

**MANEUVER TRAINING CENTER
FORT PICKETT
BLACKSTONE, VIRGINIA**



INTEGRATED CONTINGENCY PLAN

NOVEMBER 2014

INTEGRATED CONTINGENCY PLAN

MANEUVER TRAINING CENTER FORT PICKETT BLACKSTONE, VIRGINIA

Prepared for:

**Virginia Department of Military Affairs
MTC-Fort Pickett
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1. REGULATORY INTRODUCTION

1.1 GENERAL APPLICABILITY AND PURPOSE

[40 CFR 112.1] [9 VAC 25-91-170 A.1]

This Integrated Contingency Plan (ICP) provides a comprehensive document to assist in the prevention of discharges of oil, chemicals, and other types of potential pollutants from the Virginia Department of Military Affairs' Maneuver Training Center located at Fort Pickett, herein referred to as MTC-Fort Pickett. The facility is located in the Town of Blackstone, Virginia within Nottoway County. This Plan identifies potential spill sites and details spill prevention procedures, inspection programs, and required training of personnel. In the event of a discharge, the Plan also provides a strategy for spill control that is designed to minimize the impact on the navigable waters of the United States or adjoining shorelines as well as all State waters.

The ICP fulfills the requirements for a Spill Prevention, Control, and Countermeasure (SPCC) Plan as required by the United States Environmental Protection Agency (EPA) Regulation Title 40, Code of Federal Regulations, Part 112 (40 CFR 112), and Army Regulation (AR) 200-1, Chapter 11, and describes spill detection, reporting, containment, cleanup and disposal procedures. Under 40 CFR 112, facilities that store a total capacity of oil in excess of 1,320 gallons, which could be reasonably anticipated to discharge harmful quantities of oil to navigable waters, are required to have an SPCC Plan. In consideration of the aboveground storage capacity at MTC-Fort Pickett, and its potential for impact to navigable waters, the facility is covered by the requirements of 40 CFR 112.

The ICP also incorporates the Oil Discharge Contingency Plan (ODCP) for the facility. The ODCP has been prepared to comply with the Commonwealth of Virginia Regulation 9 VAC 25-91-10, Part IV, Oil Discharge Contingency Plan Requirements (also referred to as 9 VAC 25-91-170). This regulation applies to all facilities in the Commonwealth of Virginia that have either an individual or an aggregate aboveground storage capacity of 25,000-gallons or greater of oil.

Additionally, the ICP incorporates the RCRA Hazardous Waste Contingency Plan for the facility in compliance with 40 CFR 265 Subpart D, Contingency Plan and Emergency Procedures since the facility is a Large Quantity Generator (LQG) of hazardous waste.

The ICP has been developed to provide a concise document that incorporates all the content requirements of the SPCC Plan, ODCP and RCRA Hazardous Waste Contingency Plan while eliminating redundancies inherent to each plan.

1.2 REGULATORY REQUIREMENTS

This Plan has been prepared and implemented in accordance with EPA 40 CFR 112, Oil Pollution Prevention; 9 VAC 25-91-170, Oil Discharge Contingency Plan; 40 CFR 265 Subpart D, Contingency Plan and Emergency Procedures; and AR 200-1, Environmental Protection and Enhancement. References used in the development of this Plan are contained in **Appendix D**.

1.2.1 40 CFR 112.1(d) Requirements

An SPCC Plan must be written and certified for an on-shore installation when one or more of the following conditions exist:

- There is a reasonable potential for discharging oil from fixed facilities into waters of the United States, or;
- The facility is not subject to the control of the US Department of Transportation or the US Department of the Interior as defined in specific memoranda of understanding, or;
- The oil storage capacity on-site exceeds either:
 - 1) 42,000 gallons of total underground storage; or
 - 2) 1,320 gallons of total aboveground storage in containers of 55 gallons or more capacity, or;
- The facility is not used exclusively for wastewater treatment and oil recovery as a by-product of that process.

1.2.2 AR 200-1 Requirements

Army Regulation 200-1, Chapter 3 requires that each installation prepare, maintain, and implement an SPCC Plan and OSCP whenever any of the following conditions are met:

- Required by 40 CFR 112, Oil Pollution Prevention, because of the volume of stored petroleum, oil, and lubricants (POLs) or because the storage location is such that a spill could reasonably be expected to discharge into or upon navigable waters.
- Hazardous materials are stored in more than “consumer quantities.” or
- Hazardous waste is generated and the facility qualifies as a “large quantity generator.”

1.2.3 9 VAC 25-91-170 Requirements

9 VAC 25-91-170 applies to all facilities in the Commonwealth of Virginia that have either an individual or an aggregate aboveground storage capacity of 25,000-gallons or greater of oil.

1.2.4 40 CFR 265 Subpart D Requirements

40 CFR 265 Subpart D require that large quantity generators (LQG) of hazardous waste and treatment, storage and disposal (TSD) facilities prepare, maintain and implement a Contingency Plan which is designed to minimize hazards to human health or the environment from fires, explosions, or any release of hazardous waste or hazardous waste constituents to air, soil or surface water.

1.2.5 MTC-Fort Pickett Specific Requirements

An SPCC Plan is required for MTC-Fort Pickett because:

- There is a reasonable potential for discharging oil from fixed facilities into waters of the United States, and;

- Fuel storage capacity exceeds 1,320 gallons total aboveground storage in containers of 55 gallons or more capacity, and;
- Underground fuel storage capacity exceeds 42,000 gallons.

MTC-Fort Pickett is a large quantity generator (LQG) of hazardous waste. Thus, a RCRA Hazardous Waste Contingency Plan is required.

An ODCP is required for MTC-Fort Pickett because fuel storage capacity at the installation exceeds 25,000-gallons. Only tanks with a capacity greater than 660-gallons are regulated under ODCP.

Since the elements of the ODCP are included in the ICP, the ICP must be submitted to the following Virginia Department of Environmental Quality (DEQ) regional office for review and approval:

Virginia Department of Environmental Quality – Blue Ridge Regional Office
7705 Timberlake Road
Lynchburg, Virginia 24502
Telephone Number: (434) 582-5120

Once approved, a copy of the final approved ICP and the DEQ approval letter shall be made available for inspection at MTC-Fort Pickett. The VAARNG will amend or update this ICP prior to a change in facility design, construction, operation, or maintenance that substantially affects the facility's potential to discharge oil or every 60 months, whichever ever comes first. The DEQ will be notified of these changes within 30 days of their occurrence.

2. DEFINITIONS [40 CFR 112.2]

Acronyms and Definitions for this Plan are found in **Appendix A**.

3. GENERAL SPCC PLAN REQUIREMENTS [40 CFR 112.3]

3.1 FACILITIES OPERATIONAL PRIOR TO AUGUST 18, 2002 [40 CFR 112.3(a)]

MTC-Fort Pickett was operational prior to August 18, 2002; therefore the SPCC Plan has been amended as needed to comply with subsequent revisions to 40 CFR 112 published in the Federal Register. Amendments must be certified by a Professional Engineer (PE). The current version of the Plan includes the required amendments and is effective on the date on which a registered Professional Engineer (PE) certifies that the document has been reviewed and prepared in accordance with good engineering practices.

3.2 FACILITIES OPERATIONAL ON OR AFTER AUGUST 18, 2002
[40 CFR 112.3(b)]

Not applicable.

3.3 ONSHORE DRILLING OR WORKOVER RIGS [40 CFR 112.3(c)]

Not Applicable.

3.4 PROFESSIONAL ENGINEER CERTIFICATION [40 CFR 112.3(d)]

This Plan has been reviewed and certified by a PE who attests: that he is familiar with 40 CFR 112; that he or his agent is familiar through site review with MTC-Fort Pickett; that the Plan has been prepared in accordance with good engineering practice; that procedures required for inspections and testing have been established; and that this Plan is adequate for the facilities at MTC-Fort Pickett. The signed certification statement is located in **Appendix E**.

3.5 PLAN AVAILABILITY [40 CFR 112.3(e)][40 CFR 265.53]

A complete copy of the ICP is maintained at MTC-Fort Pickett and is available to EPA personnel for on-site review during normal working hours.

3.6 EXTENSIONS OF TIME [40 CFR 112.3(f)]

Not Applicable.

4. AMENDMENT OF PLAN BY REGIONAL ADMINISTRATOR [40 CFR 112.4]

4.1 SUBMISSION TO EPA [40 CFR 112.4(a)]

The Virginia Department of Military Affairs (DMA) will submit the information required by 40 CFR 112.4(a) within 60 days to the EPA Regional Administrator for review whenever the facility has:

- Discharged more than 1,000 gallons of oil into or upon navigable waters or adjoining shorelines in a single spill event; or
- Discharged more than 42 gallons of oil in each of two spill events within any 12 month period.

The information required on **Form C.2** in **Appendix C** will be submitted to the EPA Regional Administrator at EPA Region III. The Regional Administrator will review the information and the Plan and may require further amendments to the Plan.

4.2 TIME EXEMPTION FOR AMENDMENT [40 CFR 112.4(b)]

Not Applicable.

4.3 SUBMIT INFORMATION TO STATE AGENCIES [40 CFR 112.4(c)]

At the same time, VAARNG will submit a complete copy of the information noted in Section 4.1 to the DEQ Blue Ridge Regional Office. The DEQ may conduct a review and make recommendations to the EPA.

4.4 EPA REVIEW [40 CFR 112.4(d-f)]

Instructions of the Regional Administrator received after the review in Section 4.1 above will be implemented within 30 days of receipt unless otherwise specified in writing by the Regional Administrator.

5. AMENDMENT OF PLAN BY OWNER/ OPERATOR [40 CFR 112.5] [40 CFR 265.54]

5.1 AMENDMENT OF THE PLAN [40 CFR 112.5(a-b)]

VAARNG will review the ICP:

- Whenever there is a change in facility design, construction, operation, or maintenance that affects the facility's potential for the discharge of oil or hazardous substances;
- At least once every five (5) years from the date of certification of the Plan.

The review will assess whether spill reporting/response contact information has changed, equipment or procedure changes are necessary to prevent or control discharges, more effective, field-proven prevention and control technology has become available, or if revisions are required by EPA or DEQ. Each review will be documented on the signed statement included in Appendix E.

The Plan will be amended within six months of the review and the amendment(s) will be fully implemented no later than six months after the amendment has been completed, unless an extension has been requested and granted.

5.2 CERTIFICATION OF PLAN AMENDMENTS [40 CFR 112.5(c)]

Technical amendments to this Plan must be certified by a PE. Administrative type revisions and deletions to the Plan, which do not materially affect the facility's potential for a discharge of oil, do not require PE certification. The record of the reviews and amendments is included in **Appendix E**.

6. RESERVED [40 CFR 112.6]

This section is reserved by the EPA for future use.

7. SPILL PREVENTION, CONTROL, & COUNTERMEASURE PLAN
[40 CFR 112.7]

7.1 FACILITY DESCRIPTION

7.1.1 Facility Conformance [40 CFR 112.7(a)(1-2)]

MTC-Fort Pickett conforms to all the requirements of 40 CFR 112. The cross-reference table in **Appendix D** highlights which sections of this Plan apply to each subpart of 40 CFR 112. This Plan does not deviate from the requirements of 40 CFR 112.

7.1.2 Facility Owner and Address [40 CFR 112.7(a)(4)](9 VAC 25-91-170 A.2)]

Facility Owner

Department of the Army

Facility Operator

Commonwealth of Virginia
Department of Military Affairs
Building 316, Fort Pickett
Blackstone, VA 23824-6316

Facility Address

Department of Military Affairs
Maneuver Training Center
Fort Pickett
NGVA-FMO-ENV
Building 316
Blackstone, VA 23824

Designated Points of Contact

MTC-Fort Pickett Environmental Specialist
(434) 298-6407

MTC-Fort Pickett Environmental Specialist
(434) 298-6121

7.1.3 Directions to the Facility [9 VAC 25-91-170 A.1]

Driving directions to MTC-Fort Pickett are listed below:

From Richmond, follow Powhite Parkway south to 288 West towards Hull Street (360) and Amelia. Exit 288 East onto Hull St (360 W) and travel west to Rt. 153. Turn left onto Rt. 153 and travel south to 460. Turn right onto 460 W and travel approximately 6 miles to Rt. 40 Business. Turn left onto Rt. 40 Business and travel until reaching the Fort Pickett sign. Turn left onto Military Road and keep straight as you reach the entrance to the base, which is several hundred feet past the intersection at Rt. 40.

7.1.4 Facility Description [40 CFR 112.7(a)(3)] [9 VAC 25-91-170 A.3][40 CFR 265.52 (f)]

MTC-Fort Pickett is located in Blackstone, Virginia approximately thirty-five miles west of Petersburg, Virginia. The facility consists of approximately 42,000 acres of land. MTC-Fort Pickett is bordered by Blackstone, Virginia to the west and mostly rural land to the north, south, and east. **Figure 1a**, the General Vicinity Map, shows the general location and topography of MTC-Fort Pickett with respect to the surrounding area. **Figure 1b**, the Site Location Map, shows the layout of MTC-Fort Pickett.

MTC-Fort Pickett is used primarily for training, base operations, and maneuvering for the U.S. Army National Guard and U.S. Army Reserve units. The Virginia Army National Guard (VAARNG) Headquarters (HQ) as operated by the Commonwealth of Virginia Department of Military Affairs (VDMA) is also located on MTC-Fort Pickett. In October 1997 operations at MTC-Fort Pickett were taken over by the VDMA and the VAARNG as a result of the Base Realignment and Closure (BRAC) process. The installation was essentially divided into three distinct areas: an area operated by the VDMA; the excess area relinquished to the Nottoway County Local Reuse Authority (LRA); and the research area operated by Virginia Tech.

MTC-Fort Pickett facility and tenant activities covered by SPCC regulations are as follows:

- Aboveground and underground heating oil storage tanks;
- Temporary storage/parking of fuel tankers;
- Storage of petroleum, oils, and lubricants (POLs) for maintenance activities; and
- Field fueling activities.

Underground petroleum storage tanks (USTs) for both retail and bulk distribution to vehicles are exempted from the SPCC requirements if they meet all applicable standards of 40 CFR Part 280/81; however, the bulk fuel loading racks are subject to SPCC requirements.

MTC-Fort Pickett consists of many different tenants conducting various activities. The following sections identify each tenant and discuss the petroleum-related activities that are conducted. Each section also refers to a site diagram, shown on **Figures 2 through 18**, respectively. Each facility has a fire evacuation plan for buildings within its compound, which will also be used in case of a hazardous material emergency. In general, most bulk storage is in hazmat lockers located outside major buildings. Therefore, an evacuation route for those areas is not applicable.

