,430

**Tank has a capacity of less than 55 gallons and so is not SPCC-regulated. Included here for reference.

A.34.4 Secondary Containment and Drainage: Most of the fire pump tanks are double-walled and/or located within a building, so any discharge would be contained within the tank or within the building itself. Several tanks are vaulted ASTs, in which the vault would contain any release from the tank.

A.34.5 Communications: Personnel working at the fire pumps and the fire pump tanks during inspections and test runs are equipped with mobile radios.



**Typical Fire Pump Arrangement,
shown with 75-gallon day tank (1032-
FP-DT-1)**



**Typical double-walled Fire Pump
Tank,
260-FP**

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TAB 35 TO ANNEX A

MISCELLANEOUS STORAGE TANKS
VARIOUS BUILDINGS AND ORGANIZATIONS

A.35.1 General: There are several shops, buildings, and work areas that house only small tanks or drums. These tanks are listed in this tab. Refer to the maps in Annex W for locations of these tanks, and refer to Annex P for photographs and secondary containment information. Photographs are also located at the end of this tab.

A.35.2 Oil Bulk Storage and Handling: The following are stored in ASTs and drums at the indicated locations on base.

Tank Number	Product Stored	Organization	Type	Shell Capacity (gallons)
General Aboveground Storage Tanks				
117	Diesel	72ABW/CEC - Pavement	AST	1,500
213	Various Oils	550CMMXS/MSDPAB	Steel Drum	2,200 (40 x 55 gal)
260	Used Oil	Motor Pool	AST	280
290 West	Waste Fuel	AFCEC	AST	2,000
1122	Diesel	Road and Grounds Equipment	AST - Vaulted	1,000
1137-1	Mogas	TRACE	AST combined	1,000
1137-2	Diesel	TRACE	AST combined	500
2110	Used Oil	Motor Pool	AST	230
2110-drum	Various Oils	Motor Pool	Steel Drum	165 (3 x 55 gal)
2210	Mil-C-7808	552 CMMXS/MSDPAC	AST - Vaulted	1,445
3001-F100-1	Lube Oil	545 PMXS/MXDP	AST	80
3001-F100-3	Dewatering Oil	545 PMXS/MXDP	AST	80
3001-PD680	Solvent PD-680	776 MXSS	AST - Vaulted	1,500
3234-A North	Flush Oil	76 PMXG	AST	600
3234-B North	Flush Oil	76 PMXG	AST	300
3234-C North	Lube Oil	76 PMXG	AST	200
3234-A South	Flush Oil	76 PMXG	AST	600
3234-B South	Flush Oil	76 PMXG	AST	300
3234-C South	Lube Oil	76 PMXG	AST	200
3703-A	Flush Oil	76 PMXG	AST	260
3703-B	Flush Oil	76 PMXG	AST	260

Tank Number	Product Stored	Organization	Type	Shell Capacity (gallons)
3703-C	Flush Oil	76 PMXG	AST	260
3772	Diesel	72ABW/CEC	AST	1,000
3772-drum	Release Fluid	72ABW/CEC	drum	1,540 (28 x 55 gal)
			Total Volume	17,580

A.35.2 Secondary Containment and Drainage: All drums listed here are stored indoors and are provided with adequate secondary containment. Drums at Building 213 and Building 3772 are stored in concrete dikes, and Building 2110 has pits that capture drainage from the shop.

Most tanks listed here have adequate secondary containment, provided by a double-walled tank, a vault, drainage pit, or oil/water separator. See Table A.1 and Annex P for more detailed secondary containment information.

The only tank listed here that does not have adequate secondary containment is the used oil tank at Building 260, which is located on an inadequate spill pallet. See Annex P for more detailed information.

TAB 36 TO ANNEX A**GENERATORS**

A.36.1 General: There are several shops, buildings, and work areas that have generators and generator fuel tanks present. These generators and tanks are listed in this tab. Refer to the maps in Annex W for locations of these items, and refer to Annex P for photographs and secondary containment information.

The point of contact (POC) for the contractor on Base responsible for generators may be reached at 734-7427 or at 734-9798. If a leak or other potential problem is noted, an alternate contact is Civil Engineering Contractor Customer Service (72 ABW/CECOW) at 734-3117.

The point of contact given above may be contacted for information regarding generator locations and fuel capacities. The point of contact for Liquid Fuels, 72 ABW/CECOF (the operators that provide the fuel for the generators and perform generator inspections) may be reached at 734-2753. The inventory is subject to change and this Plan shall be updated as needed.

A.36.2 Operations: Generators at the base are managed and maintained by the Power Production Shop (PowerPro). Personnel are present for all fuel transfers, as they are performed manually.

A.36.3 Oil Bulk Storage and Handling: All generators on base are operated with diesel fuel. Fueling is performed by PowerPro on an as-needed basis. Emergency generators are typically run and refueled once per week to ensure proper operation.

The table below lists all the above-ground emergency and auxiliary power generators that are in areas besides those in the previous tabs of this annex. 98 generators or generator tanks are listed in the table below. Some of the generators described in this section are also listed in other Tabs in Annex A, as follows:

- Tab 4 – 290 Fuel Yard [generator: 290]
- Tab 10 – HAZMINCEN (NAVY) and STRATCOM Wing ONE AGE and Fueling Facility [generators: 820-1, 820-2]
- Tab 28 – Consolidated Fuels Test Facility [generators: 3902, 3907]
- Tab 31 – Shop, Aircraft, and Engine Accessories Overhaul Depot (or, TAC Area) [generators: 9001-A, -B, -C, -D, -S, and 9301]
- Tab 33 – Industrial Waste Treatment Plant (IWTP) [generators: 62501A, B, C, D, and E]
- Tab 57 – Engine Cleanup Area [generator: 3105]

Tank Number	Type	Shell Capacity (gallons)
1	Generator AST	100
18	Generator Belly Tank	60
117-G	Generator AST	500
208	Generator Belly Tank	595
230	Generator Belly Tank	185
230E	Generator Belly Tank	113
240	Generator AST - Vaulted	1,480
250	Generator AST	100
255	Generator Belly Tank	750
260-DT	Generator AST	275
280-DT	Generator AST	100
281	Generator Belly Tank	100
284-DT	Generator AST	350
290	Generator AST	75
414	Generator AST	450
416-SE	Generator Belly Tank	143
416-NE	Generator Belly Tank	312
469	Generator AST	150
504-A-DT	Generator AST	275
504-B-DT	Generator AST	275
591	Generator Belly Tank	55
685	Generator Belly Tank	145
690	Generator Belly Tank	240
807	Generator AST	355
812	Generator Belly Tank	240
820-1	Generator AST	1,150
820-2	Generator AST	1,150
906	Generator AST	268
928	Generator AST	300
930	Generator AST	300
933	Generator AST	300
935	Generator Belly Tank	140
942	Generator AST	300
951	Generator Belly Tank	80
955	Generator Belly Tank	125
988	Generator AST - Vaulted	200
996	Generator Belly Tank	706
1002	Generator AST	150

Tank Number	Type	Shell Capacity (gallons)
1029	Generator Belly Tank	145
1066	Generator AST	250
1082	Generator AST	150
1083-1	Generator AST	12,500
1083-2	Generator AST	12,500
71083	Generator AST	250
71084	Generator AST	250
71085	Generator AST	250
1086	Generator AST	200
1091	Generator AST	350
1094-G	Generator Belly Tank	275
1105	Generator AST	275
1115	Generator Belly Tank	244
2280	Generator Belly Tank	150
3001-D	Generator AST - Vaulted	1,000
3001-D-DT	Generator AST Daytank	135
3001-G	Generator AST Daytank	400
3001-N	Generator Belly Tank	521
3001-W	Generator AST	150
3102	Generator Belly Tank	100
3105	Generator Belly Tank	75
3202	Generator Belly Tank	155
3221-DT	Generator AST Daytank	159
3225	Generator Belly Tank	200
3228	Generator AST	106
3705	Generator Belly Tank	100
3715	Generator Belly Tank	204
3902	Generator Belly Tank	258
3907	Generator Belly Tank	308
4000	Generator Belly Tank	135
4002	Generator Belly Tank	60
4002-2	Generator AST	75
4006	Generator Belly Tank	200
4029	Generator Belly Tank	280
4032	Generator Belly Tank	75
4058	Generator AST	300
5811	Generator Belly Tank	130
9001-S	Generator AST	138

Tank Number	Type	Shell Capacity (gallons)
9001-A	Generator AST	500
9001-B	Generator AST	500
9001-C	Generator AST	500
9001-D	Generator AST	500
9301	Generator AST	1,504
22125	Generator AST	400
61289	Generator Belly Tank	200
62501A	Generator Belly Tank	500
62501B	Generator Belly Tank	520
62501C	Generator Belly Tank	500
62501D	Generator Belly Tank	100
62501E	Generator Belly Tank	215
3307-P-7	Generator AST	90
3307-P-8	Generator AST	90
3307-P-10	Generator Belly Tank	135
5905-P-12	Generator Belly Tank	520
3307-P-13	Generator Belly Tank	200
3307-P-14	Generator Belly Tank	135
Total Volume		53,029

A.36.4 Secondary Containment and Drainage: Two types of generator fuel tanks are present: belly tanks and external ASTs. Both types are double-walled. See the table above for a description of the drainage destination.

A.36.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify Civil Engineering Contractor Customer Service at 734-3117.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.

- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Generator Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The contacts listed above in addition to those identified in the Red Plan make up the SRT for generators located on Base.

Contingency – Generators are inspected by authorized personnel. Trained and authorized personnel are responsible for inspecting and transferring fuel to the generators located throughout the Base. Some are located within a small fenced area protected with a lock. Generator locations are identified in the Generator Inventory in this Tab.

A.36.6 Communications: PowerPro contractors carry portable radios and mobile phones with them at all times.

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TAB 37 TO ANNEX A**INITIAL ACCUMULATION POINT (IAP) SITES**

A.37.1 General: Initial Accumulation Point (IAP) sites are located all over the base. They are areas where drums are temporarily stored for the collection of waste fluids, including oil and oily liquids, as well as other solid and liquid waste products. IAP sites may consist of a single drum or several pallets of drums. When a drum is full, it is removed for disposal of its contents and replaced with an empty drum.

See Table A.2 for detailed information on IAP drum sites. Also see photographs at the end of this Tab for representative examples of IAP sites on Base.

A.37.2 Operation: The supervisor of the shop where the IAP is located has responsibility for the IAP site.

A.37.3 Maximum Storage and Handling Capacity: There are approximately 188 IAP sites on base that contain oil or oil-based liquied, made up of approximately 310 drums, or a maximum of 17,050 gallons of oil.

A.37.4 Secondary Containment: Drums at an IAP site are all stored on a spill pallet or within diked secondary containment. Shops also typically have a spill kit located nearby.

A.37.5 Drainage: The risk of a discharge from an IAP reaching navigable waters is comparatively low. Should the contents of a drum leak, the oil would be contained in a spill pallet. Further, most IAPs are located inside buildings.



IAP AW0002



IAP AW0003



IAP AW0010



IAP TP0004

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TAB 38 TO ANNEX A

MISCELLANEOUS OIL-FILLED OPERATIONAL EQUIPMENT
VARIOUS BUILDINGS AND ORGANIZATIONS

A.38.1 General: There are several shops, buildings, and work areas that house only small quantities of oil-filled operational equipment. These pieces of equipment are listed in this tab. Refer to the maps in Annex W for locations of these items.

A.38.2 Operations: Personnel are on duty during times of product transfer or delivery. Product is typically moved between the drum to the equipment tank by hand or with a pump. Some equipment is drained automatically to a waste tank when necessary.

A.38.3 Oil Bulk Storage and Handling: The following equipment is in operation at the indicated locations on base.

Organization	Building, Post Location	Equipment Type	Product Stored	Size (gallons)	Number	Total Capacity (gallons)
544 PMXS	3001, Post J-93	Vertical Turret Lathe	Hydraulic Fluid	60	1	60
544 PMXS/MXDRB	3001, Post X-67	Test Stand	Motor Oil	55	1	55
544 PMXS/MXDXAB	3001, Post W-85	Vertical Turret Lathe	Hydraulic Fluid	90	1	90
545 PMXS/MXDP	3001, Post T-81W	Degreaser	PD-680	80	2	160
545 PMXS/MXD PAN	9001, Post AA30	Degreaser	Solvent	150	1	150
547 PMXS/MXD TAA	3234, Cell 11 & 12	Fuel Filter	Test Fuel	100	3	300
547 PMXS/MXD TAA	3234, Cell 11 & 12	Hydraulic Fluid Reservoir	Hydraulic Fluid	67	2	134
547 PMXS/MXD TAA	3234, Cell 9 & 10	Hydraulic Fluid Reservoir	Hydraulic Fluid	235	1	235
547 PMXS/MXD TAA	3234, Cell 9 & 10	Fuel Filter	Test Fuel	100	3	300
547 PMXS/MXD TAA	3234, Cell 9 & 10	Hydraulic Fluid Reservoir	Hydraulic Fluid	80	1	80
547 PMXS/MXD TAA	3234, Cell 9 & 10	Hydraulic Fluid Reservoir	Hydraulic Fluid	67	2	134
547 PMXS/MXD TAA	3703, Cell 1 & 2	Fuel Filter	Test Fuel	70	3	210

Organization	Building, Post Location	Equipment Type	Product Stored	Size (gallons)	Number	Total Capacity (gallons)
547 PMXS/MXD TAA	3703, Cell 7 & 8	Hydraulic Fluid Reservoir	Hydraulic Fluid	80	1	80
547 PMXS/MXD TAA	3703, Room 5 & 6	Hydraulic Loading Eq System	Hydraulic Fluid	57	1	57
547 PMXS/MXD TAA	3703, Room 7 & 8	Hydraulic Loading Eq System	Hydraulic Fluid	57	1	57
548 PMXS/MXD XA	3001, Post N-87	5-Axis Machining Center	Hydraulic Fluid	60	1	60
548 PMXS/MXD XA	3001, Post N-89	Vertical CNC Grinder	Hydraulic Fluid	107	1	107
550 CMMXS/MXD PAA	210	Centrifugal Compressor	Hydraulic Fluid	144	2	288
550 CMMXS/MXD PAA	210A	Centrifugal Air Compressor	Hydraulic Fluid	144	1	144
551 CMMXS/MXD PAA	3705, Post A-16	CNC Bender	Hydraulic Fluid	60	1	60
551 CMMXS/MXD RAC	3001, Post R-65	CNC Surface Grinder	Hydraulic Fluid	60	1	60
551 CMMXS/MXD RAC	3001, Post U-33	5-Axis Machining Center	Hydraulic Fluid	90	2	180
551 CMMXS/MXD RAC	3001, Post U-35	Center Machining N10	Hydraulic Fluid	80	1	80
551 CMMXS/MXD RAC	3001, Post V-33	Pallet Changer	Hydraulic Fluid	65	1	65
551 CMMXS/MXD RAC	3001, Post W-35	5-Axis Machining Center	Hydraulic Fluid	90	2	180
551 CMMXS/MXD XAB	9001, Post B-24	Four-Post Hydraulic Press	Hydraulic Fluid	214	1	214
551 CMMXS/MXD XAB	9001, Post B-24	CNC Press	Hydraulic Fluid	200	1	200
551 CMMXS/MXD XAB	9001, Post B-25	300-ton Press	Hydraulic Fluid	700	1	700
551 CMMXS/MXD XAB	9001, Post B-26	Elastomer Cyril Bath Press	Hydraulic Fluid	350	1	350
551 CMMXS/MXD XAB	9001, Post B-27	Fluid Cell Press	Hydraulic Fluid	200	1	200
551 CMMXS/MXD XAB	9001, Post C-24	12-ft Brake Press	Hydraulic Fluid	203	1	203
551 CMMXS/MXD XAB	9001, Post C-28	Shear	Hydraulic Fluid	70	1	70

Organization	Building, Post Location	Equipment Type	Product Stored	Size (gallons)	Number	Total Capacity (gallons)
551 CMMXS/MXDXAB	9001, Post D-28	12-ft Hydraulic Shear	Hydraulic Fluid	79	1	79
552 MXDPBA	3001, Post O-57	Agitation Tank	Motor oil, preservation oil	110	2	220
552 MXDPBA	3001, Post P-45	Test Stands	Turbine Oil	100	3	300
567 AMXS/MXDPAI	3001, Post J-105	Intensifier Pump	Hydraulic Fluid	100	2	200
76 PMXG	3001, Post Y-13	Hydraulic Shear	Hydraulic Fluid	61	1	61
76 PMXG	3001, Post Y-38	Shear	Hydraulic Fluid	57	1	57
776 SMXG/OBM	9001, Post D-53	Supercomputer with Coolant	Paraffin coolant	250	1	250
Total Volume						4,957

A.38.4 Secondary Containment and Drainage: All equipment listed here is stored indoors and is provided with containment, either in the form of containment within the machine, within the building, or spill kits. Some buildings also have drains that go to the IWTP. See Table A.5 for more detailed information.

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TAB 39 TO ANNEX A**ELECTRICAL TRANSFORMERS**

A.39.1 General: The high voltage electrical grid for the installation contains several hundred oil-containing transformers containing dielectric (mineral) oil. Transformers containing an oil volume of 55 gallons or greater are considered “oil containing operating equipment” by EPA and are required to be included in the installation oil storage capacity.

A.39.2 Description: The transformers used in the power distribution system have oil-containing capacities ranging from a few gallons to over 2,000 gallons. These transformers are installed in a variety of configurations including pole-mounted and aboveground concrete pads. The dielectric oil in these transformers is filled as part of the manufacturing process and is typically left in place throughout the service life of the unit. Therefore, there is typically no handling or transfer of oil involved in routine installation, operations and maintenance of transformers.

A.39.3 Operation: The Oklahoma Gas & Electric has oversight responsibilities for the transformers. Electrical Shop personnel conduct inspection of the transformers on a routine basis and perform maintenance, repair, and replacement as needed.

A.39.4 Maximum Storage and Handling Capacity: The maximum storage capacity of the Tinker transformers is 69,024 gallons. Refer to Table A.16.1 for a summary list of substations and Table A.16.2 for a summary list of transformers.

A.39.5 Secondary Containment: Oil filled electrical equipment is specifically excluded from the EPA definition of “bulk storage container”. Therefore, transformers are not subject to bulk storage container requirements for secondary containment. Some transformers are located within diked areas that provide containment. For transformers located outside of containment, this ICP provides the alternate means of meeting secondary containment requirements.

A.39.6 Drainage: The risk of a discharge from a transformer reaching navigable waters is comparatively low. Should the contents of a transformer leak, it is expected that the spill would be discovered rapidly (due to the fact that the transformer will likely shut down because of overheating due to loss of cooling oil) and contained at the site.

Table A.39.1: Substations with Oil Capacity 55 Gallons or Greater

Location	KVA ¹	Oil Capacity (gallons)	Worst Case Release Potential
Substation 2	-	9,000	East Soldier Creek, runoff leaving at Outfall A10 (SWPPP).
Substation 2	-	3,400	Same as above.
Substation 2	-	3,400	Same as above.
Substation 3	-	4,500	Crutcho Creek leaving at Outfall A2 (SWPPP).
Substation 4	-	6,707	Kuhlman Creek leaving at Outfall A3 (SWPPP).
Substation 4	-	6,707	Same as above.
Substation 4	-	2,740	Same as above.
Substation 5	-	6,500	East Soldier Creek leaving at Outfall A10 (SWPPP).
Substation 5	-	6,500	Same as above.
Substation 5	-	6,500	Same as above.
Substation 5	500	200	Same as above.
Substation 5	500	200	Same as above.
Substation 5	500	200	Same as above.
Substation 5	500	200	Same as above.
Substation 5	300	120	Same as above.
Substation 5	300	120	Same as above.
Substation 5	300	120	Same as above.
Substation 5	300	120	Same as above.
Substation 5	300	120	Same as above.
Substation 5	225	90	Same as above.
Substation 5	225	90	Same as above.
Substation 5	225	90	Same as above.
Substation 5	225	90	Same as above.
Substation 5	225	90	Same as above.
Substation 5	225	90	Same as above.
Substation 5	225	90	Same as above.
Substation 6	2500	1,000	Wooded creek channel leaving at Outfall A2 (SWPPP).
Substation 6	1000	400	Same as above.
Substation 6	1000	400	Same as above.
Substation 6	750	300	Same as above.
Substation 6	750	300	Same as above.
Substation 6	750	300	Same as above.
Substation 6	750	300	Same as above.
Substation 6	750	300	Same as above.
Substation 6	750	300	Same as above.
Substation 6	750	300	Same as above.

Table A.39.1: Substations with Oil Capacity 55 Gallons or Greater

Location	KVA ¹	Oil Capacity (gallons)	Worst Case Release Potential
Substation 6	500	200	Same as above.
Substation 6	500	200	Same as above.
Substation 6	300	120	Same as above.
Substation 6	300	120	Same as above.
Substation 6	300	120	Same as above.
Substation 6	300	120	Same as above.
Substation 6	300	120	Same as above.
Substation 6	300	120	Same as above.
Substation 6	300	120	Same as above.
Substation 6	300	120	Same as above.
Substation 6	300	120	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Substation 6	225	90	Same as above.
Total Oil Capacity		64,264	

Note: Substation 6 is an inactive substation used to store transformers that can be used as replacements when needed and ones being turned into the DRMO. The inventory of Substation 6 is always subject to change.

Table A.39.2: Transformers with Oil Capacity 55 Gallons or Greater

Location	KVA ⁽¹⁾	Oil Capacity (gallons)	Worst Case Release Potential
3001 Metal Yard	-	400	Leaving at Outfall A5 (SWPPP).
5703	225	90	Crutcho Creek leaving at Outfall A2 (SWPPP).
5802	750	300	Crutcho Creek leaving at Outfall A2 (SWPPP).
5802	500	200	Same as above.
5802	500	200	Same as above.
5810	500	400	Crutcho Creek leaving at Outfall A2 (SWPPP).
5902	500	200	Crutcho Creek leaving at Outfall A2 (SWPPP).
5903, Midkiff Hall	300	120	Crutcho Creek leaving at Outfall A2 (SWPPP).
5904, Butler Hall	300	120	Crutcho Creek leaving at Outfall A2 (SWPPP).
5905, Vanway Dining Hall	300	120	Leaving at Outfall A5 (SWPPP).
5908	225	90	Leaving at Outfall A1 (SWPPP).
5909	225	90	Leaving at Outfall A1 (SWPPP).

Location	KVA ⁽¹⁾	Oil Capacity (gallons)	Worst Case Release Potential
5910, Rough Hall	500	200	Leaving at Outfall A1 (SWPPP).
5913	225	90	Leaving at Outfall A1 (SWPPP).
5929	1000	400	Leaving at Outfall A1 (SWPPP).
5930	500	200	Leaving at Outfall A1 (SWPPP).
5931	500	200	Leaving at Outfall A1 (SWPPP).
5942	750	300	Leaving at Outfall A1 (SWPPP).
5946	750	300	Leaving at Outfall A2 (SWPPP).
5947	750	300	Leaving at Outfall A1 (SWPPP).
6001	500	200	Leaving at Outfall A2 (SWPPP).
6002	300	120	Leaving at Outfall A2 (SWPPP).
6004	300	120	Leaving at Outfall A2 (SWPPP).
Total Oil Capacity		4,760	

(A) Where KVA is given, the oil capacity listed is approximate. Actual capacities vary depending on manufacturer.

TAB 40 TO ANNEX A**TRANSFER OPERATIONS**

A.40.1 General: Base Fuels personnel execute the majority of transfer operations conducted at Tinker AFB. The Base Fuels office is located in Building 250 and may be contacted at 739-5066 or 739-3105.

Bulk petroleum products are stored, transferred, and used in significant quantities at various locations throughout the Base. Fueling personnel are responsible for providing spill control and monitoring fueling operations at the remote fueling locations. The table included in this Tab identifies some of the routine remote fueling locations.

A.40.2 Oil Bulk Storage and Handling: Remote fueling at scheduled routine fueling stops are as follows:

Location (Building #)	Fuel Type Dispensed	Fueling Location	Receiving Storm Drain	Receiving Waters
10	Diesel	Southeast corner of Building 10, in fenced lot	~40 feet west of fueling location	Kuhlman Creek
18	Diesel	Southeast corner of fenced, paved area on south end of Building 18	~250 feet west of fueling location; very low grade	Kuhlman Creek
220	Oil	Wash rack, oil loading	--	Kuhlman Creek
241	Mogas and Jet A	Southeast of Building 241	--	Kuhlman Creek
264	Jet A	Fuel pump	--	Kuhlman Creek
506	Diesel	Southwest corner of fenced, paved area to the southwest of Building 506	~150 feet northeast of fueling location	Kuhlman Creek
506	Mogas	West end of fenced, paved area to the southwest of Building 506	~60 feet southeast of fueling location	Kuhlman Creek
1010	Mogas and Diesel	Pumps west of Bldg 1010	--	East Crutch Creek
1022	Diesel	South of Building 1022 across from the overhead door	None	Crutch Creek
1058	Mogas, Diesel, and Jet A	Loading area behind 1070	--	East Crutch Creek
1083	Diesel	Loading at loading area	--	East Crutch Creek
1122	Diesel	Loading area at 1122 tank	--	East Crutch Creek
1137	Diesel and Mogas	Loading area at 1137 tank	--	East Crutch Creek
1156	Diesel and Mogas	Paved drive at the north end of Building 1156	None	Crutch Creek
2101	Mogas, Diesel, and Jet A	Loading area	--	East Crutch Creek (Outfall A13)

Location (Building #)	Fuel Type Dispensed	Fueling Location	Receiving Storm Drain	Receiving Waters
2121	Diesel	Southeast corner of Building 2121	~200 feet south of fueling location; very low grade	Crutcho Creek
2121	Mogas	Northeast corner of Building 2121	~500+ feet south of fueling location; very low grade	Crutcho Creek
3001	Diesel	South end of Building 3001; NE of Building 3102	~60 feet south of fueling location; terrain relatively flat	Soldier Creek
3001	Mogas	South end of Building 3001; between Buildings 3105 and 3001	~75 feet north of fueling location; terrain relatively flat	Soldier Creek
3703	Mogas	Northwest of Building 3703	~200 feet	Soldier Creek
3705	Diesel and Mogas	East of Building 3705, at Door 17 or 19	~75 feet southeast of fueling location	Soldier Creek
3772	Diesel	Fuel pump	--	East Soldier Creek
3902	Calibration Fluid	West of Building 3902	--	East Soldier Creek (Outfall A11)
3907	Calibration Fluid	South of Building 3907	--	East Soldier Creek (Outfall A11)
5935	Mogas and Diesel	Loading area behind Bldg 5935	None	Crutcho Creek
1139 (South Forty)	Diesel and Mogas	Southeast of Building 1139	None	Crutcho Creek
117 (Fire Station No. 1)	Diesel	South of Building 117	~150 feet northeast of fueling location	Soldier Creek (Outfall A5)
117 (Fire Station No. 1)	Mogas	North of Building 117	~45 feet south of fueling location	Soldier Creek (Outfall A5)
19 Can Storage	Diesel	Northeast corner of paved lot	None	Crutcho Creek
273 Fuel Yard	Jet A	Loading area	None	Kuhlman Creek
290 Fuels Yard	Jet A	Loading area at fuels yard	None	Kuhlman Creek
290 Fuels Yard	Jet A	Unloading areas at fuels yard, north of Bulk Tanks	None	Kuhlman Creek
3700 Fuels Yard	Jet A	Loading area at 3700	None	East Soldier Creek
507th Fuel Yard	Jet A	Loading area	None	East Crutcho Creek
885 Roads and Grounds	Biodiesel	Pump east of Bldg 885	--	Kuhlman Creek
885 Roads and Grounds	Mogas	Pump east of Bldg 885	--	Kuhlman Creek
DRMO	Diesel	Southwest of Building 804	None	Crutcho Creek
DRMO	Mogas	South of east end of Building 801, along south fenceline.	None	East Crutcho Creek (Outfall A19)

A.40.3 Secondary Containment and Drainage: Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

Spill kits are available to shop personnel to respond to discharges occurring in this facility. Small discharges from routine operations shall be cleaned up by facility personnel without requesting emergency response assistance. For such activities, impacted material is removed and taken to the appropriately authorized waste stream.

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Transfer Operation Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Contingency – All transfer lines, pumps, manifolds, and valves are monitored to prevent the discharge or contamination of fuel. Valves at the storage tanks are kept closed, and in most cases locked, except during receipt or issue of fuel. Control valves on transfer lines are kept closed when not in use. Pump switches are mounted at the fill stands, hydrants, the individual pumps, and the manifold areas. All power to the pumps is secured unless transfer operations are in progress. Refueling trucks are equipped with radios and spill kits to be used in the event of a discharge or spill. For spill or overflow protection, operators should eliminate topping off tank. Operators shall note flow direction and location of storm water outlets at refueling locations so as to be prepared to respond in the event of a spill.

A.40.4 Containment, Cleanup, and Disposal: Operator shall respond to spills by containing the spilled substance. Spill kits shall be used to provide temporary diking to preclude entrance to ditch or storm sewer. For larger spills, temporary dikes should be placed in sewer lines at applicable manholes. Absorbent material, portable skimmers and/or vacuum trucks should be utilized for cleanup.

A.40.5 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

A.40.6 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.

TAB 41 TO ANNEX A

OIL/WATER SEPARATORS

A.41.1 General: The point of contacts (POCs) for oil/water separators as identified in this Tab are identified in the table below. If the POC identified in the inventory table included in this tab cannot be reached, the IWTP may be contacted at 734-3114.

The table below provides a listing of oil/water separators and information including location, point of contact, description, inspection frequency and discharge location. Guidance for oil/water separators is provided in AFI 32-7041, *Water Quality Compliance*. The most current version of this publication may be obtained from the following Web site: <http://www.e-publishing.af.mil>. The inventory is subject to change and this Plan shall be updated as needed.

List of Oil/Water Separators:

Facility	Location	Phone Number	Separator/ Sump/ UST	Inspection Frequency	Discharge Location
117	Northeast of building	734-2042	Separator / UST 11701	Monthly	--
214	Southwest of building	736-7483	Separator / UST 21407	Monthly	Industrial WTP
220	North of building in alley	734-5588	Separator	Monthly	Sanitary
260-N	Northwest corner, outside	734-3340	Separator	Monthly	Sanitary
260-Ramp	Ramp area (West of bldg. on ramp)	734-3340	Separator/UST	Monthly	Sanitary
289-E	East of building	734-5588	Separator	Monthly	Industrial WTP
289-W	West of building	734-5588	Separator	Monthly	Industrial WTP
290	South of building in fuel yard	739-4188	Separator/UST 347	Monthly	Stormwater Outfall A3
472-E	East of building by Service Pumps	734-7135	--	Monthly	Stormwater Outfall A3
472-W	West of building (bay area)	734-7135	Separator	Monthly	Sanitary
477	South of commissary in creek	417-6152 or 734-5199	Separator/UST	Monthly	Stormwater Outfall A3
773	South of Roads and Grounds building	734-1150	Separator	Monthly	Sanitary
820	East of building 820 and north of 829	739-3591	Separator	Monthly	Industrial WTP
821	South of building 821 steam plant	417-6152	Separator	Monthly	Industrial WTP
825	Northeast corner of fenced yard, building 825	739-3591	Separator	Monthly	Industrial WTP
830	Southeast corner of building next to sidewalk	739-3591	Separator	Monthly	Sanitary
926	Hush House Building 926	739-3591	Separator/UST 626926	Monthly	Sanitary

Facility	Location	Phone Number	Separator/ Sump/ UST	Inspection Frequency	Discharge Location
976-A	North of building	734-5588	Sump only	Monthly	Sanitary
976-B	South of building	734-5588	Sump only	Monthly	Stormwater Outfall A2
981	North of AWACS Alert Ramp	734-5588	Separator/UST	Monthly	Stormwater Outfall A2
985	Southwest corner	734-5588	Separator	Monthly	Sanitary
985-N	Northwest section of building	734-5588	Separator	Monthly	--
989	Southwest corner of Alert Fire Dept	734-5588	Separator	Monthly	Sanitary
995	Southwest corner of Alert/Navy fuel yard	739-4188	Separator	Monthly	Sanitary
1010	South of building	734-7516 or 734-7475	Separator	Monthly	Sanitary
1030-1	Tar Mac Area of 1030	734-2994	Separator	Monthly	Stormwater Outfall A2
1030-2	Southeast of building	734-2994	Separator	Monthly	Sanitary
1041	Southwest corner	734-2994	Separator/UST	Monthly	Stormwater Outfall A2
1058	East of building (wash rack)	734-2994	Separator	Monthly	--
1082	Southeast of building (outside)	734-2994	Separator	Monthly	--
1091	507 th Fuel Yard (connected to sanitary lift station)	739-4188	Separator	Monthly	Sanitary
1107-N	Northwest corner behind Mini Mall	733-4679	Separator	Monthly	Stormwater Outfall A2
1107-S	Southwest corner in front of Mini Mall	733-4679	Separator	Monthly	Stormwater Outfall A2
1130	South of building	734-2655	Separator	Monthly	Sanitary
2101-E	Southwest corner	734-6076	Separator	Monthly	Industrial WTP
2101-W	Northwest corner	734-6076	Sump only	Monthly	
2110	West of building	734-2566	Separator/UST	Weekly	Industrial WTP
2136	Northeast of building in alley	736-9862 or 734-3114	Separator	Monthly	Industrial WTP
2143	Car wash southwest corner	734-2655	Separator	Monthly	Industrial WTP
3234	East of building across road	736-3103 or 734-3114	Separator	Weekly	Industrial WTP
3703	West side in the U has two pumps	736-3103 or 734-3114	Separator and Pumps	Monthly	Industrial WTP
6002	North side of building	734-2467	Sump only	Monthly	Sanitary
7006	Southwest corner of wash rack	734-3862	Separator	Monthly	Industrial WTP
21829	East of fire pond	417-6152	Separator/UST	Monthly	Stormwater drains to fire pond

A.41.2 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

Spill Response Procedures/Equipment Inventory – Based upon the information gathered, the Facility Manager shall evacuate the area if necessary based on the hazard presented. If unsure, the appropriate MSDS(s) shall be consulted to determine hazard(s).

If it is determined that the incident cannot be controlled without undue risk to the facility personnel, the Facility Manager must order the evacuation of all workers at risk and notify appropriate outside agencies as identified in the Red Plan.

Oil/Water Separator Response Procedures – Upon notification of an emergency, the following contingency and curtailment response procedures pertaining to the particular type of emergency will be followed in the order shown.

Spill Response Team (SRT) – The contacts listed in the table below in addition to those identified in the Red Plan make up the SRT for oil/water separators located on Base.

Contingency – Oil/water separators will be inspected on a monthly basis unless otherwise indicated in the table below. The sludge depth, oil depth, and water depth are noted, and if necessary, arrangements will be made to remove buildup of sludge or oil. Environmental Operations Engineering Section (72 ABW/CEIEC) provides program management of oil/water separators.

A.41.3 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.

TAB 42 TO ANNEX A**ANIMAL FATS AND VEGETABLE OILS STORAGE SITES
VARIOUS BUILDINGS**

A.42.1 General: Several food service facilities, each of which generates used cooking oil, operate on the Base. For regulatory purposes, EPA refers to this type of material as “Animal Fats and Vegetable Oil” (AFVO). This oil is typically collected in 250-gallon, single-walled plastic containers (see photographs at the end of this Tab). An outside contractor owns the containers and collects the accumulated oil on a regular basis. EPA has determined that AFVO (to include used cooking oil) pose a threat to the environment, which in some cases can be equal to, or more severe than the threat posed by petroleum oils. Therefore, AFVO are included in the scope of this Plan for spill prevention and response planning.

A.42.2 Description and Operations: All AFVO containers at Tinker AFB are 250-gallon plastic containers. The containers are typically situated near the refuse collection area of dining facilities to allow easy access for the collection truck. Food services personnel fill the containers, typically via plastic containers that are used to transfer used oil from the kitchen areas to the bulk container. Each of the containers is on a regular collection cycle that ranges from one to twelve weeks. The containers are emptied into a collection truck and transported off Base to a processing facility. An inventory of all used cooking oil bulk containers is listed below.

Tank ID	Facility Description	Container	Size (gallons)	Number of Containers	Total (gallons)
473-VO	Burger King	Plastic bin	250	1	250
685-VO	BX	Plastic bin	250	1	250
3001-VO	Cafeteria	Plastic bin	250	1	250
5603-VO	Officer’s Club	Plastic bin	250	1	250
5703-VO	Bowling Alley	Plastic bin	250	1	250
5907	Dining Facility	Plastic bin	250	1	250
6601	Golf Course Grill	Plastic bin	250	1	250
Totals				7	1,750

A.42.3 Containment and Drainage: The used cooking oil containers are single-walled and not enclosed in secondary containment. The containers are staged on impervious surfaces.



Burger King Used Vegetable Oil Bin



Officer's Club Used Vegetable Oil Bin

TAB 43 TO ANNEX A**EHS/WAREHOUSE STORAGE
BUILDING 1 (DLA/DDOO-XM)**

A.43.1 General: This shop may be reached by contacting the Unit Environmental Coordinator at 734-8597. The contact may also be notified to obtain a current inventory list.

A.43.2 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at this location.

A.43.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.43.4 Secondary Containment and Drainage: Spill runoff from spills at Building 1 will discharge via storm drains to Kuhlman Creek.

A.43.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the Industrial Waste Treatment Plant at 734-3892 or 734-3114, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved

- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

A.43.6 Special Precautionary Measures: The following guidance is provided for responding to releases at or beside Building 1:

- A. Protective equipment needed by all personnel being exposed to releases include chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus (SCBA).
- B. Other protective equipment needs include:
 - 1) Equipment to repair leaks, plugging and/or patching devices.
 - 2) Sampling and monitoring devices: Gas tube samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water.
- C. Air emissions should be combated with water mist and runoff contained.

Note: For cylinders, patching and plugging should be one of the first procedures initiated when possible. Successful patching and plugging of leaks will depend on several factors: The hazard in approaching the leaking container, the size of the holes, the hydraulic head, etc.

A.43.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.43.8 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.



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Drainage from this location flows into Kuhlman Creek.
See Figure A-3 General Drainage Map for more information

LEGEND

-  Electrical Transformer
-  Generators
-  Base Boundary
-  Existing Buildings

0 100 200

Feet



FIGURE A.43.1
EHS/WAREHOUSE STORAGE
BUILDING 1

TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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TAB 44 TO ANNEX A

WATER WELLS/POOLS/EHS STORAGE BRANCH
(72 ABW/CECOPI)

A.44.1 General: The point of contact for the water wells may be reached at 734-3114 or the Unit Environmental Coordinator at 734-9804. The contact may also be reached to obtain a current inventory list.

A.44.2 Description and Operations: This tab contains information related to chlorine storage at locations with water wells or pools.

A.44.3 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at these locations.

A.44.4 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at these locations.

A.44.5 Secondary Containment and Drainage: Spills of chlorine gas will enter the air as a vapor emission.

A.44.6 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill

- Substance spilled
- Amount spilled and rate of discharge
- Any damages or injuries involved
- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

A.44.7 Special Precautionary Measures: The following information is provided as guidance for responding to a chlorine gas release:

- A. Protective equipment needed by all personnel being exposed to releases from chlorine gas include:
 - 1) Chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus (SCBA).
- B. Other equipment needs include:
 - 1) Equipment to repair leaks (chlorine B kit) plugging and/or patching devices,
 - 2) Sampling and monitoring devices: Gas tube samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water,
 - 3) Neutralizing materials: fly ash, cement powder, activated carbon, soda ash, and caustic soda.
 - 4) Air emissions should be combated with water mist and runoff contained and analyzed. For cylinders patching and plugging should be one of the first procedures initiated when possible.

A.44.8 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.44.9 Hazard Analysis Summary:

- A. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Chlorine
 - 2) Location: Water Well #13, Building 3213
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of environmental exposure: Possible damage to flora and fauna. Resultant runoff will discharge to East Soldier Creek.

- B. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine
 - 2) Location: Water Well #12, Building 3211
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into East Soldier Creek.
- C. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine
 - 2) Location: Water Well #11, Building 3209
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into East Soldier Creek.
- D. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine
 - 2) Location: Water Well #20, Building 2127
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into East Soldier Creek.
- E. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine
 - 2) Location: Water Well #22, Building 2113
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.
- F. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine
 - 2) Location: Water Well #7, Building 1012
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.
- G. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
 - 2) Location: Water Well #27, Building 4044
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into East Soldier Creek.
- H. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine Gas
 - 2) Location: Water Well #24, Building 3801
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.
- I. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine
 - 2) Location: Water Well #25, Building 3802
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into East Soldier Creek.
- J. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine Gas
 - 2) Location: Water Well #23, Building 2109
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into East Soldier Creek.
- K. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine Gas
 - 2) Location: Water Well #21, Building 2119
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
 - 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into East Soldier Creek.
- L. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Chlorine

- 2) Location: Water Well #26, Building 3803
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Stanley Draper Watershed.

M. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Chlorine Feed Station, Building 35
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Kuhlman Creek.

N. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Izzard Pool, Building 5703
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.

O. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Gerrity Pool, Building 6003
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.

P. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Water Well #29, Building 849
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.

Q. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Water Well #30, Building 56601

- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.

R. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Water Well #31, Building 4519
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.

S. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Water Well #32, Building 50414
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.

T. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Water Well #33, Building 53902
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Crutch Creek.

U. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Chlorine
- 2) Location: Chlorine Feed Station, Building 774
- 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes
- 4) Consequences of Environmental Exposure: Possible destruction of surrounding fauna and runoff into Kuhlman Creek.

A.44.10 Posting Requirements: This site-specific contingency plan shall be posted prominently in the Supervisor's Office.

TAB 45 TO ANNEX A**LIGHT HAZARD STORAGE AREAS AND
HAZARDOUS MATERIAL STORAGE AREAS**

A.45.1 General: Light hazard areas may be located at any location on Base.

Information concerning light hazard storage areas may be obtained by contacting the chemical monitor for the location. Contact names and numbers are listed on flammable storage lockers. An alternate contact is the Unit Environmental Coordinator assigned to the area. If these contacts are not available or cannot be identified, contact Environmental Management at 734-4111.

A.45.2 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed
 - 1) When notifying Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.45.3 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials.

A.45.3 Emergency Equipment: Spill kits shall be located near light hazard storage areas.**A.45.4 Containment and Countermeasures:**

- A. The Incident Commander (IC) will take all necessary measures to contain the hazard within the immediate area and prevent its spread to other nearby facilities. The IC shall seek the assistance of emergency personnel.
- B. 72 ABW/CECO personnel will apply absorbent material to oil, fuel and coolant released materials, operate earth moving equipment to form dikes and otherwise contain the spill at the discretion of the IC. 72 ABW/CECO personnel will operate under its Operating Instruction (OI).
- B. Tinker AFB Fire Department personnel, with the assistance of Security Forces personnel, will secure the area and prevent unauthorized personnel from entering the affected area. In the case of a release of poisonous gas (e.g. cyanide or chlorine gas), Tinker AFB Fire Department personnel will sound two short blasts on an alarm to indicate the presence of poisonous gas. All personnel not equipped with proper respiratory protection will be evacuated from the affected area.
- C. Leaking Chemical Containers:
 - 1) The Base organization owning the container is responsible for reorienting the container so that the leak is slowed or stopped, if directed by the IC.
 - 2) The container should be taken to the end user for immediate consumption. If this is not possible, destruction/neutralization shall be accomplished at a location designated by the IC. If the chemical(s) cannot be treated, destroyed, or neutralized, the Base organization owning the container will repackage the chemical(s) in suitable, approved Department of Transportation (DOT) container with appropriate hazardous waste labeling.
 - 3) Repackaged chemicals will be transported to a temporary storage site approved by IC. If the Base organization does not have the capability to transport the material, a transporter shall be identified by the IC. The IC will direct the transportation vehicle and obtain an escort. The Base organization owning the chemical(s) is required to furnish the labor to load and unload the repackaged chemicals, both at the interim storage site on Base and at the RCRA hazardous waste storage site on Base.

A.45.5 Posting Requirements: This contingency plan shall be posted in prominent locations at light hazard storage areas. Appropriate Material Safety Data Sheets shall also be readily accessible to employees in their work area throughout each work shift.

TAB 46 TO ANNEX A**HAZARDOUS AND SPECIALTY STORAGE BRANCH
BUILDINGS 16 (DLA/DDOO-SOP)**

A.46.1 General: This area may be reached by contacting the facility manager at 739-4222. The Unit Environmental Coordinator may be reached at 734-8597.

Typically, this area has sulfuric acid (240 gallons) and hydrofluoric acid (113 gallons) in hazardous storage. The Unit Environmental Coordinator may also be reached to obtain a more current inventory list.

A.46.2 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at these locations.

A.46.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.46.4 Secondary Containment and Drainage: Spills occurring inside Building 16 would be contained in the stock room.

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.46.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.

- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.46.6 Special Precautionary Measures: The following guidance is provided for responding to releases from Building 16:

- A. Protective equipment needed by all personnel being exposed to releases include chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus (SCBA).
- B. Other protective equipment needs include: Sampling and monitoring devices: Gas tube samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water.
- C. Neutralizing material: Sodium Cyanide: Calcium Hypochlorite (dilute/neutralize) Potassium Cyanide: Hypochlorite (dilute/neutralize) Sulfuric Acid: Soda Ash or lime Nitric Acid and Hydrofluoric Acid: Soda Ash or lime Phenol or Cresylic Acid: Wadding, grease absorbent clay.
- D. Air emission spill procedures are to knock down emissions with water mists. The resultant runoff must be contained and analyzed.
- E. Special Hazards during explosion/fire:
 - 1) Sodium Cyanide, when in contact with acids or salts, liberates highly toxic and flammable hydrocyanic acid gas.
 - 2) Potassium cyanide when in contact with acids forms highly toxic flammable hydrogen cyanide gas.
 - 3) Sulfuric Acid is highly reactive with water, organics, cyanides, strong bases, sulfides and metals.
 - 4) Nitric and Hydrofluoric Acids reacts with most metals to produce hydrogen gas and Nitric oxides which can form an explosive mixture with air. A violent exothermic reaction occurs with water.
 - 5) Phenol or Cresylic acid in contact with flame or intense heat may generate phosgene.

A.46.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.46.8 Hazard Analysis Summary:

- A. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Nitric Acid
 - 2) Location: Building 16
 - 3) Properties: Poison; spillage may cause fire or liberate dangerous gas. Harmful if inhaled and may cause delayed lung injury. Vapor may cause severe burns.
 - 4) Consequences of Environmental Exposure: Possible damage to flora and fauna.
- B. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Sodium Cyanide
 - 2) Location: Building 16
 - 3) Properties: Poison, may be fatal if swallowed or inhaled, causes eye burns and may irritate skin.
 - 4) Consequences of Environmental Exposure: Possible destruction of fauna and flora; runoff would enter Kuhlman Creek.
- C. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Sulfuric Acid
 - 2) Location: Building 16
 - 3) Properties: Poison; causes severe burns, reacts violently with water. Harmful if swallowed or inhaled, contact with other material may cause fire.
 - 4) Consequences of Environmental Exposure: Damage to surrounding fauna. Runoff would occur into Kuhlman Creek.
- D. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Potassium Cyanide
 - 2) Location: Building 16
 - 3) Properties: Poison; highly toxic, skin/eye irritant, vapors are harmful.
 - 4) Consequences of environmental exposure: Damage to flora and fauna, runoff to Kuhlman Creek.

E. HAZARD IDENTIFICATION (Major Hazard)

- 1) Chemical: Hydrofluoric Acid
- 2) Location: Building 16
- 3) Properties: Corrosive; spillage may cause fire or liberate dangerous gas. Harmful if inhaled and may cause delayed lung injury. Strong oxidizer, vapor may cause severe burns.
- 4) Consequences of Environmental Exposure: Damage to surrounding fauna. Runoff would occur into Kuhlman Creek.

A.46.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in the Supervisor's Office.



LEGEND

- ▲ Electrical Transformer
- ▲ Extremely Hazardous Substance
- Base Boundary
- Existing Buildings



FIGURE A.46.1
 HAZARDOUS AND SPECIALTY BRANCH
 BUILDINGS 16
 TINKER AIR FORCE BASE, OKLAHOMA

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TAB 47 TO ANNEX A**DRUM AND CHEMICAL STORAGE AREAS**

A.47.1 General: Drum and chemical storage areas can be located at any location on Base.

Information concerning drum and chemical storage areas may be obtained by contacting the chemical monitor for the location. Contact names and numbers are listed on flammable storage lockers or other appropriate locations near storage areas. An alternate contact is the Unit Environmental Coordinator assigned to the area. If these contacts are not available or cannot be identified, contact Environmental Management at 734-4111.

A.47.2 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken

- Organizations which have already been contacted

A.47.3 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials.

A.47.4 Emergency Equipment: Spill kits shall be located near light hazard storage areas.**A.47.5 Containment and Countermeasures:**

- A. The Incident Commander (IC) will take all necessary measures to contain the hazard within the immediate area and prevent its spread to other nearby facilities. The IC shall seek the assistance of emergency personnel.
- B. 72 ABW/CECO personnel will apply absorbent material to oil, fuel and coolant released materials, operate earth moving equipment to form dikes and otherwise contain the spill at the discretion of the IC. 72 ABW/CECO personnel will operate under its Operating Instruction (OI).
- C. Tinker AFB Fire Department personnel, with the assistance of Security Forces personnel, will secure the area and prevent unauthorized personnel from entering the affected area. In the case of a release of poisonous gas (e.g. cyanide or chlorine gas), Tinker AFB Fire Department personnel will sound two short blasts on an alarm to indicate the presence of poisonous gas. All personnel not equipped with proper respiratory protection will be evacuated from the affected area.
- D. Leaking Chemical Containers:
 - 1) The Base organization owning the container is responsible for reorienting the container so that the leak is slowed or stopped, if directed by the IC.
 - 2) The container should be taken to the end user for immediate consumption. If this is not possible, destruction/neutralization shall be accomplished at a location designated by the IC. If the chemical(s) cannot be treated, destroyed, or neutralized, the Base organization owning the container will repackage the chemical(s) in suitable, approved Department of Transportation (DOT) container with appropriate hazardous waste labeling.
 - 3) Repackaged chemicals will be transported to a temporary storage site approved by IC. If the Base organization does not have the capability to transport the material, a transporter shall be identified by the IC. The IC will direct the transportation vehicle and obtain an escort. The Base organization owning the chemical(s) is required to furnish the labor to load and unload the repackaged chemicals, both at the interim storage site on Base and at the RCRA hazardous waste storage site on Base.

A.47.6 Posting Requirements: This contingency plan shall be posted in prominent locations at light hazard storage areas. Appropriate Material Safety Data Sheets shall also be readily accessible to employees in their work area throughout each work shift.

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TAB 48 TO ANNEX A

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TAB 49 TO ANNEX A

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TAB 50 TO ANNEX A**CRYOGENICS FACILITY
BUILDINGS 1051, 1052, AND 1054**

A.50.1 General: The Tinker AFB Cryogenics Facility (also referred to as the “Liquid Oxygen Test Facility”) is located southeast of the intersection of Patrol Road and Reserve Road in the South Forty area. The facility is managed by the bulk fuels operation and supplies liquid nitrogen and liquid oxygen for aircraft operational purposes. Bulk fuels personnel are responsible for ordering and issuing cryogenic liquids. Refer to Figures A.50.1A and B for diagrams of the Cryogenics Facility and to photographs at the end of this Tab.

A.50.2 Description and Operations: The Cryogenics Facility consists of three buildings: Building 1051 houses a laboratory and offices, Building 1052 is a canopy-covered, open sided structure which contains liquid nitrogen and liquid oxygen storage tanks, and Building 1054 is a maintenance shed. Within Building 1052, there are four 2,000-gallon tanks, three of which contain liquid oxygen and one of which contains liquid nitrogen. There is one 5,000-gallon tank which contains liquid nitrogen. The facility is surrounded by a six-foot high cyclone fence and is accessed via a locked vehicle gate. Civilian personnel assigned to the bulk fuels organization operate this facility.

A.50.3 Bulk Storage and Handling: Liquid oxygen and liquid nitrogen are stored in stainless steel tanks mounted on a concrete pad in Building 1052. Storage tanks are replenished via commercial delivery tanker and inventory is tracked by the Fuels Control Center. Liquid oxygen deliveries are received approximately twice per month. Liquid nitrogen is delivered approximately once a month. The cryogenic liquids are issued daily to various end users via trailer-mounted tanks filled from the bulk storage tanks. Cryogenics facility operations personnel are trained to respond in the event of an emergency. Emergency procedures are documented in a site-specific response plan, which was last updated in March 2001.

A.50.4 Secondary Containment and Drainage: Secondary containment is not required for cryogenic liquids. Storm water runoff from the facility flows to the south into Crutch Creek.

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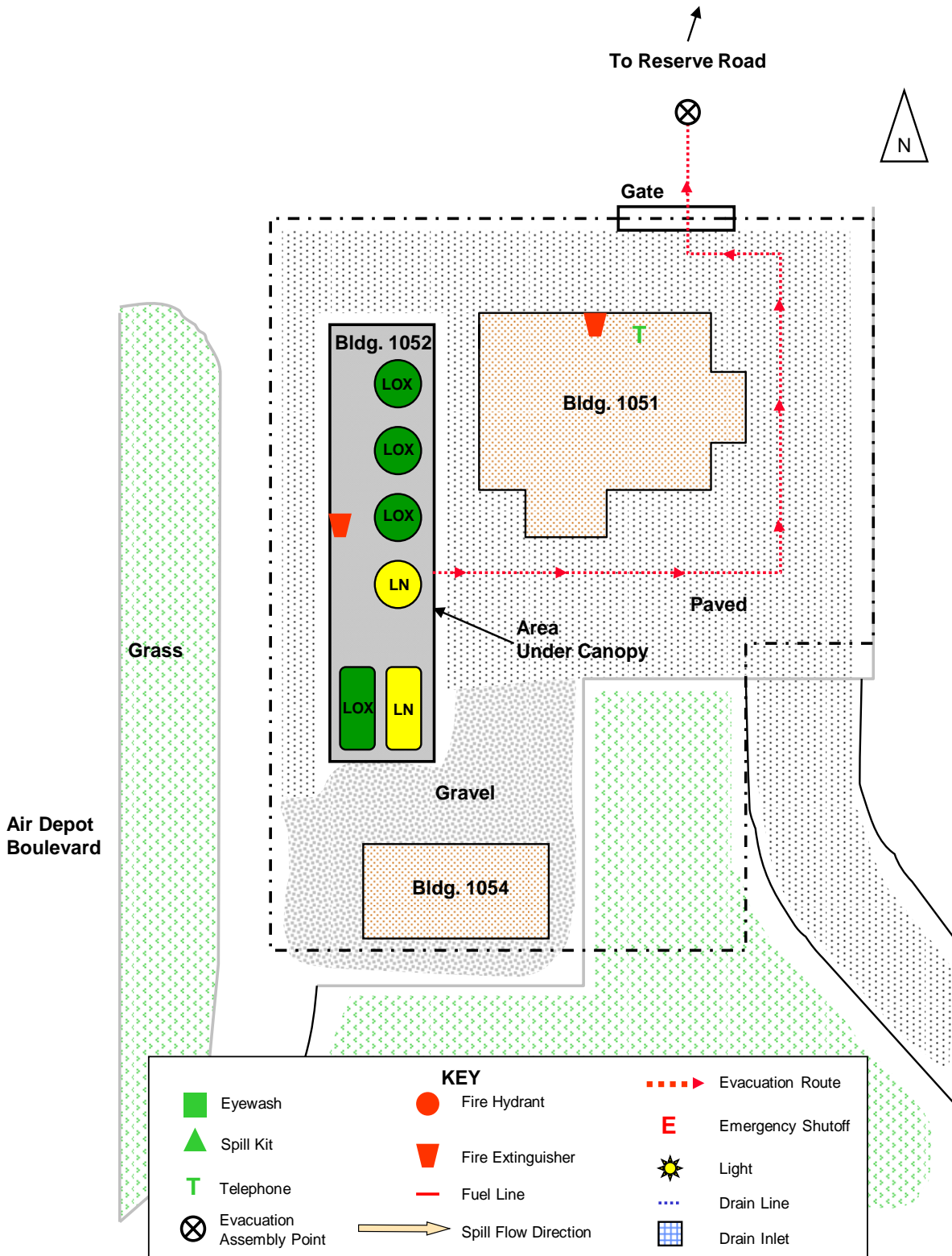


Figure A.50.1A: Cryogenics Facility

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LEGEND

-  Electrical Transformer
-  Base Boundary
-  Existing Buildings



Feet

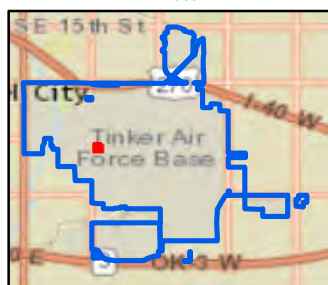


FIGURE A.50.1B
CRYOGENICS FACILITY
BUILDING 1051

TINKER AIR FORCE BASE, OKLAHOMA

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Cryogenics Facility



Cryogenics Facility

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TAB 51 TO ANNEX A**COMPRESSED NATURAL GAS FUELING FACILITY
BUILDING 1090**

A.51.1 General: There is one operational Compressed Natural Gas (CNG) fueling facility at Tinker AFB: the Building 1090 CNG Station. This facility is operated by the bulk fuels organization and is used to fuel specially retrofitted government vehicles including pickup trucks and passenger sedans. The Building 2130 CNG Station is no longer being used.

A.51.2 Description and Operations: The Building 1090 CNG Station is located on the west side of Air Depot Boulevard north of Coddling Road. The facility consists of a canopy-covered compressor compound surround by a wooden fence, and one CNG fill-stand beneath an aluminum canopy. There is an out-of-service oil dispenser located next to the fill stand. The facility is adequately lit by pole-mounted streetlights. An emergency shutoff switch is mounted on a light pole at the southeast corner of the compressor compound. Refer to Figures A.51.1A and B for diagrams of the Building 1090 CNG Station and to photographs at the end of this Tab.

The CNG fill station is supplied via Oklahoma Natural Gas Company pipeline. The compressor equipment and filling devices are visually inspected by bulk fuels personnel on a daily basis. System maintenance and repairs are performed by technicians from Tulsa Natural Gas Technologies, Inc.

A.51.3 Bulk Storage and Handling: Compressed natural gas is stored in tanks at the fill stations. Dispensing is performed by vehicle operators who have received training in the safe operation of CNG fill equipment.

A.51.4 Secondary Containment and Drainage: Secondary containment is not required for CNG facilities. Storm water drainage from the Building 1090 CNG Station flows into a storm drain inlet due east of the fill-stand. Drainage from this location eventually exits Tinker AFB at Outfall A2.

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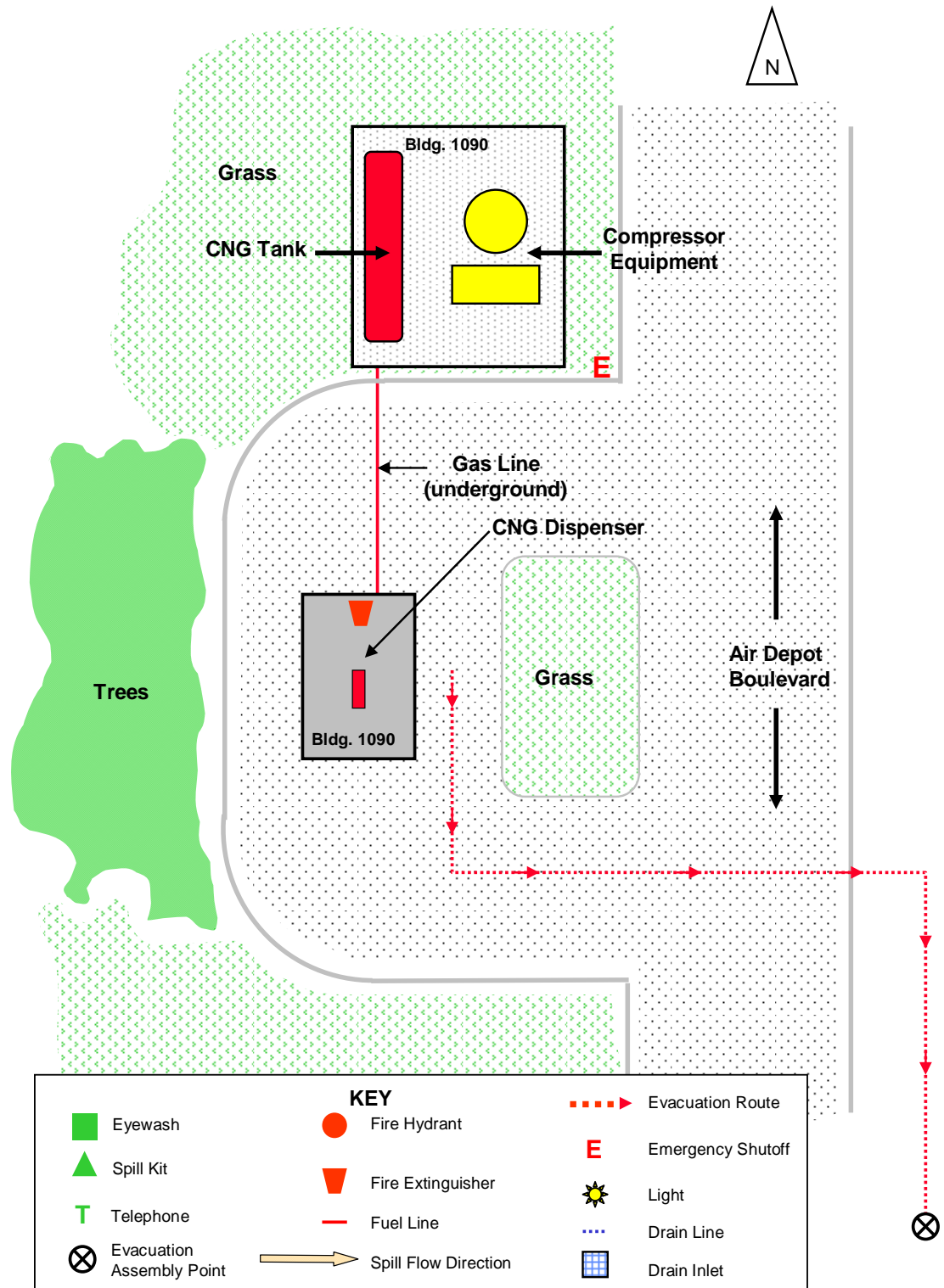


Figure A.51.1A: Building 1090 CNG Fill Station

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Drainage from this location flows into East Crutcho Creek.
See Figure A-3 General Drainage Map for more information

LEGEND

-  Electrical Transformer
-  Base Boundary
-  Wetland Areas



FIGURE A.51.1B
CNG FILL STATION
BUILDING 1090

TINKER AIR FORCE BASE, OKLAHOMA

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Building 1090 CNG Fill Station

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TAB 52 TO ANNEX A**PRODUCTION CENTER
BUILDING 2122, POST F-40 (565 AMXS/MXDRAB)**

A.52.1 General: This shop may be reached by contacting the facility manager at 736-3355 or 734-8329. The Unit Environmental Coordinator may be reached at 582-4809. The contact may also be notified to obtain a current inventory list.

A.52.2 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at this location.

A.52.3 Oil-Filled Operational Equipment: The hangar area in Building 2122 contains 4 CASS units, also known as hydraulic test stands, at the north side of the building. These perform hydraulic and air operations and testing. Refer to Figure A.52.1 for a diagram of the Production Center.

Equipment Type	Product Stored	Size (gallons)	Number	Total Capacity (gallons)
Hydraulic Test Stand	Hydraulic Fluid	4 reservoirs/stand x 120 gals/each	16	7,680
Total			16	7,680

A.52.4 Secondary Containment and Drainage: Each CASS unit test stand has containment present in the bottom of the equipment. There are also floor drains that drain to the IWTP. Spills occurring from the lift station pit in the aircraft wash rack facility will discharge to the IWTP. Any material released outside the facility will discharge to Crutch Creek.

A.52.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.

- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the Industrial Waste Treatment Plant at 734-3892 or 734-3114, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.52.6 Special Precautionary Measures: The following guidance is provided for responding to releases from the Aircraft Wash Rack:

- A. Protective equipment needed by all personnel being exposed to releases include chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus (SCBA).
- B. Other protective equipment needs include: Sampling and monitoring devices: Gas tube samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water.
- C. Air emission spill procedures are to knock down emissions with water mists. The resultant runoff must be contained and analyzed.
- D. Special Hazards during explosion/fire: When phenol or cresylic acid is in contact with flame or intense heat, phosgene may be generated.

A.52.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

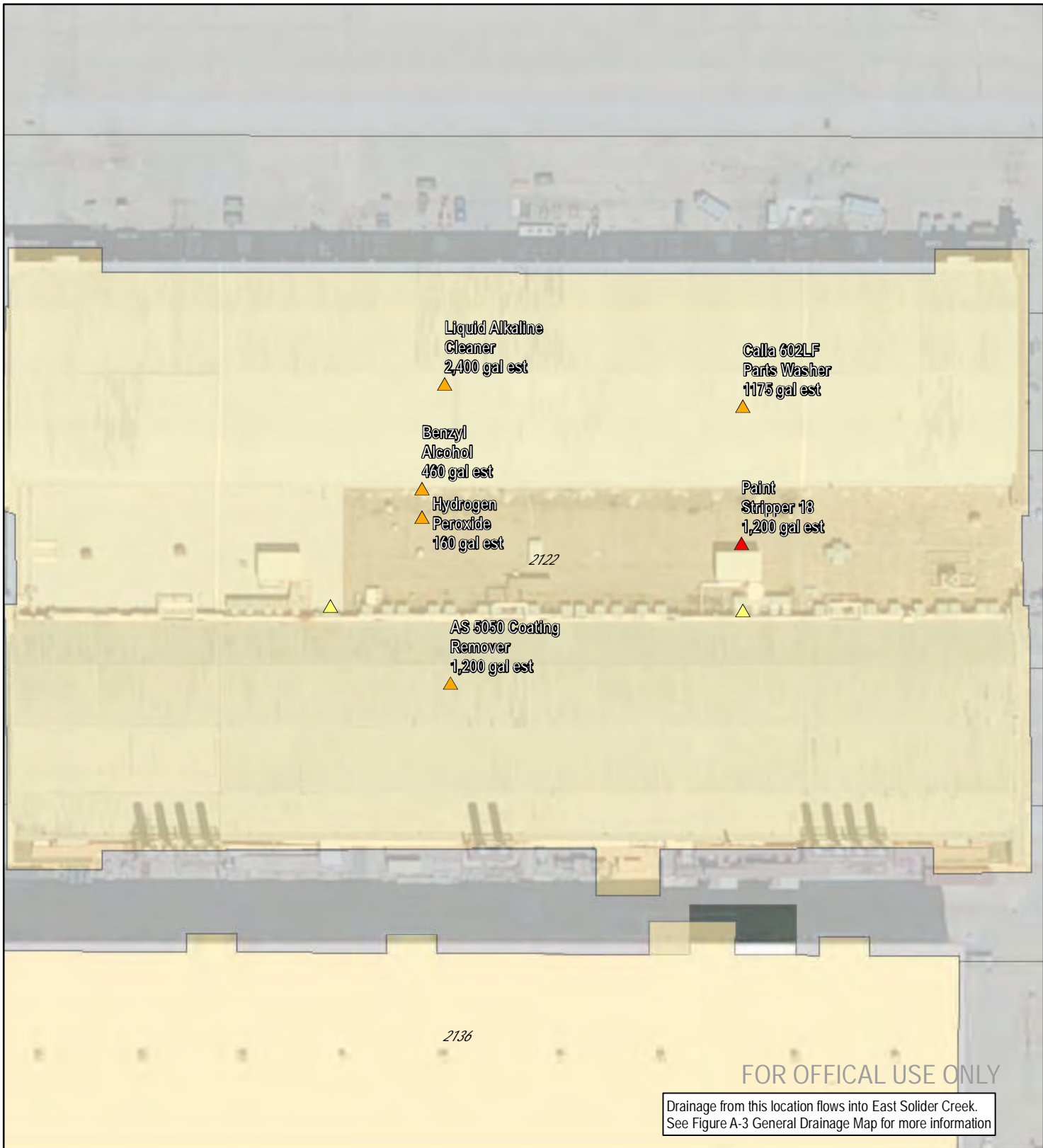
A.52.8 Hazard Analysis Summary:

- A. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Phenol
 - 2) Location: Building 2122, South hangar

- 3) Properties: Corrosive; Can cause severe burns and may be fatal if exposure is extensive. Vapors are harmful.
- 4) Consequences of Environmental Exposure: Possible destruction of flora and fauna. Runoff would occur to Crutch Creek.

A.52.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in the Supervisor's Office.

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LEGEND

- Electrical Transformer
- Hazardous Substance
- Extremely Hazardous Substance
- Base Boundary
- Existing Buildings

0 100 200

Feet



FIGURE A.52.1
PRODUCTION CENTER
BUILDING 2122, POST F-40
TINKER AIR FORCE BASE, OKLAHOMA

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TAB 53 TO ANNEX A

BARREL WASHING
BUILDING 3125 (72 ABW/CEIEC)

A.53.1 General: This shop may be reached by contacting the facility manager/Unit Environmental Coordinator at 734-3278. The contact may also be notified to obtain a current inventory list. Refer to Figure A.53.1 for a diagram of the Barrel Washing facility at Building 3125.

A.53.2 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at this location.

A.53.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.53.4 Secondary Containment and Drainage: Hazardous materials spilled outside the diked area will flow toward West Soldier Creek via storm drains.

A.53.5 Emergency Response Procedures:

ANY LIQUID SPILL CONTAINED IN THE DIKED AREA (Example: Overflowing or leaking barrel, etc.)

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:
- 1) Call 911 asking for Tinker AFB Fire Department and give your name, the type of hazardous material spilled, the location of the spill and the estimated quantity of the spill.
 - 2) Immediately notify supervisor.
- B. Supervisor will:
- 1) Evacuate/secure the area.
 - 2) Conduct an employee roll call to ensure that no personnel are trapped in the affected area.
 - 3) Restrict all sources of ignition.
 - 4) Report to the Incident Commander (IC) until spill team arrival and provide assistance until team is fully operational.

MAJOR LIQUID SPILL OUTSIDE THE DIKED AREA (Example: Overturned drum, ruptured drum, etc.)

- A. Any person recognizing a hazardous substance, hazardous waste or POL spill shall immediately:

- 1) Call 911 asking for Tinker AFB Fire Department and give your name, the type of hazardous material spilled, the location of the spill and the estimated quantity of the spill.
 - 1) Immediately notify supervisor in charge.
- B. Supervisor will:
- 1) Evacuate/secure the area.
 - 2) Initiate containment action if it can be done safely.
 - 3) Conduct an employee roll call to ensure that no personnel are trapped in the affected area.
 - 4) Restrict all sources of ignition.
 - 5) If the spill enters a storm drain, notify the IWTP at 734-3892 or 734-3114.
 - 6) Report to the Incident Commander (IC) until spill team arrival and provide assistance until team is fully operational.

A.53.6 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials.

A.53.7 Containment, Cleanup, and Disposal: The hazardous waste drum storage area is covered and contained by dikes. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.53.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent place in Building 3125, with the responsible organization's supervisor and the site monitor.



LEGEND

- ▲ Electrical Transformer
- Base Boundary
- Existing Buildings

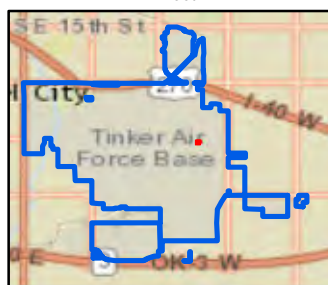


FIGURE A.53.1
BARREL WASHING
BUILDING 3125

TINKER AIR FORCE BASE, OKLAHOMA

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TAB 54 TO ANNEX A**BLADE REPAIR FACILITY
BUILDING 3221 (76 PMXG/MXPCB)**

A.54.1 General: This shop may be reached by contacting the facility manager at 736-2919 or 736-4920. The Unit Environmental Coordinator may be reached at 582-4811. The contact may also be notified to obtain a current inventory list. Refer to Figure A.54.1 for a diagram of the Blade Repair Facility at Building 3221.

A.54.2 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at this location.

A.54.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.54.4 Secondary Containment and Drainage:

- A. Any liquid spill from this facility will flow to a 4,000 gallon stainless steel tank located in the northwest corner of the facility. The spill will be contained in the pit area and is capable of discharging into the industrial waste sewer.
- B. Spills occurring in the holding tank pit in the Blade Repair facility will manually discharge to the IWTP. Any material release outside the facility will discharge to east Soldier Creek.

A.54.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.

- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.54.6 Special Precautionary Measures: The following guidance is provided for responding to releases from the Blade Repair Facility:

- A. Protective equipment needed by all personnel being exposed to releases include chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus (SCBA).
- B. Other protective equipment needs include: Sampling and monitoring devices: Gas tube samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water.
- C. Neutralizing materials: absorbent wadding or grease absorbent clay.
- D. Air emission spill procedures are to knock down emissions with water mists. The resultant runoff must be contained and analyzed.
- E. Special Hazards during explosion/fire: When phenol or cresylic acid is in contact with flame or intense heat, phosgene may be generated.

A.54.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.54.8 Hazard Analysis Summary:

- A. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Phenol
 - 2) Location: Building 3221
 - 3) Properties: Corrosive; Can cause severe burns and may be fatal if exposure is extensive. Vapors are harmful.

- 4) Consequences of Environmental Exposure: Possible destruction of flora and fauna. Runoff would occur to Crutch Creek.

A.54.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in the Supervisor's Office.

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- LEGEND**
- Electrical Transformer
 - Generators
 - Fuel Lines
 - Base Boundary
 - Existing Buildings

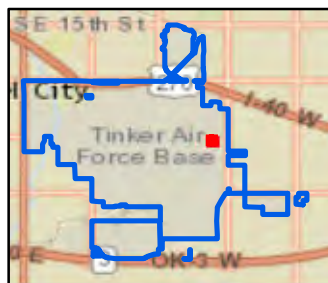
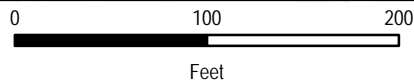


FIGURE A.54.1
BLADE REPAIR FACILITY

TINKER AIR FORCE BASE, OKLAHOMA

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TAB 55 TO ANNEX A**COOLING TOWER
BUILDING 3311 (72 ABW/CECOPO)**

A.55.1 General: This shop may be reached by contacting the facility manager at 734-3070 or the Unit Environmental Coordinator at 734-9804. The contact may also be notified to obtain a current inventory list. Refer to Figure A.55.1 for a diagram of the Cooling Tower at Building 3311.

A.55.2 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at this location.

A.55.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.55.4 Secondary Containment and Drainage: Spills entering area storm drains will enter East Soldier Creek to the East.

A.55.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled

- Amount spilled and rate of discharge
- Any damages or injuries involved
- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

A.55.6 Special Precautionary Measures: The following guidance is provided for responding to releases from Building 3311:

- A. Protective equipment needed by all personnel being exposed to releases include chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus (SCBA).
- B. Other equipment needs include: Sampling and monitoring devices: Gas tube samplers, and/or photoionization detectors, and/or detector tubes with proper sensors appropriate to the material for air, colorimetric kits for water.
- C. Air emission spill procedures are to knock down emissions with water mists. The resultant runoff must be contained and analyzed.
- D. Neutralizing material that may be needed includes soda ash or lime.
- E. Special hazards during fire/explosion: Sulfuric acid is highly reactive with water, organic cyanides, strong bases, saltides, and metals.

A.55.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.
- B. Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements.

A.55.8 Hazard Analysis Summary:

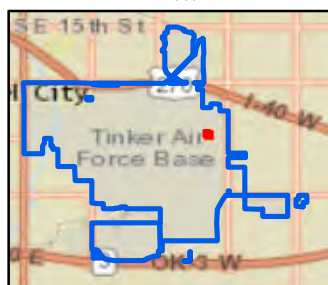
- A. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Sulfuric Acid
 - 2) Location: Building 3311
 - 3) Properties: Poison; causes severe burns, reacts violently with water. Harmful if swallowed or inhaled, contact with other material may cause fire.
 - 4) Consequences of Environmental Exposure: Damage to surrounding fauna. Runoff would occur into East Soldier Creek.

A.55.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in the Supervisor's Office.



LEGEND

- ▲ Electrical Transformer
- ▲ Hazardous Substance
- ▲ Extremely Hazardous Substance
- Fats, Oils and Greases
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings



**FIGURE A.55.1
COOLING TOWER**

TINKER AIR FORCE BASE, OKLAHOMA

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TAB 56 TO ANNEX A

LOGISTICS FOR CIVIL ENGINEER CONTRACTOR
BUILDING 413 (72 ABW/CECOL)

A.56.1 General: This shop may be reached by contacting the facility manager at 734-4256 or 734-3331. This contact may also be notified to obtain a current inventory list. The Unit Environmental Coordinator may be reached at 734-9804. Refer to Figure A.56.1 for a diagram of Building 413.

A.56.2 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at this location.

A.56.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.56.4 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved

- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

A.56.5 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials.

A.56.6 Hazard Analysis Summary:

- A. HAZARD IDENTIFICATION (Major Hazard)
 - 1) Chemical: Chlorine
 - 2) Location: Building 413
 - 3) Properties: Poisonous; may be fatal if inhaled. Contact may cause burns to skin and eyes.
 - 4) Consequences of Environmental Exposure: Damage to surrounding fauna. Runoff would leave Tinker AFB at Outfall A3 as described in the SWPPP.

A.56.7 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- Eye wash stations
- Fire extinguishers
- Fire alarm and sprinkler system
- Some personal protective equipment

A.56.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent location in Building 413 approved by the supervisor.



LEGEND

- ▲ Electrical Transformer
- ▭ Base Boundary
- ▭ Existing Buildings

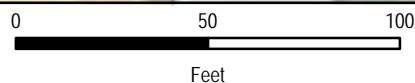


FIGURE A.56.1
 LOGISTICS FOR CIVIL ENG. CONTRACTOR
 BUILDING 413
 TINKER AIR FORCE BASE, OKLAHOMA

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TAB 57 TO ANNEX A

ENGINE CLEANUP AREA
BUILDING 3105 (76 AMXG/MXPB)

A.57.1 General: This shop may be reached by contacting the facility manager at 736-5776 or 736-5818. The Unit Environmental Coordinator may be reached at 582-4809. The contact may also be notified to obtain a current inventory list. Refer to Figure A.57.1 for a diagram of the Engine Cleanup Area at Building 3105.

A.57.2 Oil Bulk Storage and Handling: The bulk storage at this area consists of 1 generator with a diesel belly tank and 1 open-top vat that stores penetrant oil for non-destructive testing of parts.

Tank Number	Product Stored	Type	Shell Capacity (gallons)
3105-NDI	Penetrant Oil	AST/Open-top tank	80
3105	Diesel	Generator Belly Tank	75
Total Volume			155

A.57.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.57.4 Secondary Containment and Drainage: Storm water runoff from the facility flows to storm drains on the east and south sides of this maintenance hangar. Runoff from the facility and pavement east and south of the hangar leaves at Outfall A10. Runoff from the pavement on the north and west sides of the hangar flows west and leaves at Outfall A5 as described in the SWPPP.

A.57.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.

- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
- 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
- Name and contact number for facility
 - Date and time of incident
 - Location and source of spill
 - Substance spilled
 - Amount spilled and rate of discharge
 - Any damages or injuries involved
 - Extent of area impacted
 - Potential hazards
 - Actions taken
 - Organizations which have already been contacted

A.57.6 Special Precautionary Measures:





- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials.

A.57.7 Containment, Cleanup, and Disposal: Spill residues shall be placed in drums and disposed of in accordance with standard disposal requirements

A.57.8 Posting Requirements: This site-specific contingency plan shall be posted in a prominent location approved by shop supervisor.



LEGEND

-  Electrical Transformer
-  Aboveground Storage Tanks
-  Generators
-  Base Boundary
-  Existing Buildings

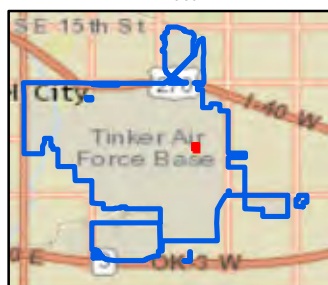


FIGURE A.57.1
ENGINE CLEANUP AREA
BUILDING 3105
TINKER AIR FORCE BASE, OKLAHOMA

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TAB 58 TO ANNEX A**COMMODITIES PAA****BUILDING 9001, POST H-20 (OC-ALC/76CMXG/551CMMXS/MXDPBB)**

A.58.1 General: This shop may be reached by contacting the supervisor at 582-4633 or the Unit Environmental Coordinator at 582-4810. The contact may also be notified to obtain a current inventory list.

The PAA shop has an automatic Waste Water Treatment System to treat and dispose of all liquids contained within its surrounding curb. In spite of this, it is possible to have a spill that exceeds the containment capacity or a spill that is initiated outside of the containment boundary. Refer to Figure A.58.1 for a diagram of the Commodities PAA Area at Building 9001.

A.58.2 Oil Bulk Storage and Handling: There is no bulk storage or handling of oil at this location.

A.58.3 Oil-Filled Operational Equipment: There is no oil-filled operational equipment at this location.

A.58.4 Secondary Containment and Drainage: Spills will usually pool on the concrete floor. There are no floor drains outside the containment area.

A.58.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility

- Date and time of incident
- Location and source of spill
- Substance spilled
- Amount spilled and rate of discharge
- Any damages or injuries involved
- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

A.58.6 Special Precautionary Measures:

- A. Protective equipment needed by all personnel being exposed to releases include chemical resistant clothing with full body coverage and positive pressure, self-contained breathing apparatus.
- B. Refer to Material Safety Data Sheets (MSDSs) for particular hazards and precautionary measures for specific chemical properties.
- C. Other equipment needs include sampling and monitoring devices, gas tube samplers and or photoionizing detectors for air, colorimetric kits for water.
- D. Neutralizing materials which may be needed:
 - 1) Soda Ash (used to neutralize Sulfuric Acid, Phosphoric Acid & Hydrochloric Acid)
 - 2) Lime (used to neutralize Sulfuric Acid, Phosphoric Acid & Hydrochloric Acid)
 - 3) Vinegar (used to neutralize sodium hydroxide aka caustic soda)
- E. Air emission spill procedures are to knock down emissions with water mists. The resultant runoff must be contained and analyzed.
- F. Special hazards during explosion/fire:
 - 1) Phosphoric Acid reacts with water and metals to produce flammable hydrogen gas.
 - 2) Sulfuric Acid is highly reactive with water, organic Cyanides, strong bases, Saltides and metals.
 - 3) Caustic Soda (sodium hydroxide) reacts with water and acids...
 - 4) Hydrochloric acid reacts with water and organic materials to produce flammable hydrogen gas.

A.58.7 Containment, Cleanup, and Disposal:

- A. Spills may be contained by creating dikes using absorbent clay, spill pillows, etc.

- B. Spill residues shall be pumped back into the area within the curb for normal treatment and disposal. If the PAA system's Waste Water Treatment System is not operational and will not be operational in the near future, fluids shall be disposed of in accordance with standard local TAFB and OKC disposal requirements.

HAZARD ANALYSIS SUMMARY

- A. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Phosphoric Acid
 - 2) Location: Building 9001, PAA Shop, G21
 - 3) Properties: Extremely corrosive, severe burns, respiratory irritation.
 - 4) Consequences of environmental exposure: Damage to fauna.
- B. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Sulfuric Acid
 - 2) Location: Building 9001, PAA Shop, G21
 - 3) Properties: Poison - causes severe burns, reacts violently with water. Harmful if swallowed or inhaled, contact with other material may cause fire.
 - 4) Consequences of Environmental Exposure: Damage to flora and fauna.
- C. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Caustic Soda (sodium hydroxide)
 - 2) Location: Building 9001, PAA Shop, G21
 - 3) Properties: Causes burns to any area of contact. Harmful if swallowed.
 - 4) Consequences of Environmental Exposure: Damage to flora and fauna.
- D. HAZARD IDENTIFICATION (Major Hazard)
- 1) Chemical: Hydrochloric Acid
 - 2) Location: Building 9001, PAA Shop, G21
 - 3) Properties: Corrosive; may cause severe burns and respiratory irritation. Spills may cause fire or release dangerous hydrogen gas.
 - 4) Consequences of Environmental Exposure: Damage to flora and fauna.

A.58.8 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- Fire Extinguishers:
 - Post D-20, one
 - Post F-20, one
 - Post D-22, one
- Chemical Eye Wash and Showers

- G-20, Two, one inside booth, one outside booth
- F-20, One
- F-21, One, on deck
- Fire Alarms
 - E-20 on column
 - D-21 on column

A.58.9 Posting Requirements: This site-specific contingency plan shall be posted prominently in locations approved by the supervisor.



- LEGEND**
- ▲ Hazardous Substance
 - ▲ Extremely Hazardous Substance
 - + Generators
 - Base Boundary
 - Existing Buildings



FIGURE A.58.1
COMMODITIES PAA
BUILDING 9001

TINKER AIR FORCE BASE, OKLAHOMA

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TAB 59 TO ANNEX A

SW GROUNDWATER TREATMENT PLANT
BUILDING 61089 (72 ABW/CEC)

A.59.1 General: This shop may be reached by contacting the facility manager/Unit Environmental Coordinator at 734-4576 or 734-3058. The contact may also be notified to obtain a current inventory list.

Chemicals stored at this shop include sodium polyphosphate.

A.59.2 Oil Bulk Storage and Handling: No bulk storage or handling of oil products takes place at this location.

A.59.3 Oil-Filled Operational Equipment: No oil-filled operational equipment is stored at this location.

A.59.4 Secondary Containment and Drainage: Spills within the building shall be contained within the building. Spills outside the building will leave the facility at Outfall A2 as described in the SWPPP.

A.59.5 Emergency Response Procedures: In the event of a spill or discharge, the person recognizing the spill shall immediately call 911 asking for Tinker AFB Fire Department and notify the activity supervisor.

The following emergency actions will be taken to the maximum extent possible and, if safe to do so, with the help of other available personnel.

- A. Stop the Product Flow: Stop transfers, secure pumps, close valves, etc.
- B. Warn Personnel: Sound alarm, enforce safety/security measures, make site “off-limits” to unauthorized personnel; initiate evacuation if necessary.
- C. Secure Ignition Sources: Shut off motors, secure electrical circuits, and extinguish open flames.
- D. Initiate Containment: Secure drain valves or block drains, deploy absorbent materials, oil boom, or other containment equipment where possible.
- E. Make Notifications: If not yet contacted, call 911 asking for Tinker AFB Fire Department, the activity supervisor and any other installation offices as necessary or as directed.
 - 1) When notifying the Tinker AFB Fire Department, provide as much information about the incident as possible, including the following:
 - Name and contact number for facility
 - Date and time of incident
 - Location and source of spill

- Substance spilled
- Amount spilled and rate of discharge
- Any damages or injuries involved
- Extent of area impacted
- Potential hazards
- Actions taken
- Organizations which have already been contacted

A.59.6 Special Precautionary Measures:

- A. Proper safety equipment which may include goggles, gloves, full-length apron, boots and respirator shall be worn when handling hazardous materials.
- B. Refer to Material Safety Data Sheets for particular hazards and precautionary measures for specific chemical materials.

A.59.7 Containment, Cleanup, and Disposal:

- A. A spill inside the building shall be neutralized (if necessary) and pumped via the sump back into the influent storage tank for treatment.
- B. Spill residue not suitable for transfer into the influent storage tank shall be placed in drums for proper disposal.

A.59.8 Emergency Equipment: Emergency equipment available at the storage area consists of the following:

- Fire extinguishers are located within the plant. The extinguishers are capable of extinguishing type A, B or C fires.
- Personal protective equipment is stored in the plant.
- A spill clean-up kit, consisting of absorbent pillows and acid/base neutralizing agents, is located inside the plant.

A.59.9 Posting Requirements: This site-specific contingency plan shall be posted in a prominent place in the groundwater treatment plant, with the responsible organization's supervisor and the site monitor.



LEGEND

- ▲ Electrical Transformer
- Base Boundary
- Existing Buildings

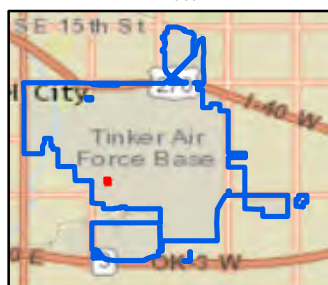


FIGURE A.59.1
 SW GROUNDWATER TREATMENT PLANT
 BUILDING 61089
 TINKER AIR FORCE BASE, OKLAHOMA

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TAB 60 TO ANNEX A

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ANNEX B

Notification Checklist and Reporting Forms

This is a prioritized list. Document all phone calls with date, time, and name of person taking the report. Refer to the Initial Spill Response Notification Report in THE RED PLAN or at the end of this annex. When completed, this list will become a part of the official spill records maintained by the Incident Commander and the Environmental Management Branch.

Do not delay notifications while awaiting complete information on the spill.

Emergency Notifications

AGENCY	NUMBER	WHO/WHEN CONTACTED
Tinker AFB Fire and Emergency Services (Response time 30 minutes)	911	

Mandatory Notifications

AGENCY	NUMBER	WHO/WHEN CONTACTED
National Response Center (NRC) (must call within 30 minutes)	1-800-424-8802 202-267-2675	Spill #:
State of Oklahoma Discharge Report and Response Center (DRRC)	1-800-522-0206 (24-hour)	
Oklahoma Department of Environmental Quality	1-800-256-2365	Spill #:
USAF, Headquarters, AFMC Environmental Office Command Post	DSN 787-5879 ⁽¹⁾ DSN 574-6314	
Oklahoma County Local Emergency Planning Committee (LEPC)	405-713-1360	
Oklahoma City Dispatch Public Service Midwest City Communications Dispatch Center Del City Dispatch	405-297-3430 405-732-2266 405-677-3344	

(1) Notifications can be made electronically through the Spill Incident Report Internet System (SIRIS)

Recommended Notifications

AGENCY	NUMBER	WHO/WHEN CONTACTED
US EPA Region VI	214-665-2222	
Defense Energy Support Center (for spills from Bulk Storage Sites)	703-767-8420	
US Fish and Wildlife Service	405-608-5251	
Air Force Engineering Service Center	904-283-6167	

Key Base Personnel, Offices, and Response Team(s) Members

AGENCY	NUMBER	RESPONSE TIME	WHO/WHEN CONTACTED
<u>Emergency Operations Center (EOC), Director</u> Commander 72 ABW/MSG	405-739-4109		
<u>Alternate EOC Director</u> Deputy Commander 72 ABW/MSG	405-739-4109		
<u>Second Alternate EOC Director</u> Base Civil Engineer 72 ABW/CE	405-734-3451		
Environmental Management Branch	405-734-5199		
Bioenvironmental Engineering	405-734-7844		
Emergency Management	405-734-3515		
Security Forces	405-734-3737		
Liquid Fuels Maintenance	405-734-2753		
Staff Judge Advocate/Legal Officer	405-739-5811		
Public Affairs	405-739-2026		
Ground Safety	405-739-3263		

Spill Cleanup Contractors

CONTRACTOR	NUMBER	RESPONSE TIME	WHO/WHEN CONTACTED
Dunamis Environmental Group	405-619-5744 (24-hours)		
Tinker Support Services Environmental Office	405-734-1150		
US Navy Supervisor of Salvage (SUPSALV)	202-781-3889		

Other Assistance

AGENCY	NUMBER	WHO/WHEN CONTACTED
Oklahoma City Emergency Operation Center	405-297-2255	
U.S. Fish and Wildlife. Regional Spill Response Coordinator - Division of Endangered Species and Habitat Conservation	505-346-2525	
U.S. Fish and Wildlife. Field Spill Coordinator - Oklahoma Ecological Services Field Office	918-581-7458	
National Weather Service	405-366-6583	
Oklahoma Department of Health Emergency Preparedness and Response Service (EPRS)	405-271-0900	
Oklahoma Department of Environmental Quality Water Quality Division, Drinking Water	405-271-5205	
Oklahoma Department of Wildlife Conservation	405-521-3851 (day) 405-737-8692 (night)	

NOTE

For information on hazardous substances, contact
CHEMTREC (Chemical Transportation Emergency Center)
at 1-800-424-9300 (24-hour)

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Master Blank Forms

Oil and Hazardous Substance Discharge Telephone Report Sheet

Pollution Incident Report Format to Headquarters (AFMC)

Spilling Activity Report to Environmental Management Branch (OC-ALC/EM)

(Users should reproduce copies as needed)

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Oil and Hazardous Substance Discharge Report Sheet*Do not delay making reports while waiting for complete or additional information.*

1. <u>Name, location and mailing address of facility</u> Tinker Air Force Base 72 ABW 7735 5 th Street Tinker Air Force Base, OK 73145-9100
2. <u>Name and telephone number of OI (Contact for further information)</u> Commander, 72nd Mission Support Group (72 ABW/MSG) Tinker Air Force Base (405) 739-2856
3. <u>Name and telephone number of person making report</u>
4. <u>Name/type of product spilled</u>
5. <u>Location of spill</u>
6. <u>Date and time of spill & weather conditions</u>
7. <u>Environment affected (especially any body of water)</u>
8. <u>Cause and source of discharge</u>
9. <u>Quantity or duration of discharge</u>
10. <u>Remedial Action</u>
11. <u>Injuries or property damage</u>
12. <u>Known or Anticipated Health Risks</u>
13. <u>Agencies Notified (From Checklist)</u>

FROM 72 ABW/CE TINKER AFB OK//CE//
TO HQ AFMC WRIGHT PATTERSON AFB OH//CEVC//
INFO HQ USAF BOLLING AFB DC//CEVC/JACE/SGPA//
INFO HQ AFCEA TYNDALL AFB FL//PA/DEMM//
INFO HQ AFMC WRIGHT PATTERSON AFB OH//SGPB//
INFO HQ USAF PENTAGON WASH DC//LGSS//
INFO AFCEE ATLANTA GA//ER//
INFO SAF PENTAGON WASH DC//AQCM//

UNCLAS

SUBJ: POLLUTION INCIDENT REPORT SUBMITTED IN ACCORDANCE WITH AFI 32-7005

THE FOLLOWING MESSAGE CONFIRMS THE TELECON BETWEEN NAME, HQ AFMC/CEV, AND NAME AND OFFICE SYMBOL ON DATE

1. INSTALLATION:
2. INCIDENT REPORT: (initial, second, third, final)
3. DATE AND TIME OF INCIDENT:
4. ACTUAL DAMAGE OR POTENTIAL THREAT: (to human health, property, plant, etc.)
5. LOCATION OF INCIDENT AND NATURE OF TERRAIN:
6. CAUSE OF INCIDENT:
7. TYPE AND ESTIMATED AMOUNT OF POLLUTANT:
8. CORRECTIVE ACTION TAKEN TO ELIMINATE SOURCE:
9. CORRECTIVE ACTION TAKEN TO REMOVE POLLUTANT:
10. ASSISTANCE REQUIRED:
11. ESTIMATED DATE OF REMEDIATION AND EXPECTED EFFECTIVENESS:
12. ANTICIPATED OR ACTUAL REACTION BY MEDIA OR PUBLIC:
13. TIME OF OFFICIAL SPILL NOTIFICATION TO THE NATIONAL RESPONSE CENTER (IF APPLICABLE):
14. DESCRIPTION OF ANY PROBLEMS ENCOUNTERED (IF APPLICABLE):
15. POC IS: NAME: PHONE:

WHEN A SIGNIFICANT SPILL OCCURS:

A. PROVIDE THE FOLLOWING INFORMATION:

Name/Rank/Grade of Reporter: _____

Organization Causing Spill: _____

Phone Number for Activity: _____

Time & Date of Incident: _____

- Type of Spill ___ Sewage
- ___ Hazardous Waste (Type: _____)
- ___ PCB
- ___ Lubricant / Solvent / Hydraulic Fluid (Circle One)
- ___ Jet A/Diesel Fuel / Gasoline (Circle One)

Amount Spilled: _____

Location of Spill: _____

Cause of Incident: _____

Extent Spill Traveled (into storm drains, oil/water separators, or into the ground):

Corrective Actions Taken (if any): _____

B. Notification to the following:	Date/Time
Base Fire Department	_____
Environmental Flight	_____

* A copy of this form should be forwarded to 72 ABW/CE within two days of an incident.

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ANNEX C

Evacuation Plan

C.1 General: This annex addresses procedures to be followed in the event that the Incident Commander (IC) determines it is necessary for personnel to evacuate the area around the spill or areas that may be affected by the spill. Base security will initiate evacuations and conduct traffic control as required. If the need to control or evacuate an area outside the installation develops, the IC will work with local emergency officials to carry out this action according to the Midwest City and Del City community evacuation plans.

All activities where significant quantities of oil or hazardous substances are stored or handled will establish evacuation procedures. Emergency signals, routes to exit the site, and areas to reassemble will be designated. The procedures will be posted and available for all personnel to review. Any outside contractors working in the area must also be made aware of these procedures.

Mass evacuations, if required, will be conducted in accordance with *Tinker Air Force Base Installation Emergency Management Plan (IEMP) 10-2*.

C.2 Requirements and Guidelines: The evacuation of the area will take place when:

- A highly flammable material is spilled (all persons within at least 1,000 feet of the spill will be alerted and evacuated);
- The chances of an impending explosion are high (the entire area within 2,000 feet will be evacuated);
- A highly toxic material is spilled (all persons within 3,000 feet to more than 1 mile will be evacuated).

C.3 Evacuation Considerations: Evacuation plans for Tinker AFB take into consideration the following factors:

- | | |
|---|--|
| a. Location of stored materials: | Materials are stored in ASTs, USTs, mobile/portable tanks and drums; see Annex W, Site M |
| b. Hazard imposed by spills: | See Annex E (Hazard Evaluation);
Annex J (SDS) |
| c. Spill flow directions: | See Annex A, Annex W, Site Maps. |
| d. Wind direction/speed: | Prevailing winds are typically from the south-southeast, averaging 12-14 mph. |

- | | |
|--|---|
| e. Current/tides/waves: | Not Applicable. |
| f. Arrival routes for response personnel/equipment: | Gate 1 (Tinker Gate, northern gate).
Gate 34 (Gott Gate, southern gate). |
| g. Evacuation routes: | See Evacuation Map, Figure C.1. |
| h. Alternative routes: | See Evacuation Map, Figure C.1. |
| i. Injured personnel transport: | Medical Response Teams, @ 911 Dispatch. |
| j. Alarm/notification systems: | Radios, phones and computers are Base wide. |
| k. Centralized check-in area: | See paragraphs C.9 to C.14. |
| l. Mitigation command center: | See paragraphs C.9 to C.14. |
| m. Emergency shelters: | Numerous buildings on Base are available. |

Note: Regardless of the magnitude of a spill of oil or hazardous substance, the same basic immediate actions must be taken to minimize hazards to personnel, the public, and the environment.

C.4 Significant Discharge: A medium or worst case discharge at one of the bulk storage or handling sites would likely pose a hazard such that an evacuation must be considered. A significant discharge could result in a hazardous vapor exposure near the spill and/or a fire or explosion hazard. Large spills may also migrate from the immediate spill site and pose a danger downwind or down stream. Initial responders will conduct a hazard assessment and make recommendations to the IC. The prevailing winds are variable and generally from the south-southeast. The Air Traffic Control Tower or Base Weather Forecaster should be contacted to get the latest weather conditions.

Hazards imposed by the spilled material can be evaluated by reviewing the applicable Material Safety Data Sheet. This information is maintained at each site where hazardous materials are stored, handled, or used.

C.5 Evacuation Routes and Assembly Areas: Evacuation routes established by the specific activity will be followed for localized evacuations. Refer to Figure C.1 for a map of general evacuation routes for Tinker AFB. For more extensive evacuations on Base, bulk fuels personnel follow those guidelines in paragraphs C.9 through C.14.

Assembly areas or emergency shelters will be designated at a reasonable and safe distance from the storage sites or incident site. The IC may also designate a safe area for assembly. Responsible personnel from any activity involved in an evacuation should conduct a roll call, check-in, or other validation of personnel.

C.6 Emergency Response Personnel: Tinker AFB Fire and Emergency Services (FES) serve as the first responder to oil or hazardous substance incidents on Base. Most of the major storage and handling sites are within the appropriate response time for FES. Response time to sites at the northwestern side of the Base will be longer as they may be located several miles from FES.

C.6.1 Fire and Emergency Services Actions: The following considerations serve as FES guidelines on evacuation:

- a. The IC has the authority to order an immediate evacuation and withdraw fire-fighting forces;
- b. Planning and coordination of large-scale evacuation shall be a function of the IC; the decision to evacuate will be influenced by the properties of the product involved and FES ability to deal with them;
- c. The initial extent of evacuation will depend on:
 - (1) The severity and potential of product/situation;
 - (2) Forces available; and,
 - (3) Influence of weather and topography on the hazards present.
- d. When evacuation is indicated, security forces will be notified immediately;
- e. Security forces will normally use the external public address systems on their vehicles to inform personnel of the need to evacuate. If more rapid evacuation is needed, extra public address equipment (e.g., "bull horns") or alarms may be required;
- f. Evacuation relocation areas will be designated for persons being evacuated;
- g. Instructions for evacuation of workers will be given by FES;
- h. A liaison will be established with security forces for assistance at evacuation points;
- i. Information will be provided to those personnel being evacuated;
- j. A person will be designated in charge at each evacuation location; and
- k. As needed, affected roadways, rail traffic, and air space above the incident will be secured or closed.

C.6.2 Security Forces Actions: A security patrol is dispatched to the incident whenever FES responds. The security patrol will provide traffic control or initiate evacuation if so directed. Additional security patrols will be available as necessary when requested. In the event of injuries at the incident site, contact the medical group for Field Response Team and/or call 911 for contract ambulance services, as indicated. Depending on severity of

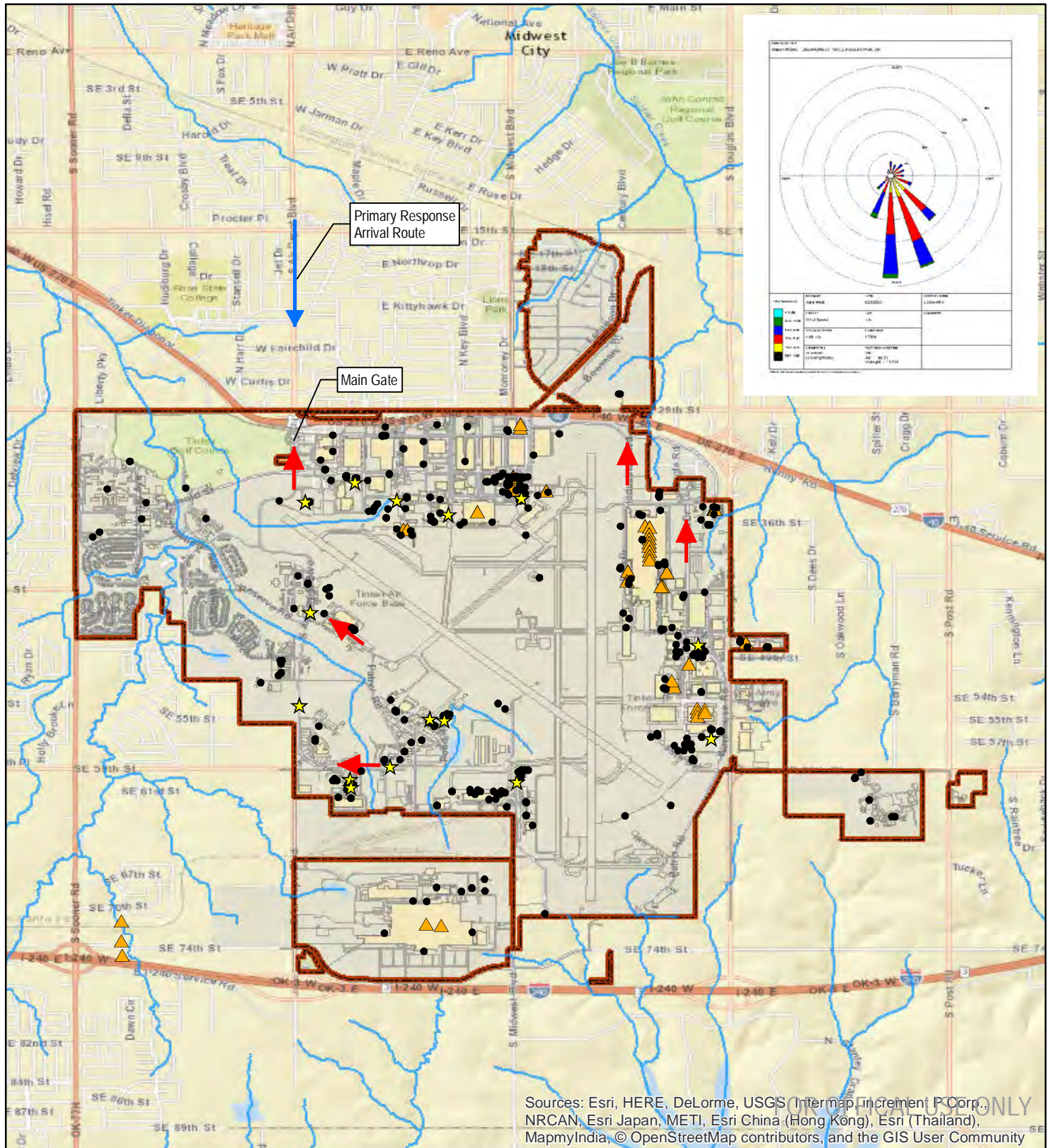
injury/exposed personnel may be seen by medical group or transported to local hospitals as appropriate.

C.7 Command and Control: During a spill emergency, responding personnel will establish a command post at or near the discharge site if possible. The initial command post will generally be a FES vehicle. If the incident response is expected to be more involved and extend for any length of time, a nearby building offering shelter, communications, etc. may be designated as the command post for the spill management and response teams.

C.8 Actions by Activity Managers/Supervisors/Operators: During an evacuation from a fuel handling facility, personnel will secure (to the extent possible) control valves in the transfer systems. Supervisory personnel will secure power and other possible sources of ignition after a discharge is discovered, but only if such actions do not place personnel in immediate danger. Emergency responders should be advised of recommended approach routes and where evacuating personnel are assembling. A supervisor or knowledgeable operator should report to the SFO or other emergency responders to provide information on the site, activity, and incident particulars.

Fuel operators and other personnel performing duties at oil and hazardous substance storage and handling sites are instructed that when, in their judgment, a dangerous situation develops at their facility, they should take necessary emergency action, including evacuation, without having to notify the supervisor. The danger will be communicated to others at the site and they will reassemble where it is safe. Notifications will be made and they will await further instructions.

Upon notification of an actual disaster that requires evacuation of the Fuels Control Center (FCC) at the 290 Fuel Yard, the FCC will notify all units affected and relocate to Building 3714. In the event that alternate areas of operation cannot be used, the senior supervisor on duty will evacuate to a safe place of operation based upon his/her discretion. The FCC will notify the government representative of their location and their operational status.



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

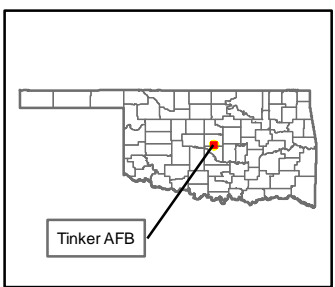
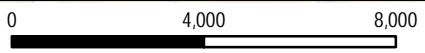
FOR OFFICIAL USE ONLY



FIGURE C.1
GENERAL EVACUATION ROUTES
TINKER AIR FORCE BASE, OKLAHOMA

DATE	PROJECT NO	SCALE
FEB 2016	03886.544.007	AS SHOWN

- LEGEND**
- Tinker Tank
 - ▲ Hazardous Substance
 - ★ Muster Locations
 - ➔ Evacuation Route
 - Buildings
 - ▭ Base Boundary



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ANNEX D

Spill Response Organization and Duties

D.1 Organization for Spill Response: Tinker AFB is required by regulations to have a pre-designated official with authority to direct emergency response efforts at the scene of an oil or hazardous substance discharge. This individual serves as the Incident Commander (IC). The Emergency Operations Center (EOC) Director supports the IC and acts as the Qualified Individual (QI) in accordance with Federal Facility Response Plan regulations. At the disposal of the IC and EOC Director, are a Spill Response Team (SRT) and other support units (Figure D.1). Responsibilities and duties of these personnel, forces, teams, and support groups are discussed in paragraph D.3.

Spill response personnel will generally be organized in such a manner as to meet the format of the Air Force Incident Management System (AFIMS) outlined in AFI 10-2501. The general concept and structure of AFIMS is discussed in section D.4.

D.2 Spill Response Team: The SRT members, as outlined below, are tasked to respond to all spills when requested by the IC or EOC Director and to perform spill containment, recovery, cleanup, disposal, and restoration activities. Any or all of the components of the SRT may be activated for the spill incident as determined necessary by the IC or EOC Director and generally based on the severity of the incident. In the event of a significant POL spill requiring the activation of the SRT, emergency notifications will be initiated per Annex B, as authorized by the IC or EOC Director. The SRT provides a coordinated response to contain, control, and recover spills and restore the environment to pre-spill conditions as nearly as possible.

D.3 Responsibilities and Duties: The specific responsibilities and duties of key personnel in the spill response organization are discussed in the following sub-paragraphs. ***The first priority is always the protection of human life and health.*** Any individual discovering a spill should warn others in the area and call the Tinker AFB Fire and Emergency Services (FES). The responsible unit/activity, when discovering or made aware of spill, should take steps to:

Stop the spill;

Warn others, get help, and ensure that FES is called;

Initiate procedures to secure ignition sources and get cleanup equipment on-site; and,

Minimize the spill area and contain the spill by any safe means and materials.

Continued response and follow-up actions for the activity should include:

- Recovery of spilled product and contaminated materials for proper disposal;
- Repair/replace equipment and materials used in the cleanup; and,
- Submit a spill report to the Environmental Management Branch.

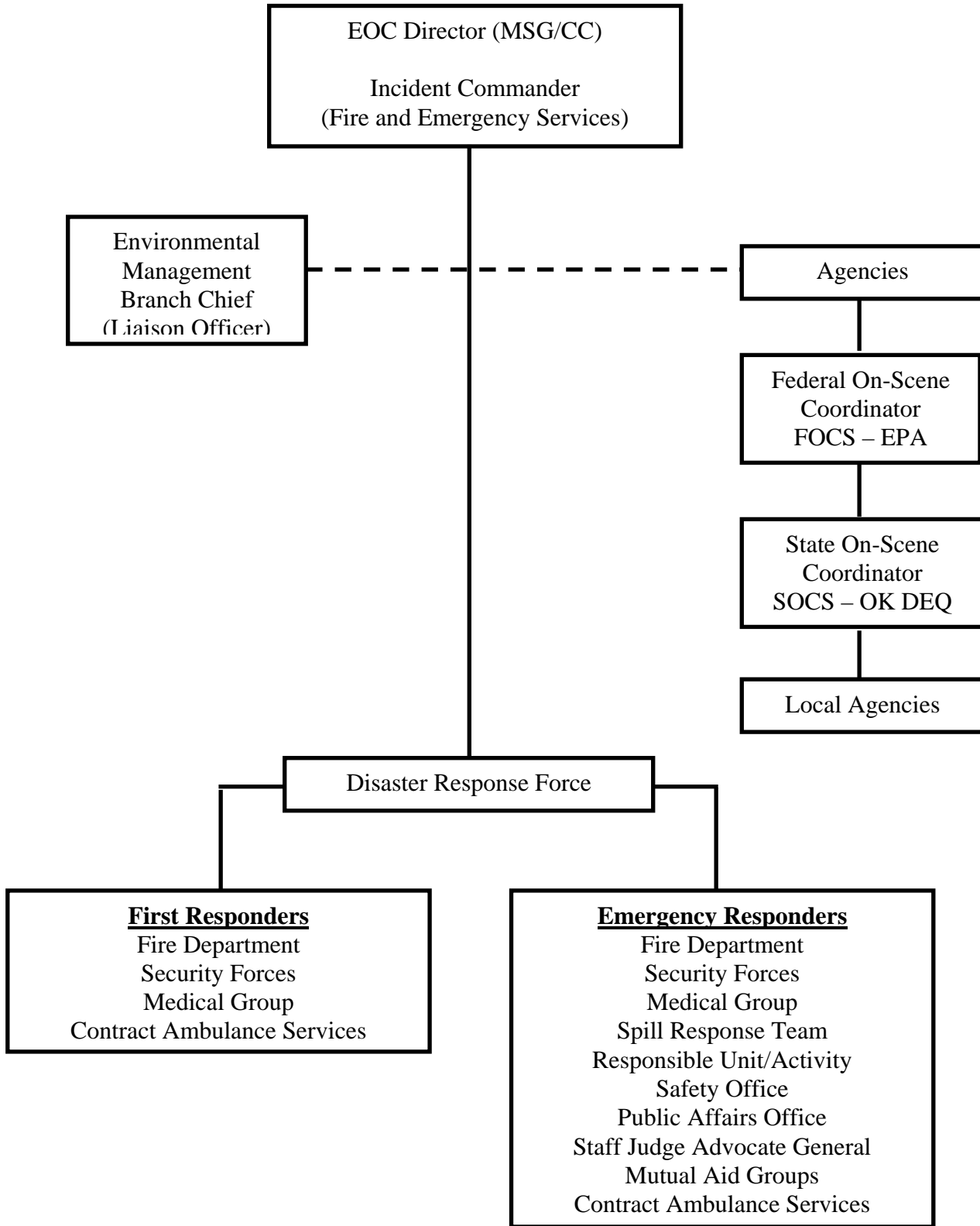


Figure D.1: Tinker AFB Spill Response Organization

D.3.1 First Responders (Tinker AFB Fire and Emergency Services, 911, 30 minutes): First Responders, as defined by AFIMS, are members of the Disaster Response Force elements that deploys immediately to the spill scene to provide initial command and control, to save lives, and to suppress and control hazards. Firefighters, law enforcement and security personnel, and key emergency medical personnel provide the initial, immediate response to HAZMAT incidents. All First Responders are Emergency Responders, but not all Emergency Responders are First Responders. First Responder duties have priority over other assigned duties.

D.3.2 Emergency Responders: Emergency Responders, as defined by AFIMS, are members of the response elements that deploy after the First Responders to expand command and control and provide additional support. Emergency Responders include follow-on firefighters, law enforcement personnel, security personnel, spill cleanup team, bioenvironmental engineering, and other specialized team members. Emergency Responder duties have priority over other assigned duties. Emergency Responders are not assigned as augmentees or to additional duties that will conflict with their emergency duties.

D.3.3 Emergency Operations Center Director (Commander 72 ABW/MSG, 405-739-2856, response time 1 hour): The EOC Director is the Mission Support Group (MSG) Commander or other senior representative designated by the Installation Commander. The EOC Director provides oversight for the Incident Commander to support and control emergency response to incidents. The EOC Director can support multiple ICs simultaneously, while providing senior officer level command and control for sustained response and recovery operations. If senior military authority or assessment is required on scene, the EOC Director or designate can move from the EOC to the incident site. Before leaving the EOC, the EOC Director must appoint and brief a replacement. The replacement must meet the same training requirements as the EOC Director. On scene, the Incident Commander maintains legal authority and tactical control. The EOC Director serves as the senior military representative to maintain military command authority over military resources as required by law.

D.3.4 Environmental Management Branch (405-734-5199, response time 1 hour) will:

1. Provide an Environmental Engineer/Planner to furnish technical expertise relative to pollution control techniques.
2. Serve as alternate QI/IC.
3. Collect samples for analysis.
4. Submit annual Environmental Status Report (RCS: DD-HE(A) 1269). Report will be prepared as of 31 December and submitted by 15 February (AFR19-1).
5. Report spills to Federal, State, and local regulatory agencies, as required.

D.3.5 Contract Civil Engineering Operations Branch (72 ABW/CEO) will:

1. Provide personnel for spill containment, control and cleanup.
2. Prepare operating instructions as required to support this plan to include: containment countermeasures, cleanup and disposal actions, and equipment required.
3. Maintain and requisition required equipment and supplies.

4. Maintain equipment listing of defueling trucks, straw blowers, containment booms, earthmoving equipment, etc.
5. Ensure that proper training of 72 ABW/CEO is conducted as needed.

D.3.6 Defense Logistics Agency (DLA) will:

1. Expedite requests for supplies and equipment to support this plan.
2. Develop procedures to ensure the safe movement of chemicals and other potentially hazardous materials.
3. Maintain procedures for hazardous material spill control.
4. Redrum/repack any hazardous materials/waste located in DLA facilities or under DLA control where the original container has deteriorated below standards and when material is received in severely damaged or leaking containers.

D.3.7 Security Forces Squadron (72 SFS/SF) (405-734-3737, Response time 1 hour) will:

1. Notify 72 ABW/CEF, extension 911, if a spill incident is reported to them.
2. Provide assistance in support of this plan to:
 - a. Respond to a FES call for assistance.
 - b. Cordon the area and control personnel movement as necessary.

D.3.8 72nd Medical Group (72 MDG/SG) will:

1. Contact 911 for contract ambulance services if notified of the need and the call has not already been accomplished, to expedite immediate treatment and transport of injured/exposed personnel requiring care in local hospitals.
2. Provide medical support for minor injuries/exposures.
3. Provide air and other sampling to determine health exposures.

D.4 Off-Base Resources: The following off-base resources may be utilized in the event of a major HAZMAT incident on Tinker AFB:

1. Air Force Civil Engineering Center (AFCEC): This agency is assigned the responsibility to provide technical guidance and assistance to major commands and Bases in contingency operations and environmental planning. Technical expertise can be provided to the Air Force IC on hazardous material identification, control, cleanup and disposal. AFCEC is located at Lackland Air Force Base, Texas.
2. Regional Response Team: Planning and response resources available under the National Oil and Hazardous Substances Contingency Plan can be requested through the Department of Defense representative to the Regional Response Team (RRT), the EPA co-chairman of the RRT, or the Region VI Regional Response Center.
3. State of Oklahoma Response Team: Serves as the lead by the Oklahoma Department of Pollution Control and consists of representatives of various state agencies.
4. Midwest City Police and Fire Departments: The Midwest City Police and Fire Departments may be contacted for assistance. See Annex B.
5. Private Contractors: Private contractors are included in the response organization primarily to conduct cleanup and restoration work when Base resources are insufficient to conduct these activities. These groups are commercial spill cleanup contractor(s). Their services, including response personnel and equipment, must be arranged for through the IC and a Contracting Officer for the Base. Their services may be arranged when the spill incident and response requirements exceed the capabilities of on-Base response resources. The services of a local or regional OSRO may be sought or the US Navy Supervisor of Salvage may be contacted for assistance. See Annex G (Spill Response Contract Support).

D.5 Air Force Incident Management System (AFIMS): Air Force Emergency Management (EM) Program Compliance with the National Incident Management System (NIMS). The Air Force revised the Disaster Response Force (DRF) organizational construct and nomenclature as the Air Force EM program to be consistent with NIMS and the National Response Plan without compromising Air Force operational missions or disrupting military command authority. The Air Force uses the same structure for peace or war, at domestic and foreign locations. To implement this change, standard NIMS terminology has replaced Air Force-specific terms.

Table D.1 provides a sample of NIMS terminology used by the Air Force.

Table D.1: Samples of NIMS Terminology

NIMS Term	
ESF	Emergency Support Function
EOC	Emergency Operations Center
N/A	First Responders
N/A	Emergency Responders
MEOC	Mobile Emergency Operations Center
EOC Manager	Emergency Operations Center Manager
ICS	Incident Command System
EOP	Emergency Operations Plan
IAP	Incident Action Plan

For more details on operational aspects of AFIMS, refer to AFMAN 10-2502. For specific aspects of emergency management program implementation at Tinker AFB, refer to *Tinker AFB Plan 10-2, Installation Emergency Management Plan*.

ANNEX E

Hazard Evaluation

E.1 General: This Annex examines Tinker AFB fuel storage and transfer operations in an effort to predict where discharges could occur and identifies potential hazards that could result. Response actions that are required to deal with these hazards are presented.

Tabs 1 through 4 cover the hazard identification factors for aboveground and underground storage tanks, vulnerability analysis, potential spill analysis, and the oil spill history. Tab 5 presents the Environmental Sensitivity Map.

E.2 Hazard Evaluation Overview: Tinker AFB is the home of the Oklahoma City Air Logistics Complex (OC-ALC) and is an active USAF installation dedicated to providing worldwide technical logistics support to Air Force aerospace weapon systems, equipment, commodity items, and encompasses a myriad of responsibilities. The Base manages and maintains various aircraft and performs depot level maintenance on more than 120 aircraft annually. This installation is responsible for the management of a variety of missile systems to include the Harpoon missile. The ALC annually overhauls and maintains more than 1,100 engines from 11 major commands as well as the Army, Navy, and numerous foreign countries. Extensive activities such as aircraft maintenance facilities, military housing, personnel support facilities, and recreational areas fall under the control of Tinker AFB. These activities include oil and hazardous substance storage and transfer facilities for the Base.

Tinker AFB is located in central Oklahoma in the southeastern portion of Oklahoma County. The Base is approximately 9 miles southeast of the central business district of Oklahoma City and adjacent with Midwest and Del City. This installation is surrounded by residential and commercial development to the north, west, and east, with industrial and commercial development to the south. The population of Tinker AFB is approximately 30,000 with a land area, including satellite areas, of 4,996 acres.

Potential spill sites include, but are not limited to:

1. Bulk underground storage tanks,
2. Bulk aboveground storage tanks,
3. Pump and manifold areas,
4. Above and underground piping,
5. Tanker truck transfer headers,
6. Flight line hydrant stations,
7. Refueling vehicle parking areas, and
8. Other storage and transfer areas.

Any discharge that spills over or escapes the secondary containment at one of the storage or transfer sites will enter the storm water drainage system or drainage ditches within a short distance.

Tinker AFB has dedicated emergency spill response kits that are located at various storage and transfer sites. The Base fire department maintains additional dedicated spill response equipment. Annex F provides a listing of the equipment and its location. Response equipment is exercised and inspected on a periodic basis according to a required inspection and maintenance schedule. Annex G provides information on off-Base spill cleanup support available on short notice in an emergency. Tinker AFB's recovery strategy for spills is discussed in sections 11.0, 12.0, and 13.0 of the main body of this *Integrated Contingency Plan*.

E.3 Tank and Surface Impoundment Forms: There are no surface impoundments facilities at Tinker AFB. Tank identification for Tinker AFB is listed in Tab 1, this Annex.

E.4 Vulnerability Analysis: Potential effects to human health, property, and the environment are discussed in Tab 2 to this Annex.

E.5 Analysis for the Potential of an Oil Spill: A discussion of possible spill sites and the probability of a spill occurring at Tinker AFB are provided in Tab 3 to this Annex.

E.6 Installation Oil Spill History: A list of past spill incidents at the Base is provided in Tab 4 to this Annex.

E.7 Environmentally Sensitive Areas Map: See Tab 5, this Annex.

TAB 1 TO ANNEX E**Tank, Secondary Containment, and Surface Impoundment Data, and Hazard Identification**

E.1.1 General: General locations of fuel storage tanks, oil-filled operational equipment, and hazardous materials at Tinker AFB are listed in Table E.1. All tanks are protected with secondary containment. There are no surface impoundments maintained on the Base. Refer to Annex A, Table A.1 for the following summary tables:

- Table A.1: Bulk oil storage ASTs
- Table A.2: IAP drum storage sites
- Table A.3: Animal fats and vegetable oils
- Table A.4: USTs
- Table A.5: Oil-filled operational equipment (including transformers)
- Table A.6: Hazardous substances

E.1.2 Transfer Operations and Throughput: Transfers of petroleum products occur on a routine basis at Tinker AFB. Jet-fuel is received by pipeline and transported throughout the Base by either pipeline or truck. Commercial tanker trucks deliver diesel fuel and gasoline to various sites on Base. Transfer operations at the Base include: tank-to-tank transfers, filling of ground refueling vehicles, fueling of aircraft, and filling of small storage tanks at various activities as required. Annex A describes operations at the primary transfer and storage sites.

Daily throughput on Base will vary depending on operations and training tempo. During periods of surge operations, the risk of a discharge is increased.

E.1.3 Secondary Containment and Impoundments: Most aboveground storage tanks and many designated transfer locations at Tinker AFB have secondary containment structures. With only a few exceptions, the containment areas have the capacity to hold the contents of the tank located inside. Containment areas around pumps, manifolds, and valves are generally adequate to retain small spills. Newer USTs are protected with leak detection and monitoring systems. The tanks in the POL Storage Yard containing Jet A are gauged at least daily and periodically checked through a leak detection testing program. Aboveground transfer lines are inspected daily and are periodically pressure tested to ensure integrity of the systems. Control valves are located inside secondary containment at the tanks or nearby in valve pits that provide containment for small spills.

Table E.1: Aboveground Oil Storage Tank Hazard Identification

Category	Location(s)	Type	Secondary Containment	Discharge Hazard Points/Comments
Bulk Jet A Bulk Diesel Bulk Gasoline Fuel Oil Lubricating Oils Calibration Fluid Used Fuel	290 POL Fuel Yard 273 Fuel Yard and Phillips System 507 th ARW AWACS Alert Area DISA Area Consolidated Fuels TAC Area TSS Fire Pump Tanks Shops Basewide	SWS	Concrete Dikes	<ul style="list-style-type: none"> • Connections, piping or valves • Discharge from Loading Racks • Physical damage to tank walls or fittings • Dispensers and associated piping • Aboveground piping
Waste Oil Reclaimed Oil	Basewide	DWS	Self Contained	<ul style="list-style-type: none"> • Fill ports • Physical damage to tank walls or fittings • Spill potential during transfer of oil from mobile containers
Emergency Generators and Boiler Plants	Basewide	DWS	Self Contained	<ul style="list-style-type: none"> • Fill ports • Physical damage to tank walls or fittings • Spill potential during fuel transfer • Physical Damage to aboveground/elevated piping • Undetected discharge due to remote locations
Diesel Gasoline	Gov. Vehicle Service Station/AAFES	DWS	Self Contained	<ul style="list-style-type: none"> • Fill ports, piping or valves • Physical damage to tank walls or fittings • Dispensers and associated piping • Diesel loading arm • Bulk gasoline issue hose
Electrical Transformers	Basewide	SWS	Equivalent Protection Facility Response Plan	<ul style="list-style-type: none"> • Physical damage to transformer shell • Discharge during maintenance • Undetected discharge due to remote locations
Drum Storage Sites	Basewide	SWS	Portable Containment Curbing	<ul style="list-style-type: none"> • Physical damage to drum • Spill potential during product transfer
Animal Fats/Vegetable Oil (AFVO) Containers	Basewide	SWS	No Containment	<ul style="list-style-type: none"> • Physical damage to containers • Spill potential during oil transfer and collection

DWS = Double-Walled Welded Steel

SWS = Single-Walled Steel

Table E.2: Underground Oil Storage Tank Hazard Identification

Tank Use Category	Base Location(s)	Tank Type	Discharge Hazard Points/Comments
Gasoline (Commercial) Gasoline/Diesel (Government)	AAFES 3 rd CCG	FGDW	<ul style="list-style-type: none"> Underground Piping or valves Fill ports, piping, or valves Leaks from tank shell Dispensers and associated piping Structural collapse
Jet A	552 nd AGE	Steel	<ul style="list-style-type: none"> Underground Piping or valves Fill ports, piping, or valves Leaks from tank shell Dispensers and associated piping Structural collapse
Jet A (Product Recovery)	290 Fuel Yard Purging Facility AWACS	Unknown FGDW Unknown	<ul style="list-style-type: none"> Underground Piping or valves Fill ports, piping, or valves Leaks from tank shell Dispensers and associated piping Structural collapse
PF-1 JP-10	Missile Test Cell Facility	FGDW	<ul style="list-style-type: none"> Underground Piping or valves Fill ports, piping, or valves Leaks from tank shell Dispensers and associated piping Structural collapse
Jet A	Purging Facility	Steel	<ul style="list-style-type: none"> Underground Piping or valves Fill ports, piping, or valves Leaks from tank shell Dispensers and associated piping Structural collapse
Emergency Power	Various Locations	Steel FGDW	<ul style="list-style-type: none"> Underground Piping or valves Fill ports, piping, or valves Leaks from tank shell Dispensers and associated piping Structural collapse
Calibration Fluid	3902 Tank Yard	FGDW	<ul style="list-style-type: none"> Underground Piping or valves Fill ports, piping, or valves Leaks from tank shell Dispensers and associated piping Structural collapse

FGDW = Fiberglass Double-Walled

FG = Fiberglass

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Tab 2 to ANNEX E**Vulnerability Analysis**

E.2.1 General: This tab provides a vulnerability analysis of the potential effects on human health, property and the environment from an oil or hazardous substance spill at Tinker AFB. The main storage and transfer sites are located near the flight line, the aircraft support activities as well as the maintenance and industrial areas of the Base. The majority of Tinker AFB land is drained by the Crutcho Creek Drainage Basin that flows to the north into the North Canadian River. Elm Creek and Hog Creek Drainage Basins flow to the south of the Base into the Little River that forms confluences with the South Canadian River and Arkansas and Mississippi Rivers. All Base creek flows are the result of storm water runoff.

E.2.2 Human Health: Unless there is a post-spill explosion or fire, the threat to human life and health will depend upon the amount of product discharged. Information on the toxicity effects and persistence of products at Tinker AFB can be found in the SDS/MSDS sheets provided in Annex J. The following sections provide information on areas or facilities that could be affected by a spill from the Base.

The hazard in handling and storing fuels is not only in the fuel itself, which is toxic to the human body, whether by skin contact or by ingestion, but also in its vapors. Vapors from fuels constitute fire and explosion hazards. Fuel vapors have been known to travel from some distance and, upon reaching a source of ignition, to flashback to the point of origin, causing a fire. Flashbacks are extremely dangerous and are usually fatal to anyone caught in them. Moreover, fuel vapors are heavier than air and settle to the ground and accumulate in dangerous amounts in depressions, troughs and pits. The danger area exists not only in the immediate vicinity of the fueling operation, but may extend downwind, depending on weather conditions. These vapors can be ignited by static or friction sparks, hot exhaust pipes, lighted cigarettes, electrical devices, and similar ignition sources. Additionally, burning petroleum produces a dense black smoke that presents serious health hazards to personnel downwind.

E.2.3 Water Quality/Groundwater: The primary subsurface water zones identified at Tinker AFB include the Hennessey Water Bearing Zone, the Upper Saturated Zone, the Lower Saturated Zone, and the Producing Zone. The Base is located in a recharge area for these water-bearing zones; groundwater is derived primarily from precipitation and from infiltration of surface streams. Groundwater at Tinker AFB is found under either water table or confined conditions. The depth to water ranges from a few feet to about 70 feet depending on the local topography. Water on Base can sometimes be found in shallow, thin, discontinuous perched zones located above the aquifer. Water from the recharge Garber-Wellington Aquifer is of sufficient quality to be used for most industrial, agricultural, and domestic purposes.

The approximate direction of groundwater flow in the Garber-Wellington Aquifer is south and southwest across the southern one-half of the Base and west to northwest across the northern one-half. Shallow groundwater may discharge to surface streams (gaining stream) or be

recharged by stream (losing stream). Both situations occur at Tinker along Crutch Creek and Soldier Creek. In contrast, water in the Hennessey Water Bearing Zone generally flows to the northeast toward Crutch Creek from higher topographic areas along the south boundary of the Base. The overall trend of processes of the hydrologic cycle on Tinker AFB is downward and the trend of water quality is stable. Over 55,000 people use the Garber-Wellington Aquifer as a source of drinking water.

Water quality on Tinker AFB is considered fair overall with occasional Total Suspended Solids (TSS) and Chemical Oxygen Demand (COD) readings in excess of NPDES permitted levels. Surface water degradation is primarily due to nonpoint-source pollution. The most common examples include sediment from soil erosion associated with construction/demolition activities; automobile oil/fluid runoff from parking lots; runoff from areas treated with fertilizers and pesticides; chemical substances from spills associated with industrial activities; and deicing compounds from roadways, taxiways, runways, ramp areas, and aircraft. Some indications of non-point source pollution include periodic fish kills and depauperate aquatic floral and fauna communities.

E.2.4 Base Supply Wells: Groundwater is used extensively in the area as a source of drinking water. Wells in the Kimsey residential area are within 50 yards of Tinker AFB. Most of the wells in the area adjacent to the Base (northeast of the Base) have been abandoned and plugged. Those residences have been provided municipal water. The Base supply wells in use are in compliance with the Safe Drinking Water Act. Exposures to surface water and sediment in East Soldiers, West Soldiers, Elm, Kuhlman, and Crutch Creeks pose no apparent public health hazard.

Drinking water at Tinker AFB is obtained from two sources. The first is from on-Base groundwater wells. Groundwater is chlorinated and fluoridated at the pump stations. This comprises over 90 percent of the total amount of water consumed on Base. The second source is purchased water from Oklahoma City. The city water may come from the Stanley Draper Lake System that is subsidized by the Otoka pipeline. Oklahoma City also provides water from Lake Hefner and Lake Overholser. The city water enters the Base at two locations. On the eastern side of the Base, city water is pumped to a 500,000-gallon storage tank before entering the Base-wide distribution system. On the south perimeter, city water is connected to the Base-wide distribution system. Both Base water and city water blend randomly in the system.

E.2.5 Socioeconomic Areas and Infrastructure: The following paragraphs provide information on areas, activities, and systems that could be affected by a major discharge or release from Tinker AFB.

Utilities: Public utilities that service Tinker AFB and the surrounding areas should not generally be affected by a spill from the Base. These include electricity and telephone service, and should not be impacted unless there was a fire or explosion that affects transmission lines. Emergency generators are available to supply power to critical activities and operational sites if power is interrupted.

Transportation Routes: None of the major transportation routes should be impacted by a significant spill on Base. A large spill may migrate to drainage ditches that parallel traffic routes and could impact traffic if there is a fire or explosion hazard posed by the spilled product.

Schools/ Medical Facilities: Tinker Elementary School on the west side of the Base could be affected in the event of a major discharge. The 72nd Medical Group clinics are the primary medical facilities for Base personnel, and if affected by a major discharge, would require transport and care of all injured personnel to local off Base hospitals.

Residential/Recreational Areas: Tinker AFB accommodates 660 family housing units and seven dormitories on the west side of the installation near Crutch Creek. A family campground, picnic area, and fishing pond are available for recreational purposes for Base personnel and visiting military families at Tinker. A recreational park is near the golf course at Tinker. Two parks are within three miles of Tinker's northern border. Tinker has a small fishing pond at the campground area that is fished by Base residents, personnel, and visitors. Soldier and Crutch Creeks are large enough to support edible fish. People fish in the Canadian River and in Stanley Draper Lake. No hunting or fishing has been reported to occur in the immediate area outside of Tinker, and hunting is not permitted on Base.

Businesses: There are numerous commercial and light industrial establishments adjacent to or in close proximity to Tinker AFB. Commercial shopping areas are located to the north of the Base and should not be impacted by a discharge at the Base. Commercial establishments are also located along the eastern portion of the Base along Douglas Boulevard. These businesses could potentially be impacted by a major discharge if the product were to migrate to the local drainage ditches. Other retail and service businesses to the south should not be impacted from a discharge at Tinker AFB.

E.2.6 Natural Resources at Risk: Flora and fauna on and near Tinker AFB could be impacted by a large spill. The extent of impact will depend upon the amount of product spilled and the area affected. Areas of particular concern are the wetlands and related vegetative and wildlife communities. The goal of the installation is to protect and conserve these resources through an integrated ecosystem approach.

Flora: None of the plant species identified at Tinker AFB are classified as State or Federal species of concern or proposed/listed as threatened or endangered. However, the Oklahoma Penstemon, which is classified as rare under the Oklahoma Natural Heritage Inventory Program, is found at numerous locations on Base.

Within land areas that have been converted to urban and industrial use, the plant community is comprised primarily of turf grasses and ornamental trees and shrubs. The predominant turfgrass on Tinker is Bermuda grass. Native buffalo grass is often found mixed with Bermuda grass.

Fauna: Tinker AFB is classified as a "Category 1" installation, which indicates that the Base has suitable habitat for conserving and managing fish and wildlife. The occurrence of over 200 native and exotic vertebrate species has been documented on Base. This includes resident and

migratory populations and is comprised of 21 mammals, 129 birds, 22 reptiles, 10 amphibians, and 22 fish. Tinker has no threatened or endangered species. However, there are several sensitive species, which are identified in Table E.3.

Table E.3: Sensitive Species Listing – Tinker AFB

Common Name	Scientific Name	Status
Texas horned lizard	<i>Phrynosoma cornutum</i>	FSC
Migrant loggerhead shrike	<i>Lanius ludovicianus migrans</i>	FSC
Barn owl	<i>Tyto alba</i>	SSSC
Swainson's hawk	<i>Buteo swainsoni</i>	SSSC
Burrowing owl	<i>Athene cunicularia</i>	SSSC
Orchard oriole	<i>Icterus spurius</i>	SSSC

FSC – Federal Species of Concern

SSSC – Oklahoma State Species of Special Concern

The Texas horned lizard occurs primarily in sparsely vegetated grassland areas in the southwest corner of the Base with isolated pockets in the southeast and northern parts of Tinker AFB. Loggerhead shrikes occur throughout the Base. Barn owls have been observed mostly on the northeast side (Glenwood and in vicinity of the industrial wastewater treatment plant) of the Base. Swainson's hawks occur Basewide and have historically nested along Kuhlman Creek south of the golf course. Burrowing owls have been sighted on the airfield and in Reserve 3 of the Urban Greenway. These owls appear to be winter visitors and have not been known to nest on Base.

Tab 3 to ANNEX E**Analysis of the Potential for an Oil Spill**

E.3.1 General: This Tab addresses the potential for a spill at Tinker AFB. The analysis was conducted using the spill history of the installation (see Annex E, Tab 4), the consideration of the local conditions in the Midwest City and Del City area especially with regard to adverse weather and natural disasters, and through the use of the detailed analysis of potential spills at similar installations.

E.3.2 Hazard Imposed By Spilled Material: The most significant hazard posed by the products stored at the Base if released during the following scenarios are:

- Rupture of a pipeline or pipelines releasing gasoline or diesel fuel that could lead to water pollution with a high potential for a major fire or explosion;
- Catastrophic failure of an aboveground storage tank that could lead to water pollution with a high potential for a major fire or an explosion;
- Catastrophic failure of a hydrant system resulting in an explosion and fire with the potential for water pollution;
- Release of gasoline or diesel fuel at the loading rack that could lead to water pollution with the potential for a major fire or an explosion; or
- Refueler accident on Base with the release of gasoline and diesel fuel that could lead to water pollution and/or the potential for a major fire or an explosion.

E.3.3 Potential Spill Factors: Potential spill sites at the storage/handling areas include:

- | | |
|---|--|
| 1. 290 Fuel Yard | 12. Barrel Storage Yard / 90-Day Hazardous Waste Accumulation Site |
| 2. 273 Fuel Yard and the Phillips System | 13. Roads and Grounds Facility |
| 3. 507 th Fuel Yard | 14. Motor Pool |
| 4. AWACS Alert Area | 15. Defense Information Systems Agency (Bldg 3900) |
| 5. 3700 Fuel Yard | 16. Consolidated Fuels Test Facility |
| 6. Cryogenics Facility | 17. Skills Development Center |
| 7. Compressed Natural Gas Fueling Facilities | 18. Tinker Golf Course Maintenance |
| 8. 552 nd Equipment Maintenance Squadron AGE | 19. TAC Area |
| 9. Oklahoma City Air Logistics Complex AGE | 20. Industrial Waste Treatment Plant (IWTP) |
| 10. 507 th Air Refueling Wing AGE | 21. Animal Fats and Vegetable Oil Bins |
| 11. Navy STRATCOM Wing 1 (TACAMO) | 22. Electrical Transformers and other oil-filled operational equipment |
| | 23. Fire Pump Tanks (72 ABW/CEO Sprinkler Shop) |
| | 24. Army-Air Force Exchange Service |
| | 25. Generators |

These potential spill areas are addressed in detail in paragraphs 11.5 (Response Countermeasures at Potential Spill Sites) and 12.0 (Response Planning and Discharge Scenarios) in the Main Plan,

and in Annex A (Facility Information and Site Diagrams). The Cryogenics Facility and CNG Fill Stations are not addressed because they do not present the potential for an oil spill.

Due to the significant magnitude of fuel handling operations at Tinker AFB, the potential for an oil spill on Base is significant. The probable size and impact of an oil discharge is low based on the implementation of the following risk management programs:

- Prevention, detection and response procedures;
- Equipment maintenance programs;
- Staging of spill equipment locations where fuel is handled;
- Engineered containment structures in high risk areas; and,
- Spill prevention and response training.

The potential for spills is highest where the number of fuel transfer operations is greatest. While the quantity of fuel stored in these tanks and transferred is relatively large, systems are engineered and supervisory controls are in place to minimize the potential for a release. Direct oversight of all operations by supervisory personnel minimizes the likelihood of a discharge and increases the ability to control a spill should one occur. Strict adherence to safe operating procedures and equipment testing and inspection programs further reduces the likelihood of a spill.

The potential for Tinker AFB to experience a spill as a result of adverse weather exists. Severe thunderstorms, lightning strikes, strong winds, cold weather conditions, and tornadoes occur in the region of Tinker AFB. Extremely heavy rains could cause flooding conditions while heavy snows and sub-freezing temperatures during the winter could cause damage to the facility resulting in a spill. A large spill under adverse weather conditions would discharge fuel into the local drainage ditches that could impact Kuhlman and Crutch Creek.

The potential for a massive release of oil, such as tank failure, line rupture, or discharge caused by natural disaster is low. Engineered secondary containment structures are the primary defense against such events. Tanks are equipped with high-level shutoff valves. The Automated Tank Gauging (ATG) system provides an audible alarm at Building 250. A rigorous inspection and repair program is implemented at Tinker AFB. This program consists of daily inspections of bulk storage tanks and transfer systems, and annual testing. The Tinker AFB Liquid Fuels Maintenance (LFM) organization is dedicated fuel system maintenance and has 24-hour response capabilities.

Jet A is received by pipeline and flows through valve manifolds to ASTs. Jet A is also issued from the fuel yard to the flightline through pumphouses. Pipeline failures could result in discharges due to a catastrophic event such as a tornado or major fire. Other failures could occur due to internal or external corrosion, or a construction accident from heavy equipment. The risk of undetected discharges is minimized by an automatic pressure loss detection system.

Fueling and defueling of aircraft along the flightline presents a spill potential. Discharges could occur in piping, valves, and equipment between storage tanks and refueler trucks during loading-unloading operations. The potential for releases during truck loading and unloading operations

is limited by an on-site attendant, truck compartment size, and secondary containment structures such as curbing.

Oil spills on the flightline ramp area represent the most probable source of a small spill (less than 2,100 gallons). The potential for an aircraft to discharge a large quantity of fuel is remote and would most likely be the result of a catastrophic incident.

E.3.4 Response Actions to Address Potential Spills: Tinker AFB recovery strategy for oil spills is discussed in Section 13.0 of this Integrated Contingency Plan. Should a spill occur at the facility, the Incident Commander (IC) mobilizes cleanup resources using the Spill Response Team (SRT). If outside resources are required, the IC can request support from the primary spill response contractor who can deploy equipment, cleanup crews, and supplies to the spill site. Additional spill response contractor support is outlined in Annex G.

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Tab 4 to ANNEX E

Installation Oil Spill History

E.4.1 Summarized Spill History: The spill history for Tinker AFB from 1996 on is listed in Table E.4 below. This list should not be used to compare different years or be interpreted as an increase or decrease in spill activity. Many factors, such as changes in federal and state regulations, increased environmental awareness, improved environmental protection and compliance, etc., combine to make such comparisons invalid for this period. In all cases where defective equipment required repair or replacement, operational procedures needed to be changed, or personnel needed to be provided additional training, those actions were accomplished.

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
9/12/96	290	DL1 fillstand. High level shut off valve failed during filling of 84C1151.	DL1	2	Fuel spill cleaned up by EAST personnel. High level shut off valve repaired.
10/9/96	Ramp	AWACS ramp B1. Sump tank overfilled on 79C309 during defueling of E3 #0001.	JP-8	1	AWACS personnel cleaned up fuel spill. HHT was inspected and no problems found.
11/3/96	Ramp	AWACS Ramp A3. 79C310 servicing an E3 when sump overfilled.	JP-8	10	AWACS and EAST personnel cleaned up fuel spill.
11/15/96	Ramp	AWACS ramp A2. Hydrant Hose Truck (HHT) 79C310 servicing of E3 when sump overfilled, due to Type III operational problem at the outlet.	JP-8	Unknown	Fuel spill was cleaned up and A3 outlet was taken out of service for repair.
11/21/96	2130	Discovered blown pressure relief valve.	CNG	Unknown	Repaired pressure relief valve.
12/30/96	290	Fillstand 12. High level shut off valve failed during filling of 82L203.	JP-8	15	Fuel spill cleaned up by EAST personnel. High level shut off valve repaired.
2/27/97	Ramp	Spot A6. 83L871 servicing E3.	JP-8	15	AWACS and EAST personnel cleaned up fuel spill. High-level control air line was repaired.
3/21/97	290	DL1 fillstand. High level shut off valve failed during filling of 86C817.	DL1	5	Fuel spill cleaned up by EAST personnel. High level shut off valve repaired.
4/10/97	290	Tank 341. Offloading transporter when high level shut off failed.	De-Ice	25	LFM and EAST personnel cleaned up fuel spill. High level shut off was repaired.

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
5/22/97	290	Fillstand 15. Fillstand valve was not properly closed during filling of commercial tank truck due to valve not being properly identified.	JP-8	15	EAST personnel cleaned up fuel spill. Fill level was reduced on commercial trucks and valve was properly marked
6/13/97	Ramp	Tango 1. 79C309 radiator hose ruptured during defuel operation.	Anti-freeze	4	EAST personnel cleaned up spill. Hose was replaced and unit placed back in service.
7/10/97	Ramp	Spot A-6. During servicing of E-3, crew chief connected single point nozzle wrong and cut the rubber seal.	JP-8	1	EAST and AWACS personnel cleaned up spill. Nozzle was replaced and unit put back into service.
7/23/97	3714	Off loading facility. Upon opening the off-loading hose, fuel spilled due to check valves not being installed after modification.	JP-5	4	Fuel was washed into the fuel oil/water separator. Check valves were installed.
8/21/97	Ramp	Tango 3. Radiator hose ruptured during defuel operation.	Anti-freeze	1/2	EAST personnel cleaned up spill. Hose was replaced and unit placed back in service.
8/29/97	Route	Bldg 2101. Cam lock connection came loose during servicing from 86C817.	DL1	3-5	Jones O&M personnel cleaned up spill. Hose was replaced and unit placed back in service.
9/15/97	290	PL receiving separator R1 leaking on the inlet bushing.	JP-8	2	EAST personnel cleaned up spill. LFM replaced bushing.
11/10/97	290	Fillstand 12. High level shut off valve failed during filling of 89L786.	JP-8	10	EAST personnel cleaned up 8 gals of spill. Fire department flushed storm drain that received 2 gals. High level shut off valve was repaired.
11/20/97	Ramp	Spot 2 MAC. Prior to servicing aircraft 89L954 developed leak on the hose reel.	JP-8	1/2	EAST personnel cleaned up spill. Hose reel was repaired.
12/24/97	290	Fillstand. High level shut off valve failed during filling of 97L381.	JP-8	5	EAST personnel cleaned up spill. High level shut off valve was tested with no problems found. Unit put back into service.
1/13/98	Route	Bldg 267. Off loading valve was inoperative during servicing with 84C1157.	MUR	1	EAST personnel cleaned up spill. Bulk fuel off loading valve was replaced and unit put back into service.
12/24/97	290	Fillstand. High level shut off valve failed during filling of 97L381.	JP-8	5	EAST personnel cleaned up spill. High level shut off valve was tested with no problems found. Unit put back into service.
1/13/98	290	Fillstand. High level shut off valve failed during filling of 84C1151.	MUR	4	EAST personnel cleaned up spill. High level shut off valve was tested with no problems found. Unit put back into service.
1/22/98	290	Fillstand. Improper valves opened and closed while 3rd Mob filled 87L342.	DL1	1/2	EAST personnel cleaned up spill. Recommended training for 33 CCS/CYCP personnel.

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
3/3/98	3714	Offloading headers. Air pocket in offloading hose of commercial transport burped fuel.	JP-5	3	EAST personnel cleaned up spill.
3/5/98	290	Fillstand 15. High level shut off valve failed during filling of 89L786.	JP-8	10-12	EAST personnel cleaned up spill. High level shut off valve was repaired and unit placed back into service.
3/31/98	Ramp	Spot B3. Clamp of fuel sensing hose failed after completion of servicing aircraft with 97L319.	JP-8	1/2	EAST personnel cleaned up spill. Fuel sensing hose clamp was replaced and unit placed back into service.
6/2/98	Ramp	Spot A2. 79C309 sump tank overfilled during defuel of aircraft. Problems with aircraft tanks caused sump to fill rapidly.	JP-8	5	EAST personnel cleaned up spill. Unit was checked for problems. None found. Unit placed back into service.
6/8/98	Route	Bldg 3705. Dispensing nozzle on 86C817 developed leak while servicing forklift.	DL1	1	EAST personnel cleaned up spill. Nozzle was replaced and unit placed back into service.
6/9/98	Ramp	Spot 6. MAC. Prior to servicing aircraft 89L954 hose reel developed leak.	JP-8	1/2	EAST personnel cleaned up spill. Hose reel was repaired and unit was placed back into service.
7/15/98	1090	Oil dispensing hose ruptured during servicing.	Oil	7 qts	EAST personnel cleaned up spill. Hose was replaced and an emergency shut off switch was installed.
7/24/98	486	Pumphouse. 87L585 nozzle gasket blew out during pressurization for sampling.	JP-8	1	EAST personnel cleaned up spill. Nozzle gasket was replaced and unit placed back into service.
8/5/98	2110	Refueling maintenance parking lot. While in the shop for pump repair 97L380 leaked fuel from pump and piping connections.	JP-8	1	EAST personnel cleaned up spill. A drip pan was placed underneath unit until repair could be made.
8/13/98	Ramp	N3 pit outlet. Poppet valve did not seal properly after servicing aircraft and allowed pit to fill and spill fuel onto the ramp.	JP-8	1	EAST personnel cleaned up spill. Poppet valve was repaired and area was placed back into service.
8/16/98	Ramp	AWACS entry gate. Tank vent cap seal failed during FOD check of 89L954.	JP-8	1	Security forces personnel cleaned up spill. Vent cap was repaired and unit was placed back into service.
8/21/98	290	Oil/Water separator failed due to sludge clogging the separator during heavy rain.	JP-8	Residue	Creek was boomed by fire department and USPCI. LFM removed contents of separator. USPCI removed sludge from bottom of separator. Unit was placed back into service.
9/2/98	290	Pipeline receipt separator. Pipeline sensing line failed during receipt of fuel.	JP-8	2	EAST personnel cleaned up spill. Sensing line was repaired and filter separator was placed back into service.
11/17/98	220	During initial fill of AGE tank, fuel spilled after single point adapter was removed from tank fill hose.	JP-8	5	AWACS AGE personnel cleaned up spill. A tank shut off valve has been installed along with a single point connection for the supply hose.

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
12/1/98	Ramp	Spot B3. Prior to servicing aircraft, 79C309s sump tank overfilled due to B3 outlet failing causing excessive pressure on the truck.	JP-8	3	AWACS and EAST personnel cleaned up fuel spill. Spot 3 was repaired and area placed back into service.
2/2/99	885	Due to normal use and time, a leak developed at the base of DL2 pump.	DL2	1 qt	EAST personnel cleaned up spill. Pump was repaired and unit was placed back into service.
3/3/99	3714	Off-loading area. Commercial transport driver failed to properly connect hose prior to opening off-loading valves of the truck.	JP-5	50	EAST personnel cleaned up spill. LFM installed check valves.
3/16/99	885	Air eliminator on diesel pump failed.	DL2	1 pt	EAST personnel cleaned up spill. Pump was repaired and unit placed back into service.
5/8/99	Ramp	Spot N2. Prior to filling a refueling unit at C System, a piece of paper had lodged in N2 pit poppet valve causing overflow when system was pressurized.	JP-8	50	USPCI removed fuel from pit. EAST and depot maintenance personnel cleaned up spill. Piece of paper removed from poppet valve and area placed back into service.
5/10/99	Ramp	Tango 7. During disconnection from aircraft, the hydrant adapter failed.	JP-8	1-2	Fuel drained into the fuel oil separator through the water pit. The air eliminator adapter was replaced and system was placed back into service.
5/19/99	273	15A filter separator. During pipeline receipt, the float in the separator was sticking and had a hole.	JP-8	2	EAST personnel cleaned up spill. Filter separator was repaired and placed back into service.
8/3/99	Ramp	N3 pit outlet. After completion of service of aircraft, hosecart 72W094's moosehead failed. Three worn pins and locking pin were out of adjustment.	JP-8	5	EAST and aircraft maintenance personnel cleaned up spill. Hose cart's moosehead was replaced and unit was placed back into service.
9/22/99	1090	An "O" ring failed on ONG's CNG compressor.	CNG	2	ONG replaced "O" ring and system was placed back into service.
11/1/99	2130	Pressure relief valve malfunctioned.	CNG	4	ONG repaired valve and system was placed back into service.
11/1/99	Ramp	507th ramp. While draining dikes, the lift station failed sending fuel residue into the creek.	JP-8	Residue	Fire department boomed creek. Lift station was repaired.
11/9/99	2130	Station developed a leak.	CNG		ONG repaired station and system was placed back into service.

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
11/16/99	Ramp	Tango 4. While servicing aircraft, one of 97L319's seals failed.	JP-8	1-2	Navy and EAST personnel cleaned up spill. Seal was replaced and unit was placed back into service.
11/29/99	3716	While pressurized, the pressure relief line developed a pinhole that sprayed fuel.	JP-5	1 qt	EAST personnel cleaned up spill. Pressure relief line was replaced and system placed back into service.
12/29/99	290	Fillstand. After filling and purging 97L222, the poppet valve had a washer obstructing its closing procedure.	JP-5	1	EAST personnel cleaned up spill. Poppet valve was repaired and area was placed back into service.
1/4/00	290	Fillstand 14. While filling 89L786, the high-level shutoff valve failed.	JP-8	2	EAST personnel cleaned up spill. The unit was tested and no problem was found. Unit was placed back into service.
1/7/00	885	A witness reported that while someone else was refueling 85B716, a spill occurred for unknown reason.	DL2	¾	EAST personnel cleaned up spill. VCO of vehicle was notified of spill.
1/7/00	Route	Bldg 293. While servicing a tug, 84C1157 leaked fuel. Nozzle was open prior to pressurizing of hose.	DL2	2	EAST personnel cleaned up spill. Nozzle will not be opened prior to pressurizing hose.
1/13/00	290	Fillstand. While filling 84C1157, the fillstand shut off valve failed.	DL2	3	EAST personnel cleaned up spill. Valve was repaired and system was placed back into service.
1/31/00	Ramp	Grassrow. While servicing a T38, 97L383's nozzle failed which allowed the poppet valve to remain open.	JP-8	3	Transient maintenance personnel cleaned up spill. The single point nozzle was repaired and unit placed back into service.
3/10/00	Route	A2. During servicing E3 #0352, the air line hose of 87L585 failed.	JP-8	< 1	EAST personnel cleaned up the spill. Hose was replaced and unit placed back into service.
3/25/00	Ramp	A1. After servicing E3 #0009, the assisting crewmember accidentally opened the single point nozzle.	JP-8	1	AWACS and EAST personnel cleaned up the spill. No problems found with hose truck.
7/26/00	Ramp	During moving of hose cart 72W094, moosehead poppet valve failed.	JP-5	1	EAST personnel cleaned up the spill. Unit was repaired and placed back in service.
9/6/00	995	AGE org tank 995 overfilled due to the tank custodian's miscalculation.	JP-8	1.5	AWACS personnel cleaned up the spill. Tank custodian informed to calculate water in tank.
10/31/00	Ramp	B2. After servicing E3 #0577, poppet valve in single point nozzle failed.	JP-8	1	AWACS and EAST personnel cleaned up the spill. No problems found with hose truck.
11/21/00	Ramp	A2. During servicing E3 #1408, the sensing line of 87L585 failed.	JP-8	2	AWACS and EAST personnel cleaned up the spill. Unit was repaired and place in service.

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
11/29/00	290	Fillstand 12. During filling of 97L383, fillstand hose developed a pinhole leak	JP-8	1	EAST personnel cleaned up the spill. LFM replaced the hose.
12/28/00	290	Pipeline receipt spool failed during switching from Tank 273 to Tank 330.	JP-8	3	EAST personnel cleaned up the spill. Spool was repaired and placed back in service.
1/10/01	Ramp	B6. During servicing of E3 #0008, a valve on the sump drain of 90L554 failed.	JP-8	2	EAST personnel cleaned up the spill. Unit was repaired and placed back in service.
1/16/01	Ramp	C4. While servicing KC135R #0079, the sensing line of 87L585 failed.	JP-8	3-5	EAST personnel cleaned up the spill. Unit was repaired and placed back in service.
1/26/01	2212	During filling of Tank 2212, fuel spilled from vent due to tank custodian's miscalculation.	Boiler Fuel	2	EAST and Dyn Par personnel cleaned up the spill. Tank custodian was informed not to fill more than 95% full.
4/9/01	290	Fillstand 12. Poppet valve of single point nozzle failed during filling of refueling unit.	JP-8	1 quart	EAST personnel cleaned up the spill. Valve was repaired and system was placed back in service.
6/12/01	1091	Daily inspection detected fuel odor and sheen in the creek.	JP-8	Unknown	EASON contractor removed sheen from creek. Dyn Par pumped out the lift station. Facility was taken out of service for repair.
7/27/01	Ramp	A3. During servicing of E3 #1607, the sump drain hose failed on the hose truck 97L319.	JP-8	3-5	EAST personnel cleaned up the spill. Hose was replaced and unit placed back in service.
7/20/01	Tango 3	Spill from AC cart.	Anti-Freeze	< 1	Cleaned up w/absorbent
7/24/01	Bldg. 1083	Blown hydraulic line.	Hyd fluid	65	Unknown
7/25/01	Bldg. 820	Spill from failed equipment.	Lube Oil	2	Cleaned up w/absorbent
7/27/01	B-4, SE Pool	Equipment failure.	Hyd oil	< 1	Cleaned up w/absorbent mats
9/6/01	Bldg. 478 parking lot	Overfilled fuel tank on POV.	Gas	< 1	Cleanup by SRT
9/12/01	Bldg. 3234 Lift Sta.	Lift station overflow – fuel/water mixture.	JP-8	30	Cleanup by Safety Kleen
9/12/01	AFLC Ramp	Mike 1 Spot, KC-135 # 060 stuck fuel tank valve.	JP-8	50	Cleanup by SRT
9/14/01	Spot 6	F-14 tank dump valve stuck open.	JP-8	30	Cleanup by SRT

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
9/20/01	Bldg 3001 Parking lot	POV fuel tank punctured by parking block	Gas	10	Cleanup by FD
10/4/01	Hangar Bay 4	Not reported - unknown	JP-8	10	Cleanup by shop crew
10/5/01	Spot B6	E3A Aircraft #003 open fuel vent during refuel	JP-8	25	Cleanup by flightline crew
10/15/01	Bay 4	Not reported - unknown	JP-8	3	Cleanup by shop crew
12/10/01	VQ-3 Spot 1	Equipment failure – details unknown/ not reported	JP-8	20	Cleanup by SRT
12/18/01	Bldg 2111 Storage Yard	Leaking fuel bowser.	JP-8	< 5	Cleanup by B-1 Maint. Crew
12/19/01	Bay 4	Overfilled hydraulic jack unit reservoir.	Hyd fluid	< 1	Cleanup by shop crew w/pig pads
12/24/01	SP Guard Facility	Spilled fuel during filling of portable heater.	Not reported	< 1	Cleanup by FD
1/2/02	Bldg 820 Dock 4	Spill during aircraft fuel draining.	JP-8	3	Cleanup by Navy Response team
1/3/02	Bldg 214	High level alarm failed on UST. Fuel overflowed from tank vent.	JP-10	400	Cleanup by Safety Kleen
1/12/02	Bldg 3705	Fuel leak from floor pan under AGE mule.	Diesel	5	Cleanup by shop crew
2/8/02	Tango 4	Fuel spilled from ground refueler vehicle.	JP-8	10	Cleanup by ground crew
2/25/02	Bldg 13902	Specifics not reported.	Not reported	10	Not reported
2/26/02	Gate 34 SP Office	Spilled fuel while refilling portable heater.	Diesel	1	Cleanup by SP
4/12/02	507 th Ramp	Hydrant Service Vehicle (HSV) leaking fuel from loose flange.	JP-8	5	Cleanup by fuels personnel
4/16/02	Spot K-2	KC-135 Aircraft #0312 high-level control valve failed.	JP-8	10	Cleanup by Safety Kleen
4/16/02	Bldg. 3001	Test stand knocked over	Hyd fluid	3	Cleanup by shop crew

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
4/18/02	Bldg 985	Fuel tank overfilled by fuel truck driver.	JP-8	10	Cleanup by 552 EMS Group
6/7/02	Bldg. 3102	KC-135 leaked fuel from #3 eng.	JP-8	250	Cleanup on ramp by using organization
9/7/02	Kilo 5	B-52 fuel valve leaked	JP-8	50	Cleanup by ramp crew
9/9/02	Bldg. 1139	Drum punctured by forklift	Paint thin	1	Cleanup by shop personnel
12/2/02	Tango 4	Spill from fuel truck	JP-8	4	Cleanup by shop personnel
12/5/02	Unknown	Fuel leak from T-5 aircraft	JP-8	8	Cleanup by ramp crew
1/23/03	T2	Fuel leak from aircraft	JP-8	5	Cleanup by ramp crew
1/29/03	Pump	Leak from JP-8 pump	JP-8	2	Cleanup by ramp crew
2/6/03	290 FY	Fuel spilled inside dike at Tank 331	JP-8	10	Cleanup by fuels personnel
2/28/03	Bldg. 3108	Calibration fluid leak from pipe	Cal. fluid	10	Cleanup by shop personnel
3/27/03	T3	Leaking seal on aircraft	JP-8	<1	Cleanup by ramp crew
5/3/03	Tango-6	Hose leak	JP-8	3	Cleanup by shop crew
7/14/03	Arnold St. & H Ave	Oil leak from POV	Engine Oil	3	Cleanup by DynPar
7/23/03	Romeo 4	Fuel expelled from aircraft during leak test	JP-8	<2	Cleanup by ramp crew
9/19/03	Tango 2	Fuel leak	JP-8	10	Cleanup by ramp crew
9/24/03	Tango 1	Fuel spilled during receptacle maintenance	JP-8	1	Cleanup by ramp crew
10/3/03	Tango 3	Fuel released from aircraft	JP-8	5	Cleanup by ramp crew
12/7/03	Bldg. 860	Fuel spilled from AC cart - overfill	JP-8	1	Cleanup by shop crew

Table E.4: Tinker AFB Oil Spill History

Date	Location	Description	Product	Quantity (gallons) ¹	Action Taken
2/4/04	N/A	Fuel spilled from drain line.	JP-8	1	Cleanup by shop crew
2/11/04	Bldg. 820 Bay 4	Fuel line leak	JP-5	1	Cleanup by shop crew
2/18/04	Bldg. 820 Bay 4	Fuel released from S-3 defuel line.	JP-8	1	Cleanup by shop crew
2/??/04	Bldg. 820 Bay 1	Fuel spilled from drain line.	JP-8	3	Cleanup by shop crew
2/26/04	Bay 2	Information not provided	JP-8	50	Cleanup by shop crew
3/10/04	Tango 4	Leak from engine	JP-8	<	Cleanup by shop crew
3/17/04	Bay 3	Leak from fuel line	JP-8	1	Cleanup by shop crew
4/24/04	Tango 3	Loose fuel fitting	JP-8	10	Cleanup by ramp crew
8/14/07	Bldg. 820; Navy Ramp	Equipment failure; valve failed while defueling aircraft	Jet Fuel	3	Valve repaired; notified personnel to properly inspect equipment to ensure valves are working properly prior to defueling
9/25/07	Warehouse Road	Failure to properly contain fluids prior to transporting equipment	Motor Oil	500	Contractor was trained on how to properly transport units; notified of environmental requirements to conduct work on base
10/14/09	Bldg. 3001; Parking Lot	Leaking Equipment	Metal Penetrant	<1	Covered equipment; cleaned pavement
7/27/10	Reserve Road; 507th Area	Leak in concrete truck hydraulic line	Hydraulic Fluid	4	Roads cleaned with TerraCAP, grass with Micro-Blaze, and vehicles were washed; all wash water collected
1/28/11	Bldg. 3715; Fuel Station	Failed gasket during refueling	JP-5	10	Shut off system, repair failed gasket
3/28/11	Fuel Tank 349. T	Contractor hit a water main during demolition	Potable Water & Fuel	~500 gal	Pump water and repaired line
4/29/11	Bldg. 2101; SW Storage Pad	Equipment malfunction; diesel leak	Diesel	40 gal	Issued EDR for improper spill containment and notification; requiring training and spill kits

Table E.4: Tinker AFB Oil Spill History

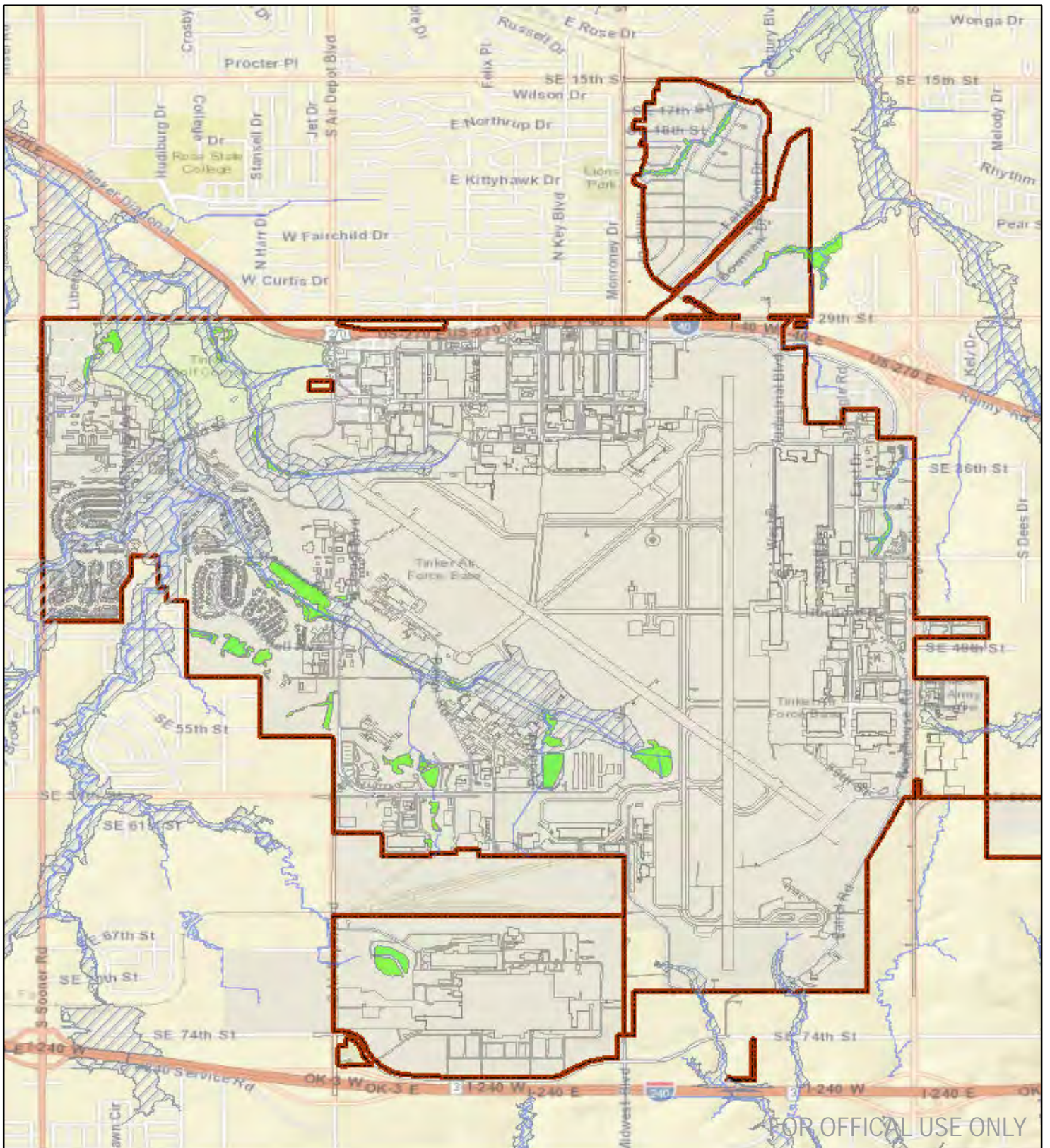
Date	Location	Description	Product	Quantity (gallons)¹	Action Taken
2/8/13	Bldg. 230; Storm Sewers	Unknown	JP-8	Trace	TBD
3/6/13	Soldier Creek	Unknown	Fuel	Trace	Pumped sheen
1/16/14	Connie Park	Unknown	JP-8	<5 gal	Investigating
3/3/14	JP-8 Tank 483	Cracked Valve	JP-8	16,800	Repair valve for bulk storage tank and containment dike
7/31/14	ALC Ramp	Operator error, overfilling fuel tank	Jet A	<1 gal	Retraining
1/24/15	Runway 18/36	Fuel System Error - Released 50-100 gal	Jet A	50-100	Repair Aircraft
3/16/15	Soldier Creek/IWTP	Unknown illicit discharge	Unknown Oil	200 gal	Dam, contain, pump

¹ Unless otherwise noted.

Tab 5 to ANNEX E



Environmental Sensitivity Map

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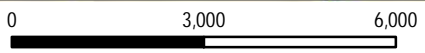


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LEGEND

-  Floodplain
-  Wetland Areas
-  Creek Areas
-  Base Boundary
-  Existing Buildings

SOURCE: Fema Floodplain data 2014.



Feet

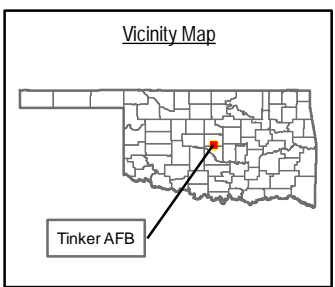


FIGURE E.5.1
ENVIRONMENTAL SENSITIVITY MAP
TINKER AIR FORCE BASE
OKLAHOMA CITY, OKLAHOMA

DATE	PROJECT NO	SCALE
FEB 2016	03886.544.007.0061	AS SHOWN

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ANNEX F

Response Equipment

F.1 Installation Containment and Recovery Equipment: Various types of emergency response equipment are maintained at Tinker AFB. Equipment for containment and recovery of discharges and to protect personnel is available at most storage and handling locations as well as “using” activities. The fire department and response teams also maintain a considerable inventory of response equipment. All Base response equipment is maintained in a ready status and is replaced after use. It is available within 30 minutes during normal work hours and within two hours at all other times when requested or needed. Some contract equipment is stored at Tinker AFB. This equipment is included in Table F.1. Additional contract response equipment from the US Navy SUPSALV located in California and other more distant locations that can be used to satisfy Tier 2 and Tier 3 response resource requirements is included in Annex G.

F.2 Equipment/Materials Listings: Table F.1 summarizes emergency response equipment, quantity, location, and responsible organizations. Each using activity (organization that has a potential for an operational spill at its location) is responsible for maintaining sufficient spill response equipment to conduct the initial response to a discharge. All spill response equipment is maintained in the using activity’s area of responsibility. See Annex N for inspections/testing. In addition to the equipment listed in Table F.1, sluice gates that can be used to retain a spill are located as shown in Figure F.1.