7.2 OIL STORAGE FACILITIES/ACTIVITIES

7.2.1 Materials On-Site and Storage Capacities [40 CFR 112.7(a)(3)(i-vi)] [9 VAC 25-91-170 A.5]

Currently there are **125 aboveground storage tanks (ASTs) and 17 underground storage tanks (USTs)**. The ASTs range in size from 70-gallons to 4,000-gallons, with the predominant size being 2,000 gallons. The USTs range in size from 5,000 gallons to 30,000 gallons, with the predominant size being 20,000 gallons. The total petroleum storage in ASTs and USTs at MTC-Fort Pickett is approximately 380,000 gallons. **Table 1** lists the petroleum ASTs and **Table 2** lists petroleum USTs.

The majority of ASTs are used to store No. 2 fuel oil and are situated adjacent to troop barrack buildings located throughout MTC-Fort Pickett. Each block typically consists of 20-30 barracks that use fuel oil for their heating units. Typically, one AST serves one barrack, however, there are cases where one AST serves two barracks. The ASTs are predominantly 1,000-gallon and 2,000-gallon steel vaulted ASTs.

In addition to bulk storage tanks for heating oil, various ASTs are used throughout the installation to store diesel, motor vehicle gasoline (MOGAS), Used Oil and spent kitchen grease. Petroleum

is also stored in portable containers, such as 55-gallon drums and mobile refuelers, which are located throughout the installation.

MTC-Fort Pickett includes several dining facilities (DFACs) located throughout the facility. Spent grease (vegetable oils and fats) from food preparation are transferred from the kitchens to a 300-gallon grease container, situated outside, near each kitchen. These containers are specifically designed to store spent grease and are drained, via tipple, to a transfer truck for subsequent delivery to an offsite recycling operation. RECO Biotechnology supplies and operates the 300-gallon spent grease containers. Each grease container is located on a concrete pad and covered with a roof. Spill equipment is available for the control and clean up of any release.

Also located throughout MTC-Fort Pickett are emergency generators that supply back-up power to individual buildings. Typically, these emergency generators utilize a steel, double-walled base tank situated beneath the emergency generator, known as a “belly” tank. Belly tanks range in size from 70 gallons to 330 gallons. Two generators have separate stand alone 500-gallon double-walled tanks.

The majority of the USTs at the installation are associated with vehicle fueling and are regulated under 40 CFR Part 280/81. Two USTs used to store heating oil are not regulated under 40 CFR Part 280/81 and are therefore subject to SPCC requirements.

The following narrative describes petroleum storage tank locations and the surface drainage and discharge pathways associated with each location. Areas are grouped by building numbers. Tenant organizations and other significant petroleum storage locations within each area are discussed in detail.

100 Area

The 100 Area includes Buildings 141, 142 and the VAARNG Maneuver Area Training Equipment Site (MATES) Compound.

Buildings 141 and 142 are administration buildings that share a 298-gallon emergency generator belly tank. No other oil storage is present.

Figure 2 illustrates the stormwater flow direction in the case of a petroleum spill, and the locations of the above mentioned petroleum storage areas.

Maneuver Area Training Equipment Site (MATES)

The MATES conducts vehicle maintenance and painting operations on military and other government owned equipment. The facility consists of the following oil storage locations. Spill kits are located throughout the facility at the various Field In-Storage Maintenance Shops (FISMs) and are shown on **Figure 2**.

Hazardous Material Building: In early 1999, a POL storage building was constructed. The storage building is designed to contain ninety 55-gallon drums. The inside is bermed with a 6-inch concrete curb that provides approximately 4,950 gallons of secondary containment. There are no floor drains within the storage shed.

Underground Storage Tank Fueling Area: Two 8,000-gallon fiberglass diesel fuel USTs are located within the compound at Building 134. They were upgraded in 1998 to meet the technical standards for USTs as required by 40 CFR Part 280 and State Administrative Code. The USTs are single-walled fiberglass equipped with overfill/spill containment sumps. The lines connecting the tanks to the dispensers are double-walled fiberglass equipped with interstitial monitoring sensors. The USTs are monitored with a Veeder Root TLS-350 Automatic Tank Gauging (ATG) system. Vehicles are refueled on a concrete pad using two fuel dispensers. The wheels of the vehicles are chocked prior to refueling. The driver of the vehicle remains with the vehicle during the refueling to prevent overfilling of the vehicle.

Underground Heating Oil Tanks: The MATES facility has two underground heating oil storage tanks. The two 5,000-gallon heating oil tanks at Building 134 are constructed of fiberglass. An underground piping network from the Wheeled Support Shop and FISM-II fills one of the 5,000-gallon tanks with Used Oil. The other 5,000-gallon tank is used as a blend tank with No. 2 Fuel Oil to achieve the appropriate mixture for the heating system. Both USTs are monitored with a Veeder Root TLS-350 Automatic Tank Gauging (ATG) system.

Vaulted Aboveground Heating Oil Storage Tanks: The MATES facility has five vaulted heating oil ASTs. One 2,000-gallon tank is located at Building 143, three 3,000-gallon tanks are located at Buildings 134A, 137 and 139, and a 4,000-gallon tank is located at Building 135.

2,500 Gallon Refueling Truck: The MATES facility has one 2,500-gallon diesel fuel dispensing truck. This truck receives bulk fuel issue from Fuel Station #1 and distributes fuel to individual pieces of equipment throughout the different FISMs. The refueling truck is permanently fixed at MATES and equipped with adequate secondary containment for 110% of the largest vehicle. The fueling truck is stored in a covered secondary containment structure.

275-gallon Mobile Used Oil Tank: The MATES facility has one 275-gallon used oil AST. The 275-gallon tank is stationed outside of Building 134 and is housed in a hazardous material building with integral secondary containment.

Hazardous Waste/Material Storage Shed: The facility has six storage sheds. Two are located at Building 135, one is located at Building 137 and Building 139 and two are located at Building 134A. These sheds contain various POLs and wastes generated by MATES and are equipped with integral secondary containment for 110% of the largest container (55-gal drum) stored within the shed.

Oil/Water Separators: The MATES facility has four oil/water separators (OWS) that are maintained by MTC-Fort Pickett Facilities Engineering Division. NGVA-FMO-ENV schedules cleanouts approximately every 6 months. Two OWSs are located on the east side, next to each corner of Building 134. The wash pad and grit chamber are located on the southeast corner of the same building. Another OWS with grit chamber, wash pad and diversion valve, is located between Buildings 137 and 139. The final OWS with grit chamber and wash pad is located on the north side of Building 143. Each of these OWSs is connected to the sanitary sewer system and the Town of Blackstone maintains the wastewater treatment facility. The oil/water separators are solely used for wastewater treatment and are therefore exempt from SPCC requirements.

200, 300, and 400 Areas

The 200 Area includes the MTC-Fort Pickett Directorate of Public Works (DPW) and several storage warehouses. Building 212 stores non-hazardous materials and military supplies and has a vaulted 2,000-gallon No. 2 fuel oil AST for heating. The remaining 200 Area buildings are included below under Directorate of Public Works.

The 300 Area consists of administration buildings, including the Directorate of Logistics (DOL), Fort Pickett Forestry Office and VDMA Headquarters. This area contains four (4) vaulted No. 2 fuel oil ASTs for heating, two (2) double-walled emergency generator belly tanks and one (1) fire pump AST. The 70-gallon fire pump AST is located within Building 301 and has a metal secondary containment dike under the tank. Building 311 (DOL) and 321 (Forestry/Wildlife) each have a single-walled portable diesel AST for vehicle fueling, which are parked in their respective lots when not in use.

The 400 Area includes Billeting and MTC-Fort Pickett Headquarters offices. There are four (4) vaulted No. 2 fuel oil ASTs and one (1) double-walled AST for heating, and two (2) double-walled emergency generator belly tanks in this area. The DPW Quarry is also located in the 400 Area and is discussed in detail below.

Surface drainage from these areas flows to the west/southwest via unnamed streams into Hurricane Branch, which discharges into the Nottoway River. These areas are graphically shown on **Figure 3**.

Directorate of Public Works (DPW)

Located within the 200 Area is the MTC-Fort Pickett Directorate of Public Works (DPW), which manages the repair and servicing of machinery including gasoline-powered hand tools, equipment and vehicles, repairs on all real property, such as barracks, administration buildings, telephone lines, etc. Spill kits are located within Building 229 for response to spills that may occur, as shown on **Figure 4**. The oil storage locations within this area are as follows:

POL Storage: A POL storage building is located at the rear of Building 229 and contains approximately 500 gallons of miscellaneous oils and lubricants. A POL storage building is located at the north end of the compound between Buildings 239 and 232. The POL storage buildings are equipped with integral secondary containment for 110% of the largest container (55-gal drum)

stored within the building. DPW also has nine (9) single-walled portable diesel ASTs for vehicle fueling and two (2) emergency generators with double-walled belly tanks, which are parked on the lot when not in use.

Vaulted Heating Oil ASTs: One 1,000-gallon steel, vaulted No. 2 heating oil AST is located south of Building 229. One 1,000-gallon steel, vaulted No. 2 heating oil AST is located on the west side of Building 232. The tank is on the exterior of the fenced compound.

500-gallon Used Oil AST: One 500-gallon double-walled used oil AST is located east of Building 229.

Hazardous/Non-Hazardous Waste Storage: The facility has two waste storage sheds. One is located northeast of Building 229 and the other is located between Buildings 232 and 239. These sheds contain various hazardous and non-hazardous wastes generated by DPW and are equipped with adequate secondary containment for 110% of the largest container stored within the shed.

In the event of a spill from the ASTs, surface water flow in this area is west toward the sewer catch basin located at the corner of Rives Street and 9th Street and northeast toward the catch basin behind Building 229.

Figure 4 illustrates the correct placement of spill booms in the case of a petroleum spill and the above mentioned petroleum storage areas.

ASP and DPW Quarry

The Ammunition Supply Point (ASP) is located along Military Road and contains one 300-gallon No. 2 fuel oil AST for heating Building 495. In the event of a spill from the AST, surface water flow in this area is southeast toward an unnamed tributary to Hurricane Branch.

MTC-Fort Pickett DPW manages a rock quarry located along Military Road to the west, just past West Entrance Road. The quarry produces rock for use on roads and tank trails throughout the installation. Spill kits are located next to the POL/waste storage sheds.

POL/Non-hazardous Waste Storage: Two storage buildings contain approximately 250 gallons of miscellaneous oils, lubricants and Used Oil. The storage buildings are equipped with integral secondary containment for 110% of the largest container (55-gal drum) stored within the building.

Vaulted MOGAS AST: One 500-gallon steel, vaulted MOGAS AST is located west of Building 490 and is used for refueling DPW vehicles.

Vaulted Diesel AST: One 250-gallon steel, vaulted diesel AST is located east of Building 487 and is used to fuel a generator located in Building 487.

In the event of a spill from the ASTs, surface water flow in this area is west/southwest toward Hurricane Branch. A rock berm, approximately 4 feet high, has also been constructed between the quarry and Hurricane Branch as a Best Management Practice (BMP) in accordance with the MTC-Fort Pickett Stormwater Pollution Prevention Plan (SWPPP).

Figure 5 illustrates the correct placement of spill booms in the case of a petroleum spill from these areas.

500, 700 and 900 Areas

The 500 and 700 Areas include the U.S. Army Reserve Center (USARC), U.S. Army Reserve 99th RSC 88th Equipment Compound Site (ECS 88), and Building 580. Building 580 is a residence maintained by the Billeting Office, which has a 500-gallon vaulted No. fuel oil AST for heating. No other oil storage is present. Petroleum storage at ECS 88 and USARC are discussed further in the sections below.

The 900 Area houses the FORSCOM Petroleum Training Module (FPTM), which is discussed in more detail below.

Surface drainage from these areas flows to the east towards Birchin Creek and is shown on Figure 6.

U.S. Army Reserve Center (USARC), 275th Quartermaster, 377th Chemical and 392nd Signal Battalion

The USARC is located along 10th Street. Within the USARC compound, the 275th Quartermaster, 377th Chemical and 392nd Signal Battalion conduct training and minor vehicle maintenance. A 95-gallon over-pack with spill response equipment is located in Building 504. The storage that is regulated by the 40 CFR 112 are as follows:

Vaulted Heating Oil AST: There is one 2,000-gallon No. 2 fuel oil AST located on the southeast corner of Building 503.

Hazardous Material Storage: A small, brick hazardous material storage building is located at the east end of the facility. The building has adequate secondary containment for 110% of the the largest container stored within the building (55-gal drum). There are also three hazardous material buildings located at the east end of the facility containing miscellaneous cleaning products and POLs. The buildings are equipped with integral secondary containment for 110% of the largest container stored within the building.

Oil/Water Separator: The facility has a wash pad with rack and grit chamber in the middle of the compound along the south fence line. The OWS is connected to the sanitary sewer system and the Town of Blackstone maintains the wastewater treatment facility. USARC personnel indicate the wash rack is no longer in use.

Surface water flow is to the southeast and west of the facility.

Figure 7 shows the correct placement of spill booms in the case of a petroleum spill.

99th RSC 88th Equipment Compound Site (ECS 88)

ECS 88 has petroleum storage on site that poses minimal risk for spills and consists of the following oil storage locations. Spill kits located throughout the facility will be used to respond to any spills that may occur, as shown on **Figure 8**.

POL//Hazardous Materials Storage: There are twelve hazardous material buildings located within the facility. Nine hazardous material buildings are located between Building 564 and Building 761 at the west end of the compound next to the fence line. One is used to store hazardous waste (aerosol paint), two are used for battery storage the the remaining buildings are used to store various POLs. Each building is equipped with integral secondary containment for 110% of the largest container stored within the building (55-gal drum). The remaining three hazardous material lockers are located between Building 763 and Building 764. They are flammable lockers that do not store containers 55-gallons or greater and therefore are not required to have secondary containment.

Used Oil Tanks: The compound has two 400-gallon steel, vaulted ASTs for the storage of used oil. One of the 400-gallon tanks is located on the southeast end of Building 761 and the other is located at the southeast end of Building 763. One double-walled 1,000-gallon used oil AST is located behind Building 564. One 500-gallon double-walled skid mounted tank is located behind Building 564A. The tank is intended to store diesel fuel for vehicles; however, personnel state that the tank is currently empty and has never been used.

Oil/Water Separators: A wash pad, grit chamber and OWS are located at the south end of the compound near Building 767. The OWS is connected to the sanitary sewer system and the Town of Blackstone maintains the wastewater treatment facility. NGVA-FMO-ENV maintains the OWS and schedules clean out as needed.

If a spill were to occur within the facility the surface water flow in this area is east toward the subsurface storm sewer located south of 10th Street on Dearing Avenue.

Figure 8 shows the correct placement of a spill boom in the case of a petroleum spill.

FORSCOM Petroleum Training Module (FPTM)

The FPTM provides training and support to military units on operating over 20 miles of pipeline throughout the installation. The pipeline is used for training purposes only and transports water instead of oil. In the training scenario, units usually set up the pipeline in April and take it down in October. The operations at the FPTM facility pose moderate-to-small potential for spills. The POL storage within this facility are as follows:

500-gallon Used Oil AST: The 500-gallon used oil tank is a steel, vaulted tank located on the east side of the compound along the fence line and south of Building 980 next to the hazardous material buildings. Spill equipment is available inside Building 976 for any spills that might occur.