Table F.1: Tinker AFB Emergency Response Equipment List

Item	Quantity	Location	Responsible Organization
Crane	1	Roads & Grounds	72 ABW/CEO
Dozer	1	Roads & Grounds	72 ABW/CEO
Grader	1	Roads & Grounds	72 ABW/CEO
Tank Trailer, 1,500-gallon, water	1	Roads & Grounds	72 ABW/CEO
Truck, water distributor	1	Roads & Grounds	72 ABW/CEO
Compressor, pneumatic	2	Roads & Grounds	72 ABW/CEO
Sweeper, runway vacuum	2	Roads & Grounds	72 ABW/CEO
Sweeper, Wayne, pick-up, street type	2	Roads & Grounds	72 ABW/CEO
Pump, reciprocating power drive, 50 GPM	2	Roads & Grounds	72 ABW/CEO
Pump, air operated, 2.5-inch discharge	2	Roads & Grounds	72 ABW/CEO
Dump truck, 2.5-ton	2	Roads & Grounds	72 ABW/CEO
Crane, 15-ton	1	Building 773	72 ABW/CEO
Dozer	2	Building 773	72 ABW/CEO
Grader	3	Building 773	72 ABW/CEO

Table F.1: Tinker AFB Emergency Response Equipment List

Item	Quantity	Location	Responsible Organization
Loader	2	Building 773	72 ABW/CEO
Truck, water distributor, 1,000-gallon	1	Building 773	72 ABW/CEO
Compressor, pneumatic with jack hammer and concrete saw self-propelled	2	Building 773	72 ABW/CEO
Sweeper, runway vacuum	3	Building 773	72 ABW/CEO
Six pack pick-up truck, 22-foot, tilt trailer with tractor	1	Building 773	72 ABW/CEO
1 ½ ton flat bed truck	6	Building 773	72 ABW/CEO
Pick-up trucks	5	Building 773	72 ABW/CEO
Dump truck, 1/2 ton	7	Building 773	72 ABW/CEO
Dump truck, 5-ton,	4	Building 773	72 ABW/CEO
Dump truck, 10-ton,	5	Building 773	72 ABW/CEO
Ford Tanker (1,600 gallons)	1	Building 62516	Dunamis ⁽¹⁾
GMC Tanker (1,400 gallons)	1	Building 62516	Dunamis ⁽¹⁾
L800 Vactor (1,000 gallons)	1	Building 62516	Dunamis ⁽¹⁾
Tanker (1,600 gallons)	1	Building 62516	Dunamis ⁽¹⁾
L8000 Tanker (2,600 gallons)	1	Building 62516	Dunamis ⁽¹⁾
Ford F-350 Small Tanker (600 gallons)	1	Building 62516	Dunamis ⁽¹⁾
International Tanker (3,300 gallons)	1	Building 62516	Dunamis ⁽¹⁾
International Tanker (3,000 gallons)	1	Building 62516	Dunamis ⁽¹⁾
International Tanker (5,500 gallons)	1	Building 62516	Dunamis ⁽¹⁾
Frac Tanks ⁽²⁾ (20,000 gallons)	1	Building 62516	Dunamis ⁽¹⁾
Roll-off boxes (5,000 gallons)	12	Building 62516	Dunamis ⁽¹⁾
Spill response trailers (HAZMAT) (Creek Spill)	2	“Response vehicles list” from the fire department	Fire Department
P-10 Hazards Incident Truck (HIT) w/plugs & drain mat; includes a standby truck w/57 sandbags	1	RVL	Fire Department
Sedan	1	RVL	Fire Department
Ford 6 pack	2	RVL	Fire Department
Dodge pick up	1	RVL	Fire Department
P-18, 2,000-gal water tanker	1	RVL	Fire Department
F-6, 5,000-gal water tanker semi	1	RVL	Fire Department

Table F.1: Tinker AFB Emergency Response Equipment List

Item	Quantity	Location	Responsible Organization
10-ton tractor	1	RVL	Fire Department
85 aerial	1	RVL	Fire Department
P-19 crash truck	1	RVL	Fire Department
P-23 crash truck	2	RVL	Fire Department
P-15(D) crash truck	1	RVL	Fire Department
P-24 fire engine	1	RVL	Fire Department
P-20 ramp vehicle	2	RVL	Fire Department
P-27 mini-pumper	2	RVL	Fire Department
P-28 rescue truck	1	RVL	Fire Department
P-10 heavy rescue truck	1	RVL	Fire Department
Chevy Suburban	2	RVL	Fire Department
P-15(D) crash truck	1	RVL	Fire Department
P-22 fire engine	2	RVL	Fire Department

- (1) Dunamis is an Oil Spill Removal Organization (See Annex G) that maintains equipment at the installation
(2) Dunamis has a contract with Baker Tanks to provide an additional 25-20,000 frac tanks if needed.

F.3 Fire Department and HAZMAT Team: The fire department (including the HAZMAT Team) is the first responder for discharges at Tinker AFB. As such, they maintain an inventory of emergency response equipment and materials. Each emergency response vehicle is equipped with a limited amount of equipment for spill response, but the HAZMAT Trailer is fully equipped for an oil or hazardous substance spill response. The equipment can be deployed to a spill site anywhere on Base within approximately ten minutes. Equipment is inspected and tested periodically as outlined in Annex N. A list of equipment available in the Tinker AFB Fire Department’s HAZMAT Response Trailer and the HAZMAT Storage Trailer is available upon request from the Tinker AFB Special Operations. Table F.2 is a listing from the Tinker AFB Fire Department’s HAZMAT Response Trailer and the HAZMAT Storage Trailer.

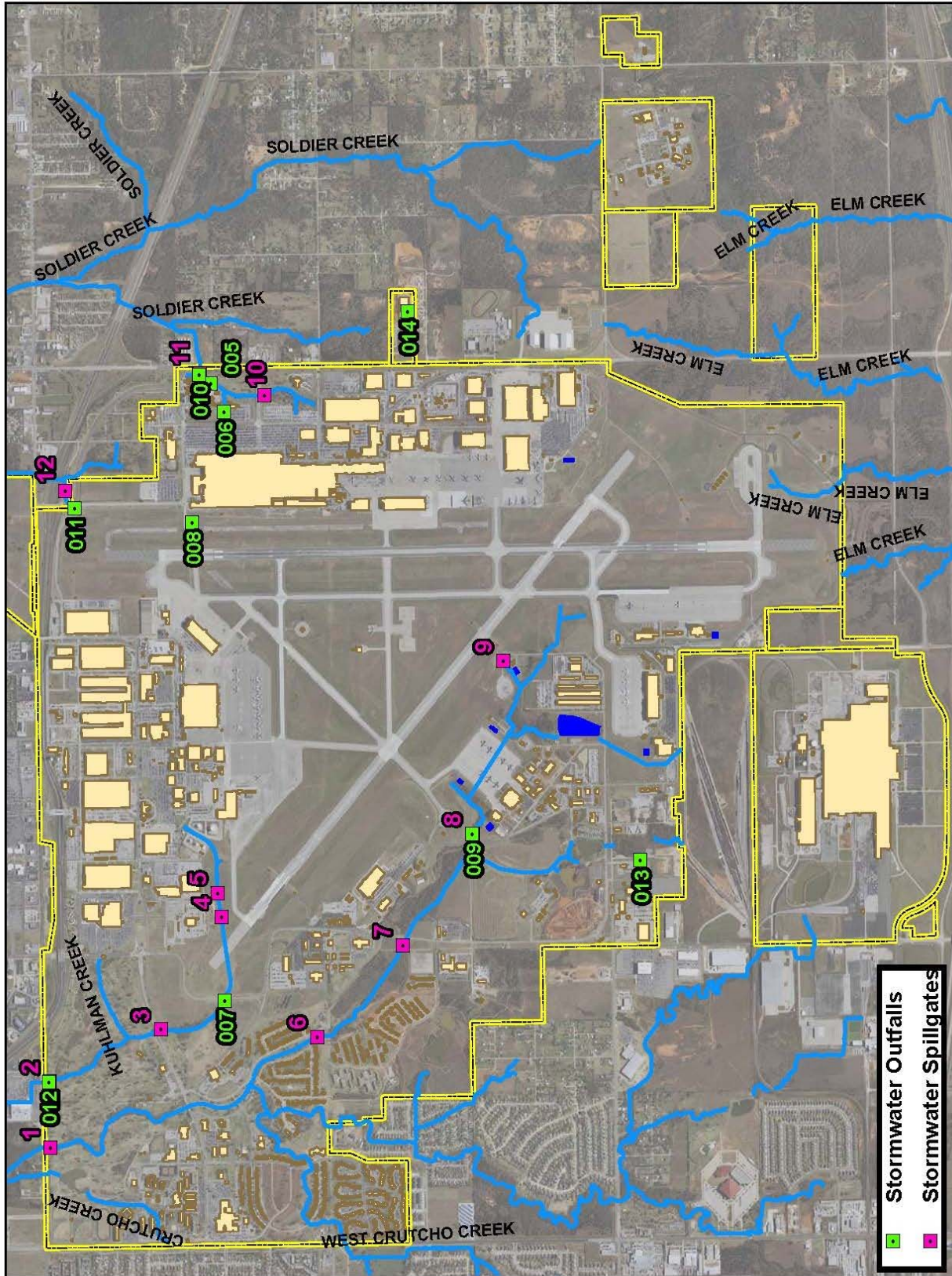


Figure F.1: Sluice Gate Location Map

ANNEX G

Spill Response Contract Support

G.1 Overview of Contract Support: For purposes of the Tinker AFB *Integrated Contingency Plan*, “contract support” means spill response assets that are procured from off-Base, regardless of the source. These sources may include companies that offer emergency response services, Oil Spill Removal Organizations (OSROs), or US Navy Supervisor of Salvage (SUPSALV) resources. They will all have trained and available personnel, special spill response equipment, and be able to meet response times within the required limits. Tinker AFB has spill response capabilities to respond to most discharges, but would require additional resources for a major or worst case discharge. When emergency spill response services are required, the EOC Director has authority to contract with OSROs and request the services of the US Navy SUPSALV.

G.2 Spill Response Contractor: Tinker AFB has a contractual agreement with Dunamis to provide equipment and manpower in the event of a spill of oil or hazardous materials. These services include spill response for designated facilities.

Dunamis Environmental Group
509 South Sunnyside Road
Del City, OK 73115
Tel: (405) 619-5577 Fax: (405) 640-7473

Dunamis can provide pollution response standby or spill control services to meet regulatory response requirements. Additionally, Dunamis has full time supervisory, technical and general support personnel available to respond to oil and hazardous substance spills, up to and including a worst-case discharge at Tinker AFB. Tab 1 to this Annex contains a copy of a commitment letter with Dunamis, a listing of response equipment, a review of their and capabilities, and copies of certifications and permits.

G.3 US Navy Supervisor of Salvage (SUPSALV): SUPSALV is identified as an alternate spill response contractor for Tinker AFB. While not classified under the Coast Guard’s OSRO Classification System, SUPSALV is considered equivalent to a Level E OSRO. SUPSALV personnel and equipment are provided on a cost-reimbursable basis to government agencies. Equipment is staged at several locations around the country, with the closest being Port Hueneme, CA. Equipment can be deployed from there with trained personnel, in a matter of hours, in response to a spill at Tinker AFB. Tab 2 to this annex contains a copy of a US Navy letter authorizing SUPSALV response at federal facilities, and information on SUPSALV equipment.

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Tab 1 to ANNEX G

Dunamis Environmental Group

G.1.1 Included in this tab is a copy of the Dunamis Environmental Group contract for pollution response.

G.1.2 Organizations requiring additional or updated information on an informal basis should contact Dunamis directly for this assistance at (405) 619-5744.

G.1.3 Equipment provided by Dunamis is staged at Tinker AFB as identified in Annex F, Table F.1.


REMINDER

**All requests for contractor support are
to be submitted to the IC**

SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, AND 30				1. REQUISITION NUMBER		PAGE 1 OF 46	
2. CONTRACT NO. FA8101-14-D-0006		3. AWARD/EFFECTIVE DATE 19-Sep-2014		4. ORDER NUMBER		5. SOLICITATION NUMBER FA8101-14-R-0041	
7. FOR SOLICITATION INFORMATION CALL:		a. NAME JAMES R. DAVISON		b. TELEPHONE NUMBER (No Collect Calls) 405-739-7664		8. OFFER DUE DATE/LOCAL TIME 04:30 PM 13 Aug 2014	
9. ISSUED BY AFSC/PZIOA JAMES R. DAVISON/405-739-4182 7858 5TH ST STE 1 TINKER AFB OK 73145-9903 TEL: 405-739-7664 FAX: 405-739-7957		CODE FA8101		10. THIS ACQUISITION IS <input type="checkbox"/> UNRESTRICTED <input checked="" type="checkbox"/> SET ASIDE: 100% FOR <input type="checkbox"/> SB <input type="checkbox"/> HUBZONE SB <input type="checkbox"/> 8(A) <input checked="" type="checkbox"/> SVC-DISABLED VET-OWNED SB <input type="checkbox"/> EMERGING SB SIZE STD: 12.5M NAICS: 562112		11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE 13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700) 13b. RATING 14. METHOD OF SOLICITATION <input type="checkbox"/> RFQ <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP	
15. DELIVER TO SEE SCHEDULE		CODE		16. ADMINISTERED BY SEE ITEM 9		CODE	
17a. CONTRACTOR/OFFEROR DUNAMIS ENVIRONMENTAL GROUP, LLC MARTY MINOR 509 S SUNNYLANE RD DEL CITY OK 73115-2943 TEL. 405-410-5060		CODE 5DSE0		18a. PAYMENT WILL BE MADE BY ACCTG DISB STA NR 503000 DFAS CO BLDG 21 JAIM ANALYSIS RECON 3990 E BROAD ST RM 6C 240 COLUMBUS OH 43213-1152		CODE F03000	
<input type="checkbox"/> 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER		18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a. UNLESS BLOCK BELOW IS CHECKED <input checked="" type="checkbox"/> SEE ADDENDUM					
19. ITEM NO.	20. SCHEDULE OF SUPPLIES/ SERVICES			21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	SEE SCHEDULE						
25. ACCOUNTING AND APPROPRIATION DATA						26. TOTAL AWARD AMOUNT (For Govt. Use Only) \$0.00 EST	
<input type="checkbox"/> 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1. 52.212-4. FAR 52.212-3. 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED				<input checked="" type="checkbox"/> 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4. FAR 52.212-5 IS ATTACHED. ADDENDA <input checked="" type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED			
28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN 1 COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN. REF: SEE SCHEDULE				29. AWARD OF CONTRACT: REFERENCE <input type="checkbox"/> OFFER DATED . . . YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS: SEE SCHEDULE			
30a. SIGNATURE OF OFFEROR/CONTRACTOR				31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)		31c. DATE SIGNED 19-Sep-2014	
30b. NAME AND TITLE OF SIGNER (TYPE OR PRINT)		30c. DATE SIGNED		31b. NAME OF CONTRACTING OFFICER (TYPE OR PRINT) MAURICE C SUMMERS / CONTRACTING OFFICER TEL: 405-739-7147 EMAIL: maurice.summers@tinker.af.mil			

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION IS NOT USABLE

STANDARD FORM 1449 (REV 3/2005)
Prescribed by GSA
FAR (48 CFR) 53.212

SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS OFFEROR TO COMPLETE BLOCKS 12, 17, 23, 24, AND 30				1. REQUISITION NUMBER		PAGE 1 OF 46	
2. CONTRACT NO. FA8101-14-D-0006		3. AWARD/EFFECTIVE DATE 19-Sep-2014		4. ORDER NUMBER		5. SOLICITATION NUMBER FA8101-14-R-0041	
7. FOR SOLICITATION INFORMATION CALL:		a. NAME JAMES R. DAVISON				b. TELEPHONE NUMBER (No Collect Calls) 405-739-7664	
9. ISSUED BY AFSC/PZIOA JAMES R. DAVISON/405-739-4182 7858 5TH ST STE 1 TINKER AFB OK 73145-9903 TEL: 405-739-7664 FAX: 405-739-7957		CODE FA8101		10. THIS ACQUISITION IS <input type="checkbox"/> UNRESTRICTED <input checked="" type="checkbox"/> SET ASIDE: 100% FOR <input type="checkbox"/> SB <input type="checkbox"/> HUBZONE SB <input type="checkbox"/> 8(A) <input checked="" type="checkbox"/> SVC-DISABLED VET-OWNED SB <input type="checkbox"/> EMERGING SB SIZE STD: 12.5M NAICS: 562112		11. DELIVERY FOR FOB DESTINATION UNLESS BLOCK IS MARKED <input type="checkbox"/> SEE SCHEDULE	
						12. DISCOUNT TERMS Net 30 Days	
						13a. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 700)	
						13b. RATING	
						14. METHOD OF SOLICITATION <input type="checkbox"/> RFQ <input type="checkbox"/> IFB <input checked="" type="checkbox"/> RFP	
15. DELIVER TO SEE SCHEDULE		CODE		16. ADMINISTERED BY		CODE	
						SEE ITEM 9	
17a. CONTRACTOR/OFFEROR DUNAMIS ENVIRONMENTAL GROUP, LLC MARTY MINOR 509 S SUNNYLANE RD DEL CITY OK 73115-2943 TEL. 405-410-5060		CODE 5DSED		18a. PAYMENT WILL BE MADE BY ACCTG DISB STA NR 503000 DFAS CO BLDG 21 JAIM ANALYSIS RECON 3990 E BROAD ST RM 6C 240 COLUMBUS OH 43213-1152		CODE F03000	
		FACILITY CODE					
<input type="checkbox"/> 17b. CHECK IF REMITTANCE IS DIFFERENT AND PUT SUCH ADDRESS IN OFFER		18b. SUBMIT INVOICES TO ADDRESS SHOWN IN BLOCK 18a. UNLESS BLOCK BELOW IS CHECKED <input checked="" type="checkbox"/> SEE ADDENDUM					
19. ITEM NO.	20. SCHEDULE OF SUPPLIES/ SERVICES			21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT
	SEE SCHEDULE						
25. ACCOUNTING AND APPROPRIATION DATA						26. TOTAL AWARD AMOUNT (For Govt. Use Only) \$0.00 EST	
<input type="checkbox"/> 27a. SOLICITATION INCORPORATES BY REFERENCE FAR 52.212-1, 52.212-4, FAR 52.212-3, 52.212-5 ARE ATTACHED. ADDENDA <input type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED							
<input checked="" type="checkbox"/> 27b. CONTRACT/PURCHASE ORDER INCORPORATES BY REFERENCE FAR 52.212-4, FAR 52.212-5 IS ATTACHED. ADDENDA <input checked="" type="checkbox"/> ARE <input type="checkbox"/> ARE NOT ATTACHED							
28. CONTRACTOR IS REQUIRED TO SIGN THIS DOCUMENT AND RETURN <u>1</u> COPIES TO ISSUING OFFICE. CONTRACTOR AGREES TO FURNISH AND DELIVER ALL ITEMS SET FORTH OR OTHERWISE IDENTIFIED ABOVE AND ON ANY ADDITIONAL SHEETS SUBJECT TO THE TERMS AND CONDITIONS SPECIFIED HEREIN. REF: SEE SCHEDULE				29. AWARD OF CONTRACT: REFERENCE <input type="checkbox"/> OFFER DATED . . . YOUR OFFER ON SOLICITATION (BLOCK 5), INCLUDING ANY ADDITIONS OR CHANGES WHICH ARE SET FORTH HEREIN, IS ACCEPTED AS TO ITEMS: SEE SCHEDULE			
30a. SIGNATURE OF OFFEROR/CONTRACTOR 				31a. UNITED STATES OF AMERICA (SIGNATURE OF CONTRACTING OFFICER)		31c. DATE SIGNED	
30b. NAME AND TITLE OF SIGNER (TYPE OR PRINT) Marty P. Minore, Manager		30c. DATE SIGNED 9/19/2014		31b. NAME OF CONTRACTING OFFICER (TYPE OR PRINT) TEL: . . . EMAIL:			

AUTHORIZED FOR LOCAL REPRODUCTION
PREVIOUS EDITION IS NOT USABLE

STANDARD FORM 1449 (REV 3/2005)
Prescribed by GSA
FAR (48 CFR) 53.212

SOLICITATION/CONTRACT/ORDER FOR COMMERCIAL ITEMS (CONTINUED)					PAGE 2 OF 46	
19. ITEM NO.	20. SCHEDULE OF SUPPLIES/ SERVICES	21. QUANTITY	22. UNIT	23. UNIT PRICE	24. AMOUNT	
	SEE SCHEDULE					
32a. QUANTITY IN COLUMN 21 HAS BEEN <input type="checkbox"/> RECEIVED <input type="checkbox"/> INSPECTED <input type="checkbox"/> ACCEPTED, AND CONFORMS TO THE CONTRACT, EXCEPT AS NOTED: _____						
32b. SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE			32c. DATE	32d. PRINTED NAME AND TITLE OF AUTHORIZED GOVERNMENT REPRESENTATIVE		
32e. MAILING ADDRESS OF AUTHORIZED GOVERNMENT REPRESENTATIVE				32f. TELEPHONE NUMBER OF AUTHORIZED GOVERNMENT REPRESENTATIVE		
				32g. E-MAIL OF AUTHORIZED GOVERNMENT REPRESENTATIVE		
33. SHIP NUMBER		34. VOUCHER NUMBER		35. AMOUNT VERIFIED CORRECT FOR		36. PAYMENT
<input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL						<input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL
37. CHECK NUMBER		38. S/R ACCOUNT NUMBER		39. S/R VOUCHER NUMBER		
				40. PAID BY		
41a. I CERTIFY THIS ACCOUNT IS CORRECT AND PROPER FOR PAYMENT				42a. RECEIVED BY (<i>Print</i>)		
41b. SIGNATURE AND TITLE OF CERTIFYING OFFICER				41c. DATE		
				42b. RECEIVED AT (<i>Location</i>)		
				42c. DATE REC'D (<i>YY/MM/DD</i>)		42d. TOTAL CONTAINERS

AUTHORIZED FOR LOCAL REPRODUCTION
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STANDARD FORM 1449 (REV 3/2005) BACK
Prescribed by GSA
FAR (48 CFR) 53.212

Tab 2 to ANNEX G**US Navy Supervisor of Salvage**
(SUPSALV)

G.2-1 Included in this tab are copies of a Department of the Navy letter authorizing their response resources for DoD facilities and selected pages extracted from the applicable US Navy manual outlining SUPSALV's mission, capabilities, rates, notification, and work request procedures. (NAVSEA MANUAL S0300-BR-MAN-010, *US Navy Supervisor of Salvage (SUPSALV) Pollution Response Guide and Equipment Manual*, Sep 93)

G.2-2 Organizations requiring additional or updated information on an informal basis should contact SUPSALV directly for this assistance at (703) 607-2758 during duty hours. After duty hours, calls should be directed to (703) 602-7527 (NAVSEA Duty Officer).

REMINDER

**All requests for SUPSALV support are
to be submitted to the IC**



DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
2531 JEFFERSON DAVIS HWY
ARLINGTON VA 22242-51605090 IN REPLY REFER TO
OPR: 00C25
Ser: 00C2\2193
16 August 1993

From: Commander, Naval Sea Systems Command
To: Distribution

Subj: AUTHORITY TO UTILIZE U.S. NAVY SUPERVISOR OF SALVAGE
(SUPSALV) OIL SPILL RESPONSE EQUIPMENT

Encl: (1) SUPSALV Equipment Inventory
(2) SUPSALV Phone Access Information
(3) SUPSALV Derated Equipment Capacities

1. Pursuant to the Oil Pollution Act of 1990 (OPA 90), facilities handling specific quantities of oil are required to maintain Facility Response Plans in accordance with EPA and Coast Guard direction. This letter authorizes any DoD facility to list in its Facility Response Plan the spill response resources owned and managed by the U.S. Navy Supervisor of Salvage (SUPSALV).

2. OPA 90 requirements for addressing the full range of spill response scenarios mandate that response equipment and trained personnel be in place to respond to these spills within certain time requirements. The Navy has strategically pre-positioned response equipment to provide rapid response to Navy spills. This equipment, with all required operating personnel, is available for response to any DoD component; and consequently can be counted towards meeting the resource requirements specified in OPA 90 regulations.

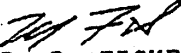
3. SUPSALV maintains an extensive inventory of centrally-located, open-ocean and catastrophic spill response equipment. This equipment is used on a cost-reimbursable basis by DoD facilities in the event of large oil spills beyond the capabilities of the facility's locally available spill response assets. The equipment, located in Williamsburg, VA; Stockton, CA; Anchorage, AK; and Pearl Harbor, HI, is designed for rapid deployment by either air or truck. An inventory is provided in enclosure (1). Further descriptions of equipment capabilities and response time estimates can be provided upon request.

4. In addition, SUPSALV maintains the capability to respond to significant hazardous material spills. This capability is principally through an in-place contractor with the capability to contract locally for whatever hazardous material spill response assets may be required.

Subj: AUTHORITY TO UTILIZE U.S. NAVY OIL SPILL RESPONSE
EQUIPMENT

5. SUPSALV will respond with dispatch to requests for equipment or assistance from DoD activities. Enclosure (2) lists the appropriate procedures to follow should assistance be required. Enclosure (3) lists equipment skimming capacities using OPA 90 calculations. These figures may be used in determining equipment requirements for response to the worst case scenario. It remains the responsibility of the command to ensure that their facility can meet the tiered response requirement criteria outlined in the Coast Guard rules.

6. For questions or comments on this issue contact Mr. Paul Hankins at (703) 607-2758.


R. P. FISKE
Director of Ocean Engineering
Supervisor of Salvage and Diving, USN

Distribution:
All DoD Shore Facilities

Copy to:
N452
PCCI
All Coast Guard Marine Safety Offices

Chapter 5. EQUIPMENT INVENTORY

5.1 Inventory

SUPSALV inventories and maintains three types of pollution response equipment. All equipment is ready for immediate deployment with operating personnel. The following types of equipment are available:

- **SPILLED OIL RECOVERY** - Includes equipment and systems such as skimmers and oil containment booms used for the control and recovery of spilled oil.
- **CASUALTY OFFLOADING** - This equipment is used to prevent or minimize the spill of oil from a casualty by offloading the ship's petroleum, oil, and lubricants (POL).
- **ANCILLARY SUPPORT EQUIPMENT** - Includes equipment such as small boats, rigging vans, shop vans, and other support material that can be set up on-site.

An inventory of SUPSALV pollution control equipment follows. Any logistic support requirements such as large support vessels, aircraft, staging areas, and related items must be locally provided and should be addressed in local contingency plans. These requirements are described in Chapter 7.

NAVSEA-S0300 -BR-MAN-010

Chapter 5A. DAILY EQUIPMENT RECOVERY RATES

5A.1 SUPSALV OIL SPILL EQUIPMENT RECOVERY RATES

SKIMMER	EFFECTIVE DAILY RECOVERY RATE (24-Hour Period)
1. Class V Skimmer	1,371 bbls
2. Class XI Skimmer	480 bbls
3. Destroil, VOSS	1,371 bbls
4. Oil Mop Mark V-20-OP 18" Oil Mop 36" Oil Mop*	960 bbls 1,920 bbls
5. Oil Mop Mark I	29 bbls
6. Skim Pacs Mod 2400 Mod 4200	226 bbls 459 bbls
7. Vacuum Pump (VS8100)	(Not set up for skimming)

*The Oil Mop recovery information was taken from a similar model nameplate data because the SUPSALV model is no longer in production.

SUPSALV

1. Skimmers/Pumps

Type, Model, and Year: Skimmer Vessel System (36' Aluminum Hull) Class V
Number: 24
Operational Status: OPERATIONAL
Capacity: 1,371.4 bbl/day (Temporary storage of Class V systems is limited to 565.3 bbl/day [Dracone and Skimmer holding Tank Capacity])
D-rated by U.S. Coast Guard
Storage Locations(s): 10 — Williamsburg, VA; 10 — Port Hueneme, CA; 2 — Anchorage, AK; 2 - Pearl Harbor, HI
SUPSALV is listed as an EPA — Coast Guard On-Storage Oil Spill Response Organization

Type, Model, and Year: Vessel of Opportunity Skimmer System (VOSS) Destroy Weir
Number: Skimmer with Model Desmi 210 pump
Operational Status: 4
Capacity: OPERATIONAL
Storage Locations(s): 1,371.4 bbl/day
: 1 — Williamsburg, VA; 3 — Anchorage, AK
SUPSALV is listed as an EPA - Coast Guard On-Storage Oil Spill Response Organization

Type, Model, and Year: Skimming System (Screw Pump VOSS) Class XI
Number: 4
Operational Status: OPERATIONAL
Capacity: 480.0 bbl/day
Storage Locations(s): 2 — Williamsburg, VA; 1 — Port Hueneme, CA; 1 — Anchorage, AK
SUPSALV is listed as an EPA - Coast Guard On-Storage Oil Spill Response Organization

Type, Model, and Year: Skimmer, Sorbent Rope Mop (36')
Number: 3
Operational Status: OPERATIONAL
Capacity:
Storage Locations(s): 1 — Williamsburg, VA; 2 — Port Hueneme, CA
SUPSALV is listed as an EPA — Coast Guard On-Storage Oil Spill Response Organization

2. Booms

Type, Model, and Year:	Boom Vane
Number:	12
Operational Status:	OPERATIONAL
Size (length):	42" x 1,920'
Containment Area:	Not Applicable
Storage Locations:	5 - Williamsburg, VA; 4 - Port Hueneme, CA; 2 - Anchorage, 1 - Pearl Harbor, HI

Type, Model, and Year:	Boom Mooring System
Number:	75
Operational Status:	OPERATIONAL
Size (length):	200 feet of water
Containment Area:	Not Applicable
Storage Locations:	31 - Williamsburg, VA; 28 - Port Hueneme, CA; 12 - Anchorage, AK; 4 - Pearl Harbor, HI

3. Boats, Motors, and Barges

Type, Model, and Year:	Boom Handling Boat
Number:	20
Operational Status:	OPERATIONAL
Size (length):	24', 260 hp Diesel
Containment Area:	Not Applicable
Storage Locations:	8 - Williamsburg, VA; 8 - Port Hueneme, CA; 2 - Anchorage, AK; 2 - Pearl Harbor, HI

Type, Model, and Year:	Inflatable
Number:	5
Operational Status:	OPERATIONAL
Size (length):	19' & 23'
Containment Area:	Not Applicable
Storage Locations:	2 - Williamsburg, VA; 1 - Port Hueneme, CA; 1 - Anchorage, AK; 1 - Pearl Harbor, HI

Type, Model, and Year:	Boom Tending Boats - Right Hull
Number:	9
Operational Status:	OPERATIONAL
Size (length):	18 ft.
Containment Area:	Not Applicable
Storage Locations:	4 - Williamsburg, VA; 3 - Port Hueneme, CA; 1 - Anchorage, AK; 1 - Pearl Harbor, HI

SUPSALV Communication Equipment (include operating frequency and channel and/or cellular phone numbers) — Operational Status:
OPERATIONAL

Type	Quantity	Storage Location
Command Trailer (40' Communications and Command Center)	2	1 — Williamsburg, VA 1 — Port Hueneme, CA
Command Van (20' Communications and Command Center)	5	2 — Williamsburg, VA 1 — Port Hueneme, CA 1 — Anchorage, AK 1 — Pearl Harbor, HI
Communication System (Satellite Phone, Land)	2	1 — Williamsburg, VA 1 — Anchorage, AK
Communication System (Satellite Phone, Ship)	1	1 — Williamsburg, VA

SUPSALV: Other Equipment (e.g., Heavy Equipment, etc.)

The following equipment is maintained by SUPSALV at the storage location shown.

Type and Year	Quantity	Storage Location
136,000-Gallon Oil Storage Bladder	11	6 — Williamsburg, VA 4 — Port Hueneme, CA 1 — Anchorage, AK
21,000, 26,000 and 50,000-Gallon Oil Storage Bladders	18	3 — Williamsburg, VA 12 — Port Hueneme, CA 1 — Anchorage, AK 2 — Pearl Harbor, HI
Pump System, POL 6" Submersible	18	7 — Williamsburg, VA 5 — Port Hueneme, CA 2 — Anchorage, AK 4 — Pearl Harbor, HI
Floating Hose (6" x 100')	58	58 — Williamsburg, VA
Hot Tap System	3	1 — Williamsburg, VA 1 — Port Hueneme, CA 1 — Pearl Harbor, HI
Boarding Kit	3	1 — Williamsburg, VA 1 — Anchorage, AK 1 — Pearl Harbor, HI
Fender System (8' x 12')	11	7 — Williamsburg, VA 4 — Port Hueneme, CA

Type and Year	Quantity	Storage Location
Fender System (14' x 60' LP Air)	5	4 — Williamsburg, VA 1 — Port Hueneme, CA
Fender System (10' x 50' LP Air)	11	8 — Williamsburg, VA 2 — Port Hueneme, CA 1 — Anchorage, AK

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ANNEX H

Substantial Harm Determination

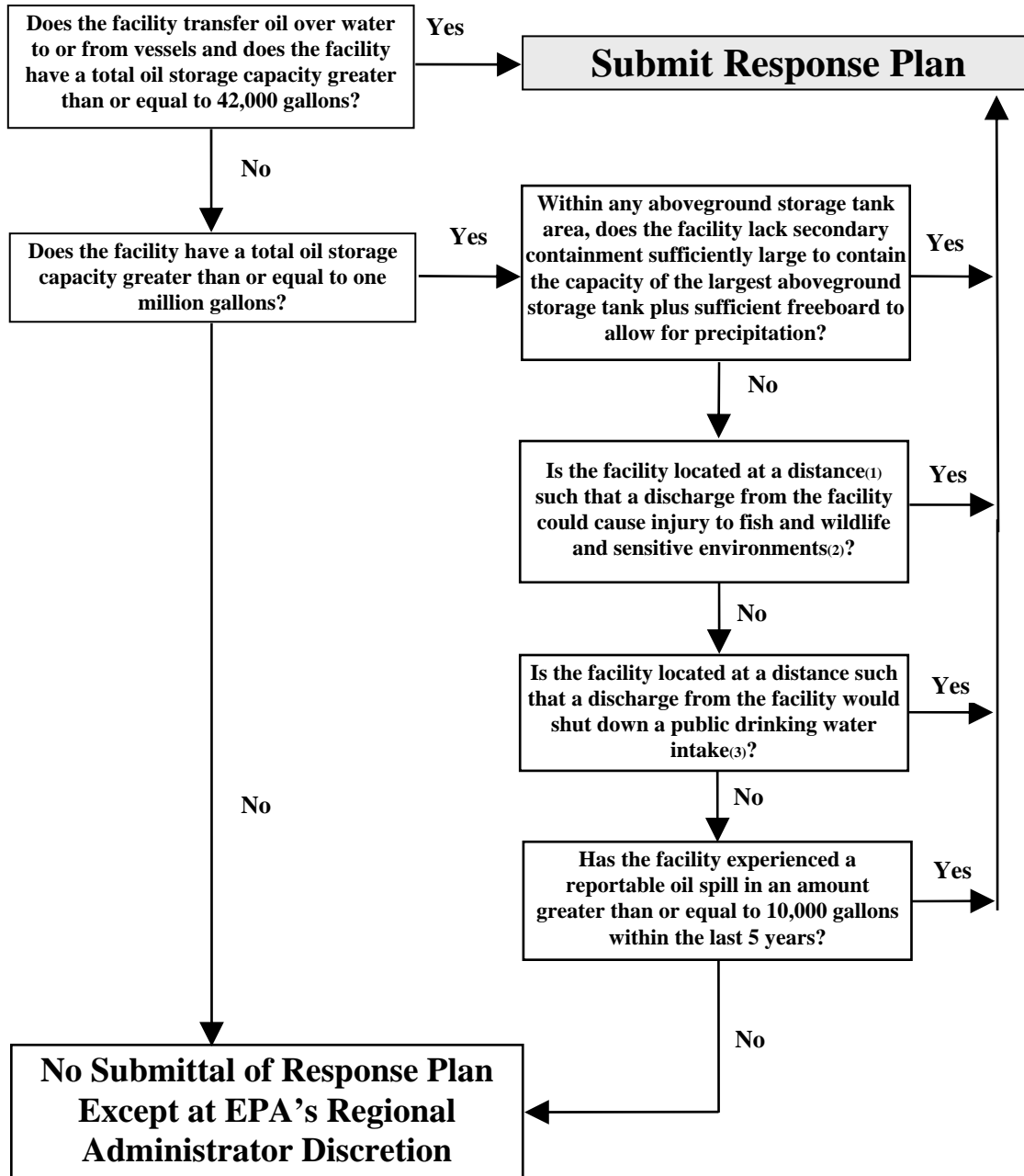
H.1 Determination of Substantial Harm Flowchart: Under the Environmental Protection Agency's (EPA) Final Rules, 40 CFR Part 112, facility owners are required, through a self-determination process, to evaluate their facilities for the potential of causing "substantial harm" to the environment, using the criteria published in the Final Rule. Following the EPA Flowchart in Figure H.1, the bulk fuel facility at Tinker AFB has a total capacity of 7,551,000 gallons. See the tank listing for individual tank capacities and other information in Annex A. Fuel transfers at Tinker AFB include receipt and issue of Jet A in support of organizations located at or transiting through the Base. The flowchart indicates that a response plan must be submitted and that Tinker AFB poses a potential risk of substantial harm to the environment.

H.2 Substantial Harm Determination: In determining "substantial harm," the owner or operators, under certain circumstances, are required to calculate the distance at which an oil spill could cause injury to an environmentally sensitive area or disrupt operations at a drinking water intake. EPA does not require planning distance calculations from owners or operators who have determined that their regulated facility has the potential to cause substantial harm. Tinker AFB is located adjacent to navigable waters of the United States and could impact nearby wetlands. The Base has the potential to cause substantial harm from a discharge. Therefore, no distance calculation is required to be included in this annex. However, for planning purposes, distances were calculated in Annex I.

H.3 Response Plan Cover Sheet: A copy of the "Response Plan Cover Sheet" is included in this annex.

Figure H.1

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 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 40 CFR 143.2(c).

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 (40 CFR 112). 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 the burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 401 M St., SW, Washington, DC. 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

<u>General Information</u>	
Owner/Operator of Facility:	United States Air Force
Facility Name:	Tinker Air Force Base
Facility Address (street address or route):	OC-ALC/EM
	7701 Arnold St., Suite 204
	(Oklahoma County)
City, State, and U.S. Zip Code:	Oklahoma City, Oklahoma 73145-9100
Facility Phone Number:	(405) 734-4111
Latitude (Degrees: North):	Longitude (Degrees: West):
35° 26' 0"	97° 23' 30"
degrees, minutes, seconds	degrees, minutes, seconds
Dun & Bradstreet Number:	North American Industry Classification System (NAICS) Code:
007206337	928110
Largest Aboveground Oil Storage Tank Capacity (gallons):	Maximum Oil Storage Capacity (gallons):
2,330,748	ASTs: 7,551,000
	USTs: 349,630
Number of Aboveground Oil Storage Tanks:	Worst Case Oil Discharge Amount (gallons):
229	2,330,748
Facility Distance to Navigable Water. (Mark the appropriate line.)	
0-1/4-mile	1/4-1/2-mile
<input type="checkbox"/>	<input checked="" type="checkbox"/>
1/2-1-mile	>1-mile
<input type="checkbox"/>	<input type="checkbox"/>

RESPONSE PLAN COVER SHEET
(continued)

Applicability of Substantial Harm Criteria

Does the facility transfer oil over-water² to or from vessel and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes _____ No X

Does the facility have a total storage capacity greater than or equal to 1 million gallons *and*, within any storage area, does the facility lack secondary containment² that is sufficiently large to contain the capacity of the largest aboveground storage tank plus sufficient freeboard to allow for precipitation?

Yes _____ No X

Does the facility have a total storage capacity greater than or equal to 1 million gallons *and* is the facility located at a distance² (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 environments³?

Yes X No _____

Does the facility have a total storage capacity greater than or equal to 1 million gallons *and* is the facility located at a distance² (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?

Yes _____ No X

Does the facility have a total storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 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 information, I believe that the submitted information is true, accurate, and complete.

Signature: _____

Name (please type or print) Cathy Scheirman

Title: Division Chief, Environmental Management Branch
 Tinker Air Force Base

Date: _____

ANNEX I

Federal Worst Case Planning Volumes, Distance and Response Resources

I.1 Federal Worst Case Planning Factors/Calculations: This annex contains the Federal worst case discharge planning factors for Tinker Air Force Base (AFB). Since the facility is subject to EPA regulations, the worst case discharge has been calculated using EPA guidelines and requirements.

I.2 EPA Worst Case Planning: Planning for a worst case discharge (WCD) involves calculating the volume of the WCD, calculating the distance such a spill could travel, and identifying the response resources necessary to respond. The EPA WCD for Tinker AFB was determined using the EPA WCD worksheet at the end of this annex (Worksheet I.1). Because this is an onshore facility, Part A of the worksheet from Appendix D, 40 CFR Part 112, is the only applicable section. The worst case discharge is based on the loss of the entire capacity of the largest aboveground storage tank at Tinker AFB and is calculated to be 2,330,748 gallons of Jet A.

The distance such a spill could travel was calculated based on EPA's planning distance method for Oil Transport on Land (40 CFR 112 Appendix C, Part 5). The planning distance for a worst case discharge (WCD) is:

$$d = (v)(t)(c)$$

where:

$$v = (1.5/n) \times (r)^{2/3} \times (s)^{1/2} = 3.24$$

where:

n = Manning's Roughness coefficient (0.04)

r = hydraulic radius = $0.667 \times 5 \text{ ft} = 3.335 \text{ feet}$

s = slope = $(1220-1130) \text{ feet} / 11.6 \text{ miles} \times 1 \text{ mile} / 5280 \text{ ft} = 0.0015$

-- slope based on the distance and elevation change in Crutch Creek between Tank 273 and the North Canadian River

t = time interval based on the type of water (river areas = 27 hours)

c = constant conversion factor of 0.68

so:

$$d = (3.24) \times (27) \times (0.68) = 59.5 \text{ miles}$$

Though the planning distance is almost 60 miles, a spill would interact with Fish and Wildlife Sensitive Environments before reaching this distance. The North Canadian River is 11.6 miles upstream on Crutch Creek, and both contain streams Fish and Wildlife Sensitive Areas. See Figure E.5.1 for more information.

Response resources required to be contracted were calculated using the worksheet from 40 CFR 112, Appendix E Attachment E-1; see Worksheet I.2 at the end of this annex.

The following amounts are required to be contracted for in advance:

Tier	Gallons/day	Bbl/day
Tier 1	79	1.875
Tier 2	158	3.75
Tier 3	315	7.5

I.3 Area Contingency Plan (ACP): The Federal worst case planning volumes above are consistent with EPA *Region 6 Inland Area Contingency Plan*, May 2010. Equipment operability and readiness would not be affected by ice, debris, and weather-related visibility.

I.4 Response Resource Mobilization and Response Times: Resources required for spill response are based on the following calculations of planning volumes for non-marine transportation related facilities:

- **Small Discharge:** a volume less than or equal to 2,100 gallons (50 bbls)
- **Medium Discharge:** the lesser of 36,000 gallons or 10% of the capacity of the largest aboveground storage tank (233,075 gallons). Therefore the medium discharge volume is 36,000 gallons
- **Worst Case Discharge:** for a facility adjacent to navigable waters, 100% of the capacity of the largest single aboveground storage tank within a secondary containment area (2,330,748 gallons).

EPA Small Discharge

Under this EPA requirement, a discharge of 2,100 gallons or less must be addressed. A scenario for a spill of this magnitude (1,800 gallons) has been developed at Tinker AFB involving an accident at the 290 Fuel Yard (see Section 12.6.1 of the basic plan).

EPA containment boom requirement = 1,000 feet, with means of immediate employment within one hour of the discovery of a spill.

- Tinker AFB does not maintain a skirted containment boom in Oklahoma City to meet the 1,000 foot requirement in Appendix E Section 3.3.1 which states “The response resources shall, as appropriate, include: one thousand feet of containment boom...and a means of deploying it within 1 hour of the discovery of a discharge.”

Given the immediate environment in which Tinker AFB is located consisting of normally dry creek channels, 1,000 feet of skirted containment boom is not the most appropriate means to contain a release. As an alternative means to respond to a small discharge Tinker AFB maintains the following:

- Absorbent boom at the Fire Department and in response trailers.
- Heavy equipment on Base is available to rapidly construct berms and dams to block spill pathways.
- Gates are present in certain areas of the base – see Figure F.1. These sluice gates can be closed to isolate spills.

These assets, shown in Annex F, can effectively be deployed within an hour to retain a small discharge. These assets allow Tinker AFB to comply with Appendix E Section 3.3.

EPA rules require the facility owner or operator to have available oil recovery devices with an effective daily recovery rate equal to the amount of oil discharged in a small spill within two hours of the detection of an oil discharge.

- Tinker AFB (Roads and Grounds operation) has one portable pneumatic pump (50 gpm) and one sump pump available to assist in recovery of discharged oil. The TEDRC for these pumps is 28,000 gallons/day. The pumps are available within minutes to the spill site. See Annex F for information on the pumps. **This effective daily recovery rate, using the portable pump, exceeds the calculated EPA effective daily recovery requirement of 2,100 gallons for a small discharge, allowing Tinker AFB to meet EPA oil recovery requirements.**

EPA rules require a daily storage capacity equivalent to twice the effective daily recovery capacity required on-scene.

- For this small discharge, EPA requires daily oil storage capacities for recovered oily material equal to 4,200 gallons (twice the required daily recovery rate). Tinker AFB has more than 20,000 gallons of storage as shown in Annex F, Table F.1. **The Tinker AFB oily material temporary storage capacity meets the EPA small discharge storage requirement.**

EPA Medium Discharge

Under the EPA requirement, a discharge of 36,000 gallons (857 barrels) or 10% of the capacity of the largest AST (2,330,748 gallons x 10% = 233,075 gallons) must be addressed. A scenario for a spill of this magnitude has been developed at the AWACS Alert Area (see paragraph 12.6.2 of the basic plan).

EPA containment boom requirement = 1,000 feet, with means of immediate employment. Additionally, EPA requires that sufficient boom be available to protect fish and wildlife and sensitive environments.

- A discussion of boom capabilities for the EPA Small Discharge indicates that the Base has access to assets available to **meet** the intent of EPA boom requirements for a medium discharge. Absorbent boom and equipment to block spill pathways and control a discharge are available to Tinker AFB.

In addressing a medium discharge, EPA requires that oil recovery devices arrive on-scene within 12 hours of the detection of an oil discharge, with an effective daily recovery rate equal to 50% of the planning volume (50% of 36,000 gallons = 18,000 gallons).

- Tinker AFB has a 50 gallon per minute reciprocating power drive pump as shown in Annex F. This corresponds to an oil recovery capacity of 72,000 gallons per day. **This effective daily recovery rate exceeds the calculated EPA effective daily recovery requirement of 18,000 gallons/day for a medium discharge, allowing Tinker AFB to meet EPA oil recovery requirements.**

For this medium discharge, EPA requires daily oil storage capacities for recovered oily material equal to 36,000 gallons (twice the required daily recovery rate).

- Dunamis equipment stored onsite (See Annex F, Table F.1) has a cumulative capacity of 40,600 gallons. **Storage available directly exceeds the EPA daily oil storage volume requirements for a medium discharge.**

EPA Worst Case Discharge

Consideration of the resources planned for spill response is based on an evaluation of a worst case discharge (WCD) from Tank 273 of 2,330,748 gallons (55,494 barrels) of Jet-A fuel into the surrounding areas of the 273 Fuel Yard. The resources required for the worst case discharge are detailed below. Refer to the worksheet at the end of this section showing calculations to determine the planning volume for tiered recovery capacity. Required containment capacities of recovered oily materials are two times the daily on-water and shoreline recovery capacities.

- **Tier 1** assets must be on-scene within 12 hours and must be able to recover 832 barrels/day (~35,000 gallons/day) and to store two times the recovered volume (~70,000 gallons). To recover 832 barrels of oil, a 4,000-gallon vacuum truck and on-Base pumps (50 gallon/minute) can be utilized. On-site storage capacities exceed 40,000 gallons. **Assets on-Base exceed the EPA Tier 1 volume requirements.**
- The **Tier 2** planning recovery volume is 1,387 barrels/day (58,250 gallons/day), the storage volume is 116,500 gallons, and resources are required to be on site in 36 hours. The volumes are cumulative so resources required to be on site within 36 hours would be able to recover the 1,387 barrels/day. Tier 2 resources would be provided by SUPSALV; they can deploy from Port Hueneme, CA in a few hours and take approximately 22 hours of driving time to arrive in Oklahoma City thereby meeting the 36 hour Tier 2 time frame. **Assets on site (Annex F) and available from US Navy SUPSALV(Annex G) exceed the EPA Tier 2 recovery and storage volume requirements.**

- The planning volumes for **Tier 3** are 2,220 barrels/day for recovery and 186,500 gallons of storage; resources are required to be on site in 60 hours. **Assets on site and available from SUPSALV exceed the EPA Tier 3 planning volume requirements.**
- The planning volume for **Shoreline Cleanup** is 5549 barrels/day. Shoreline recovery equipment is available from Navy SUPSALV. **Assets available from SUPSALV exceed the EPA shoreline cleanup volume requirements for a WCD.**
- **In a worst case discharge, the EPA requires daily oil storage capacities for recovered oily material equal to twice the required daily on-water and shoreline recovery rates.** Combining the required daily rates of 4439 bpd (on water) and 5549 bpd (shoreline) times two totals 19,976 bpd (839,000 gallons) is the required daily oil storage capacity. Besides refueling vehicles and unused AST/UST storage available on the Base, SUPSALV can provide temporary storage capacity in excess of the daily storage needs. **Storage available at Tinker AFB and from SUPSALV exceeds the EPA daily oil storage volume requirements for a WCD.**

To accomplish the above, a response contract has been established with the SUPSALV as documented in Annex G to supply the resources detailed above.

Worksheet I.1

**WORST CASE DISCHARGE CALCULATION FOR ONSHORE STORAGE FACILITIES¹
40 CFR PART 112, APPENDIX D PART A**

Part A of this worksheet is to be completed by owners or operators of SPCC-regulated facilities (excluding oil production facilities) 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.

A1. SINGLE-TANK FACILITIES

For facilities containing only one aboveground storage tank, the worst case volume equals the capacity of the storage tank. If adequate secondary containment (sufficiently large to contain the capacity of the aboveground storage tank plus sufficient freeboard to allow for precipitation) exists for the oil storage tank, multiply the capacity of the tank by 0.8.

- **FINAL WORST CASE VOLUME:** N/A GAL
- Do not proceed further.

A2. SECONDARY CONTAINMENT - MULTIPLE TANK FACILITIES

Are all aboveground storage tanks or groups of aboveground storage tanks at the facility without adequate secondary containment?²

 N (Y/N)

- a. If the answer is yes, the final worst case volume equals the total aboveground oil storage capacity at the facility.
- **FINAL WORST CASE VOLUME:** N/A GAL
- Do not proceed further.
- b. If the answer is no, calculate the total aboveground capacity of the tanks without adequate secondary containment. If all aboveground storage tanks or groups of aboveground storage tanks at the facility have adequate secondary containment, enter "0" (zero).
- 0 GAL
- c. 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 A2(b).
- **FINAL WORST CASE VOLUME:** ³ 2,330,748 gallons

¹ "Storage facilities" represent all facilities subject to this part, excluding oil production facilities.

² Secondary containment is defined in 40 CFR 112.7 (e)(2). Acceptable methods and structures for containment are given in 40 CFR 112.7(c)(1)

³ All "complexes" that are jointly regulated by EPA and USCG must also calculate the worst case discharge for the transportation-related portions of the facility and plan for whichever volume is greater.

Worksheet I.2
WCD Response Resources
40 CFR PART 112, APPENDIX E Attachment E-1

Part I Background Information

Step (A) Calculate Worst Case Discharge in barrels (Appendix D) 55,494

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

Step (C) Operating Area (choose one) X Nearshore/Inland , Great Lakes
 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
<u>80</u> (D1)	<u>10</u> (D2)	<u>10</u> (D3)

Step (E1) On-Water Oil Recovery $\frac{\text{Step (D2)} \times \text{Step (A)}}{100}$ $\frac{10 \times 55,494}{100}$ 5,549

Step (E2) Shoreline Recovery $\frac{\text{Step (D3)} \times \text{Step (A)}}{100}$ $\frac{10 \times 55,494}{100}$ 5,549

Step (F) Emulsification Factor (Table 3 of this appendix) 1.0

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

Tier 1 <u>0.15</u> (G1)	Tier 2 <u>0.25</u> (G2)	Tier 3 <u>0.40</u> (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% or less by volume of the total oil storage capacity at the facility. For purposes of this calculation, the volume of all products in an oil group must be summed to determine the percentage of the facility's total oil storage capacity.

Worksheet I.2
WCD Response Resources (
40 CFR PART 112, APPENDIX E Attachment E-1
(continued)

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

Tier 1	[Step (E1) x Step (F) x Step (G1)] (5,549 x 1.0 x 0.15)	<u>832</u>
Tier 2	[Step (E1) x Step (F) x Step (G2)] (5,549 x 1.0 x 0.25)	<u>1,387</u>
Tier 3	[Step (E1) x Step (F) x Step (G3)] (5,549 x 1.0 x 0.40)	<u>2,220</u>

Part III Shoreline Cleanup Volume (barrels)

[Step (E2) x Step (F)] 5,549 x 1.0	<u>5,549</u>
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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	(J1)	<u>1.875</u>
Tier 2	(J2)	<u>3.75</u>
Tier 3	(J3)	<u>7.5</u>

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

Tier 1	[Part II Tier 1 - Step (J1)]	<u>830</u>
Tier 2	[Part II Tier 2 - Step (J2)]	<u>1,383</u>
Tier 3	[Part II Tier 3 - Step (J3)]	<u>2,213</u>

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

ANNEX J

Safety Data Sheets

J.1 General: This Annex includes the safety data sheets (SDSs), formerly material safety data sheets (MSDS) for the bulk petroleum products stored or handled at Tinker AFB. The SDSs/MSDSs have been provided by the manufacturer or distributor of the product. This list is not meant to be exhaustive. Additional information can be extracted from the database contained in the DoD Hazardous Materials Information System (HMIS) or chemical and hazardous materials information publications. Copies of SDSs for petroleum products and hazardous substances in a given worksite are readily accessible to employees in that area.

J.2 Bulk Fuel Oil and Major Hazardous Substances SDS Listing:

- Jet Fuel (Jet A) – a jet fuel that is kerosene-based military turbine fuel with additives and flashpoint less than 100°F. This product is received and stored by the Base for aircraft operations.
- Diesel Fuel - product is received and stored by the Base for use in vehicles and equipment.
- Gasoline, Unleaded - product is received and stored by the Base for use in vehicles and equipment.

J.3 The Hazard Communications Standard: The HAZCOM Instruction, AFI 90-821, sets forth guidelines for the following:

- Chemical Labeling - requires labeling of all chemicals.
- Material Safety Data Sheet / Safety Data Sheet - must be immediately available to all employees.
- Hazard Determination - employer must identify and maintain a list of all hazardous chemicals used in the workplace.
- Written Implementation Program - development of a shop-specific Hazard Communication Program.
- Employee Training - employer must provide employee training covering the handling of hazardous materials.
- Trade Secret - sets forth conditions for manufacturers withholding information about materials.

J.4 Safety Precautions for Hazardous Chemical Spills: Specific safety precautions to be followed in the event of a spill depend on the characteristics of the hazardous substance(s) involved and must be determined on a case-by-case basis. All operational and response personnel aware of any suspected or actual release must always emphasize on-scene safety and will follow these general procedures:

- Approach cautiously, do not rush in;
- Identify and evaluate the hazard using all available information, i.e., shipping documents, SDSs, knowledgeable personnel, etc.;
- Secure the scene without entering the immediate hazard area;
- Obtain help; notify the fire department and request assistance from qualified personnel;
- Determine required personal protection equipment (PPE) before any personnel enter the affected area; and,
- Continue to act cautiously and avoid inhalation, ingestion, injection and absorption even if no hazardous substance is known to be involved.



Jet A Aviation Fuel

Version 2.0

Revision Date 2013-05-10

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Trade name : Jet A Aviation Fuel
 Material : 1102484, 1103429, 1102481, 1103418, 1102485, 1102483,
 1102482, 1024254, 1024255, 1024256, 1024257, 1104981,
 1104992

Use : Fuel

Company : Specialty Chemicals
 10001 Six Pines Drive
 The Woodlands, TX 77380

Emergency telephone:

Health:

866.442.9628 (North America)
 1.832.813.4984 (International)

Transport:

North America: CHEMTREC 800.424.9300 or 703.527.3887
 Asia: +800 CHEMCALL (+800 2436 2255)
 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
 South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Responsible Department : Product Safety and Toxicology Group
 E-mail address : MSDS@CPChem.com
 Website : www.CPChem.com

SECTION 2: Hazards identification

Emergency Overview

Form: Liquid **Physical state:** Liquid **Color:** Clear light yellow
 OSHA Hazards : Carcinogen, Harmful by ingestion., Aspiration hazard, Delayed target organ effects

GHS Classification

: Flammable liquids, Category 3
 Skin irritation, Category 2
 Carcinogenicity, Category 2
 Specific target organ systemic toxicity - single exposure, Category 3
 Specific target organ systemic toxicity - repeated exposure, Category 1, Eyes, Blood
 Aspiration hazard, Category 1
 Acute aquatic toxicity, Category 2
 Chronic aquatic toxicity, Category 2

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GHS-Labeling

Symbol(s)



Signal Word

: Danger

Hazard Statements

: H226: Flammable liquid and vapor.
 H304: May be fatal if swallowed and enters airways.
 H315: Causes skin irritation.
 H336: May cause drowsiness or dizziness.
 H351: Suspected of causing cancer.
 H372: Causes damage to organs (Eyes, Blood) through prolonged or repeated exposure.
 H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements

: **Prevention:**
 P201: Obtain special instructions before use.
 P202: Do not handle until all safety precautions have been read and understood.
 P210: Keep away from heat/sparks/open flames/hot surfaces.
 - No smoking.
 P233: Keep container tightly closed.
 P240: Ground/bond container and receiving equipment.
 P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
 P242: Use only non-sparking tools.
 P243: Take precautionary measures against static discharge.
 P260: Do not breathe dust/fume/gas/mist/vapor/spray.
 P264: Wash skin thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P271: Use only outdoors or in a well-ventilated area.
 P273: Avoid release to the environment.
 P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
 P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
 P303 + P361 + P353: IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 P308 + P313: IF exposed or concerned: Get medical advice/ attention.
 P321: Specific treatment (see supplemental first aid instructions on this label).
 P331: Do NOT induce vomiting.
 P332 + P313: If skin irritation occurs: Get medical advice/ attention.
 P362: Take off contaminated clothing and wash before reuse.
 P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 P391: Collect spillage.
Storage:
 P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
 P403 + P235: Store in a well-ventilated place. Keep cool.

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P405: Store locked up.

Disposal:

P501: Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity:**IARC**

Group 2B: Possibly carcinogenic to humans

Naphthalene 91-20-3

NTP

Reasonably anticipated to be a human carcinogen

Naphthalene 91-20-3

ACGIH

Confirmed animal carcinogen with unknown relevance to humans

Kerosene C9-C16 8008-20-6

SECTION 3: Composition/information on ingredients

Synonyms : Aviation Turbine Fuel A
Kerosene Turbine Fuel
Kerosene
Jet A-1 Fuel
Jet A Fuel

Molecular formula : UVCB

Component	CAS-No.	Weight %
Kerosene C9-C16	8008-20-6	100
Naphthalene	91-20-3	0 - 3

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

If inhaled : Consult a physician after significant exposure. If unconscious place in recovery position and seek medical advice.

In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.

In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

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SECTION 5: Firefighting measures

Flash point	:	37.8 °C (100.0 °F)
Autoignition temperature	:	210 °C (410 °F)
Suitable extinguishing media	:	Alcohol-resistant foam. Carbon dioxide (CO ₂). Dry chemical.
Unsuitable extinguishing media	:	High volume water jet.
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Special protective equipment for fire-fighters	:	Wear self contained breathing apparatus for fire fighting if necessary.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Fire and explosion protection	:	Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.
Hazardous decomposition products	:	Hydrocarbons. Carbon oxides.

SECTION 6: Accidental release measures

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7: Handling and storage**Handling**

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Advice on safe handling : Avoid formation of aerosol. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion : Do not spray on an open flame or any other incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage areas and containers : No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

SECTION 8: Exposure controls/personal protection

Ingredients with workplace control parameters

US

Ingredients	Basis	Value	Control parameters	Note
Kerosene C9-C16	ACGIH	TWA	200 mg/m3	P, A3, Skin, varies,
	NIOSH REL	TWA	100 mg/m3	
	OSHA Z-1	TWA	500 ppm, 2,000 mg/m3	(b),
	OSHA Z-1-A	TWA	400 ppm, 1,600 mg/m3	
Naphthalene	ACGIH	TWA	10 ppm,	A4, Skin,
	ACGIH	STEL	15 ppm,	A4, Skin,
	OSHA Z-1	TWA	10 ppm, 50 mg/m3	(b),
	OSHA Z-1-A	TWA	10 ppm, 50 mg/m3	
	OSHA Z-1-A	STEL	15 ppm, 75 mg/m3	

- (b) The value in mg/m3 is approximate.
- A3 Confirmed animal carcinogen with unknown relevance to humans
- A4 Not classifiable as a human carcinogen
- P Application restricted to conditions in which there are negligible aerosol exposures
- Skin Danger of cutaneous absorption
- varies varies

Immediately Dangerous to Life or Health Concentrations (IDLH)

Substance name	CAS-No.	Control parameters	Update
Naphthalene	91-20-3	Immediately Dangerous to Life or Health Concentration Value 250 parts per million	1995-03-01

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

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Personal protective equipment

- Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Flame retardant antistatic protective clothing. Workers should wear antistatic footwear.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

- Form : Liquid
 Physical state : Liquid
 Color : Clear light yellow

Safety data

- Flash point : 37.8 °C (100.0 °F)
 Lower explosion limit : 0.6 %(V)
 Upper explosion limit : 4.7 %(V)

- Oxidizing properties : no
 Autoignition temperature : 210 °C (410 °F)
 Molecular formula : UVCB

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Molecular Weight	: Not applicable
pH	: Not applicable
Pour point	: No data available
Boiling point/boiling range	: 149 - 300 °C (300 - 572 °F)
Vapor pressure	: 0.40 MMHG
Relative density	: 0.775, 20 °C(68 °F)
Density	: 806.5 g/l
Water solubility	: Negligible
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: 1.5 cSt at 20 °C (68 °F)
Relative vapor density	: 4.5 (Air = 1.0)
Evaporation rate	: 1
Percent volatile	: > 99 %

SECTION 10: Stability and reactivity

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

Possibility of hazardous reactions

Conditions to avoid : Heat, flames and sparks.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Jet A Aviation Fuel
Acute oral toxicity : LD50: > 5,000 mg/kg
 Species: rat

Acute inhalation toxicity
 Kerosene C9-C16 : LC50: > 5.28 mg/l
 Exposure time: 4 h
 Species: rat

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Naphthalene LC50: >0.38 mg/m³Exposure time: 4 h

Acute dermal toxicity

Kerosene C9-C16 : LD50: > 2,000 mg/kg
Species: rabbit

Naphthalene LD50: > 2,000 mg/kg
Species: rabbit

Jet A Aviation Fuel**Skin irritation**

: May cause skin irritation in susceptible persons.

Jet A Aviation Fuel**Eye irritation**

: Vapors may cause irritation to the eyes, respiratory system and the skin.

Jet A Aviation Fuel**Sensitization**

: No adverse effects expected.

Repeated dose toxicity

Kerosene C9-C16 : Species: rabbit
Application Route: Dermal
Dose: 0, 200, 1000, 2000 mg/kg
Exposure time: 28 day
Number of exposures: 3 times/wk
Lowest observable effect level: 1,000 mg/kg

Carcinogenicity

Kerosene C9-C16 : Species: mouse
Dose: 0, 28.5, 50, 100%
Exposure time: 104 wks
Number of exposures: 2, 4, or 7 times/wk
Remarks: Weak dermal carcinogen

Naphthalene Species: mouse
Sex: male
Dose: 10, 30 ppm
Exposure time: 105 weeks
Number of exposures: 6 hours/day, 5 days/week
Test substance: yes
Print Date: No information available.
Remarks: No evidence of carcinogenicity

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Species: mouse
 Sex: female
 Dose: 10, 30 ppm
 Exposure time: 105 weeks
 Number of exposures: 6 hours/day, 5 days/week
 Test substance: yes
 Print Date: No information available.
 Remarks: increased incidence of alveolar/bronchiolar adenomas

Species: rat
 Sex: male and female
 Dose: 10, 30, 60 ppm
 Exposure time: 105 weeks
 Number of exposures: 6 hours/day, 5 days/week
 Test substance: yes
 Print Date: No information available.
 Remarks: nose respiratory epithelial adenoma, increased incidence of olfactory neuroblastomas

Teratogenicity

Kerosene C9-C16 : Species: rat
 Application Route: Inhalation
 Dose: 0, 106, 364 ppm
 Exposure time: 6 hrs/d
 Test period: GD 6-15
 NOAEL Teratogenicity: 364 ppm
 NOAEL Maternal: 364 ppm

Naphthalene : Species: rabbit
 Application Route: oral gavage
 Dose: 40, 200, 400 mg/kg
 Test period: 29 d, GD 6-18
 NOAEL Teratogenicity: 400 mg/kg

**Jet A Aviation Fuel
Aspiration toxicity**

: May be fatal if swallowed and enters airways.
 Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity hazard.

**Jet A Aviation Fuel
Further information**

: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents may degrease the skin.

SECTION 12: Ecological information**Toxicity to fish**

Kerosene C9-C16 : LL50: 2 - 5 mg/l
 Exposure time: 96 h
 Species: Oncorhynchus mykiss (rainbow trout)
 Method: OECD Test Guideline 203

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Naphthalene LC50: 3.2 mg/l
 Exposure time: 96 h
 Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates

Kerosene C9-C16 : EL50: 1.4 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)
 Method: OECD Test Guideline 202

Naphthalene LC50: 2.16 mg/l
 Exposure time: 48 h
 Species: Daphnia magna (Water flea)

Toxicity to algae

Kerosene C9-C16 : EL50: 1 - 3 mg/l
 Exposure time: 72 h
 Species: Raphidocellus subcapitata (algae)
 Method: OECD Test Guideline 201

Naphthalene EC50: 2.96 mg/l
 Exposure time: 48 h
 Species: Selenastrum capricornutum (algae)

Elimination information (persistence and degradability)

Biodegradability : Expected to be ultimately biodegradable

Additional ecological information : Toxic to aquatic life with long lasting effects.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
 Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

The information in this MSDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

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SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the MSDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III, (37.8 °C)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III, (D/E)

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN1863, FUEL, AVIATION, TURBINE ENGINE, 3, III

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information**National legislation**

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

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

CERCLA Reportable : 3333 lbs
Quantity

MSDS Number: 100000014588

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Naphthalene

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA 313 Ingredients : The following components are subject to reporting levels established by SARA Title III, Section 313:

: Naphthalene - 91-20-3

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : Kerosene C9-C16 - 8008-20-6
Naphthalene - 91-20-3

New Jersey Right To Know : Kerosene C9-C16 - 8008-20-6
Naphthalene - 91-20-3

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

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

Naphthalene

91-20-3

Notification status

Europe REACH : This mixture contains only ingredients which have been subject to a pre-registration according to Regulation (EU) No. 1907/2006 (REACH).

United States of America US.TSCA : On TSCA Inventory

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

Australia AICS : On the inventory, or in compliance with the inventory

New Zealand NZIoC : On the inventory, or in compliance with the inventory

Japan ENCS : On the inventory, or in compliance with the inventory

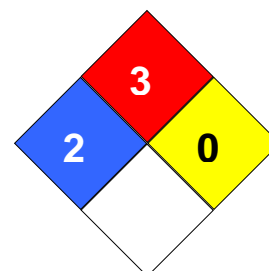
Korea KECI : On the inventory, or in compliance with the inventory

Philippines PICCS : On the inventory, or in compliance with the inventory

China IECSC : On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
Fire Hazard: 3
Reactivity Hazard: 0

**Further information**

Legacy MSDS Number : 1975

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this MSDS pertains only to the product as shipped.

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

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency

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NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		

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SECTION 1. IDENTIFICATION

Product name : SH CARB MV2 DIESEL (S-15 PPM)

Product code : 002D3111

Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Trading (US) Company**
P. O. BOX 4604
Houston, TX 77210-4604
USA

SDS Request : 877-276-7285
Customer Service :

Emergency telephone number

Spill Information : NORTH AMERICA - 1-800-424-9300
INTERNATIONAL - +1-703-527-3887
Health Information : 1-877-504-9351

Recommended use of the chemical and restrictions on use

Restrictions on use : This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier., This product is not to be used as a solvent or cleaning agent; for lighting or brightening fires; as a skin cleanser.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3
Aspiration hazard : Category 1
Acute Toxicity (Inhalation) : Category 4
Skin irritation : Category 2
Carcinogenicity : Category 2
Specific target organ toxicity - repeated exposure : Category 2 (Blood, Thymus, Liver.)
Chronic aquatic toxicity : Category 2

GHS Label element

Hazard pictograms :



Signal word : Danger

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- Hazard statements : PHYSICAL HAZARDS:
H226 Flammable liquid and vapour.
HEALTH HAZARDS:
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
ENVIRONMENTAL HAZARDS:
H411 Toxic to aquatic life with long lasting effects.
- Precautionary statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331 Do NOT induce vomiting.
Disposal:
P501 Dispose of contents and container to appropriate waste site or reclaimer in accordance with local and national regulations.

Other hazards which do not result in classification

May ignite on surfaces at temperatures above auto-ignition temperature.
Vapour in the headspace of tanks and containers may ignite and explode at temperatures exceeding auto-ignition temperature, where vapour concentrations are within the flammability range. This material is a static accumulator.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.
This product is intended for use in closed systems only.

The classification of this material is based on OSHA HCS 2012 criteria.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

- Chemical nature : May contain catalytically cracked oils in which polycyclic aromatic compounds, mainly 3-ring but some 4- to 6-ring species are present.
- May contain cetane improver (Ethyl Hexyl Nitrate) at <0.2% v/v.
May also contain several additives at <0.1% v/v each.

Hazardous components

Chemical Name	Synonyms	CAS-No.	Concentration (%)
Fuels, diesel	Fuels, diesel	68334-30-5	99 - 100

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Dyes and markers can be used to indicate tax status and prevent fraud.

Further information

Contains:

Chemical Name	Identification number	Concentration [%]
Cumene	98-82-8, 202-704-5	0 - 0.5
Naphthalene	91-20-3, 202-049-5	0 - 0.5

SECTION 4. FIRST-AID MEASURES

- If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- In case of skin contact : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.
When using high pressure equipment, injection of product under the skin can occur. If high pressure injuries occur, the casualty should be sent immediately to a hospital. Do not wait for symptoms to develop.
- In case of eye contact : Flush eye with copious quantities of water.
If persistent irritation occurs, obtain medical attention.
- If swallowed : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing. Give nothing by mouth.
- Most important symptoms and effects, both acute and delayed : If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
The onset of respiratory symptoms may be delayed for several hours after exposure.
Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dio-

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- side, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use direct water jets on the burning product as they could cause a steam explosion and spread of the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.
- Specific hazards during fire-fighting : Hazardous combustion products may include:
A complex mixture of airborne solid and liquid particulates and gases (smoke).
Oxides of sulphur.
Unidentified organic and inorganic compounds.
Carbon monoxide may be evolved if incomplete combustion occurs.
Will float and can be reignited on surface water.
Flammable vapours may be present even at temperatures below the flash point.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Further information : Clear fire area of all non-emergency personnel.

Keep adjacent containers cool by spraying with water.
If possible remove containers from the danger zone.
If the fire cannot be extinguished the only course of action is to evacuate immediately.
Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Do not breathe fumes, vapor.
Do not operate electrical equipment.
- : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area and evacuate all personnel. Attempt to disperse the gas or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Monitor area with combustible gas meter.

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- Environmental precautions : Take measures to minimise the effects on groundwater. Contain residual material at affected sites to prevent material from entering drains (sewers), ditches, and waterways. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Methods and materials for containment and cleaning up : Take precautionary measures against static discharges. For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely. Prevent from spreading or entering into drains, ditches or rivers by using sand, earth, or other appropriate barriers. For solids, shovel into a suitable clearly marked container for disposal or reclamation in accordance with local regulations.

Observe all relevant local and international regulations.
Evacuate the area of all non-essential personnel.
Ventilate contaminated area thoroughly.

- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet. Local authorities should be advised if significant spillages cannot be contained. Maritime spillages should be dealt with using a Shipboard Oil Pollution Emergency Plan (SOPEP), as required by MARPOL Annex 1 Regulation 26.

U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Center at (800) 424-8802. Under Section 311 of the Clean Water Act (CWA) this material is considered an oil. As such, spills into surface waters must be reported to the National Response Center at (800) 424-8802. This material is covered by EPA's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Petroleum Exclusion. Therefore, releases to the environment may not be reportable under CERCLA.

SECTION 7. HANDLING AND STORAGE

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- Technical measures : Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
Air-dry contaminated clothing in a well-ventilated area before laundering.
Prevent spillages.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Never siphon by mouth.
Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse.
- Precautions for safe handling : Ensure that all local regulations regarding handling and storage facilities are followed.
Avoid inhaling vapour and/or mists.
Avoid prolonged or repeated contact with skin.
When using do not eat or drink.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Earth all equipment.
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
- Avoidance of contact : Strong oxidising agents.
- Product Transfer : Avoid splash filling Wait 2 minutes after tank filling (for tanks such as those on road tanker vehicles) before opening hatches or manholes. Wait 30 minutes after tank filling (for large storage tanks) before opening hatches or manholes. Keep containers closed when not in use. Contamination resulting from product transfer may give rise to light hydrocarbon vapour in the headspace of tanks that have previously contained gasoline. This vapour may explode if there is a source of ignition. Partly filled containers present a greater hazard than those that are full, therefore handling, transfer and sampling activities need special care. Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diame-

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ter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Storage

Other data

- : Drum and small container storage:
Drums should be stacked to a maximum of 3 high. Use properly labeled and closable containers.
- Tank storage:
Tanks must be specifically designed for use with this product. Bulk storage tanks should be diked (bunded). Locate tanks away from heat and other sources of ignition. Must be stored in a diked (bunded) well-ventilated area, away from sunlight, ignition sources and other sources of heat. Vapours from tanks should not be released to atmosphere. Breathing losses during storage should be controlled by a suitable vapour treatment system. The vapour is heavier than air. Beware of accumulation in pits and confined spaces. Keep container tightly closed and in a cool, well-ventilated place. Keep in a cool place. Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk. The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product. Keep in a bunded area with a sealed (low permeability) floor, to provide containment against spillage. Prevent ingress of water.

Specific use(s)

- : See additional references that provide safe handling practices for liquids that are determined to be static accumulators: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity). CENELEC CLC/TR 50404 (Electrostatics – Code of practice for the avoidance of hazards due to static electricity). Ensure that all local regulations regarding handling and storage facilities are followed.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Cumene	98-82-8	TWA	50 ppm 245 mg/m ³	OSHA Z-1

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		TWA	50 ppm	ACGIH
Naphthalene	91-20-3	TWA	10 ppm 50 mg/m ³	OSHA Z-1
		TWA	10 ppm	ACGIH

Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

Engineering measures

- : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
 - Use sealed systems as far as possible.
 - Firewater monitors and deluge systems are recommended.
 - Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
 - Local exhaust ventilation is recommended.
 - Eye washes and showers for emergency use.

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Do not ingest. If swallowed then seek immediate medical assistance

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Personal protective equipment

Respiratory protection : If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. When prolonged or frequent repeated contact occurs. Nitrile rubber. For incidental contact/splash protection Neoprene, PVC gloves may be suitable. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended. If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide adequate eye protection.

Skin and body protection : Wear chemical resistant gloves/gauntlets and boots. Where risk of splashing, also wear an apron.

Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Hygiene measures : Always observe good personal hygiene measures, such as washing hands after handling the material and before eating,

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drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping. Define procedures for safe handling and maintenance of controls. Educate and train workers in the hazards and control measures relevant to normal activities associated with this product. Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation. Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or subsequent recycle. Do not ingest. If swallowed then seek immediate medical assistance. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to EN374 and provide employee skin care programmes.

Environmental exposure controls

General advice : Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour. Minimise release to the environment. An environmental assessment must be made to ensure compliance with local environmental legislation. Information on accidental release measures are to be found in section 6.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : pale red-brown

Odour : Stenched

Odour Threshold : Data not available

pH : Not applicable

Melting / freezing point : Data not available

Initial boiling point and boiling range : 170 - 390 °C / 338 - 734 °F Method: Unspecified

Flash point : 55 - 75 °C / 131 - 167 °F Method: Unspecified

Flammability (solid, gas) : Not applicable

Upper explosion limit : 6 %(V)

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Lower explosion limit	: 1 %(V)
Vapour pressure	: <= 0.4 kPa (38.0 °C / 100.4 °F) Method: Unspecified
	<= 0.6 kPa (50.0 °C / 122.0 °F) Method: Unspecified
Density	: 820 - 860 kg/m ³ (15.0 °C / 59.0 °F) Method: Unspecified
Solubility(ies)	
Water solubility	: negligible
Partition coefficient: n-octanol/water	: Not applicable
Auto-ignition temperature	: > 220 °C / 428 °F
Viscosity	
Viscosity, kinematic	: 2 - 4.5 mm ² /s (40 °C / 104 °F) Method: Unspecified
Explosive properties	: Classification Code: Not classified.
Oxidizing properties	: Not applicable
Conductivity	: Low conductivity: < 100 pS/m, The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m., Whether a liquid is nonconductive or semiconductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.
Chemical stability	: Stable under normal use conditions.
Conditions to avoid	: Avoid heat, sparks, open flames and other ignition sources. In certain circumstances product can ignite due to static electricity.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition	: Hazardous decomposition products are not expected to form

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products

during normal storage.

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on product data, a knowledge of the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur through inhalation or following accidental ingestion.

Acute toxicity

Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg
Remarks: Low toxicity:

Acute inhalation toxicity : LC 50 (rat): > 1 - <=5 mg/l
Exposure time: 4 h
Remarks: Harmful if inhaled.

Acute dermal toxicity : LD 50 (Rabbit): > 2,000 mg/kg
Remarks: Low toxicity:

Skin corrosion/irritation

Product:

Remarks: Irritating to skin.

Serious eye damage/eye irritation

Product:

Remarks: Expected to be slightly irritating.

Respiratory or skin sensitisation

Product:

Remarks: Not expected to be a sensitiser.

Germ cell mutagenicity

Product:

: Remarks: Positive in in-vitro, but negative in in-vivo mutagenicity assays.

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Carcinogenicity

Product:

Remarks: Limited evidence of carcinogenic effect, Repeated skin contact has resulted in irritation and skin cancer in animals.

IARC

Group 2B: Possibly carcinogenic to humans

Cumene 98-82-8

Naphthalene 91-20-3

ACGIH

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

OSHA

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

NTP

Reasonably anticipated to be a human carcinogen

Naphthalene 91-20-3

Reproductive toxicity

Product:

:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

STOT - single exposure

Product:

Remarks: Not classified.

STOT - repeated exposure

Product:

Target Organs: Blood, Thymus, Liver

Remarks: May cause damage to organs or organ systems through prolonged or repeated exposure.

Aspiration toxicity

Product:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

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Further information

Product:

Remarks: Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Information given is based on a knowledge of the components and the ecotoxicology of similar products.
Fuels are typically made from blending several refinery streams. Ecotoxicological studies have been carried out on a variety of hydrocarbon blends and streams but not those containing additives.
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Ecotoxicity

Product:

Toxicity to fish (Acute toxicity) :
Remarks: Expected to be toxic:
LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to daphnia and other aquatic invertebrates (Acute toxicity) :
Remarks: Expected to be toxic:
LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to algae (Acute toxicity) :
Remarks: Expected to be toxic:
LL/EL/IL50 > 1 <= 10 mg/l

Toxicity to fish (Chronic toxicity) :
Remarks: NOEC/NOEL expected to be > 0.01 - <= 0.1 mg/l (based on modeled data)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) :
Remarks: NOEC/NOEL expected to be > 0.1 - <= 1.0 mg/l (based on modeled data)

Toxicity to bacteria (Acute toxicity) :
Remarks: Expected to be practically non toxic:
LL/EL/IL50 > 100 mg/l

Persistence and degradability

Product:

Biodegradability :
Remarks: Readily biodegradable.

Bioaccumulative potential

Product:

Bioaccumulation :
Remarks: Contains constituents with the potential to bioaccumulate.

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Mobility in soil

Product:

Mobility : Remarks: Partly evaporates from water or soil surfaces, but a significant proportion will remain after one day.
If product enters soil, one or more constituents will be mobile and may contaminate groundwater.
Large volumes may penetrate soil and could contaminate groundwater.
Floats on water.

Other adverse effects

no data available

Product:

Additional ecological information : Films formed on water may affect oxygen transfer and damage organisms.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Recover or recycle if possible.
Send to drum recoverer or metal reclaimer. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Drain container thoroughly. Do not dispose into the environment, in drains or in water courses
After draining, vent in a safe place away from sparks and fire. Do not dispose of tank water bottoms by allowing them to drain into the ground.
Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. This will result in soil and groundwater contamination.
Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.
- Contaminated packaging : Residues may cause an explosion hazard if heated above the flash point. Do not puncture, cut or weld uncleaned drums.
Do not pollute the soil, water or environment with the waste container.
Comply with any local recovery or waste disposal regulations.
Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.
- Local legislation
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or na-

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tional requirements and must be complied with.

SECTION 14. TRANSPORT INFORMATION

National Regulations

US Department of Transportation Classification (49 CFR Parts 171-180)

UN/ID/NA number : UN 1202
Proper shipping name : DIESEL FUEL
Class : 3
Packing group : III
Labels : 3
ERG Code : 128
Marine pollutant : no
Remarks : This material is an 'OIL' under 49 CFR Part 130 when transported in a container of 3500 gallon capacity or greater.

International Regulation

IATA-DGR

UN/ID No. : UN 1202
Proper shipping name : DIESEL FUEL
Class : 3
Packing group : III
Labels : 3

IMDG-Code

UN number : UN 1202
Proper shipping name : DIESEL FUEL
Class : 3
Packing group : III
Labels : 3
Marine pollutant : yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable
Special precautions : Not applicable

Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Combustible Liquid, Carcinogen

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EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Naphthalene	91-20-3	100	*
Cumene	98-82-8	5000	

*: Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity

Calculated RQ exceeds reasonably attainable upper limit.

CERCLA Reportable Quantity

Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Naphthalene	91-20-3	0.5 %
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Clean Water Act

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Naphthalene	91-20-3	0.5 %
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Pennsylvania Right To Know

Fuels, diesel	68334-30-5
Cumene	98-82-8
Naphthalene	91-20-3

New Jersey Right To Know

Naphthalene	91-20-3
-------------	---------

California Prop 65

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

Other regulations : IARC has classified diesel exhaust emissions as a Class 1 carcinogen - carcinogenic to humans. Steps should be taken to prevent personal exposure to diesel exhaust emissions.

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

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SECTION 16. OTHER INFORMATION

Further information

NFPA Rating (Health, Fire, Reactivity) 2, 2, 0

This product is intended for use in closed systems only.

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Due to the conversion of this product to GHS classification and labelling, there has been a significant change to the nature of the information presented in chapter 2.

Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS = Australian Inventory of Chemical Substances
ASTM = American Society for Testing and Materials
BEL = Biological exposure limits
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
CAS = Chemical Abstracts Service
CEFIC = European Chemical Industry Council
CLP = Classification Packaging and Labelling
COC = Cleveland Open-Cup
DIN = Deutsches Institut für Normung
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
DSL = Canada Domestic Substance List
EC = European Commission
EC50 = Effective Concentration fifty
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals
ECHA = European Chemicals Agency
EINECS = The European Inventory of Existing Commercial Chemical Substances
EL50 = Effective Loading fifty
ENCS = Japanese Existing and New Chemical Substances Inventory
EWC = European Waste Code
GHS = Globally Harmonised System of Classification and Labelling of Chemicals
IARC = International Agency for Research on Cancer
IATA = International Air Transport Association
IC50 = Inhibitory Concentration fifty
IL50 = Inhibitory Level fifty
IMDG = International Maritime Dangerous Goods
INV = Chinese Chemicals Inventory
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables
KECI = Korea Existing Chemicals Inventory
LC50 = Lethal Concentration fifty
LD50 = Lethal Dose fifty per cent.

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LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading
LL50 = Lethal Loading fifty
MARPOL = International Convention for the Prevention of
Pollution From Ships
NOEC/NOEL = No Observed Effect Concentration / No Ob-
served Effect Level
OE_HPVS = Occupational Exposure - High Production Volume
PBT = Persistent, Bioaccumulative and Toxic
PICCS = Philippine Inventory of Chemicals and Chemical
Substances
PNEC = Predicted No Effect Concentration
REACH = Registration Evaluation And Authorisation Of
Chemicals
RID = Regulations Relating to International Carriage of Dan-
gerous Goods by Rail
SKIN_DES = Skin Designation
STEL = Short term exposure limit
TRA = Targeted Risk Assessment
TSCA = US Toxic Substances Control Act
TWA = Time-Weighted Average
vPvB = very Persistent and very Bioaccumulative

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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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SAFETY DATA SHEET

CITGO Gasolines, All Grades Unleaded



Section 1. Identification

- GHS product identifier** : CITGO Gasolines, All Grades Unleaded
- Synonyms** : Unleaded Gasolines; Conventional Unleaded Gasoline with Ethanol; Unleaded Gasoline with Ethanol; Reformulated Unleaded Gasoline with Ethanol; Motor Gasolines; Petrol; Automobile Motor Fuels; Finished Gasolines; Gasoline, Regular Unleaded; Gasoline, Mid-grade Unleaded; Gasoline, Premium Unleaded; Reformulated Gasolines (RFG); Reformulated Motor Fuels; Oxygenated Motor Spirits; Gasoline, Regular Reformulated; Gasoline, Mid-grade Reformulated; Gasoline, Premium Reformulated; RBOB; GTAB; Arizona Clean Burning Gasoline (CBG); CARB Gasoline with Ethanol.
- Material uses** : Fuel.
- Code** : Various
- MSDS #** : UNLEAD
- Supplier's details** : CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210
sdsvend@citgo.com
- Emergency telephone number** : Technical Contact: (832) 486-4000
Medical Emergency: (832) 486-4700
CHEMTREC Emergency: (800) 424-9300
(United States Only)

Section 2. Hazards identification

- OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2B
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION [Fertility] - Category 2
TOXIC TO REPRODUCTION [Unborn child] - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [central nervous system (CNS)] - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation and Narcotic effects] - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
ASPIRATION HAZARD - Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
Causes skin and eye irritation.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May be fatal if swallowed and enters airways.
May cause damage to organs. (central nervous system (CNS))
May cause respiratory irritation.
May cause drowsiness and dizziness.

Date of issue/Date of revision : 5/19/2015.

1/19

Section 2. Hazards identification

Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response

: Get medical attention if you feel unwell. IF exposed or if you feel unwell: Call a POISON CENTER or physician. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention.

Storage

: Store locked up. Store in a well-ventilated place. Keep cool.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements

: Avoid contact with skin and clothing. Wash thoroughly after handling.

Hazards not otherwise classified

: Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

Substance/mixture

: Substance

Other means of identification

: Unleaded Gasolines; Conventional Unleaded Gasoline with Ethanol; Unleaded Gasoline with Ethanol; Reformulated Unleaded Gasoline with Ethanol; Motor Gasolines; Petrol; Automobile Motor Fuels; Finished Gasolines; Gasoline, Regular Unleaded; Gasoline, Mid-grade Unleaded; Gasoline, Premium Unleaded; Reformulated Gasolines (RFG); Reformulated Motor Fuels; Oxygenated Motor Spirits; Gasoline, Regular Reformulated; Gasoline, Mid-grade Reformulated; Gasoline, Premium Reformulated; RBOB; GTAB; Arizona Clean Burning Gasoline (CBG); CARB Gasoline with Ethanol.

Ingredient name	%	CAS number
Toluene	<20	108-88-3
Pentane, all isomers	<20	109-66-0
Xylenes, mixed isomers	<20	1330-20-7
Hexane, other isomers	<15	*
Heptane, all isomers	<15	142-82-5
Ethanol	0 - 10	64-17-5
Butane	0 - 10	106-97-8
Benzene	<4.9	71-43-2
Cumene	<4	98-82-8
Ethylbenzene	<4	100-41-4
n-Hexane	<3	110-54-3
Cyclohexane	<3	110-82-7
1,2,4-Trimethylbenzene	<2	95-63-6
Naphthalene	<2	91-20-3

* = Various ** = Mixture *** = Proprietary

Any concentration shown as a range is to protect confidentiality or is due to process variation.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation. Breathing high concentrations can cause irregular heartbeats which can be fatal.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
Breathing high concentrations can cause irregular heartbeats which can be fatal.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

Section 4. First aid measures

- Notes to physician** : This material (or a component) may sensitize the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. If ingested, this material presents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended. Consider activated charcoal and/or gastric lavage. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.
- Specific treatments** : Treat symptomatically and supportively.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that gas or vapor is still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, carbon dioxide (CO₂), water spray (fog) or foam. SMALL FIRE: Steam, CO₂, dry chemical or inert gas (e.g., nitrogen). LARGE FIRE: Use foam, water fog or water spray. Water fog and spray are effective in cooling containers and adjacent structures. However, water can cause frothing and/or may not extinguish the fire. Water can be used to cool the external walls of vessels to prevent excessive pressure, ignition or explosion.

- Unsuitable extinguishing media** : Do not use water jet.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Section 6. Accidental release measures

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Use only as a motor fuel. Do not syphon by mouth. Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container. Non equilibrium conditions may increase the fire hazard associated with this product. Always bond receiving containers to the fill pipe before and during loading. Always confirm that receiving container is properly grounded. Bonding and grounding alone may be inadequate to eliminate fire and explosion hazards. Carefully review operations that may increase the risks such as tank and container filling, tank cleaning, sampling, gauging, loading, filtering, mixing, agitation, etc. In addition to bonding and grounding, efforts to mitigate the hazards may include, but are not limited to, ventilation, inerting and/or reduction of transfer velocities. Always keep nozzle in contact with the container throughout the loading process. Do NOT fill any portable container in or on a vehicle. Special precautions, such as reduced loading rates and increased monitoring, must be observed during "switch loading" operations (i.e., loading this material in tanks or shipping compartments that previously contained a dissimilar product).
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental

Section 7. Handling and storage

contamination.

Bulk Storage Conditions: Maintain all storage tanks in accordance with applicable regulations. Use necessary controls to monitor tank inventories. Inspect all storage tanks on a periodic basis. Test tanks and associated piping for tightness. Maintain the automatic leak detection devices to assure proper working condition.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Pentane, all isomers	ACGIH TLV (United States, 4/2014). TWA: 1000 ppm 8 hours.
Toluene	OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 2950 mg/m ³ 8 hours. OSHA PEL Z2 (United States, 2/2013). TWA: 200 ppm 8 hours. CEIL: 300 ppm AMP: 500 ppm 10 minutes. ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.
Xylenes, mixed isomers	ACGIH TLV (United States, 4/2014). TWA: 100 ppm 8 hours. TWA: 434 mg/m ³ 8 hours. STEL: 150 ppm 15 minutes. STEL: 651 mg/m ³ 15 minutes. OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 435 mg/m ³ 8 hours.
Hexane, other isomers	ACGIH (United States). TWA: 500 ppm 8 hours. STEL: 1000 ppm 15 minutes.
Heptane, all isomers	ACGIH TLV (United States, 4/2014). TWA: 400 ppm 8 hours. TWA: 1640 mg/m ³ 8 hours. STEL: 500 ppm 15 minutes. STEL: 2050 mg/m ³ 15 minutes. OSHA PEL (United States, 2/2013). TWA: 500 ppm 8 hours. TWA: 2000 mg/m ³ 8 hours.
Ethanol	ACGIH (United States). TWA: 1000 ppm 8 hours. OSHA (United States). TWA: 1000 ppm 8 hours. ACGIH TLV (United States, 4/2014). STEL: 1000 ppm 15 minutes. OSHA PEL (United States, 2/2013). TWA: 1000 ppm 8 hours. TWA: 1900 mg/m ³ 8 hours.
Butane	ACGIH (United States). TWA: 800 ppm 8 hours. ACGIH TLV (United States, 4/2014). STEL: 1000 ppm 15 minutes.
Benzene	ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 0.5 ppm 8 hours. TWA: 1.6 mg/m ³ 8 hours. STEL: 2.5 ppm 15 minutes. STEL: 8 mg/m ³ 15 minutes.

Section 8. Exposure controls/personal protection

Cumene	<p>OSHA PEL (United States, 2/2013). TWA: 1 ppm 8 hours. STEL: 5 ppm 15 minutes.</p> <p>OSHA PEL Z2 (United States, 2/2013). TWA: 10 ppm 8 hours. CEIL: 25 ppm AMP: 50 ppm 10 minutes.</p> <p>ACGIH TLV (United States, 4/2014). TWA: 50 ppm 8 hours.</p> <p>OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 50 ppm 8 hours. TWA: 245 mg/m³ 8 hours.</p>
Ethylbenzene	<p>ACGIH TLV (United States, 4/2014). TWA: 20 ppm 8 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 100 ppm 8 hours. TWA: 435 mg/m³ 8 hours.</p>
n-Hexane	<p>ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 50 ppm 8 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 500 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p>
Cyclohexane	<p>ACGIH TLV (United States, 4/2014). TWA: 100 ppm 8 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 300 ppm 8 hours. TWA: 1050 mg/m³ 8 hours.</p>
1,2,4-Trimethylbenzene	<p>ACGIH TLV (United States, 4/2014). TWA: 25 ppm 8 hours. TWA: 123 mg/m³ 8 hours.</p>
Naphthalene	<p>ACGIH (United States). Absorbed through skin. TWA: 10 ppm 8 hours. STEL: 15 ppm 15 minutes.</p> <p>OSHA (United States). TWA: 10 ppm 8 hours.</p> <p>ACGIH TLV (United States, 4/2014). Absorbed through skin. TWA: 10 ppm 8 hours. TWA: 52 mg/m³ 8 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 10 ppm 8 hours. TWA: 50 mg/m³ 8 hours.</p>

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, vapor controls, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : Avoid skin contact with liquid. Chemical-resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Heavy duty, industrial grade chemically resistant gloves constructed of nitrile, neoprene, polyethylene, fluoroelastomer rubber or polyvinyl chloride as approved by glove manufacturer. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. Leather gloves are not protective for liquid contact.
- Body protection** : Avoid skin contact with liquid. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Avoid skin contact with liquid. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Leather boots are not protective for liquid contact.
- Respiratory protection** : Avoid inhalation of gases, vapors, mists or dusts. Use a properly fitted, air-purifying or supplied-air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If an air purifying respirator is appropriate, use one equipped with cartridges rated for organic vapors.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Transparent, clear to amber or red.
- Odor** : Pungent, characteristic gasoline.
- pH** : Not applicable
- Boiling point/boiling range** : 38 to 204°C (100.4 to 399.2°F)
- Flash point** : Closed cup: -43°C (-45.4°F) [Tagliabue [ASTM D-56]]
- Evaporation rate** : 7.5 (n-butyl acetate. = 1)
- Lower and upper explosive (flammable) limits** : Lower: 1.4%
Upper: 7.6%
- Vapor pressure** : 29.3 to 60 kPa (220 to 450 mm Hg) [room temperature]
- Vapor density** : 3 to 4 [Air = 1]
- Relative density** : 0.72 to 0.77
- Solubility** : Very slightly soluble in the following materials: cold water.
- Auto-ignition temperature** : 280°C (536°F)
- Viscosity** : Kinematic (room temperature): <0.01 cm²/s (<1 cSt)

Section 10. Stability and reactivity

- Reactivity** : Not expected to be Explosive, Self-Reactive, Self-Heating, or an Organic Peroxide under US GHS Definition(s).
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
- Incompatible materials** : Reactive or incompatible with the following materials:
oxidizing materials
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Toluene	LC50 Inhalation Vapor	Rat	>20 mg/l	4 hours
	LD50 Dermal	Rabbit	12267 mg/kg	-
	LD50 Oral	Rat - Male	5580 mg/kg	-
	TDLo Oral	Rat	1000 mg/kg	-
Xylenes, mixed isomers	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	6700 ppm	4 hours
	LD50 Oral	Mouse	2119 mg/kg	-
	LD50 Oral	Rat	4300 mg/kg	-
Hexane, other isomers Heptane, all isomers	LD50 Oral	Rat	4300 mg/kg	-
	LC50 Inhalation Gas.	Rat	48000 ppm	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg	-
Ethanol	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapor	Mouse	>40000 ppm	10 minutes
	LC50 Inhalation Vapor	Rat	124700 mg/m ³	4 hours
	LD50 Oral	Guinea pig	5560 mg/kg	-
Butane	LD50 Oral	Rabbit	6300 mg/kg	-
	LD50 Oral	Rat	7060 mg/kg	-
	LC50 Inhalation Vapor	Mouse	680000 mg/m ³	2 hours
Benzene	LC50 Inhalation Vapor	Rat	658000 mg/m ³	4 hours
	LC50 Inhalation Vapor	Rat	10000 ppm	7 hours
	LD50 Oral	Mammal - species unspecified	5700 mg/kg	-
	LD50 Oral	Mouse	4700 mg/kg	-
Cumene	LD50 Oral	Rat	6400 mg/kg	-
	LC50 Inhalation Vapor	Mouse	10 g/m ³	7 hours
	LD50 Dermal	Rabbit	12300 uL/kg	-
	LD50 Oral	Rat	2.9 g/kg	-
Ethylbenzene	LD50 Oral	Rat	4000 mg/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
n-Hexane	LD50 Oral	Rat	3500 mg/kg	-
	LC50 Inhalation Vapor	Rat	48000 ppm	4 hours
Cyclohexane	LD50 Oral	Rat	15840 mg/kg	-
	LC50 Inhalation Vapor	Mouse	70000 mg/m ³	2 hours
	LD50 Oral	Rat	6240 mg/kg	-
	LD50 Oral	Rat	12705 mg/kg	-

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1,2,4-Trimethylbenzene	LD50 Oral	Rat	>5000 mg/kg	-
	LDLo Oral	Rabbit	5500 mg/kg	-
	LC50 Inhalation Vapor	Rat	18000 mg/m ³	4 hours
	LD50 Oral	Mouse	6900 mg/kg	-
Naphthalene	LD50 Oral	Rat	5 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-

Conclusion/Summary

Pentane, all isomers: Studies of pentane isomers in laboratory animals indicate exposure to extremely high levels (roughly 10 vol.%) may induce cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

Toluene: Deliberate inhalation of toluene at high concentrations (e.g., glue sniffing and solvent abuse) can cause CNS depression, cardiac arrhythmias and death.

Xylenes, mixed isomers: Overexposure to xylene may cause upper respiratory tract irritation, headache, cyanosis, blood serum changes, CNS damage and narcosis. Effects may be increased by the use of alcoholic beverages. Evidence of liver and kidney impairment were reported in workers recovering from a gross over-exposure.

Heptane, all isomers: Heptane is a CNS depressant and narcosis at elevated concentrations.

Ethanol: Inhalation exposure to ethanol vapor at concentrations above applicable workplace exposure levels is expected to produce eye and mucus membrane irritation. Human exposure at concentrations from 1000 to 5000 ppm produced symptoms of narcosis, stupor and unconsciousness. Subjects exposed to ethanol vapor in concentrations between 500 and 10,000 ppm experienced coughing and smarting of the eyes and nose. At 15,000 ppm there was continuous lacrimation and coughing. While extensive acute and chronic effects can be expected with ethanol consumption, ingestion is not expected to be a significant route of exposure to this product.

Butane: Studies in laboratory animals indicate exposure to extremely high levels of butanes (1-10 or higher vol.% in air) may cause cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

Cumene: Overexposure to cumene may cause upper respiratory tract irritation and CNS depression.

n-Hexane: n-Hexane is a CNS depressant and narcosis at elevated concentrations.

Cyclohexane: Cyclohexane is a CNS depressant and narcosis at elevated concentrations.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Toluene	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Mild irritant	Pig	-	870 Micrograms	-
	Skin - Mild irritant	Rabbit	-	24 hours 250 microliters	-
	Skin - Moderate irritant	Rabbit	-	435 milligrams	-
Xylenes, mixed isomers	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Skin - Moderate irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
Ethanol	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-

Section 11. Toxicological information

Benzene	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	88 milligrams	-
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
Cumene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
	Eyes - Mild irritant	Rabbit	-	86 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 10 milligrams	-
Ethylbenzene	Skin - Mild irritant	Rabbit	-	24 hours 15 milligrams	-
n-Hexane	Eyes - Mild irritant	Rabbit	-	10 milligrams	-
1,2,4-Trimethylbenzene	Skin - Edema	Rabbit	3	-	-
Naphthalene	Skin - Mild irritant	Rabbit	-	495 milligrams	-

Skin : **Xylenes, mixed isomers**: May cause skin irritation.
Cyclohexane: Cyclohexane can cause eye, skin and mucous membrane irritation.

Eyes : **Xylenes, mixed isomers**: May cause eye irritation.

Respiratory : No additional information.

Sensitization

Skin : **Toluene**: Non-sensitizer to skin.

Respiratory : **Toluene**: Non-sensitizer to lungs.

Mutagenicity

Conclusion/Summary : **Heptane, all isomers**: n-heptane was not mutagenic in the Salmonella/microsome (Ames) assay.
Benzene: Some studies of workers exposed to benzene have shown an association with increased rates of chromosome aberrations in circulating lymphocytes.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzene	Positive - Inhalation - TD	Rat - Female	-	-

Conclusion/Summary : **Ethanol**: IARC Monograph 96 (2010) identified Ethanol in alcoholic beverages as a Group 1 carcinogen.
Benzene: Studies of workers exposed to benzene show clear evidence that over-exposure can cause cancer of the blood forming organs (acute myelogenous leukemia) and aplastic anemia. Also, studies suggest over-exposure to benzene may be associated with other types of leukemia and other blood disorders. Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of benzene vapor can cause bone marrow suppression and cancer in multiple organ systems.
Ethylbenzene: Findings from a 2-year inhalation study in rodents conducted by NTP were as follows: Effects were observed only at the highest exposure level (750 ppm). At this level the incidence of renal tumors was elevated in male rats (tubular carcinomas) and female rats (tubular adenomas). Also, the incidence of tumors was elevated in male mice (alveolar and bronchiolar carcinomas) and female mice (hepatocellular carcinomas). IARC has classified ethyl benzene as "possibly carcinogenic to humans" (Group 2B).
Cumene: Studies in laboratory animals indicate evidence of adverse effects on the kidney and adrenal glands following high level exposure. The relevance of these findings to humans is not clear at this time. IARC has classified cumene as "possibly carcinogenic to humans" (Group 2B). In addition, NTP has determined cumene is reasonably anticipated to be a human carcinogen based on sufficient evidence of carcinogenicity from studies in experimental animals.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
Toluene	-	3	-
Xylenes, mixed isomers	-	3	-
Ethanol	-	1	-
Benzene	+	1	Known to be a human carcinogen.
Ethylbenzene	-	2B	-
Cumene	-	2B	Reasonably anticipated to be a human carcinogen.
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

Reproductive toxicity

Conclusion/Summary

Toluene: Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Several studies of workers suggest long-term exposure may be related to small increases in spontaneous abortions and changes in some gonadotropic hormones. However, the weight of evidence does not indicate toluene is a reproductive hazard to humans. Studies in laboratory animals indicate some changes in reproductive organs following high levels of exposure, but no significant effects on mating performance or reproduction were observed. Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Findings in laboratory animals were largely negative. Positive findings include small increases in minor skeletal and visceral malformations and developmental delays following very high levels of maternal exposure.

Benzene: One study of women workers exposed to benzene suggested a weak association with irregular menstruation. However, other studies of workers exposed to benzene have not demonstrated clear evidence of an effect on fertility or reproductive outcome in humans. Benzene can cross the placenta and affect the developing fetus. Cases of aplastic anemia have been reported in the offspring of persons severely over-exposed to benzene. Studies in laboratory animals show evidence of adverse effects on male reproductive organs following high levels of exposure but no significant effects on reproduction have been observed. Embryotoxicity has been reported in studies of laboratory animals but effects were limited to reduced fetal weight and skeletal variations.

Ethylbenzene: Studies in laboratory animals indicate limited evidence of renal malformations, resorptions, and developmental delays following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time.

n-Hexane: In laboratory studies, prolonged exposure to elevated concentrations of n-hexane was associated with decreased sperm count and degenerative changes in the testicles of rats.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Benzene	Negative - Inhalation	Rat	-	-

Conclusion/Summary : No additional information.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 3	Not applicable.	Narcotic effects
Pentane, all isomers	Category 3	Not applicable.	Narcotic effects
Hexane, other isomers	Category 3	Not applicable.	Narcotic effects
Heptane, all isomers	Category 3	Not applicable.	Narcotic effects
Ethanol	Category 3	Not applicable.	Respiratory tract irritation
Butane	Category 2	Not determined	central nervous system (CNS)
Cumene	Category 3	Not applicable.	Respiratory tract irritation
Ethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
n-Hexane	Category 3	Not applicable.	Narcotic effects
Cyclohexane	Category 3	Not applicable.	Narcotic effects

Section 11. Toxicological information

1,2,4-Trimethylbenzene	Category 3	Not applicable.	Respiratory tract irritation
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Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Toluene	Category 2	Inhalation	kidneys
Benzene	Category 1	Inhalation	blood system
n-Hexane	Category 2	Inhalation	peripheral nervous system

Aspiration hazard

Name	Result
CITGO Gasolines, All Grades Unleaded	ASPIRATION HAZARD - Category 1
Pentane, all isomers	ASPIRATION HAZARD - Category 1
Toluene	ASPIRATION HAZARD - Category 1
Hexane, other isomers	ASPIRATION HAZARD - Category 1
Heptane, all isomers	ASPIRATION HAZARD - Category 1
Benzene	ASPIRATION HAZARD - Category 1
Cumene	ASPIRATION HAZARD - Category 1
Ethylbenzene	ASPIRATION HAZARD - Category 1
n-Hexane	ASPIRATION HAZARD - Category 1
Cyclohexane	ASPIRATION HAZARD - Category 1

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. May cause respiratory irritation. Breathing high concentrations can cause irregular heartbeats which can be fatal.
- Skin contact** : Causes skin irritation. Defatting to the skin.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
Breathing high concentrations can cause irregular heartbeats which can be fatal.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Potential chronic health effects

Section 11. Toxicological information

General	: Causes damage to organs through prolonged or repeated exposure. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Carcinogenicity	: May cause cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	: May cause genetic defects.
Teratogenicity	: Suspected of damaging the unborn child.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: Suspected of damaging fertility.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Toluene	Acute EC50 433 ppm Marine water	Algae - Skeletonema costatum	96 hours
	Acute EC50 12500 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 11600 µg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 6000 µg/l Fresh water	Daphnia - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	Acute LC50 5500 µg/l Fresh water	Fish - Oncorhynchus kisutch - Fry	96 hours
	Chronic NOEC 500000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
Xylenes, mixed isomers	Chronic NOEC 1000 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Acute EC50 90 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 8.5 ppm Marine water	Crustaceans - Palaemonetes pugio - Adult	48 hours
	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 15700 µg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute LC50 19000 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours
Heptane, all isomers	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 16940 µg/l Fresh water	Fish - Carassius auratus	96 hours
	Acute EC50 1.5 mg/l	Daphnia - Daphnia magna	48 hours
	Acute LC50 4 mg/l	Fish - Carassius auratus	24 hours
	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute LC50 4924 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
Ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
Benzene	Acute EC50 29000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 1360000 µg/l Fresh water	Algae - Scenedesmus abundans	96 hours
	Acute EC50 9230 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 21000 µg/l Marine water	Crustaceans - Artemia salina - Nauplii	48 hours
	Acute LC50 5.28 ul/L Fresh water	Fish - Oncorhynchus gorbuscha - Fry	96 hours
	Chronic NOEC 1.5 to 5.4 ul/L Marine water	Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling)	4 weeks

Section 12. Ecological information

Cumene	Acute EC50 2600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 7400 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 10600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Ethylbenzene	Acute LC50 2700 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 4600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 3600 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2930 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 5200 µg/l Marine water	Crustaceans - Americamysis bahia	48 hours
	Acute LC50 4200 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 1000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
n-Hexane	Acute LC50 2500 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 4530 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Cyclohexane	Acute LC50 17000 µg/l Marine water	Crustaceans - Cancer magister - Zoea	48 hours
	Acute LC50 4910 µg/l Marine water	Crustaceans - Elasmopus pecteniscrus - Adult	48 hours
1,2,4-Trimethylbenzene	Acute LC50 7720 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute LC50 22.4 mg/l Fresh water	Fish - Tilapia zillii	96 hours
	Acute EC50 1.6 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 2350 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 213 µg/l Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
Naphthalene	Chronic NOEC 0.67 ppm Fresh water	Fish - Oncorhynchus kisutch	40 days

Conclusion/Summary : Not available.

Persistence and degradability

Conclusion/Summary : **Toluene**: Rapidly biodegradable in aerobic conditions.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Pentane, all isomers	3.45	171	low
Toluene	2.73	8.3	low
Xylenes, mixed isomers	3.12	8.1 to 25.9	low
Heptane, all isomers	4.66	552	high
Ethanol	-0.35	-	low
Butane	2.89	-	low
Benzene	2.13	4.27	low
Cumene	3.55	94.69	low
Ethylbenzene	3.6	-	low
n-Hexane	4	501.187	high
Cyclohexane	3.44	167	low
1,2,4-Trimethylbenzene	3.63	243	low
Naphthalene	3.4	36.5 to 168	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations





Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification : D001, D018

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Xylenes, mixed isomers	1330-20-7	Listed	U239
Toluene	108-88-3	Listed	U220
Benzene	71-43-2	Listed	U019
Cumene	98-82-8	Listed	U055
Cyclohexane	110-82-7	Listed	U056

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN1203	UN 1203	UN1203
UN proper shipping name	UN 1203, Gasoline, 3 PG II.	UN 1203, Gasoline, 3 PG II.	UN 1203, Gasoline, 3 PG II.
Transport hazard class(es)	3 	3  	3 
Packing group	II	II	II
Environmental hazards	Yes.	Yes.	Yes.
Additional information	Packaging instruction Passenger aircraft Quantity limitation: 5 L Cargo aircraft Quantity limitation: 60 L	-	Cargo Aircraft Only Quantity limitation: 60 L Limited Quantities - Passenger Aircraft Quantity limitation: 5 L

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15. Regulatory information

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted.
Clean Water Act (CWA) 307: Toluene; Benzene; Ethylbenzene; Naphthalene
Clean Water Act (CWA) 311: Xylenes, mixed isomers; Toluene; Benzene; Ethylbenzene; Cyclohexane; Naphthalene
 This material is classified as an oil under Section 311 of the Clean Water Act (CWA) and the Oil Pollution Act of 1990 (OPA). Discharges or spills which produce a visible sheen on waters of the United States, their adjoining shorelines, or into conduits leading to surface waters must be reported to the EPA's National Response Center at (800) 424-8802.
Clean Air Act (CAA) 112 regulated flammable substances: Pentane; Butane

SARA 302/304

Composition/information on ingredients

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
 Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

Name	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Octanes, all isomers	Yes.	No.	No.	Yes.	No.
Pentane	Yes.	No.	No.	Yes.	No.
Toluene	Yes.	No.	No.	Yes.	Yes.
Hexane, other isomers	Yes.	No.	No.	Yes.	Yes.
Heptane	Yes.	No.	No.	Yes.	No.
Xylenes, mixed isomers	Yes.	No.	No.	Yes.	No.
Ethanol	Yes.	No.	No.	Yes.	Yes.
Butane	Yes.	Yes.	No.	Yes.	No.
Nonane, all isomers	Yes.	No.	No.	Yes.	No.
Benzene	Yes.	No.	No.	Yes.	Yes.
n-hexane	Yes.	No.	No.	Yes.	Yes.
Cumene	Yes.	No.	No.	Yes.	Yes.
Methylcyclohexane	Yes.	No.	No.	Yes.	No.
Trimethylbenzene, all isomers	Yes.	No.	No.	Yes.	Yes.
Ethylbenzene	Yes.	No.	No.	Yes.	Yes.
2,2,4-Trimethylpentane	Yes.	No.	No.	Yes.	No.
1,2,4-Trimethylbenzene	Yes.	No.	No.	Yes.	No.
Cyclohexane	Yes.	No.	No.	Yes.	No.
Cyclopentane	Yes.	No.	No.	Yes.	No.
Naphthalene	Yes.	No.	No.	Yes.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Toluene	108-88-3	<20
	Xylenes, mixed isomers	1330-20-7	<20
	Benzene	71-43-2	<5
	Ethylbenzene	100-41-4	<4
	Cumene	98-82-8	<4
	n-Hexane	110-54-3	<3
	Cyclohexane	110-82-7	<3
	1,2,4-Trimethylbenzene	95-63-6	<2
Naphthalene	91-20-3	<2	

Section 15. Regulatory information

Supplier notification			
	Toluene	108-88-3	<20
	Xylenes, mixed isomers	1330-20-7	<20
	Benzene	71-43-2	<5
	Ethylbenzene	100-41-4	<4
	Cumene	98-82-8	<4
	n-Hexane	110-54-3	<3
	Cyclohexane	110-82-7	<3
	1,2,4-Trimethylbenzene	95-63-6	<2
	Naphthalene	91-20-3	<2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

: The following components are listed: HEPTANE (N-HEPTANE); Xylenes, mixed isomers; Toluene; Octanes, all isomers; PENTANE; ETHYL ALCOHOL; BENZENE; Butane; Cumene; Ethylbenzene; Trimethylbenzene, all isomers; Methylcyclohexane; n-Hexane; Ethyltoluene; Cyclohexane; 2,2,4-Trimethylpentane; PSEUDOCUMENE; Cyclopentane

New York

: The following components are listed: Toluene; Benzene; Cumene; Benzene, 1-methylethyl-; Ethylbenzene; Hexane; Cyclohexane; Benzene, hexahydro-; 2,2,4-Trimethylpentane; Naphthalene

New Jersey

: The following components are listed: Gasoline

Pennsylvania

: The following components are listed: Gasoline

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	%	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Gasoline engine exhaust (condensates / extracts)	100	Yes.	No.	No.	No.
Toluene	<20	No.	Yes.	No.	7000 µg/day (ingestion)
Ethanol	<10	Yes.	Yes.	No.	No.
Benzene	<5	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)
Ethylbenzene	<5	Yes.	No.	41 µg/day (ingestion) 54 µg/day (inhalation)	No.
Cumene	<5	Yes.	No.	No.	No.
Naphthalene	<2	Yes.	No.	Yes.	No.

International regulations

International lists

: **Australia inventory (AICS):** All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Malaysia Inventory (EHS Register): All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Taiwan inventory (CSNN): All components are listed or exempted.

Canada inventory

: All components are listed or exempted.

EU Inventory

: All components are listed or exempted.

WHMIS (Canada)

: Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Section 16. Other information

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 5/19/2015.

Key to abbreviations

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 UN = United Nations

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ANNEX K

Safety and Health Plan

K.1 General: This annex addresses the safety and health of Tinker AFB personnel while working at oil and hazardous substance (OHS) storage, transfer and handling sites on the Base. The safety guidelines and precautions in this annex are minimum requirements and pertain to normal work situations. It is impractical to summarize all situations that may arise; therefore full cooperation by all personnel is required to cope with hazardous conditions that may not be covered in this annex. All personnel are required to be in compliance with AFI 90-821, Hazard Communication (HAZCOM) Program, for additional awareness of working conditions.

K.2 Personnel Qualifications: All personnel assigned to OHS handling operations must be physically able to perform the duties required. Personnel must be able to read and understand, with a minimum amount of instruction, the contents of this annex. No individual will be permitted to operate any system, equipment or perform any other task at an oil or hazardous substance storage or transfer site at Tinker AFB, unless the individual is thoroughly familiar with this annex and aware of each potential hazard involved at their activity site. Unauthorized personnel in or around fuel operations are not permitted.

K.3 Training: Accidents are generally caused when individuals consciously or unconsciously involve themselves in unsafe acts or allow unsafe conditions to exist. Safety indoctrination and training are a means to help reduce accidents and prevent injuries. Safety consciousness must begin during initial qualification training and continue throughout that individual's assignment at that activity. Operating personnel will receive training on the nature of the OHS at the work site and the general principles of safe handling, storage, use and transportation of these substances. Operators must be able to recognize potential hazards to avoid dangerous exposures and to develop safe working practices. Additionally, they will receive training on emergency procedures. Personnel will be familiar with facility publications, manuals, or instructions providing information on safe and efficient operations.

K.4 Characteristics of Oil and Hazardous Substances: Although the handling of OHS presents many hazards, they can be handled safely and with freedom from accidents, if their characteristics are understood and proper safety precautions are taken. OHS can pose a health hazard from skin contact (absorption), ingestion, or inhalation. Vapors from OHS, especially petroleum products, may also constitute a fire and explosion hazard. Fuel vapors have been known to travel some distance and, upon reaching a source of ignition, flashback to the point of origin, causing a fire or explosion. Flashbacks are extremely dangerous and are usually fatal to persons close by. OHS vapors that are heavier than air will often accumulate in low-lying areas and confined spaces. Hazardous areas may also extend downwind. Flammable vapors can be ignited by static electricity, sparks, hot exhaust pipes, lighted cigarettes, electrical devices, or other heat generating sources.

K.5 General Precautions, Instructions, and Requirements: Safety awareness and procedures are directed toward prevention of accidents and exposure to health hazards.

K.5.1 Static Electricity: Static electricity in areas with explosive vapor concentrations is extremely dangerous. Static charges are generated by the movement or contact and separation of two unlike materials. The flow of fuel through equipment and movement of contaminants (rust, mill scale, water, etc.) during fuel transfers, or during the settling period (30 minutes minimum), will generate sufficient static charge to create a potential hazard. A charge builds up around triggering points (gauging and sampling devices, floats, swing pipes, etc.) and, if not discharged through the fuel to the wall of the container (which must be grounded), sparks can occur in the vapor space above the fuel. Complete elimination of static electricity is impossible, however, by following proper grounding or bonding procedures and other precautions in fuel handling, the hazard can be greatly reduced.

K.5.2 Prevention: The major objective should always be prevention of hazardous conditions. For example, it is easier to prevent a fire than to extinguish one. The following are general safety requirements and prevention measures in the operation of fuel transfer sites and may be applied to other sites that store, transfer or handle hazardous substances:

Clothing - Clothing made from 100 percent cotton, or combination blends of cotton with polyester or cotton with nylon, is authorized for outer garment wear by operators. Wool stockings, wool glove inserts, wool caps, and, under garments of nylon, silk, or polyester pose no significant hazard and are acceptable. Clothing made from 100 percent wool, silk, nylon, Dacron, or polyester is not authorized for outer garment wear during fuel handling operations. Outer garments will not be donned or removed while conducting fueling handling operations. Protective gloves will be used when handling and working with jet fuels or other hazardous substances.

Housekeeping - Good housekeeping at OHS storage facilities is essential to safe and efficient operations. Cleanliness will be observed at all times.

Smoking - No smoking is allowed around OHS storage and handling facilities except in designated areas.

Horseplay - Horseplay can lead to inattention and accidents around OHS handling and storage operations and is not permitted.

Electrical - Flashlights, drop lights, extension cords, and electrical fixtures or appliances must be approved as “intrinsically safe” or “explosion proof” and maintained in good condition for use in fuel handling and storage operations.

Entrance into hazardous areas - Permission will be obtained from the activity supervisor to open a fuel storage tank or enter a tank. When it is necessary to enter a pit, building, or enclosure where fire, explosion, hazardous vapors, lack of oxygen, or similar hazard may be encountered, confined space entry procedures will be followed. Remove or open

covers, open doors and windows wide, and operate mechanical, spark-free forced-draft ventilators well in advance of entry to clear the area of hazardous vapors. The supervisor will provide procedures to be followed for entry and determine the need for gas free testing. Air quality tests will be made for oxygen deficiency and flammable vapors with a testing meter. Personnel will only be permitted to enter the area when it is determined to be safe. Never enter a hazardous area unless an observer is stationed outside. Never stay in an enclosed area when affected by dizziness, nausea, or headache, where an OHS odor is present, or where an OHS has been spilled.

Improper use of OHS - Personnel will not use fuels or other hazardous substances to clean clothing, floors, parts, etc., or use open OHS containers, containing product, near electrical appliances, which are not intrinsically safe.

Restriction to working alone - A two-person policy applies to all fuel transfer operations. USAF/Tinker AFB policy requires that a person be at both the issue and receipt ends of the operation. Proper communications will be maintained at all times during transfer operations and communications equipment must be intrinsically safe.

Restriction of vehicle operation - Internal combustion engines are a source of ignition. Ignition of vapors may occur through the arcing of distributor points, hot engines, exhaust piping, burning or glowing carbon particles in the exhaust piping, backfiring, or when an electrical switch is operated. No internal combustion engine, including vehicles, will be operated within 50 feet of bulk fuel transfer operations, except for engines/motors necessary for transfer operations, which are specially equipped with spark arrestors, flame arrestors, and other safety equipment, except for diesel powered vehicles or equipment.

Maintenance of grounding connections - Grounding connections will be kept clean, unpainted, and in good condition at all times.

Grounding and bonding equipment - Personnel will never begin any fuel transfer operation until all equipment is properly grounded and bonded. Static ground cables and clamps will be visually inspected each time, prior to connecting to a tank truck, vessel, drum, or any other container used in a fuel transfer operation. The person making the connection will ensure the clamp is attached to a metal surface, free from dirt, grease, paint, etc., and that it is properly secured. Grounding cables will remain in place during the entire transfer operation.

Note: Bonding or grounding cables may be insulated or non-insulated. A non-insulated cable permits visual inspection for continuity of the bond. Insulated cables should be tested and inspected on a regular basis for continuity of the entire bonding circuit, including clamps and connectors.

Requirement for personnel to ground themselves - Prior to opening hatch covers of tank cars, tank trucks, and other containers involved in fuel handling operations, personnel will ground themselves through conductors, static wires or grounded handrails.

Inspection of OHS containers prior to loading - Prior to loading OHS into any container, the interior will be inspected for debris and previous product. Foreign objects or materials, such as wood, rust, water, etc., may be a source of ignition from static electricity. Containers will not be loaded until they are free of foreign material. Switch loading is not permitted, i.e., loading jet fuels over another type fuel.

Restriction of free fall of fuel - Splash or overhead filling which permits the free fall of fuel will not be permitted. If over-the-top loading is conducted, the loading spout or tube must extend to the bottom of container before fuel flow is started. The spout or tube will be kept at the bottom of the container until fuel transfer is completed. Bottom loading is the recommended method for transfers.

Initial fuel flow rate - When transferring fuel into trucks or other containers, personnel will start the flow at an initial rate not to exceed 3 feet per second nozzle velocity. The flow rate will be controlled at this slow rate until the end of the loading spout is well below the fuel level in the container (12 inches or more) in order to minimize turbulence, splashing, and spraying.

Restriction of locking, blocking, or tying the load valve in an open position - During fuel transfer operations, personnel will never lock, block, or tie the loading valve in an open position. The valve must be able to be manually operated at all times.

Withdrawing loading tube from fuel container - At the conclusion of a fuel transfer into trucks, wait at least 3 minutes for the fuel to settle before withdrawing the loading tube from the product.

Closing hatch covers - Personnel will make sure all hatch covers on fuel trucks or other containers are carefully and completely closed and secured before disconnecting the static ground cable.

Pump controls - The starter controls for all pumps will be locked in the off position when not in use and must be located at a site accessible only to authorized personnel.

Precautions During Repairs:

Repairs involving welding on fuel transfer lines and fuel tanks will not be performed without approval of the safety officer or the fire department.

Repair work will not be performed within 100 feet of a fuel transfer operation.

When disconnecting a line, workers will loosen bottom flange bolts first in order to bleed off any pressure that may be in the line.

Fire extinguishers will be ready for immediate use when maintenance is underway on storage and transfer equipment. A fire watch, with an approved fire extinguisher, will be assigned when potentially hazardous conditions exist.

K.5.3 Identification of Health Hazards:

Inhalation of vapors - The most critical route of exposure is by breathing toxic vapors. Personnel working in areas where OHS vapors are present should not exceed permissible exposure limits. Vapors cannot always be detected by odor. Workers showing signs of dizziness, nausea, or headache must be removed from the hazardous area immediately and medical attention provided. If vapor concentrations exceed safe working levels, forced ventilation must be conducted to reduce vapor levels or respiratory protection must be provided.

Ingestion of OHS - OHS can be irritating or toxic if swallowed. If ingestion is suspected, seek medical attention. First aid should be administered by trained and qualified personnel. Do not induce vomiting unless you are certain it is the proper emergency action.

Skin contact - Avoid getting OHS on the skin. Many substances remove protective oils from the skin causing drying, chapping, and cracking of the skin, which allows easy absorption of the product into the bloodstream. Chemical burns may also result from some OHS that remain in contact with the skin. If a person is splashed with an OHS, remove contaminated clothing and shower or wash with soap and water as soon as possible. If OHS gets into the eyes, flush with water and seek medical attention.

K.6 Personal Protective Equipment (PPE): Before any PPE or other safety equipment is used by personnel, instruction and hands-on training must be conducted on the proper use and limitations of the equipment. Personnel must be fit-tested before using respiratory protection equipment. Training will be provided on the care and maintenance of PPE.

K.7 Specific Precautions, Instructions, and Requirements: The following procedures and safety precautions are specific to fuel handling operations. These procedures are designed to minimize the hazards from static electricity and other sources of ignition and to reduce the chance of a discharge during fuel handling operations. All-purpose checklists have been developed to outline standard operating procedures for fuel handling operations. The checklists are available at the Bulk Fuels Office. The checklists address:

- Pipeline Jet Fuel Receipt
- Receiving Jet A by tank truck at the 290 & 273 Fuel Yard
- Refuel/Defuel with Hydrant Systems
- Transfer From Bulk Storage to Hydrants

- Transferring from Tank 273
- Receipt/Issue of Solvent Tank 337
- 507th Hydrant System Operations.
- Receipts/Issues of Jet A at 290 yard.
- Receipts/Issues of MUR at 290 Yard
- Receipts/Issues of Diesel at Tank 332
- Transferring from Tank 3716 into Tank 273
- Transferring from Tank 330/331
- Filling DL2 Tank 887
- Filling MUR Tank 886
- Receipt/Issue of Deicing fluid Tank 341
- Inventory checklist.
- Receipt/Issue of deicing fluid Tank 338
- Filling Vehicle at Bulk Storage
- Aircraft Movement Area Checklist.
- Refueling/Defueling with HHT 309
- Filling Ground Fuel Vehicles at Bulk Storage
- Draining dikes
- RTB Jet A Units at 290 & 273
- Filling Jet A Units @ 3718

ANNEX L

Public Affairs

L.1 Background and Setting: A discharge at the Tinker AFB Bulk Fuel Facilities, or other large scale fire, explosion, or chemical release, will attract widespread local news media depending on the severity of the spill. During a major oil or hazardous substance spill, Tinker AFB can expect inquiries from the local press, including live television coverage and on-camera interviews. A positive and responsive media relations program is required to provide the public with accurate and timely information.

L.2 Community Relations Plan: The blueprint for public information and participation is the Community Relations Plan (CRP) maintained by the Public Affairs Office (PAO). This important document identifies the public's concerns and suggests ways that those responsible for implementing environmental restoration will respond to those concerns. The purpose of the CRP is to communicate openly and effectively with concerned citizens on the ways in which they can participate in the process of restoring the environment at Tinker AFB. The CRP is designed as a planned approach to establishing and maintaining two-way communication between the Base and its surrounding community. An interactive communication system enables the community and those implementing the Base environmental programs to convey information to each other, provide responses to questions and concerns, and formulate more responsive actions.

L.3 Handling Media Inquiries: The Tinker AFB Public Affairs Office will support the Incident Commander and serve as the primary point of contact for the media. The Public Affairs Officer (PAO) must be kept informed of the incident situation. The following actions should be taken by the PAO in preparation for handling the media:

- Proceed to the spill site or Command Post following a major spill,
- Instruct spill response personnel to direct news media queries to the Base PAO,
- Monitor the spill and keep a log of:
 - time the spill occurred and circumstances surrounding the spill;
 - a summary of response actions;
 - important developments during the response;
 - date and time that news releases are issued;
 - how and when command policies are implemented; and
 - copies of situation reports, pollution reports, and other pertinent messages.
- Advise the news media that an official statement will be issued after the investigation is completed.

Once approved by the Installation Commander, information may be released to the public to prevent or dispel rumors. Getting the word out early to the press and news agencies is especially important. Timely news releases will ensure accurate information regarding the spill and response actions. Inform the media of scheduled news briefings. Photo opportunities and visits to the spill site should be arranged if possible, without interfering with the cleanup operations. Working with the news media will help ensure that accurate information is being disseminated and hopefully prevent or minimize any misinformation being generated or speculation about the incident.

L.4 Working with the Media: The following principles should be noted when working with the media:

- Being candid and open with the media is especially important; every effort should be made to make information available.
- Provide the generic facts in terms of what happened, what product spilled, and the emergency services along with the key state and national offices that were notified.
- If spill cleanup contractors are on the scene, let the media know, or tell them that they are enroute.
- **Do not provide** names of persons notified, sequence of notification or time of notification.
- If injuries have occurred, indicate so, but **do not** provide details.
- If the product spilled into any waterway, or other wetlands, say so, but provide no estimates.
- **Do not speculate** on how much product spilled, what the effects on the environment will be or how long it will take to clean up the spill. Describe the current priorities in the cleanup effort.
- If the spill pathway has affected the local community, state clearly what actions are being taken to contain and clean up the affected area. Make every effort to insure the community is part of the solution, not the problem.
- End all briefings with a statement quote that "Tinker Air Force Base is committed to cleaning up this spill and restoring the pre-spill environmental conditions in the affected area." Indicate the following day's briefing schedule, then close the briefing.
- The media will be looking for someone with technical knowledge, not necessarily a public affairs specialist. Be prepared to step up to the task.

L.5 Ten Guidelines in Media Relations:

1. Who has the advantage – you or the media?

The media always has the advantage. It's their arena on television, radio or newspaper. They have the access to the public and only through them, can you get that access.

2. How do you know if you are doing well?

You don't. Ratings and circulation is what motivates the media. If there is a story, they will tell it and they will get information from anyone who will talk to them. They will fight each other for the details on any story. You may be in the way of that story or you may be a part of that story. In a crisis, there are two issues to be dealt with (1) the emergency response and (2) the media. The media doesn't care how well you do. It's a news story either way.

3. Who decides what is right and fair?

The public. They decide what is fair and unfair and who to penalize and for how long.

4. How can you get the upper hand?

You should on the offense and be proactive. Call the media. Don't wait for them to call you. Tell them what happened and what you are doing. Have a plan for working with the media and practice it.

5. What must you do to get and keep the upper hand?

Have a clear message. The media can help deliver the message for you faster and more efficiently than any other method. Have a pre-written message to send out by FAX, phone, and the Internet. The first 30 minutes of a crisis are the most critical. Get your message out. Get on the offensive and stay there. If you wait for the media to contact you, you will play catch-up for the rest of the crisis. Remember the Golden Hour of Medicine – the first hour determines the next 72 hours for the patient. So it is in a crisis.

6. What other factors determine how you will be perceived?

Choice of words. Have a planned presentation. You can't have control over the questions you will be asked, but you do have control of the answers. Decide up front what you want to say. Don't ab lib. Don't lie. If you don't know, say so and give a timeframe as to when you can get the answer or refer the question to someone who does know.

7. What is the most common reason for bad media perception?

Bad attitude. If you resent the media, you will be perceived as negative or trying to hide something.

8. How do you improve media relations?

Practice. Have a plan. Practice that plan. Have prewritten releases with fill-in-the-blanks that can be quickly put together that reflects your company's messages. Don't rely on experience.

9. What is your only decision in working with the media?

If you don't work with the media, they will find someone else to get the story from. You won't be in control and you may not be happy with the results. They will find the concerned neighbor, focus on the health of people impacted by the spill, the environmentalists, and other stakeholders and any disgruntled employee who will talk.

10. What do you do if you made a mistake?

If you make one, admit it and correct it. The media will find out anyway. The public will forgive you if you admit your mistakes and trust you less if you don't.

L.6 The Ten Commandments — When in doubt, be sure to follow the Ten Commandments for good media relations:

- 1. Be Honest**
2. Be Brief
- 3. Be Available**
4. Be Timely
- 5. Be Fair**
6. Be Flexible
- 7. Be Objective**
8. Be Positive
- 9. Be Informed**
10. Be Professional

ANNEX M

Training, Drills, Exercises and Records

M.1 Training Requirement: Under the Oil Pollution Act of 1990 (OPA 90), Tinker Air Force Base (Tinker AFB) is required to conduct regular training, exercises and drills related to the execution of their *Integrated Contingency Plan (ICP)* on an annual basis. The drill year officially begins on January 1st of each year. Training and exercise records are also required and are to be maintained as a separate attachment to the *ICP*. Records must be maintained for at least three years. AF Form 55 or an electronic equivalent will be used to record training completed by Base personnel. Other forms included in this annex may also be used by trainers, personnel, and activities when completing the required training or exercises. Tinker AFB must meet the requirements of several regulations, each with specific training requirements. Applicable training guidance is published as follows:

- 40 CFR 112 (EPA); *Oil Pollution Prevention: Non-Transportation Related Onshore Facilities*; Final Rules.
- The Department of Transportation, the Environmental Protection Agency, the Department of Interior *Training Reference for Oil Spill Response*, published August, 1994.
- The Department of Transportation, the Environmental Protection Agency, the Department of Interior *National Preparedness for Response Exercise Program (PREP) Guidelines*, published August, 1994.
- Occupational Safety and Health Administration (OSHA) requirements under 29 CFR 1910.120 (q), *Emergency Response to Hazardous Substance Releases*, July 1, 1993 (training contained in this section is often referred to as Hazardous Waste Operations and Emergency Response (HAZWOPER) training).
- Air Force Instructions 32-4001 and 32-4002 describe levels of training and response exercises that will be completed by Base personnel.

Note: the National Fire Protection Association, Inc. in their "Standards for Professional Competence of Responders to Hazardous Materials Incidents" lists training requirements beyond those in 29 CFR Part 1910.120(q). This annex addresses only required training associated with the above listed references.

M.1.1 Environmental Protection Agency (EPA) Requirements: 40 CFR Part 112, paragraph 112.21 (a) requires that a facility "... develop and implement a facility response training program and a drill/exercise program ..." The drill and exercise program is to include evaluation procedures. Paragraph 112.21 (b) recommends that "the training program be based on the *Training Reference for Oil Spill Response*. EPA notes in paragraph 112.21 (c): "A program that follows the *National Preparedness for Response Exercise Program (PREP)* will be deemed satisfactory ..."

- Under the Final Rule, all personnel involved in oil handling activities will be required to receive:

- **8 hours of facility-specific training** within one year of the effective date of the regulation.
 - In subsequent years, employees will require **4 hours of refresher training**.
 - After the training program has been initiated, **new employees will be required to undergo 8 hours of training** within one week of starting work.
- Under the Final Rule, the facility owner or operator must have a training program for those personnel involved in oil spill response activities:
 - The training shall be functional in nature according to job tasks for both supervisory and non-supervisory operational personnel.
 - Trainers shall develop specific lesson plans on subject areas relevant to facility personnel involved in oil spill response and cleanup.
 - The training program must include facility response drills/exercises and evaluation procedures.
 - All personnel will be required to participate in annual training exercises.
 - Announced and unannounced training exercises will be scheduled that will test the facility response plan. Results of the exercise will be recorded and logs of formal response training will be noted in logs appended to the response plan.
 - Facility-specific training will include equipment operation and maintenance, facility operations, discharge prevention laws and regulations, and contents of the facility's *Integrated Contingency Plan (ICP)*.
 - Facility training in emergency response operations can be held in conjunction with local contingency planning efforts.
 - This training is in addition to any health and safety training requirements under OSHA requirements. Owners and operators are responsible for the proper instruction of their personnel.

M.1.2 Training Reference for Oil Spill Response Requirements: *The Training Reference for Oil Spill Response* is a unified Federal effort to incorporate the exercise requirements of the Coast Guard, the Environmental Protection Agency, the Research and Special Programs Administration (Office of Pipeline Safety) and the Minerals Management Service in meeting the intent of the Oil Pollution Act of 1990 for spill response training. This reference provides a foundation of suggested subject material for training personnel with responsibilities identified in the *ICP*. Subject material is provided for each of the key individuals or groups of people required to be identified in *ICP* as well as for worker health and safety:

- Qualified individual (primary and alternate)
- Spill management team (facility response team)
- Facility personnel (operators, guards, etc.)
- Oil spill removal organizations (OSROs) (cleanup contractors)
- Worker safety and health

M.1.3 National Preparedness for Response Exercise Program Requirements:

- The *National Preparedness for Response Exercise Program* (PREP) is a unified federal effort to incorporate the exercise requirements of the United States Coast Guard, the Environmental Protection Agency, the Research and Special Programs Administration Office of Pipeline Safety, and the Minerals Management Service in meeting the intent of the Oil Pollution Act of 1990 for spill response preparedness.
- The PREP outlines the triennial cycle of exercises, wherein all plan components must be exercised at least once every three years. These components include:
 - **Organizational Design**
 - 1) Notification
 - 2) Staff mobilization
 - 3) Ability to operate within the response management system described in the plan
 - **Operational Response**
 - 4) Discharge control
 - 5) Assessment of discharge
 - 6) Containment of discharge
 - 7) Recovery of spilled material
 - 8) Protection of economically and environmentally sensitive areas
 - 9) Disposal of recovered product
 - **Response Support**
 - 10) Communications
 - 11) Transportation
 - 12) Personnel support
 - 13) Equipment maintenance and support
 - 14) Procurement
 - 15) Documentation

The PREP provides guidance on emergency procedures drills, unannounced exercises, participation in area exercises, self evaluation, Qualified Individual drills, spill management and tabletop exercise development and equipment deployment exercises.

M.1.4 Occupational Safety and Health Administration (OSHA) Requirements:

Occupational Safety and Health Administration (OSHA) Requirements: Two levels of training for first responder personnel at the facility will be followed as required under Occupational Safety and Health Administration (OSHA) regulations in 29 CFR 1910.120(q). Awareness and operations levels of response require initial and annual refresher training. OSHA rules specify that all personnel who are expected to respond to discharges of OHS will complete training and have sufficient experience to objectively demonstrate competency in appropriate subject areas.

Initial and refresher training will include instruction in the following areas:

- Understanding of hazardous substances and risks associated with them;
- Ability to identify hazardous substances and recognize their presence in an emergency;
- Understand their role in the Facility Response Plan, including site security and control;
- Ability to recognize need for additional resources and to make notifications;
- Understanding of basic HAZMAT terminology;
- Information on safety and health issues, hazards, and risk assessments at the terminal;
- Selection and use of personal protective equipment;
- Identifying work practices by which the employee can minimize risks from hazards;
- Safe use of engineering controls and equipment;
- Basic spill containment and control procedures within limits of available PPE;
- Recognition of symptoms and signs which might indicate overexposure to hazards;
- Confined space entry procedures;
- Decontamination procedures;
- Emergency response plan instruction and location/identification; and
- Identifying personnel and alternates responsible for site safety and health.

M.1.5 US Air Force Training Requirements: Tinker AFB is required to meet all federal and state requirements for training standards of personnel involved in spill prevention and response operations. AFI 10-2501 and AFMAN 10-2502 require personnel to complete training to the level of the job classification and as they may be involved in response activities. Major accident response exercises are also required to be conducted at least once every calendar year. Air Force Incident Management System Education and Training Requirements are included in Table 6.1 of AFI 10-2501.

Personnel involved in spill response activities will have specialized training on the control and handling of oil and hazardous substances commensurate with their risk and responsibilities. The training must meet the requirements of OSHA. Key personnel will receive additional specialized training on the technical, organizational, and operational aspects of oil and hazardous substance spill response. New personnel will receive initial training as soon as possible after assignment to activities that may involve pollution response. Refresher training will be conducted annually.

M.2 Tinker AFB Annual Training Requirements: Tinker AFB personnel will complete an OPA 90 site-specific annual training program that encompasses EPA and OSHA training requirements. All organizations will assure that personnel within storage areas of sections/units where there is a potential for POL emergencies are aware of the *ICP* and are prepared to act in accordance with this plan. Prevention training will include the following subjects:

1. Operations and maintenance of equipment.
2. Applicable pollution control laws.
3. Contents of the Spill Prevention, Control and Countermeasure (SPCC) Plan for Tinker AFB.
4. General facility operations: Personnel involved in oil handling activities at Tinker AFB facility will receive at least eight hours of training initially and at least four

hours of refresher training per year. Facility personnel will meet OSHA requirements for work health and safety training (29 CFR 1910.120) and will be able to demonstrate the knowledge of the following:

- a. Tinker AFB and surrounding locations.
 - b. Notification procedures/requirements for the Base Command, the SRT, Federal and State agencies (through the Environmental Management Branch), and the information required for those organizations.
 - c. Communication system used for the notifications.
 - d. Information on the products/requirements for facility, including familiarity with the material safety data sheets, special handling procedures, health and safety hazards, spill and firefighting procedures.
 - e. Facility personnel responsibilities, and procedures for use of facility equipment which may be available to mitigate or prevent an oil discharge.
 - f. Specific procedures to shut down affected operations.
 - g. Procedures to follow in the event of a discharge, potential discharge, or emergency involving the following equipment or scenarios for the Tinker AFB facility: piping or pipeline rupture; piping or pipeline leak, both under pressure and not under pressure, if applicable; explosion or fire; equipment failure; and, failure of secondary containment system.
 - h. The operational capabilities of the Tinker AFB SRT to respond to: Small Discharge, Medium Discharge, and a Worst Case Discharge.
 - i. General responsibilities and authorities of the QI as described in this response plan.
 - j. The organizational structure that will be used to manage the response actions, including: command and control, public information, safety, liaison with other government agencies, spill response operations, planning, logistics support, and finance.
 - k. The drill and exercise program to meet requirements.
 - l. Roles and responsibilities of Federal and State agencies in pollution response.
- OPA 90 Site-Specific Training: Training should include the following: correct equipment operation and maintenance, general facility operations, discharge prevention laws and regulations, and the contents of the facility's *Integrated Contingency Plan (ICP)*. Training will also encompass the notification system, emergency procedures, duties of the qualified individual, containment and cleanup activities, precautions for worker health and safety and assessment of the threat to public health and safety from the worst case discharge.
 - OSHA Training: Annual OSHA training is required for all employees under 29 CFR 1910.120 (q) for Level 1 (Awareness) and Level 2 (Operations) training. Oil and hazardous substance storage facility workers on Base will normally fall into two basic OSHA categories: First Responder Awareness Level and First Responder Operations Level. Both levels are primarily defensive roles during a medium or large spill situation. Reinforcement and additional training for their job requirements are usually handled through on-the-job training or through command sponsored training activities.
 - On-Scene Incident Commander (OSIC) Training: Mock-alert drills for all the Spill Response team (SRT) personnel (announced and unannounced) should be scheduled and

conducted each year with specific spill response equipment tested and deployed at each drill. Facility-owned equipment deployment drills must be conducted twice each year. Personnel such as fire chiefs and the OSIC who will assume control of an incident scene beyond the First Responder Awareness Level require at least 24 hours of initial training, and "sufficient" annual refresher training. Some of the areas in which they must demonstrate competence include:

- An understanding of the OSIC duties and responsibilities as outlined in the Tinker AFB *Integrated Contingency Plan*;
 - Know and be able to implement the incident command system;
 - Know how to implement the emergency response plan;
 - Know and understand the hazards and risks associated with employees working in PPE;
 - Know how to implement the local emergency response plan;
 - Know the State Emergency Response Plan and the Federal Regional Response Team; and,
 - Know and understand the importance of containment, countermeasures, cleanup, mitigation and disposal procedures.
- Spill Response Team Training Requirements: The Contract Base Civil Engineer and the Environmental Management Branch will ensure the SRT personnel are trained in accordance with 29 CFR 1910.120. This includes the training of personnel who operate spill containment equipment such as defueling trucks and installation petroleum absorbent creek booms. Personnel who operate earth moving equipment are exempted from training requirements under 29 CFR 1910.120 regulations if they receive training on the material involved and have been trained on the proper use of personal protective equipment. Environmental Management **Branch** personnel shall be trained in the proper use of sampling equipment. All SRT personnel will be able to demonstrate knowledge of the following:
- Familiarity with Tinker AFB and the surrounding area.
 - Notification procedures/requirements for Tinker AFB facility owner/operators, internal response organization, Federal and State agencies, contracted oil spill removal organizations, and the information required for those organizations.
 - Communication system used for notifications.
 - Familiarity with the material safety data sheets, special handling procedures, health and safety hazards, spill and fire fighting procedures.
 - Procedures the facility personnel may use to mitigate or prevent any discharge or a substantial threat of a discharge of oil resulting from facility operational activities associated with daily operations.
 - To the extent necessary, to render assistance to mitigate or prevent any discharge or a substantial threat of discharge of oil in the event of explosion, fire or equipment failure.

- Tinker AFB personnel responsibilities, if any, to initiate a response.
- Operational capabilities of the SRT to respond to the: Average Most Probable Discharge/Small Discharge; Maximum Most Probable Discharge/Medium Discharge, and Worst Case Discharge.
- Responsibilities and authorities of the Qualified Individual (QI) as described in this *ICP* and TAFB response organizations.
- The organizational structure that will be used to manage the response actions, including command and control; public information; safety; liaison with other government agencies; spill response operations; planning; logistics support; and finance.
- The responsibilities and duties of each SRT member within the organizational structure.
- The training procedures described in this response plan for members of the SRT.
- The drill and exercise program to meet Federal and/or State requirements.
- Procedures for review of the plan to evaluate and validate its effectiveness.
- Roles and responsibilities of Federal and State agencies in pollution response.
- Available response resources.
- Contracting/ordering procedures to acquire resources in accordance with designated job responsibilities.
- Basic information on spill operations and oil spill cleanup technology, including oil containment; oil recovery methods and devices; equipment limitations/uses; spill trajectory analysis; use of dispersants; burning; bioremediation; and waste storage and disposal considerations.
- Hazard recognition and evaluation.
- Site safety and security procedures.
- Incident Command System/Unified Command System.
- Public affairs, as applicable to designated job responsibilities.
- Crisis management, as applicable to designated job responsibilities.
- Personnel management, as applicable to designated job responsibilities.
- Emergency transfer procedures, as applicable to designated job responsibilities.

- Procedures for directing the deployment and use of spill response equipment, as applicable to designated job responsibilities.

M.3 Training Records Management: Federal and State regulations require that a record of all formal response and safety training received by each employee be maintained in the *Integrated Contingency Plan* or in a designated location on-site. Each supervisor at Tinker AFB is required to maintain the training records for his employees. This includes full time and part time employees. Records on each individual will include the name, job title, training courses attended and completion date, training hours completed, and test results, when applicable. These training records also include copies of training certificates awarded as well as documentation on periodic training conducted at the installation. A copy of the training log should be provided to the Tinker AFB Environmental Management Branch Office to have on file with the ICP. AF Form 55 or electronic equivalent will generally be used. Other sample forms used to document training sessions and exercises are provided at the end of this annex. All training records must be available for inspection upon request by any regulator. Training records and highlights for drills and exercises will be maintained by each supervisor for a period of five years and should be available for inspection.

M.4 Tinker AFB Training Logs: Immediately after Tinker AFB personnel receive formalized training, the supervisor will ensure that personnel training logs are posted and kept on file. As a minimum, the training logs should describe the type of training received (specific subjects), contain a listing of the employees receiving the instruction, and note the number of hours allocated to the training and the date the training occurred. Training exercises, announced and unannounced, should be described in terms of general scenarios addressed, participants, special equipment utilized, and actions taken by the SRT, with any particular problems noted. In order to comply with the EPA record keeping requirement, the completed records will be retained for at least five years. This annex contains blank forms for recording the following training and drills.

M.4.1 Qualified Individual (QI) Notification Drill: This drill is conducted to ensure that the QI and the rest of the Base response personnel can be contacted in a spill response emergency to perform their required duties. Contact will be made by telephone or cellular phone and confirmation must be received to satisfy requirements of the drill. The drill will be conducted quarterly.

M.4.2 Spill Response Team (SRT) Tabletop Exercise (TTX): The Tinker AFB SRT TTX must be conducted annually in accordance with the PREP guidelines. At least once every three years, the exercise will involve the worst case discharge scenario. The tabletop sessions will exercise the team's organization, communications, and decision-making abilities in the event of a spill. The tabletop exercise will establish:

- SRT knowledge of the response plan;
- Evaluation/validation of the *ICP*;
- Personal knowledge of emergency response procedures;
- Knowledge of the notification system;
- Interaction and coordination among SRT members;
- Role of the QI; and,

- Ability to access the Oil Spill Removal Organization.

Verification of successful completion of the SRT TTX shall be made by Tinker AFB and such certification shall be maintained on file for a period of 5 years following the exercise.

M.4.3 Contractor Training: Contractors working in areas associated with oils and hazardous substances are responsible for training their personnel in spill response and reporting procedures. The Contract Administrator for Tinker AFB is responsible for providing contractors with a summary of spill response and reporting procedures.

M.4.4 Training for Oil Spill Removal Organization: Contractor personnel will be trained in hazard recognition, worker health and safety issues, oil containment, oil recovery methods and devices, equipment operation, and waste storage and disposal consideration. Personnel will be trained to meet OSHA regulations in 29 CFR 1910.120. All private response personnel will be trained to meet the OSHA standards for emergency response operations promulgated in 29 CFR 1910.120. Personal protective equipment will be worn as appropriate to adequately protect personnel from all potential hazards. Personnel will be provided with adequate training to do their jobs safely. This training is the sole responsibility of the OSRO, not Tinker AFB.

M.5 Discharge Prevention Meetings: The Environmental Protection Agency's 40 CFR Part 112.7(f)(3) requires that discharge prevention briefings for oil-handling personnel be conducted annually. The briefings should highlight and describe known spill events or failures, malfunctioning components, and recently developed precautionary measures. A record of the meeting including date, subjects discussed, any action required, and employees in attendance will be filed in this annex or other readily available location as designated. Discharge Prevention Meeting Log forms are provided in this annex.

M.6 Equipment Testing: Federal and State regulations require that deployment of response equipment be conducted on a semiannual basis. Equipment exercises identified in the *Integrated Contingency Plan* should be conducted in the operating environment anticipated during response. The purpose of the equipment deployment exercise is to ensure that the response equipment identified in the plan is operable and that personnel responsible for operating the equipment are proficient.

Any spill response contractor or Oil Spill Removal Organization (OSRO) that may be retained by Tinker AFB will have trained and qualified response personnel and equipment to supplement the Base's response equipment to meet response requirements. As part of the annual OPA 90 training at Tinker AFB, selected equipment from the OSRO will be alerted and deployed at a simulated spill site. Facility response equipment should be exercised at the same time. It is not necessary that every piece of equipment identified in the plan be deployed and operated; only a representative sample of each type of equipment need be included.

Whenever facility equipment is deployed and tested, inspection checklists provided in Annex N will be completed. Completed forms should be filed in Annex N or a dedicated file at the Environmental Management Branch office or location where the equipment is maintained and be readily available for review by regulators.

M.7 Drills and Exercises: The 72 ABW/IG office will appoint an exercise team to be responsible for periodic drill and exercise procedures. These include internal and external drills, announced and unannounced drills, QI notification drills conducted quarterly, SRT TTXs done annually, operator and OSRO equipment deployment drills held annually, and a triennial drill cycle which incorporates and tests all components of this *ICP*. A drill to evaluate the effectiveness of the SRT will simulate a discharge and will require the participation of all SRT personnel. An exercise review will be conducted to identify and correct any deficiencies in this plan or the notification procedures.

Training and Exercise Records and Meeting Logs

Master Blank Forms

(Users should reproduce copies as needed)

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Qualified Individual Notification Drill Log

Date: _____

Exercise Coordinator: _____

On-Scene Incident Commander: _____

Emergency Scenario: _____

Time Spill Response Team (SRT) 90% assembled: _____

Other agencies included in mock drill (fire, police, city emergency manager, local cooperative, COM, etc.) _____

Time Equipment Deployed/Action Taken: _____

Evaluation: _____

Changes To Be Implemented: _____

Response Plan Review: _____

Milestones To Implement Changes: _____

Names/Position of Personnel Participating:

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Spill Response Team
Tabletop Exercise Log

Date: _____

Office/Agency: _____

Qualified Individual(s): _____

Emergency Scenario: _____

Other agencies included in tabletop exercise (fire, police, city emergency manager, spill response contractor, regulatory agencies, etc.): _____

Evaluation: _____

Changes To Be Implemented: _____

Time Table For Implementation: _____

Names/Position of Personnel Participating:

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Discharge Prevention Meeting Log

Date: _____

Office/Agency: _____

Attendees:

Subject/Issue Identified:

Required Action:

Implementation Date: _____

Subject/Issue Identified:

Required Action:

Implementation Date: _____

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ANNEX N

Facility and Equipment Inspections and Records

N.1 General: This annex discusses the preventive maintenance, inspections, testing, and record-keeping performed on critical petroleum handling and storage systems and equipment at Tinker AFB. Critical items are those that affect the safe operation of the petroleum storage and transfer systems. Maintenance, inspection, and testing are also performed on spill response equipment.

N.2 Tinker AFB Inspection, Tests, and Records: Under Federal and State regulations, inspections should be in accordance with written procedures developed for the facility by the owner or operator. These written procedures and a record of the inspections, signed by the appropriate supervisor or inspector, should be made part of this *Integrated Contingency Plan (ICP)* and maintained for a period of five years. Preventive maintenance, testing, and inspection of equipment are performed in compliance with the manufacturer's maintenance procedures, industry standards, and in accordance with USAF instructions and maintenance guidelines. For each item or system, there are specific maintenance or adjustment checks that must be performed on a regular basis. Trained personnel at Tinker AFB perform the necessary maintenance, testing and checks.

The Environmental Management Branch (will lead the Local Emergency Planning Committee Working Group (LEPCWG) in conducting a detailed inspection every three years of all facilities and equipment used to store, handle, dispose of or consume oil or other hazardous substances. This inspection will be used to update projects required to prevent the day-to-day loss of potential pollutants and to eliminate the potential for spills. The inspection reports will be maintained on file in the Environmental Management Branch offices. Copies of these inspections will be provided to 72 AMDS/SGPB. See Site Data Sheets used by the LEPCWG at the end of this annex.

N.3 Tinker AFB Facility and Response Equipment Inspection Records: Each regulated facility is required to conduct self-inspections of tanks, transfer systems, secondary containment and response equipment and maintain a checklist and record of these inspections in the facility's contingency plan or other designated location. Inspection checklists for fuel handling and storage systems and response equipment at Tinker AFB are provided in this annex. Completed self-inspection forms are to be filed at the end of this annex and maintained for a period of five years. If the inspection reports prove too bulky to file within the ICP, a separate file may be maintained and its location noted in the Plan. Response equipment is required to be tested and deployed every six months. An inspection form to meet regulatory requirements is provided in this annex to record testing and deployment information.

The OSROs, Dunamis and US Navy SUPSALV, are responsible for the regular inspection of the equipment they would provide.

N.4 National Preparedness for Response Exercise Program (PREP): Response equipment deployment exercises shall be conducted to ensure that the equipment is operational and the personnel who would operate that equipment in a spill response are capable of deploying and operating it. Response equipment must be tested and deployed every 6 months. Tinker AFB deployment exercises shall be conducted IAW the *National Preparedness for Response Exercise Program (PREP)* Guidelines. An example of that form is provided in this annex to record testing and deployment information. At a minimum, the following equipment must be deployed and operated on a semi-annual basis for all applicable Tinker AFB-owned equipment:

- In lieu of the required 1,000 feet of each type of boom in the inventory, Tinker AFB will deploy the bulldozer and other earth moving equipment.
- One of each type of skimming system in the inventory

Only a representative sample of each type of response equipment needs to be deployed and operated, as long as the remainder is properly maintained. Testing of response equipment may be conducted while it is being deployed. For equipment owned and deployed by the Tinker AFB designated Oil Spill Removal Organization (OSRO), the Base can take credit for "real world" deployments of the OSRO spill response equipment to spills not related to the Base.

N.5 Maintenance and Testing Organization: Maintenance and testing are performed at Tinker AFB by qualified personnel and include operator maintenance and support maintenance.

N.5.1 Operator Maintenance: Operator maintenance is performed by the person responsible for day-to-day care of the equipment at each site. This maintenance is usually preventive in nature. Operator maintenance includes inspection of the equipment for leaks and for signs that the equipment may need adjustment or repair. Such maintenance may include inspection, adjusting, lubricating, testing, cleaning, making minor repairs, replacing parts, servicing, repairing leaks, and replacing pipe sections, couplings, fittings and valves. All operators of the equipment are familiar with the technical manuals on the equipment and understand their maintenance responsibilities. Operators will report any defects beyond facility personnel repair capabilities to their supervisor.

N.5.2 Support Maintenance: Support maintenance is the type of maintenance that cannot be performed by Base personnel. Generally, support maintenance requires special tools or equipment not authorized for use by operators and usually requires the removal of equipment from the system or area, or special technicians coming to the Base to conduct repairs or maintenance. This type of maintenance will be contracted.

N.6 Storage Tank Inspection and Maintenance: Maintenance and testing of equipment is performed on a frequency determined by regulation or USAF policy. Inspections help determine the extent of maintenance required. Checklists and forms are found at the end of this annex. See Tinker AFB Records for dates and past and future inspections.

N.6.1 Aboveground Tanks: Tanks are inspected in accordance with 40 CFR Part 112, State requirements, and AFI 23-204 and AFI 32-7044. Table N.1 summarizes the type and frequency of testing designed to conform to the requirements of 112.8(c)(6) related to

integrity testing. Maintenance and testing schedules comply with all requirements and standards. It is noted that AFI 23-204, AFI 32-7044 and the AST Inspection Report and Management Plan dated August 2011 require more testing than is required by the SPCC Rule. USEPA generally believes visual inspection plus elevation of a shop-built containers with a capacity less than 30,000 gallons provides environmental protection “equivalent” to the integrity testing requirements. These tanks are elevated in a manner that decreases corrosion potential (as compared to a container in contact with soil) and makes all sides of the container visible during inspection (e.g., where the containers are mounted on structural supports, saddles, or some forms of grillage). Table N.1 summarizes the integrity testing applicability for bulk storage tanks and outlines what type of testing is to be conducted in accordance with industry standards.

In general, checks and inspections of tanks will be conducted on a daily, monthly, and annual basis as follows:

Daily checks consist of visually inspecting tank surfaces and equipment for corrosion and paint condition. Routine exterior maintenance, such as spot or touch-up painting, is performed by Base personnel. Tank equipment and gauges are checked for proper operation. They will be repaired by facility personnel, unless special technical skill or equipment requires an outside contractor. Extensive exterior maintenance, such as sand-blasting, painting of tanks, interior surface maintenance, and required integrity testing is performed by outside contractors. Visual inspections for leaks are made during scheduled rounds of the facility. Emergency repairs will be undertaken immediately. Daily checks apply mainly to the bulk fuel storage facilities controlled by the Fuels Management Office.

Monthly inspections are more extensive and recorded on an inspection form and log included at the end of this annex. Responsible personnel will check bulk storage tanks for the following:

- Exterior surfaces of tanks for leaks, cracks, areas of wear, corrosion, thinning, maintenance, operating practices, settling of structures, separation or swelling of insulation, malfunctioning equipment, and structural or foundation weakness.
- Proper functioning of leak detection systems, cathodic protection equipment, and fuel level monitoring and warning systems, as applicable.
- Monthly inspections of ASTs that are located in below-grade vaults may differ from inspections of other ASTs. If it is impractical to enter vault, these tanks may be inspected from above ground through the entry port on a monthly basis, with more extensive inspections occurring annually.

Brittle Fracture Evaluation

Brittle fracture evaluations must be conducted in accordance with American Petroleum Institute (API) 653 for field constructed tanks whenever the tank has been repaired, altered, reconstructed, or has had a change in service that could affect the risk of a discharge. Brittle fracture evaluations are typically required for tanks having a steel thickness 0.5 inch or

greater (corresponding to a tank diameter of approximately 50 feet); tanks having a skin thickness less than 0.5 inch are not susceptible to brittle fracture failure. There are no field-constructed tanks at the facility with a diameter near 50 feet; therefore, this provision does not apply.

N.6.2 Underground Tanks: Underground tanks are registered with the State of Oklahoma in accordance with the UST Management program. Federal notification requirements in 40 CFR Part 280 for USTs are met through the registration with the State. The USTs meet discharge detection requirements by complying with the performance standards found in 40 CFR 280.20 and the monthly inventory control requirements in 40 CFR 280.43. The large bulk storage tanks are equipped with automatic or visual gauging devices as described in Annex A.

USTs may be subject to State regulations for periodic tightness testing. The test report shows facility and tank identification, date of test, results, test method, certification by technician, technician's qualifications, address and signature. If a test shows the tank does not meet the standards, it will have to be repaired, replaced, or taken out of service. Tanks may be exempt from periodic tightness testing if they are corrosion resistant and have leak detection systems. The systems must remain functional or the tank must undergo periodic tightness testing. Cathodic protection and leak detection systems must be inspected in accordance with the regulations. The systems for the tanks are inspected according to the following schedule:

- Weekly - monitor for traces of petroleum.
- Monthly - inspection of all monitoring systems.
- Annual - check adequacy of cathodic protection system; perform TRACER test.

There are no partially bunkered tanks at Tinker AFB.

N.7 Ground Refueler Fillstand and Hydrant Inspection and Maintenance: The fill stands and hydrants are routinely inspected for the presence of leaks, faulty equipment, loose connections, clogged filters, and the need for any repairs or adjustments during fuel issuing operations. The fueling areas are kept clean and free of debris and product residue. When the systems are not in use, they are checked periodically by an operator for the presence of any leaks. All assemblies are checked for electrical continuity. If continuity cannot be established, immediate action is taken to repair or replace bonding cables. Continuity checks are performed quarterly. For piping that does not have installed cathodic protection, piping resistance to ground is to be maintained at no more than 25 ohms. Piping resistance is checked annually.

Truck grounding cable resistance to ground is measured monthly. The resistance from cable clip end to ground will not exceed 25 ohms. All ground rods will be tested and inspected to ensure the fill stands and hydrants can be operated safely. Required maintenance includes:

- Replacing ground wires, clamps, and connections.
- Replacing gaskets and o-rings.
- Overhauling or replacing valves.

- Cleaning or replacing filters.
- Cleaning or replacing strainers.
- Inspecting, testing, and servicing the grounding systems.
- Inspecting, servicing, and calibrating system meters.
- Inspecting, servicing, and calibrating pressure gauges.

N.8 Pipeline, Pump, and Manifold Inspection and Maintenance: All transfer lines, pumps, manifolds and valves are monitored to prevent the discharge or contamination of fuel. Valves at the storage tanks are kept closed, and in most cases locked, except during receipt or issue of fuel. Control valves on transfer lines are kept closed when not in use. Valves and piping are marked consistent with Military Standard 161.

The main power switches are co-located near the pumps. Pump switches are mounted at the fill stands, hydrants, the individual pumps, and the manifold areas. All power to the pumps is secured unless transfer operations are in progress.

The complete pumping and piping systems are checked daily for any leakage, abrasion, or corrosion. The checks are performed daily by an operator or supervisor. When a line is in use for a fuel issue or receipt operation, it is checked on an hourly basis. Any malfunction or deficiency found will be repaired and tested as soon as possible. A pressure check of the repaired system may need to be conducted prior to placing it back in service. Pressure tests of each section of the piping system are conducted annually. The test is performed at 30 pounds of pressure above the static head and maintained for at least 12 hours with periodic pressure and temperature readings taken and recorded. Results are kept on file at the Fuels Management Office.

Routine maintenance is performed in accordance standard operating procedures:

- Painting exposed piping/systems; inspecting/coating underground piping when uncovered.
- Keeping manifolds clean and free of debris; keeping valve pits clean and free of water.
- Replacing gaskets; polishing, resetting, lubricating and reconditioning valves.
- Replacing pump seals, adjusting packing and stuffing glands.

N.9 Secondary Containment Inspection and Maintenance: Secondary containment is installed around the ASTs at Tinker AFB. Containment is also installed around the pump and manifold areas, and tanker truck unloading sites.

The large ASTs at the major bulk fuel areas are surrounded individually by a cement secondary containment dike. Construction, capacity, and permeability protection meet all the requirements and standards set forth by the State, NFPA, and USAF. These containment areas can be drained through manually operated post valves. Each containment area is drained into a storm water line. Draining of containment areas is conducted by a fuels supervisor when excess water has accumulated. Prior to draining any dike, it is important to check the Air Force Technical Order (AFTO) 39 for that system and to insure that no discrepancies exist that would prohibit a safe operation. The water is checked for a sheen or visible fuel product, which must be removed

before draining. Dikes will not be drained during darkness or while it is raining. Any fuel or residue must be removed before the water can be discharged. The discharged water cannot contain more than 15 ppm oil according to the Oklahoma Pollutant Discharge Elimination System permit. Records are kept of each discharge event. Water samples will be taken and analyzed to document any pollutant level as required.

The secondary containment systems are checked and inspected at the same time as the storage tanks. The containment area should be free of debris, excess runoff, and any product. The dikes, curbs or berms are checked for any cracks, erosion, or discoloration. The drain valves are checked to ensure that they are closed and locked and will operate properly. Operating or maintenance personnel will make necessary repairs to the containment if required. A separate checklist may be used for inspecting secondary containment. If so, the completed forms and logs must be maintained by the same person responsible for the tank inspection records.

N.10 Oil/Water Separator Inspection and Maintenance: The Civil Engineering Directorate has a subcontractor who inspects the oil/water separators at Tinker AFB. The oil/water separators are inspected on a monthly basis with the exception of two separators, which are inspected weekly. The subcontractor must inspect for proper operation of each device and for the buildup of solids, debris, oil and/or fuel. The subcontractor is responsible for arranging to have the solids, debris, oil and/or fuel removed. The Civil Engineering Directorate subcontractor maintains inspection records. The subcontractor is also responsible for the repair and maintenance of the separators. The Environmental Management Branch provides program management of oil/water separators.

N.11 Fire Protection Equipment Inspection and Maintenance: Fire protection equipment is checked and preventive maintenance performed according to a pre-determined schedule. This ensures that the equipment located at the bulk storage areas will operate properly in the event of an emergency. The inspections and testing are performed by the fire department. Contractors may on occasion perform more extensive maintenance and any certifications required. Periodic inspections are conducted to ensure the facility meets fire codes. The following inspection and maintenance schedule applies to fire protection equipment at Tinker AFB:

Daily

- All fire extinguishers checked for proper location and condition.
- Fixed fire fighting systems are visually inspected.

Weekly

- Equipment is inspected for broken seals or low pressure.
- The fire fighting system pump is started and operated at design pressure.

Monthly

- Hoses and nozzles are checked for operational condition.
- All systems are checked for leaks or damage and findings recorded.

Quarterly

- All chemical extinguishers checked for caking.

- Hoses and nozzles checked for proper operation and cleared with air.

Annually

- All nitrogen cylinders are weighed and recharged as necessary.
- Pressurized units are checked and serviced as needed.
- Moisture seals on extinguishers are inspected and replaced as needed.
- Hoses are hydro-tested at 250 psi and replaced if defective.
- Fire pumps are capacity tested.

N.12 Emergency Response Equipment Inspection and Maintenance: Tinker AFB bulk storage fuels maintains a limited inventory of spill response equipment. Annex F contains a listing and description of the equipment. A monthly check of the equipment is performed and it is exercised and tested according to the training requirements discussed in Annex M or manufacturers' recommendations. If any of the equipment is used for any purpose other than an emergency, it must be serviced and replaced as soon as possible. Equipment that is found to be inoperable must be repaired or replaced. Response equipment inspection, testing, and deployment checklists and forms are located at the end of this annex. The unit/activity where the equipment is located will maintain a file of completed forms.

N.13 Water, Sediment, and Soil Sampling: To ensure that pollution prevention measures and secondary containment systems are functioning properly and to prevent the discharge of pollutants off Base, the Environmental Management Branch periodically samples the discharge from the ten outfalls on Tinker AFB. If any samples detect an unusual concentration of petroleum product or hazardous substance, special inspections and investigations will be undertaken to determine the source.

N.14 Training for Inspections: Personnel assigned responsibilities to conduct tank and secondary containment checks and inspections will receive pollution prevention procedures training. Guidelines on inspection requirements and procedures will be included in this training. These topics are included in the pollution prevention training program as described in Annex M.