Pipeline Operations Equipment: FPTM uses a variety of pumps, light sets and generators throughout the installation for pipeline operations training. When the pipeline is operating, eight pump stations are set up along the pipeline. Each pump station has a portable, trailer-mounted pump with a 110-gallon diesel fuel tank. Plastic secondary containments berms are erected at each pump station with adequate containment to hold 110% of the largest container. When not in use, the pumps are stored empty in the FPTM lot.

Hazardous Materials Storage: FPTM has three hazardous material buildings which contain miscellaneous POLs, antifreeze and battery acid used during the training that is conducted within the facility. The buildings are located on the east side of the compound along the fence line and south of Building 980. The hazardous material buildings are equipped with integral secondary containment for 110% of the largest container stored within the shed.

A shallow drainage swale, located immediately east of the facility would contain the largest potential oil spill. The swale is grassed and slopes gently.

Figure 9 shows the correct placement of a spill booms in the case of a petroleum spill.

1300, 1500, 2100, 2300, and 2500 Areas

The 1300 Area includes Telecommunications offices, U.S. Navy Explosive Ordnance Disposal (EOD) Offices and barracks, and other general administration buildings. This area has three (3) double-walled emergency generator diesel tanks and four (4) vaulted No. 2 fuel oil ASTs for heating. Surface drainage is generally to the northeast towards Birch Creek; however, several tanks located south of East Parade Street, drain to the southwest unto an unnamed tributary to Hurricane Branch.

The 1500 Area includes Field Maintenance Shop #15 (FMS 15) and other maintenance buildings associated with the 3647th Maintenance Company. A more detailed discussion of petroleum storage at FMS 15 is presented below.

The 2100 Area includes the 183rd Regiment Regional Training Institute (RTI), which has one (1) 70-gallon diesel tank associated with the fire pump located inside Building 2117. Building 2117 is constructed of concrete block and a metal secondary containment dike is located under the tank.

Surface flow is toward a drainage ditch immediately east of the facility, which drains to Birch Creek.

The 2300 Area includes the MTC-Fort Pickett Recycling and 90-Day Temporary Waste Accumulation Facility. A more detailed discussion of petroleum storage at the Recycling Facility is presented below.

The 2500 Area includes a residence that is currently used by the Installation Commander. The house (Building 2538) has a vaulted 500-gallon No. 2 fuel oil AST for heating. No other oil storage is present. Surface drainage is to the southwest towards an unnamed tributary to Hurricane Branch.

These areas are graphically shown on **Figure 10**.

Field Maintenance Shop (FMS) #15

The operations at FMS #15 pose a moderate-to-small potential for spills. FMS #15 is responsible for the repair and maintenance of government vehicles used on the installation. The storage located within this facility are as follows:

2000-gallon Used Oil Tank: The 2,000-gallon used oil tank is a steel, vaulted AST that meets all SPCC requirements. The tank is located at the north end of the FMS compound and centrally located between Building 1556 and Building 1545 under a roofed structure. A spill kit is located next to the used oil tank.

Hazardous Material Storage: POLs are stored in three sheds located at the north end the facility next to the fence line. The POL storage sheds are equipped with integral secondary containment for 110% of the largest container stored within the shed. There are approximately sixty 55-gallon drums and various other containers stored in the three POL sheds. A spill response center within Building 1556 can be used to respond to any spills that may occur. Drums of POLs are also stored in Buildings 1543, 1542, 1541 and 1540, some of which are used by the 3647th Maintenance Company.

Indoor Drainage System: The indoor floor drains are connected to an oil-water separator that will provide a catch basin for the residual POLs spilled within the building. The FMS personnel will cleanup any spill POLs with provide spill equipment before cleaning the maintenance bay. The oil-water separator recovers the waste oils and discharges the waste effluent to the public wastewater treatment system.

Oil/Water Separator: The wash pad, grit chamber and OWS are at the north end of Building 1556. MTC-Fort Pickett Facilities Engineering Division maintains the OWS and schedules clean outs as needed. The OWS is connected to the sanitary sewer system and the Town of Blackstone maintains the wastewater treatment facility.

There are no storm water drains on the compound; however, a drainage ditch, located along Dearing Avenue, provides a migration pathway to a drainage swale, on the east side of Dearing Avenue. This swale ultimately leads to an intermittent stream that feeds Birchin Creek.

Figure 11 shows the correct placement of a spill boom in the case of a petroleum spill.

Recycling Center and 90-Day Temporary Waste Accumulation Facility

The Recycling Center and 90-Day Temporary Waste Accumulation Facility located at MTC-Fort Pickett are used to house materials prior to disposal. The Recycling Center stores paper, cardboard and various metals, such as steel, aluminum, tin, copper, and brass, which are sold to maintain the program. The 90-Day Temporary Waste Accumulation Facility stores hazardous and non-hazardous wastes prior to off-site disposal.

2,000-gallon Used Oil Tank: The 2,000-gallon used oil tank is a steel, vaulted AST that meets all SPCC requirements. The AST is located at the north end of the compound along the fence line.

300-Gallon Recyclable Gasoline Tank: The steel, vaulted AST meets all SPCC requirements. The AST is located on the west side of the compound, along the fence line next to the used oil tank.

Hazardous Material Storage: The Recycling Center has two storage sheds at the end of Building 2361 to store lead acid batteries. The buildings are equipped with integral secondary containment.

Hazardous and Non-Hazardous Waste Storage: Four waste storage sheds are located behind Building 2361. One is used to store hazardous waste and three are generally used to store non-hazardous wastes. (95-gallon over pack). In the case of an emergency from a spill of hazardous/non-hazardous waste, the facility has a list of emergency phone numbers and a complete inventory of waste material housed within the hazardous material buildings. Building 2361 contains adequate spill equipment to prevent any spilled material from reaching an environmental receptor.

Storm water drains as sheet flow on the compound; however, a drainage ditch, located along Dearing Avenue, provides a migration pathway to a drainage swale, on the east side of Dearing Avenue. This swale ultimately leads to an intermittent stream that feeds Birchin Creek. The facility is also regulated under a VPDES General Stormwater Permit, and a design for the construction of a bioretention filter has been completed. Construction should be complete by the end of 2014. The addition of the filter will not alter the current surface flow path.

Figure 12 shows the surface flow and the correct placement of a containment boom in the case of a spill.

1400, 1600, 1800, 2000, and 2200 Areas

The 1400 Area includes the MTC-Fort Pickett Fire Department (Building 1485). The Fire Department has no bulk petroleum storage onsite. The HAZMAT Response trailer is parked at Building 1485. The facility has one OWS that collects vehicle wash water and is connected to the sanitary sewer.

The 1600 Area includes troop barracks and dining facilities. There are eleven (11) vaulted No. 2 fuel oil ASTs for heating and two (2) 300-gallon kitchen grease containers. Tanks in the northwestern portion of this area discharge to the north into Birch Creek. The remaining tanks discharge to the south into an unnamed tributary to Hurricane Branch.

The 1800 Area includes several troop barracks and Fuel Station #2. Building 1876 has one (1) vaulted No. 2 fuel oil AST for heating. This area discharges to a storm sewer catch basin located immediately south, which flows northwest until it discharges west to an unnamed tributary to Hurricane Branch. Petroleum storage at Fuel Station #2 is discussed in more detail below.

The 2200 Area includes troop barracks and dining facilities. There are four (4) vaulted No. 2 fuel oil ASTs for heating and two (2) 300-gallon kitchen grease containers. There are also two (2) grease traps, located at Buildings 2211 and 2220. The 2200 Area drains south to storm sewer inlets then west to an unnamed tributary to Hurricane Branch.

These areas are graphically shown on **Figure 13**.

Vehicle Fuel Station #2

Vehicle Fuel Station #2 (Building 1800) is a military fueling point with one retail dispenser and one bulk fill stand. Vehicles are refueled on a concrete pad. The wheels of the vehicles are chocked prior to refueling and the driver of the vehicle remains with the vehicle during refueling to prevent overfilling.

In order to satisfy the SPCC requirements for bulk fuel off-loading and on loading, there must be adequate containment for the single largest compartment of the vehicle that is receiving fuel. MTC-Fort Pickett personnel will use a portable spill containment boom with a capacity of approximately 7,500 gallons.

Diesel fuel dispensing to military vehicles is conducted at Building 1800 from two 20,000-gallon USTs. The tanks were installed in 1992 to comply with the technical standards for USTs as required by 40 CFR Part 280 and the State Administrative Code. The bulk fill stand and the retail dispenser both have a 6 inch concrete berm area to contain fuel in case of a release. A 95-gallon spill kit is available at the bulk rack for any spills that might occur.

Surface drainage is to the southwest of the facility toward Hurricane Branch.

Figure 14 shows the surface drainage and correct placement of a spill booms in the case of a spill.

2400, 2600, 2800, and 3000 Areas

The 2400 Area consists of a leisure center, theater and chapel, along with troop barracks and dining facilities. There are five (5) No. 2 fuel oil ASTs for heating and three (3) 300-gallon kitchen grease containers. Central Fuel Station #1 is also located in the 2400 Area and is discussed in greater detail below. Areas south of West Parade Ave discharge northwest to storm sewer inlets and eventually west to an unnamed tributary to Hurricane Branch. Areas north of West Parade Ave discharge northeast to an unnamed tributary to Hurricane Branch.

The 2600 Area includes troop barracks and dining facilities. There are fifteen (15) vaulted No. 2 fuel oil ASTs for heating and two (2) 300-gallon kitchen grease containers. There are also two (2) grease traps, located at Buildings 2628 and 2642. Areas south of West Parade Ave discharge to storm sewer inlets located east and eventually drain southeast to an unnamed tributary to Hurricane Branch. Areas north of West Parade Ave discharge northeast to an unnamed tributary to Hurricane Branch.

The 2800 Area includes troop barracks and dining facilities. There are five (5) vaulted No. 2 fuel oil ASTs for heating and one (1) 300-gallon kitchen grease container. There are also two (2) grease traps, located at Buildings 2817 and 2827. Fuel Station #3 is located in the 2800 Area and is discussed in detail below. The 2800 Area discharges to storm sewer inlets located east and eventually drains southeast to an unnamed tributary to Hurricane Branch.

The 3000 Area consists of MTC-Fort Pickett Directorate of Plans, Training and Security (DPTS), which maintains the training ranges and maneuver areas. DPTS personnel maintain five (5) single-walled portable diesel ASTs for vehicle fueling. Each vehicle with a portable fuel tank carries spill equipment in case of a release. No other bulk petroleum storage is present onsite.

These areas are graphically shown on **Figure 15**.

Central Fuel Station #1

The Central Fuel Station #1 (Building 2474) has the greatest potential for spills within MTC-Fort-Pickett with nine (9) USTs ranging in size from 10,000-gallons to 30,000-gallons. Bulk fueling is conducted within the facility.

Non-Hazardous Waste Storage: The facility has two waste storage sheds. Oily rags, used oil, and used oil dri are stored in a storage container next to the bulk fuel island. The storage shed next to the Building 2474 contains fuel treatment and used oil dri drums. These storage containers are equipped with integral secondary containment for 110% of the volume of the largest container (55-gal drum).

Diesel USTs: Two 15,000-gallon and four 20,000-gallon double-walled fiberglass tanks containing diesel fuel were installed in 1995 to meet the technical standards for USTs as required by 40 CFR Part 280 and the State Administrative Code.

MOGAS USTs: One 10,000-gallon double-walled fiberglass tank containing MOGAS was installed in 1995 to meet the technical standards for USTs as required by 40 CFR Part 280 and the State Administrative Code.

JP-8 USTs: One 30,000-gallon and one 10,000 double-walled fiberglass tank containing JP-8 was installed in 1995 to meet the technical standards for USTs as required by 40 CFR Part 280 and the State Administrative Code.

The tank truck loading and unloading procedures meet the minimum requirements and regulation established by the Department of Transportation. Secondary containment is provided during loading or unloading of fuel at the facility by the curbing and sloping of the concrete pad that directs all surface flow to a 30,000-gallon double-walled fiberglass OWS located at the southwest corner of the facility. NGVA-FMO-ENV maintains the OWS and schedules clean outs as needed.

The Central Fuel Station #1 facility has four (4) 95-gallon over pack drums with spill equipment and four oil-dri dispensing drums located on the retail and bulk fuel islands for spill response.

Figure 16 shows the correct placement of a spill booms in the case of a petroleum spill at Central Fuel Station #1.

Vehicle Fuel Station #3

Fuel dispensing to military vehicles is conducted at Building 2870 from two (2) 15,000-gallon JP-8 USTs. The tanks were installed in 1992 to comply with the technical standards for USTs as required by 40 CFR Part 280 and the State Administrative Code. A 95-gallon spill kit is available between the retail pumps for any spills that might occur. No bulk fueling is conducted at Fuel Station #3.

Surface drainage is to the north and west of the facility along Garnett Avenue.

Figure 17 shows the correct placement of a spill booms in the case of a petroleum spill at the Fuel Station #3.

Table 1 - Inventory of Petroleum Aboveground Storage Tanks (ASTs)

Building	Tank ID	Volume (gal)	Contents	Tank Use	Tank Material	Secondary Containment	Installation Date
134 A	*T-134 A	3000	No. 2 Fuel Oil	Heating	Aggregate	Vaulted Tank	2004
134 B	T-134 B	275	Used Oil	Storage	Steel	Inside POL Storage Shed	1998
135	*T-135	4000	No. 2 Fuel Oil	Heating	Aggregate	Vaulted Tank	2004
2	*T-137	3000	No. 2 Fuel Oil	Heating	Aggregate	Vaulted Tank	2005
139	*T-139	3000	No. 2 Fuel Oil	Heating	Aggregate	Vaulted Tank	2005
143	*T-143	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
212 A	*T-212 A	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
229A	*T-229A	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
229B	T-229B	500	Used Oil	Storage	Steel	Vaulted Tank	1995
232	*T-232	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1999
309	*T-309	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
313	*T-313	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
317	T-317	500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
320	*T-320	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
463	*T-463	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
465	*T-465	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
467	*T-467	4000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
487	T-487	250	Diesel	Generator	Steel	Vaulted Tank	1995
490	T-490	500	MOGAS	Vehicle Fueling	Steel	Vaulted Tank	2014
494	T-494	500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
495	T-495	300	No. 2 Fuel Oil	Heating	Steel	Double-Walled	2004
503	*T-503	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1996
564	*T-564 A	1000	Diesel	Vehicle Fueling	Steel	Double-Walled	2013
564	*T-564 C	1000	Used Oil	Storage	Steel	Double-Walled	2005
580	T-580	500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
761	T-761	400	Used Oil	Storage	Steel	Vaulted Tank	1995
763	T-763	400	Used Oil	Storage	Steel	Vaulted Tank	1995
976	T-976	500	Used Oil	Storage	Steel	Vaulted Tank	1995
1307	*T-1307 A	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
1363	*T-1363	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
1374	T-1374	500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
1390	T-1390	500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
1556 C	*T-1556 C	2000	Used Oil	Storage	Steel	Vaulted Tank	1995
1613	*T-1613	4000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995

Table 1 - Inventory of Petroleum Aboveground Storage Tanks (ASTs)

Building	Tank ID	Volume (gal)	Contents	Tank Use	Tank Material	Secondary Containment	Installation Date
1668	*T-1668	1500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2005
1669	*T-1669	1500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2007
1670	*T-1670	1500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2005
1671	*T-1671	1500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2005
1672	*T-1672	1500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2007
1673	*T-1673	1500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2007
1674/75	*T-1674	2500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2007
1678/79	*T-1679	2500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2007
1680	*T-1680	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2007
1692	T-1692	250	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2003
1876/77	*T-1876	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
2208/09	*T-2208	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
2210	*T-2210	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
2217/18	*T-2217/18	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1999
2219	*T-2219	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1999
2361	*T-2361	2000	Used Oil	Storage	Steel	Vaulted Tank	1995
2361A	*T-2361A	300	Recyclable Gasoline	Storage	Steel	Vaulted Tank	1997
2403	*T-2403	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2404	*T-2404	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2405	*T-2405	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2406	*T-2406	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2480	*T-2480	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2538	*T-2538	500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2605	*T-2605	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
2606	*T-2606	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2004
2615/16	*T-2615	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2617	*T-2617	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2618	*T-2618	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
2620/21	*T-2620	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2622/23	*T-2622	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1995
2624/25	*T-2624	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
2626	*T-2626	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2003
2629/30	*T-2629	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
2631/32	*T-2632	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2003
2639/40	*T-2639	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2003

Table 1 - Inventory of Petroleum Aboveground Storage Tanks (ASTs)

Building	Tank ID	Volume (gal)	Contents	Tank Use	Tank Material	Secondary Containment	Installation Date
2644	*T-2644	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2003
2646/47	*T-2646	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	1998
2648	*T-2648	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2003
2814/15	*T-2814	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2004
2816	*T-2816	1000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2004
2823	*T-2823	500	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2004
2828/29	*T-2828	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2003
2838/39	*T-2838	2000	No. 2 Fuel Oil	Heating	Steel	Vaulted Tank	2005
0024	T-0024	70	Diesel	Generator	Steel	Vaulted Tank	Unknown
141	T-141	298	Diesel	Generator	Steel	Vaulted Tank	2012
301	T-301A	100	Diesel	Generator	Steel	Double-Walled	2003
301	T-301B	70	Diesel	Fire Pump	Steel	Steel Dike, Inside Bldg	2004
316	T-316	275	No. 2 Fuel Oil	Generator	Steel	Double-Walled	Unknown
473	T-473	225	No. 2 Fuel Oil	Generator	Steel	Double-Walled	1995
487	T-487	250	Diesel	Generator	Steel	Vaulted Tank	1995
1306	T-1306A	500	Diesel	Generator	Steel	Double-Walled	2013
1306	T-1306B	330	Diesel	Generator	Steel	Double-Walled	2014
2117	T-2117	70	Diesel	Fire Pump	Steel	Steel Dike, Inside Bldg	2011
UAC	T- STO96	100	Diesel	Portable Generator	Steel	Double-Walled	2005
229	T-STO95	100	Diesel	Portable Generator	Steel	Double-Walled	2005
229	DPW-01	100	Diesel	Portable Fueling	Steel	Spill kit	2007
229	DPW-25	100	Diesel	Portable Fueling	Steel	Spill kit	2005
229	DPW-27	75	Diesel	Portable Fueling	Steel	Spill kit	2014
229	MTC-064	50	Diesel	Portable Fueling	Steel	Spill kit	2000
229	ST-200	75	Diesel	Portable Fueling	Steel	Spill kit	2011
229	ST-201	75	Diesel	Portable Fueling	Steel	Spill kit	2010
229	MTC-112	100	Diesel	Portable Fueling	Steel	Spill kit	2005
229	Spare 1	100	Empty	Portable Fueling	Steel	Spill kit	Unknown
229	Spare 2	100	Empty	Portable Fueling	Steel	Spill kit	Unknown
311	DOL	105	Diesel	Portable Fueling	Steel	Spill kit	Unknown
321	Wildlife	75	Diesel	Portable Fueling	Steel	Spill kit	Unknown
3001	ITAM 1	100	Diesel	Portable Fueling	Steel	Spill kit	2011

Table 1 - Inventory of Petroleum Aboveground Storage Tanks (ASTs)

Building	Tank ID	Volume (gal)	Contents	Tank Use	Tank Material	Secondary Containment	Installation Date
3001	ITAM 2	100	Diesel	Portable Fueling	Steel	Spill kit	2014
3001	MPRC 1	100	Diesel	Portable Fueling	Steel	Spill kit	2009
3001	MPRC 2	100	Diesel	Portable Fueling	Steel	Spill kit	2009
3001	IPBC	80	Diesel	Portable Fueling	Steel	Spill kit	2012
DRS	Portable Pumps (9)	110 (each)	Diesel	Pump Assembly	Steel	Plastic berm	Unknown
1667	T-1667	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
1686	T-1686	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
2211	T-2211	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
2249	T-2249	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
2403	T-2403A	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
2417	T-2417	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
2425	T-2425	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
2619	T-2619	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
2642	T-2642	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
2817	T-2817	300	Spent Kitchen Grease	Storage	Steel	Spill kit	2010
TOTAL		119,238					

*Tanks with volumes greater than 660 gallons.

Table 2 - Inventory of Petroleum Underground Storage Tanks (USTs)

Building	Tank ID	Volume (gal)	Contents	Tank Use	Construction Material	Secondary Containment	Installation Date
134	T-134A	5000	No. 2 Fuel Oil	Heating	Fiberglass	Double-walled	2014
134	T-134B	5000	Used Oil/No. 2 Fuel Blend	Heating	Fiberglass	Double-walled	2014
134*	T-134 (1)	8000	Diesel	Vehicle Fueling	Fiberglass	Single-walled	1985
134*	T-134 (2)	8000	Diesel	Vehicle Fueling	Fiberglass	Single-walled	1985
1800*	T-1800-1	20000	Diesel	Vehicle Fueling	Fiberglass	Double-walled	1992
1800*	T-1800-2	20000	Diesel	Vehicle Fueling	Fiberglass	Double-walled	1992
2474*	T-2474A	10000	MOGAS	Vehicle Fueling	Fiberglass	Double-walled	1995
2474*	T-2474B	10000	JP-8	Vehicle Fueling	Fiberglass	Double-walled	1995
2474*	T-2474C	15000	Diesel	Vehicle Fueling	Fiberglass	Double-walled	1995
2474*	T-2474D	15000	Diesel	Vehicle Fueling	Fiberglass	Double-walled	1995
2474*	T-2474E	20000	Diesel	Vehicle Fueling	Fiberglass	Double-walled	1995
2474*	T-2474F	20000	Diesel	Vehicle Fueling	Fiberglass	Double-walled	1995
2474*	T-2474G	20000	Diesel	Vehicle Fueling	Fiberglass	Double-walled	1995
2474*	T-2474H	20000	Diesel	Vehicle Fueling	Fiberglass	Double-walled	1995
2474*	T-2474J	30000	JP-8	Vehicle Fueling	Fiberglass	Double-walled	1995
2870*	T-2870-1	15000	JP-8	Vehicle Fueling	Fiberglass	Double-walled	1992
2870*	T-2870-2	15000	JP-8	Vehicle Fueling	Fiberglass	Double-walled	1992
Total		256,000					

*Regulated UST

Airfield

The Blackstone Army Airfield has little to no potential for spills. It is included as a separate figure, because it is not depicted on the general cantonment area maps. The Blackstone Army Airfield is located along Route 40. The airfield has a small brick building, Building 0024, that houses an emergency generator. The building has a concrete floor. The double-walled generator belly tank holds approximately 70 gallons of diesel. Surface drainage at the airfield is to the northeast.

Figure 18 shows the correct placement of containment booms in the case of a petroleum spill.

Miscellaneous Field Fueling Training Activities

Bulk fuel training by military personnel occurs frequently at MTC-Fort Pickett. All fuel bladder training must coincide with the 77F Handbook for field fueling operations and will not occur in close proximity to surface water. A double-walled berm will be erected to contain the single largest bladder. Each berm area shall have a liner thick enough to withstand daily wear and tear of the fueling operation. All piping associated with the transfer and fueling operations will be checked continuously. All field fueling operations will have on-site adequate spill equipment and personnel to prevent a catastrophic release. The spill equipment will be in the vicinity of the fueling bladder or truck.

If a spill occurs, the training unit will contact MTC-Fort Pickett Range Operations (Building 3001) immediately, and Range Operations personnel will report the incident to the Environmental Coordinator and/or Specialist. All cleanup material must be handled safely and properly disposed of through the installation's Temporary Waste Accumulation Facility at Building 2361. Once the training unit begins disassembling the bladders or fueling operation, they will ensure that all lines and bladders are free of petroleum residue to the best available technology. All sites will be inspected prior to the release of any unit from the installation by the Environmental Specialist or designated alternative person.

7.3 POTENTIAL SPILL PREDICTIONS, VOLUMES, RATES, AND CONTROL [40 CFR 112.7(b)]

7.3.1 Materials Stored [9 VAC 25-91-170 A.4]

Products that presently are used, stored, and/or distributed at MTC-Fort Pickett include:

- No. 2 Fuel Oil
- No. 2 Diesel
- Used Oil
- MOGAS
- JP-8

Material Safety Data Sheets (MSDS) for products stored at MTC-Fort Pickett are located in Building 316 and are included in **Appendix F** of this document.

7.3.2 Distance to Navigable Waters and Adjoining Shorelines and Flow Path

MTC-Fort Pickett is intersected by a number of creeks, streams, and tributaries. These tributaries ultimately discharge into the Nottoway River, which flows to the southeast and is part of the Chowan River Basin, just inside the southern border of MTC-Fort Pickett. The facility maintains a number of stormwater drains and drainage ditches to collect and direct surface water generated during rainfall events.

Significant releases of oil that enter surface waters at MTC-Fort Pickett, if left unchecked, could ultimately be discharged to the Nottoway River; however, due to the distances involved, and the procedures implemented at MTC-Fort Pickett, a petroleum release at MTC-Fort Pickett actually causing a sheen on the Nottoway River is highly unlikely. **Figures 2 through 18** illustrate the drainage patterns from each bulk storage tank.

7.3.3 Spill History

One reportable spill (>25 gallons to the environment or any amount to surface water) has occurred during the last five years. On 31-July-2014, approximately 50 gallons of JP-8 fuel was released at Fuel Station #1. The spill was reported to DEQ Blue Ridge Regional Office and was cleaned up on accordance with all applicable regulations.

7.3.4 Spill Potential

The most probable causes of a spill would be careless filling operations, structural or equipment failure, operational error, or collision. Equipment failure or operational error, either during product transfers or storage could cause a spill from the petroleum storage tanks identified in **Table 1** and **Table 2**. The possibility of collision would only exist in areas of aboveground petroleum storage although most AST systems are equipped with steel bollards for protection.

Structural or equipment failure would include tank or line rupture due to corrosion; leaks through tank seams; leaks from piping, fittings, joints, pumps or gaskets; and valve or seal rupture. Operational error, usually caused by "poor housekeeping" or not adhering to facility SOPs, would include improper operation of transfer or storage equipment; lack of maintenance to systems including seals, filters, pumps and drainage systems; and overfilling an oil or fuel tank, hydraulic reservoir, or gear oil reservoir. Any vehicle, including forklifts or material handling apparatus, could cause collisions.

There is a reasonable potential for equipment failure (e.g., tank overflow, rupture, or leakage). **Table 3** includes a prediction of the direction, rate of flow, and total quantity of oil that could be discharged as a result of each major type of equipment failure. Calculations for the maximum volume released are based on the following:

Scenario: A fuel truck is loading oil into a heating oil tank at the facility, with an attendant present throughout the operation.

- The truck is loading at a rate of 150 gallons per minute.
- The typical failure mode expected is a ruptured hose connection.
- A shutoff valve, present on the loading line, and the pump control are accessible to the attendant.
- The attendant can safely shut down the pump and close the valve within 10 seconds of the hose connection rupture, based on past experience under similar circumstances; 15 seconds is assumed to be a conservative estimate of the response time.

Calculations:

With a flow rate of 150 gal/min and a reaction time of 15 seconds, the most likely discharge is calculated to be 37.5 gallons:

$$[(150 \text{ gal/min}) \times (1 \text{ min}/60 \text{ sec}) \times (15 \text{ sec})] = 37.5 \text{ gallons}$$

Based on the most likely source and mechanism of failure during fuel loading/unloading, the secondary containment volume should be at least 37.5 gallons. Fuel trucks are required to carry spill equipment on board in the event of a release.

Due to the location of the ASTs and distances to surface water resources, a discharge to navigable waters or adjoining shorelines would be unlikely. Spill equipment on-site would be sufficient to control a release from a typical failure.

In addition, all ASTs located at MTC-Fort Pickett have adequate secondary containment for 110% of the tank’s capacity in the event of a tank rupture.

Table 3. Potential Spill Risk Analysis				
Source	Type of Failure	Spill Direction	Maximum Vol. Released (gallons)	Spill Rate (gallon/min)
Any AST	Overfill/ Hose break	Refer to Figures 2 to 18	37.5	150
Any AST	Rupture	Refer to Figures 2 to 18	Ranges from 70 to 4,000 gallons	Instantaneous
Any UST	Overfill/ Hose break	Refer to Figures 2 to 18	37.5	150
Any UST	Rupture	To groundwater	Ranges from 5,000 to 30,000 gallons	Instantaneous
Drums	Rupture/ Leaks	Refer to Figures 2 to 18	55	Instantaneous

7.3.5 Containment and Diversionary Structures – Onshore [40 CFR 112.7(c)(1)]

Most ASTs on MTC-Fort Pickett contain fuel oil used to heat adjacent buildings. Any new AST installed on MTC-Fort Pickett is, at a minimum, compatible for material stored, double-walled, and usually will be vaulted and two-hour fire-rated. The ASTs also come equipped with overfill prevention and overfill containment systems, which are “fail-safe” engineered and have an audible filling alarm.

Two ASTs with steel dikes are located inside concrete block buildings and supply fuel for fire suppression engine systems. All 55-gallon drum storage has sufficient integral secondary containment. The drums are housed inside a specialized designed building at each of the tenant compounds. Kitchen grease containers are located on concrete pads with a concrete berm which provides adequate secondary containment. Each containment capacity has sufficient freeboard for precipitation (40 CFR part 112.7 (c)(1)(i)).