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Table N-1: Inspection Schedule

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
Bulk Storage, Including Mobile Refuelers								
TSS Sprinkler Shop	11-FP	11	AST	285	1	X	-	-
72ABW/CEC - Pavement	117	117	AST	1,500	1	X	-	-
550CMMXS/ MSDPAB	200B	200, Room 178 - Air Driven Accessories Test	AST	750	1	X	-	-
550 MXDPAA	200-S1	200, Room 178 - Air Driven Accessories Test	AST - Vaulted	140	1	X	-	-
550 MXDPAA	200-S2	200, Room 178 - Air Driven Accessories Test	AST - Vaulted	140	1	X	-	-
All 72ABW/CEC	241-FP	241, Fire Pump Near Transient Alert	AST - Vaulted	500	1	X	-	-
Motor Pool	260	260	AST	280	1	X	-	-
TSS Sprinkler Shop	260-FP	260	AST	200	1	X	-	-
552 EMS	264R	552nd AGE, near 289	AST - Vaulted	15,000	1	X	20 years	-
72MSG/LRDF	271	290 POL Fuel Yard	AST - Vaulted	5,941	1	X	20 years	-
72MSG/LRDF	273 / 211	273 Fuel Yard	AST	2,330,748	1	X	5 years	10 years
72MSG/LRDF	274	273 Fuel Yard	AST	1,051,870	1	X	5 years	10 years
All 72ABW/CEC	286	Fire Pump Near Transient Alert	AST - Vaulted	1,000	1	X	-	-
All 72ABW/CEC	287	Fire Pump Near Transient Alert	AST - Vaulted	1,000	1	X	-	-
AFCEC	290W	Bldg 214, SW corner	AST	2,000	1	X	-	-
72MSG/LRDF	327	3700 Fuel Yard	AST	12,000	1	X	20 years	-
72MSG/LRDF	330 / 212	290 POL Fuel Yard	AST	212,463	1	X	5 years	10 years
72MSG/LRDF	331 / 213	290 POL Fuel Yard	AST	212,168	1	X	5 years	10 years
72MSG/LRDF	332 / 223	290 POL Fuel Yard	AST	42,418	1	X	5 years	10 years
72MSG/LRDF	333 / 214	290 POL Fuel Yard	AST	42,353	1	X	5 years	10 years
72MSG/LRDF	334 / 215	290 POL Fuel Yard	AST	46,915	1	X	5 years	10 years
72MSG/LRDF	335 / 216	290 POL Fuel Yard	AST	46,915	1	X	5 years	10 years
72MSG/LRDF	337	290 POL Fuel Yard	AST	46,935	1	X	5 years	10 years
72MSG/LRDF	341 / 218	290 POL Fuel Yard	AST	42,468	1	X	5 years	10 years
TSS Sprinkler Shop	416-FP-1	416	AST	175	1	X	-	-
TSS Sprinkler Shop	416-FP-2	416	AST	175	1	X	-	-
TSS Sprinkler Shop	469-FP	467	AST	611	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
AAFES Gas Station	472-1	472 - AAFES Service Station	AST - Vaulted	12,000	1	X	20 years	-
AAFES Gas Station	472-2	472 -AAFES Service Station	AST - Vaulted	12,000	1	X	20 years	-
AAFES Gas Station	472-3	472 -AAFES Service Station	AST - Vaulted	12,000	1	X	20 years	-
AAFES Gas Station	472-4	472 -AAFES Service Station	AST - Vaulted	12,000	1	X	20 years	-
AAFES	472-FS1	472 - AAFES Firestone	AST	280	1	X	-	-
AAFES	472-FS2	472 - AAFES Firestone	AST	275	1	X	-	-
AAFES	473-VO	Burger King	Poly Bin	250	3	X	-	-
72MSG/LRDF	483 / 224	Phillips System	AST	426,052	1	X	5 years	10 years
72MSG/LRDF	484 / 225	Phillips System	AST	426,108	1	X	5 years	10 years
AAFES	685-VO	New BX	Poly Bin	250	3	X	-	-
72ABW/CEI	809-1	809	AST	4,000	1	X	-	-
72ABW/CEC - Sprinkler Shop	810-FP	810	AST	75	1	X	-	-
72ABW/CEC - Sprinkler Shop	810-FP-DT	810	AST	120	1	X	-	-
TSS Sprinkler Shop	812-FP-1	812	AST	200	1	X	-	-
TSS Sprinkler Shop	812-FP-2	812	AST	200	1	X	-	-
72MSG/LRDF	886 / 230	Roads and Grounds	AST - Vaulted	3,000	1	X	-	-
72MSG/LRDF	887 / 210	Roads and Grounds	AST - Vaulted	12,000	1	X	20 years	-
72MSG/LRDF	965 / 207	976 - AWACS Alert Area	AST	107,520	1	X	5 years	10 years
72MSG/LRDF	998 / 205	976 - AWACS Alert Area	AST	106,472	1	X	5 years	10 years
72MSG/LRDF	999 / 206	976 - AWACS Alert Area	AST	106,489	1	X	5 years	10 years
TSS Sprinkler Shop	1020-FP	1020	AST	180	1	X	-	-
All 72ABW/CEC	1032-FP-DT-2	1032	AST	75	1	X	-	-
All 72ABW/CEC	1032-FP-DT-3	1032	AST	75	1	X	-	-
All 72ABW/CEC	1032-FP	Southeast of 1032	AST - Vaulted	564	1	X	-	-
507th MXS	1060 / 192	Behind 1070	AST - Vaulted	5,000	1	X	20 years	-
507th MXS	1061 / 193	Behind 1070	AST - Vaulted	5,000	1	X	20 years	-
507th MXS	1062 / 194	Behind 1070	AST - Vaulted	6,000	1	X	20 years	-
72MSG/LRDF	21090	1073 - 507th ARW	AST	108,454	1	X	5 years	10 years
72MSG/LRDF	21091	1073 - 507th ARW	AST	108,903	1	X	5 years	10 years
72MSG/LRDF	21093	1073 - 507th ARW	AST - Vaulted	4,000	1	X	-	-
TSS Sprinkler Shop	1083-FP	1083	AST	120	1	X	-	-
TSS Sprinkler Shop	1094-FP	1094	AST	180	1	X	-	-
Road and Grounds Equipment	1122	1122 Pavement Shop	AST	1,000	1	X	-	-
Motor Pool	1130-1	1130 Motor Pool	AST	325	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
Motor Pool	1130-2	1130 Motor Pool	AST	265	1	X	-	-
TRACE	1137-1	1137 TRACE Grounds Maintenance	AST	1,000	1	X	-	-
TRACE	1137-2	1137 TRACE Grounds Maintenance	AST	500	1	X	-	-
ALC AGE	2101D	ALC AGE	AST	6,000	1	X	20 years	-
ALC AGE	2101JM	ALC AGE	AST	6,000	1	X	20 years	-
Motor Pool	2110	2110	AST	230	1	X	-	-
MAB	2117	2111 Purging Facility	AST - Vaulted	2,000	1	X	-	-
72ABW/CEC - Sprinkler Shop	2119-FP-1	2119	AST	250	1	X	-	-
72ABW/CEC - Sprinkler Shop	2119-FP-2	2119	AST	250	1	X	-	-
TSS Sprinkler Shop	2123A / 203	2123	AST - Vaulted	2,000	1	X	-	-
TSS Sprinkler Shop	2123B / 204	2123	AST - Vaulted	2,000	1	X	-	-
TSS Sprinkler Shop	2123-DT	2123	AST	110	1	X	-	-
552 CMMXS/MSDPAC	2210	2210 - Fuel Accessories Unit	AST - Vaulted	1,445	1	X	-	-
545 PMXS/MXDPABE	3001-F100-1	3001, Post T-81W	AST	80	1	X	-	-
545 PMXS/MXDPABE	3001-F100-2	3001, Post T-81W	AST	80	1	X	-	-
545 PMXS/MXDPABE	3001-F100-3	3001, Post T-81W	AST	80	1	X	-	-
776 MXSS	3001-PD680	3001	AST - Vaulted	1,500	1	X	-	-
Aramark	3001-VO	Cafeteria	Poly Bin	250	3	X	-	-
776 AMXG	3105-NDI	3105, Post A-9	AST	80	1	X	-	-
72ABW/CEC - Sprinkler Shop	3202-FP	3202	AST - Vaulted	180	1	X	-	-
76 PMXG	3234-A North	3234, cell 11 & 12	AST	600	1	X	-	-
76 PMXG	3234-B North	3234, cell 11 & 12	AST	300	1	X	-	-
76 PMXG	3234-C North	3234, cell 11 & 12	AST	200	1	X	-	-
76 PMXG	3234-A South	3234, cell 9 & 10	AST	600	1	X	-	-
76 PMXG	3234-B South	3234, cell 9 & 10	AST	300	1	X	-	-
76 PMXG	3234-C South	3234, cell 9 & 10	AST	200	1	X	-	-
76 PMXG	3703-A	3703, cell 1 & 2	AST	260	1	X	-	-
76 PMXG	3703-B	3703, cell 1 & 2	AST	260	1	X	-	-
76 PMXG	3703-C	3703, cell 7 & 8	AST	260	1	X	-	-
72MSG/LRDF	3710	3700 Fuel Yard	AST	205,000	1	X	5 years	10 years
72MSG/LRDF	3716 / 201	3700 Fuel Yard	AST	207,165	1	X	5 years	10 years
72MSG/LRDF	3718 / 202	3700 Fuel Yard	AST	445,964	1	X	5 years	10 years

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
72 ABW/CEC	3772	3772	AST	1,000	1	X	-	-
DISA	3900-1	3900 - DISA	AST	20,000	1	X	20 years	-
DISA	3900-DT-1	3900 - DISA	AST	600	1	X	-	-
DISA	3900-DT-2	3900 - DISA	AST	600	1	X	-	-
DISA	3900-DT-3	3900 - DISA	AST	600	1	X	-	-
DISA	3900-DT-4	3900 - DISA	AST	600	1	X	-	-
552 CMMXS/MSDPAC	3907-1200	South side of 3907 - Consolidated Fuels Test Facility	AST	10,000	1	X	20 years	-
552 CMMXS/MSDPAC	3907-1201	South side of 3907 - Consolidated Fuels Test Facility	AST	10,000	1	X	20 years	-
552 CMMXS/MSDPAC	3907-2200	South side of 3907 - Consolidated Fuels Test Facility	AST	10,000	1	X	20 years	-
552 CMMXS/MSDPAC	3907-2201	South side of 3907 - Consolidated Fuels Test Facility	AST	10,000	1	X	20 years	-
72FSS	5603-VO	Officer's Club	Poly Bin	250	3	X	-	-
72FSS	5703-VO	Bowling Alley	Poly Bin	250	3	X	-	-
72FSS	5907-VO	Chow Hall	Poly Bin	250	3	X	-	-
Golf Course Maintenance	5935-1	Golf Course Maintenance	AST	550	1	X	-	-
Golf Course Maintenance	5935-2	Golf Course Maintenance	AST	550	1	X	-	-
Auto Hobby Shop	6002	Auto Hobby Shop	AST	700	1	X	-	-
72FSS	6601-VO	Golf Course Grill	Poly Bin	250	3	X	-	-
TSS Sprinkler Shop	7017-FP	7017	AST	115	1	X	-	-
776 MXSS	9302-1	TAC Area, T-9 Test Cell	AST	12,000	1	X	20 years	-
776 MXSS	9302-2	TAC Area, T-9 Test Cell	AST	12,000	1	X	20 years	-
TSS Sprinkler Shop	9303-FP-1	9303 TAC Area	AST	320	1	X	-	-
TSS Sprinkler Shop	9303-FP-2	9303 TAC Area	AST	320	1	X	-	-
776 MXSS	9403	TAC Area, T-9 Test Cell	AST	10,000	1	X	20 years	-
776 MXSS	9404	TAC Area, T-9 Test Cell	AST	10,000	1	X	20 years	-
DEG	62501-1	62501 - Industrial Waste Treatment Plant	AST	21,000	1	X	20 years	-
DEG	62501-2	62501 - Industrial Waste Treatment Plant	AST	21,000	1	X	20 years	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
DEG	62501-3	62501 - Industrial Waste Treatment Plant	AST	21,000	1	X	20 years	-
DEG	62501-4	62501 - Industrial Waste Treatment Plant	AST	21,000	1	X	20 years	-
Navy	NA001	820, Navy STRATCOM	AST	1,000	1	X	-	-
Navy	NA002	820, Navy STRATCOM	AST	4,000	1	X	-	-
DEG	61101-4	62516 - Industrial Waste Treatment Plant	Tank Truck	600	1	X	-	-
DEG	61101-5	62516 - Industrial Waste Treatment Plant	Tank Truck	1,600	1	X	-	-
DEG	61101-3	62516 - Industrial Waste Treatment Plant	Tank Truck	2,600	1	X	-	-
DEG	61101-3	62516 - Industrial Waste Treatment Plant	Tank Truck	3,000	1	X	-	-
DEG	61101-1	62516 - Industrial Waste Treatment Plant	Tank Truck	5,500	1	X	-	-
72MSG/LRDF	R11 Refuelers	290 Fuel Yard, Parking Area	Mobile Refueler	6,000	1	X	-	-
72MSG/LRDF	R12 Refuelers	290 Fuel Yard, Parking Area	Mobile Refueler	200	1	X	-	-
72MSG/LRDF	C300 Tank Truck	290 Fuel Yard, Parking Area	Mobile Refueler	1,200	1	X	-	-
72MSG/LRDF	Bowser (400 gal)	290 Fuel Yard, Parking Area	Mobile Refueler: Bowser	400	1	X	-	-
72MSG/LRDF	Bowser (300 gal)	290 Fuel Yard, Parking Area	Mobile Refueler: Bowser	300	1	X	-	-
72MSG/LRDF	Bowser (600 gal)	290 Fuel Yard, Parking Area	Mobile Refueler: Bowser	600	1	X	-	-
72MSG/LRDF	Bowser (400 gal)	3700 Fuel Yard	Mobile Refueler: Bowser	400	1	X	-	-
72MSG/LRDF	Bowser (400 gal)	Phillips System	Mobile Refueler: Bowser	400	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
552 MXG	Bowser (300 gal)	2110	Mobile Refueler: Bowser	300	1	X	-	-
552 MXG	Bowser (600 gal)	220 AGE Yard	Mobile Refueler: Bowser	600	1	X	-	-
Navy	Bowser (350 gal)	820	Mobile Refueler: Bowser	350	1	X	-	-
552 MXG	Bowser (600 gal)	976 AGE Yard	Mobile Refueler: Bowser	600	1	X	-	-
507 ARW	Bowser (600 gal)	1070, AGE Yard	Mobile Refueler: Bowser	600	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
Bulk Storage: Generators								
PowerPro	1	1, Outside North Loading Dock	AST	100	1	X	-	-
PowerPro	18	18, Southwest Side of Bldg	Generator Belly Tank	60	1	X	-	-
PowerPro	117-G	117, Fire Station 1, Outside, SE Corner	AST	500	1	X	-	-
PowerPro	208	208, Outside, East Side of Facility	Generator Belly Tank	595	1	X	-	-
PowerPro	230	230, Outside, SW Corner	Generator Belly Tank	185	1	X	-	-
PowerPro	230E	230, Eastside of Bldg	Generator Belly Tank	113	1	X	-	-
PowerPro	240	240, West Side of Bldg	Vaulted AST	1,480	1	X	-	-
PowerPro	250	250, Base Fuels, Outside, East of Bldg	AST	100	1	X	-	-
PowerPro	255	255, Outside, West Side of Facility	Generator Belly Tank	750	1	X	-	-
PowerPro	260-DT	260, Inside Stand-Alone Bldg	AST	275	1	X	-	-
PowerPro	280-DT	280, Outside, SE Corner of Bldg	AST	100	1	X	-	-
PowerPro	281	281, SE of Bldg 280	Generator Belly Tank	100	1	X	-	-
PowerPro	284-DT	284, Inside Mech Rm	AST	350	1	X	-	-
PowerPro	290	290, Outside, NE Corner of Fuel Yard	AST	75	1	X	-	-
PowerPro	414	414, Outside, North of Bldg	AST	450	1	X	-	-
PowerPro	416-SE	416, Outside, Se Corner of Bldg	Generator Belly Tank	143	1	X	-	-
PowerPro	416-NE	416, Outside, NE Side of Facility	Generator Belly Tank	312	1	X	-	-
PowerPro	469	469, Supply Distribution, Outside, West of Bldg	AST	150	1	X	-	-
PowerPro	487-DT	487, Inside Stand-Alone Bldg	AST	275	1	X	-	-
PowerPro	504-A-DT	504, Inside Stand-Alone Bldg	AST	275	1	X	-	-
PowerPro	504-B-DT	504, Inside Stand-Alone Bldg	AST	275	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
PowerPro	591	591, Security Police, Outside, North of Bldg	Generator Belly Tank	55	1	X	-	-
PowerPro	685	685, Outside, East Side of Facility	Generator Belly Tank	145	1	X	-	-
PowerPro	690	690, Outside, North of Bldg	Generator Belly Tank	240	1	X	-	-
PowerPro	807	807, Outside, South Side	Generator Belly Tank	355	1	X	-	-
PowerPro	812	812, Outside, South Side	Generator Belly Tank	240	1	X	-	-
PowerPro	820-1	820-1, In Front of 829	AST	1,150	1	X	-	-
PowerPro	820-2	820-2, In Front of 829	AST	1,150	1	X	-	-
PowerPro	906	906, AWACS Flight Line, Inside	AST	268	1	X	-	-
PowerPro	928	928, Localizer 35, Inside, Stand-Alone Bldg	AST	300	1	X	-	-
PowerPro	930	930, Glideslope Flight Line, Inside, Stand-Alone Bldg	AST	300	1	X	-	-
PowerPro	933	933, 17 Glidescope Stand-Alone Bldg	AST	300	1	X	-	-
PowerPro	935	935, Control Tower, Inside	Generator Belly Tank	140	1	X	-	-
PowerPro	942	942, Localizer 17, Inside, Stand-Alone Bldg	AST	300	1	X	-	-
PowerPro	951	951, 12 Approach Bak-12 on South Side of Barrier Shed	Generator Belly Tank	80	1	X	-	-
PowerPro	955	955, Outside, End of Runway,Nw/ILS	Generator Belly Tank	125	1	X	-	-
PowerPro	988	988, East of Guard Gate, Inside, Stand-Alone Bldg	Vaulted AST	200	1	X	-	-
PowerPro	996	996, AWACS, Inside Temp Stand-Alone Bldg	Generator Belly Tank	706	1	X	-	-
PowerPro	1002	1002, SW Side of Bldg, Outside	AST	150	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
PowerPro	1029	1029, Telephone Switch	Generator Belly Tank	145	1	X	-	-
PowerPro	1066	1066, Outside, SW Corner	AST	250	1	X	-	-
PowerPro	1082	1082, 507th	AST	150	1	X	-	-
PowerPro	1083-1	1083, B-2 Units	Convault AST	12,500	1	X	20 years	-
PowerPro	1083-2	1083, B-2 Units	Convault AST	12,500	1	X	20 years	-
PowerPro	71083	71083, B-2 Unit #1	Generator Belly Tank	250	1	X	-	-
PowerPro	71084	71084, B-2 Unit #2	Generator Belly Tank	250	1	X	-	-
PowerPro	71085	71085, B-2 Unit #3	Generator Belly Tank	250	1	X	-	-
PowerPro	1086	1086, SP Armory, Outside, South Side	AST	200	1	X	-	-
PowerPro	1091	1091, 507th Fuel Yard	AST	350	1	X	-	-
PowerPro	1094-G	1094, Behind Hospital	Generator Belly Tank	275	1	X	-	-
PowerPro	1105	1105, Inside, South Side of Bldg, Transmitter Site	AST	275	1	X	-	-
PowerPro	2280	2280, Paint Hangar, Outside, West of Bldg	AST	150	1	X	-	-
PowerPro	3001-N	3001, North Annex	Generator Belly Tank	521	1	X	-	-
PowerPro	3001-G	3001, North Annex	AST	400	1	X	-	-
PowerPro	3001-D	3001, Inside Boiler Room	Vaulted AST	1,000	1	X	-	-
PowerPro	3001-D-DT	3001, 3001E, Inside Boiler Room	AST	135	1	X	-	-
PowerPro	3001-W	3001, West Side of Alley, Outside	AST	150	1	X	-	-
PowerPro	3102	3102, Fire Station, Outside, North of Bldg	AST	100	1	X	-	-
PowerPro	3105	3105, SE Corner Hangar	Generator Belly Tank	75	1	X	-	-
PowerPro	3202	3202, Northwest Side	Generator Belly Tank	155	1	X	-	-
PowerPro	3221-DT	3221, Inside Bldg, NE	AST	159	1	X	-	-
PowerPro	3225	3225, Outside, East of Bldg	Generator Belly Tank	200	1	X	-	-
PowerPro	3228	3228, Outside, East Side of Facility	Generator Belly Tank	106	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
PowerPro	3705	3705, Outside, East Side of Facility	Generator Belly Tank	100	1	X	-	-
PowerPro	3714	3714, NW Corner of Fuel Yard	Generator Belly Tank	204	1	X	-	-
PowerPro	3902	3902, SE Corner of Bldg, Outside	Generator Belly Tank	258	1	X	-	-
PowerPro	3907	3907, South Side of Bldg	Generator Belly Tank	308	1	X	-	-
PowerPro	4000	4000, South Side of Bldg	Generator Belly Tank	135	1	X	-	-
PowerPro	4002	4002, South Side of Bldg	Generator Belly Tank	60	1	X	-	-
PowerPro	4002-2	Parked at 4002 Currently, East of Bldg	Generator Belly Tank	75	1	X	-	-
PowerPro	4006	4006, East of Bldg 4006	Generator Belly Tank	200	1	X	-	-
PowerPro	4029	4029, EIG, Outside, SW Corner of Bldg	Generator Belly Tank	280	1	X	-	-
PowerPro	4032	4032, LSOC Facility, Outside, West of Bldg	Generator Belly Tank	75	1	X	-	-
PowerPro	4058	4058, SW of FAA Control Tower	Convault AST	300	1	X	-	-
PowerPro	5811	5811, Stand-Alone Bldg	Generator Belly Tank	130	1	X	-	-
PowerPro	9001-S	9001, South Side of Bldg	Generator Belly Tank	138	1	X	-	-
PowerPro	9001-A	9001, East of Bldg	AST	500	1	X	-	-
PowerPro	9001-B	9001, North of Bldg	AST	500	1	X	-	-
PowerPro	9001-C	9001, North of Bldg	AST	500	1	X	-	-
PowerPro	9001-D	9001, West of Bldg	AST	500	1	X	-	-
PowerPro	9301	9301, Boiler Plant	AST	1,504	1	X	-	-
PowerPro	22125	22125, Lift Station, Outside, East of Bldg	AST	400	1	X	-	-
PowerPro	61289	61289	Generator Belly Tank	200	1	X	-	-
PowerPro	62501A	IWTP, Outside, NW End	AST	500	1	X	-	-
PowerPro	62501B	IWTP, Outside, NE End	Generator Belly Tank	520	1	X	-	-
PowerPro	62501C	IWTP, Outside, SE End	AST	500	1	X	-	-
PowerPro	62501D	IWTP, Outside, SW End	AST	100	1	X	-	-
PowerPro	62501E	IWTP, Outside, NW End	Generator Belly Tank	215	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
PowerPro	3307-P-7	Bldg 13	Generator Belly Tank	90	1	X	-	-
PowerPro	3307-P-8	Bldg 13	Generator Belly Tank	90	1	X	-	-
PowerPro	3307-P-10	Bldg 13	Generator Belly Tank	135	1	X	-	-
PowerPro	5905-P-12	5905: Dining Facility	Generator Belly Tank	520	1	X	-	-
PowerPro	3307-P-13	2280	Generator Belly Tank	200	1	X	-	-
PowerPro	3307-P-14	1053; 2280, 2283	Generator Belly Tank	135	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
Oil-Filled Operational Equipment								
72 LRS/LGLOC	Filter Separator (2 units)	290 Fuel Yard	Filter Separator (2 units)	300	1	X	-	-
72 LRS/LGLOC	Filter Separator (4 units)	290 Fuel Yard	Filter Separator (4 units)	150	1	X	-	-
72 LRS/LGLOC	Filter Separator (2 units)	290 Fuel Yard	Filter Separator (2 units)	150	1	X	-	-
72 LRS/LGLOC	Filter Separator (4 units)	290 Fuel Yard	Filter Separator (4 units)	100	1	X	-	-
72 LRS/LGLOC	Filter Separator (2 units)	290 Fuel Yard	Filter Separator (2 units)	150	1	X	-	-
72 LRS/LGLOC	Filter Separator (2 units)	3700 Fuel Yard	Filter Separator (2 units)	300	1	X	-	-
72 LRS/LGLOC	Filter Separator (4 units)	3700 Fuel Yard	Filter Separator (4 units)	200	1	X	-	-
72 LRS/LGLOC	Filter Separator (6 units)	976 - AWACS Alert Area	Filter Separator (6 units)	200	1	X	-	-
72 LRS/LGLOC	Filter Separator (5 units)	507th Fuel Yard	Filter Separator (5 units)	200	1	X	-	-
72 LRS/LGLOC	Filter Separator (2 units)	Phillips System	Filter Separator (2 units)	300	1	X	-	-
72 LRS/LGLOC	Filter Separator (3 units)	Phillips System	Filter Separator (3 units)	200	1	X	-	-
72 LRS/LGLOC	Filter Separator (2 units)	273 Fuel Yard	Filter Separator (2 units)	200	1	X	-	-
552 MXG	Various AGE Equipment: 220 Yard (Various units)	220 AGE Yard	Various AGE Equipment: 220 Yard (Various units)	Various	1	X	-	-
552 MXG	Various AGE Equipment: 260 Yard (Various units)	260 AGE Yard	Various AGE Equipment: 260 Yard (Various units)	Various	1	X	-	-
552 MXG	Various AGE Equipment: 240 Yard (Various units)	240 AGE Yard	Various AGE Equipment: 240 Yard (Various units)	Various	1	X	-	-
552 MXG	Various AGE Equipment: 976 Yard (Various units)	976 AGE Yard	Various AGE Equipment: 976 Yard (Various units)	Various	1	X	-	-
552 MXG	Diesel Ace Air Conditioner (31 units)	220, 240, 260, or 976 AGE Yards	Diesel Ace Air Conditioner (31 units)	127	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
552 MXG	Diesel Generator, Trilectron (21 units)	220, 240, 260, or 976 AGE Yards	Diesel Generator, Trilectron (21 units)	147	1	X	-	-
552 MXG	Dash 60 (12 units)	220, 240, 260, or 976 AGE Yards	Dash 60 (12 units)	190	1	X	-	-
552 MXG	Dash 95 (2 units)	220, 240, 260, or 976 AGE Yards	Dash 95 (2 units)	80	1	X	-	-
507 ARW	Trailer-Mounted Air Conditioner (7 units)	1070, AGE Yard	Trailer-Mounted Air Conditioner (7 units)	60	1	X	-	-
507 ARW	Trailer-Mounted Compressor (6 units)	1070, AGE Yard	Trailer-Mounted Compressor (6 units)	80	1	X	-	-
76 MXW/ALC	Various AGE Equipment: 2101 AGE Yard (189 units)	ALC Age Yard	Various AGE Equipment: 2101 AGE Yard (189 units)	19,315 total	1	X	-	-
76 MXW/ALC	Air Conditioner, MA-3D100 (62 units)	2101B, ALC AGE Yard	Air Conditioner, MA-3D100 (62 units)	60	1	X	-	-
76 MXW/ALC	Air Conditioners, Various (65 units)	2101B, ALC AGE Yard	Air Conditioners, Various (65 units)	175	1	X	-	-
76 MXW/ALC	Air Starter (20 units)	2101B, ALC AGE Yard	Air Starter (20 units)	80	1	X	-	-
76 MXW/ALC	Cabin Press Starter (4 units)	2101B, ALC AGE Yard	Cabin Press Starter (4 units)	50	1	X	-	-
76 MXW/ALC	Cabin Press Starter (10 units)	2101B, ALC AGE Yard	Cabin Press Starter (10 units)	95	1	X	-	-
76 MXW/ALC	Generator, GTC (4 units)	2101B, ALC AGE Yard	Generator, GTC (4 units)	195	1	X	-	-
76 MXW/ALC	Generator, MEP (9 units)	2101B, ALC AGE Yard	Generator, MEP (9 units)	90	1	X	-	-
76 MXW/ALC	Generator, MD (4 units)	2101B, ALC AGE Yard	Generator, MD (4 units)	75	1	X	-	-
76 MXW/ALC	Hydraulic Test Stands (6 units)	2101B, ALC AGE Yard	Hydraulic Test Stands (6 units)	95	1	X	-	-
76 MXW/ALC	Liquid Cooling System, ACE (5 units)	2101B, ALC AGE Yard	Liquid Cooling System, ACE (5 units)	127	1	X	-	-
NAVY	Diesel Ace Air Conditioner (8 units)	Navy, Bldg 820	Diesel Ace Air Conditioner (8 units)	130	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
NAVY	Diesel Generator, Trilectron (8 units)	Navy, Bldg 820	Diesel Generator, Trilectron (8 units)	120	1	X	-	-
NAVY	Flight Trainer, Hydraulic Reservoir (1 unit)	Navy, Bldg 830	Flight Trainer, Hydraulic Reservoir (1 unit)	375	1	X	-	-
NAVY	Maintenance Trainer, Hydraulic Reservoir (1 unit)	Navy, Bldg 830	Maintenance Trainer, Hydraulic Reservoir (1 unit)	500	1	X	-	-
NAVY	Trainer, Hydraulic Reservoir (1 unit)	Navy, Bldg 830	Trainer, Hydraulic Reservoir (1 unit)	155	1	X	-	-
547 PMXS/MXDTAA	Fuel Filter (3 units)	3234, Cell 9 & 10	Fuel Filter (3 units)	100	1	X	-	-
547 PMXS/MXDTAA	Hydraulic Fluid Reservoir (1 unit)	3234, Cell 9 & 10	Hydraulic Fluid Reservoir (1 unit)	80	1	X	-	-
547 PMXS/MXDTAA	Hydraulic Fluid Reservoir (2 units)	3234, Cell 9 & 10	Hydraulic Fluid Reservoir (2 units)	67	1	X	-	-
547 PMXS/MXDTAA	Hydraulic Fluid Reservoir (1 unit)	3234, Cell 9 & 10	Hydraulic Fluid Reservoir (1 unit)	235	1	X	-	-
547 PMXS/MXDTAA	Fuel Filter (3 units)	3234, Cell 11 & 12	Fuel Filter (3 units)	100	1	X	-	-
547 PMXS/MXDTAA	Hydraulic Fluid Reservoir (2 units)	3234, Cell 11 & 12	Hydraulic Fluid Reservoir (2 units)	67	1	X	-	-
547 PMXS/MXDTAA	Hydraulic Fluid Reservoir (1 unit)	3703, Cell 7 & 8	Hydraulic Fluid Reservoir (1 unit)	80	1	X	-	-
547 PMXS/MXDTAA	Fuel Filter (3 units)	3703, Cell 1 & 2	Fuel Filter (3 units)	70	1	X	-	-
550 MXDPAA	Test Stand (1 unit)	200, Room 151, cell 20	Test Stand (1 unit)	500	1	X	-	-
550 MXDPAA	Test Stand (1 unit)	200, Room 151, cell 18	Test Stand (1 unit)	300	1	X	-	-
550 MXDPAA	Hydraulic Test Stand (1 unit)	200, Room 123	Hydraulic Test Stand (1 unit)	120	1	X	-	-
552 MXDPBB	Manifold Flush Stand (1 unit)	3907, Post B-7	Manifold Flush Stand (1 unit)	55	1	X	-	-
552 MXDPAB/PBC	Hydraulic Test Stand (40 units)	3902	Hydraulic Test Stand (40 units)	500 gal max, 400 gal avg	1	X	-	-
552 MXDPAB/PBC	Pump Module (3 units)	3902	Pump Module (3 units)	2,000	1	X	-	-
552 MXDPAB/PBC	Pump Module (1 unit)	3907	Pump Module (1 unit)	800	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
552 MXDPAB/PBC	Hydraulic Test Stand (8 units)	3907	Hydraulic Test Stand (8 units)	500 gal max, 400 gal avg	1	X	-	-
552 MXDPBA	Test Stands (3 units)	3001, Post P-45	Test Stands (3 units)	100	1	X	-	-
552 MXDPAA	PD-680 Spray Booth (1 unit)	3907, Room 231	PD-680 Spray Booth (1 unit)	125	1	X	-	-
552 MXDPBA	Agitation Tank (2 units)	3001, Post O-57	Agitation Tank (2 units)	110	1	X	-	-
544 PMXS/MXDRB	Test Stand (1 unit)	3001, Post X-67	Test Stand (1 unit)	55	1	X	-	-
776 AMXG	Test Stand (16 units)	2122	Test Stand (16 units)	120 x 4 each	1	X	-	-
776 SMXG/OBM	Supercomputer with Coolant (1 unit)	9001, Post D-53	Supercomputer with Coolant (1 unit)	250	1	X	-	-
545 PMXS/MXDPAN	Degreaser (1 unit)	9001, Post AA30	Degreaser (1 unit)	150	1	X	-	-
544 PMXS	Vertical Turret Lathe (1 unit)	3001, Post J-93	Vertical Turret Lathe (1 unit)	60	1	X	-	-
551 CMMXS/MXDRAC	Center Machining N10 (1 unit)	3001, Post U-35	Center Machining N10 (1 unit)	80	1	X	-	-
551 CMMXS/MXDXAB	CNC Press (1 unit)	9001, Post B-24	CNC Press (1 unit)	200	1	X	-	-
547 PMXS/MXDTAA	Hydraulic Loading Eq System (2 units)	3703, Rooms 5, 6, 7, 8	Hydraulic Loading Eq System (2 units)	57	1	X	-	-
551 CMMXS/MXDXAB	Shear (1 unit)	9001, Post C-28	Shear (1 unit)	70	1	X	-	-
551 CMMXS/MXDXAB	300-ton Press (1 unit)	9001, Post B-25	300-ton Press (1 unit)	700	1	X	-	-
548 PMXS/MXDXA	5-Axis Machining Center (1 unit)	3001, Post N-87	5-Axis Machining Center (1 unit)	60	1	X	-	-
551 CMMXS/MXDRAC	CNC Surface Grinder (1 unit)	3001, Post R-65	CNC Surface Grinder (1 unit)	60	1	X	-	-
551 CMMXS/MXDXAB	Fluid Cell Press (1 unit)	9001, Post B-27	Fluid Cell Press (1 unit)	200	1	X	-	-
550 CMMXS/MXDPAA	Centrifugal Compressor (2 units)	210	Centrifugal Compressor (2 units)	144	1	X	-	-
76 PMXG	Shear (1 unit)	3001, Post Y-38	Shear (1 unit)	57	1	X	-	-
551 CMMXS/MXDXAB	12-ft Brake Press (1 unit)	9001, Post C-24	12-ft Brake Press (1 unit)	203	1	X	-	-

Table N-1: Inspection Schedule (cont'd)

Organization	Tank or Equipment ID	Building/ Location	Tank/ Equipment Type	Capacity	Inspections Required			
					STI Category	STI SP001 Monthly & Annual	Inspection Frequency	
							External	Internal
76 PMXG	Hydraulic Shear (1 unit)	3001, Post Y-13	Hydraulic Shear (1 unit)	61	1	X	-	-
551 CMMXS/MXDPA	CNC Bender (1 unit)	3705, Post A-16	CNC Bender (1 unit)	60	1	X	-	-
551 CMMXS/MXDXAB	Elastomer Cyril Bath Press (1 unit)	9001, Post B-26	Elastomer Cyril Bath Press (1 unit)	350	1	X	-	-
544 PMXS/MXDPA	Ultra High Pressure Water Pump (2 units)	3001, Post S-107	Ultra High Pressure Water Pump (2 units)	100	1	X	-	-
544 PMXS/MXDPA	Ultra High Pressure Water Pump (2 units)	3001, Post P-107	Ultra High Pressure Water Pump (2 units)	100	1	X	-	-
551 CMMXS/MXDXAB	12-ft Hydraulic Shear (1 unit)	9001, Post D-28	12-ft Hydraulic Shear (1 unit)	79	1	X	-	-
544 PMXS/MXDXAB	Vertical Turret Lathe (1 unit)	3001, Post W-85	Vertical Turret Lathe (1 unit)	90	1	X	-	-
544 PMXS/MXDPA	Intensifier Pump (2 units)	3001, Post P-107	Intensifier Pump (2 units)	100	1	X	-	-
544 PMXS/MXDPA	Intensifier Pump (2 units)	3001, Post R-107	Intensifier Pump (2 units)	100	1	X	-	-
544 PMXS/MXDPA	Intensifier Pump (2 units)	3001, Post S-107	Intensifier Pump (2 units)	100	1	X	-	-
567 AMXS/MXDPAI	Intensifier Pump (2 units)	3001, Post J-105	Intensifier Pump (2 units)	100	1	X	-	-
551 CMMXS/MXDXAB	Four-Post Hydraulic Press (1 unit)	9001, Post B-24	Four-Post Hydraulic Press (1 unit)	214	1	X	-	-
548 PMXS/MXDPA	Vertical CNC Grinder (1 unit)	3001, Post N-89	Vertical CNC Grinder (1 unit)	107	1	X	-	-
551 CMMXS/MXDRAC	5-Axis Machining Center (2 units)	3001, Post U-33	5-Axis Machining Center (2 units)	90	1	X	-	-
551 CMMXS/MXDRAC	Pallet Changer (1 unit)	3001, Post V-33	Pallet Changer (1 unit)	65	1	X	-	-
551 CMMXS/MXDRAC	5-Axis Machining Center (2 units)	3001, Post W-35	5-Axis Machining Center (2 units)	90	1	X	-	-
550 CMMXS/MXDPA	Centrifugal Air Compressor (1 unit)	210A	Centrifugal Air Compressor (1 unit)	144	1	X	-	-

Use after this only AFTO Form 39

Facility and Equipment Inspection Records

Master Blank Forms

(Users should reproduce copies as needed)

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TANK INSPECTION CHECKLIST

DATE _____ TANK NUMBER _____ TANK CONTENTS _____

LOCATION _____ INSPECTOR _____

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
1. Check tanks for leaks, specifically looking for:			
a. Drip marks	_____	_____	_____
b. Discoloration of tanks	_____	_____	_____
c. Puddles containing spilled or leaked material	_____	_____	_____
d. Corrosion on tanks	_____	_____	_____
e. Cracks	_____	_____	_____
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	_____	_____	_____
f. Damage caused by vegetation roots	_____	_____	_____

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
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	_____	_____	_____
f. Localized dead vegetation	_____	_____	_____
4. Check safety items:			
a. Cathodic protection system operable	_____	_____	_____
b. Leak detection system operable	_____	_____	_____
c. Monitoring equipment operable	_____	_____	_____
d. Fire suppression system operable	_____	_____	_____
e. External stairways or walkways are sound	_____	_____	_____

Remarks:

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Secondary Containment Checklist

DATE _____ LOCATION _____ INSPECTOR _____

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
1. Check dike or berm system for the following:			
a. Capacity is per requirements	_____	_____	_____
b. Drainage control valves are operational, secured	_____	_____	_____
c. Permeability conditions of dike, berm and floor met	_____	_____	_____
d. Free of debris	_____	_____	_____
e. Erosion - free	_____	_____	_____
f. Pipes, inlets, and drainage functional	_____	_____	_____
2. Check secondary containment for:			
a. Free of cracks	_____	_____	_____
b. Free of discoloration	_____	_____	_____
c. Free of corrosion	_____	_____	_____
d. Free of excess water accumulation	_____	_____	_____
e. Free of any product accumulation	_____	_____	_____
f. Valves secured	_____	_____	_____

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Response Equipment Inspection Checklist

DATE _____ LOCATION _____ INSPECTOR _____

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
1. <u>Containment Boom</u>			
a. Quantity on-hand matches inventory	_____	_____	_____
b. Properly stored and accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
e. Last tested	Date: _____		
2. <u>Absorbent Materials</u>			
a. Quantity on-hand matches inventory	_____	_____	_____
b. Properly stored and accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
3. <u>Pumps/Skimbers</u>			
a. Quantity on-hand matches inventory	_____	_____	_____
b. Properly stored and accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
e. Last tested	Date: _____		

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
4. <u>Miscellaneous Hand Tools/Equipment</u>			
a. Quantity matches inventory	_____	_____	_____
b. Properly stored/ accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
5. <u>Communications Equipment</u>			
a. Quantity matches inventory	_____	_____	_____
b. Properly stored/accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
e. Last tested	Date: _____		_____
6. <u>Personal Protective and Safety Equipment</u>			
a. Quantity matches inventory	_____	_____	_____
b. Properly stored/accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
e. Last tested	Date: _____		_____
7. <u>Air Sampling/Monitoring Equipment</u>			
a. Quantity matches inventory	_____	_____	_____
b. Properly stored/accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
e. Last tested	Date: _____		_____

	<u>Yes</u>	<u>No</u>	<u>Comments</u>
8. <u>HAZMAT Trailer</u>			
a. Quantity matches inventory	_____	_____	_____
b. Properly stored/accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
e. Last tested	Date: _____		

9. <u>Fuel Recovery Tanks and Trucks</u>			
a. Quantity matches inventory	_____	_____	_____
b. Properly stored/accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
e. Last tested	Date: _____		

10. <u>Miscellaneous Heavy Equipment</u>			
a. Quantity matches inventory	_____	_____	_____
b. Properly stored/accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____
d. Within shelf life	_____	_____	_____
e. Last tested	Date: _____		

11. <u>Pre-Staged Spill Response Kits</u>			
a. Quantity matches inventory	_____	_____	_____
b. Properly stored/accessible	_____	_____	_____
c. Serviceable condition	_____	_____	_____

Yes

No

Comments

d. Within shelf life

e. Last tested

Date: _____

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**Response Equipment Testing
and Deployment Exercise Log**

Type of Test **Date**

Equipment Testing: _____
(Boom, Pumps, etc.)

Equipment Tested: _____

Type of Test **Date**

Equipment Testing: _____
(Boom, Pumps, etc.)

Equipment Tested: _____

Type of Test **Date**

Equipment Testing: _____
(Boom, Pumps, etc.)

Equipment Tested: _____

Type of Test **Date**

Equipment Testing: _____
(Boom, Pumps, etc.)

Equipment Tested: _____

Location **Date**

Deployment Exercise: _____

Equipment Deployed: _____

Location **Date**

Deployment Exercise: _____

Equipment Deployed: _____

**Response Equipment Testing
and Deployment Exercise Log**

Last Update: _____

Last Inspection or Response Equipment Test:

Date: _____ Equipment tested: _____

Inspection Frequency: Monthly

Last Deployment Drill:

Date: _____

Deployment Frequency: Semi-annually

Oil Spill Removal Organization Certification:

OSRO: _____

Date: _____

OSRO: _____

Date: _____

OSRO: US Navy Supv of Salvage

Date: N/A

**Tinker AFB
Local Emergency Planning Committee Working Group
(LEPCWG)**

Site Data Sheets

DATE: _____

INITIALS _____

FACILITY NUMBER: _____ GRID _____

COORDINATES: _____

OIL OR HAZARDOUS SUBSTANCES PRESENT _____

TYPE (TANK, DRUM, PIPE, ETC.) _____

CONSTRUCTION MATERIAL _____

SIZE/SHAPE _____

LOCATION (NARRATIVE) _____

MAXIMUM SPILL QUANTITY _____

CALCULATION PROCEDURE PROBABLE SPILL _____

ROUTE _____

SECONDARY CONTAINMENT _____

DIKE MATERIAL _____ DIKE HEIGHT _____

DIKE AREA _____ DIKE VOLUME _____

DIKE DRAINING EQUIPMENT _____

OTHER SECONDARY CONTAINMENT _____

VISUAL INSPECTION
(FREQUENCY/ITEM INSPECTED/INSPECTED BY): _____

**Tinker AFB
Local Emergency Planning Committee Working Group
(LEPCWG)**

**Site Data Sheets
(continued)**

EXTERNAL _____

INTERNAL (DATE OF LAST RESULTS) _____

PREVENTIVE MAINTENANCE (PROCEDURES/FREQUENCY) _____

LEAK TESTING BURIED SITES (DATES/RESULTS) _____

HOUSEKEEPING:

AISLE SPACE _____ AREA CLEAN _____

NEAT AND ORDERLY STORAGE OF CHEMICALS _____

OTHER COMMENTS _____

MATERIAL COMPATIBILITY (LINERS, PROTECTIVE COATING OR CATHODIC PROTECTION:

INTERNAL _____

EXTERNAL _____

SECURITY:

FENCES AND LOCKED GATES _____

TRAFFIC BARRIERS _____

LOCKED VALVES AND PUMP CONTROLS _____

LIGHTING _____

OTHER _____

MONITORING (TYPE/INTERLOCKS):

**Tinker AFB
Local Emergency Planning Committee Working Group
(LEPCWG)**

**Site Data Sheets
(continued)**

LIQUID LEVEL _____

FLOW METERS _____

FLOW _____

TOTALIZERS _____

MATERIAL INVENTORY _____

GROUND WATER (FOR UNDERGROUND SITES) _____

OTHER _____

DETAILED VISUAL INSPECTION AND COMMENTS: _____

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ANNEX O

General Emergency Response Guidelines

O.1 General: Tinker AFB has developed site-specific emergency response plans for each facility that stores or uses hazardous substances. Typically, these plans are maintained at each facility and are included within Annex A, where applicable. More generally, emergency response procedures for Tinker AFB are addressed in the **RED PLAN**.

O.2 General Guidelines for Hazardous Substance Spills: In the event of a release or spill at one of the hazardous substance storage and handling sites, the person discovering the spill will leave the area immediately and notify the activity supervisor and the fire department. Operations in the area will be suspended and the situation will be assessed. The response guidelines and procedures in this *Integrated Contingency Plan* will be followed in addition to any guidelines provided in the specific emergency action plan for the site. The following general guidelines apply to spills at these sites.

Liquid Spills

- Alert people in the area, notify the supervisor and the fire department.
- Wear proper personal protective equipment if taking mitigating actions.
- Contain the spill with appropriate absorbent material.
- Ventilate the space if possible.
- For flammables: remove ignition sources and use plastic or non-sparking tools and equipment for cleanup actions.
- For caustics: absorb or neutralize with appropriate agent working from outside edges inward; care must be taken because neutralization can be reactive causing boiling and splattering, and giving off heat and gases.
- Acids – use sodium bicarbonate or acid spill kit.
- Bases – use sodium bisulfate, citric acid, or base spill kit.

Dry Spills

- Alert people in the area, notify the supervisor and the fire department.
- Wear proper personal protective equipment if taking mitigating actions.
- If not water reactive, dampen the material to prevent an airborne dust hazard.
- If water reactive, control the material with a sweeping compound or cover it to control airborne dust hazard.
- Carefully brush solids into a dust pan, shovel, or container, or use a vacuum to recover and place in a covered container.

O.3 Emergency Procedures and First Aid:

Emergency Procedures: If a release or spill is discovered or suspected, all personnel will immediately leave the contaminated area. The activity supervisor or other person in charge will be notified of the incident. Personnel should not attempt to enter the area until it is determined safe or the proper personal protective equipment is worn. Emergency response assistance from the fire department can be expected if spill mitigation is beyond the capability of activity personnel.

First Aid: Any personnel suspected of being exposed to a hazardous substance will be provided medical attention as soon as possible. Remove the individual from the hazardous area at once. Remove contaminated clothing and wash exposed body areas. Keep the individual warm and at rest until emergency medical personnel arrive and the individual can be transported to a medical facility. The hospital should be advised that the individual being transported might be contaminated so special precautions can be taken.

ANNEX P

Secondary Containment Documentation

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Annex P
Secondary Containment Documentation

Tank: 1



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 100
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 11-FP



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 285
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
The building provides containment. The tank contractor is also equipped with spill materials during loading.

Tank: 18



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 60
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 117



Tank Type: AST
Contents: Diesel
Capacity (gal): 1,500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Spill kit at neighboring fire station

Tank: 117-G



Tank Type: Generator
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 200A



Tank Type: AST
Contents: New Calibration Fluid
Capacity (gal): 750
Overfill Protection: N/A - not in use

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
N/A - Not in use

**Annex P
Secondary Containment Documentation**

Tank: 200B



Tank Type: AST
Contents: Waste Calibration Fluid
Capacity (gal): 750
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

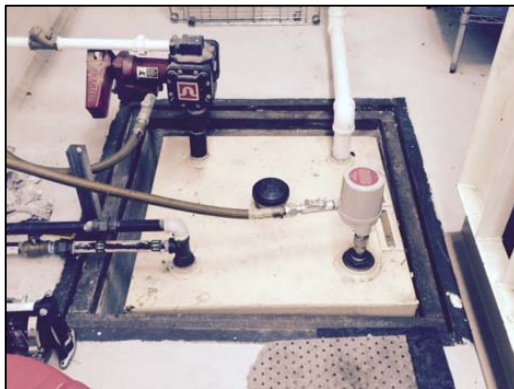
Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank is loaded automatically from inside. It also sits in a berm with a 1,060-gallon capacity. Spill kits are also located in the building.

Tank: 200-S1 and 200-S2



Tank Type: AST - Vaulted
Contents: Waste Calibration Fluid
Capacity (gal): 140
Overfill Protection: Automatic empty with pump

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Equivalent Protection: Tank is loaded automatically from trench drains in building

Tank: 200-drum1



Tank Type: Drums
Contents: Solvent
Capacity (gal): 2 drums x 55 gal each = 110 gal total
Overfill Protection: Emptied only

Secondary Containment Properties:

Building provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Drums are new product and are only emptied, not filled.

Annex P
Secondary Containment Documentation

Tank: 200-drum2



Tank Type: Drums
Contents: Calibration fluid
Capacity (gal): 2 drums x 55 gal each = 110 gal total
Overfill Protection: Emptied only

Secondary Containment Properties:
Building provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Drums are new product and are only emptied, not filled.

Tank: 208



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 595
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 213



Tank Type: Drums
Contents: Various Oils
Capacity (gal): 40 drums x 55 gal each = 2,200 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties:
Each Concrete Berm: 6 ft x 5 ft x 5 in
= 93.5 gal each

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Drums are new product and are only emptied, not filled.

Annex P
Secondary Containment Documentation

Tank: 220-drum-1



Tank Type: Drums
Contents: Various Oils
Capacity (gal): 7 drums x 55 gal each = 385 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties: Drums located indoors on a 60-gallon spill pallet. **Containment Adequate?**

General Secondary Containment for Loading [112.7(c)]:
Drums are new product and are only emptied, not filled.

Tank: 230



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 185
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled **Containment Adequate?**

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 230E



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 113
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled **Containment Adequate?**

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 240



Tank Type: External Generator Tank - Vaulted AST
Contents: Diesel
Capacity (gal): 1,480
Overfill Protection: Ronan System

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 241-FP



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Ronan System

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 241-DT-1



Tank Type: AST
Contents: Diesel
Capacity (gal): 50
Overfill Protection: N/A

Secondary Containment Properties:

Building provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Product is piped in from the vaulted AST, 241-FP

*Tank 241-DT-1 contains <55 gallons of oil, and is therefore not SPCC-regulated. However, it is included in this Plan for reference.

Annex P
Secondary Containment Documentation

Tank: 241-DT-2



Tank Type: AST
Contents: Diesel
Capacity (gal): 50
Overfill Protection: N/A

Secondary Containment Properties:
Building provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Product is piped in from the vaulted AST, 241-FP

*Tank 241-DT-2 contains <55 gallons of oil, and is therefore not SPCC-regulated. However, it is included in this Plan for reference.

Tank: 250



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 100
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 255



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 750
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 260



Tank Type: AST
Contents: Used Oil
Capacity (gal): 280
Overfill Protection: Equivalent protection - Wide fill port

Secondary Containment Properties: Spill Pallet with 73-gallon capacity
Containment Adequate? No

General Secondary Containment for Loading [112.7(c)]:
 Spill pad under tank and spill kit adjacent

Tank: 260-FP



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled
Containment Adequate? Yes

General Secondary Containment for Loading [112.7(c)]:
 The building provides containment. The tank contractor is also equipped with spill materials during loading.

Tank: 260-DT



Tank Type: Generator Daytank
Contents: Diesel
Capacity (gal): 275
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Drain in building goes to IWTP
Containment Adequate? Yes

General Secondary Containment for Loading [112.7(c)]:
 Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 264R



Tank Type: AST - Vaulted
Contents: Jet A
Capacity (gal): 15,000
Overfill Protection: Ronan System/HLA

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

A spill kit is present at this area.

Tank: 271



Tank Type: AST - Vaulted
Contents: Waste Fuel
Capacity (gal): 5,941
Overfill Protection: High-level alarms

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Spill kits are present in the 290 POL Fuel Yard.

No photo

**Annex P
Secondary Containment Documentation**

Tank: 273



Tank Type: AST
Contents: Jet A
Capacity (gal): 2,330,748
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area: 90,380 ft²
 Storm event volume ⁽²⁾: 48,956 ft³
Storm event volume: 366,191 gal

Secondary Containment Properties ⁽³⁾:

Berm Area: 86,930 ft²
 Berm slope: 1 : 1.5 max
 Berm height: 4 ft
 Tank to Berm floor, Δheight: 0 ft
Gross Containment Volume: 2,497,556 gal

Displacement Properties:

No Tank or Footer Displacement

Diameter: - ft
 Height: - ft
Total Displacement: 0 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 2,131,365 gal
 Tank Volume: 2,330,748 gal
Effective - Tank Volume: -199,383 gal

Required Containment (Tank + Rain):	2,696,939 gal
Additional Berm Height Needed:	0.31 ft
	3.72 in

Is Secondary Containment adequate? No

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 274



Tank Type: AST
Contents: Fuel Oil
Capacity (gal): 1,051,870
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area: 59,427 ft²
 Storm event volume ⁽²⁾: 32,190 ft³
Storm event volume: 240,779 gal

Secondary Containment Properties ⁽³⁾:

Berm Area: 56,538 ft²
 Berm slope: 1 : 1.5 max
 Berm height: 4 ft
 Tank to Berm floor, Δheight: 0 ft
Gross Containment Volume: 1,605,016 gal

Displacement Properties:

No Tank or Footer Displacement

Diameter: - ft
 Height: - ft
Total Displacement: 0 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 1,364,237 gal
 Tank Volume: 1,051,870 gal
Effective - Tank Volume: 312,367 gal

Is Secondary Containment adequate?

Yes

Additional Berm Height Needed:

**0.0 ft
0.0 in**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 280-DT



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 100
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 281



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 100
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 284-DT



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 350
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 286



Tank Type: AST - Vaulted
Contents: Jet A
Capacity (gal): 1,000
Overfill Protection: Ronan System

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 287



Tank Type: AST - Vaulted
Contents: Mogas
Capacity (gal): 1,000
Overfill Protection: Ronan System

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 290



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 75
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 327



Tank Type: AST (Convault)
Contents: Lubricating Oil LA6
Capacity (gal): 12,000
Overfill Protection: High-level alarms

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:

3700 Fuel Yard has bermed containment. Spill kits are also present.

**Annex P
Secondary Containment Documentation**

Tank: 330



Tank Type: AST
Contents: Jet A
Capacity (gal): 212,463
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (94'x57'): 5,358 ft²
 Storm event volume ⁽²⁾: 2,902 ft³
Storm event volume: 21,709 gal

Secondary Containment Properties:

Berm length: 93 ft
 Berm width: 56 ft
 Berm height: 6 ft
Gross Containment Volume: 233,735 gal

Displacement Properties:

Octagonal Foundation:

Width: 45 ft
 Height: 0.5 ft
 Volume of Each Footer: 839 ft³
Total Displacement: 6,274 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 205,752 gal
 Tank Volume: 212,463 gal
Effective - Tank Volume: -6,711 gal

Is Secondary Containment adequate?

No

Additional Berm Height Needed:

0.17 ft
2.04 in

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 331



Tank Type: AST
Contents: Jet A
Capacity (gal): 212,168
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (94'x57'): 5,358 ft²
 Storm event volume ⁽²⁾: 2,902 ft³
Storm event volume: 21,709 gal

Secondary Containment Properties:

Berm length: 93 ft
 Berm width: 56 ft
 Berm height: 6 ft
Gross Containment Volume: 233,735 gal

Displacement Properties:

Octagonal Foundation:

Width: 45 ft
 Height: 0.5 ft
 Volume of Each Footer: 839 ft³
Total Displacement: 6,274 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽³⁾: 205,752 gal
 Tank Volume: 212,168 gal
Effective - Tank Volume: -6,416 gal

Is Secondary Containment adequate? No **Additional Berm Height Needed:** 0.16 ft
1.92 in

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 332



Tank Type: AST
Contents: Diesel
Capacity (gal): 42,418
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (72'x49'): 3,528 ft²
 Storm event volume ⁽²⁾: 1,911 ft³
Storm event volume: 14,294 gal

Secondary Containment Properties:

Berm length: 71 ft
 Berm width: 48 ft
 Berm height (average): 3.92 ft
Gross Containment Volume: 99,843 gal

Displacement Properties:

Octagonal Foundation (2 footers):

Width: 22.5 ft
 Height: 0.5 ft
 Volume of Each Footer: 210 ft³
Total Displacement: 3,137 gal

Tank Displacement: Tank 333

Tank Cross-Sectional Area: 189 ft²
 Height in Containment: 3.42 ft
 Tank Displacement: 645 ft³
Tank Displacement: 4,822 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽³⁾: 77,589 gal
 Tank Volume: 42,418 gal
Effective - Tank Volume: 35,171 gal

Is Secondary Containment adequate?

Yes

Additional Berm Height Needed:

**0.0 ft
0.0 in**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
⁽³⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 333



Tank Type: AST
Contents: MOGAS
Capacity (gal): 42,353
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (72'x49'): 3,528 ft²
 Storm event volume ⁽²⁾: 1,911 ft³
Storm event volume: 14,294 gal

Secondary Containment Properties:

Berm length: 71 ft
 Berm width: 48 ft
 Berm height (average): 3.92 ft
Gross Containment Volume: 99,843 gal

Displacement Properties:

Octagonal Foundation (2 footers):

Width: 22.5 ft
 Height: 0.5 ft
 Volume of Each Footer: 210 ft³
Total Displacement: 3,137 gal

Tank Displacement: Tank 332

Tank Cross-Sectional Area: 189 ft²
 Height in Containment: 3.42 ft
 Tank Displacement: 645 ft³
Tank Displacement: 4,822 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽³⁾: 77,589 gal
 Tank Volume: 42,353 gal
Effective - Tank Volume: 35,236 gal

Is Secondary Containment adequate?

Additional Berm Height Needed:

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 334



Tank Type: AST
Contents: JP-5
Capacity (gal): 46,915
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (71'x37'): 2,627 ft²
 Storm event volume ⁽²⁾: 1,423 ft³
Storm event volume: 10,644 gal

Secondary Containment Properties:

Berm length: 70 ft
 Berm width: 36 ft
 Berm height (average): 5.08 ft
Gross Containment Volume: 95,819 gal

Displacement Properties:

Octagonal Foundation (2 footers):

Width: 22.5 ft
 Height: 0.5 ft
 Volume of Each Footer: 210 ft³
Total Displacement: 3,137 gal

Tank Displacement: Tank 335

Tank Cross-Sectional Area: 189 ft²
 Height in Containment: 4.58 ft
 Tank Displacement: 865 ft³
Tank Displacement: 6,469 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽³⁾: 75,569 gal
 Tank Volume: 46,915 gal
Effective - Tank Volume: 28,654 gal

Is Secondary Containment adequate?

Additional Berm Height Needed:

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 335



Tank Type: AST
Contents: JP-5
Capacity (gal): 46,915
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (71'x37'): 2,627 ft²
 Storm event volume ⁽²⁾: 1,423 ft³
Storm event volume: 10,644 gal

Secondary Containment Properties:

Berm length: 70 ft
 Berm width: 36 ft
 Berm height (average): 5.08 ft
Gross Containment Volume: 95,819 gal

Displacement Properties:

Octagonal Foundation (2 footers):

Width: 22.5 ft
 Height: 0.5 ft
 Volume of Each Footer: 210 ft³
Total Displacement: 3,137 gal

Tank Displacement: Tank 334

Tank Cross-Sectional Area: 189 ft²
 Height in Containment: 4.58 ft
 Tank Displacement: 865 ft³
Tank Displacement: 6,469 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽³⁾: 75,569 gal
 Tank Volume: 46,915 gal
Effective - Tank Volume: 28,654 gal

Is Secondary Containment adequate?

Additional Berm Height Needed:

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 337



Tank Type: AST
Contents: Solvent PD-680
Capacity (gal): 46,935
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (36'x35'): 1,260 ft²
 Storm event volume ⁽²⁾: 683 ft³
Storm event volume: 5,105 gal

Secondary Containment Properties:

Berm length: 35 ft
 Berm width: 34 ft
 Berm height (average): 5.25 ft
Gross Containment Volume: 46,731 gal

Displacement Properties:

Octagonal Foundation (2 footers):

Width: 22.5 ft
 Height: 0.5 ft
 Volume of Each Footer: 210 ft³
Total Displacement: 3,137 gal

Tank Displacement: Tank 333

Tank Cross-Sectional Area: 189 ft²
 Height in Containment: 4.75 ft
 Tank Displacement: 896 ft³
Tank Displacement: 6,704 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽³⁾: 31,785 gal
 Tank Volume: 46,935 gal
Effective - Tank Volume: -15,150 gal

Is Secondary Containment adequate?

No

Additional Berm Height Needed:

**1.7 ft
20.4 in**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
⁽³⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 341



Tank Type: AST
Contents: JP-5
Capacity (gal): 42,468
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (36'x35'): 1,260 ft²
 Storm event volume ⁽²⁾: 683 ft³
Storm event volume: **5,105 gal**

Secondary Containment Properties:

Berm length: 35 ft
 Berm width: 34 ft
 Berm height (average): 5.25 ft
Gross Containment Volume: 46,731 gal

Displacement Properties:

Octagonal Foundation (2 footers):

Width: 22.5 ft
 Height: 0.5 ft
 Volume of Each Footer: 210 ft³
Total Displacement: 3,137 gal

Tank Displacement: Tank 333

Tank Cross-Sectional Area: 189 ft²
 Height in Containment: 4.75 ft
 Tank Displacement: 896 ft³
Tank Displacement: 6,704 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽³⁾: 31,785 gal
 Tank Volume: 42,468 gal
Effective - Tank Volume: -10,683 gal

Is Secondary Containment adequate?

No

Additional Berm Height Needed:

**1.2 ft
14.4 in**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 414



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 450
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 416-FP-1



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 175
Overfill Protection: Stick gauge

Secondary Containment Properties:
Building provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
The building provides containment. The tank contractor is also equipped with spill materials during loading.

Tank: 416-FP-2



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 175
Overfill Protection: Stick gauge

Secondary Containment Properties:
Building provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
The building provides containment. The tank contractor is also equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 416-SE



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 143
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 416-NE



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 312
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 469-FP



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 611
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

The building provides containment. The tank contractor is also equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 469



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 150
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 472-1



Tank Type: AST - Vaulted
Contents: Unleaded Gasoline
Capacity (gal): 12,000
Overfill Protection: Dipstick

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Spill materials present at gas station.

Tank: 472-2



Tank Type: AST - Vaulted
Contents: Unleaded Gasoline
Capacity (gal): 12,000
Overfill Protection: Dipstick

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Spill materials present at gas station.

Annex P
Secondary Containment Documentation

Tank: 472-3



Tank Type: AST - Vaulted
Contents: Unleaded Plus Gasoline
Capacity (gal): 12,000
Overfill Protection: Dipstick

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Spill materials present at gas station.

Tank: 472-4



Tank Type: AST - Vaulted
Contents: Unleaded Super Gasoline
Capacity (gal): 12,000
Overfill Protection: Dipstick

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Spill materials present at gas station.

Tank: 472-FS1



Tank Type: AST
Contents: Waste Oil
Capacity (gal): 280
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Spill materials present in auto shop.

Annex P
Secondary Containment Documentation

Tank: 472-FS2



Tank Type: AST
Contents: Motor Oil
Capacity (gal): 275
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Spill materials present in auto shop.

Tank: 472-drum



Tank Type: Drums
Contents: Various Oils
Capacity (gal): 7 drums x 55 gal each = 385 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties:
Building provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Spill materials present in auto shop.

Tank: 473-VO



Tank Type: Grease Bin
Contents: AFVO
Capacity (gal): 250
Overfill Protection: Equivalent Protection - Wide fill port

Secondary Containment Properties:
None

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
None

**Annex P
Secondary Containment Documentation**

Tank: 483



Tank Type: AST
Contents: Jet A
Capacity (gal): 426,052
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (123.5'x123.5'): 15,252 ft²
 Storm event volume ⁽²⁾: 8,262 ft³
Storm event volume: 61,797 gal

Secondary Containment Properties ⁽³⁾:

Berm length and width: 121.5 ft
 Berm height: 4.593 ft
 Berm walls slope: 1 : 1.823
 Tank to Berm, Δheight: 0.21 ft
Gross Containment Volume: 430,635 gal

Displacement Properties:

Circular Foundation:

Diameter: 46.5 ft
 Height: 1.5 ft
Total Displacement: 12,703 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 356,135 gal
 Tank Volume: 426,052 gal
Effective - Tank Volume: -69,917 gal

Is Secondary Containment adequate?

No

Additional Berm Height Needed:

**0.63 ft
7.56 in**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 484



Tank Type: AST
Contents: Jet A
Capacity (gal): 426,108
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (123.5'x123.5'): 15,252 ft²
 Storm event volume ⁽²⁾: 8,262 ft³
Storm event volume: 61,797 gal

Secondary Containment Properties ⁽³⁾:

Berm length and width: 121.5 ft
 Berm height: 4.593 ft
 Berm walls slope: 1 : 1.823
 Tank to Berm floor, Δheight: 0.21 ft
Gross Containment Volume: 430,635 gal

Displacement Properties:

Circular Foundation:

Diameter: 45.5 ft
 Height: 1 ft
Total Displacement: 12,162 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 356,676 gal
 Tank Volume: 426,108 gal
Effective - Tank Volume: -69,432 gal

Is Secondary Containment adequate?

No

Additional Berm Height Needed:

**0.63 ft
7.56 in**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 504-A-DT



Tank Type: External Generator Daytank
Contents: Diesel
Capacity (gal): 275
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Building provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 504-B-DT



Tank Type: Generator
Contents: Diesel
Capacity (gal): 275
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Building provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 591



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 55
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 685-VO



Tank Type: Grease Bin
Contents: AFVO
Capacity (gal): 250
Overfill Protection: Equivalent Protection - Wide fill port

Secondary Containment Properties: None
Containment Adequate? **No**

General Secondary Containment for Loading [112.7(c)]: None

Tank: 685



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 145
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled
Containment Adequate? **Yes**

General Secondary Containment for Loading [112.7(c)]: Tank contractor is equipped with spill materials during loading.

Tank: 690



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 240
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled
Containment Adequate? **Yes**

General Secondary Containment for Loading [112.7(c)]: Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 807



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 355
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
 Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Tank contractor is equipped with spill materials during loading.

Tank: 809-1



Tank Type: AST
Contents: Used Oil
Capacity (gal): 4,000
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
 Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Spill pallet at loading area and spill kit adjacent to tank.

Tank: 809-drum-1



Tank Type: Drums
Contents: Various Oil
Capacity (gal): 80 drums x 55 gal each = 4,400 gal total
Overfill Protection: Drums not filled

Secondary Containment Properties:
 Drains in the area go to 2,000-gallon impoundment for inspection prior to release.

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Containers are not filled in this building

Annex P
Secondary Containment Documentation

Tank: 809-drum-2



Tank Type: Drums
Contents: Various Oil
Capacity (gal): 8 drums x 55 gal each = 440 gal total
Overfill Protection: Drums not filled

Secondary Containment Properties: Drains in the area go to 2,000-gallon impoundment for inspection prior to release. **Containment Adequate?** Yes

General Secondary Containment for Loading [112.7(c)]: Containers are not filled in this building

Tank: 809-tote



Tank Type: Tote
Contents: Various Oil
Capacity (gal): 330
Overfill Protection: Tote not filled here

Secondary Containment Properties: Drains in the area go to 2,000-gallon impoundment for inspection prior to release. **Containment Adequate?** Yes

General Secondary Containment for Loading [112.7(c)]: Containers are not filled in this building

Tank: 810-FP



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 75
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled **Containment Adequate?** Yes

General Secondary Containment for Loading [112.7(c)]: The building provides containment. The tank contractor is also equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 810-FP-DT



Tank Type: Fire Pump Daytank
Contents: Diesel
Capacity (gal): 120
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Building provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

The building provides containment. The tank contractor is also equipped with spill materials during loading.

Tank: 810-drum



Tank Type: Drums
Contents: Various Oil
Capacity (gal): 80 drums x 55 gal each = 4,400 gal total
Overfill Protection: Drums are not filled here

Secondary Containment Properties:

Building is sloped towards the center to contain spilled material

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Containers are not filled in this building

Tank: 812-FP-1



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 812-FP-2



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 812



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 240
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 817-drum



Tank Type: Drums
Contents: Various Oil
Capacity (gal): 60 drums x 55 gal each = 3,300 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties:
Drums placed on 60-gallon spill pallets.
Building floor is also sloped to a closed drain.

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Drums are new product and are only emptied, not filled.

**Annex P
Secondary Containment Documentation**

Tank: 820-drum



Tank Type: Drums
Contents: Various Oil
Capacity (gal): 4 drums x 55 gal each = 220 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties: **Containment Adequate?**
 Drums located on spill pallets or in drum overpacks Yes

General Secondary Containment for Loading [112.7(c)]:

Drums are new product and are only emptied, not filled.

Tank: 820-1



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 1,150
Overfill Protection: Audible vent on tank whistles when full

Secondary Containment Properties: **Containment Adequate?**
 Dike = 13.33 ft x 20 ft x 1 ft = 1,994 gal
 Pad = 8.67 ft x 13.67 ft x 0.5 ft = -443 gal
 Housing = 7.67 x 12.67 x 4 in = -242 gal

 Gross Containment = 1,309 gal

Precip. = 13.33 ft x 20 ft x 6.5 in = 1,080 gal
 Effective Containment = 229 gal

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 820-2



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 1,150
Overfill Protection: Audible vent on tank whistles when full

Secondary Containment Properties: **Containment Adequate?**
 Dike = 13.33 ft x 20 ft x 1 ft = 1,994 gal
 Pad = 8.67 ft x 13.67 ft x 0.5 ft = -443 gal
 Housing = 7.67 x 12.67 x 4 in = -242 gal

 Gross Containment = 1,309 gal

Precip. = 13.33 ft x 20 ft x 6.5 in = 1,080 gal
 Effective Containment = 229 gal

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 825-drum



Tank Type: Drums
Contents: Various Oil
Capacity (gal): 4 drums x 55 gal each = 220 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties:
Drums placed on 60-gallon spill pallet

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Drums are not filled

Tank: 830-drum



Tank Type: Drums
Contents: Hydraulic Fluid
Capacity (gal): 3 drums x 55 gal each = 165 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties:
Building provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Drums are not filled

Tank: 886



Tank Type: AST - Vaulted
Contents: Unleaded Gasoline
Capacity (gal): 3,000
Overfill Protection: Ronan System

Secondary Containment Properties:
Vault provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 887



Tank Type: AST - Vaulted
Contents: Bio-Diesel
Capacity (gal): 12,000
Overfill Protection: Ronan System

Secondary Containment Properties:
 Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
 Tank contractor is equipped with spill materials during loading.

Tank: 906



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 268
Overfill Protection: Stick Gauge

Secondary Containment Properties:
 Concrete dike = 8 ft x 7 ft x 3 ft = 1,256 gal
 Precipitation = 8 ft x 7 ft x 6.5 in = 227 gal
 Net containment = 1,029 gal

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
 Tank contractor is equipped with spill materials during loading.

Tank: 928



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 300
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
 Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
 Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 930



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 300
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 933



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 300
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 935



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 140
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 942



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 300
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 951



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 80
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 955



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 125
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 965



Tank Type: AST
Contents: Jet A
Capacity (gal): 107,520
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (72'x72'): 5,184 ft²
 Storm event volume ⁽²⁾: 2,808 ft³
Storm event volume: 21,004 gal

Secondary Containment Properties ⁽³⁾:

Berm length and width: 70 ft
 Berm height: 6 ft
 Berm walls slope: 1 : 1.5
 Tank to Berm floor, Δheight: 0.2 ft
Gross Containment Volume: 189,222 gal

Displacement Properties:

Circular Foundation:

Diameter: 29.5 ft
 Height: 1 ft
Total Displacement: 5,113 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 163,106 gal
 Tank Volume: 107,520 gal
Effective - Tank Volume: 55,586 gal

Is Secondary Containment adequate?

Additional Berm Height Needed:

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 988



Tank Type: Generator with Vaulted AST
Contents: Diesel
Capacity (gal): 550
Overfill Protection: 0

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 996



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 706
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 998



Tank Type: AST
Contents: Jet A
Capacity (gal): 106,472
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (75'x72'): 5,400 ft²
 Storm event volume ⁽²⁾: 2,925 ft³
Storm event volume: 21,879 gal

Secondary Containment Properties ⁽³⁾:

Berm length: 73 ft
 Berm width: 70 ft
 Berm height: 6 ft
 Berm walls slope: 1 : 1.5
 Tank to Berm floor, Δheight: 0.2 ft
Gross Containment Volume: 173,972 gal

Displacement Properties:

Circular Foundation:

Diameter: 29.5 ft
 Height: 1 ft
Total Displacement: 5,113 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 146,981 gal
 Tank Volume: 106,472 gal
Effective - Tank Volume: 40,509 gal

Is Secondary Containment adequate?

Additional Berm Height Needed:

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 999



Tank Type: AST
Contents: Jet A
Capacity (gal): 106,489
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (75'x72'): 5,400 ft²
 Storm event volume ⁽²⁾: 2,925 ft³
Storm event volume: 21,879 gal

Secondary Containment Properties ⁽³⁾:

Berm length: 73 ft
 Berm width: 70 ft
 Berm height: 6 ft
 Berm walls slope: 1 : 1.5
 Tank to Berm floor, Δheight: 0.2 ft
Gross Containment Volume: 173,972 gal

Displacement Properties:

Circular Foundation:

Diameter: 29.5 ft
 Height: 1 ft
Total Displacement: 5,113 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 146,981 gal
 Tank Volume: 106,489 gal
Effective - Tank Volume: 40,492 gal

Is Secondary Containment adequate?

Yes

Additional Berm Height Needed:

0.0 ft
0.0 in

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 1002



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 150
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1020-FP



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 180
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1029



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 145
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 1032-FP



Tank Type: Vaulted AST/Fire Pump Tank
Contents: Diesel
Capacity (gal): 564
Overfill Protection: Ronan System

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1032-FP-DT-2



Tank Type: Fire Pump Daytank
Contents: Diesel
Capacity (gal): 75
Overfill Protection: Automatic shut-off

Secondary Containment Properties:
Building provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Product is piped in from the vaulted AST, 1032-FP

Tank: 1032-FP-DT-3



Tank Type: Fire Pump Daytank
Contents: Diesel
Capacity (gal): 75
Overfill Protection: Automatic shut-off

Secondary Containment Properties:
Building provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Product is piped in from the vaulted AST, 1032-FP

Annex P
Secondary Containment Documentation

Tank: 1060



Tank Type: AST - Vaulted
Contents: MOGAS/Unleaded
Capacity (gal): 5,000
Overfill Protection: Ronan System, HLA

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Spill kits are present, and tank contractor is equipped with spill materials during loading.

Tank: 1061



Tank Type: AST - Vaulted
Contents: Jet A
Capacity (gal): 5,000
Overfill Protection: Ronan System, HLA

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Spill kits are present, and tank contractor is equipped with spill materials during loading.

Tank: 1062



Tank Type: AST - Vaulted
Contents: Diesel
Capacity (gal): 6,000
Overfill Protection: Ronan System, HLA

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Spill kits are present, and tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 1066



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 250
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1082



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 150
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1083-FP



Tank Type: AST
Contents: Diesel
Capacity (gal): 120
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Metal containment >150 gallons

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Metal containment and building

Annex P
Secondary Containment Documentation

Tank: 1083-1



Tank Type: External Generator Tank (Convault)
Contents: Diesel
Capacity (gal): 12,500
Overfill Protection: High-Level Alarm

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1083-2



Tank Type: External Generator Tank (Convault)
Contents: Diesel
Capacity (gal): 12,500
Overfill Protection: High-Level Alarm

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 71083



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 250
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 71084



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 250
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 71085



Tank Type: Generator
Contents: Diesel
Capacity (gal): 250
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1086



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 1091



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 350
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1094-FP



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 180
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
The building provides containment. The tank contractor is also equipped with spill materials during loading.

Tank: 1094-G



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 275
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 1105



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 275
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 1122



Tank Type: AST
Contents: Diesel
Capacity (gal): 1,000
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading. Spill kits are also present in the nearest building.

Tank: 1130-1



Tank Type: AST
Contents: Used Oil
Capacity (gal): 325
Overfill Protection: Equivalent protection - Wide fill port

Secondary Containment Properties:
Spill Pallet with 73-gallon capacity

Containment Adequate?
No

General Secondary Containment for Loading [112.7(c)]:
Spill kits are present in the building.

Annex P
Secondary Containment Documentation

Tank: 1130-2



Tank Type: AST
Contents: Used Oil
Capacity (gal): 265
Overfill Protection: Equivalent protection - Wide fill port

Secondary Containment Properties: Spill Pallet with 73-gallon capacity
Containment Adequate? **No**

General Secondary Containment for Loading [112.7(c)]: Spill kits are present in the building.

Tank: 1130-drum



Tank Type: Drums
Contents: Various Oils
Capacity (gal): 16 drums x 55 gal each = 880 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties: Floor is sloped to drain to a pit within the building
Containment Adequate? **Yes**

General Secondary Containment for Loading [112.7(c)]: Drums are new product and are only emptied, not filled.

Tank: 1130-GP-drum



Tank Type: Drums
Contents: Various Oils
Capacity (gal): 4 drums x 55 gal each = 220 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties: Building provides > 55 gallons of containment
Containment Adequate? **Yes**

General Secondary Containment for Loading [112.7(c)]: Drums are new product and are only emptied, not filled.

Annex P
Secondary Containment Documentation

Tank: 1130-SP-drum



Tank Type: Drums
Contents: Various Oils
Capacity (gal): 5 drums x 55 gal each = 275 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties: Building provides > 55 gallons of containment
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Drums are new product and are only emptied, not filled.

Tank: 1137-1



Tank Type: AST combined
Contents: Mogas
Capacity (gal): 1,000
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Spill kits are present in the building

Tank: 1137-2



Tank Type: AST combined
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Spill kits are present in the building

Annex P

FOR OFFICIAL USE ONLY

Secondary Containment Documentation

Tank: 2101D



Tank Type: AST (Convault)
Contents: Diesel
Capacity (gal): 6,000
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Spill kits are present adjacent to the tanks

Tank: 2101JM



Tank Type: AST (Convault)
Contents: Jet A and MOGAS
Capacity (gal): 6,000
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Spill kits are present adjacent to the tanks

Tank: 2101-drum



Tank Type: Drums
Contents: Various Oils
Capacity (gal): 27 drums x 55 gal each = 1,485 gal total
Overfill Protection: New Drums

Secondary Containment Properties:
Spill pallets and 6" concrete containment berm

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Covered spill pallets provide containment for loading

NOTE: For this drum storage area, a 10-year 24-hour rain event of 5.5 inches was used.

Annex P
Secondary Containment Documentation

Tank: 2110



Tank Type: AST
Contents: Used Oil
Capacity (gal): 230
Overfill Protection: Equivalent protection - Wide fill port

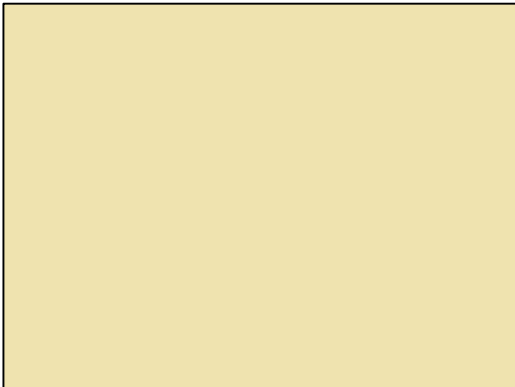
Secondary Containment Properties:
Floor is sloped to drain to a grated pit

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:

Grated pit provides containment for loading. Spill kits are also present in the building.

Tank: 2110-drum



Tank Type: Drums
Contents: Various Oils
Capacity (gal): 3 drums x 55 gal each = 165 gal total
Overfill Protection: Drums are not filled

Secondary Containment Properties:
Floor is sloped to drain to a grated pit

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:

Grated pit provides containment for loading. Spill kits are also present in the building.

Tank: 2117



Tank Type: AST - Vaulted
Contents: JP-5/water
Capacity (gal): 2,000
Overfill Protection: 0

Secondary Containment Properties:
Vault provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:

Oily water is loaded by piping.

Annex P
Secondary Containment Documentation

Tank: 2119-FP-1



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 250
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:

The building provides containment. The tank contractor is also equipped with spill materials during loading.

Tank: 2119-FP-2



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 250
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:

The building provides containment. The tank contractor is also equipped with spill materials during loading.

Tank: 2123A



Tank Type: Fire Pump Tank - Vaulted AST
Contents: Diesel
Capacity (gal): 2,000
Overfill Protection: Ronan System

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 2123B



Tank Type: Fire Pump Tank - Vaulted AST
Contents: Diesel
Capacity (gal): 2,000
Overfill Protection: Ronan System

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 2123-FP-DT



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 110
Overfill Protection: Auto fill from vaulted ASTs

Secondary Containment Properties:

Metal containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Product is piped in from the vaulted ASTs.

Tank: 22125



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 400
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 2210



Tank Type: AST - Vaulted
Contents: Mil-C-7808
Capacity (gal): 1,445
Overfill Protection: Ronan System

Secondary Containment Properties:
Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Spill materials located nearby

Tank: 2280



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 150
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3001-D



Tank Type: AST - Vaulted/Generator
Contents: Diesel
Capacity (gal): 1,000
Overfill Protection: Ronan System

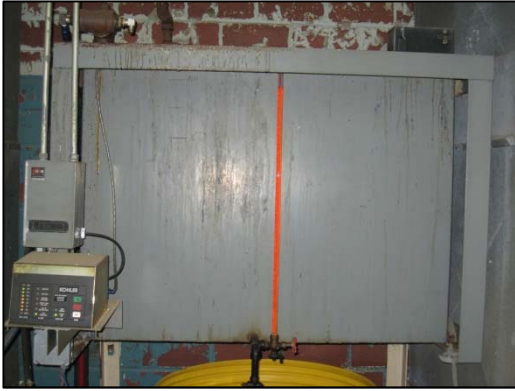
Secondary Containment Properties:
Vault provides containment

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 3001-D-DT



Tank Type: Generator Daytank
Contents: Diesel
Capacity (gal): 135
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
1,683 gallons - containment pit in room

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3001-D-drum



Tank Type: Drum
Contents: Diesel
Capacity (gal): 55
Overfill Protection: Equivalent Protection

Secondary Containment Properties:
60 gallons - drum overpack

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Drum overpack

Tank: 3001-G (daytank for 3401)



Tank Type: Generator Daytank
Contents: Diesel
Capacity (gal): 400
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Building provides containment

Annex P
Secondary Containment Documentation

Tank: 3001-N



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 521
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3001-NDI



Tank Type: AST
Contents: Penetrant Oil
Capacity (gal): 80
Overfill Protection: Equivalent Protection - open vat

Secondary Containment Properties:
Drain in building to IWTP

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Loading is inside the building. Drains run to the IWTP. Spill kits also nearby.

Tank: 3001-PD680



Tank Type: AST - Vaulted
Contents: Solvent PD-680
Capacity (gal): 1,500
Overfill Protection: Ronan System

Secondary Containment Properties:
Vault provides containment

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Loading is inside the building. The building and nearby spill kits provide contain

Annex P
Secondary Containment Documentation

Tank: 3001-VO



Tank Type: Grease Bin
Contents: AFVO
Capacity (gal): 250
Overfill Protection: Equivalent Protection

Secondary Containment Properties:
None

Containment Adequate?
No

General Secondary Containment for Loading [112.7(c)]:
None

Tank: 3001-W



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 150
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3102



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 100
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 3105



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 75
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3202



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 155
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3202-FP



Tank Type: Fire Pump Tank - Vaulted AST
Contents: Diesel
Capacity (gal): 180
Overfill Protection: Ronan System

Secondary Containment Properties:
Vault

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 3221-DT



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 159
Overfill Protection: UST level sensor

Secondary Containment Properties:
Drain in building goes to IWTP

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3225



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3228



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 106
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 3234-C South



Tank Type: Single-wall
Contents: Lube Oil
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Oil/Water Separator #3234 = 3,000 gallons

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Drain to oil/water separator. Spill materials also located nearby.

Tank: 3234-A South



Tank Type: Single-wall
Contents: Flush Oil
Capacity (gal): 600
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Oil/Water Separator #3234 = 3,000 gallons

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Drain to oil/water separator. Spill materials also located nearby.

Tank: 3234-B South



Tank Type: Single-wall
Contents: Flush Oil
Capacity (gal): 300
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Oil/Water Separator #3234 = 3,000 gallons

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Drain to oil/water separator. Spill materials also located nearby.

**Annex P
Secondary Containment Documentation**

Tank: 3234-C North



Tank Type: Single-wall
Contents: Lube Oil
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Oil/Water Separator #3234 = 3,000 gallons
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Drain to oil/water separator. Spill materials also located nearby.

Tank: 3234-A North



Tank Type: Single-wall
Contents: Flush Oil
Capacity (gal): 600
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Oil/Water Separator #3234 = 3,000 gallons
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Drain to oil/water separator. Spill materials also located nearby.

Tank: 3234-B North



Tank Type: Single-wall
Contents: Flush Oil
Capacity (gal): 300
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Oil/Water Separator #3234 = 3,000 gallons
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Drain to oil/water separator. Spill materials also located nearby.

Annex P
Secondary Containment Documentation

Tank: 3307-P-7



Tank Type: Portable Generator with External Tank
Contents: Diesel
Capacity (gal): 90
Overfill Protection: Dipstick gauge

Secondary Containment Properties:
None

Containment Adequate?
No

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3307-P-8



Tank Type: Portable Generator with External Tank
Contents: Diesel
Capacity (gal): 90
Overfill Protection: Dipstick gauge

Secondary Containment Properties:
None

Containment Adequate?
No

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3307-P-10



Tank Type: Portable Generator with Belly Tank
Contents: Diesel
Capacity (gal): 135
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 3307-P-13



Tank Type: Portable Generator with Belly Tank
Contents: Diesel
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3307-P-14



Tank Type: Portable Generator with Belly Tank
Contents: Diesel
Capacity (gal): 135
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3703-C



Tank Type: Single-wall
Contents: Flush Oil
Capacity (gal): 260
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Oil/Water Separator #3703 = 3,300 gallons

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Drain to oil/water separator. Spill materials also located nearby.

Annex P
Secondary Containment Documentation

Tank: 3703-A



Tank Type: Single-wall
Contents: Flush Oil
Capacity (gal): 260
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Oil/Water Separator #3703 = 3,300 gallons
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Drain to oil/water separator. Spill materials also located nearby.

Tank: 3703-B



Tank Type: Single-wall
Contents: Flush Oil
Capacity (gal): 260
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Oil/Water Separator #3703 = 3,300 gallons
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Drain to oil/water separator. Spill materials also located nearby.

Tank: 3705



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 100
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties: Double-walled
Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 3710



Tank Type: AST
Contents: Jet A
Capacity (gal): 205,000
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (75.5'x80.5'): 6,078 ft²
 Storm event volume ⁽²⁾: 3,292 ft³
Storm event volume: 24,625 gal

Secondary Containment Properties ⁽³⁾:

Berm length: 79.5 ft
 Berm width: 74.5 ft
 Berm height: 6 ft
 Tank to Berm floor, Δheight: 0.2 ft
Gross Containment Volume: 259,359 gal

Displacement Properties:

Circular Foundation:

Diameter: 34 ft
 Height: 1 ft
Total Displacement: 6,791 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 227,943 gal
 Tank Volume: 205,000 gal
Effective - Tank Volume: 22,943 gal

Is Secondary Containment adequate?

Yes

Additional Berm Height Needed:

**0.0 ft
0.0 in**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 3714



Tank Type: Generator with Belly Tank

Contents: Diesel

Capacity (gal): 204

Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 3716



Tank Type: AST
Contents: JP-5/JP-8 mix
Capacity (gal): 207,165
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (101'x102'): 10,302 ft²
 Storm event volume ⁽²⁾: 5,580 ft³
Storm event volume: 41,740 gal

Secondary Containment Properties ⁽³⁾:

Berm length: 99 ft
 Berm width: 100 ft
 Berm slope: 1 : 1.5
 Berm height: 6 ft
 Tank to Berm floor, Δheight: 0.2 ft
Gross Containment Volume: 363,564 gal

Displacement Properties:

Circular Foundation:

Diameter: 37 ft
 Height: 1 ft
Total Displacement: 8,043 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 313,781 gal
 Tank Volume: 207,165 gal
Effective - Tank Volume: 106,616 gal

Is Secondary Containment adequate?

Yes

Additional Berm Height Needed:

**0.0 ft
0.0 in**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

**Annex P
Secondary Containment Documentation**

Tank: 3718



Tank Type: AST
Contents: JP-5
Capacity (gal): 445,964
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (102'x119'): 12,138 ft²
 Storm event volume ⁽²⁾: 6,575 ft³
Storm event volume: 49,179 gal

Secondary Containment Properties ⁽³⁾:

Berm length: 117 ft
 Berm width: 100 ft
 Berm slope: 1 : 1.5 max
 Berm height: 6 ft
 Tank to Berm floor, Δheight: 0.2 ft
Gross Containment Volume: 417,184 gal

Displacement Properties:

Circular Foundation:

Diameter: 48 ft
 Height: 1 ft
Total Displacement: 13,535 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 354,469 gal
 Tank Volume: 445,964 gal
Effective - Tank Volume: -91,495 gal

Is Secondary Containment adequate?

No

Additional Berm Height Needed:

1.05 ft
12.6 in

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 3772



Tank Type: AST
Contents: Diesel
Capacity (gal): 1,000
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 3772-drum



Tank Type: Drums
Contents: Release Fluid
Capacity (gal): 28 x 55
Overfill Protection: Emptied only

Secondary Containment Properties:
Covered concrete containment berm

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Covered concrete containment berm

Tank: 3900-1



Tank Type: AST
Contents: Diesel
Capacity (gal): 20,000
Overfill Protection: Ronan System

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 3900-DT-1



Tank Type: Daytank
Contents: Diesel
Capacity (gal): 600
Overfill Protection: Auto fill from AST

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Product is piped in automatically from the AST.

Tank: 3900-DT-2



Tank Type: Daytank
Contents: Diesel
Capacity (gal): 600
Overfill Protection: Auto fill from AST

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Product is piped in automatically from the AST.