In accordance with 40 CFR part 112.7 (c) (1)(iv), each tenant organization has an ample supply of spill equipment to control all minor spills that may occur at their facility. MTC-Fort Pickett has a central storage facility for spill equipment at Building 2361. Each tenant organization has approval to pick up any equipment it deems necessary to clean up an accidental release of POLs. The facility has 100 feet of booms, 500 pounds of oil dri, 50 packages of absorbent pads (200 sheets per package), 95-gallon over-pack drums filled with various spill equipment, empty drums and a roll off container for easy disposal of contaminated soil. The installation’s emergency response team, which is primarily the Fire Department, has a 16’ HAZMAT trailer with an ample supply of spill equipment. The trailer is always stocked and ready to respond to any spill that may occur. All spill equipment supplies are checked and replenished on an as need basis.

7.3.6 Containment and Diversionary Structures – Offshore [40 CFR 112.7(c)(2)]

Not Applicable.

7.4 DEMONSTRATION OF PRACTICABILITY [40 CFR 112.7(d)(1-2)]

Facility management has determined that the use of the containment and diversionary structures or readily available equipment to prevent discharged oil from reaching navigable water is generally practicable and effective at this facility.

This SPCC Plan has been carefully reviewed by Management. Management concurs and supports the programs and procedures that are to be implemented, periodically reviewed, and updated in accordance with Federal Regulation 40 CFR 112 (Oil Pollution Prevention) and AR 200-1 (Environmental Protection and Enhancement). Management approval has been extended at a level with authority to commit the necessary resources. A signed statement of Management approval is included in **Appendix E**.

7.5 INSPECTIONS AND RECORDKEEPING [40 CFR 112.7(e)]

NGVA-FMO-ENV will maintain a program of regular visual inspections of all ASTs. The items covered in the inspections are performed in accordance with API standards and good engineering practices. The yearly inspection report is prepared and signed by the inspector and maintained for five years. All aboveground storage tanks will be integrity tested in accordance with manufacturer and petroleum industry standards.

Inspections and records are part of the effective spill prevention, containment structures and procedures for MTC-Fort Pickett facility. Written records of inspections performed are retained at MTC-Fort Pickett with this Plan. MTC-Fort Pickett personnel ensure that the inspections listed in **Table 4** are performed as required. Inspection results are recorded on **Forms C.3a-C.3c** in **Appendix C**.

Table 4 - Inspections and Records			
Area	Inspection	Frequency	Inspected By
All ASTs, Fuel Loading and Unloading Areas, Mobile Fuel Trucks	Using “ <i>Oil Storage Tank and Piping Inspection Checklist</i> ” (<i>Appendix C</i>) Check for: a. Obvious leaks, b. Signs of vandalism, c. Condition of security measures, and d. Damage or wear of fuel transfer pumps and hoses.	Monthly/Annual	Designated person
All ASTs	Integrity testing	As needed	Contractor
POL Storage Area, and Maintenance Areas	Look for signs of: a. Leaks/spills, b. Unsafe storage conditions, c. Safety hazards, and d. Availability of spill supplies.	Monthly/Annual	Facility personnel
Spill Response Material	Ensure: a. Appropriate number of kits, b. Appropriate locations, and c. Contain at least minimum materials.	Regular schedule	Designated person
Equipment Storage Areas	Look for: a. Gasket and fill/ drain plug leaks	Regular schedule	Facility personnel
Hazardous Material/ Hazardous Waste Containers	Ensure: a. Sufficient capacity	Before addition of product	User
Hazardous Material/ Hazardous Waste Storage Areas	Look for: a. Leaks or spills, and b. Need to schedule removal.	Regular schedule	Designated person
Diked Secondary Containment Areas	Using “ <i>Release of Secondary Containment Drainage</i> ” form (<i>Appendix C</i>) Check: a. Storm water accumulation	Regular schedule and after each significant rain event	Designated person
General Work Areas	Cursory examination	Continuous	All personnel

SPCC regulations require recordkeeping in the form of inspection logs, training records, and maintenance schedules. These records shall be maintained and kept readily accessible at Building 316, NGVA-FMO-ENV. The Environmental Coordinator and/or Specialist maintains the ICP along with written inspection procedures and records of inspections for the last five years. The Environmental Coordinator should keep the following records:

- Inspection Documentation. Written procedures for required inspections; records of inspections performed by facility personnel; and records of corrective action taken to remedy identified deficiencies.
- Maintenance Documentation. Maintenance schedule, including integrity test schedule for oil storage tanks, valves and piping, transfer structures, containment structures, oil/water separators; and records of construction, maintenance, repair, and/or integrity testing.

7.6 PERSONNEL TRAINING AND SPILL PREVENTION PROCEDURES [40 CFR 112.7(f)]

Training of facility personnel training is an effective part of the spill prevention and containment procedures for MTC-Fort Pickett facility.

7.6.1 Personnel Training Responsibilities [40 CFR 112.7(f)(1)]

VAARNG is responsible for properly instructing MTC-Fort Pickett personnel in the operation and maintenance of equipment to prevent the discharges of oil and applicable pollution prevention control laws, rules, and regulations. MTC-Fort Pickett Environmental Coordinator is responsible for the following training:

- New employees - spill prevention equipment and practices;
- Operating personnel - spill prevention briefings at least once a year; and
- All personnel - spill prevention briefings at least annually.

7.6.2 Spill Prevention Personnel [40 CFR 112.7(f)(2)]

The Environmental Coordinator is accountable for oil spill prevention at MTC-Fort Pickett. NGVA-FMO-ENV provides yearly spill prevention briefings for operating personnel to ensure adequate understanding of the ICP. These briefings highlight any past spill events or failures and recently developed precautionary measures. Training includes oil spill prevention, containment, and retrieval methods.

7.6.3 Spill Prevention Briefings [40 CFR 112.7(f)(3)]

Spill prevention briefings are conducted at intervals frequent enough to assure adequate understanding of the Plan. These briefings and training activities are summarized in **Table 5**.

Training records are kept on-site for five years (see **Form C-4** in **Appendix C** for the Training Roster).

Any military or civilian employee having HAZMAT emergency response roles beyond incidental response activities must receive specific training before they can take part in HAZMAT incident responses.

Table 5 - Spill Prevention Briefings		
Personnel	Briefing/ Training Activity	Frequency
MTC-Fort Pickett personnel who routinely work with fuel	Spill prevention and response, to include: a. discussion on known spill events or failures, b. malfunctioning components, and c. recently developed precautionary measures.	Annual, or during regular safety meetings
Oversight supervisors and operating personnel directly involved with potential spill situations	Spill prevention training, to include: a. purpose of the SPCC Plan b. spill prevention responsibility c. a review of standard operating procedures relating to spill prevention d. equipment maintenance e. nature of spills f. handling a spill – what to do g. recently developed precautionary measures h. group discussion of spill prevention i) suggestions ii) past experience	Annual, or periodically to assure adequate understanding of the SPCC Plan
MTC-Fort Pickett personnel involved with the management and handling of oil or hazardous substances	Spill prevention training (see above)	Annual
	Additional spill prevention briefing	Periodic, as needed

7.7 TRAINING, EQUIPMENT TESTING, AND PERIODIC DRILLS [9 VAC 25-91-170 A.16]

VAARNG personnel at MTC-Fort Pickett are provided with annual training in spill prevention and containment. The training consists of video presentations, lectures, and/or drills. Records of all training exercises are maintained for a minimum of five years.

VAARNG personnel at MTC-Fort Pickett regularly inspect and test facility equipment and operational systems whose failure has a potential to cause a discharge of pollutants at the facility. Equipment that is regularly inspected and tested includes equipment alarms, fuel pumps, piping, valves, storage tanks, mobile equipment, and secondary containment structures. The inspections are described in detail in Section 7.4 of this ICP. Periodic inspections for leak detection are also described in Section 7.9 of this ICP.

Periodic integrity testing is performed on MTC-Fort Pickett bulk ASTs. This testing is summarized in Section 8.3. Visual observations are performed on the bulk ASTs during a daily

drive-by or walk-around. Periodic equipment testing is performed on fuel pumps, piping, and associated valves.

Inspections and tests on equipment may uncover conditions such as cracks or slow leaks that could cause breakdowns or failures that result in discharges. VAARNG personnel at MTC-Fort Pickett perform the necessary follow-up actions to reduce breakdowns and failures by making proper adjustments, repairs, or replacement of equipment or parts.

7.8 SECURITY [40 CFR 112.7(g)] [9 VAC 25-91-170 A.21]

Security is an effective part of the spill prevention and containment structures and procedures for MTC-Fort Pickett. Oil spills can occur as a result of vandalism or pilferage of fuel. The level of security necessary is dependent on the location, strategic importance and potential for vandalism of the facility. Security provisions include fencing, locks for valves and control switches, and lighting and security patrols. Security measures are summarized in **Table 6**. These facilities are locked during off duty hours.

Table 6 - Security Measures	
Security Measure	Facility-Specific Application of Security Measure
Fence and Gate	MTC-Fort Pickett entrance gates are attended at all times. All tenant organizations shown in Figures 2 through 18 have complete fencing around their facilities. These facilities are locked during off duty hours.
Flow and Drain Valves Locked	The master flow and drain valves to MTC-Fort Pickett oil equipment are securely locked when the facilities are not in use in order to prevent the unauthorized release of petroleum products to the environment. The loading and unloading connections of all mobility fuel and heating oil lines are kept capped when not in service or when in standby service for an extended time.
Starter Controls Locked	The starter controls on fuel pumps at MTC-Fort Pickett are locked when not in use in order to prevent the unauthorized release of petroleum products to the environment.
Out of Service Pipelines Securely Capped	The loading/ unloading connections of fuel piping at MTC-Fort Pickett are securely capped when not in use.
Facility Lighting	Lighting is sufficient throughout MTC-Fort Pickett to identify spills or activities that may create the potential for a spill. Additional security lighting (e.g., vehicle-mounted floodlights, hand held lamps, etc.), provides for spill surveillance in petroleum storage areas.

7.9 DISCHARGE DETECTION [9 VAC 25-91-170 A.18.]

To meet the discharge detection requirements, all ASTs with a capacity greater than 600-gallons are checked weekly for obvious signs of release. NGVA-FMO-ENV has installed Centeron wireless tank monitors on each AST. Each AST has two monitors, one installed in the interstitial port to monitor for leaks and one installed in the primary tank to monitor fuel level. The tank monitors have an accuracy of +/- 0.1%. The tank monitors are battery-powered and completely wireless, and tank data is transmitted directly from the tank to the Centeron Data Center using

digital cellular technology. NGVA-FMO-ENV monitors the ASTs from a central computer. The tank monitors will serve as the weekly leak detection method. Weekly inspections will be conducted any time the monitors are down or are not functioning properly.

Monthly and annual inspections of all ASTs are performed in accordance with SPCC requirement. In addition, Fort Pickett personnel observe ditches and outfalls on a regular basis and are familiar with spill reporting procedures.

7.10 POST-RELEASE DETECTION PROCEDURES [9 VAC 25-91-170 A.19]

A release can be detected at MTC-Fort Pickett by two methods other than visual observation. These methods include release detection devices and inventory control procedures. Once a release is detected the source of the release must be identified and repaired. If a release is visually identified, the spill will be contained and the leak immediately repaired. Various procedures will be followed depending on how the release was detected.

POST-RELEASE DETECTION PROCEDURES	
1.	Verify accuracy of detection method.
2.	Locate source of release.
3.	Check leak detection devices for proper operation and verify if a release has occurred.
4.	Check aboveground sources including vehicle fueling ASTs, fuel oil ASTs, and mobile tanks for visual signs of releases.
5.	Check secondary containment structures for cracks or locations where releases could be detected.
6.	Leak test potential underground release sources.
7.	Inspect storm drainage ditches and sewers that could transport fuel if a release occurred.

7.11 POST-DISCHARGE REVIEW PROCEDURES [9 VAC 25-91-170 A.22]

MTC-Fort Pickett Environmental Coordinator will conduct a post-discharge review of the spill response procedures. It is the responsibility of NGVA-FMO-ENV to correct any deficiencies in the spill cleanup procedures and/or the notification process. The purpose of the post-discharge review is to determine if the spill response was adequate and if it could be improved. Changes to the ICP should be made if the review identifies areas in the response that can be improved.

The following items should be evaluated during the post-discharge review:

- On-site personnel response time;
- Fire Department response time;
- Spill response contractor response time;
- Effectiveness of spill containment and cleanup procedures at MTC-Fort Pickett;
- Effectiveness of the natural resources and municipal services protection; and
- Cause of the discharge and required corrective actions to prevent recurrence.

7.12 TANK TRUCK LOADING/UNLOADING PROCEDURES [40 CFR 112.7(h)(1-3)]

Effective spill prevention, containment structures and procedures are in place for tank truck loading and unloading at MTC-Fork Pickett.

Drivers comply with DOT regulations in 49 CFR 177. Drivers must be authorized and certified to load and unload product. Tank truck loading/ unloading procedures meet the minimum requirements and regulation established by the Department of Transportation. MTC-Fort Pickett truck loading and unloading procedures are as follows:

FUEL LOADING/ UNLOADING PROCEDURE – COMMERCIAL DELIVERY		
Step	Description	Regulatory Requirement
1.	MTC-Fort Pickett personnel measure the capacity of the tank and order the required amount of fuel.	
2.	Tanker truck arrives and checks in with security. Security notifies MTC-Fort Pickett Fire Department at 911.	1. Access to area is restricted.
3.	MTC-Fort Pickett personnel escort tanker truck to fuel loading/ unloading area and supervise unloading procedures.	1. Ground clearance warning signs are in place. 2. At least one portable “B” or “C” type fire extinguisher is readily available.
4.	To set up, the driver: a. turns off engine, b. sets parking brake, c. places wheel chocks around the tanker, and d. attaches the grounding wires.	1. Vehicle parking brake is set. 2. Wheel chocks are set in place. 3. Vehicle is grounded. 4. No smoking signs are posted.
5.	Next the driver: a. visually inspects the hoses for damage before use, b. connects the delivery hoses on the tanker and the dispensing valves, and c. places spill containment devices below the valve-hose fitting.	1. Prevent spills. 2. Absorbent pads, booms, or drip pans are used to absorb or catch any fuel that might leak.
6.	Next MTC-Fort Pickett personnel: a. sets and double checks the fuel metering devices, b. starts pump to dispense fuel, and c. continuously monitors tank filling operation.	1. If an automatic metering device is not available, or tank does not have a level-measuring device, additional personnel are used to monitor fuel level and operate pump. 2. Ensure that major leaks do not occur, the tank is not overfilled, and a fire does not occur.
7.	After unloading, the driver: a. double checks the valves to ensure they are closed, b. disconnects, drains, wipes, caps, and locks the hose, c. secures compartment hatches, d. disconnects grounding wires, e. removes wheel chocks, and g. cleans any oil that may have spilled on the ground.	1. Prevent spills.