Tank: 3900-DT-3



Tank Type: Daytank
Contents: Diesel
Capacity (gal): 600
Overfill Protection: Auto fill from AST

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Product is piped in automatically from the AST.

Annex P
Secondary Containment Documentation

Tank: 3900-DT-4



Tank Type: Daytank
Contents: Diesel
Capacity (gal): 600
Overfill Protection: Auto fill from AST and Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Product is piped in automatically from the AST.

Tank: 3902



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 150
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

**Tank: 3907-1200 3907-1201
 3907-2200 3907-2201**

Tank Type: AST
Contents: Calibration Fluid or Water & Used Calibration Fluid
Capacity (gal): 10,000
Tank Diameters (ft): 10
Overfill Protection: High-level alarms



Rainfall Data:
25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
Rainfall Area (52'x23.75'):
Storm event volume ⁽²⁾: 669 ft³
Storm event volume: **5,004 gal**

Secondary Containment Properties:

Berm length: 51 ft
Berm width: 22.75 ft
Berm height: 2 ft
Gross Containment Volume ⁽³⁾: **17,531 gal**

Displacement Properties:

Circular Foundations (4 footers):

Diameter: 10.25 ft
Height: 0.83 ft
Volume of Each Footer: 82.52 ft³
Total Footer Displacement: **2,469 gal**

Tank Displacement (3 tanks):

Total Cross-Sectional Area: 78.54 ft²
Height in Containment: 1.19 ft
Tank Displacement, each: 93.20 ft³
Total Displacement (3 tanks): **2,091 gal**

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 10,058 gal
Tank Volume: 10,000 gal
Effective - Tank Volume: 58 gal

Is Secondary Containment adequate?

Yes

Additional Berm Height Needed:

**0.0 ft
0.0 in**

General Secondary Containment for Loading [112.7(c)]:

Loading area is adjacent to tank within a sloped concrete containment area 15 ft x 22.75 ft x 2 ft deep at one end.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume calculated using estimated berm area and height.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 3907



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 308
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 4000



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 135
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 4002



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 60
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 4002-2



Tank Type: Portable Generator with Belly Tank
Contents: Diesel
Capacity (gal): 75
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 4006



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Loading area has concrete containment; spill kit located nearby.

Tank: 4029



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 280
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 4032



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 75
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 4058



Tank Type: External Generator Tank (Convault)
Contents: Diesel
Capacity (gal): 300
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 5603-VO



Tank Type: Grease Bin
Contents: AFVO
Capacity (gal): 250
Overfill Protection: Equivalent Protection

Secondary Containment Properties:

None

Containment Adequate?

No

General Secondary Containment for Loading [112.7(c)]:

None

Annex P
Secondary Containment Documentation

Tank: 5703-VO



Tank Type: Grease Bin
Contents: AFVO
Capacity (gal): 250
Overfill Protection: Equivalent Protection

Secondary Containment Properties:
None

Containment Adequate?
No

General Secondary Containment for Loading [112.7(c)]:
None

Tank: 5811



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 130
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 5905-P-12



Tank Type: Portable Generator with Belly Tank
Contents: Diesel
Capacity (gal): 520
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 5907-VO



Tank Type: Grease Bin
Contents: AFVO
Capacity (gal): 250
Overfill Protection: Equivalent Protection

Secondary Containment Properties:
None

Containment Adequate?
No

General Secondary Containment for Loading [112.7(c)]:
None

Tank: 5935-1



Tank Type: AST
Contents: Diesel
Capacity (gal): 550
Overfill Protection: Stick gauge

Secondary Containment Properties:
Plastic Berm

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Plastic berm and spill kits located in the shop

Tank: 5935-2



Tank Type: AST
Contents: Unleaded Gasoline
Capacity (gal): 550
Overfill Protection: Stick gauge

Secondary Containment Properties:
Plastic Berm

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Plastic berm and spill kits located in the shop

**Annex P
Secondary Containment Documentation**

Tank: 6002



Tank Type: AST
Contents: Used Oil
Capacity (gal): 700
Overfill Protection: Wide grated mouth

Secondary Containment Properties:

Metal containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Metal containment and concrete containment berm

Tank: 6601-VO



Tank Type: Grease Bin
Contents: AFVO
Capacity (gal): 250
Overfill Protection: Equivalent Protection

Secondary Containment Properties:

None

Containment Adequate?

No

General Secondary Containment for Loading [112.7(c)]:

None

Tank: 7017-FP



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 115
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

The building provides containment. The tank contractor is also equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 9001-S



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 138
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 9001-A



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 9001-B



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 9001-C



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 9001-D



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 9301



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 1,504
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 9302-1



Tank Type: AST
Contents: Jet A
Capacity (gal): 12,000
Overfill Protection: High-level alarms

Secondary Containment Properties:
 Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Tank contractor is equipped with spill materials during loading.

Tank: 9302-2



Tank Type: AST
Contents: Jet A
Capacity (gal): 12,000
Overfill Protection: High-level alarms

Secondary Containment Properties:
 Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Tank contractor is equipped with spill materials during loading.

Tank: 9303-FP-1



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 320
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Dike = 3.5 ft x 12.5 ft x 1.5 ft =	490 gallons
Precip = 3.5 ft x 12.5 ft x 6.5 in =	177 gallons
Net Containment =	313 gallons

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
 Tank contractor is equipped with spill materials during loading.

**Annex P
Secondary Containment Documentation**

Tank: 9303-FP-2



Tank Type: Fire Pump Tank
Contents: Diesel
Capacity (gal): 320
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Dike = 3.5 ft x 12.5 ft x 1.5 ft = 490 gallons
 Precip = 3.5 ft x 12.5 ft x 6.5 in = 177 gallons

 Net Containment = 313 gallons

Containment Adequate?

No

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 9403



Tank Type: Daytank
Contents: Jet A
Capacity (gal): 10,000
Overfill Protection: High-level alarms

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Product is piped into tank

Tank: 9404



Tank Type: Daytank
Contents: Jet A
Capacity (gal): 10,000
Overfill Protection: High-level alarms

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Product is piped into tank

**Annex P
Secondary Containment Documentation**

Tank: 21090 & 21091



Tank Type: AST
Contents: Jet A
Capacity (gal): 21090: 108,454 21091: 108,903
Overfill Protection: High-level alarms

Rainfall Data:

25-yr 24-hr storm event ⁽¹⁾: 6.5 inches
 Rainfall Area (126'x74'): 9,324 ft²
 Storm event volume ⁽²⁾: 5,051 ft³
Storm event volume: 37,778 gal

Secondary Containment Properties ⁽³⁾:

Berm length: 123 ft
 Berm width: 71 ft
 Berm slope: 1 : 1.5
 Berm height: 6 ft
 Tank to Berm floor, Δheight: 2.5 ft
Gross Containment Volume: 267,137 gal

Displacement Properties:

Tank 21090

Diameter: 28.5 ft
 Height: 3.55 ft
Total Displacement: 16,940 gal

Secondary Containment Performance Measure:

Effective Containment Volume ⁽⁴⁾: 212,419 gal
 Tank Volume: 108,903 gal
Effective - Tank Volume: 103,516 gal

Is Secondary Containment adequate? **Additional Berm Height Needed:**

General Secondary Containment for Loading [112.7(c)]:

N/A: Product is piped into the tank.

Notes:

- ⁽¹⁾ 25-yr 24-hr storm event data from *Rainfall Frequency/Magnitude Atlas for the South-Central United States. 1997. Fig. 6.4. 24-hour 25-year rainfall pattern.* Department of Geography and Anthropology, Louisiana State University. Baton Rouge, LA (Map).
- ⁽²⁾ 25-yr 24-hr storm event volume is cross sectional area (ft²) multiplied by 25-yr 24-hr storm (ft).
- ⁽³⁾ Secondary containment volume was calculated using AutoCAD software for better accuracy.
- ⁽⁴⁾ Secondary containment effective volume (gal) is gross secondary containment volume minus displacement minus storm event.

Annex P
Secondary Containment Documentation

Tank: 21093



Tank Type: AST - Vaulted
Contents: Used JP-8
Capacity (gal): 4,000
Overfill Protection: High-level alarms

Secondary Containment Properties:

Vault provides containment

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Vault provides containment

Tank: 61289



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 200
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:

Double-walled

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Tank contractor is equipped with spill materials during loading.

Tank: 62501-1



Tank Type: AST
Contents: Used Oil
Capacity (gal): 21,000
Overfill Protection: Equivalent Protection

Secondary Containment Properties:

44,829 gallons - concrete berm

Containment Adequate?

Yes

General Secondary Containment for Loading [112.7(c)]:

Concrete berm around tanks and the tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 62501-2



Tank Type: AST
Contents: Used Oil
Capacity (gal): 21,000
Overfill Protection: Equivalent Protection

Secondary Containment Properties:
44,829 gallons - concrete berm

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:

Concrete berm around tanks and the tank contractor is equipped with spill materials during loading.

Tank: 62501-3



Tank Type: AST
Contents: Used Oil
Capacity (gal): 21,000
Overfill Protection: Equivalent Protection

Secondary Containment Properties:
44,829 gallons - concrete berm

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:

Concrete berm around tanks and the tank contractor is equipped with spill materials during loading.

Tank: 62501-4



Tank Type: AST
Contents: Used Oil
Capacity (gal): 21,000
Overfill Protection: Equivalent Protection

Secondary Containment Properties:
44,829 gallons - concrete berm

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:

Concrete berm around tanks and the tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 62501A



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 62501B



Tank Type: Portable Generator with Belly Tank
Contents: Diesel
Capacity (gal): 520
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 62501C



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 500
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?
 Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 62501D



Tank Type: External Generator Tank
Contents: Diesel
Capacity (gal): 100
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 62501E



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): 215
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.

Tank: 62511



Tank Type: Generator with Belly Tank
Contents: Diesel
Capacity (gal): EMPTY
Overfill Protection: Direct Vision Gauge

Secondary Containment Properties:
Double-walled

Containment Adequate?

General Secondary Containment for Loading [112.7(c)]:
Tank is no longer in use. If usage resumes, tank contractor will be equipped with spill materials during loading.

Annex P
Secondary Containment Documentation

Tank: 290W



Tank Type: AST
Contents: Used Oil
Capacity (gal): 2,000
Overfill Protection: None - this tank is only used as secondary containment for the vehicle parking area
Secondary Containment Properties: Covered metal containment
Containment Adequate? Yes

General Secondary Containment for Loading [112.7(c)]:
Spill kit nearby

Tank: NA001



Tank Type: AST
Contents: Jet A
Capacity (gal): 4,000
Overfill Protection: Direct Vision Gauge
Secondary Containment Properties: Double-walled
Containment Adequate? Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.
Spill kit is located nearby.

Tank: NA002



Tank Type: AST
Contents: Mogas
Capacity (gal): 1,000
Overfill Protection: Direct Vision Gauge
Secondary Containment Properties: Double-walled
Containment Adequate? Yes

General Secondary Containment for Loading [112.7(c)]:
Tank contractor is equipped with spill materials during loading.
Spill kit is located nearby.

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ANNEX Q**Terminology**
(Acronyms and Abbreviations)

ABW	Air Base Wing
ACC	Air Combat Command
ACP	Area Contingency Plan
AFB	Air Force Base
AFMC	Air Force Materiel Command
ALC	Air Logistics Center
ARG	Accident Response Group
AST	Aboveground Storage Tank
AWACS	Airborne Warning and Control System
bb1	Barrel (of petroleum) (42 US gallons)
BCE	Base Civil Engineer
bpd	Barrels per day
bph	Barrels per hour
CAT	Crisis Action Team
CE	Civil Engineer
CERCLA	Comprehensive Environmental Response, Compensation and Liabilities Act of 1980
CFR	Code of Federal Regulations
CHEMTREC	Chemical Transportation Emergency Center
CHRIS	Chemical Hazard Response Information System
CNG	Compressed Natural Gas
CWA	Clean Water Act, formerly known as the Federal Water Pollution Control Act (FWPCA)
DLA	Defense Logistics Agency
DOD	Department of Defense
DOT	Department of Transportation
DRF	Disaster Response Force
DW	Double-walled
ECAMP	Environmental Compliance Assessment and Management Program
EHS	Extremely Hazardous Substance
EM	Emergency Management
EOC	Emergency Operations Center
EPA	Environmental Protection Agency
EPCRA	Emergency Planning & Community Right to Know Act

FAX	Facsimile
FCC	Fuels Control Center
FEMA	Federal Emergency Management Agency
FES	Fire and Emergency Services
FOSC	Federal On-Scene Coordinator
FRP	Facility Response Plan
FSII	Fuel System Icing Inhibitor
gal	Gallon
gpd	Gallons per day
gpm	Gallons per minute
HMRU	Hazardous Management Response Unit
HAZCOM	Hazard Communications
HAZMAT	Hazardous Materials
HS	Hazardous Substance
HW	Hazardous Waste
IC	Incident Commander
ICP	Integrated Contingency Plan
ICS	Incident Command System
IET	Integrated Environmental Team
JP	Jet Product (Jet Fuel)
LEL	Lower Explosive Limit
LEPCWG	Local Emergency Planning Committee Work Group
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
MSG	Mission Support Group
NCP	National Contingency Plan (National Oil and Hazardous Substances Pollution Contingency Plan)
NFPA	National Fire Protection Association
NPDES	National Pollution Discharge Elimination System
NRC	National Response Center
NRDA	Natural Resource Damage Assessment
NRT	National Response Team
NTR	Non-Transportation-Related
OC-ALC	Oklahoma City Air Logistics Center
OHS	Oil and Hazardous Substance
OPA 90	Oil Pollution Act of 1990

OSHA	Occupational Safety and Health Administration
OSIC	On-Scene Incident Commander
OSRO	Oil Spill Removal Organization
PAO	Public Affairs Officer
PEL	Permissible Exposure Limit
PIC	Person-in-Charge
PIV	Post Indicator Valve
POL	Petroleum, Oil, and Lubricants
PPE	Personal Protective Equipment
PPM	Parts per Million
PREP	Preparedness for Response Exercise Program
QI	Qualified Individual
RA	Regional Administrator (EPA Official)
RCRA	Resource Conservation and Recovery Act
RQ	Reportable Quantity
RRT	Regional Response Team
RSPA	Research and Special Programs Administration (DOT)
SDS	Safety Data Sheet
SERC	State Emergency Response Commission
SFO	Senior Fire Officer
SI	Surface Impoundment
SIC	Standard Industry Codes
SIRIS	Spill Incident Report Internet System
SMT	Spill Management Team
SOP	Standing Operating Procedures
SPCC	Spill Prevention Control and Countermeasures
SPDES	State Pollutant Discharge Elimination System
SRT	Spill Response Team
SUPSALV	Supervisor of Salvage (US Navy)
SW	Single-walled
TAFB	Tinker Air Force Base
TEDRC	Total Effective Daily Recovery Capacity
TPQ	Threshold Planning Quantity
UCS	Unified Command System
US	United States
USAF	United State Air Force
UST	Underground Storage Tank

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Definitions

Aboveground Storage Tank means any stationary tank that is not entirely covered with earth or other material, or any tank that can be inspected in a subterranean vault.

Adverse weather means the weather conditions that make it difficult for response equipment and personnel to clean up or remove spilled oil and conditions that must be considered when identifying response systems and equipment in a response plan.

Bulk storage tank is any container used to store oil prior to use, or distribution.

Cathodic Protection means corrosion protection for a metal tank or pipe by causing a continuous electric current to flow from one or more electrodes or a sacrificial anode to the protected structure.

Class I Fuel Spill means a primary fuel spill involving an area less than two feet in any plane dimension.

Class II Fuel Spill means a small spill involving an area not over ten feet in any plane dimension, or not over 50 square feet in area, and not of a continuing nature.

Class III Fuel Spill means a large spill involving an area over ten feet in any plane dimension, or over 50 square feet in area, or of a continuing nature.

Contingency Plan is a document setting out an organized, planned, and coordinated course of action to be followed in case of a fire, explosion, or release of a hazardous substance/material waste which threaten human health or the environment.

Discharge includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping, but excludes discharges in compliance with a permit under section 402 of the CWA or discharges of oil that are authorized by a permit issued pursuant to section 13 of the River and Harbor Act of 1899 (30 Statute 1121, 33 USC 407).

Extremely Hazardous Substance (EHS) as used in this plan, synonymous with Extremely Hazardous Material. The term is used in Title III of the Superfund Amendments and Reauthorization Act (SARA) to refer to those chemicals that could cause serious health effects following short term exposure from accidental releases

Facility means either an onshore or offshore facility and includes structures, equipment, and appurtenances thereto used or capable of being used to transfer oil or hazardous material, including to or from a vessel. A facility includes government and private facilities.

Facility operator means the person who owns, operates, or is responsible for the operation of the facility.

Fish and Wildlife and Sensitive Environments are areas that may be identified by either 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 habitat for endangered or threatened species, wilderness and natural resource areas, marine sanctuaries and estuarine reserves, conservation areas, preserves, wildlife areas, scenic rivers, recreational areas, national forests, Federal and State lands that are research national areas, heritage program areas, land trust areas, and archeological 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.

Fuel is a flammable liquid or combustible liquid used or stored for the purpose of fueling vehicles, aircraft, generators, or any other equipment which uses petroleum or alcohol based materials to convert said liquids into mechanical force and motion. These materials include but are not limited to gasoline, JP-4, diesel, and naphtha.

Harmful Quantity means a discharge that causes a film, sheen, or discoloration upon the water surface, that causes a sludge or emulsion to be deposited beneath the surface of the water, or that violates applicable water quality standards.

Hazardous Material or Hazardous Substance is any material, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may pose a substantial hazard to human health or the environment when released or spilled into the environment. It may be designated or meet certain characteristics as listed in 40 CFR, Parts 302 and 261.

HazMat Team is a team of firefighters trained and equipped to National Fire Academy standards with lead responsibilities in responding to chemical releases, they normally are considered the first responders.

Hazardous Waste (HW) refers to any waste material, liquid, solid, or gas, that because of quantity, concentration, or physical or chemical characteristics, may:

- (1) Cause or significantly contributes to an increase in mortality or to a serious irreversible, or incapacitating illness.
- (2) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of or otherwise managed.

Level of Concern (LOC) is the concentration of an EHS in the air above which there may be serious irreversible health effects or death as a result a result of a single exposure for a relatively short period of time.

Local Emergency Planning Committee (LEPC) is the committee responsible for developing spill response plans and procedures required to meet the federally mandated Community

Right-to-Know regulations under SARA Title III.

Material Safety Data Sheet (MSDS) / Safety Data Sheet (SDS) means a document provided by the manufacturer of a product that outlines the health and safety hazards of the material, and provides the chemical constituents of the material, spill response procedures, and personal protective measures to be used when handling or cleaning up a spill of the material.

Maximum extent practical means the planned capability to respond to a worst case discharge in adverse weather, as contained in a response plan that meets EPA and Coast Guard criteria.

Medium Discharge is defined by EPA as a discharge of up to 36,000 gallons of oil or 10 percent of the capacity of the largest aboveground storage tank, whichever is less.

National Contingency Plan (NCP) refers to the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300), which provides the legal framework for Federal government OHS pollution contingency planning and response.

National Response Center (NRC) is a 24-hour OHS spill notification center, located at USCG headquarters in Washington, DC. The NRC serves as the single Federal notification point for OHS spills.

Navigable waters means the waters of the United States, including the territorial seas. The term includes:

- (1) 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;
- (2) All interstate waters, including interstate wetlands;
- (3) 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:
 - (i) that are or could be used by interstate or foreign travelers for recreational or other purposes; or,
 - (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or,
 - (iii) that are used or could be used for industrial purposes by industries in interstate commerce;
- (4) All impoundments of waters otherwise defined as waters of the United States;
- (5) Tributaries of waters;
- (6) The territorial sea; and,
- (7) Wetlands adjacent to waters (other than waters that are themselves wetlands).

Note: Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 10 CFR 123.11(m), are not waters of the United States.

Non-transportation-related onshore facility describes an oil storage facility 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 in-line 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.

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.

Oil Spill Removal Organization (OSRO) means an entity that provides spill response resources.

On-Scene Coordinator (OSC) means the official in charge of spill response oversight as defined in the NCP.

Onshore facility means any facility of any kind located in, on, or under any land within the United States, other than submerged lands.

Operator means any person who leases, operates, controls, or supervises a facility.

Owner means any person who has legal or equitable title to a facility.

Permanently closed is any tank or facility that has been closed in the following manner:

- (1) All liquid and sludge were removed from each tank and connecting lines. Any waste products removed were disposed of in accordance with all applicable State and Federal requirements.
- (2) Each tank was rendered free of petroleum vapors. Provisions were made for natural breathing of the tank to ensure that the tank remains vapor free.
- (3) All connecting lines were disconnected and removed or securely capped or plugged. Manways were securely fastened in place.
- (4) Aboveground tanks were stenciled with the date of permanent closure.
- (5) Underground tanks were either filled to capacity with a solid inert material, such as sand or cement, or removed. If inert material was used, all voids within the tank were filled.
- (6) Aboveground tanks were protected from flotation in accordance with good engineering practice.

Person includes an individual, firm, corporation, industry, partnership, association, trust, or other legal entity.

Person-in-Charge means an individual designated as a person in charge of transfer operations for a facility or vessel.

Pipeline means all parts of an onshore pipeline facility through which oil moves.

Qualified Individual (QI) (and alternate qualified individual) is a person located in the United States who speaks English, available on a 24-hour basis and able to arrive at the facility in a reasonable time, familiar with the implementation of the facility response plan, trained in the responsibilities of the qualified individual under the response plan, able to engage an OSRO, able to obligate funds, and able to liaise with the FOSC.

Regional Administrator (RA) means the EPA Regional Administrator or a designee of the Regional Administrator for the Region in which the facility is located.

Regional Response Center (RRC) is the center for pollution control response activities. Tinker AFB is in Region VI with headquarters at the Environmental Protection Agency (EPA), Dallas Texas.

Regional Response Team (RRT) serves as the regional body for planning and preparedness actions before a response action is taken and for coordination and advice during such action. The RRT consists of regional representatives of the participating agencies and representatives of state government.

Reportable Quantity means a discharge of a substance that exceeds the limitations established by 40 CFR, Part 302.4.

Response activities refers to the containment and removal of oil from the land, water and shorelines, the temporary storage and disposal of recovered oil, or the taking of other actions as necessary to minimize or mitigate damage to the public health or welfare of the environment.

Response area means the inland or coastal zone as defined in the NCP.

Response resources means the personnel, equipment, supplies, and other capability necessary to perform the response activities identified in a response plan.

Response zone means a geographic area along a length of pipeline or line sections for which the operator must response activities.

Responsible Party means the organization responsible for the operation, area, or equipment that caused the spill.

Rivers and canals means a body of water confined within the inland area, including the Intracoastal Waterways and other waterways artificially created for navigation, that has a project depth of 12 feet or less.

Scully ® System is an electrical control unit connected to a truck during loading which serves to automatically shut-off dispensing pumps when high-level alarms are triggered during an overflow of an individual compartment on a tanker truck.

Secondary Containment means containment that prevents any materials spilled or leaked from reaching the land or water outside the containment area before cleanup occurs.

Small Discharge is defined by the EPA as any discharge volume less than or equal to 2,100 gallons, but not to exceed the calculated worst case discharge.

SPCC Plan means the document required by section 112.3 of 40 CFR Part 112, that details the equipment, manpower, procedures, and steps to prevent and control spills and provide adequate countermeasures to an oil spill. The SPCC Plan is a written description of the facility's compliance with the procedures outlined in the EPA Oil Pollution Prevention regulation.

Spill event means a discharge of oil or a hazardous substance.

Spill Management Team (SMT) means the personnel identified to staff the organizational structure identified in a response plan to response plan implementation.

Spill/Release Incident is the uncontrolled/unpermitted release of a hazardous material/substance (as defined) in a quantity that will or potentially can result in adverse impacts to human health or the environment.

Spill Response Team (SRT) is a designated team consisting of representatives from the Tinker AFB Fire Department, Environmental Management, Bioenvironmental Engineering, Ground Safety and Civil Engineering who may advise on, or participate in, conducting containment, countermeasures, cleanup, and disposal activities in the event of a spill or pollution incident.

State Emergency Response Commission (SERC) is a State Commission required by EPA to oversee the planning and reporting actions taken by the Local Emergency Planning Committee (LEPC) to comply with the Oil Pollution Act 1990.

Storage capacity of a tank or container means the total capacity of the tank or container, whether the tank or container is filled with oil or a mixture of oil and other substances.

Substantial Harm Facility is a facility that has a maximum storage capacity greater than or equal to 42,000 gallons with operations that include over water transfers of oil to or from vessels. If the facility has a maximum storage capacity greater than or equal to one million gallons and is (1) without adequate secondary containment, or (2) located such that a discharge from the facility could cause injury to an environmentally sensitive area, or (3) located such that a discharge would shut down a public drinking water intake, or (4) has experienced a reportable spill in an amount greater than or equal to 10,000 gallons, the facility is also considered a substantial harm facility.

Substantial threat of a discharge means any incident or condition involving a facility that may create a risk of discharge of oil.

Tier means the combination of required response resources and the times within which the resources must arrive on scene.

Transfer means any movement of oil or hazardous material to, from, or within a vessel or facility by means of pumping, gravitation, or displacement.

Underground Storage Tank is any tank completely covered with earth or other material. Tanks in subterranean vaults, bunkered tanks, or partially buried tanks are considered aboveground storage tanks.

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 US Virgin Islands, and the Pacific Island Governments.

Waste oil means oil which has been changed markedly from its original specifications, thereby becoming unsuitable for further use.

Wellhead Protection Area refers to 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.

Wetlands refers to 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, mud flats, and natural ponds.

Worst Case Discharge for an onshore facility is defined as the largest foreseeable discharge in adverse weather conditions. The USCG considers the worst case discharge to be the loss of all in-line capacity from the transfer manifold to the first valve or manifold in the non-transportation-related portion of the facility, plus the amount of discharge from the transfer until it can be shutdown. RSPA considers the worst case discharge to include one from a fire or explosion, but specifically to be the loss of capacity of the largest line section plus the amount of the discharge from the transfer until it can be shut down. The EPA considers the worst case discharge volume for a facility to be based on 100% of the largest tank within a common secondary containment area or 100% of the largest tank within a single containment area. For permanently manifolded tanks that function as one storage unit, the worst case discharge volume is based on 100% of the combined storage capacity of all manifolded tanks or 100% of the largest single tank within a secondary containment area.

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ANNEX R**References**

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40 CFR Part 68 (EPA), *Chemical Accident Prevention Provisions*, Final Rule.

40 CFR 112 (EPA); *Oil Pollution Prevention: Non-Transportation Related Onshore Facilities*; Final Rule.

40 CFR Part 9 and 300; *National Oil and Hazardous Substances Pollution Contingency Plan*; Final Rule.

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Tinker AFB Plan 10-2, *Installation Emergency Management Plan*, October 2015.

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Tinker AFB *Storm Water Pollution Prevention Plan*, August 2014.

US Department of Housing and Urban Development, 1987; *Siting of HUD-assisted Projects Near Hazardous Facilities: Acceptable Separation Distance from Explosive and Flammable Hazards*; Prepared by the Office of Environment and Energy, Environmental Planning Division, Department of Housing and Urban Development, Washington, DC.

US Department of Transportation, Federal Emergency Management Agency and US Environmental Protection Agency; *Handbook of Chemical Hazard Analysis Procedures*.

US Department of Transportation, Federal Emergency Management Agency and US Environmental Protection Agency, *Technical Guidance for Hazard Analysis: Emergency Planning for Extremely Hazardous Substances*.

US EPA, 1987, *Technical Guidance for Hazards Analysis*.

ANNEX S

Plan Distribution

<u>QTY</u>	<u>ORGANIZATION</u>	<u>REMARKS</u>
1	US Environmental Protection Agency, Region VI Karen McCormick (6SF-R) 1445 Ross Avenue, Dallas, TX 75202	Official copy IAW 40 CFR 112 Copy Number:
1	State of Oklahoma, Department of Environmental Quality	Copy Number:
1	USAF HQ, AFMC	Copy Number:
1	Contract Base Civil Engineer (72 ABW/CEC)	Copy Number:
1	Environmental Management Branch (72 ABW/CEIE)	Copy Number:
2	Base Fuels Branch (72 ABW/LGSF)	Copy Number:
1	Chief, Fire Protection Branch (72 ABW/CEF)	Copy Number:
1	Bioenvironmental Engineering (72 AMDS/SGPB)	Copy Number:
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ANNEX T**INTEGRATED CONTINGENCY PLAN FOR OIL SPILL PREVENTION AND RESPONSE****1. REGULATORY COMPLIANCE AND CROSS-REFERENCE INDEX**

This index provides cross-referencing tables for the Tinker AFB *Integrated Contingency Plan for Oil Spill Prevention and Response* and the regulatory requirements of the applicable Federal agencies. The index is divided into seven sections to cross-reference the specific regulatory requirements from each of the following documents:

- **SECTION 1: Environmental Protection Agency (EPA) 40 CFR Part 112, *Oil Pollution Prevention; Non-Transportation-Related Onshore Facilities*; begins on page T-2.**
 - Spill Prevention, Control and Countermeasure Plan: 40 CFR 112.7, 112.8 and 112.12.
 - Facility Response Plan 40 CFR 112.20
- **SECTION 2: Environmental Protection Agency, 40 CFR Part 355, *Emergency Planning and Community Right-to-Know Act (EPCRA)*, begins on page T-17.**
- **SECTION 3: Environmental Protection Agency, 40 CFR Part 264, Subpart D, *Resource Conservation and Recovery Act (RCRA)*, begins on page T-18.**
- **SECTION 4: Occupational Safety and Health Administration (OSHA), 29 CFR 1910.38(a), *Employee Emergency Plans and Fire Prevention Plans*, 1910.120, *Hazardous Waste Operations and Emergency Response (HAZWOPER)*, and 1910.165, *Employee Alarm Systems*; begins on page T-21.**
- **SECTION 5: Environmental Protection Agency, 40 CFR Part 68, *Chemical Accident Provisions*, begins on page T-24.**

**SECTION 1: ENVIRONMENTAL PROTECTION AGENCY
40 CFR Part 112, OIL POLLUTION PREVENTION and RESPONSE**

<u>GENERAL APPLICABILITY</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.1(b)	... this part applies to any owner or operator of a non-transportation-related onshore or off-shore facility engaged in ... storing ... 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, ... into or upon the navigable waters of the US or adjoining shorelines ...	1
§ 112.1(c)	... departments, agencies, and instrumentalities of the Federal government are subject to this part to the same extent as any person.	1
<u>DEFINITIONS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.2	For the purposes of this part: (as listed)	Annex Q
<u>SPCC PLAN REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.3(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 April 17, 2003, and must implement the amended Plan as soon as possible, but not later than October 18, 2003.	All
§ 112.3(d)	A licensed Professional Engineer must review and certify a Plan for it to be effective to satisfy the requirements of this part. 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.	Introductory Portion (Certification)
§ 112.3(e)(1)	Maintain a complete copy of the Plan at the facility if the facility is normally attended at least four hours per day ...	Annex S
§ 112.3(e)(2)	Have the Plan available to the Regional Administrator for on-site review during normal working hours.	Annex S

<u>SPCC PLAN REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.4(a)	... whenever your facility has discharged more than 1,000 gallons of oil in a single discharge ... or discharged more than 42 gallons of oil in each of two discharges occurring within any 12 month period, submit the following information to the RA within 60 days ... : (1) Name of facility; (2) Your name; (3) Location of facility; (4) Max storage/ handling capacity and daily throughput; (5) Corrective action taken; (6) An adequate description of the facility with maps and diagrams as necessary; (7) Cause of the discharge and a failure analysis; (8) Additional preventative measures taken/contemplated; and (9) Any other pertinent information.	17.1.1
§ 112.4(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 ...	17.1.2
§ 112.5(a)	Amend the Plan ... when there is a change in facility design, construction, operation, or maintenance that materially affects its potential for a discharge ...	2.5
§ 112.5(b)	... complete a review and evaluation of the Plan at least once every five years. ... document your review and evaluation with a signed statement as to whether you will amend the Plan...	2.5.1
§ 112.5(c)	Have a Professional Engineer certify any technical amendment to your Plan in accordance with part 112.3(d).	2.5
§ 112.7	A Plan not following the specified sequence must still meet all the requirements of this section and have a cross-referencing index.	Annex T
§ 112.7(a)(1)	Include a discussion of the facility's conformance with the requirements of this part.	18
§ 112.7(a)(2)	... Where the plan does not conform with applicable requirements ... state reasons for nonconformance, describe alternate methods for equivalent environmental protection.	18
§ 112.7(a)(3)	Describe the physical layout of the facility, include a diagram, with location and contents of each container marked, buried tanks, transfer stations and connecting pipes. Also:	Red Plan, Annex A, Annex W
§ 112.7(a)(3)(i)	Type of oil in each container and its storage capacity;	Annex A: Tables A.1 through A.5
§ 112.7(a)(3)(ii)	Discharge prevention measures including procedures for routine handling of products;	9 – 10, Annex A

<u>SPCC PLAN REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.7(a)(3)(iii)	Discharge or drainage controls such as secondary containment and procedures for the control of a discharge;	Red Plan, 11.5, 11.2
§ 112.7(a)(3)(iv)	Countermeasures for discharge discovery, response, and cleanup;	11.5
§ 112.7(a)(3)(v)	Methods of disposal of recovered materials in accordance with applicable legal requirements;	13.5
§ 112.7(a)(3)(vi)	Contact list and phone numbers for the facility response coordinator, NRC, contractors, and government agencies ...	THE RED PLAN, Annex B
§ 112.7(a)(4)	[Spill reporting information and procedures unless a plan is submitted under 112.20.]	N/A
§ 112.7(a)(5)	[Organize Plan describing procedures used during a discharge and an emergency, unless a plan is submitted under 112.20.]	N/A
§ 112.7(b)	... include a prediction of the direction, rate of flow, and total quantity of oil that could be discharged as a result of equipment failure.	12
§ 112.7(c)	... provide containment and/or diversionary structures or equipment to prevent a discharge described in 112.1(b). ... use one of the following prevention systems or its equivalent:	Annex A
§ 112.7(c)(1)	For onshore facilities:	Annex A
(i)	Dikes, berms, or retaining walls;	
(ii)	urbing;	
(iii)	Culverts, gutters, or other drainage systems;	
(iv)	Weirs, booms, or other barriers;	
(v)	Spill diversion ponds;	
(vi)	Retention ponds; or	
(vii)	Sorbent materials.	
§ 112.7(d)	... if installation of containment structures or equipment is not practicable, explain why; conduct integrity and leak testing of equipment; and unless there is a response plan submitted under 112.20, provide:	N/A
§ 112.7(d)(1)	An oil spill contingency plan following the provisions of part 109 of this chapter.	Red Plan, Basic Plan
§ 112.7(d)(2)	A written commitment of manpower, equipment, and materials required to expeditiously control and remove any discharge.	Executive Summary, Annex G
§ 112.7(e)	<i>Inspections, tests, and records.</i> Conduct inspections and tests required by this part in accordance with written procedures ... keep ... for a period of three years.	Annex N

<u>SPCC PLAN REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.7(f)(1)	<i>Personnel, training, and discharge prevention procedures.</i> ... train oil-handling personnel in operations and maintenance ... ; discharge procedures; pollution control requirements; and contents of the Plan.	Annex M
§ 112.7(f)(2)	Designate a person accountable for discharge prevention who reports to management.	Executive Summary
§ 112.7(f)(3)	Schedule and conduct discharge prevention briefings for oil-handling personnel at least once a year ... [review] discharges or failures, malfunctioning components, and any recently developed precautionary measures.	Annex M: M.5
§ 112.7(g)(1)	<i>Security.</i> Fully fence each facility handling, processing, or storing oil, and lock and/or guard entrance gates when unattended.	16.2
§ 112.7(g)(2)	Ensure master flow, drain valves, and other valves permitting outward flow of the container's contents to the surface have security measures so they remain closed when not in use.	16.4
§ 112.7(g)(3)	Lock starter controls on oil pumps in "off" position and locate where accessible only to authorized personnel when not in operation.	16.4
§ 112.7(g)(4)	Security cap or blank-flange loading/ unloading connections of oil pipelines when not in service for an extended time.	9.5
§ 112.7(g)(5)	Provide lighting ... that assists in: (i) Discovery of discharges during darkness by operating personnel or others; and (ii) Prevention of discharges occurring through acts of vandalism.	16.3
§ 112.7(h)(1)	<i>Facility tank car and tank truck loading/unloading rack.</i> Where loading/unloading area drainage has no catchment basin or treatment facility, use a quick drainage system. ... must hold at least max capacity of any single compartment of a tank car or truck using the facility.	NA
§ 112.7(h)(2)	Provide an interlocked warning light/barrier, warning signs, wheel chocks, or brake interlock system in loading/unloading areas to prevent vehicles from moving before complete disconnection of transfer lines.	NA
§ 112.7(h)(3)	Prior to filling and departure of a tank car or truck, inspect drains/outlets for integrity to prevent discharge while in transit.	NA
§ 112.7(i)	... evaluate field-constructed containers for brittle fracture or other risk if repaired, altered, or changed in service and correct any problem.	Annex N: N.6.1
§ 112.7(j)	... include a discussion of conformance with discharge prevention requirements and procedures of this part or more stringent applicable State requirements.	18

<u>SPCC PLAN</u> <u>REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP</u> <u>SECTION</u>
§ 112.8(a)	Meet requirements under 112.7 and specific procedures listed in this section. [Requirements in § 112.12(a)-(d) are the same.]	All
§ 112.8(b)(1)	<i>Facility drainage.</i> ... diked storage areas fitted with valves to prevent and control discharges. May empty with manually-activated pumps or ejectors. ... inspect accumulation for oil before draining.	Annex A
§ 112.8(b)(2)	Use manual open-and-closed valves for diked areas. (no flapper-type drains valves.) ... inspect and drain uncontaminated retained stormwater as per (c)(3)(ii)-(iv).	Annex A
§ 112.8(b)(3)	Design facility drainage systems from undiked areas ... to flow into ponds, lagoons, or catchment basins designed to retain oil ...	Annex A
§ 112.8(b)(4)	If facility drainage not engineered as per (b)(3), equip final discharge ditches with diversion that would retain uncontrolled oil discharge.	Annex A
§ 112.8(b)(5)	Where drainage waters are treated ... and lift pumps are used ... design system to prevent a discharge if there is an equipment failure or human error.	N/A
§ 112.8(c)(1)	<i>Bulk storage containers.</i> ...oil storage container material and construction must be compatible with material stored and conditions ...	Annex A: Tables A.1 through A.4
§ 112.8(c)(2)	... secondary containment for entire capacity of largest single container and sufficient free-board to contain precipitation ... diked areas are sufficiently impervious to contain oil ... alternate system must terminate and safely confine a discharge ...	Annex A, Annex P
§ 112.8(c)(3)	No drainage of uncontaminated rainwater from diked area into a storm drain or water-course, bypassing a treatment system unless: (i) Bypass valve normally sealed closed. (ii) Retained water is not contaminated. (iii) Drained under responsible supervision. (iv) Records kept of drainage events.	N/A
§ 112.8(c)(4)	...metallic USTs protected from corrosion by coatings or cathodic protection compatible with local soil conditions ... regularly leak test.	Annex N: N.6.2
§ 112.8(c)(5)	... partially buried or bunkered metallic tanks protected from corrosion. ... by coatings or cathodic protection compatible with local soil conditions.	N/A
§ 112.8(c)(6)	Test each aboveground container for integrity on a regular schedule, and when repaired. Consider size and design. Combine visual inspection with another testing technique. Keep comparison records. Inspect supports and foundations, shell, and diked area. Records kept for business practices accepted.	Annex N: N.6.1

<u>SPCC PLAN REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.8(c)(7)	Monitor internal heating coils for contamination if discharge could reach a watercourse unless there is a separate retention system.	N/A
§ 112.8(c)(8)	... containers engineered to avoid discharges. ... provide at least one of the following: (i) High liquid level alarms with an audible or visual signal at manned station. (ii) High liquid level pump cutoff devices. (iii) Direct communication between the container gauger and pumping station. (iv) Fast system to check tank levels. If visual, must be present during filling. (v) Regularly test level sensing devices.	Annex A: Tables A.1 and A.2 Annex N
§ 112.8(c)(9)	Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge.	N/A
§ 112.8(c)(10)	Promptly correct visible discharges from container or equipment ... promptly remove any oil in diked areas.	11.5.8, 11.5.9
§ 112.8(c)(11)	Position mobile/portable containers to prevent a discharge. ... secondary containment sufficient for largest single compartment and rain.	Annex A
§ 112.8(d)(1)	<i>Facility transfer operations, pumping, and facility process.</i> Provide buried piping installed/ replaced after Aug. 16 2002, with protective wrapping and coating. Cathodically protect or satisfy part 280 or 281 standards. If buried line exposed, inspect & correct corrosion damage.	9.5
§ 112.8(d)(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.	9.5
§ 112.8(d)(3)	Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.	9.5
§ 112.8(d)(4)	Regularly inspect aboveground valves, piping, and appurtenances. Assess condition of flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. Conduct integrity & leak testing of buried piping when installed, modified, relocated, or replaced.	Annex N
§ 112.8(d)(5)	Warn vehicles entering the facility to be sure they will not endanger aboveground piping or other oil transfer operations.	9.5
§ 112.12(a)	Meet the general requirements for the Plan listed under § 112.7 and the specific procedures listed in this section.	All

<u>SPCC PLAN</u> <u>REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP</u> <u>SECTION</u>
§ 112.12(b)(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.	Annex A
§ 112.12(b)(2)	Use manual open-and-closed valves for diked areas. (no flapper-type drains valves.) ... inspect and drain uncontaminated retained stormwater as per (c)(3)(ii)-(iv).	11.5
§ 112.12(b)(3)	Design facility drainage systems from undiked areas ... to flow into ponds, lagoons, or catchment basins designed to retain oil	Annex A
§ 112.12(b)(4)	If facility drainage not engineered as per (b)(3), equip final discharge ditches with diversion that would retain uncontrolled oil discharge.	Annex A
§ 112.12(b)(5)	Where drainage waters are treated ... and lift pumps are used ... design system to prevent a discharge if there is an equipment failure or human error.	N/A
§ 112.12(c)(1)	<i>Bulk storage containers.</i> ...oil storage container material and construction must be compatible with material stored and conditions ...	Annex A, Tables A.1 through A.4
§ 112.12(c)(2)	... secondary containment for entire capacity of largest single container and sufficient free-board to contain precipitation ... diked areas are sufficiently impervious to contain oil ... alternate system must terminate and safely confine a discharge ...	Annex A, Annex P
§ 112.12(c)(3)	No drainage of uncontaminated rainwater from diked area into a storm drain or water-course, bypassing a treatment system unless: (i) Bypass valve normally sealed closed. (ii) Retained water is not contaminated. (iii) Drained under responsible supervision. (iv) Records kept of drainage events.	N/A
§ 112.12(c)(4)	...metallic USTs protected from corrosion by coatings or cathodic protection compatible with local soil conditions ... regularly leak test.	Annex N
§ 112.12(c)(5)	... partially buried or bunkered metallic tanks protected from corrosion. ... by coatings or cathodic protection compatible with local soil conditions.	N/A
§ 112.12(c)(6)	Conduct integrity testing on tanks that are not fully visible for inspections. Regularly inspect containers and containment areas and maintain records.	Annex N
§ 112.12(c)(7)	Control leakage from heating coils	NA
§ 112.12(c)(8)	Overfill protection requirements	Annex A: Table A.1, Annex P

<u>SPCC PLAN REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.12(c)(9)	Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge.	N/A
§ 112.12(c)(10)	Promptly correct visible discharges from container or equipment ... promptly remove any oil in diked areas.	11.5.8
§ 112.12(c)(11)	Position mobile/portable containers to prevent a discharge. ... secondary containment sufficient for largest single compartment and rain.	Annex A
§ 112.12(d)(1)	Facility transfer operations, pumping, and facility process.	10, 15, 16.4
§ 112.12(d)(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.	9.5
§ 112.12(d)(3)	Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.	9.5
§ 112.12(d)(4)	Regularly inspect aboveground valves, piping, and appurtenances. Assess condition of flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. Conduct integrity & leak testing of buried piping when installed, modified, relocated, or replaced.	Annex N
§ 112.12(d)(5)	Warn vehicles entering the facility to be sure they will not endanger aboveground piping or other oil transfer operations.	9.5

<u>FRP</u> <u>REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP</u> <u>SECTION</u>
§ 112.20(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 ...	1.4, Annex H
§ 112.20(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: <ul style="list-style-type: none"> i. A change in the facility's configuration; ii. A change in oil(s) handled; iii. A change in capabilities of OSRO; iv. A change in facility response equipment; v. Any other change affecting the plan. 	2.5.3
§ 112.20(d)(2)	... amendments to personnel and telephone number lists in the plan or a change in the OSRO support capabilities do not require approval by the RA. ... provide a copy of such changes to the RA as they occur.	2.5.2
§ 112.20(d)(3)	... provide the EPA-issued facility identification number (where assigned) with any changes submitted.	2.5.3
§ 112.20(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 navigable waters ... if it meets any of the following criteria ...	Annex H
§ 112.20(g)(1)	All facility response plans shall be consistent with the requirements of the "NCP" (40 CFR Part 300) and applicable Area Contingency Plans ... The facility response plan should be coordinated with the local emergency response plan and a copy provided to the LEPC or State emergency response commission if requested.	1, 12.6, Annex S
§ 112.20(g)(2)	... review NCP and ACP annually to ensure facility's response plan consistency with them.	2.5.1
§ 112.20(g)(3)	... review and update facility response plan periodically to reflect changes at the facility.	2.5
§ 112.20(h)	... 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 (h)(1) and be supplemented with a cross-reference section to identify the location of elements listed in (h)(2) – (h)(10) ...	Annex T: Cross Ref. Index
§ 112.20(h)(1)	<i>Emergency Response Action Plan.</i> ... maintained in the front of the response plan, or as a separate document ... including:	Red Plan

<u>FRP</u> <u>REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP</u> <u>SECTION</u>
§ 112.20(h)(1)(i)	... identity and telephone number of a qualified individual ... ;	Red Plan: pages RP-4, RP-5
(h)(1)(ii)	... identity of individuals or organizations to be contacted in the event of a discharge;	Red Plan: pages RP-1, RP-4, RP-5
(h)(1)(iii)	... description of information to pass to response personnel ... ;	Red Plan: page RP-12
(h)(1)(iv)	... description of the facility's response equipment and its location;	Red Plan: page RP-8
(h)(1)(v)	... description of response personnel capabilities, and duties of facility personnel... ;	Red Plan: page RP-2
(h)(1)(vi)	... evacuation plans ... ;	Red Plan: Figure RP-2; Annex C
(h)(1)(vii)	... immediate measures to secure the source and provide adequate containment and;	Red Plan
(h)(1)(viii)	... diagram of the facility.	Red Plan, page Figure RP-1
§ 112.20(h)(2)	<i>Facility Information.</i> ... location and type of facility, identity of the qualified individual ...	4, 6.2, Annex A
§ 112.20(h)(3)	<i>Information about emergency response.</i>	Red Plan
(h)(3)(i)	... identity of private personnel and equipment to remove a worst case discharge ... ;	Annex G
(h)(3)(ii)	... contract/other approved means ensuring availability of personnel and equipment;	Annex G
(h)(3)(iii)	... identity and telephone number of persons/ organizations to be contacted if a discharge ... ;	11.3, Annex B
(h)(3)(iv)	... description of information to pass to response personnel ... ;	11.5, Annex B
(h)(3)(v)	... description of response personnel capabilities, response times, and qualifications;	12.2.5
(h)(3)(vi)	... description of the facility's response equipment, location, and equipment testing;	Annex F, Annex N
(h)(3)(vii)	... evacuation plans of the facility and local community, as appropriate;	Annex C

<u>FRP</u> <u>REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP</u> <u>SECTION</u>
(h)(3)(viii)	... diagram of evacuation routes; and	Red Plan
(h)(3)(ix)	... description of qualified individual duties including:	6.2, Annex D: D.3
(h)(3)(ix)(A)	Activate internal alarms and communication systems to notify all facility personnel;	11
(h)(3)(ix)(B)	Notify all response personnel, as needed;	11, Red Plan
(h)(3)(ix)(C)	Identify the character, source, and extent of the spill, and other items needed for notification;	11.3
(h)(3)(ix)(D)	Notify and give information to appropriate Federal, State, and local authorities ... ;	11.3, Annex B
(h)(3)(ix)(E)	Assess interaction of the spilled substance at facility and provide to response personnel;	13.1, Annex J
(h)(3)(ix)(F)	Assess the possible hazards to human health and the environment due to the release;	Annex E, Annex J
(h)(3)(ix)(G)	Assess and implement actions to contain and remove the substance released;	13.1 – 13.4
(h)(3)(ix)(H)	Coordinate rescue and response operations as arranged with all response personnel;	13
(h)(3)(ix)(I)	Use authority to immediately access funding to initiate cleanup activities; and	6, 11.4
(h)(3)(ix)(J)	Direct cleanup activities until properly relieved of this responsibility.	6
§ 112.20(h)(4)	<i>Hazard Evaluation.</i> Provide information on hazard evaluation and spill history.	Annex E
§ 112.20(h)(5)	<i>Response Planning Levels.</i> ... discussion of specific planning scenarios for:	12.2, Annex I
(h)(5)(i)	A worst case discharge;	12.2.3, Annex I: I.3
(h)(5)(ii)	A discharge of 2,100 gallons or less, (small discharge)	12.2.2, Annex I: I.2
(h)(5)(iii)	A discharge of 2,100-36,000 gal. or 10% of the largest tank, whichever is less, (medium spill)	12.2.1, Annex I: I.2
§ 112.20(h)(6)	<i>Discharge detection systems.</i> Describe procedures and equipment for detecting discharges.	10, 15, Annex A, Annex N

<u>FRP</u> <u>REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP</u> <u>SECTION</u>
§ 112.20(h)(7)(i)	<i>Plan implementation.</i> ... describe response actions for planning scenarios;	11.5, 12.3, Annex I
(h)(7)(ii)	... description of the equipment to be used for each scenario;	11.5, 12.3, Annex I
(h)(7)(iii)	... disposal plans for contaminated cleanup materials; and	13.5
(h)(7)(iv)	... measures to provide adequate containment and drainage of spilled oil;	9, 13, Annex A, Annex E, Annex P
§ 112.20(h)(8)(i)	<i>Self-inspection, drills/exercises, and response training.</i> ... checklist and record of inspections for tanks, containment, and equipment;	Annex M, Annex N
(h)(8)(ii)	... description of the drill/exercise program to be carried out under the response plan ... ;	Annex M
(h)(8)(iii)	... description of the training program to be carried out under the response plan as ... ;	Annex M
(h)(8)(iv)	... logs of discharge prevention meetings, training sessions, and drills/exercises.	Annex M
§ 112.20(h)(9)	<i>Diagrams.</i> ... site plan and drainage plan diagrams.	Annex A, Annex W
§ 112.20(h)(10)	<i>Security Systems.</i> ... description of facility security systems.	16
§ 112.20(h)(11)	<i>Response Plan Cover Sheet.</i> ... include a completed response plan cover sheet provided in Section 2.0 of Appendix F to this part.	Annex H: H.3 through H.5
§ 112.21(a)	The owner or operator of a facility required to prepare a response plan shall develop and implement a training program and a drill/exercise program ... describe the programs in the plan as provided in § 112.20(h)(8)	Annex M

<u>TRAINING/DRILLS REQUIREMENTS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 112.21(b)	<p>... train those personnel involved in oil spill response activities. ... program be based on the USCG’s Training Elements for Oil Spill Response, as applicable to facility operations.</p> <p>(1) ... procedures to respond to discharges of oil and in applicable oil spill response laws, rules, and regulations.</p> <p>(2) ... functional in nature according to job tasks for supervisory and non-supervisory operational personnel.</p> <p>(3) ... lesson plans on subject areas relevant to facility personnel involved in oil spill response and cleanup.</p>	Annex M
§ 112.21(c)	<p>... develop a program of facility response drills/exercises, including evaluation procedures. ... follows the National Preparedness for Response Exercise Program (PREP) ... An alternate program can also be acceptable subject to approval by the RA.</p>	Annex M

<u>§ 112 APPENDIX F</u>	<u>REQUIREMENT Facility-Specific Response Plan</u>	<u>ICP SECTION</u>
1.1	<p><i>Emergency Response Action Plan</i></p> <p>Qualified Individual Information Emergency Notification Phone List Spill Response Notification Form Response Equipment List and Location Response Equipment Testing/Deployment Facility Response Team Evacuation Plan Immediate Actions Facility Diagram</p>	Red Plan
1.2	<i>Facility Information</i>	Annex A: A.1
1.2.1	Facility name and location	Annex A: A.1
1.2.2	Latitude and longitude	Annex A: A.1
1.2.3	Wellhead protection area	Annex A: A.1
1.2.4	Owner/operator	Annex A: A.1
1.2.5	Qualified Individual	Annex A: A.1
1.2.6	Date of Oil Storage Start-up	Annex A: A.2
1.2.7	Current operation	Annex A: A.2
1.2.8	Dates and Type of Substantial Expansion	Annex A: A.2

<u>§ 112</u> <u>APPENDIX F</u>	<u>REQUIREMENT</u> Facility-Specific Response Plan	<u>ICP</u> <u>SECTION</u>
1.3	<i>Emergency Response Information</i>	
1.3.1	Notification	11.3, Annex B
1.3.2	Response Equipment List	Annex F
1.3.3	Response Equipment Testing/Deployment	Annex N
1.3.4	Personnel	Annex D, Annex G
1.3.5	Evacuation Plans	Annex A, Annex C
1.3.6	Qualified Individual's Duties	6.2 Annex D: D.1 through D.3
1.4	<i>Hazard Evaluation</i>	
1.4.1	Hazard Identification	Annex E: E.1 and Tab 1
1.4.2	Vulnerability Analysis	Annex E: Tab 2
1.4.3	Analysis of the Potential for an Oil Discharge	Annex E: Tab 4
1.4.4	Facility Reportable Oil Spill History	Annex E: Tab 5
1.5	<i>Discharge Scenarios</i>	
1.5.1	Small and Medium Discharges	12.2.1, 12.2.2, Annex I: I.2 through I.3
1.5.2	Worst Case Discharge	12.2.3, Annex I: I.4
1.6	<i>Discharge Detection Systems</i>	
1.6.1	Discharge Detection By Personnel	10.1
1.6.2	Automated Discharge Detection	10.2
1.7	<i>Plan Implementation</i>	
1.7.1	Response Resources for Small, Medium, and Worst Case Discharges	11, 12, Annex I
1.7.1.2A	Oil Spill Response – Immediate Actions	11.2, 13.4

<u>§ 112</u> <u>APPENDIX F</u>	<u>REQUIREMENT</u> Facility-Specific Response Plan	<u>ICP</u> <u>SECTION</u>
1.7.2	Disposal Plans	13.5
1.7.3	Containment and Drainage Plan	9, Annex A, Annex E, Annex P
1.8	<i>Self-Inspection, Drills/Exercises, & Response Training</i>	
1.8.1	Facility Self-Inspection	Annex N
1.8.1.1	Tank Inspection	Annex N
1.8.1.2	Response Equipment Inspection	Annex N: N.7, Inspection Log
1.8.1.3	Secondary Containment Inspection	Annex N: Inspection Log
1.8.2	Facility Drills/Exercises	Annex M
1.8.2.1	Qualified Individual Notification Drill Log	Annex M: Drill Log
1.8.2.2	Spill Management Team Tabletop Exercise Log	Annex M: Exercise Log
1.8.3	Response Training	Annex M
1.8.3.1	Personnel Response Training Log	Annex M: Training Log
1.8.3.2	Discharge Prevention Meetings Log	Annex M: Meetings Log
1.9	<i>Diagrams</i>	
	Site Plan	Red Plan, Annex W
	Site Drainage	Red Plan, Annex W
	Evacuation	Red Plan, Annex W
1.10	<i>Security</i>	16
2.0	Response Plan Cover Sheet	Annex H: H.3 through H.5
3.0	Acronyms	Annex Q: Q.1 through Q.4
4.0	References	Annex R

**SECTION 2: ENVIRONMENTAL PROTECTION AGENCY
40 CFR PART 355, EMERGENCY PLANNING AND
COMMUNITY RIGHT-TO-KNOW ACT (EPCRA)**

<u>EMERGENCY PLANNING AND NOTIFICATION</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 355.20 (a)	The owner or operator of a facility subject to [40 CFR Part 355] shall provide notification to the SERC and the LEPC that it is a facility subject to the emergency planning requirements of [40 CFR Part 355] within 60 days after the facility first becomes subject to this subpart.	Annex S
§ 355.20 (b)	You must designate a facility representative who will participate in the local emergency planning process as a facility emergency response coordinator. You must provide notice of this facility representative.	12.3
§ 355.20 (c)	You must provide notice of any changes occurring at your facility that may be relevant to emergency planning to the LEPC with 30 days after the changes have occurred.	2.5.4
§ 355.40 (a)	The owner or operator of a facility subject to [40 CFR Part 355] shall immediately notify the community emergency coordinator for the Local Emergency Planning Committee of any area likely to be affected by the release ...	Red Plan, 2.7, 11.3, Annex B
	The notice ... shall include the following ...:	Red Plan, page
	(i) The chemical name or identity of any substance involved in the release.	R-12, Annex B
	(ii) An indication of whether the substance is an extremely hazardous substance.	
	(iii) An estimate of the quantity of any such substance released into the environment.	
	(iv) The time and duration of the release.	
	(v) The medium or media into which the release occurred.	
	(vi) Any known or anticipated acute or chronic health risks associated with the emergency ...	
	(vii) Proper precautions to take as a result of the release, including evacuation.	
	(viii) The name and telephone number of the person ... to be contacted for further information.	

SECTION 3: ENVIRONMENTAL PROTECTION AGENCY
40 CFR PART 264 SUBPART D, RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
CONTINGENCY PLAN
AND EMERGENCY
PROCEDURES
REQUIREMENT
ICP
SECTION

§ 264.51(a)	... owner or operator must have a contingency plan for the facility. The plan must be designed to minimize hazards to human health or the environment from fires, explosions, or any unplanned release of hazardous waste or constituents to air, soil, or surface water.	Red Plan, Annex S
§ 264.51(b)	... the plan must be carried out immediately whenever there is a fire, explosion, or release of hazardous waste or constituents which could threaten human health or the environment.	Red Plan, 2.7, 11
§ 264.52(a)	... the plan must describe actions facility personnel take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or constituents to air, soil, or surface water at the facility.	Red Plan, 11, 12, 13, Annex D
§ 264.52(b)	... if an SPCC or other contingency plan exists, that plan may be amended to incorporate hazardous waste management provisions . . .	1.7
§ 264.52(c)	... include arrangements agreed to by local police and fire departments, hospitals, contractors, and State and local emergency response teams to coordinate the emergency...	Red Plan, 2.8, Annex D, Annex E
§ 264.52(d)	... list names, addresses, and phone numbers of persons qualified as emergency coordinator.	Red Plan: pages RP-4 and RP-5, 6.2
§ 264.52(e)	... list of emergency response equipment with description, capabilities, and location.	Red Plan: page RP-8, Annex F
§ 264.52(f)	... include an evacuation plan with signal(s) and procedures used and evacuation routes.	Red Plan: pages RP-9 and RP-9, Annex C
§ 264.53	... the contingency plan and revisions is: (a) Maintained at the facility; and Submitted to local responders ...	2.4, Annex S

CONTINGENCY PLAN
AND EMERGENCY
PROCEDURESREQUIREMENTICP
SECTION

§ 264.54	... the plan is reviewed, and amended, if: (a) the facility permit is revised; (b) the plan fails in an emergency; (c) the facility changes operations that increases potential for fires, explosions, or releases of hazardous waste/constituents, or changes emergency response actions; (d) emergency coordinators change; or (e) emergency equipment changes.	2.5.1, 2.5.2
§ 264.55	... designated employee responsible for coordinating emergency response measures with authority to commit the resources.	Executive Summary
§ 264.56(a)	...in an emergency, the coordinator must: (1) activate alarms to notify personnel (2) notify agencies with response roles	Red Plan: pages RP-4 through RP-6, 6, 11, 12 Annex D: D.1 through D.4
§ 264.56(b) & (c)	... during a release, fire, or explosion, the coordinator must identify character, source, amount, and aerial extent of the release and assess hazards to health or environment	Red Plan, page RP-10, 6, 11, 12, 13 Annex D: D.1 through D.4
§ 264.56(d)	... the coordinator must report the emergency if areas outside the facility will be affected: (1) to local authorities if evacuation of local areas may be necessary (2) to the [Federal] On-Scene Coordinator or NRC and include: (i) name/phone number of reporter (ii) name and address of the facility (iii) time and type of incident (iv) material involved and amount (v) any injuries and extent (vi) hazards to health & environment.	Red Plan: pages RP-4, RP-5, RP-10, 6, 11.3.2, Annex B Annex D : D.1 through D.4,
§ 264.56(e)	... the coordinator must take measures necessary to ensure that fires, explosions, or releases do not occur, recur, or spread ...	13.4
§ 264.56(f)	... the coordinator monitors for leaks, pressure buildup, gas generation, or equipment failures ...	13.4
§ 264.56(g)	... the coordinator provides for treatment, storage, or disposal of recovered waste & contaminated materials	13.5
§ 264.56(h)	... the coordinator ensures that, in the affected area(s): (1) materials handled as per compatible (2) emergency equipment is cleaned	13.4

**CONTINGENCY PLAN
AND EMERGENCY
PROCEDURES**

REQUIREMENT

**ICP
SECTION**

§ 264.56(i)	... owner/operator notifies the RA, and appropriate State and local authorities, that the facility is in compliance [with 40 CFR 264.56(h)] before operations resume ...	11.3.2, 13.4
§ 264.56(j)	... owner/operator submits a written report on the incident to the RA [within 15 days] ...	17.1.2

**SECTION 4: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
29 CFR PART 1910, SAFETY AND HEALTH STANDARDS**

<u>EMPLOYEE EMERGENCY AND FIRE PREVENTION PLANS</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 1910.38(a)	<i>An employer must have an emergency action plan whenever an OSHA standard in this part requires one.</i>	Red Plan
§ 1910.38(b)	<i>An emergency action plan must be in writing, kept in the workplace and available to employees for review</i>	Annex S
§ 1910.38(c)(1)	<i>An emergency action must include at a minimum procedures for reporting a fire or other emergency</i>	Red Plan, Annex B
§ 1910.38(c)(2)	Procedures for emergency evacuation, including type of evacuation and exit route assignments.	Red Plan: pages RP-8 and RP-9, 12.4, Annex C
§ 1910.38(c)(3)	Procedures to be followed by employees who remain to operate critical plant operations before they evacuate.	Annex C: C.8
1910.38(c)(4)	Procedures to account for all employees after evacuation	Annex C: C.5
1910.38(c)(5)	Procedures to be followed by employees performing rescue or medical duties; and	Annex O: O.3
1910.38(c)(5)	The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan.	Red Plan, Annex S
§ 1910.38(d)	<i>Employee Alarm System</i> An employer must have and maintain an employee alarm system. The employee alarm system must use a distinctive signal for each purpose and comply with the requirements in 1910.165.	1.7
§ 1910.38(e)	<i>Training</i> . . . employer must designate and train employees to assist in safe and orderly evacuation of other employees...	Annex M

<u>HAZWOPER AND EMERGENCY RESPONSE</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 1910.120(k)	<i>Decontamination.</i> ... provide procedures for decontamination, ...	Annex O : O.3. 13.5.6
§ 1910.120(k)(2)(i)	A decontamination procedure shall be developed, communicated to employees and implemented before any employees or equipment may enter areas on site where potential for exposure to hazardous substances exist.	Annex O : O.3. 13.5.6
§ 1910.120(k)(2)(ii)	<i>Standard operating procedures shall be developed to minimize employee contact with hazardous substances or with equipment that has contacted hazardous substances.</i>	Annex O : O.3. 13.5.6
§ 1910.120(k)(2)(iii)	<i>All employees leaving a contaminated area shall be appropriately decontaminated....</i>	Annex O : O.3. 13.5.6
§ 1910.120(k)(2)(iv)	<i>Decontamination procedures shall be monitored by the site safety and health supervisor to determine their effectiveness...</i>	Annex O : O.3. 13.5.6
§ 1910.120(l)	<i>Emergency response by employees at uncontrolled hazardous waste sites.</i> ... procedures for response actions ...	N/A
§ 1910.120(p) (8)(i)	<i>Emergency response plan.</i> ... shall be developed and implemented by all employers ...	Red Plan, Annex A, Annex C, Annex O
§ 1910.120(p) (8)(ii)	<i>Elements of an emergency response plan.</i> (A) pre-emergency planning and coordination, (B) personnel roles, lines of authority; (C) emergency recognition & prevention; (D) safe distances & places of refuge; (E) site security & control; (F) evacuation routes & procedures; (G) decontamination procedures; (H) emergency medical treatment/first aid; (I) emergency alerting & response actions; (J) critique of response follow-up; and (K) PPE & emergency equipment.	Red Plan, 12 6 9, 10, 11.1 Annex C 11.4.7 Annex A, Annex C 13.5.6 11.4.8 Red Plan 17.2 Annex F
§ 1910.120(p) (8)(iii)	<i>Training.</i> ... for emergency response employees before an emergency.	Annex M

<u>HAZWOPER AND EMERGENCY RESPONSE</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 1910.120(p) (8) (iv)	<p><i>Procedures for handling emergency incidents.</i> ... elements to be included:</p> <ul style="list-style-type: none"> topography, layout, prevailing weather and notification procedures; integrated with local emergency plans; rehearsed regularly; reviewed/amended periodically; employee alarm system installed; incident evaluation and response actions 	<p>Red Plan, Annex W 11.3 11.4.13, Annex V Annex M 2.5 11, 13.4, Annex O Red Plan, 11, Annex B</p>
§ 1910.120(q) (1)(2)(i-xii)	<p><i>Emergency Response Plan.</i> ... develop a plan that addresses: items in § 1910.120(p)(8)(ii) and local emergency response plans integration.</p>	<p>Annex T, NA</p>
§ 1910.120(q) (3)(i-x)	<p><i>Procedures for handling emergency response.</i> ... individual in charge identification and duties, ICS set-up, evaluation of incident, response actions, safety controls, back-up personnel ...</p>	<p>6, 11, Annex D</p>
§ 1910.120(q) (4-11)	<p><i>Skilled support personnel; Specialist employees; Training; Trainers, Refresher training; Medical surveillance and consultation; Chemical protective clothing; Post-emergency response operations.</i></p>	<p>Annex G, Annex K, Annex M</p>
§ 1910.165 (b)(1)(4)	<p><i>Employee alarm systems.</i> ...equipment to provide warning of emergency action ... recognized above ambient noise or light ... distinctive ... employees briefed on means of reporting emergencies</p>	<p>11, 13.4, Annex A, Annex O</p>
§ 1910.165 (d)	<p><i>Maintenance and testing.</i> ... employer shall assure systems are maintained and tested ...</p>	<p>Annex N</p>

**SECTION 5: ENVIRONMENTAL PROTECTION AGENCY
40 CFR PART 68, CHEMICAL ACCIDENT PREVENTION PROVISIONS**

<u>HAZARD ASSESSMENT, PREVENTION PROGRAMS, AND EMERGENCY RESPONSE</u>	<u>REQUIREMENT</u>	<u>ICP SECTION</u>
§ 68.20-36	Offsite consequence analysis, worst case release scenario analysis, alternative release scenario analysis	12.2, Annex E, Annex I
§ 68.42	Five-year accident history	Annex E: Tab E.4
§ 68.50	Hazard review	Annex E
§ 68.67	Process hazards analysis	Annex A, Annex E, Annex J
§ 68.81 (Program 3)	Incident investigation	RED PLAN: page RP-13, Annex B
§ 68.95(a)(1)(i)	... Procedures for informing public and local response agencies about accidental releases.	RED PLAN, Annex B, Annex L
§ 68.95(a)(1)(ii)	... proper first-aid and emergency medical treatment for accidental exposures;	Annex J, Annex O
§ 68.95(a)(1)(iii)	... emergency response procedures for an accidental release of a regulated substance.	RED PLAN, 13.4, Annex O
§ 68.95(a)(2)	... response equipment inspections, testing, and maintenance procedures	RED PLAN: RP-6 and RP-7, Annex F
§ 68.95(a)(3)	... employee training in emergency actions.	Annex M
§ 68.95(a)(4)	... plan review and update procedures.	2.5, 17
§ 68.95(b)	... the plan complies with other Federal contingency plan regulations.	1
§ 68.95(c)	... there is coordination with the community emergency response planners and their plan.	2, 12.3 Annex C

ANNEX U

Disposal Plan

U.1 General: This Disposal Plan provides hazardous waste (HW) management guidance and procedures for handling HW from generation to disposal. The guidance addresses operating procedures that comply with Federal, State, local and Air Force regulations and requirements. Information is provided on the management, handling, generation, transportation, storage, and disposal of all HW from Tinker AFB. These guidelines will also apply to fuels and contaminated materials recovered during a spill on Base. This Disposal Plan shall be reviewed and understood by management personnel. Environmental compliance is an important issue. Failure to comply with established HW requirements might result in fines or imprisonment. OC-ALC-TAFB Instruction 32-7004, *Hazardous Waste Management Instruction*, paragraph 4.0 outlines enforcement responsibility and specifically highlights individual, supervisory, and organizational liability for all Tinker AFB personnel.

U.2 Environmental Regulations: Regulatory requirements have set standards for the procurement, generation, transportation, treatment, storage, disposal, and documentation of HW. These requirements specify the need for sound management and handling of HW from “cradle to grave.” The Code of Federal Regulations (CFR) and Air Force policies identify specific methods and procedures for the management and handling of HW and guidelines for a waste Disposal Plan.

U.3 Hazardous Waste Management Overview: Since 1979, disposal of HW or of any solid waste has not been allowed on Tinker AFB. The current management of HW on Base is therefore based upon immediate transport to an off-site facility or accumulation and storage prior to transport. Most wastes that are accumulated and stored on-site are disposed of through DRMO and its contractor.

U.4 Hazardous Waste Management Responsibilities: All Tinker AFB personnel are responsible for HW management compliance. Disposal by DRMO or by contractors does not remove the responsibility to comply with applicable laws and regulations. Tinker AFB Environmental Management Branch has the responsibility for overall management of the HW program. Each generating organization is responsible for conducting proper management and pre-disposal practices when managing its HW.

U.5 Hazardous Waste Identification and Characterization: Generators of solid waste must determine if the waste is hazardous. Refer to the regulations to determine if the waste is listed as a HW or if it is excluded. If the waste is not listed or is excluded, then it must be tested or determined whether or not it has HW characteristics. Generators should be able to identify their wastes through Safety Data Sheets (SDS) / Material Safety Data Sheets (MSDS), label information, and knowledge of the waste or waste process. Laboratory testing and analysis may be necessary for unknowns or when there is insufficient information about the waste process.

U.6 Hazardous Waste Management

U.6.1 Accumulation and Storage: Tinker AFB bulk storage facilities may generate wastes during tank cleaning, painting, and other maintenance operations. Tank cleaning sludge, scale, wastewater, paint chips and rust will be recovered and picked-up by a licensed HW disposal company. Waste will not be retained and stored for more than 90 days. The most common HW generated at the Bulk Fuel Facilities is tank bottoms, a mixture of JP-8 and water, which is drained from each bulk AST and collected. Other hazardous wastes generated by facility operations less frequently are absorbent materials and/or pads.

- HW stored on Base will be placed in an appropriate container. The container must be free from defects or deterioration to ensure safe storage and must be compatible with the HW being stored. Containers will be kept closed unless adding or removing waste and marked as “hazardous waste.” The containers will not be overfilled, leaving adequate space at the top for expansion. HW container storage areas will be inspected daily and a record maintained. Records will be kept on file for at least one year.
- Tank bottom water collected from fuel storage tanks is tested for hazardous characteristics. A licensed treatment and disposal company is then contracted for offsite recycling or disposal of the bottom water and it is shipped as HW to an approved temporary storage disposal (TSD) facility if required.

U.6.2 Marking, Labeling, and Placarding: In addition to marking containers or packages used for storing HW on Base, a generator must mark each HW package or container of less than 110 gallons before transporting or offering it for transport offsite. The package or container must be of an approved type for transportation or shipment. The marking will be in accordance with Federal and State regulations and contain the type of information indicated below. The marking may be locally generated or of a preprinted adhesive type.

HAZARDOUS WASTE
Federal Law Prohibits Improper Disposal
If found, contact the nearest police, public safety authority,
or the US Environmental Protection Agency

Generator’s Name and Address:
Manifest Document Number:

- Before transporting or offering HW for transport offsite, a generator must label each package or container in accordance with the regulations. The generator must fill out all the information on the label.
- Generally the transporter will have the appropriate placards for the vehicle hauling HW. However, the generator must ensure the transporter has the placards or offer the initial transporter the appropriate placards as required in the applicable regulations.

- Hazardous wastes are analyzed prior to disposal off site by a permitted HW transporter.

U.6.3 Manifesting Hazardous Waste Shipments: The hazardous waste manifest is a critical document used to track HW from generation to disposal. In order to ship HW for disposal, the generator must prepare a HW manifest or the destination state's manifest, if required and supplied. All information, including the State-optional items, will be completed on the form.

U.7 Recordkeeping and Reports: Copies of all HW manifests will be kept for a minimum of three years. Copies of any State reports will also be kept for a minimum of three years. Results of any testing, waste analysis, or determinations made will be kept for 10 years. Periods of retention are automatically extended during the course of any enforcement actions of regulated activities or as requested by a State or EPA. When HW are generated and removed from the Base, an annual report is required by the State. The report is based on calendar year actions. Information provided includes efforts taken to reduce HW.

U.8 Personnel Training: Base personnel who handle or manage HW will be trained to a level consistent with their duties and responsibilities. Supervisors must understand the responsibilities incurred as a generator of HW. HW training should include the following:

- Introduction to RCRA
- Definition of HW
- Examples of HW generated on Base
- RCRA violations and enforcement actions
- Accumulation point management
- Container management, marking, labeling
- Spill response procedures and equipment
- Safety and health
- Manifests and record keeping (key personnel)

Personnel completing HW management training will have their training record documented. The record should indicate the type of training and be kept on file until closure of the Base or three years from the last date of employment. Information on HW training for responsible personnel should include name, title, job, description, type, and amount of introductory training received.

U.9 Hazardous Waste Spills: HW storage areas shall be operated in a manner to minimize any possibility of a fire, explosion, or release of a HW that could threaten human health or the environment. If a spill occurs, the steps to follow are the same as those set forth in this Integrated Contingency Plan. Emergency procedures and notifications will be posted at HW storage sites.

U.10 Technical Support and Points of Contact: The following agencies can provide additional HW management program support:

- National Response Center (NRC) 1-800-424-8802
- USA Center for Health Promotion & Preventative Medicine (410) 671-3651/3652

**HAZARDOUS WASTE MANAGEMENT
 WASTE COLLECTION/STORAGE SITE
INSPECTION CHECKLIST**

DAILY INSPECTION SHEET			
HW STORAGE AREA	YES	NO	CORRECTIVE ACTION NEEDED
AREA:			
Warning signs present			
Clean and neat			
Aisle space adequate			
CONTAINERS:			
Compatible with waste			
Closed and tightly sealed			
Properly labeled			
Segregated if incompatible			
Accumulation date on label			
Stored less than 90 days			
EMERGENCY RESPONSE:			
Response plan on-site			
Equipment available and accessible			
Fire extinguisher in area			
Alarm or communications device available			
Storage Site Name/Location:			
NAME OF INSPECTOR:			
SIGNATURE:		DATE:	

- Inspections must be conducted daily.
- The inspector must sign and date the form as indicated.
- The form must be kept on file for three years at Tinker AFB.

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ANNEX V**State Plan Specific Requirements**

V.1 *State of Oklahoma Emergency Operations Plan:* The State of Oklahoma Letter of Promulgation, December 2009, puts into effect and promulgates the *Oklahoma Emergency Operations Plan*. The plan assigns tasks and responsibilities to State departments and agencies and establishes a broad concept for conducting response and recovery operations if an emergency or disaster threatens or occurs anywhere in the State. The Tinker Air Force Base *Integrated Contingency Plan (ICP)* is consistent with these requirements. The basic document of the *Oklahoma Emergency Operations Plan* encompasses a basic plan and 15 Emergency Support Functions (ESF). Each ESF covers those phases of management (mitigation, preparedness, response, and recovery), the organization and assignment of responsibilities, direction and control, and continuity of government.

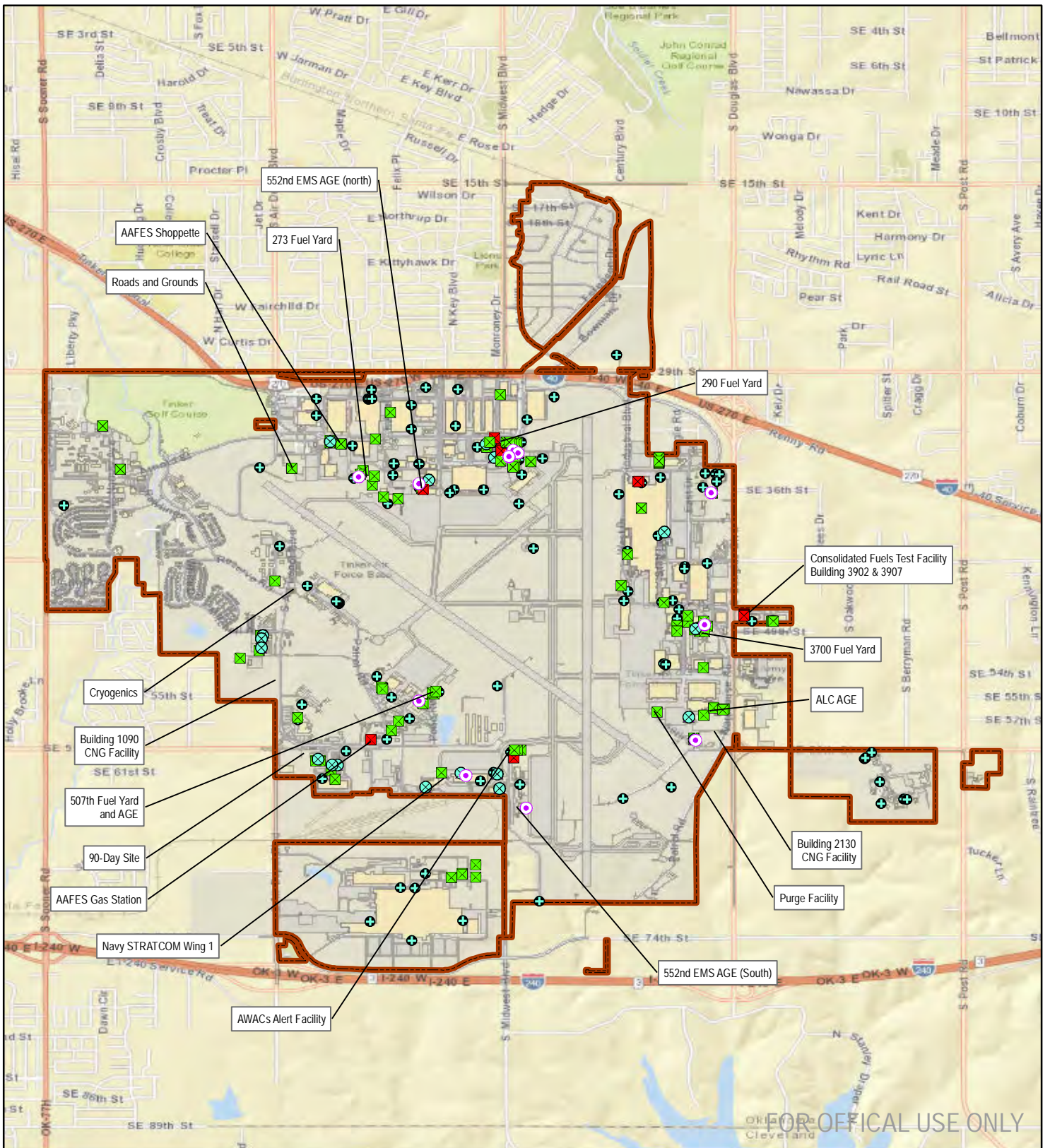
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ANNEX W

Facility Maps

Figure W.1	Oil Storage Location Map
Figure W.2	Hazardous Storage Location Map
Figure W.3	Pipeline Location Map
Figure W.4	Facility Mapbook

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LEGEND

- Aboveground Storage Tanks
- Underground Storage Tanks
- Drum
- Bowser/Mobile Refueler
- Drums
- Generators
- Buildings
- Base Boundary

0 3,000 6,000

Feet

Vicinity Map

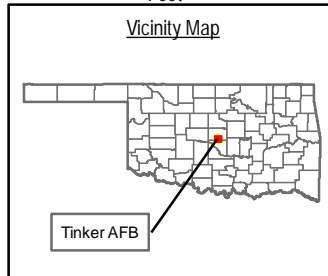
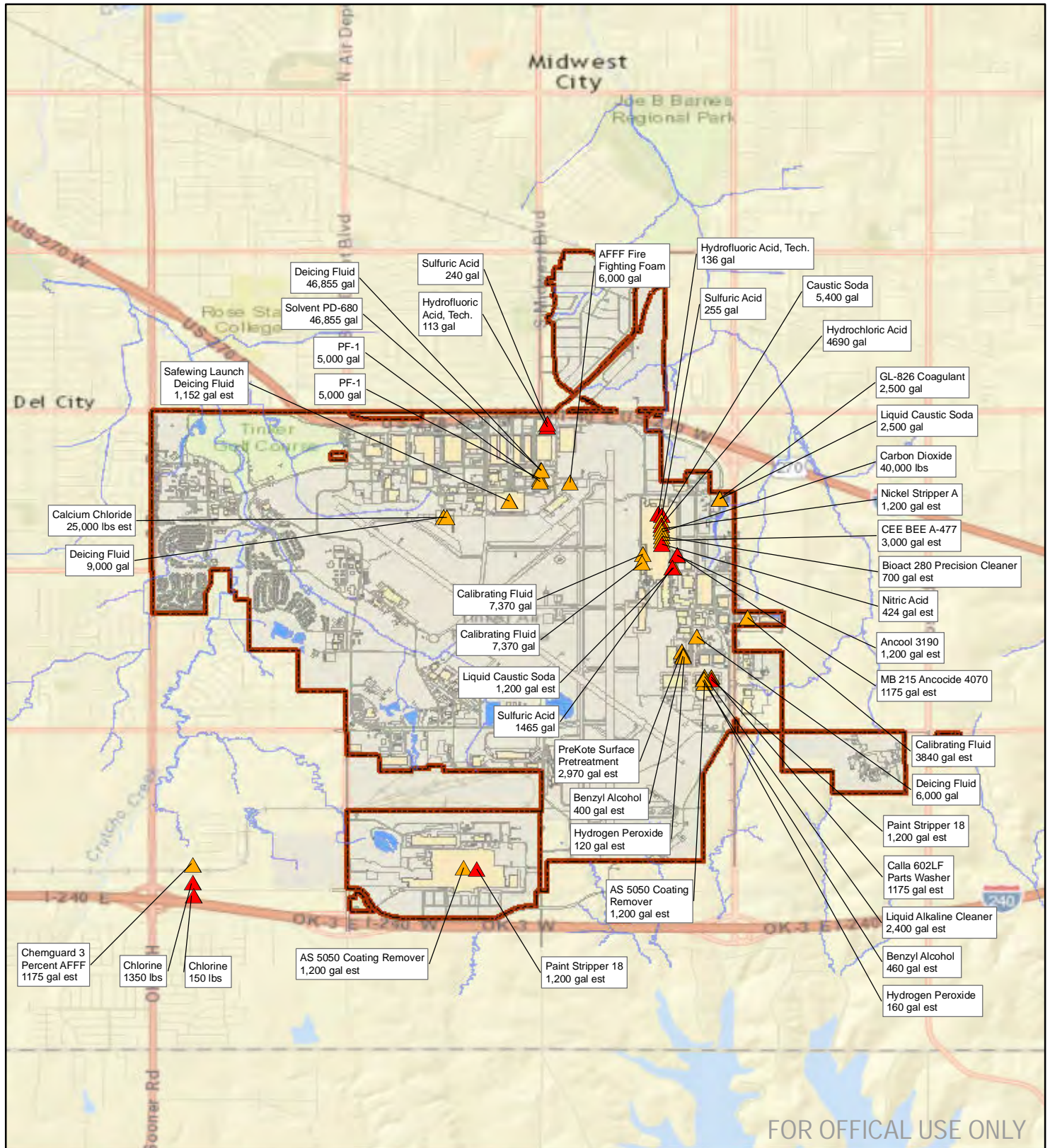


FIGURE W.1
BULK STORAGE LOCATION MAP
TINKER AIR FORCE BASE
OKLAHOMA

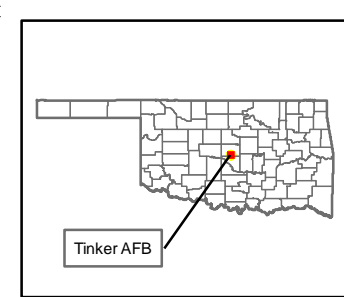
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- LEGEND**
- Hazardous Substance
 - Extremely Hazardous Substance
 - Pond Areas
 - Creek Areas
 - Base Boundary
 - Existing Buildings

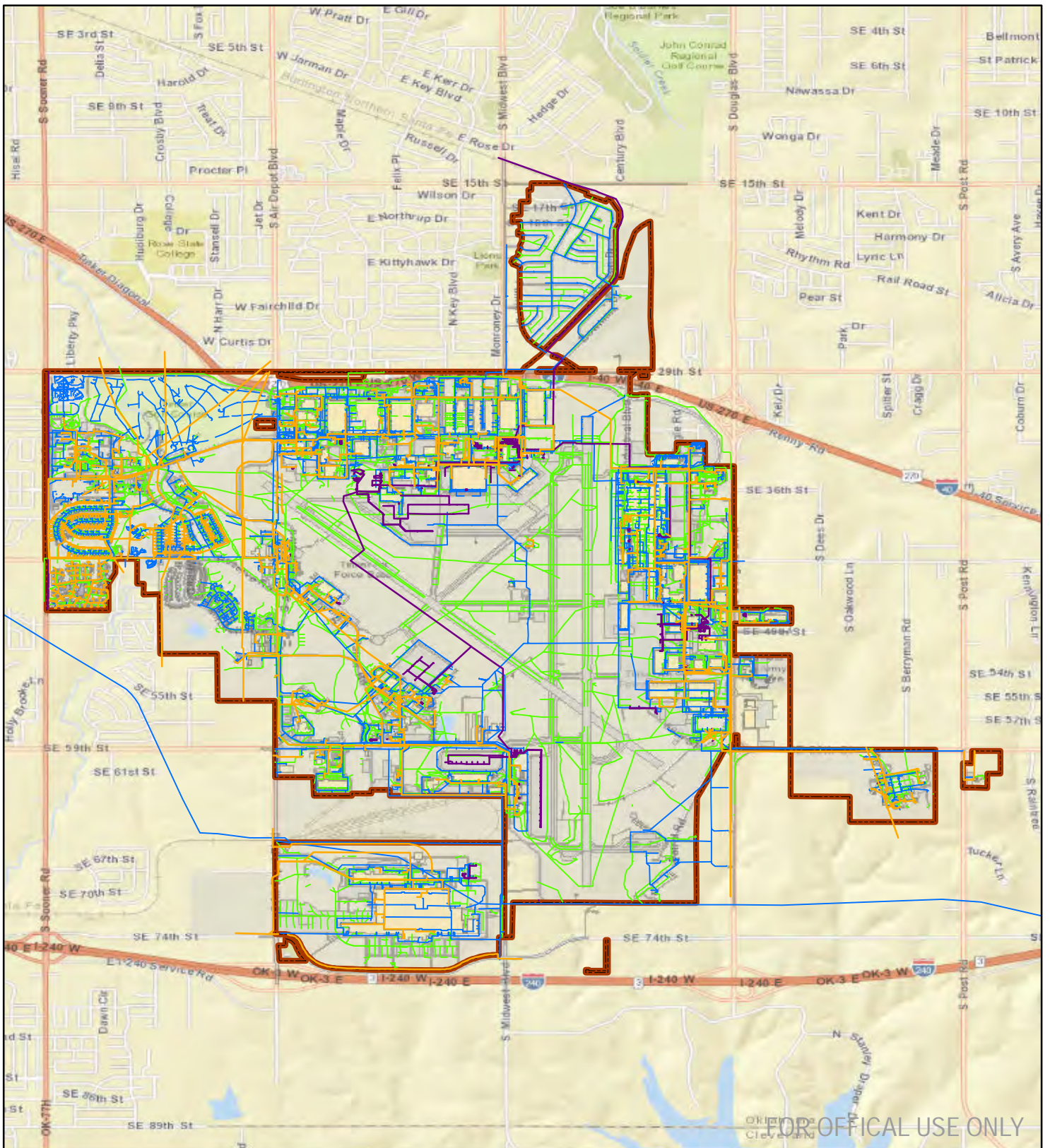


**FIGURE W.2
HAZARDOUS STORAGE
LOCATION MAP
TINKER AIR FORCE BASE
OKLAHOMA**

SOURCE:

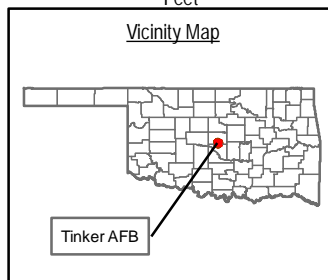
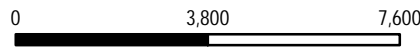
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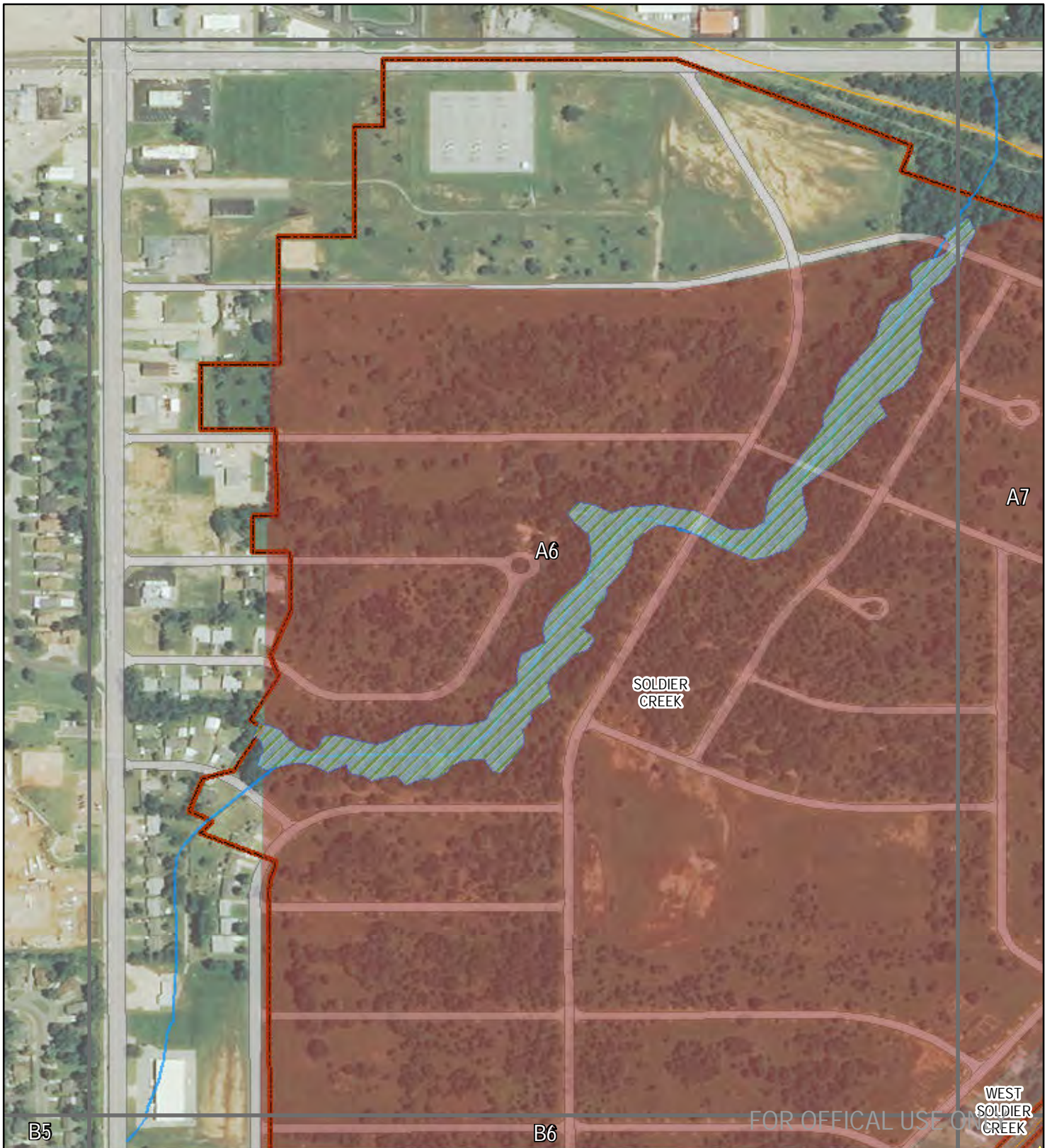
- Natural Gas Lines
- Fuel Line
- Wastewater Line
- Water Lines
- Buildings
- Base Boundary



**FIGURE W.3
PIPELINE LOCATIONS
TINKER AIR FORCE BASE
OKLAHOMA**

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LEGEND

- Electrical Transformer
- Fuel Lines
- Base Boundary
- Welland Areas
- River/Stream
- Pavement Branch

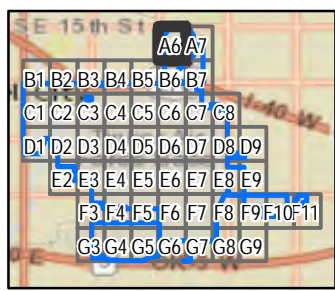









FIGURE W.4
FACILITY BASE MAP
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TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

-  Electrical Transformer
-  Fuel Lines
-  Base Boundary
-  Wetland Areas
-  River/Stream
-  Existing Buildings
-  Pavement Branch

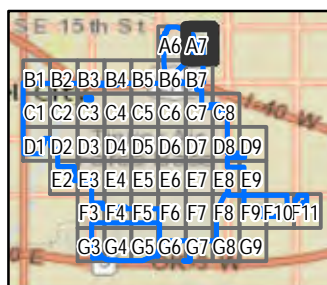
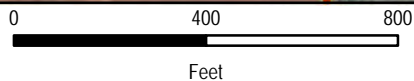
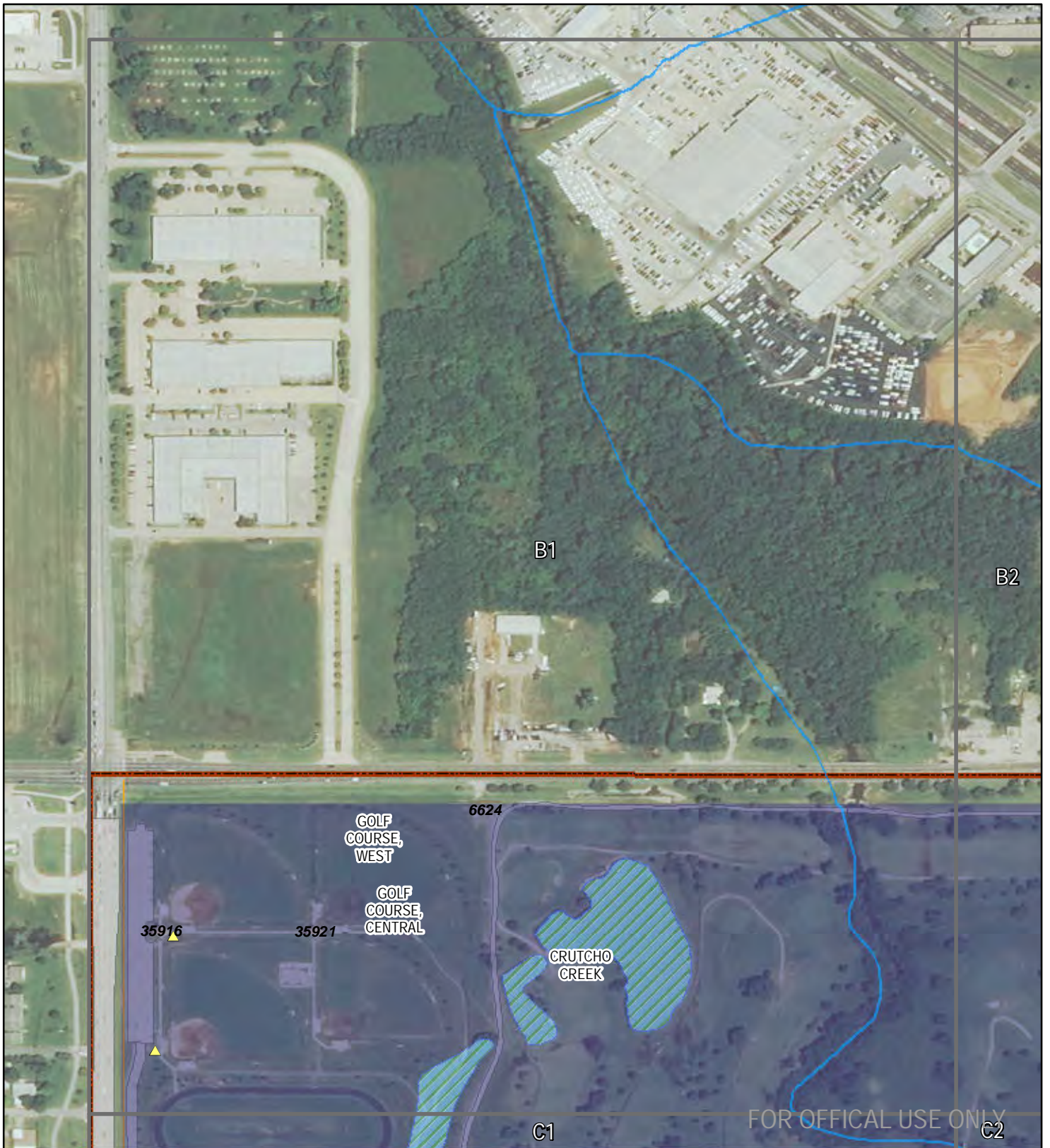


FIGURE W.4
FACILITY BASE MAP
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TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

- Electrical Transformer
- Fuel Lines
- Base Boundary
- Wetland Areas
- Pond Areas
- River/Stream
- Existing Buildings
- Pavement Branch

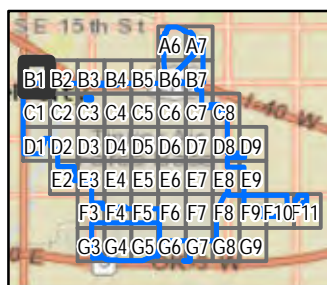
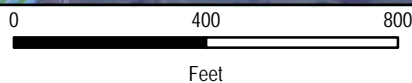


FIGURE W.4
FACILITY BASE MAP
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TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

- Base Boundary
- Wetland Areas
- Pond Areas
- River/Stream
- Pavement Branch

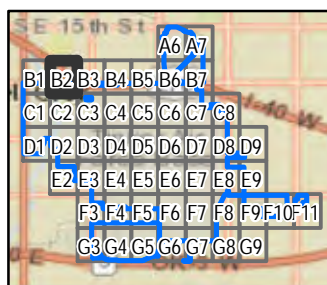
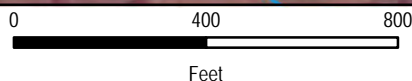
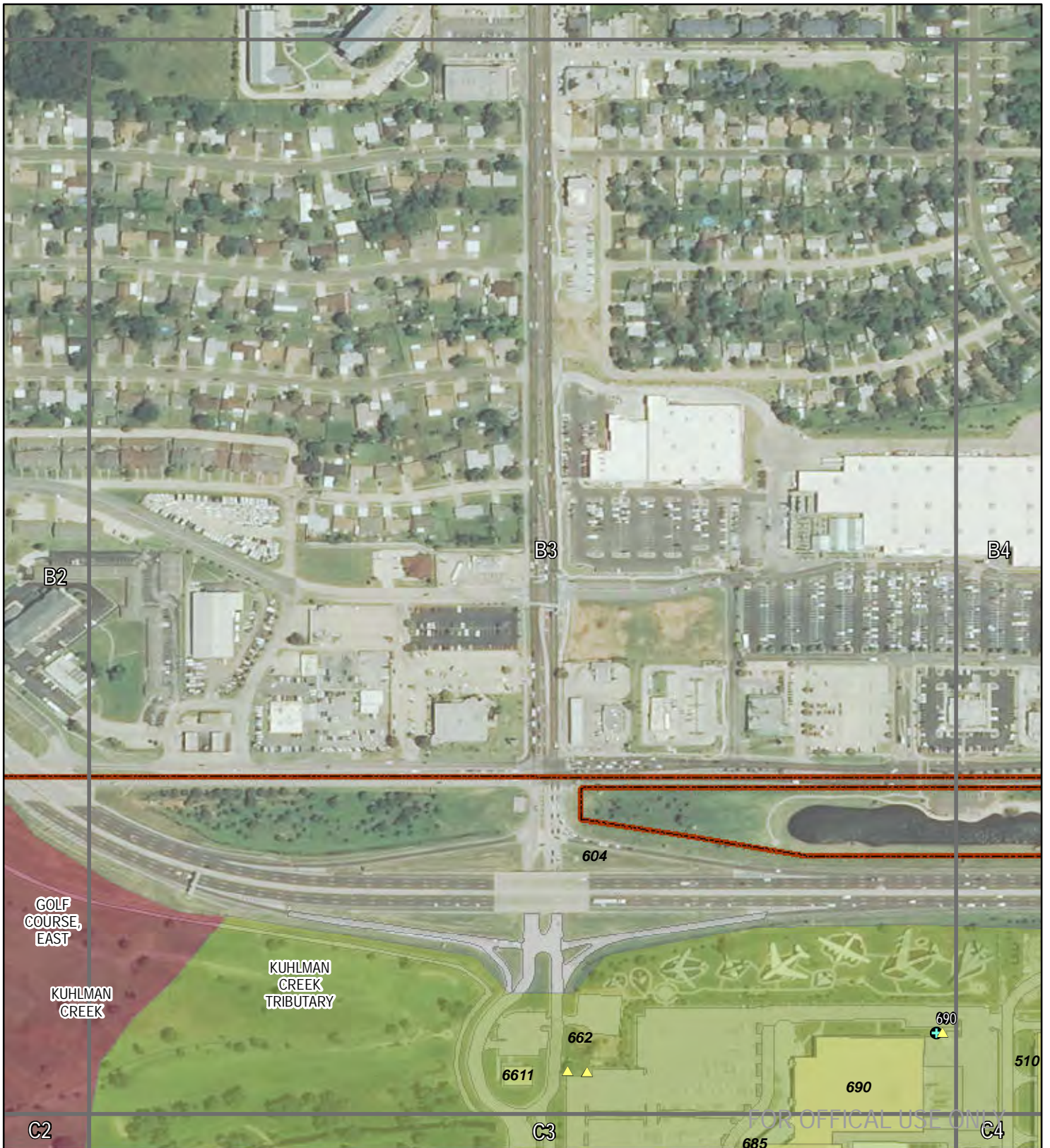


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: B2
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- Electrical Transformer
- Generators
- Base Boundary
- Existing Buildings
- Pavement Branch

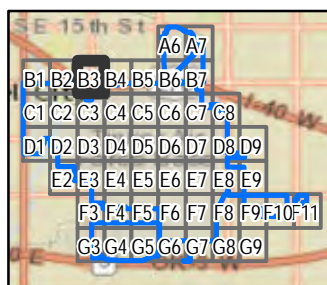
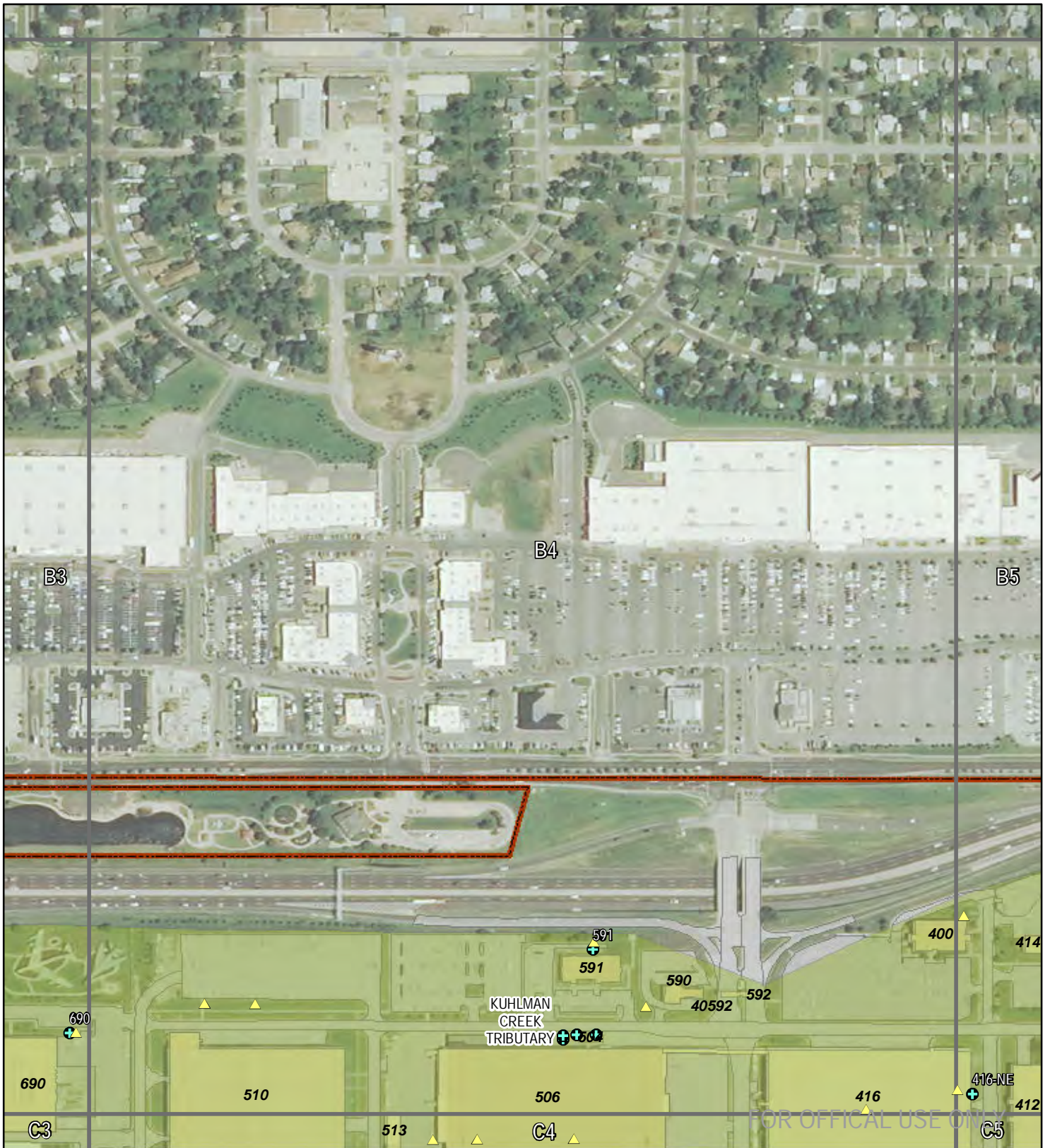


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: B3
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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- LEGEND**
- Electrical Transformer
 - Generators
 - Fuel Lines
 - Base Boundary
 - Existing Buildings
 - Pavement Branch

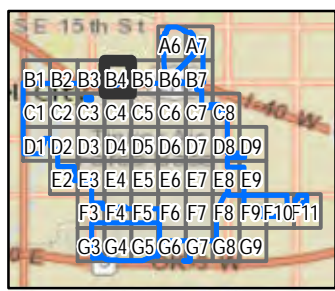
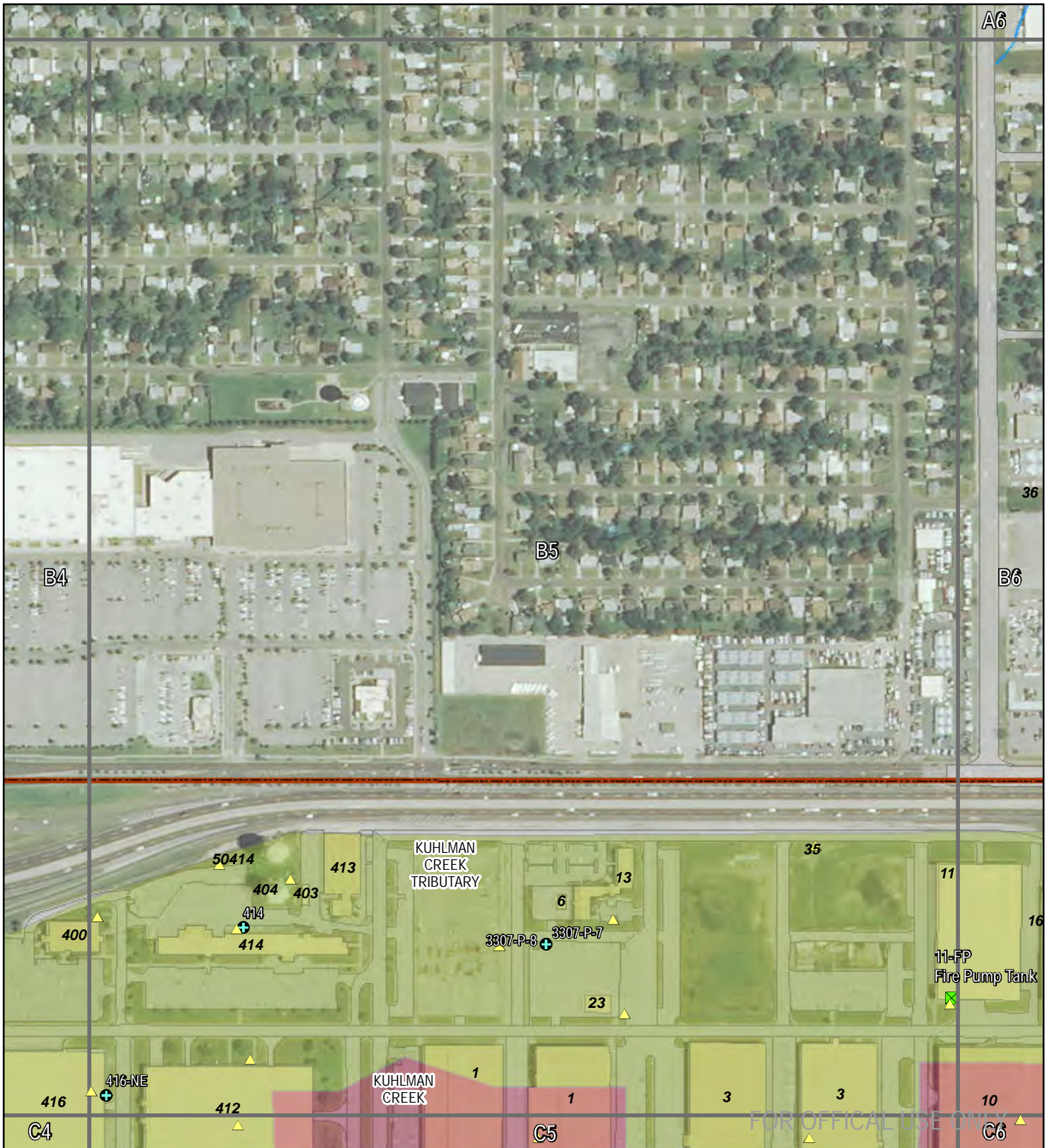


FIGURE W.4
 FACILITY BASE MAP
 MAP BOOK PAGE: B4
 TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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LEGEND

- Electrical Transformer
- Aboveground Storage Tanks
- Generators
- Base Boundary
- River/Stream
- Existing Buildings
- Pavement Branch

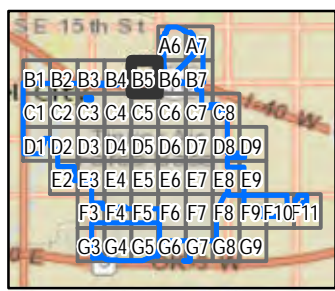
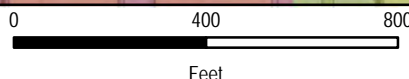
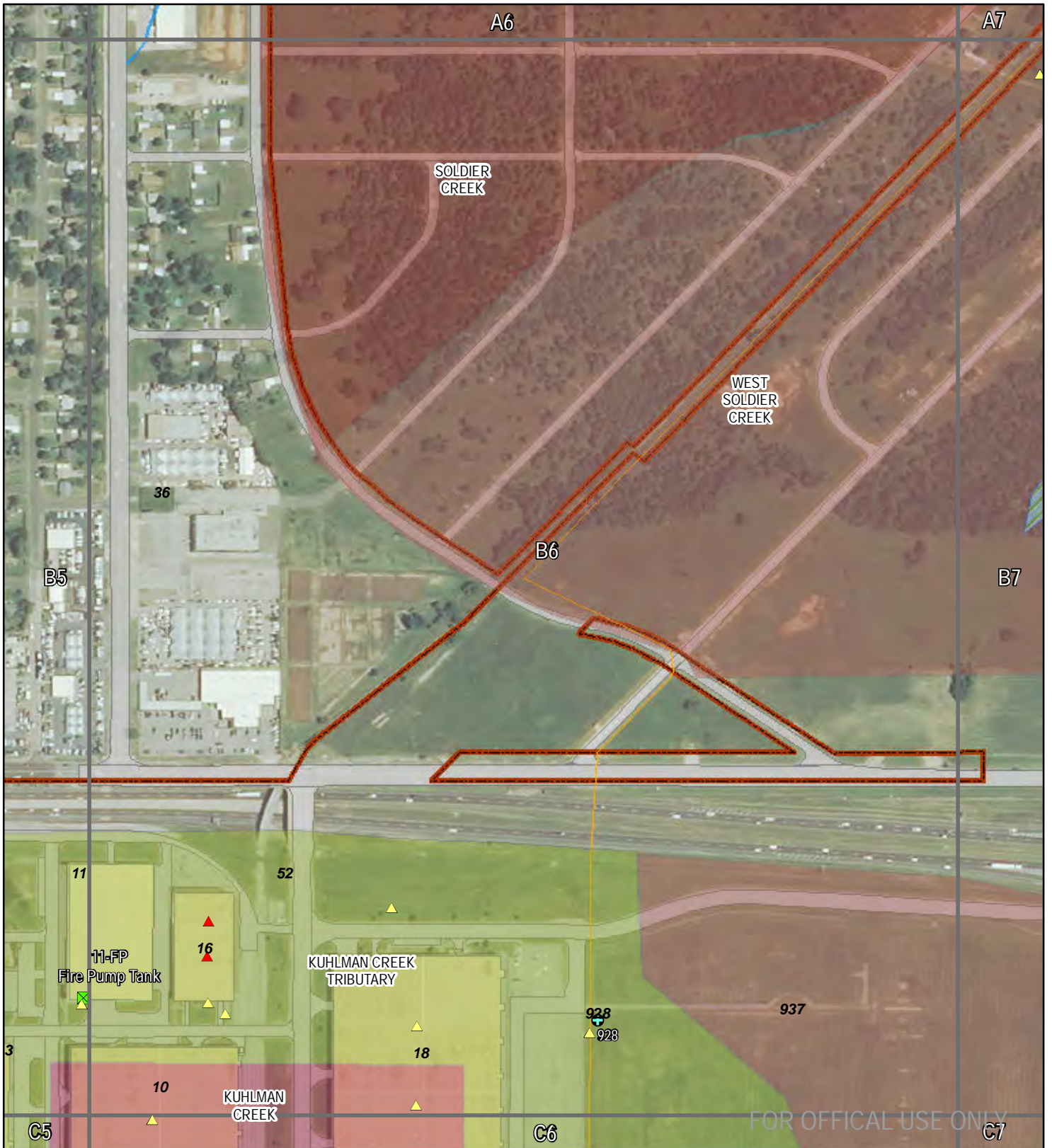


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: B5
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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LEGEND

- ▲ Electrical Transformer
- ▲ Extremely Hazardous Substance
- Aboveground Storage Tanks
- ⊕ Generators
- Fuel Lines
- Base Boundary
- Wetland Areas
- River/Stream
- Existing Buildings
- Pavement Branch

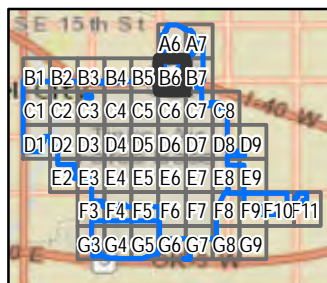
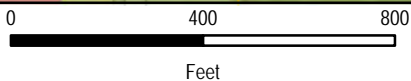
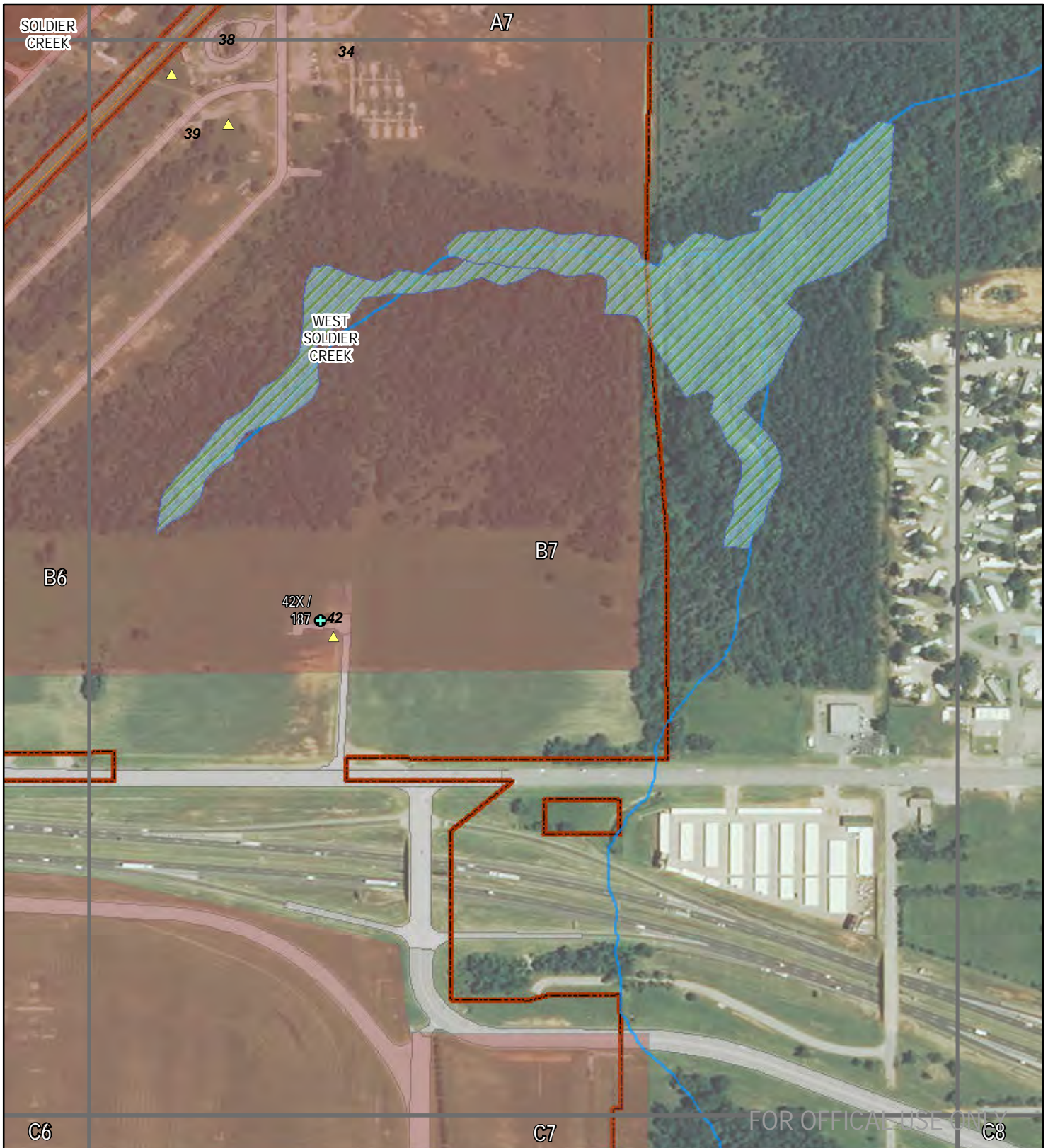


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: B6
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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LEGEND

- Electrical Transformer
- Generators
- Fuel Lines
- Base Boundary
- Wetland Areas
- River/Stream
- Existing Buildings
- Pavement Branch

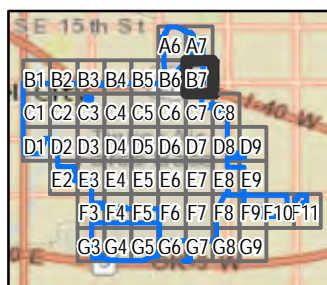
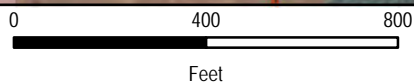
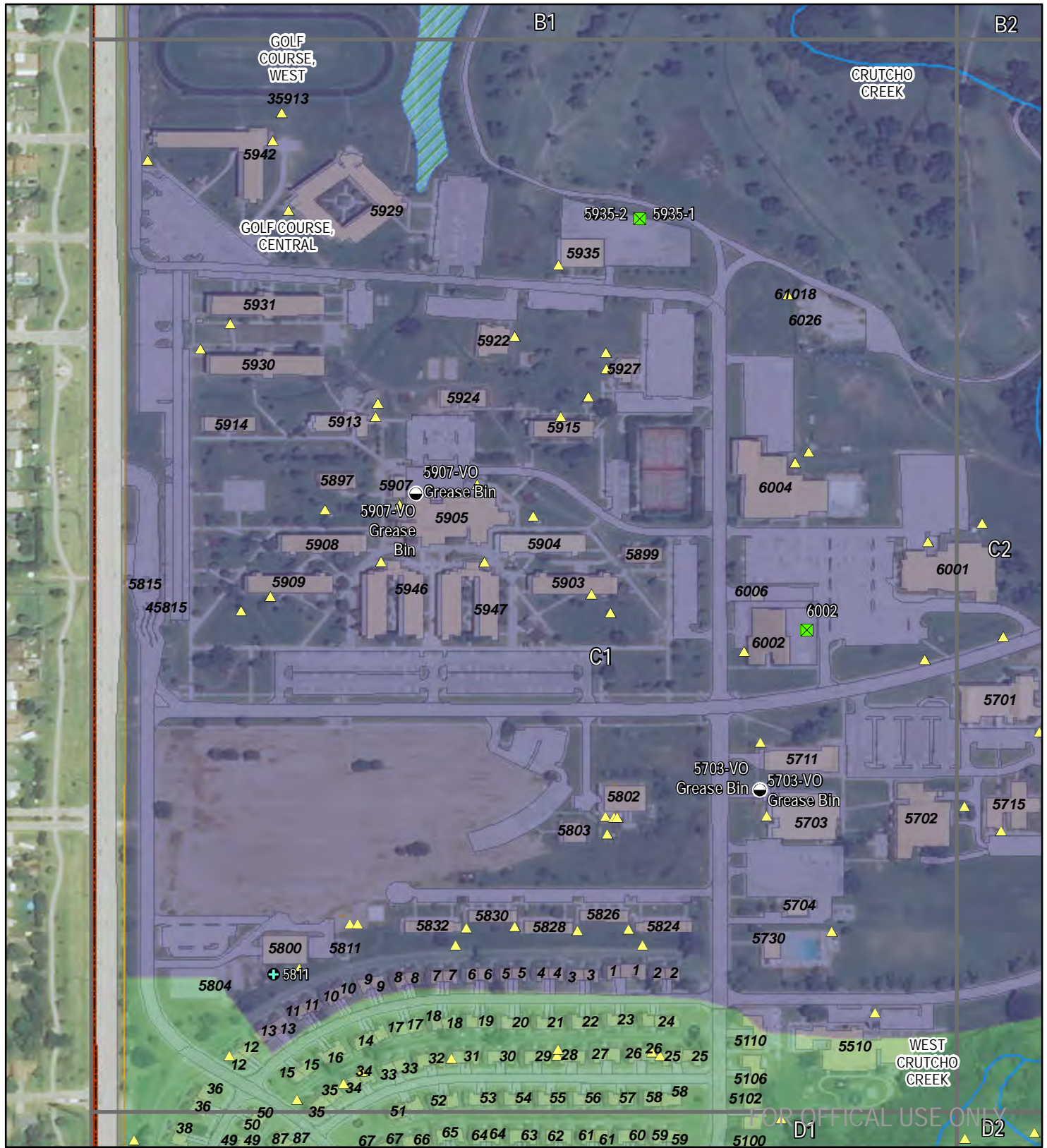


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: B7
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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- LEGEND**
- ▲ Electrical Transformer
 - Aboveground Storage Tanks
 - ⊕ Generators
 - Fats, Oils and Greases
 - Fuel Lines
 - ▭ Base Boundary
 - ▨ Wetland Areas
 - ▭ Pond Areas
 - ▭ River/Stream
 - ▭ Existing Buildings
 - ▭ Pavement Branch

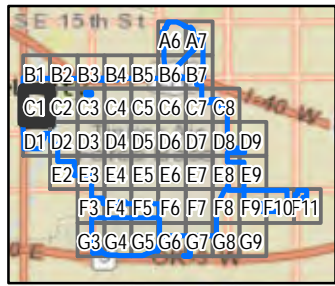


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: C1
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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- LEGEND**
- ▲ Electrical Transformer
 - Fats, Oils and Greases
 - ▭ Base Boundary
 - ▨ Wetland Areas
 - River/Stream
 - ▭ Existing Buildings
 - ▭ Pavement Branch

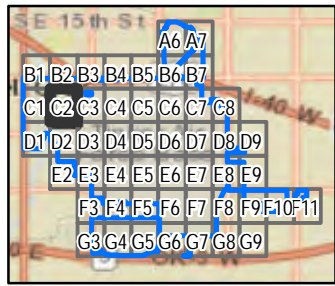
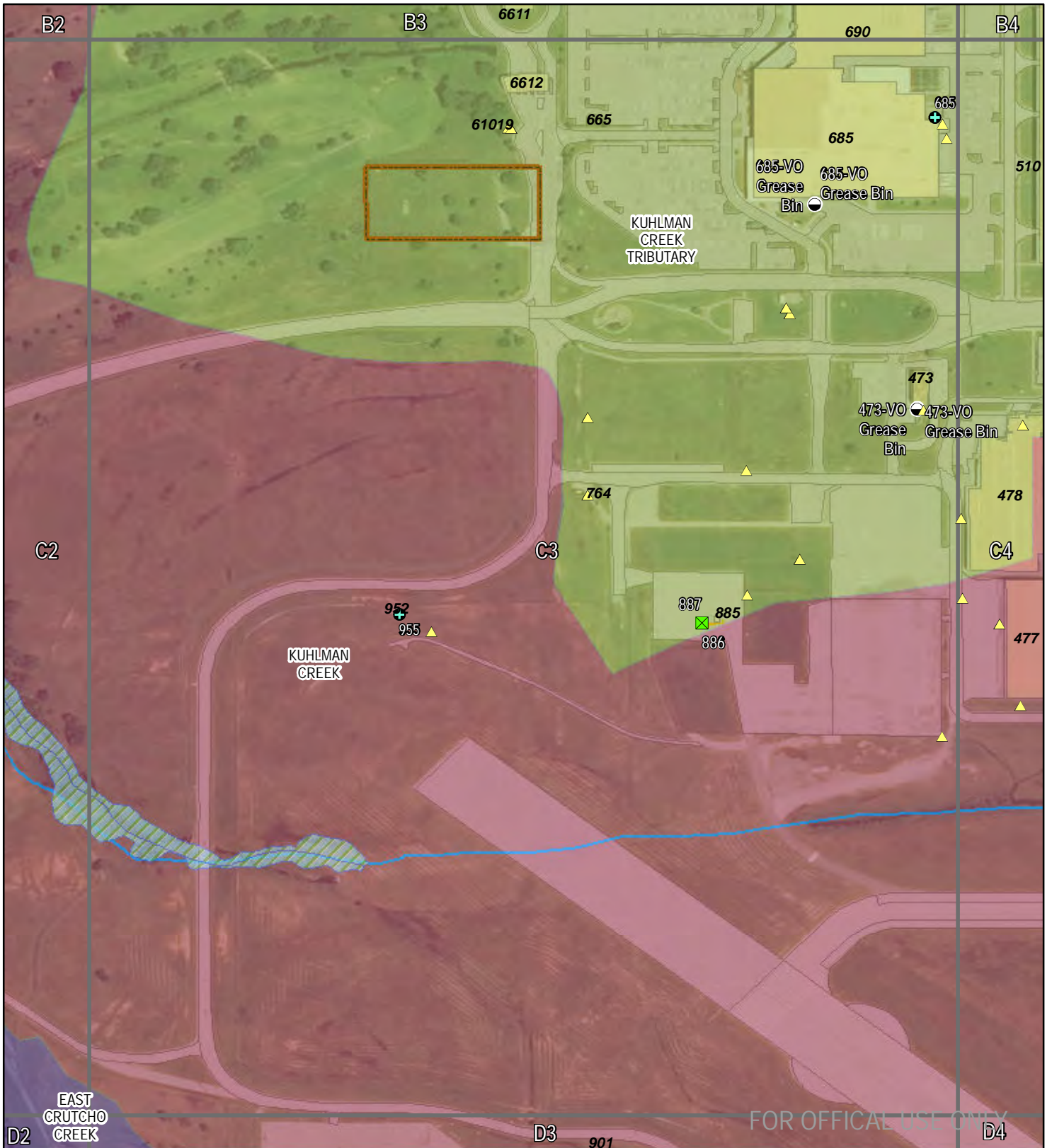


FIGURE W.4
 FACILITY BASE MAP
 MAP BOOK PAGE: C2
 TINKER AIR FORCE BASE, OKLAHOMA

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FOR OFFICIAL USE ONLY

LEGEND

- ▲ Electrical Transformer
- Aboveground Storage Tanks
- ⊕ Generators
- Fats, Oils and Greases
- Fuel Lines
- ▭ Base Boundary
- ▨ Wetland Areas
- River/Stream
- ▭ Existing Buildings
- ▭ Pavement Branch

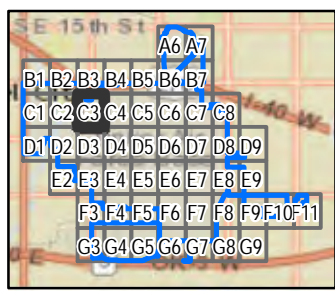
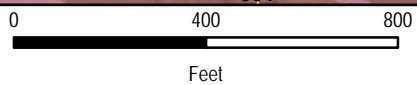
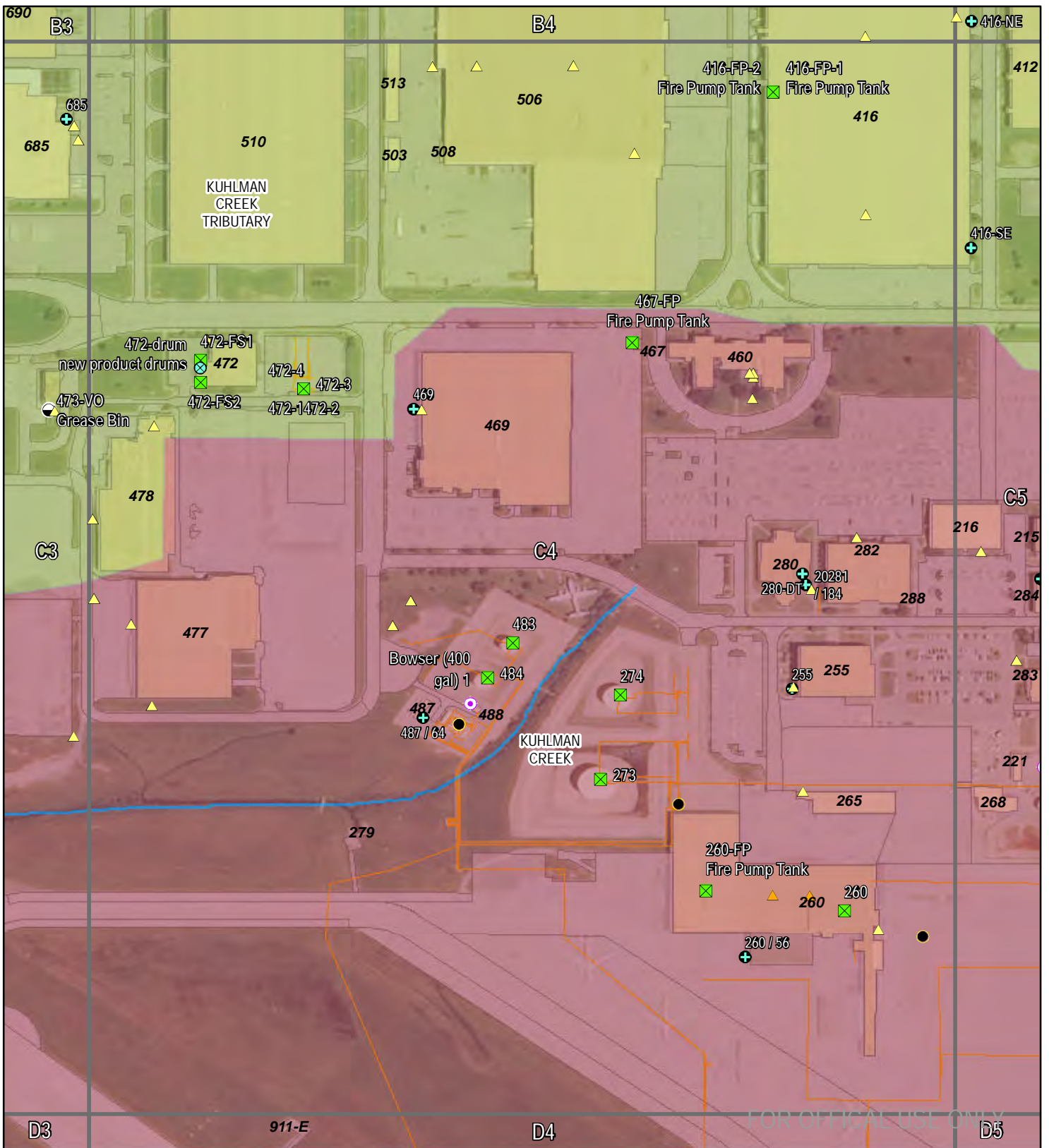


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: C3
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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- LEGEND**
- Oil Filled Equipment
 - ▲ Electrical Transformer
 - ▲ Hazardous Substance
 - ⊠ Aboveground Storage Tanks
 - ⊗ Drum
 - ⊕ Bowser/Mobile Refueler
 - ⊕ Generators
 - Fats, Oils and Greases
 - Fuel Lines
 - ▭ Base Boundary
 - River/Stream
 - ▭ Existing Buildings
 - ▭ Pavement Branch

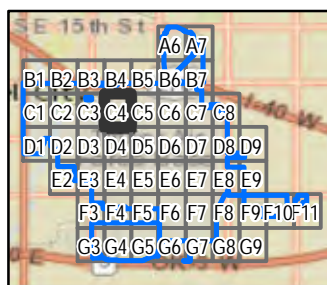
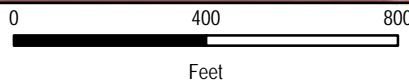
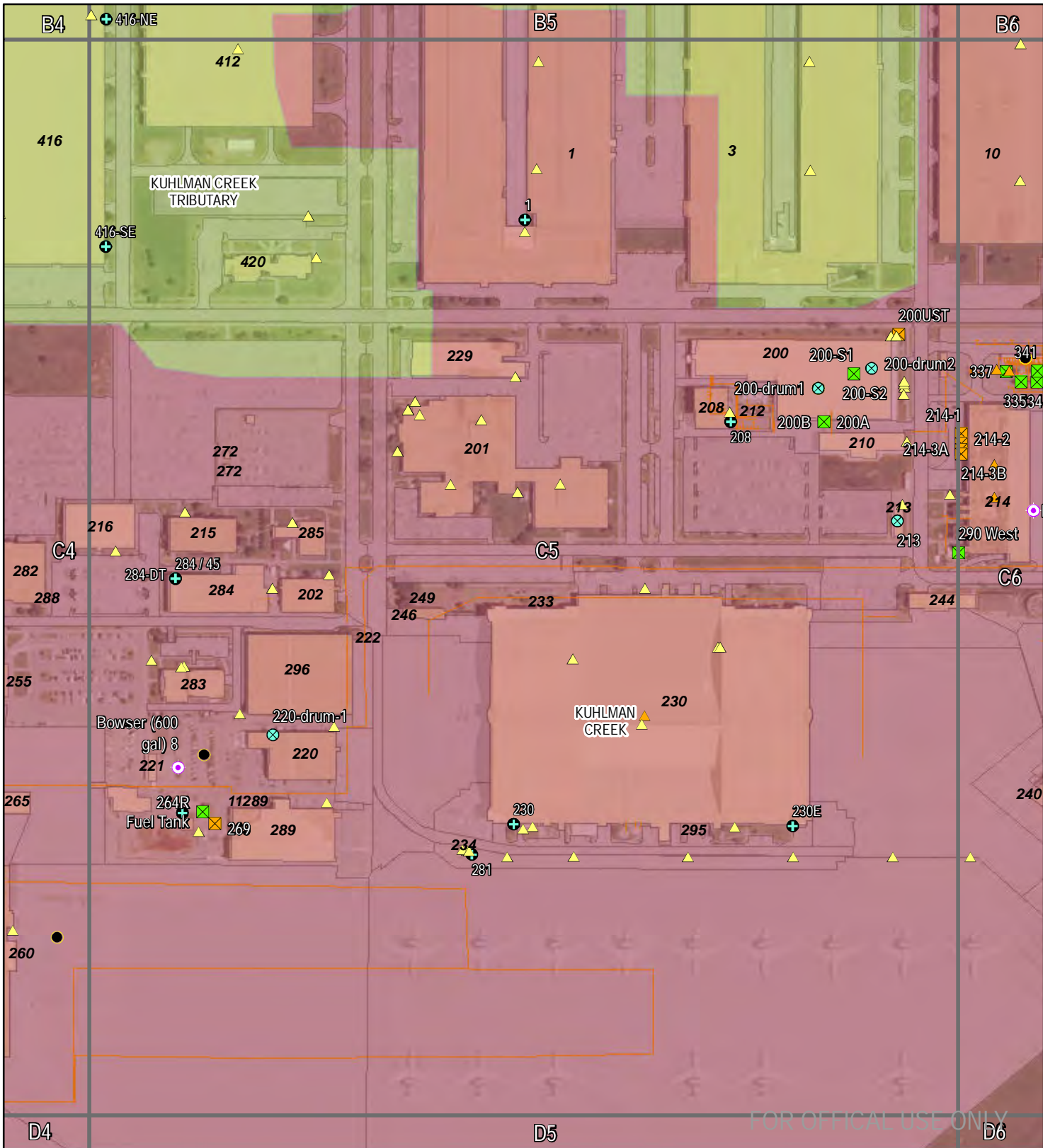


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: C4
TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- Aboveground Storage Tanks
- Underground Storage Tanks
- ⊗ Drum
- ⊕ Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings
- ▭ Pavement Branch

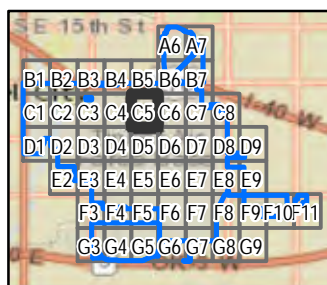
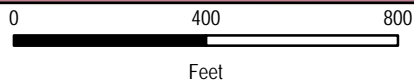
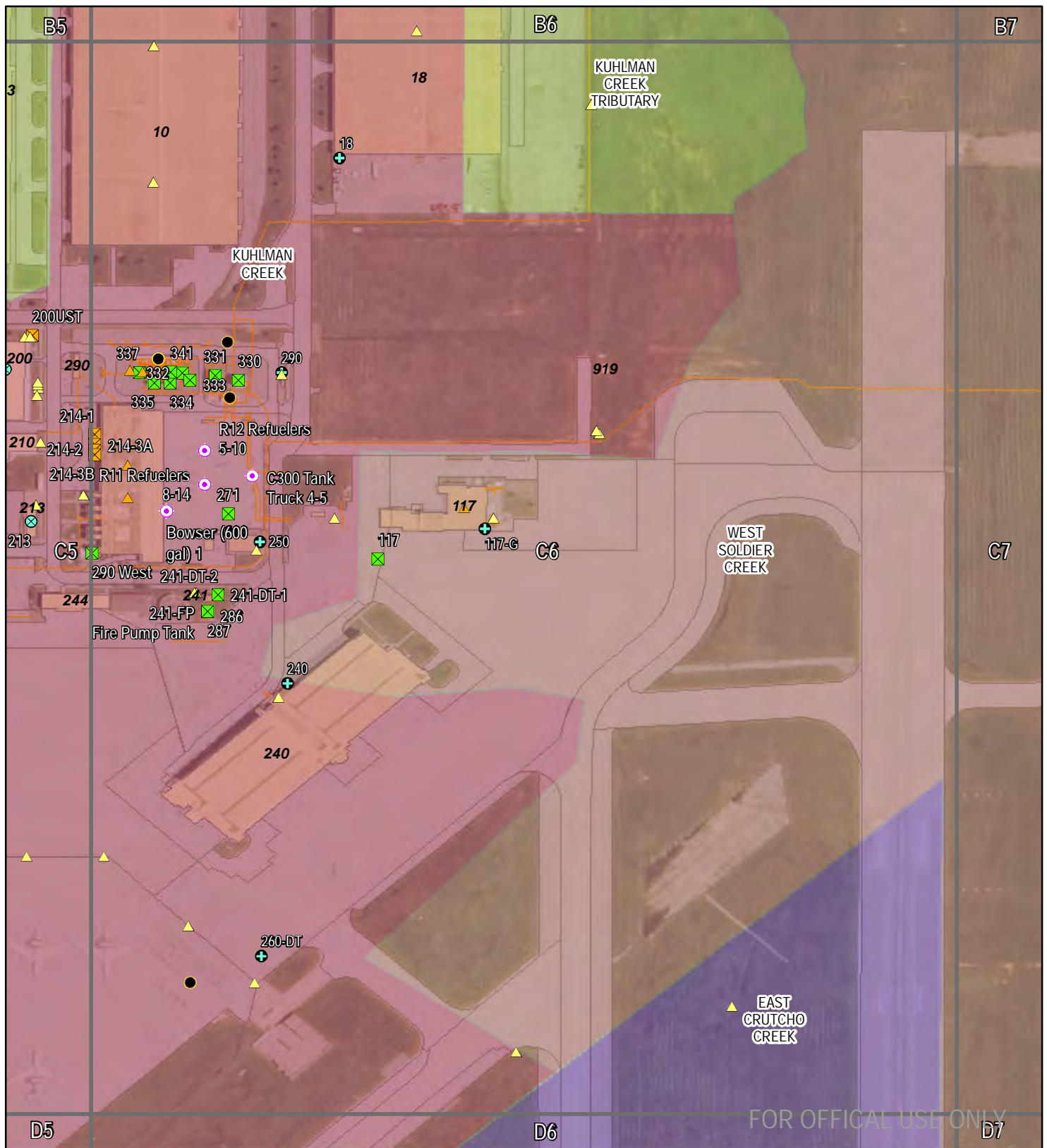


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: C5
TINKER AIR FORCE BASE, OKLAHOMA

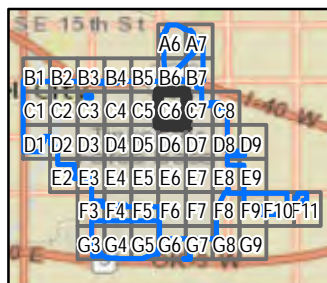
DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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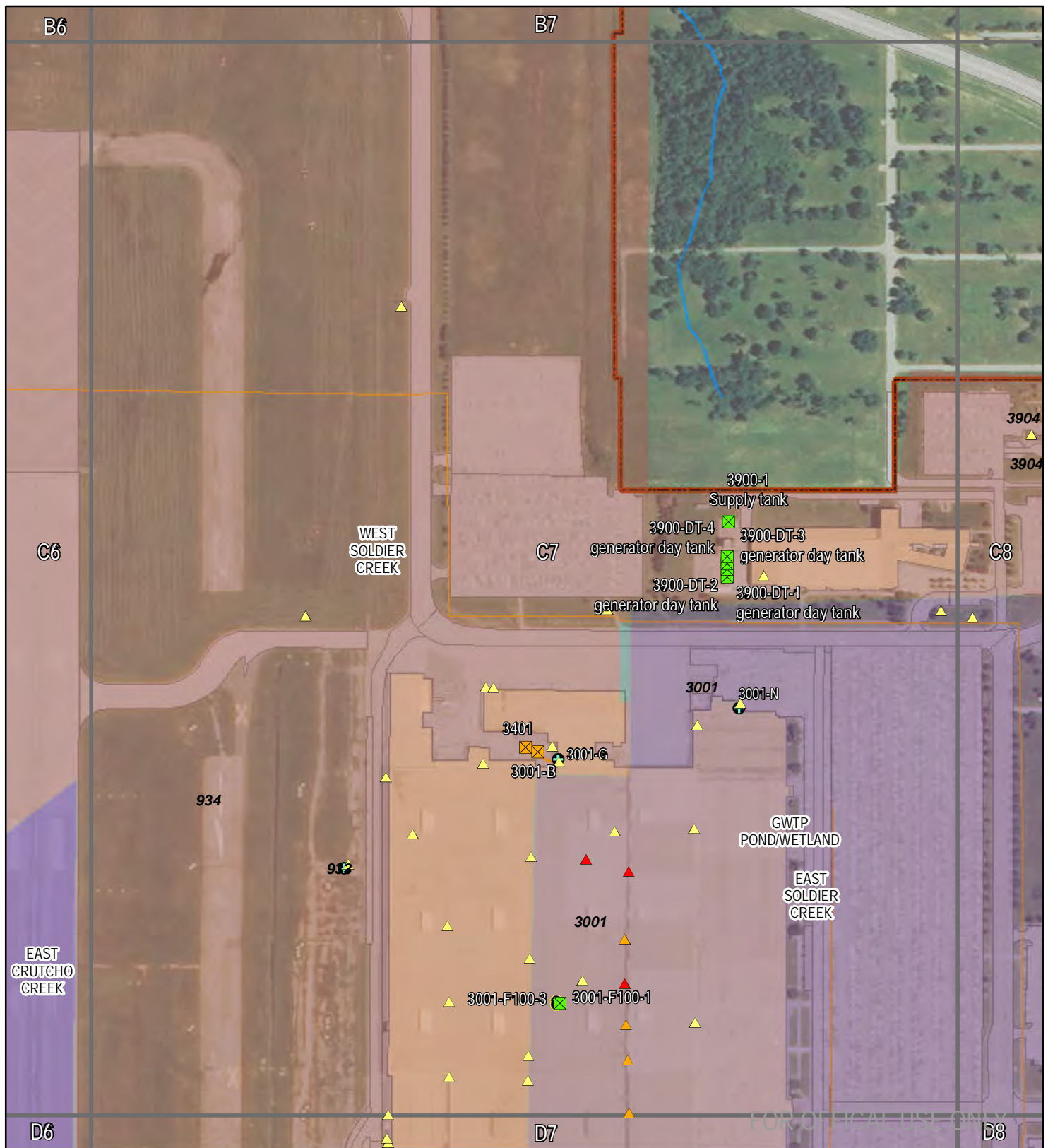
LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- Aboveground Storage Tanks
- Underground Storage Tanks
- ⊗ Drum
- ⊕ Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings
- ▭ Pavement Branch



**FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: C6
TINKER AIR FORCE BASE, OKLAHOMA**

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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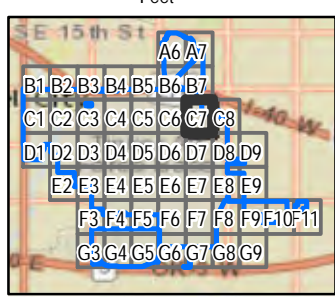
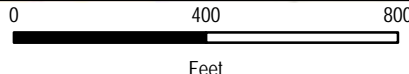


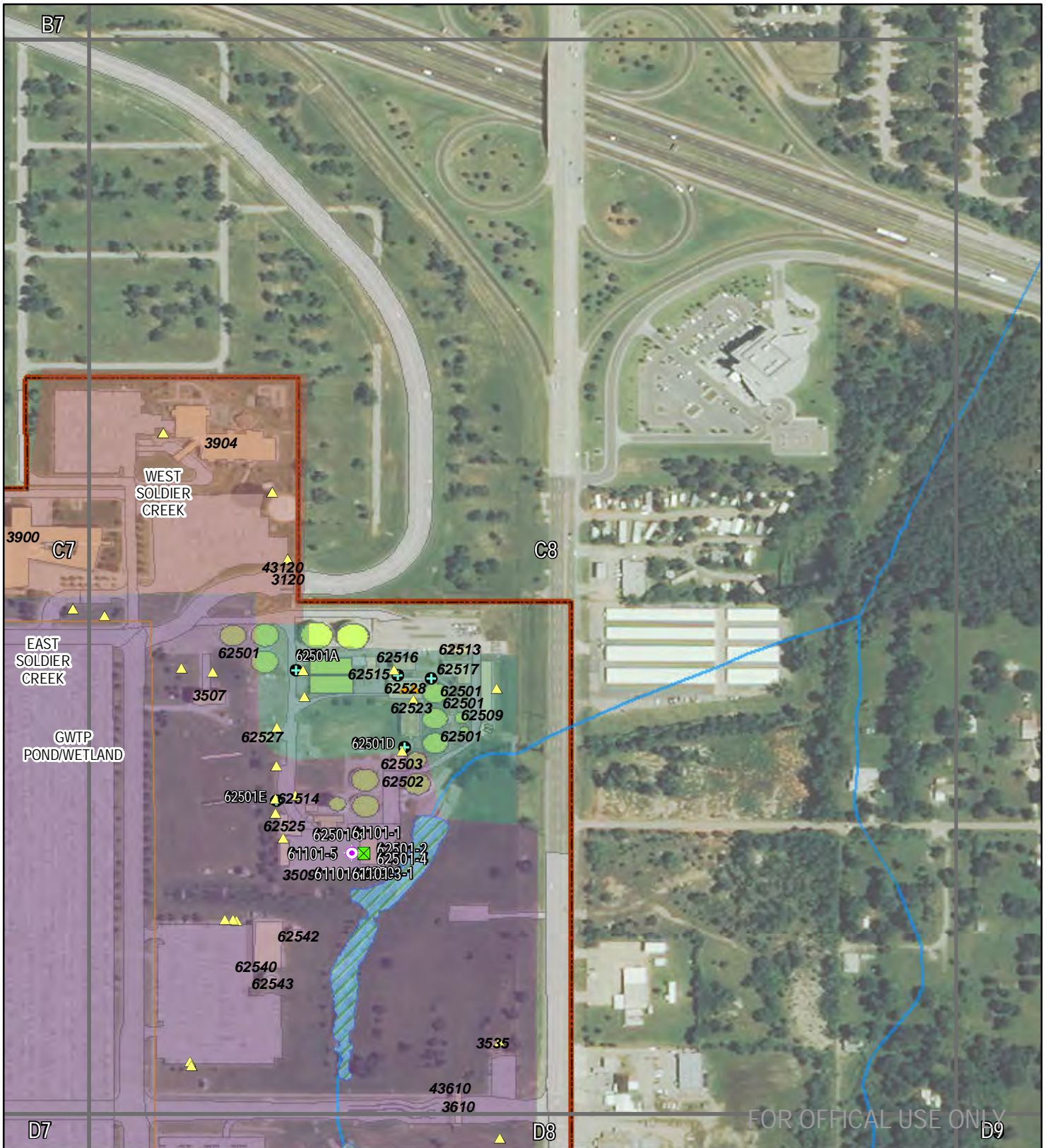
WESTON
SOLUTIONS

FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: C7
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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- LEGEND**
- Oil Filled Equipment
 - ▲ Electrical Transformer
 - ▲ Hazardous Substance
 - ▲ Extremely Hazardous Substance
 - Aboveground Storage Tanks
 - Underground Storage Tanks
 - ⊕ Generators
 - Fuel Lines
 - ▭ Base Boundary
 - River/Stream
 - ▭ Existing Buildings
 - ▭ Pavement Branch





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LEGEND

- Electrical Transformer
- Hazardous Substance
- Aboveground Storage Tanks
- Bowser/Mobile Refueler
- Generators
- Fuel Lines
- Base Boundary
- Wetland Areas
- Pond Areas
- River/Stream
- Industrial Waste Storage Area
- Existing Buildings
- Pavement Branch

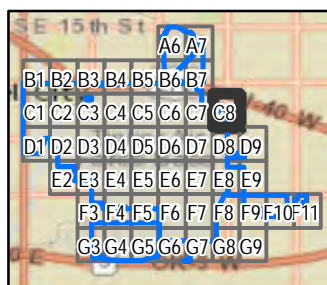
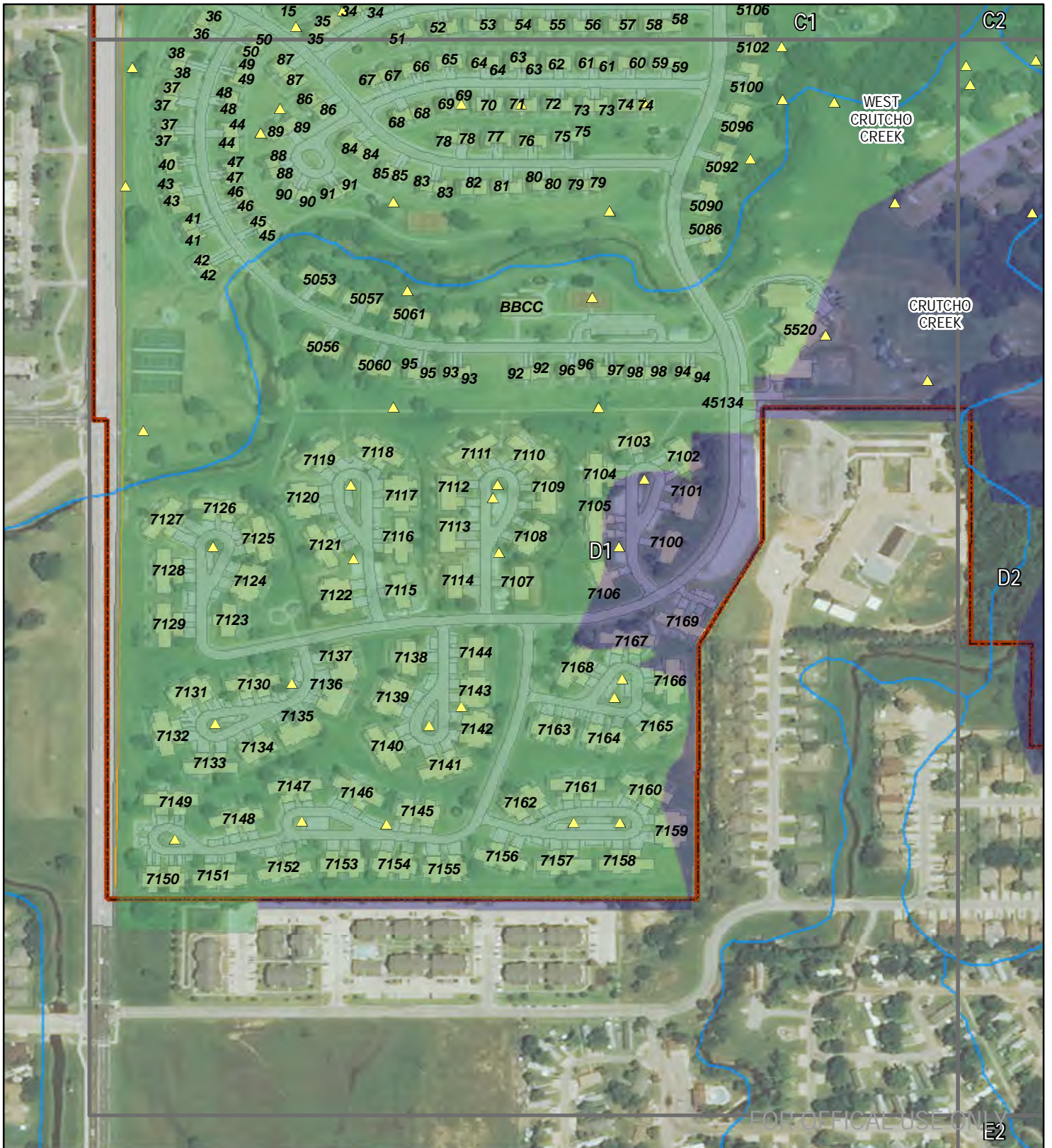


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: C8
TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

- Electrical Transformer
- Fuel Lines
- Base Boundary
- River/Stream
- Existing Buildings
- Pavement Branch

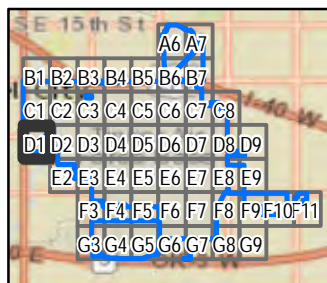


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: D1
TINKER AIR FORCE BASE, OKLAHOMA

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- LEGEND**
- ▲ Electrical Transformer
 - Base Boundary
 - Welland Areas
 - Pond Areas
 - River/Stream
 - Existing Buildings
 - Pavement Branch

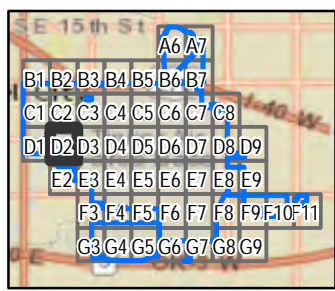


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: D2
TINKER AIR FORCE BASE, OKLAHOMA

DATE	PROJECT NO	SCALE
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LEGEND

- Electrical Transformer
- Generators
- Fuel Lines
- Base Boundary
- Wetland Areas
- River/Stream
- Existing Buildings
- Pavement Branch

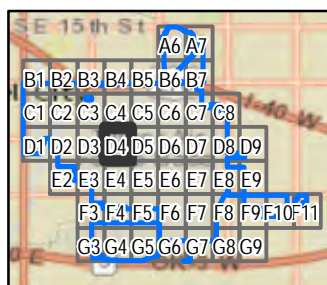
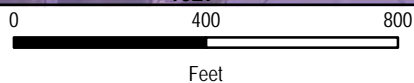
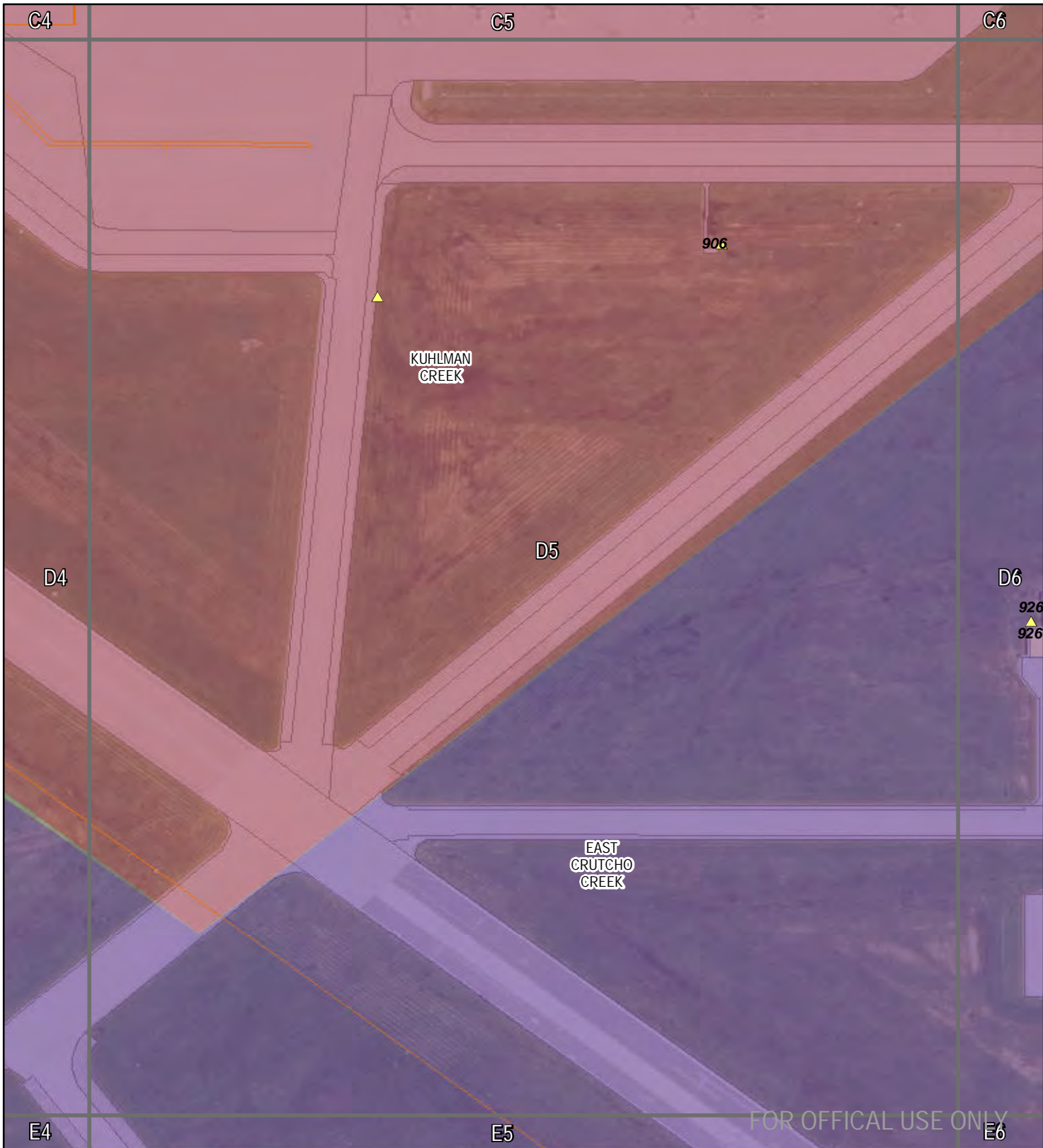


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: D4
TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

-  Electrical Transformer
-  Fuel Lines
-  Base Boundary
-  Existing Buildings
-  Pavement Branch

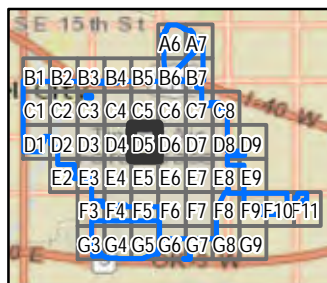
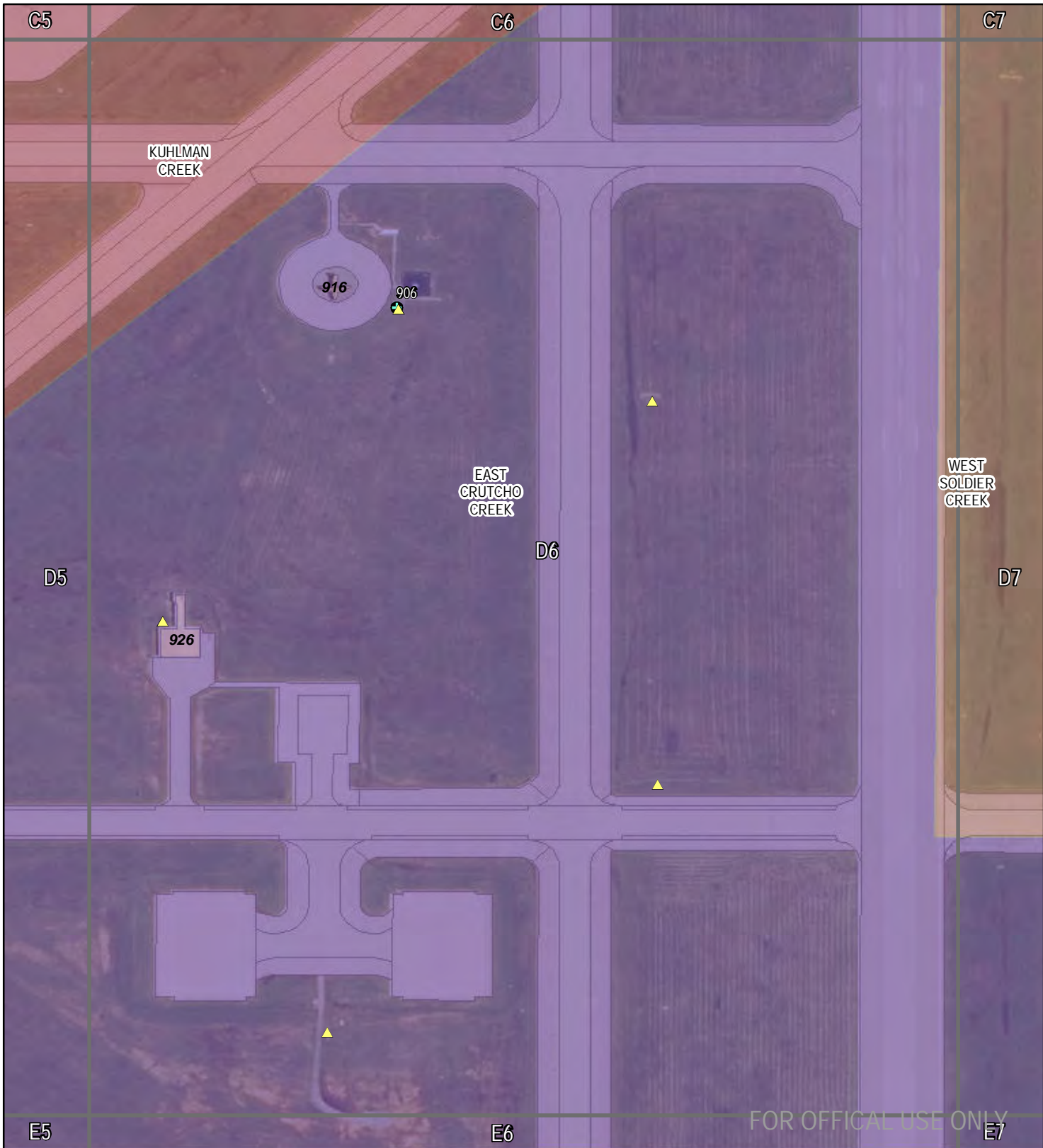


FIGURE W.4
 FACILITY BASE MAP
 MAP BOOK PAGE: D5
 TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

- ▲ Electrical Transformer
- + Generators
- Base Boundary
- Existing Buildings
- Pavement Branch

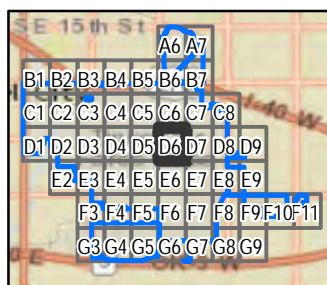
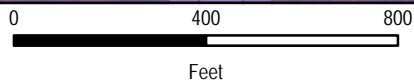
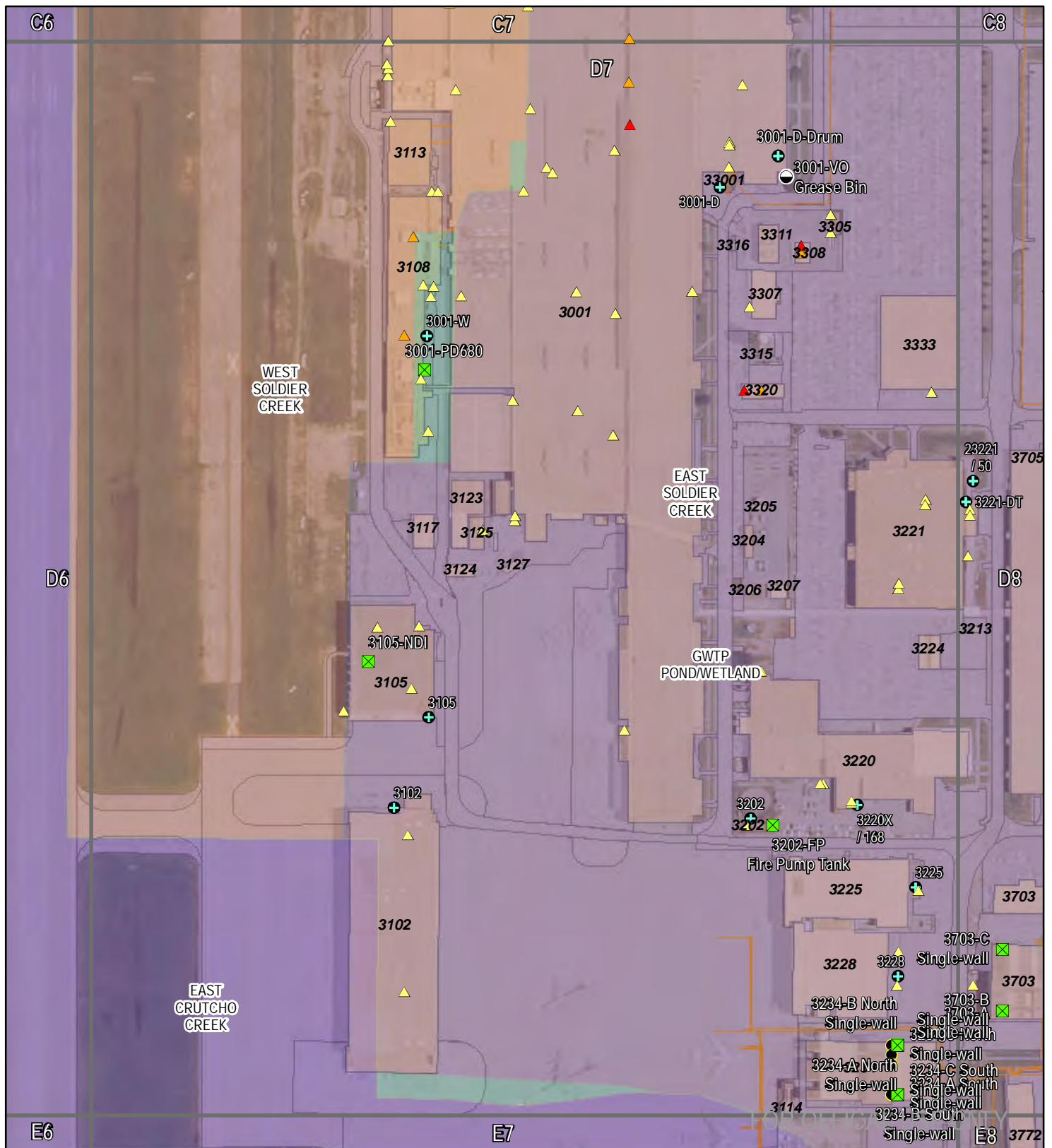


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: D6
TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- ▲ Extremely Hazardous Substance
- Aboveground Storage Tanks
- ⊕ Drum
- ⊕ Generators
- ⊕ Fats, Oils and Greases
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings
- ▭ Pavement Branch