7.12.1 Tank Truck Loading/Unloading Drainage And Containment [40 CFR 112.7(h)(1)]

Loading or unloading areas where oil is transferred but no loading/unloading rack (as defined in §112.2) is present are subject to §112.7(c), and thus appropriate secondary containment and/or diversionary structures to prevent a discharge to navigable waters or adjoining shorelines are required. The loading areas at Central Fuel Station one are curbed and drain to a 30,000-gallon OWS. Fuel Stations #2, #3 and MATES have 95-gallon overpack spill kits on-site.

7.12.2 Tank Truck Loading/Unloading Warning System [40 CFR 112.7(h)(2)]

Warning signs are posted at the loading/unloading areas at Fuel Stations #1, #2, #3 and MATES to prevent vehicular departure before complete disconnect of transfer lines. A trained MTC-Fort Pickett employee is present to observe each loading/ unloading and refueling operation. DOL is responsible for maintaining Fuel Stations #1, #2, and #3.

7.12.3 Tank Truck Loading/Unloading Checks [40 CFR 112.7(h)(3)]

The lower most drain and all outlets of fuel trucks are double-checked to prevent leakage during transit.

7.12.4 Heating Oil ASTs and USTs

Fuel oil is supplied by local vendors and is delivered by 2,500-gallon tankers to each of the heating oil ASTs and USTs. Section 7.3.4. and **Table 3** describe a typical release during fuel unloading/loading procedures and discuss secondary containment measures. Fuel oil suppliers are required to supply their own spill response equipment, secure their vehicles (wheel chocks) and respond to their own minor spills.

7.12.5 Mobility Fuel/Dispensing Stations

Central Fuel Station #1 (Building 2474), Vehicle Fuel Station #2 (Building 1800), Vehicle Fuel Station #3 (Building 2870), and MATES, store fuel within USTs.

DPW maintains one 500-gallon vaulted MOGAS AST at Building 487 (DPW Quarry) for fueling vehicles.

MATES, FPTM and Directorate of Logistics (DOL) will instruct all drivers to chock their vehicle's wheels and ground the trailer before loading or off-loading fuel. MATES uses one 2,500-gallon tanker truck to move fuel from the USTs to the different Field In-Storage Maintenance Shops. FPTM uses a 600-gallon tanker truck to fuel numerous pump stations across MTC-Fort Pickett. DOL uses a 2,500-gallon tanker truck for emergency transport of fuel. MATES and DOL park the trucks inside a secondary containment berm when not in use. FPTM parks their truck empty, but has a temporary plastic containment berm in the event the truck contains product.

Portable truck-mounted ASTs are used by various activities and tenants to fuel equipment and vehicles in the field, as listed in **Table 1**. DPW maintains ten portable ASTs, DOL has one and Range Operations maintains five. All of the portable ASTs are steel, single-walled tanks mounted in a pick-up truck bed or on a trailer. Vehicles with portable tanks will carry spill equipment in case of a release. Personnel responsible for the vehicles with portable tanks will be responsible for conducting and maintaining monthly inspection records. Inspection records will be kept in a designated location at the tenant/activity and sent to the Environmental Coordinator/Specialist as requested.

7.12.6 Vehicle Maintenance Facilities/Service Stations

Commercial vendors supply mobility fuel to the underground storage tanks using tanker trucks with capacities as high as 7,500-gallons. These tankers typically contain at least three compartments of 2,500, 3,500 and 1000-gallons each. Most JP-8 tankers that deliver fuel have a single compartment of 7,500 gallons. When off-loading the fuel, these tanker trucks park directly over the receiving USTs and gravity-feed the fuel into the tanks. The wheels of the vehicle will be chocked and the grounding wire will be attached to prevent static electricity. DOL personnel will be at the service stations to supervise off-loading of fuel. The Central Fuel Station #1, Building 2474 was designed with secondary containment for transfer operations. Vehicle Fuel Stations #2 and #3 must have a secondary containment structure setup in place before gravity drop of fuel can commence.

7.13 INVENTORY CONTROL PROCEDURES [9 VAC 25-91-170 A.17]

MTC-Fort Pickett is not subject to inventory control or testing for significant variation per 9 VAC 25-91-160 D.6. All ASTs greater than 660-gallons located at the facility are constructed and installed to meet the Steel Tank Institute (STI) standards STI - F911-93, F921-93, or F941-94 or equivalent standards. According to the Hoover/Containment Solutions specifications sheet, the AST has a primary steel and a secondary tank (i.e. containment interstice) that is also constructed of steel. The ASTs are also constructed as a UL 142 listed secondary containment tank. The coat that is placed over the secondary steel tank is for fire protection in accordance UL-2085. Manufacturer's specifications and drawings for a typical vaulted AST located at the facility are included in **Appendix H**.

7.14 FIELD CONSTRUCTED CONTAINERS [40 CFR 112.7(i)]

MTC-Fort Pickett has one field-constructed container that may be used for seasonal training activities. An SPCC amendment was completed and stamped by Gilmore Environmental Consulting (GECO) in 2013 for a field-constructed bladder site located along Warehouse Road, between 7th and 8th Streets. The site was constructed as part of a military training operation and stored No. 2 fuel oil which was then distributed by truck to heating oil ASTs throughout the installation. The site consists of six 20,000-gallon collapsible fuel bladders which were installed in accordance with Army Technical Manuals and military specifications. Each bladder is surrounded and contained by Hesco wall barriers which provide adequate secondary containment for 110% of the the largest container. An earthen berm is present to protect stormwater inlets located south of the bladder site. Spill equipment is located in a storage shed at the site and weekly and monthly inspections are conducted. A 5,000-gallon containment berm is in place for fuel loading/off-loading. The fuel truck is parked within the containment when not in use. Drawings and specifications for the bladder site are contained in **Appendix I**. The bladders were used during the winter of 2013 for heating oil storage and transfer operations and have not been in use since that time. Fuel has been removed from the bladders and the bladder site materials are currently in storage. If the bladder site is re-constructed for military training in the future, the site will comply with all applicable SPCC, ODCP and AST requirements. If the facility plans to use the bladder site for more than 120 days, each bladder should be registered as an AST per VDEQ AST regulations.

7.15 SPILL PREVENTION AND CONTAINMENT PROCEDURES [40 CFR 112.7(j)]

MTC-Fort Pickett is in conformance with applicable State of Virginia or local rules, regulations, or guidelines as discussed in the following sections.

8. SPCC PLAN REQUIREMENTS FOR ON-SHORE FACILITIES [40 CFR 112.8]

8.1 GENERAL REQUIREMENTS [40 CFR 112.8(a)]

This Plan meets the general requirements of 40 CFR 112.7, as discussed above, and also meets the requirements of 40 CFR 112.8, as discussed below.

8.2 FACILITY DRAINAGE [40 CFR 112.8(b)]

Oil products are present in several areas of the facility. Drainage or excessive leakage of oil is effectively managed from diked storage areas and undiked areas.

8.2.1 Drainage From Diked Storage Areas [40 CFR 112.8(b)(1)]

Secondary containment berms for the fuel trucks at MATES, FPTM and DPW Quarry are released once the operator has inspected the rainwater for an oil sheen. **Form C.1 in Appendix C** should be completed before each diked containment is drained. Once inspected and no sheen is observed, the rainwater is released. If a petroleum sheen is observed, the Environmental Coordinator will be informed. NGVA-FMO-ENV will schedule a clean-out and the oily water will be transported off-site to the appropriate facility. All valves are kept in the closed position for each of the diked tanks and the secondary containment berms.

8.2.2 Drainage Valves Used On Diked Storage Areas [40 CFR 112.8(b)(2)]

The valves used to drain rainwater from the diked storage areas are manually operated open-and-closed design. Retained storm water in these three areas is visually inspected prior to opening the valves to ensure that no oil is discharged from the containment areas. Inspections are performed and documented as outlined in Section 7.5.

8.2.3 Drainage Systems From Undiked Areas [40 CFR 112.8(b)(3)]

Drainage systems from undiked areas flow directly or indirectly into the storm water drainage system. The storm water drainage system consists of a series of concrete pipes and concrete and earthen drainage ditches. This system drains into a tributary of the Nottoway River. Seven stormwater retention basins are located on the installation: one at the corner of Military Road and 7th Street, one at the corner of Military Road and 8th St, one on the west side of Military Road, across from the MATES facility and one at the corner of Hospital Road and Garnett Ave., and three at the 157th Engineers' Quarry, which is outside the cantonment area,

8.2.4 Final Discharge Diversion Systems [40 CFR 112.8(b)(4)]

Ten oil/water separators are located throughout the installation, one at each vehicle washrack. The OWSs are equipped with a diversion valve to divert flow from the storm system to the sanitary sewer system. The valve is normally kept open to allow drainage to discharge to the storm system. Prior to washing activities, the valve is manually switched to divert drainage through the wash pad OWS to the sanitary sewer system. MTC-Fort Pickett also has six in-ground grease traps, located at various dining facilities. The grease traps separate kitchen grease from water and the water is discharged to the sanitary sewer.

Section 112.1(d)(6) of the SPCC rule addresses OWS used for wastewater treatment. Facilities or equipment used exclusively for wastewater treatment, and which do not satisfy any requirements of the SPCC rule, are exempt from the SPCC rule requirements. The OWSs and grease traps at MTC-Fort Pickett are used for wastewater treatment only and therefore do not count toward facility storage capacity. Tenant and activities inspect the OWSs on a regular basis and notify NGVA-FMO-ENV personnel when a cleanout is needed.

8.2.5 Drainage Water Treatment Systems [40 CFR 112.8(b)(5)]

Not applicable to MTC-Fort Pickett Facility.

8.3 BULK STORAGE CONTAINERS [40 CFR 112.8(c)][9 VAC 25-91-170 A.18]

This section of the ICP deals with the design specification and compatibility of all storage tanks and buildings at MTC-Fort Pickett. A list of the bulk storage tanks utilized at MTC-Fort Pickett is shown in **Table 1** and **Table 2** in Section 7.2. These tanks and buildings are also graphically shown on **Figures 2 through 18**.

Mobile refueler refers to a bulk storage container onboard a vehicle or towed, that is designed or used solely to store and transport fuel for transfer into or from an aircraft, motor vehicle, locomotive, vessel, ground service equipment, or other oil storage container. MTC-Fort Pickett maintains sixteen (16) portable truck-mounted ASTs and three (3) Mobile Fuel Tankers (MFTs) and/or Heavy Expanded Mobility Tactical Trucks (HEMTTs). All of the abovementioned mobile refuelers are used exclusively within the facility and are not intended for highway use. Under guidance from the Departments of the Army and the Air Force (Memorandum dated July 31, 2001), mobile fuel tankers (MFTs) kept for use within the facility and not intended for highway use fall under the jurisdiction of the facility SPCC Plan, while all other mobile fuel tankers will be stored empty while within the facility property.

8.3.1 Tank Compatibility with Stored Fluids [40 CFR 112.8(c)(1)]

The material and construction of the bulk storage tanks and the conditions of storage are compatible with the material stored.

- ASTs are of welded steel construction.

- ASTs and associated piping have an epoxy coating on their interiors and enamel coating on their exteriors to prohibit corrosion and to ensure compatibility with the fluids being stored in the tanks.
- AST valves are manually operated.
- ASTs are properly grounded.

8.3.2 Secondary Containment Volume [40 CFR 112.8(c)(2)]

The bulk storage tanks at MTC-Fort Pickett facility are constructed so that a secondary means of containment is provided for the entire contents of the largest single container plus sufficient freeboard to allow for precipitation.

The ASTs at the facility are vaulted or double-walled, utilizing steel inner and outer tanks. General specifications and drawings of the vaulted ASTs are included in **Appendix H**.

Each of the 300-gallon containers used to store used kitchen grease is located under roof, on a 13' x 8' concrete pad with an 8-inch concrete berm that provides adequate secondary containment for up to 330 gallons (110% of the capacity).

8.3.3 Drainage of Rainwater From Diked Areas [40 CFR 112.8(c)(3)]

In accordance with 40 CFR part 112.8 (c)(3) and (i) through (iv), the secondary containment berms at MATES, DPW Quarry and FPTM, are the only fuel storage with open areas to the weather. The drainage of these structures is controlled by manual release through a ball valve. All rainwater from each open secondary containment structure is inspected for the presence of an oil sheen before draining and is under strict supervision by the facility operators using the procedure described in the table below. These valves are never opened during a fuel transfer. The facility supervisor will keep a record of each release using **Form C.1** in **Appendix C**. If a petroleum sheen is observed, the Environmental Coordinator will be informed. NGVA-FMO-ENV will schedule a clean-out and the oily water will be transported off-site to the appropriate facility.

RAINWATER¹ DRAINAGE PROCEDURE	
1.	The secondary containment discharge valves are normally closed. Valve closure is verified by MTC-Fort Pickett personnel during routine walk-around inspections.
2.	MTC-Fort Pickett personnel inspect the secondary containment on a regular basis and after storm events. If rainwater is present, the rainwater is inspected for the presence of oil. If oil is present, the oil is removed before the discharge valve is opened.
3.	MTC-Fort Pickett personnel open the discharge valve, documenting the time on the Release of Secondary Containment Drainage form provided in Appendix C.
4.	Storm water is drained from the containment.
5.	MTC-Fort Pickett personnel close the discharge valve, documenting the time on the Release of Secondary Containment Drainage form.
6.	The completed Release of Secondary Containment Drainage forms are retained on-site with this Plan for at least five years.

¹ Rainwater also includes snowmelt.

8.3.4 Buried Underground Storage Tanks [40 CFR 112.8(c)(4)]

MTC-Fort Pickett has implemented a tank replacement program which was geared towards the replacement of older (pre-1980) heating oil USTs. The program has been completed and all of the older (pre-1980) heating oil USTs have been replaced with vaulted ASTs, with the exception of two 5,000-gallon double-walled fiberglass USTs at MATES that meet SPCC requirements for corrosion protection. The USTs contain used oil and No. 2 fuel oil, which are blended for heating Building 134. **Table 2** in Section 7.2 contains descriptions, such as construction material, installation date, and fuel type, of the USTs located at MTC-Fort Pickett.

Currently all 15 regulated USTs located at MTC-Fort Pickett meet the technical standards for release detection, corrosion prevention, overfill prevention, and spill containment as required by 40 CFR Part 280 and Virginia Administrative Code. The regulated USTs are listed below:

- Two 20,000-gallon diesel fuel tanks at Vehicle Fuel Station #2 (Building 1800);
- One 10,000-gallon Mogas tank at Central Fuel Station #1 (Building 2474);
- One 10,000-gallon JP-8 tank at Central Fuel Station #1 (Building 2474);
- Two 15,000-gallon and four 20,000-gallon diesel fuel tanks at Central Fuel Station #1 (Building 2474);
- One 30,000-gallon JP-8 tank at Central Fuel Station #1 (Building 2474);
- Two 8,000-gallon diesel tanks at MATES; and,
- Two 15,000-gallon JP-8 tanks at Vehicle Fuel Station #3 (Building 2870).

These regulated USTs are constructed from fiberglass and are equipped with leak detection and overfill alarms. With the exception of the two 8,000-gallon diesel fuel tanks at MATES, all are double-walled. All tanks are equipped with a Veeder-Root TLS-350 automatic tank gauging system, which is used to perform leak detection tests on the tanks at least once a month. All underground piping associated with these USTs is constructed of non-corrosive materials with either interstitial or sump sensors and do not require cathodic protection testing. All underground delivery piping is also double-walled fiberglass.

8.3.5 Partially Buried Metallic Storage Tanks [40 CFR 112.8(c)(5)]

MTC-Fort Pickett facility has no partially buried metallic storage tanks.

8.3.6 Aboveground Storage Tank Testing [40 CFR 112.8(c)(6)]

The SPCC regulations require that integrity testing be performed in accordance with accepted industry standards, with the applicable testing standard and schedule being based upon the volume and construction of the ASTs.

In accordance with the Steel Tank Institute's "*Standard for the Inspection of Aboveground Storage Tanks*" STI Standard SP001 4th Edition, July 2006; the tanks at MTC-Fort Pickett are considered Category 1 ASTs because they have spill control and a continual release detection method (CRDM). In accordance with SP001 guidelines, a Category 1 AST that is between 0- and 5,000-gallons must be inspected by authorized facility personnel on monthly and annual basis. Inspection

personnel will be knowledgeable MTC-Fort Pickett storage operations, the ASTs and their associated components, and characteristics of the liquids stored. Performing the periodic visual inspections and conducting a formal external inspection for the Category 1 ASTs satisfies the integrity testing requirements set forth in 40 CFR Part 112.

The monthly visual inspections include evaluating the structural integrity of the tank walls and bottom and the integrity of the tank foundation, secondary containment, piping and anchor bolts. In addition to the monthly visual inspections, annual integrity inspections of the ASTs will be performed by Facilities Engineering Division personnel and/or an outside contractor. Annual inspections will generally focus on similar action items included in the monthly checklist; however, a more rigorous visual inspection will be conducted on the AST and associated appurtenances to ensure the system is suitable for continued service.

Inspections are recorded on an Oil Storage Tank and Piping Inspection Checklist form included in **Appendix C**.

8.3.7 Internal Heating Coils [40 CFR 112.8(c)(7)]

MTC-Fort Pickett facility has no storage tanks with internal heating coils.

8.3.8 Fail-Safe Engineering [40 CFR 112.8(c)(8)]

MTC-Fort Pickett bulk storage tanks are “fail-safe” engineered, and are equipped with a direct reading level gauge and/or an audible filling alarm. The vaulted ASTs are also equipped with an overfill protection valve which will close when the tank is 90% full. Venting capacity is suitable for the fill and withdrawal rates.

8.4 PLANT EFFLUENT OBSERVATION [40 CFR 112.8(c)(9)]

MTC-Fort Pickett personnel observe the ditches and outfalls of the storm water drainage system on a daily basis. These areas are readily visible when entering and exiting the facility.

8.5 LEAK CORRECTIONS [40 CFR 112.8(c)(10)]

MTC-Fort Pickett personnel promptly correct visible oil leaks that result in a loss of oil from tank seams, gaskets, rivets and bolts.

8.6 MOBILE/PORTABLE FUEL TANKS [40 CFR 112.8(c)(11)]

Mobile/portable fuel tanks at MTC-Fort Pickett include 55-gallons drums, portable emergency generators, portable pump assemblies, sixteen (16) portable truck-mounted ASTs and three (3) Mobile Fuel Tankers (MFTs) and/or Heavy Expanded Mobility Tactical Trucks (HEMTTs). All mobile tanks are monitored on a daily basis and inspected monthly when they are in use and/or parked with product. Each POL storage shed includes adequate secondary containment in the form of an integral sealed metal floor and surrounding wall with the drums situated on an elevated grate. Spill response equipment is available to contain spills from other mobile fuel equipment.

Military units operating mobile fuel supply compounds/vehicles must be cognizant of their location. Petroleum container storage areas must not be placed near, and especially up gradient of the following:

- Streams, lakes, ponds, creeks, storm water drains, or other surface water bodies. Potential spill sources must not be placed within 500 feet of these receptors;
- Intermittent streams or obvious drainage pathways. Potential spill sources must not be placed within 100 feet of these receptors;
- Wetlands areas. Potential spill sources must not be placed within 100 feet of a wetland area. NGVA-FMO-ENV can supply a map of wetlands areas, if there is any question regarding the location of wetlands.

8.7 FACILITY TRANSFER OPERATIONS [40 CFR 112.8(d)]

Effective spill prevention and containment procedures are in place for both aboveground and underground piping used for transferring oil at MTC-Fort Pickett.

8.7.1 Buried Piping [40 CFR 112.8(d)(1)]

Buried piping at MTC-Fort Pickett is protected against corrosion. All buried piping for the ASTs is double walled, the outer wall made of PVC and the inner pipe copper.

8.7.2 Pipeline Out of Service [40 CFR 112.8(d)(2)]

Pipelines not in service or in standby for extended periods are capped or blank flanged and marked as to their origin. UST fill and vent pipes are capped and locked when not in use.

8.7.3 Pipe Supports [40 CFR 112.8(d)(3)]

Pipe supports are properly designed and constructed to minimize abrasion and corrosion and to allow for expansion and contraction.

8.7.4 Aboveground Valves and Pipelines [40 CFR 112.8(d)(4)]

Periodic inspections are performed to ensure the integrity of the aboveground valves and piping. NGVA-FMO-ENV personnel examine all aboveground pipelines and valves and will schedule pressure testing when warranted.

8.7.5 Aboveground Piping Protection from Vehicular Traffic [40 CFR 112.8(d)(5)]

Aboveground piping is present at Fuel Stations #1, #2 and #3 and the majority of heating oil ASTs. Most aboveground piping and ASTs are surrounded by steel or concrete bollards, which provide protection against damage.

8.8 PREVENTIVE MAINTENANCE [9 VAC 25-91-170 A.20]

Preventive maintenance procedures at MTC-Fort Pickett include the inspection and maintenance of all oil storage and transfer equipment and vehicles to prevent oil leaks or discharges. The facility regularly inspects and tests the critical equipment to ensure the safe operation of the oil storage and handling systems. These inspections will uncover conditions such as cracks or slow leaks that could cause breakdowns or failures that result in an oil discharge. This program reduces breakdowns and failures by making proper adjustments, repair, or replacement of equipment or parts. MTC-Fort Pickett personnel indicate the operating pressure for the UST transfer systems is 35 lb/in², with a maximum pressure of 100 lb/in². The majority of the ASTs on site are used for heating oil storage. The portable fuel ASTs operate using a suction pump and therefore do not have a maximum pressure. A complete set of the manufacturer's specifications and operating instructions are maintained on-site.

Additional vehicle and equipment inspections and preventive maintenance are completed according to Army regulations based on usage (hours or mileage) or time. If inspections of equipment indicate the presence of a potential problem that may cause a release, repairs will be made irrespective of the scheduled time.

9.0 OIL PRODUCTION FACILITIES - ONSHORE [40 CFR 112.9]

Not Applicable.

10.0 OIL DRILLING FACILITIES - ONSHORE [40 CFR 112.10]

Not Applicable.

11.0 OIL DRILLING, PRODUCTION - OFFSHORE [40 CFR 112.11]

Not Applicable.

12.0 SUBSTANTIAL HARM CRITERIA APPLICABILITY [40 CFR 112.20]

VAARNG has determined that MTC-Fort Pickett could not, because of its location, reasonably be expected to cause substantial harm to the environment by discharging oil into or on the navigable waters or adjoining shorelines. The Attachment C-II of 40 CFR 112.20 is completed and is maintained with this Plan in **Appendix E**. A Facility Response Plan is not required for MTC-Fort Pickett.

13.0 OIL SPILL CONTINGENCY PLAN [40 CFR 109.5]

This Oil Spill Contingency Plan provides procedures to respond to oil spills that have the potential to reach inland navigable waters. The containment and diversionary structures, and readily available equipment at MTC-Fort Pickett, are practicable and effective to prevent discharge of oil from reaching navigable waters. VAARNG has retained this Plan as a reference.

This Plan is applicable to all spills at the facility. Particular emphasis is given to the delivery of fuel to the Fuel Farm and to the aircraft parking apron.

The control and countermeasure contingencies of the ICP are implemented when a reportable quantity of oil or a hazardous substance is:

- Released due to activities within the facility; or
- Released outside of the facility and draining onto the facility.

This Plan is stored in a secure location at MTC-Fort Pickett facility. This Plan is easily accessible by facility personnel and vendors who may handle or potentially be involved in handling petroleum products and/or hazardous substances.

13.1 AUTHORITIES, RESPONSIBILITIES AND DUTIES

[40 CFR 109.5(a)] [9 VAC 25-91-170 A.11]

The ultimate responsibility for oil spill prevention, control, and countermeasures at MTC-Fort Pickett lies with the Installation Commander. However, NGVA-FMO-ENV, has been delegated the responsibility and authority to implement the plan and its requirements. This level of responsibility ensures that the ICP has management approval at a level that can commit resources to implement the plan in accordance with 40 CFR 112.7. A chain of command has been established to ensure compliance with the various components of the ICP. The definition of authorities, responsibilities, and duties of persons, organizations, or agencies which are involved in planning or directing oil removal operations are described in **Table 7**.

Table 7- Responsibilities	
Person, Organization, or Agency	Authorities, Responsibilities, and Duties
Discoverer	<p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Follow the incidental and major spill response procedures posted on-site. • Notify the appropriate supervisor and MTC-Fort Pickett Environmental Coordinator of the release. • Assist MTC-Fort Pickett Environmental Coordinator in completing spill report forms, as required.
Environmental Coordinator/Specialist	<p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Notify the appropriate federal and state agencies of any spills. • Ensure that the On-Scene Commander (OSC) and appropriate agencies are notified if facility personnel cannot adequately respond to a spill. • Coordinate spill response activities with available, trained personnel.

Table 7- Responsibilities

Person, Organization, or Agency	Authorities, Responsibilities, and Duties
	<p><u>Responsibilities to maintain ICP include:</u></p> <ul style="list-style-type: none"> • Provide annual training sessions to employees on the responsibilities associated with implementation of the ICP, operation and maintenance of equipment to prevent discharges of oil, and applicable pollution control laws, rules and regulations . Training will comply with the requirements of 40 CFR part 112 and 265; • Maintain a complete copy of the ICP, including required records of training, written procedures, inspections, and Plan amendments; • Review all plans and drawings related to oil storage, handling or transfer facilities for new construction, maintenance or remodeling to determine if amendment to the ICP is required; • Request Plan modification within 6 months of significant facility changes. • Ensure copies of the Plan are distributed to appropriate personnel at the facility and authorized emergency response agencies who request it. • Ensure inspections are performed and maintain records. • Review the Plan once every five years.
First Responder, Awareness Level	<p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Initiate evacuation, if necessary. Contact response personnel, if necessary. • Assist the Discoverer and MTC-Fort Pickett Environmental Coordinator in the event of a release. • Stop spill flow when possible without undue risk of personal injury. • Contain the spill using spill response equipment or whatever means is readily available without undue risk of personal injury. • Make spill scene OFF LIMITS to unauthorized personnel. • Restrict all sources of ignition when flammable/ combustible substances are involved. • Report to the OSC upon his/her arrival to the scene. • Assist MTC-Fort Pickett Environmental Coordinator in completing spill report forms, as required.
On-Scene Commander (OSC)	<p>The senior fire official (Fire Chief) on the scene will be the initial OSC. The OSC assumes the primary responsibility for actions following a spill and coordinates spill response activities with available, trained personnel.</p> <p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Coordinate spill response activities with available, trained personnel. • Request the deployment of spill response team. • Direct the spill response efforts. • Coordinate requirements from the on-scene control group for materials, personnel and equipment.
Fire Department	<p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Act as the initial OSC until the appointed OSC is on-site. • Immediately respond to spills as necessary to protect life and property with due regard to the environment. • Provide technical assistance to the OSC concerning response to, and handling of, combustible or flammable substances. • Provide personnel as required for the Response Team. • Maintain protective clothing and equipment for response personnel within the Fire Department. • Request the preplanned response operations center to request medical assistance if injuries are reported.

Table 7- Responsibilities	
Person, Organization, or Agency	Authorities, Responsibilities, and Duties
Police Department	<p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Patrol the base and provide notification of discovered spills; • Inspect security systems (e.g., access controls, locked storage areas, fencing, traffic control) to ensure that spills do not result from vandalism or unauthorized entry; • Limit access to spill scenes;
Installation Response Team (IRT)	<p>The IRT consists of local Fire Department personnel, Regional Emergency Response Team, and/or private spill response contractors. The Response Team will be deployed when requested by the OSC to provide a coordinated effort to contain, control, recover and restore the environment from oil, fuel, or hazardous substance spills.</p> <p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Stop spill flow when possible without undue risk of personal injury. • Contain the spill using spill response equipment or whatever means is readily available, without undue risk of personal injury. • Make spill scene OFF LIMITS to unauthorized personnel. • Restrict all sources of ignition when flammable/ combustible substances are involved. • Report to the OSC upon his/her arrival to the scene. • Assist the OSC in spill cleanup, area decontamination and restoration efforts.
National Guard Bureau	<p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Provide guidance and funds for projects.
DEQ	<p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Review the ICP under conditions specified in 9 VAC-25-91-10. • Make recommendations to the Water Control Board regarding the ICP and possible modifications.
EPA	<p><u>Primary responsibilities include:</u></p> <ul style="list-style-type: none"> • Review adequacy of the ICP under conditions specified in 40 CFR 112.4. • Require VAARNG to amend the SPCC Plan if the US EPA feels that the spill might have been prevented or its extent lessened by either physical or procedural changes.

13.2 SPILL CONTAINMENT AND CLEANUP RESPONSIBILITY [9 VAC 25-91-170 A.8]

During an incident, an On-Scene Commander (OSC) will be responsible for directing the initial response to a discharge. This person has received training in spill response techniques, and shall have the authority to commit MTC-Fort Pickett equipment and manpower during a response. An NGVA-FMO-ENV representative will be dispatched to the spill site to oversee response operations. Personnel identified in **Table 7** have the authority to direct VAARNG personnel during the initial spill response.

13.3 SPILL CONTAINMENT AND CLEANUP COMPLIANCE RESPONSIBILITY [9 VAC 25-91-170 A.9]

MTC-Fort Pickett Environmental Coordinator/Specialist listed in **Table 7** is responsible for compliance with local, state, and federal regulations during spill response and cleanup activities and is responsible for notifications to government agencies.