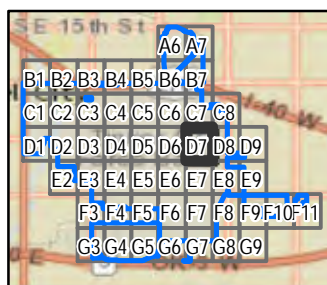
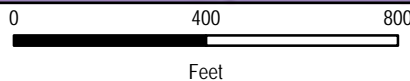
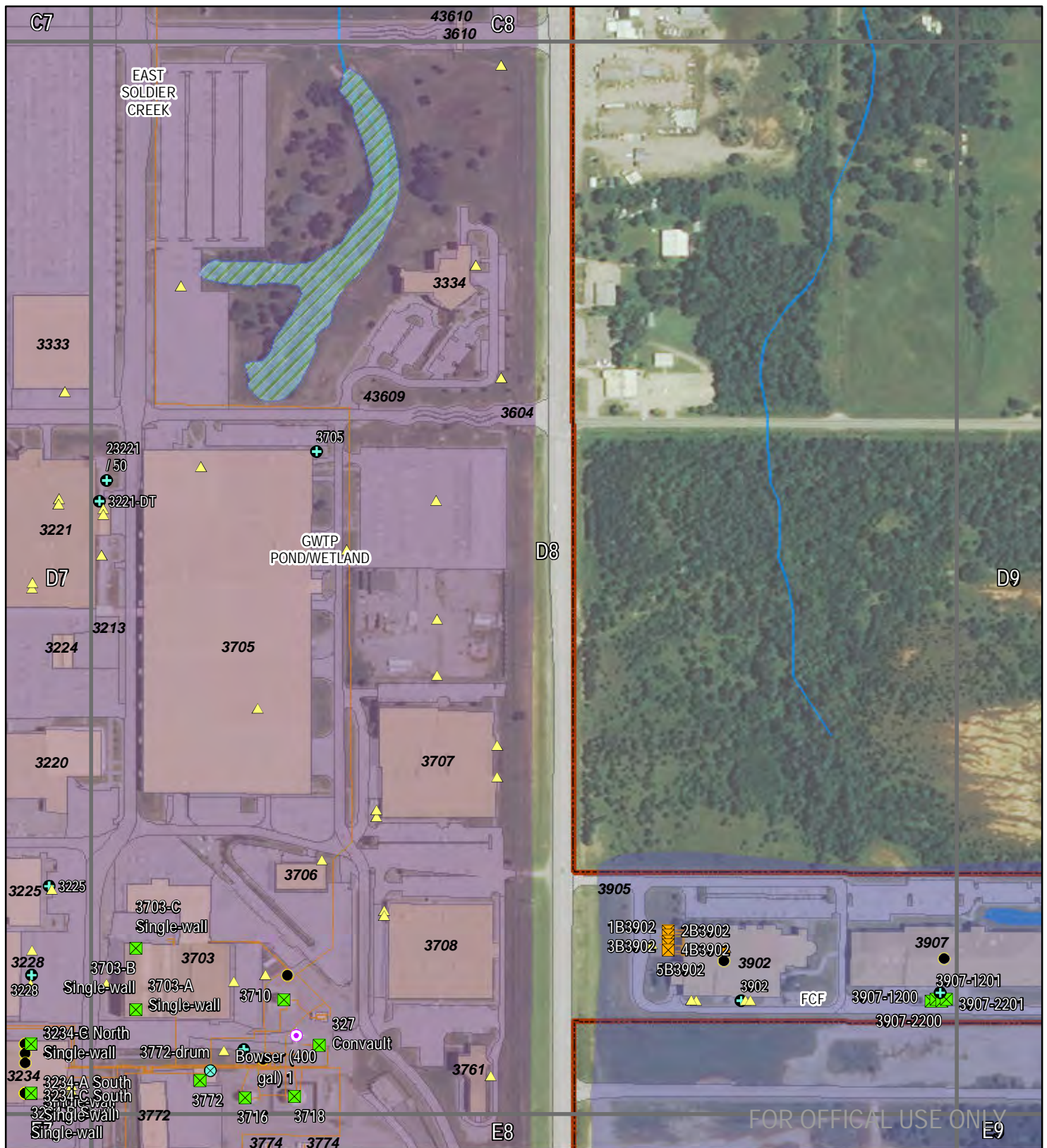


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: D7
TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- Aboveground Storage Tanks
- Underground Storage Tanks
- ⊗ Drum
- ⊕ Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▨ Wetland Areas
- ▭ Pond Areas
- ▭ River/Stream
- ▭ Existing Buildings
- ▭ Pavement Branch

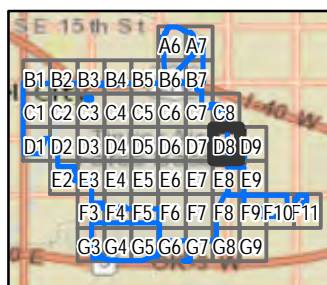


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: D8
TINKER AIR FORCE BASE, OKLAHOMA

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FOR OFFICIAL USE ONLY

LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ⊕ Aboveground Storage Tanks
- ⊕ Generators
- ▭ Base Boundary
- ▭ Pond Areas
- ▭ River/Stream
- ▭ Existing Buildings
- ▭ Pavement Branch

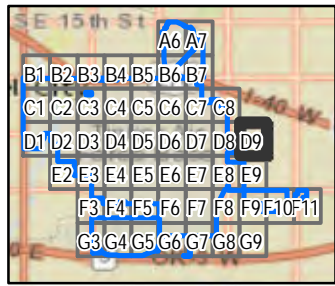
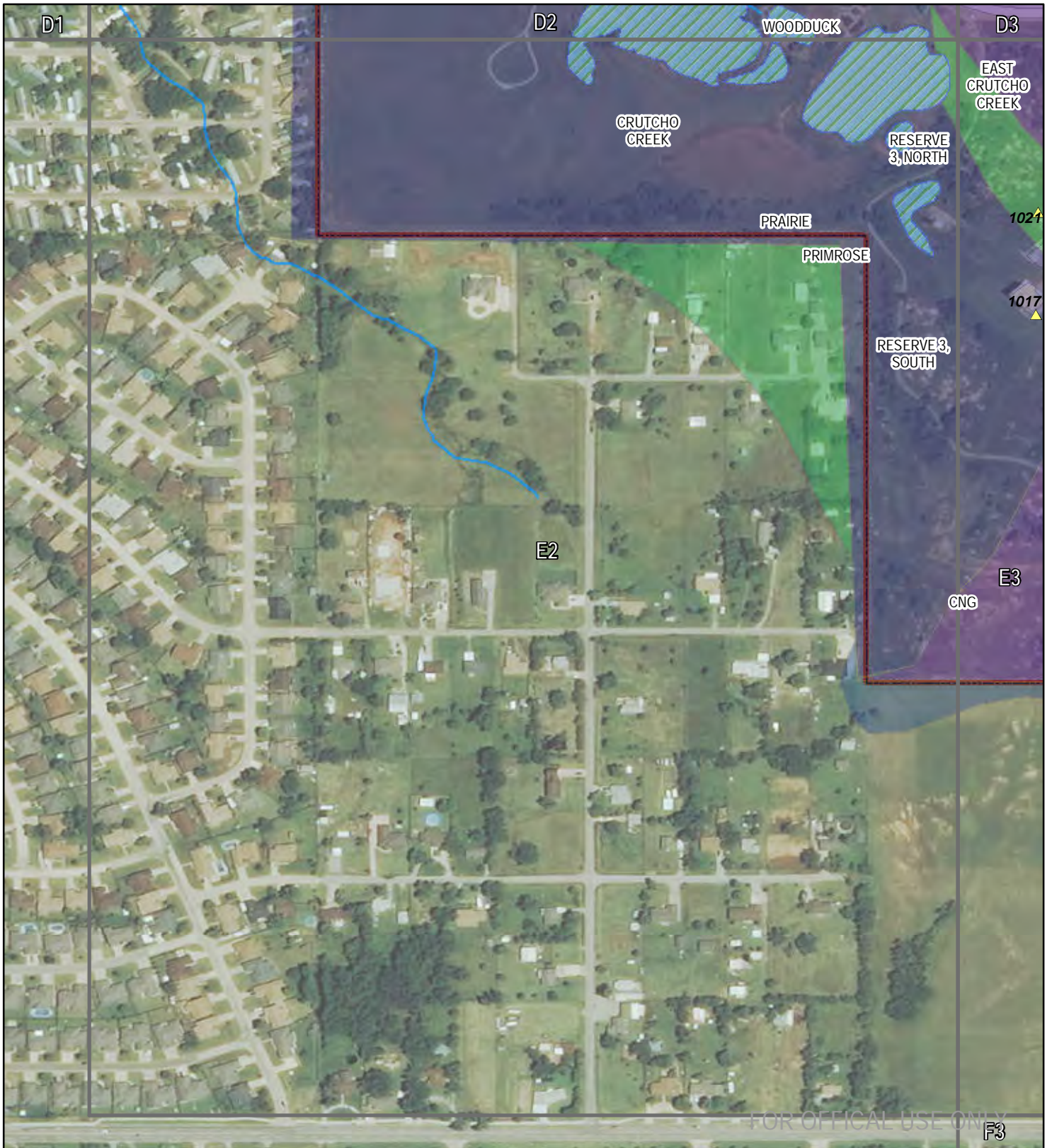









FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: D9
TINKER AIR FORCE BASE, OKLAHOMA

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LEGEND

-  Electrical Transformer
-  Base Boundary
-  Wetland Areas
-  Pond Areas
-  River/Stream
-  Existing Buildings
-  Pavement Branch

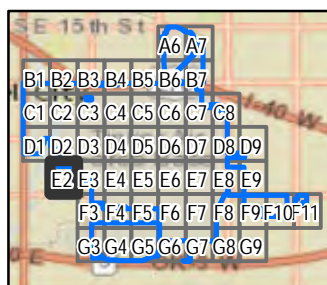
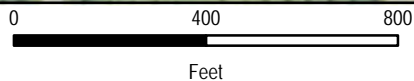


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: E2
TINKER AIR FORCE BASE, OKLAHOMA

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- LEGEND**
- ▲ Electrical Transformer
 - Aboveground Storage Tanks
 - ⊗ Drum
 - ⊕ Generators
 - ▭ Base Boundary
 - ▨ Wetland Areas
 - Pond Areas
 - River/Stream
 - Existing Buildings
 - Pavement Branch

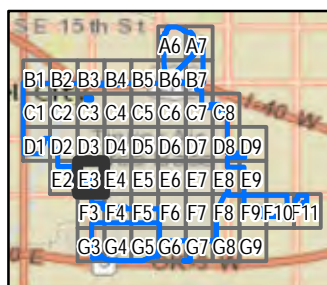
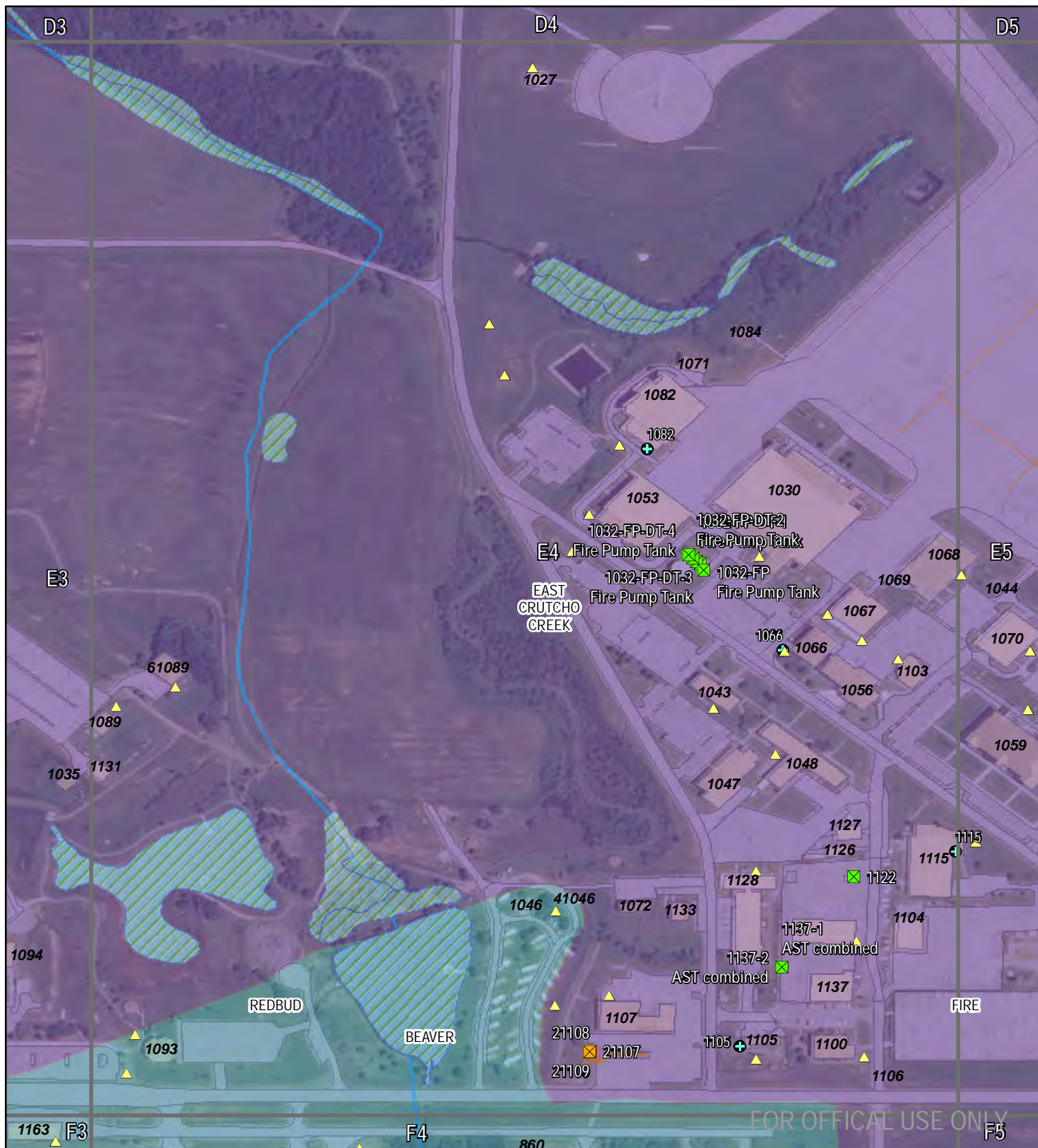


FIGURE W.4
 FACILITY BASE MAP
 MAP BOOK PAGE: E3
 TINKER AIR FORCE BASE, OKLAHOMA

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- LEGEND
- ▲ Electrical Transformer
 - Aboveground Storage Tanks
 - Underground Storage Tanks
 - Bowser/Mobile Refueler
 - ⊕ Generators
 - Fuel Lines
 - ▭ Base Boundary
 - ▨ Wetland Areas
 - ▭ Pond Areas
 - River/Stream
 - ▭ Existing Buildings
 - ▭ Pavement Branch

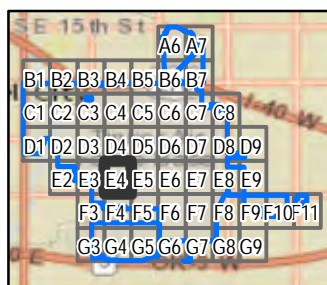
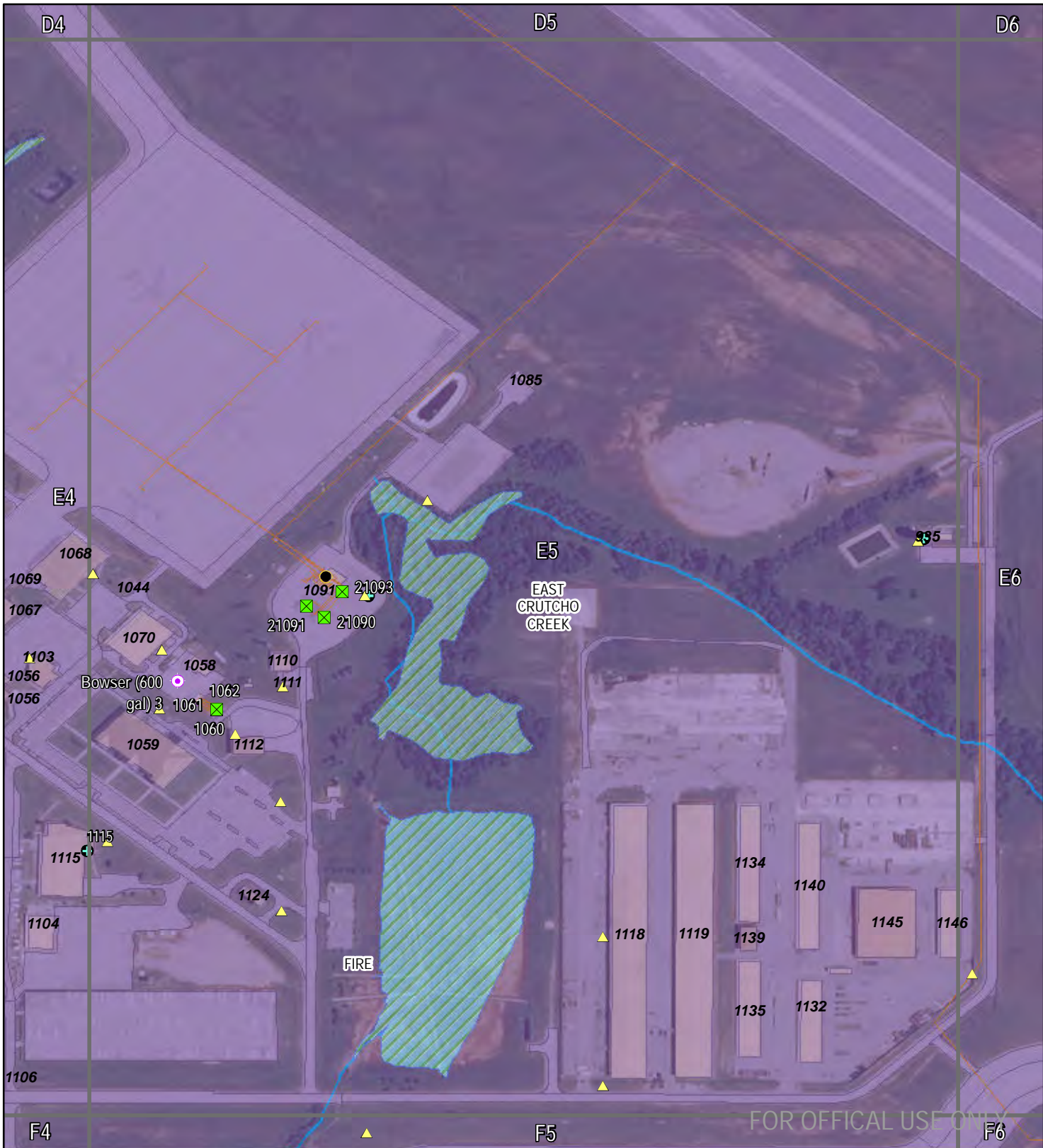


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: E4
TINKER AIR FORCE BASE, OKLAHOMA

DATE	PROJECT NO	SCALE
FEB 2016	03886.544.007	AS SHOWN



FOR OFFICIAL USE ONLY

LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- Aboveground Storage Tanks
- Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▨ Wetland Areas
- ▭ Pond Areas
- ▭ River/Stream
- ▭ Existing Buildings
- ▭ Pavement Branch

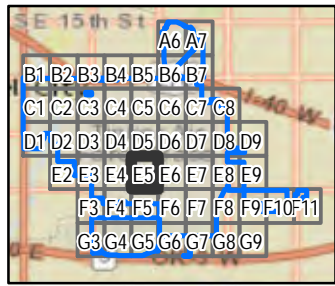


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: E5
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- Electrical Transformer
- Aboveground Storage Tanks
- Generators
- Fuel Lines
- Base Boundary
- Wetland Areas
- Pond Areas
- River/Stream
- Existing Buildings
- Pavement Branch

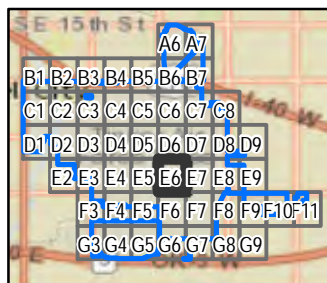
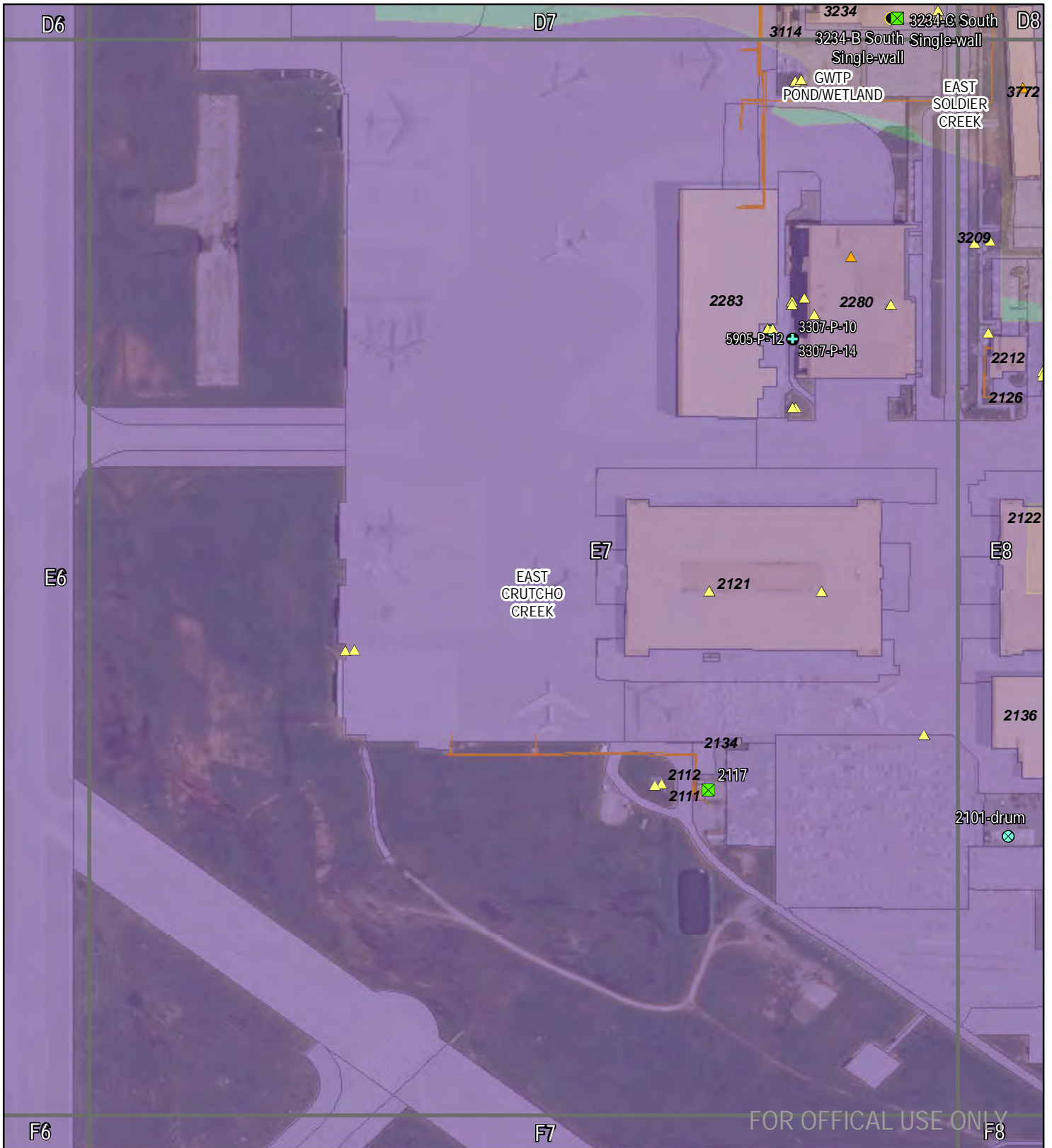


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: E6
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- ⊠ Aboveground Storage Tanks
- ⊗ Drum
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings
- ▭ Pavement Branch

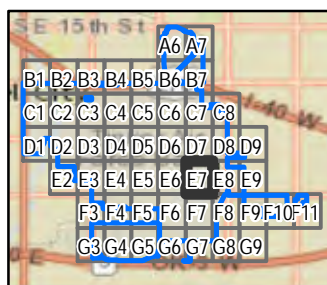
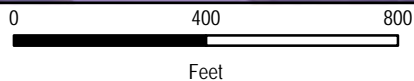
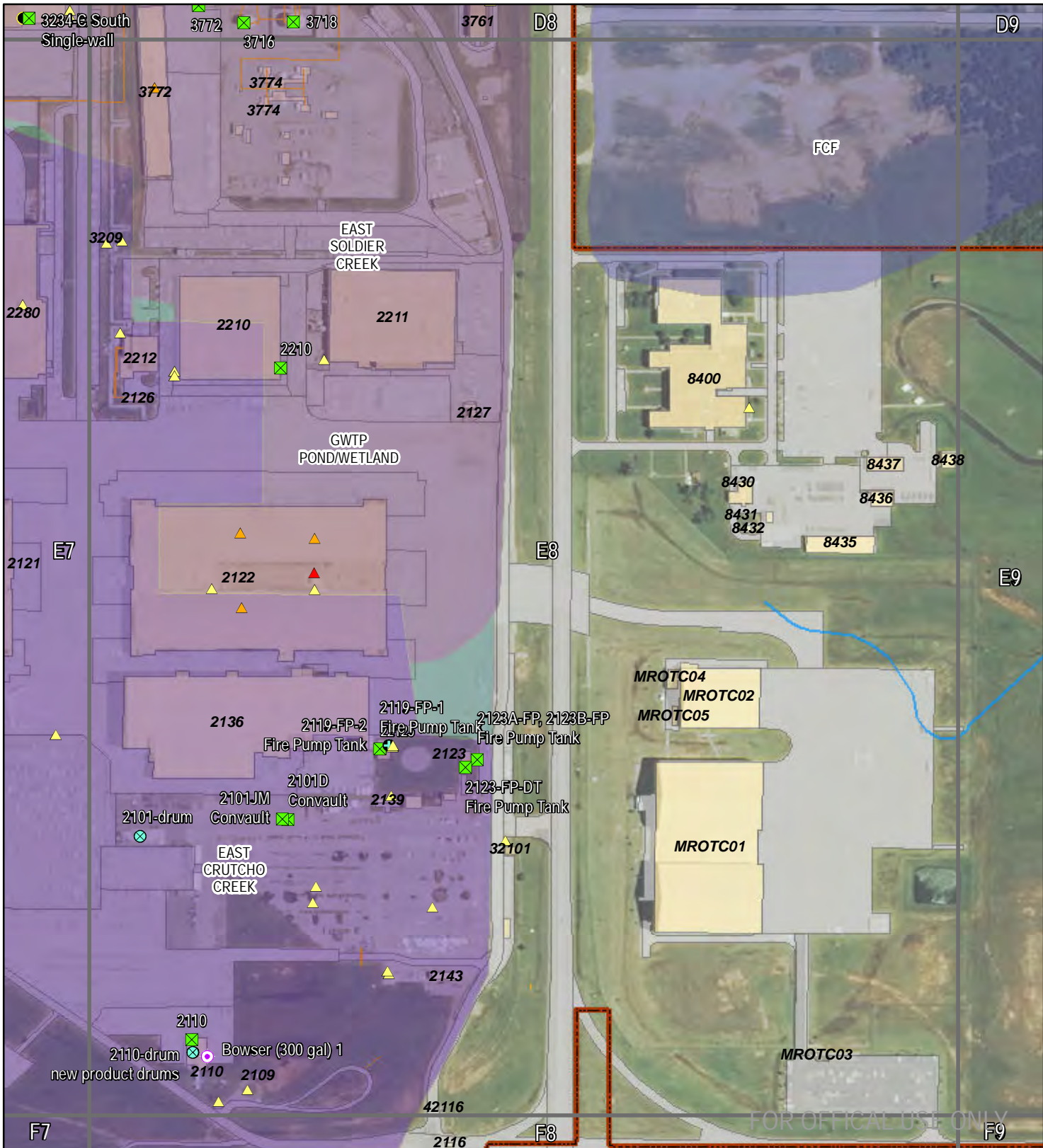


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: E7
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- ▲ Hazardous Substance
- ▲ Extremely Hazardous Substance
- ☒ Aboveground Storage Tanks
- ⊗ Drum
- ⊕ Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- River/Stream
- Existing Buildings
- ▭ Pavement Branch

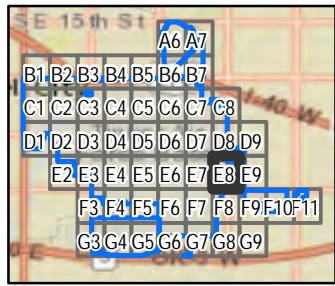
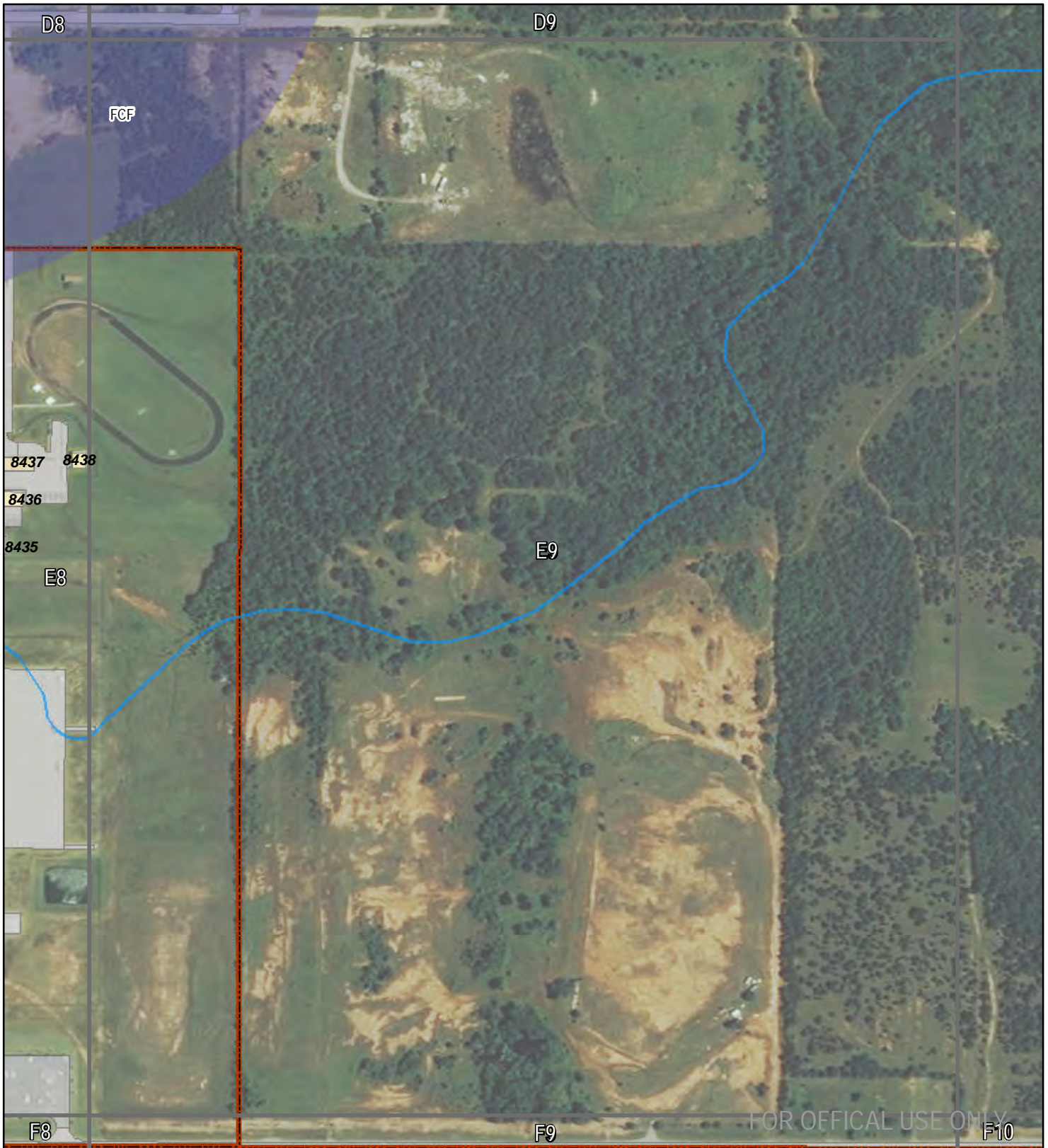






FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: E8
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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- LEGEND**
-  Base Boundary
 -  River/Stream
 -  Existing Buildings
 -  Pavement Branch

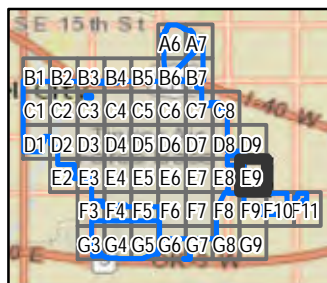


FIGURE W.4
 FACILITY BASE MAP
 MAP BOOK PAGE: E9
 TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- Electrical Transformer
- Aboveground Storage Tanks
- Drum
- Generators
- Base Boundary
- River/Stream
- Existing Buildings
- Pavement Branch

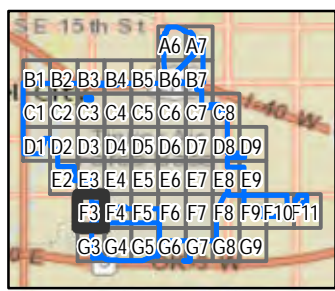
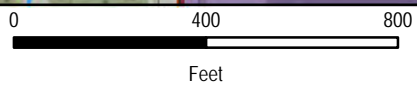
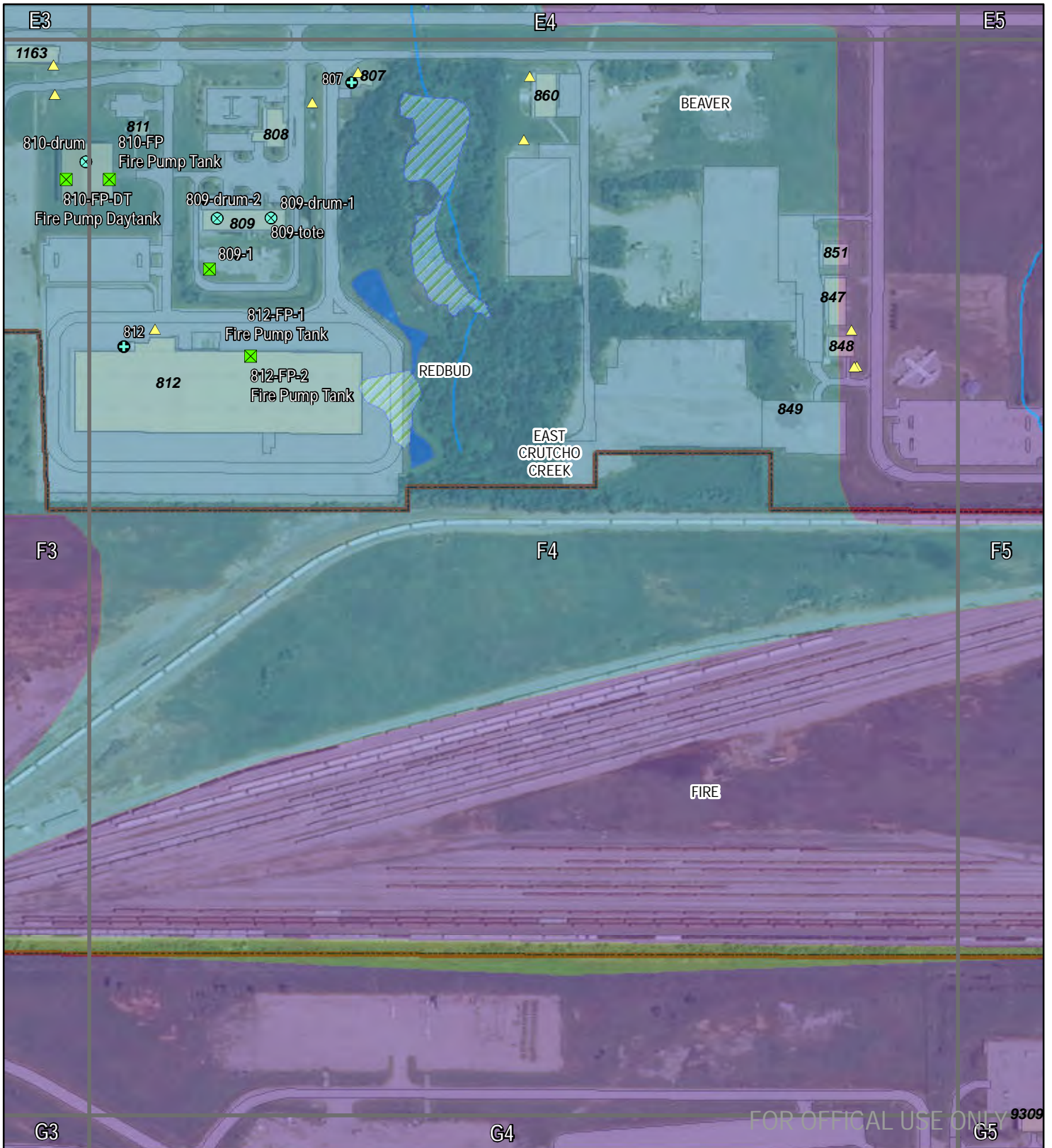


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: F3
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY 9309

LEGEND

- ▲ Electrical Transformer
- Aboveground Storage Tanks
- ⊗ Drum
- ⊕ Generators
- ▭ Base Boundary
- ▨ Wetland Areas
- Pond Areas
- River/Stream
- ▭ Existing Buildings
- ▭ Pavement Branch

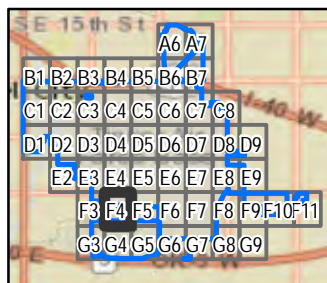
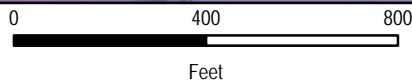
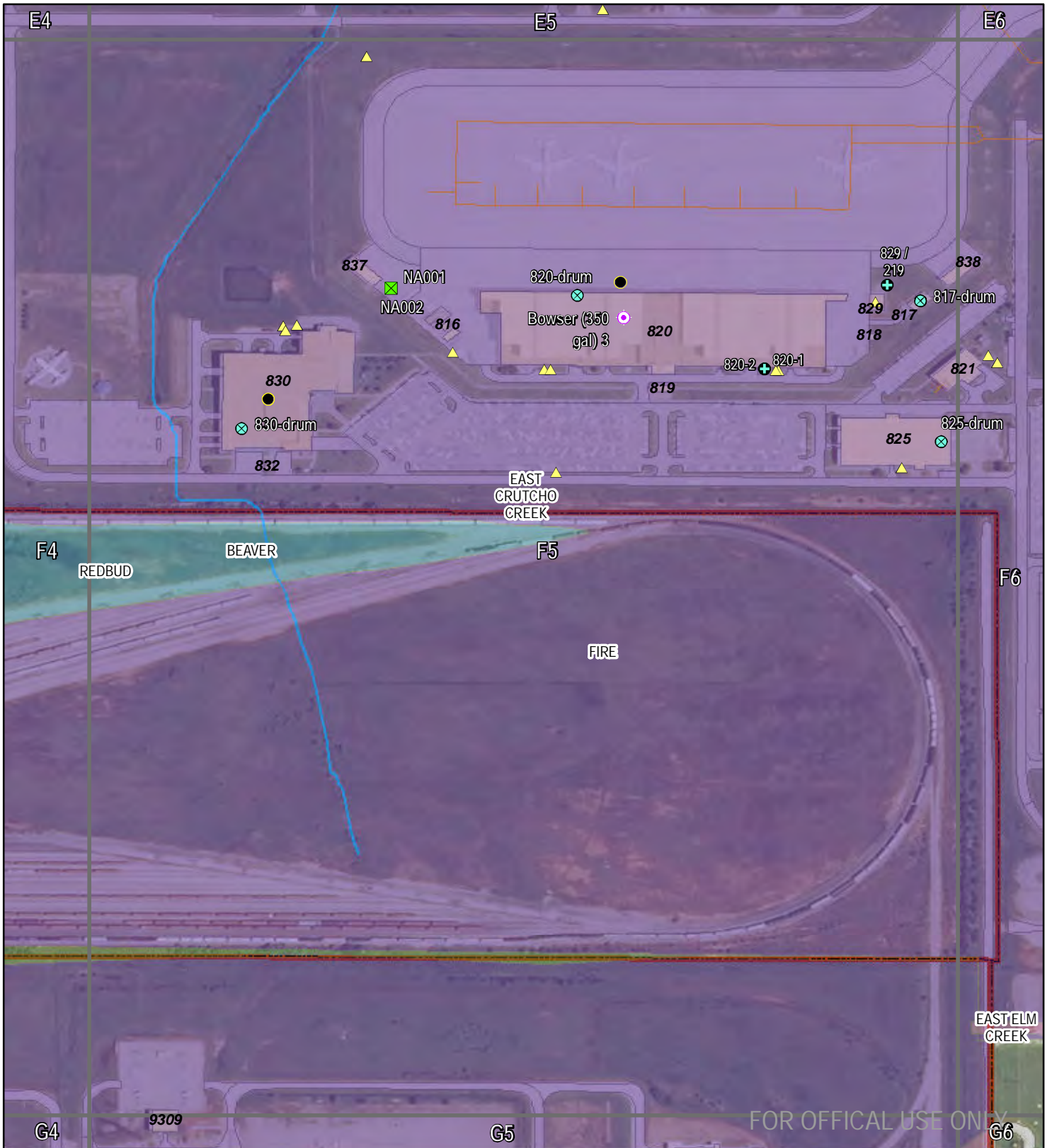


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: F4
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- Aboveground Storage Tanks
- ⊗ Drum
- ⊕ Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- River/Stream
- ▭ Existing Buildings
- ▭ Pavement Branch

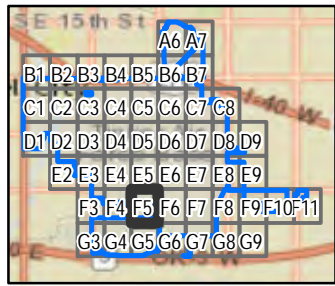
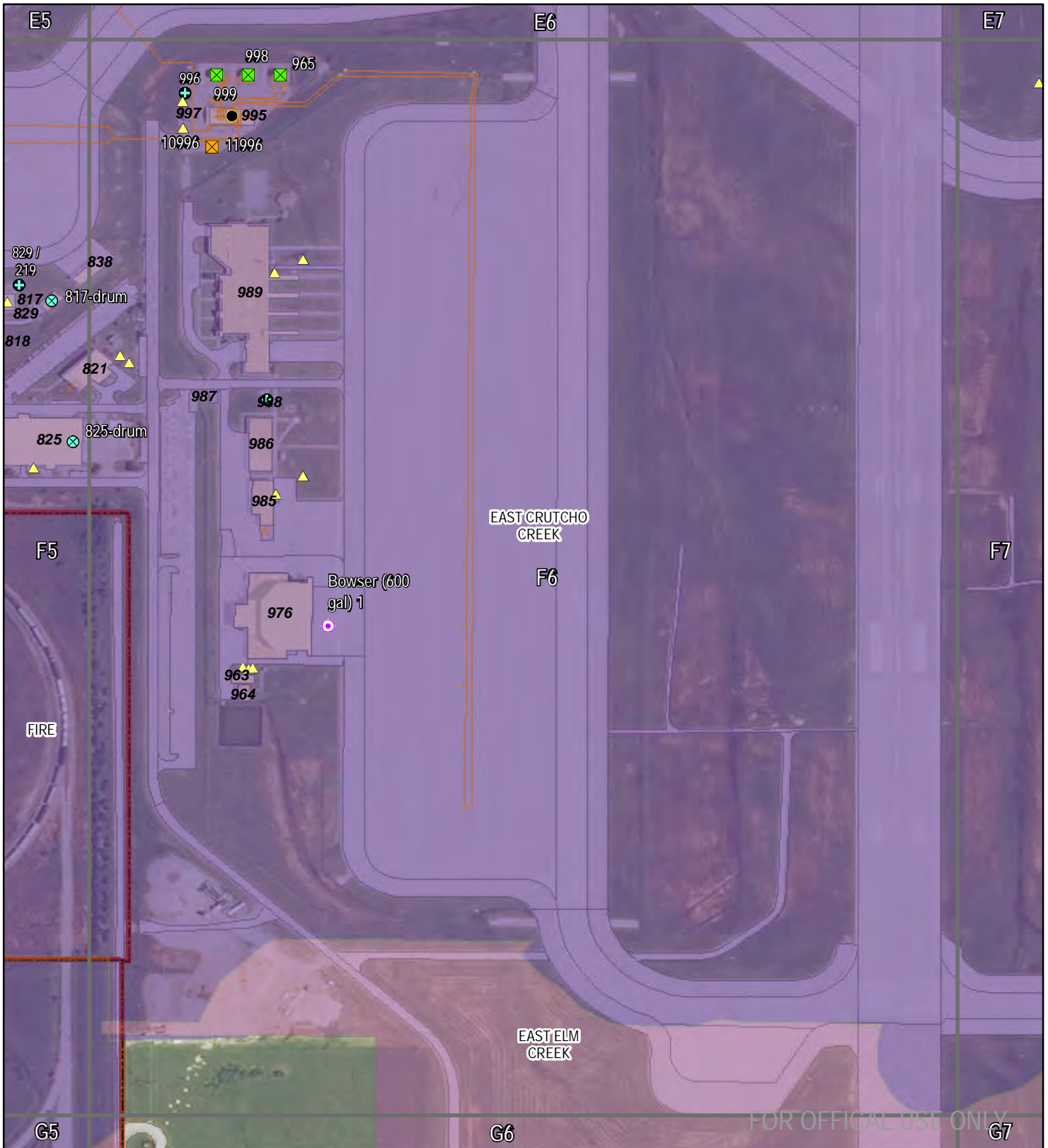


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: F5
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- Oil Filled Equipment
- ▲ Electrical Transformer
- Aboveground Storage Tanks
- Underground Storage Tanks
- ⊗ Drum
- Bowser/Mobile Refueler
- ⊕ Generators
- Fuel Lines
- ▭ Base Boundary
- ▭ Existing Buildings
- ▭ Pavement Branch

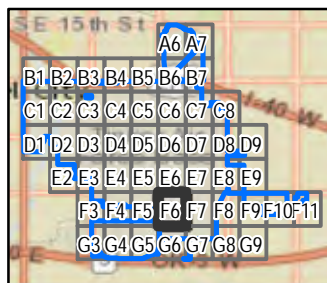
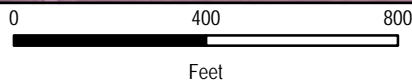


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: F6
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- Electrical Transformer
- Generators
- Base Boundary
- River/Stream
- Existing Buildings
- Pavement Branch

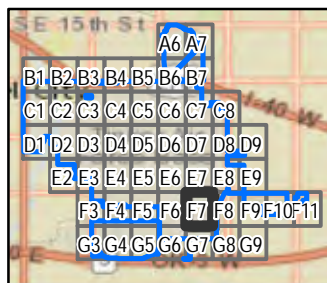
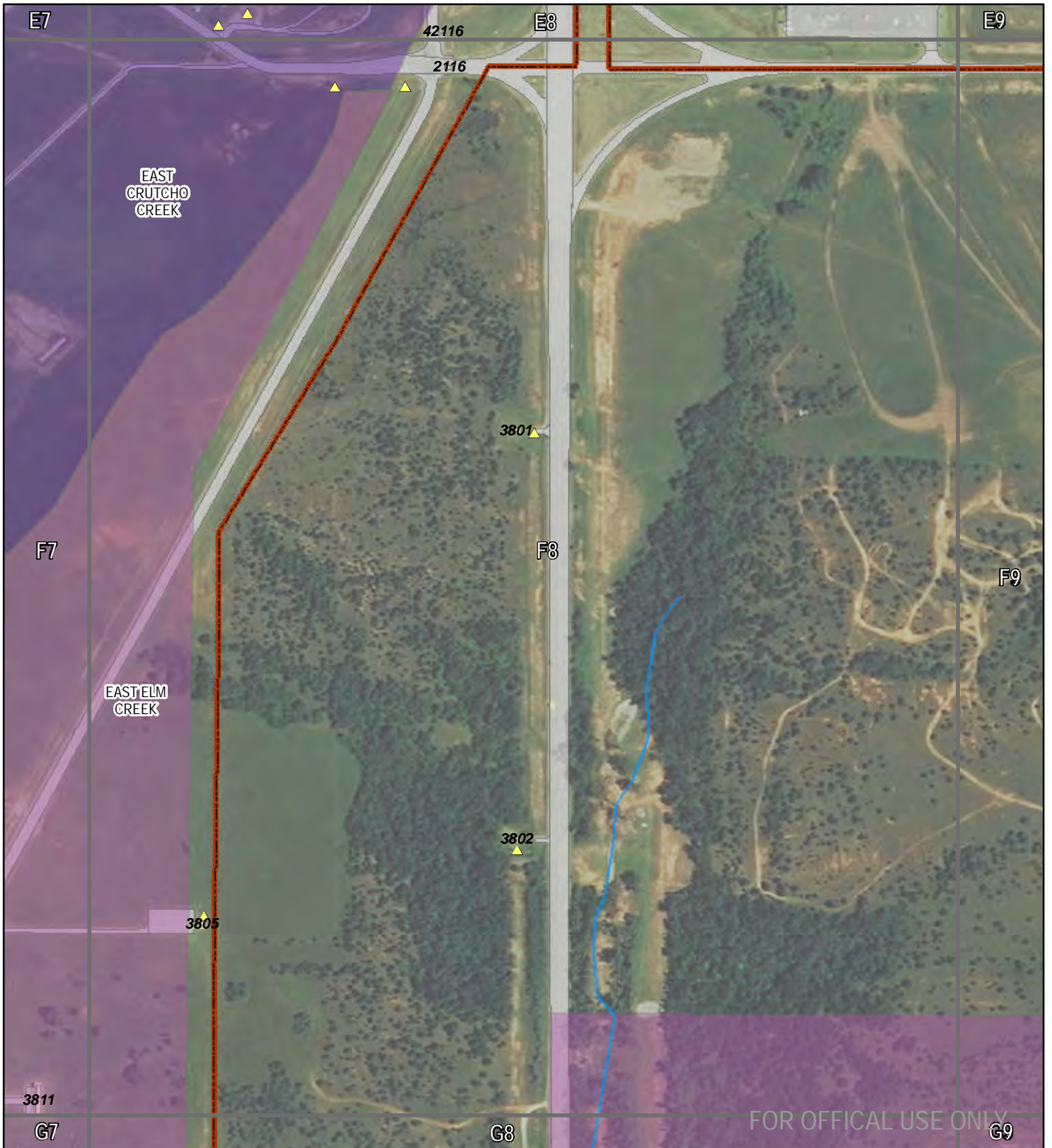





FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: F7
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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LEGEND

-  Electrical Transformer
-  Base Boundary
-  River/Stream
-  Existing Buildings
-  Pavement Branch

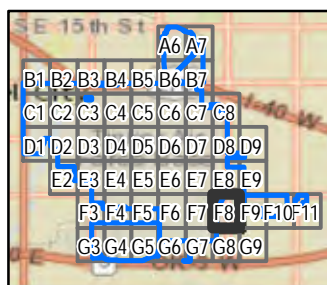
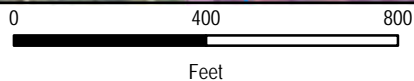
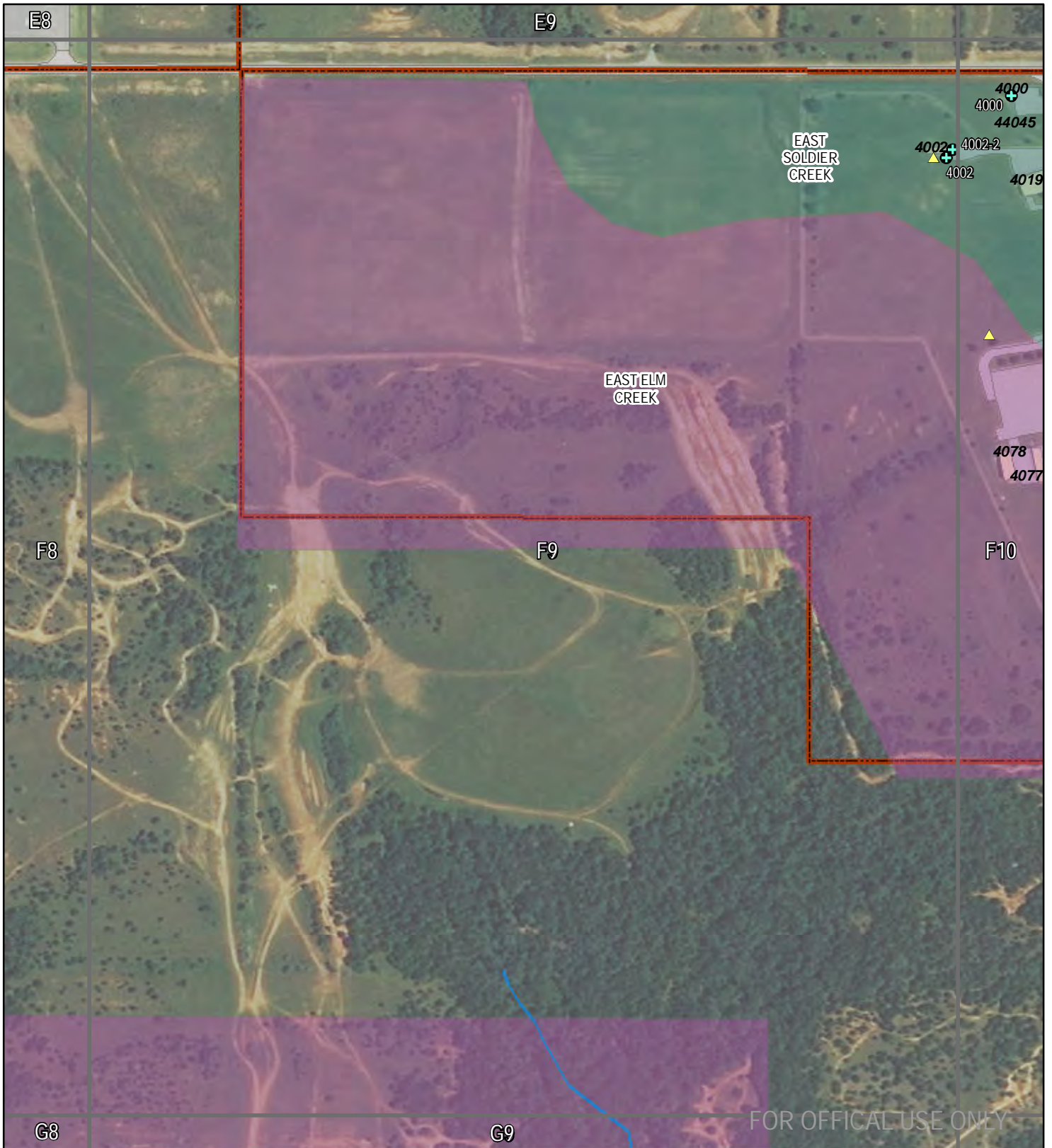


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: F8
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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LEGEND

- Electrical Transformer
- Generators
- Base Boundary
- River/Stream
- Existing Buildings
- Pavement Branch

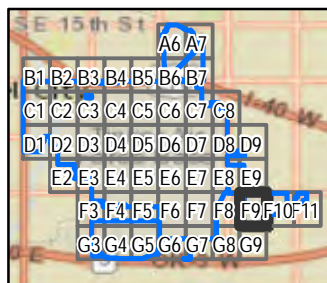
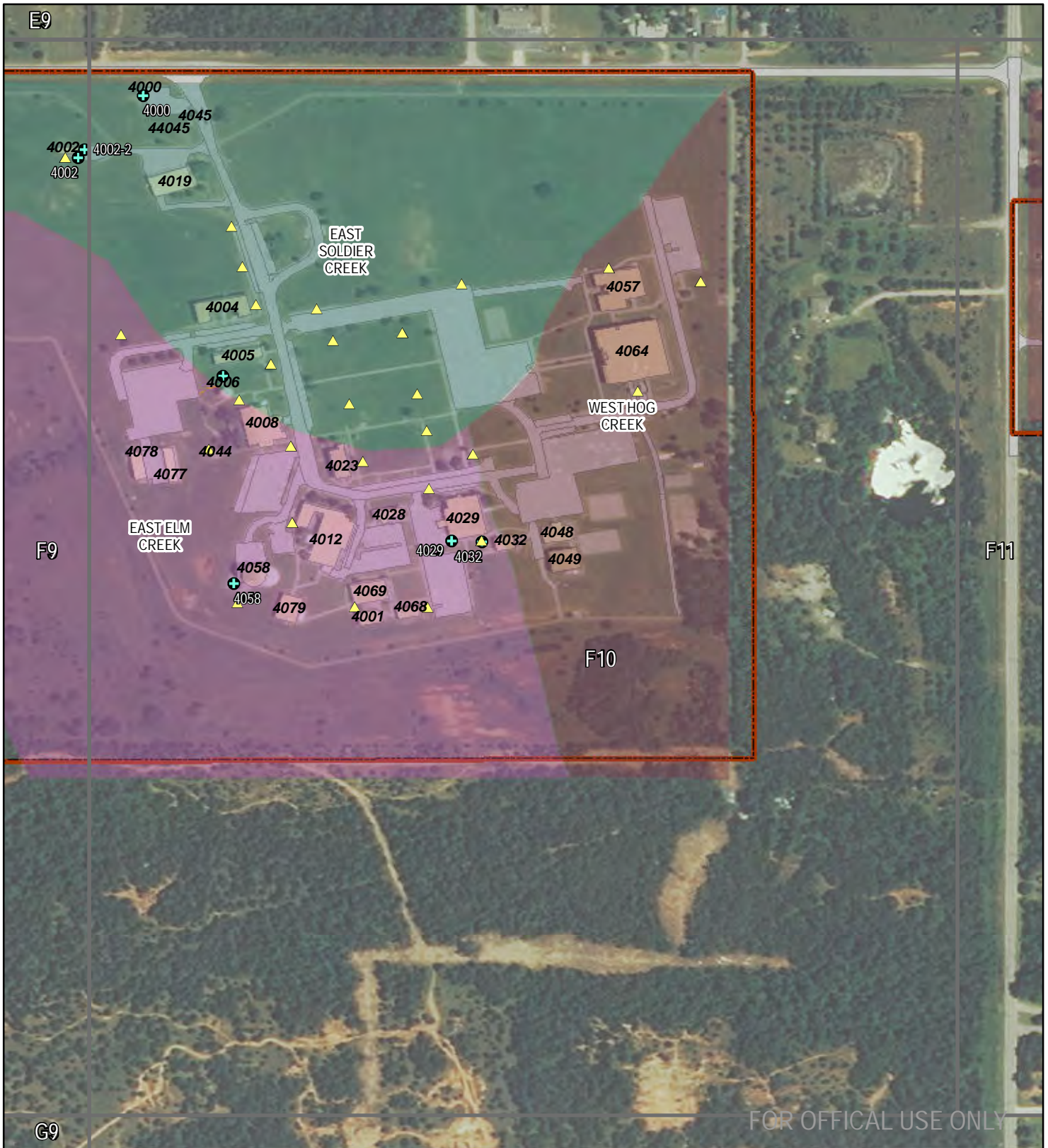


FIGURE W.4
 FACILITY BASE MAP
 MAP BOOK PAGE: F9
 TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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- LEGEND**
- Electrical Transformer
 - Generators
 - Fuel Lines
 - Base Boundary
 - Existing Buildings
 - Pavement Branch

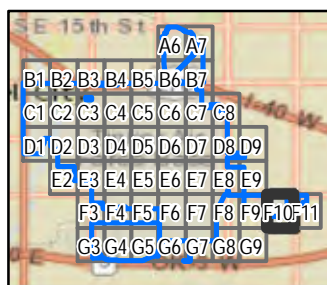






FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: F10
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

-  Electrical Transformer
-  Base Boundary
-  River/Stream
-  Existing Buildings
-  Pavement Branch

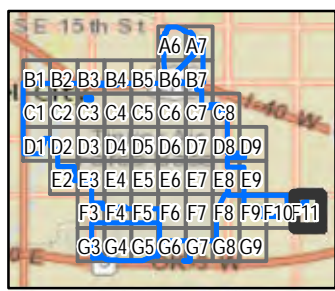


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: F11
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- Base Boundary
- Wetland Areas
- Pond Areas
- River/Stream
- Existing Buildings
- Pavement Branch

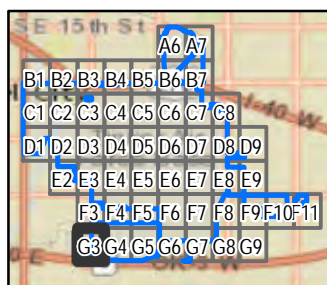
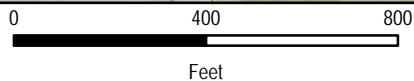
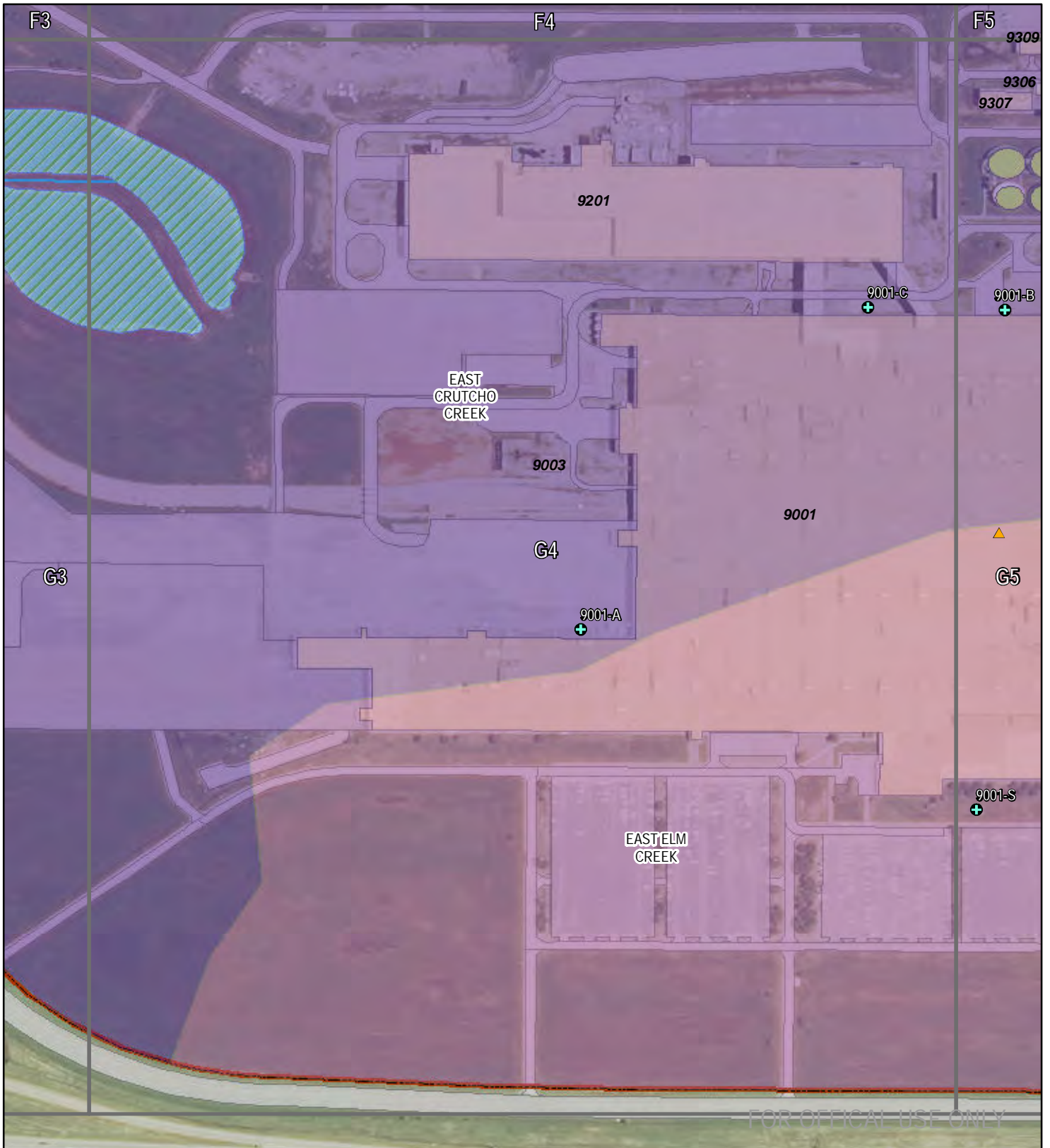


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: G3
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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LEGEND

- ▲ Hazardous Substance
- ⊕ Generators
- ▭ Base Boundary
- ▨ Wetland Areas
- ▭ Pond Areas
- ▬ River/Stream
- ▭ Industrial Waste Storage Area
- ▭ Existing Buildings
- ▭ Pavement Branch

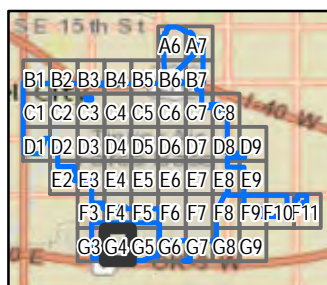
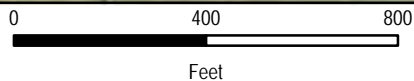
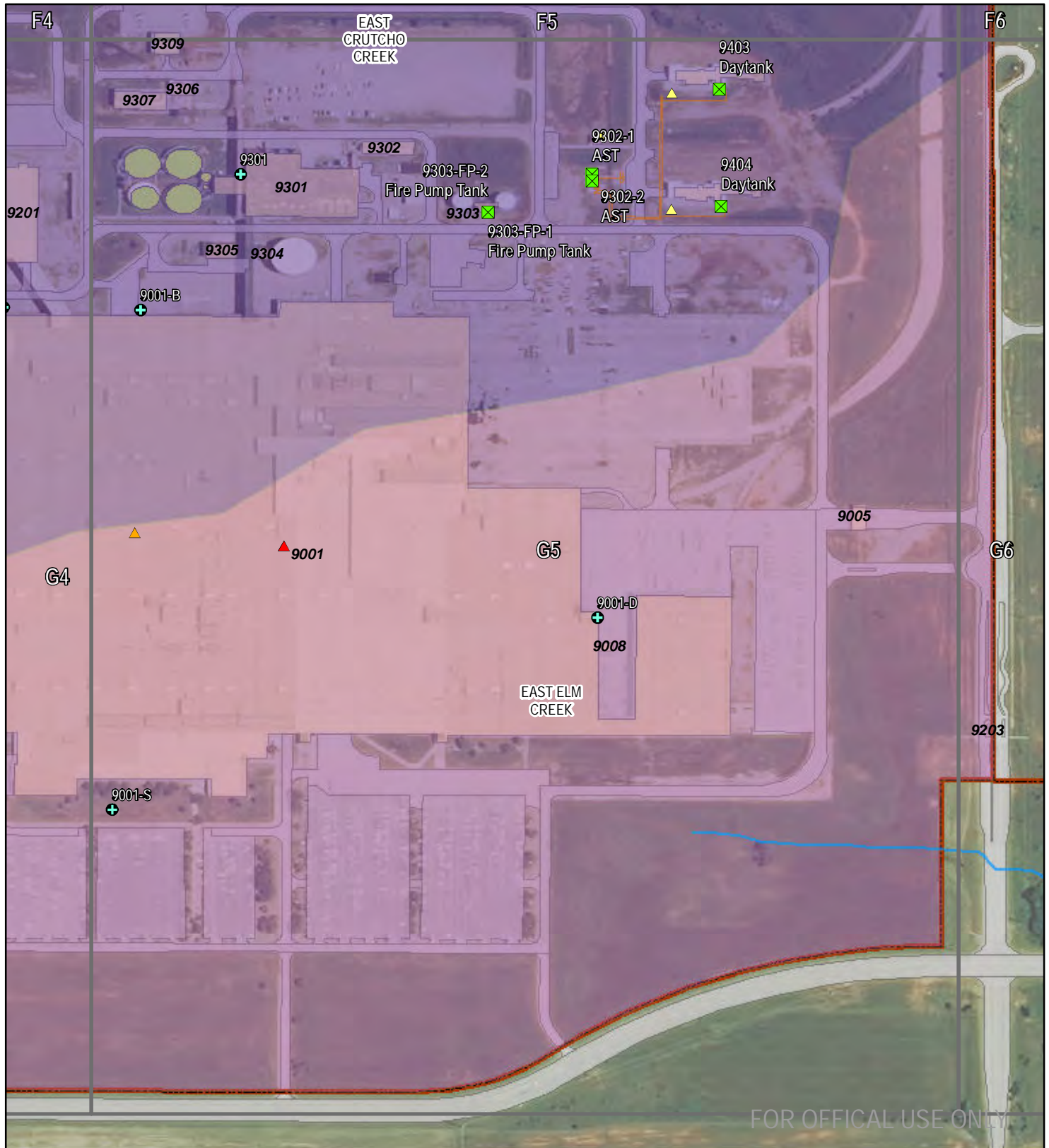


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: G4
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- ▲ Electrical Transformer
- ▲ Hazardous Substance
- ▲ Extremely Hazardous Substance
- Aboveground Storage Tanks
- + Generators
- Fuel Lines
- Base Boundary
- River/Stream
- Industrial Waste Storage Area
- Existing Buildings
- Pavement Branch

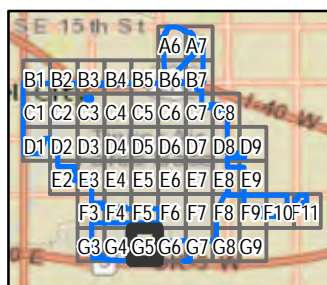
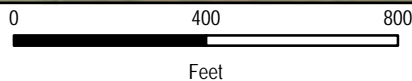
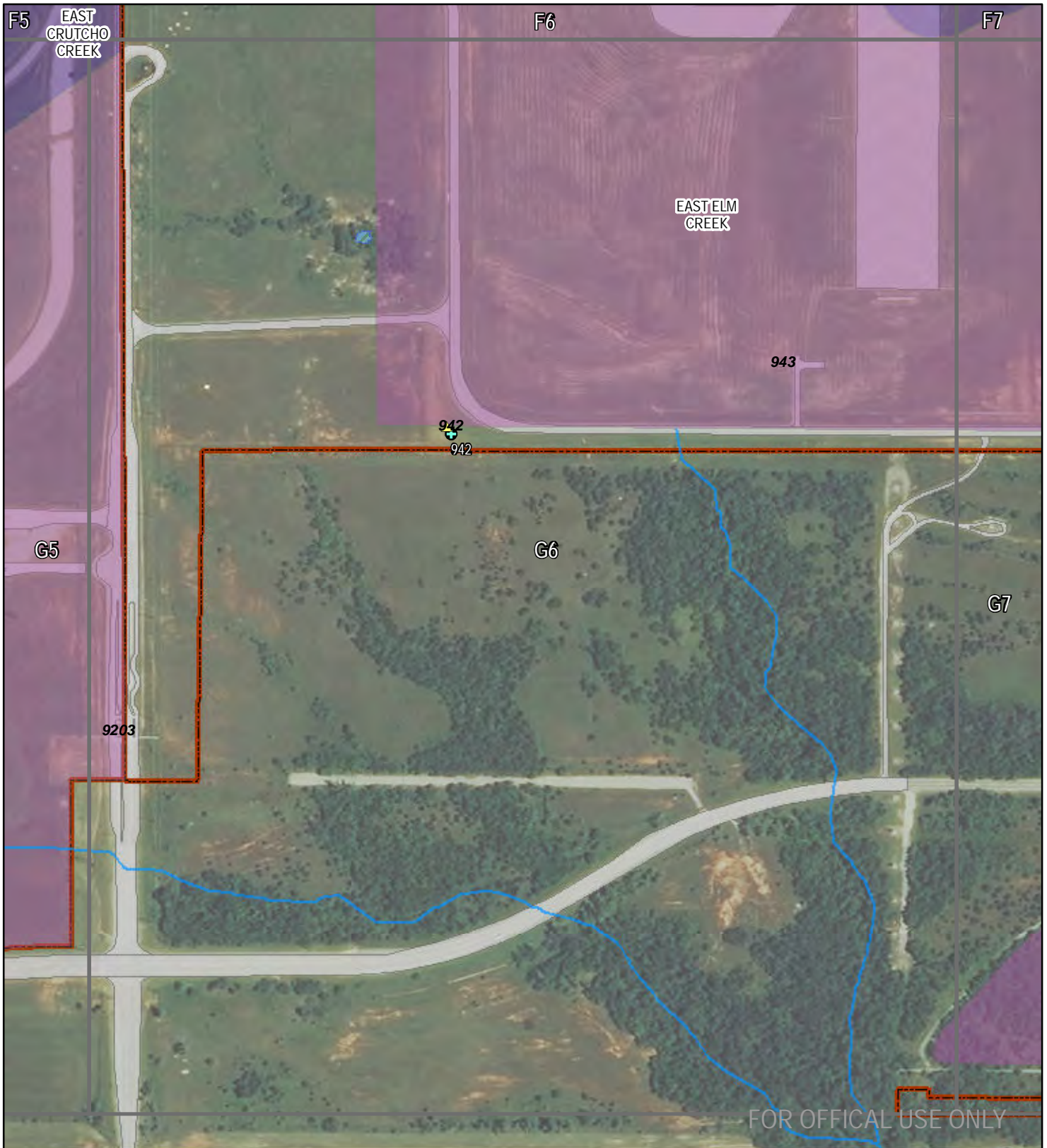


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: G5
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICAL USE ONLY

LEGEND

- Electrical Transformer
- Generators
- Fuel Lines
- Base Boundary
- Wetland Areas
- Pond Areas
- River/Stream
- Existing Buildings
- Pavement Branch

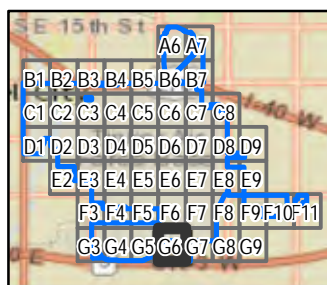
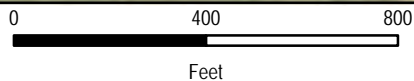
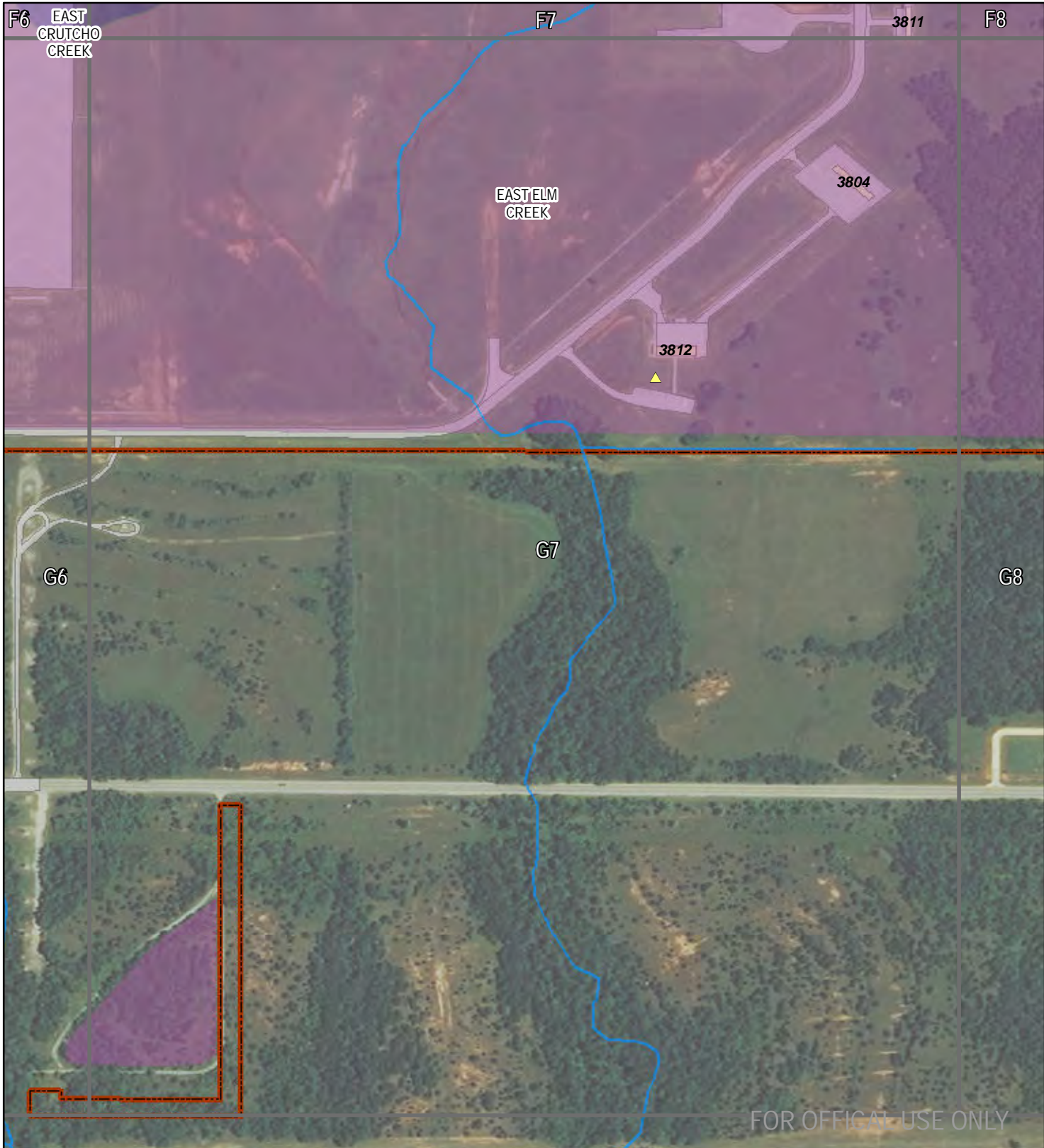


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: G6
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

- Electrical Transformer
- Base Boundary
- River/Stream
- Existing Buildings
- Pavement Branch

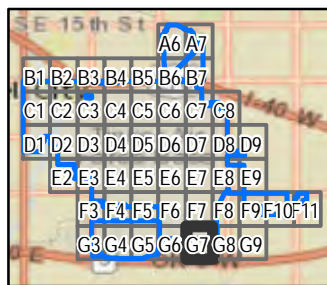
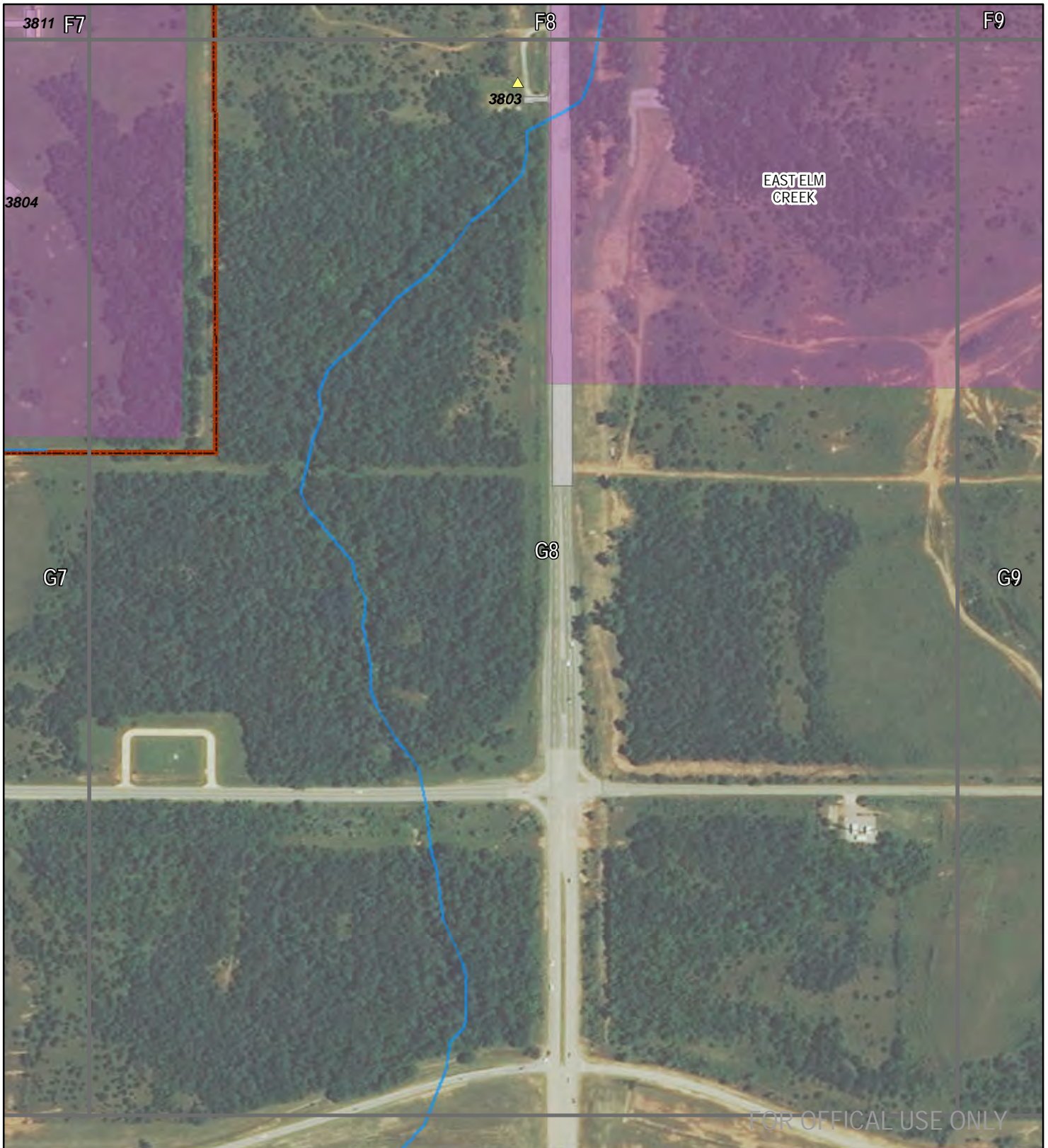







FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: G7
TINKER AIR FORCE BASE, OKLAHOMA

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FOR OFFICIAL USE ONLY

LEGEND

-  Electrical Transformer
-  Base Boundary
-  River/Stream
-  Existing Buildings
-  Pavement Branch

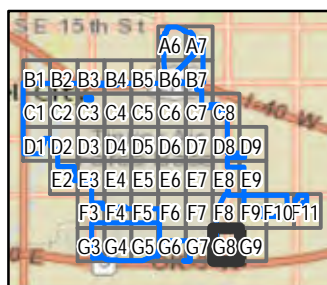
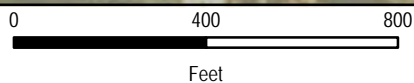
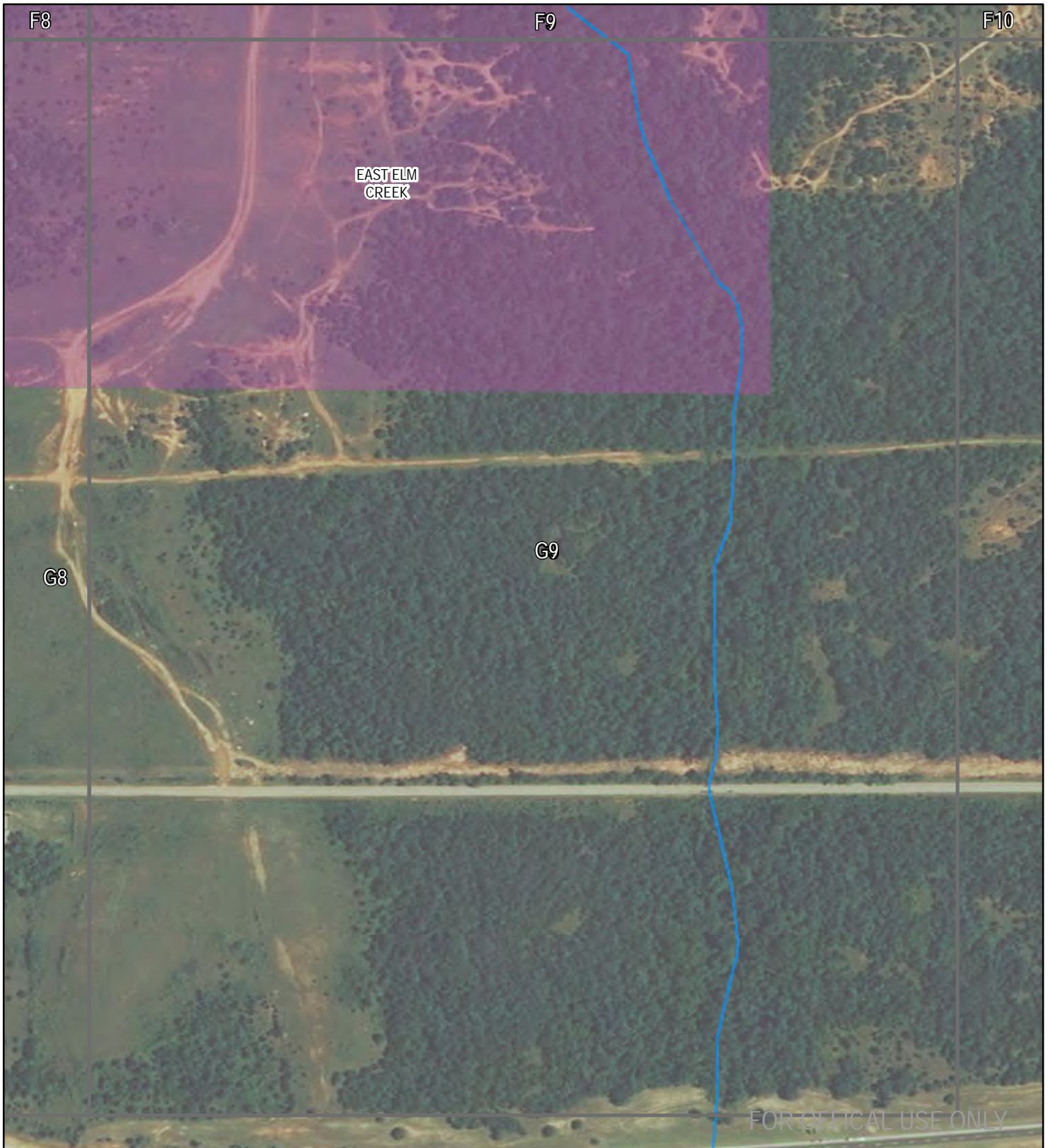


FIGURE W.4
FACILITY BASE MAP
MAP BOOK PAGE: G8
TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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FOR OFFICIAL USE ONLY

LEGEND

— River/Stream

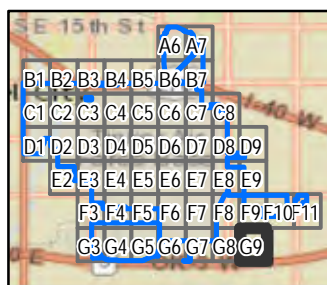
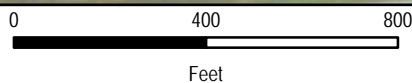


FIGURE W.4
 FACILITY BASE MAP
 MAP BOOK PAGE: G9
 TINKER AIR FORCE BASE, OKLAHOMA

DATE FEB 2016	PROJECT NO 03886.544.007	SCALE AS SHOWN
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ANNEX X

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ANNEX Y

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ANNEX Z

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