13.4 SPILL RESPONSE CONTRACTOR [9 VAC 25-91-170 A.10]

Following an incident that requires the assistance of a spill response contractor, MTC-Fort Pickett Environmental Coordinator will call an available spill response contractor. The VAARNG is then authorized to pay for the response. The following spill response companies that are utilized by VAARNG:

- IMS Environmental Services (IMS) 804-752-2351
- Marshall Miller & Associates (Cardno/MMA) 804-798-6525

Since these spill response companies are located in the vicinity of the City of Richmond, the response time following notification is expected to be between 1 and 3 hours, depending on the amount of assistance requested. Each company maintains a relatively current inventory of spill equipment at their facility and testing logs to verify equipment operation. Inventories of spill equipment are included in **Appendix G**. Cardno/MMA also submitted a letter of intent which is included in **Appendix G**.

13.5 WORST-CASE DISCHARGE SCENARIO [9 VAC 25-91-170 A.11]

13.5.1 Worst-Case Discharge Assessment

In accordance with ODCP requirements, this section presents the hypothetical worst-case discharge assessment. For the purposes of this Plan, it is assumed that under the worst-case discharge scenario, “adverse weather conditions” would occur during a 25-year, 24-hour rainfall event. The worst-case discharge would be the instantaneous release of the largest AST at MTC-Fort Pickett containing 4,000 gallons of No. 2 fuel oil. MTC-Fort Pickett has three 4,000-gallon concrete vaulted tanks located at Buildings 1613, 467 and 135.

For a worst case discharge scenario, a breach in the secondary containment system or an overflow of the system (the “slosh factor” cited in VDEQ Guidelines for the Preparation of the ODCP) is assumed to occur based on past historical information related to secondary containment systems. For the purposes of this assessment, the volume of the release required by VDEQ guidelines is 22% of the worst-case discharge (4,000 gallons), which equals 880 gallons.

$\begin{aligned}\text{Worst case discharge} &= \text{volume of largest tank} \times 0.22 \\ &= 4,000 \times 0.22 \\ &= 880 \text{ gallons}\end{aligned}$
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13.5.2 On-Site Discharge Containment Strategy

A worst-case discharge that is not secondarily contained could produce a large volume of liquid flowing towards the surface drainage conveyances. Containment of sheetflow over pervious surfaces is not easily accomplished. However, if time permits, shallow trenches or sumps may be dug in the flow path to recover as much released liquid as possible. Once the liquid reaches the surface drainage ditches, check dams or underflow dams may be constructed. Impervious materials (such as sandbags, a water proof covering, or an inflatable bladder) will be placed in front of the culvert to prevent a release from being discharged off-site. Portable recovery devices (such as explosion proof pumps or vacuum trucks) will be positioned and activated to collect liquid that has been temporarily contained. Available spill response equipment (such as sorbent booms, pillows, pads, and clay) will be deployed to recover residual product as needed.

13.5.3 Off-Site Discharge Containment Strategy

If required, MTC-Fort Pickett will obtain the services of a spill response contractor to assist with spill containment, recovery, and/or cleanup. The spill response contractor may install spill response equipment (which may include floating containment booms) along or around any natural resources identified in Section 11.0 to attempt to protect them from the spill.

14. NATURAL RESOURCES AT RISK [9 VAC 25-91-170 A.13]

The facility is required to identify and locate natural resources at risk (including, but not limited to, surface waters as indicated on the applicable USGS quadrangle maps, groundwater, public water supplies, public and private water wells and springs, state or federal wildlife management areas, wildlife refuges, management areas, sanctuaries, property listed on the National Register of Historic Places and property listed on the National Register of Natural Landmarks), which could reasonably be expected to be impacted by a discharge from the facility. Additionally, the facility is required to identify priorities for protection and means of protection these resources. The identified natural resources at risk for MTC-Fort Pickett are described in Section 14.1, and the priorities and means of protection for these natural resources are described in Section 14.2.

14.1 IDENTIFIED NATURAL RESOURCES AT RISK

The MTC-Fort Pickett Integrated Natural Resources Management Plan (INRMP) and Environmental Assessment FY 2007-2011 was used to identify natural resources at the installation that may be at risk in the event of an oil discharge.

14.1.1 Surface Water

MTC-Fort Pickett is intersected by a number of creeks, streams, and tributaries. These tributaries ultimately discharge into the Nottoway River, which flows to the southeast and is part of the Chowan River Basin, just inside the southern border of MTC-Fort Pickett. The Commonwealth of Virginia State Water Control Board classifies the Nottoway River as Class III water. Class III waters are the cleanest waters and have non-degradation standards. The Nottoway River is the primary surface water drainage system located on Fort Pickett and is responsible for draining 1,435 square miles (3,680 sq. km). Birch Creek and Hurricane Branch are the two major drainages that could be impacted in a worst-case scenario spill in the cantonment area. The facility maintains a number of storm water drains and drainage ditches to collect and direct surface water generated during rainfall events. Fort Pickett personnel indicated there are no known springs that would be impacted by a worst case discharge.

Off-site discharges of oil that enter surface waters at MTC-Fort Pickett, if left unchecked, could ultimately be discharged to the Nottoway River; however, due to the distances involved, and the procedures implemented at MTC-Fort Pickett, a petroleum release at MTC-Fort Pickett actually causing a sheen on the Nottoway River is highly unlikely.

Figure 19 identifies the surface waters associated with MTC-Fort Pickett.

14.1.2 Wetlands

There are approximately 2,810 acres of wetlands which contain many different wetland community types that have been mapped and identified within MTC-Fort Pickett. Wetlands adjacent to the Blackstone Army Airfield and along Hurricane Branch and Birch Creek may be impacted in a worst-case scenario spill within the cantonment area.

14.1.3 Public Water Supplies

The Town of Blackstone Water Treatment Plant, located along Garnett Ave between Vehicle Fuel Station #2 and Central Fuel Station #1, supplies drinking water to MTC-Fort Pickett. A worst-case discharge during a significant precipitation event would not impact these public drinking water supplies.

14.1.4 Wildlife Refuges

There are no designated wildlife refuges located at MTC-Fort Pickett.

14.1.5 Sanctuaries

There are no designated wildlife sanctuaries located at MTC-Fort Pickett.

14.1.6 Threatened or Endangered Species

MTC-Fort Pickett has a variety of federal and state threatened and/or endangered species. Overall, MTC-Fort Pickett maintains habitat for two federally listed species and five state listed species. **Table 8** presents the threatened and endangered species noted at MTC-Fort Pickett.

The Roanoke logperch, found in the Nottoway River system, has experienced a decline due to increasing siltation and sedimentation caused by surrounding land use practices. The Roanoke logperch is listed as endangered on both a global and statewide scale, with very few individuals found in Virginia.

The largest population of yellow lance mussels located within ARNG-MTC Fort Pickett is in the Nottoway River near the post boundary and Dobbins Bridge. No individuals were detected during the 2006 survey of the Nottoway River.

Bald Eagles utilize many of the larger water bodies and adjacent lands on ARNG-MTC Fort Pickett for feeding and roosting sites. They have been sighted on or near Tommeheton Lake, Hurricane Branch flowage, Twin Lakes, Dearing Pond and the Fort Pickett reservoir. However, there is currently only one known active nest located within the boundaries of ARNG-MTC Fort Pickett on Hurricane Branch.

The Nottoway River harbors the healthiest known population of the Atlantic pigtoe in Virginia, and is one of the healthiest rangewide. In a 2006 survey, 17 individuals were found at ten different sites. This species has been previously documented on ARNG-MTC Fort Pickett in several locations.

Michaux's sumac and Bachman's sparrow have only been identified in the Controlled Access Area (CAA), which is located several miles from any AST, and would not be impacted by a worst-case discharge.

Table 8 - Threatened and Endangered Species				
Common Name	Species Name	Federal Status	State Status	Global/State Rank
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted	Threatened	G4/S2S3B/S3N
Roanoke logperch	<i>Percina rex</i>	Endangered	Endangered	G1G2/S1S2
Bachman's sparrow	<i>Aimophila aestivalis</i>	N/A	Threatened	G3/S1B
Michaux's sumac	<i>Rhus michauxii</i>	Endangered	N/A	G2/S1
Yellow lance mussel	<i>Ellipto lanceolata</i>	N/A	Species of Concern	G2G3/S2S3
Atlantic pigtoe mussel	<i>Fusconia masoni</i>	N/A	Threatened	G2/S2

Global Ranks:

G1: Extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals; or because of some factor(s) making it especially vulnerable to extinction.

G2: Very rare and imperiled with 6 to 20 occurrences or few remaining individuals; or because of some factor(s) making it vulnerable to extinction.

G3: Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range; or vulnerable to extinction because of other factors. Usually fewer than 100 occurrences are documented.

G4: Common and apparently secure globally, though it may be rare in parts of its range, especially at the periphery.

G5: Very common and demonstrably secure globally, though it may be rare in parts of its range, especially at the periphery.

G_T_: The rank is uncertain, but considered to be within the indicated range of ranks (also, T_T_).

G_T_: Signifies the rank of a subspecies (e.g., G5T1 would apply to a subspecies if the species is demonstrably secure globally (G5) but the subspecies warrants a rank of T1, critically imperiled.)

State Ranks:

S1: State rank; extremely rare and critically imperiled with 5 or fewer occurrences or very few remaining individuals in Virginia; or because of some factor(s) making it especially vulnerable to extirpation in Virginia.

S2: State rank; very rare and imperiled with 6 to 20 occurrences or few remaining individuals in Virginia; or because of some factor(s) making it vulnerable to extirpation in Virginia.

S3: Rare to uncommon in Virginia with between 20 and 100 occurrences; may have fewer occurrences if found to be common or abundant at some of these locations; may be somewhat vulnerable to extirpation in Virginia.

S_S_: Rank is uncertain, but considered to be within the indicated range of ranks.

S_B/S_N: Breeding and nonbreeding status of an animal (primarily used for birds) in Virginia, when they differ.

No threatened or endangered species exist within the cantonment area at MTC-Fort Pickett. Several species are located in the Nottoway River and/or Hurricane Branch; however, due to the distances involved, impacts to these species would be unlikely in the event of a worst-case discharge.

14.1.7 National Register of Historic Places and Natural Landmarks

Two buildings located within the cantonment area at MTC-Fort Pickett have been recommended for the National Register of Historic Places: the Hangar at Blackstone Army Airfield and the Former POW Jailhouse. Neither building should be at risk in the event of a spill. The airfield has a small, double-walled generator base tank located inside a brick building and surface flow is to the northeast, away from the hangar. The former POW Jailhouse is at least ½ mile from any ASTs. No natural landmarks have been identified at MTC-Fort Pickett.

14.2 PRIORITIES AND MEANS OF PROTECTION

Personnel at MTC-Fort Pickett are trained in spill prevention and response measures, and for small spills, are capable of using available spill equipment to prevent discharges to surface water drainage ditches and/or water bodies. The use of absorbent materials and containment booms in surface drainage ditches is standard procedure for MTC-Fort Pickett. In the event of a worst-case discharge into a surface water body, response activities will be initiated with a contractor listed in Section 13.4.

In the event of a release to surface water, DCR-DNH should be contacted at the number listed in **Table 10** to help identify rare plant species and natural community occurrences that might be impacted.

In addition, the Natural Resource Trustee in charge, who will act on behalf of the public for land, fish, wildlife, biota, air, water, groundwater, drinking water supplies, and other natural resources belonging to, managed by, or held in trust by the United States, should be contacted at the number listed in **Table 10**. In Virginia, the Secretary of Natural Resources is designated by the governor to serve as the Natural Resource Trustee. The Trustee will assess the potential for or extent of natural resource damages and develop and implement a plan for the protection, restoration, rehabilitation, replacement, or acquisition of the equivalent of the natural resources under their trusteeship. A variety of other non-governmental organizations and volunteer groups are available to assist at a fish and wildlife incident by providing such things as procedural training for bird rehabilitation. A list of these organizations can be obtained from the Trustee.

15. GROUNDWATER CHARACTERIZATION STUDY [9 VAC 25-91-170 A.13.A]

The operator of a facility with an aggregate aboveground storage or handling capacity of 1,000,000 gallons or greater of oil is required to conduct a Groundwater Characterization Study within the geographic boundaries of the facility as part of the ODCP. MTC-Fort Pickett facility does not meet this 1,000,000-gallon threshold, and therefore, a groundwater characterization study is not required.

16. PIPELINE OPERATORS [9 VAC 25-91-170 A.13.B]

As part of the requirement to identify and locate natural resources at risk, an operator of a pipeline is required to identify surface waters as indicated on USGS quadrangle maps, public water supplies, state or federal wildlife management areas, wildlife refuges, management areas, sanctuaries, property listed on the National Register of Historic Places and property listed on the National Register of Natural Landmarks, which could reasonably be expected to be impacted by the discharge. At the time of a discharge, the operator of a pipeline shall conduct a Groundwater Characterization Study and identify other natural resources at risk including public and private wells or springs which could reasonably be expected to be impacted by the discharge. MTC-Fort Pickett facility is not an operator of a pipeline, and therefore, this requirement does not apply to MTC-Fort Pickett.

17. MOORED VESSELS [9 VAC 25-91-170 A.15.]

MTC-Fort Pickett is not capable of supporting water traffic. Tank vessels are not moored at the facility.

18. MUNICIPAL SERVICES AT RISK [9 VAC 25-91-170 A.14]

The facility is required to identify and locate any municipal or other services at risk (including, but not limited to, storm drains, storm water collection systems and sanitary sewer systems), which could reasonably be expected to be impacted by a discharge from the facility. Additionally, the facility is required to describe notification procedures and means of protection of these services. The identified municipal services at risk for MTC-Fort Pickett are described in Section 18.1, and the notification procedures and means of protection for these services are described in Section 18.2.

18.1 IDENTIFIED MUNICIPAL SERVICES AT RISK

18.1.1 Storm Water System

Storm drainage systems are identified on Figures 2-18 for the locations that store bulk petroleum. MTC-Fort Pickett also has VPDES General Stormwater permits for MATES Fuel Station, Fuel Stations #1, #2, and #3 and the Recycling Center and Non-Metallic Mining permits for the DPW Quarry and the 157th Engineers' Quarry. These areas are inspected regularly in accordance with the MTC-Fort Pickett Stormwater Pollution Prevention Plan (SWPPP). Stormwater from the installation discharges to the Nottoway River, which is located along the southern boundary of the installation.

18.1.2 Sanitary Sewer System and Wastewater Treatment

MTC-Fort Pickett has a sanitary sewer system which discharges into the Town of Blackstone wastewater treatment plant (WWTP), which is located along Garnett Ave. The wastewater treatment plant is located in the same area as the water treatment plant and provides primary, secondary and tertiary treatment for the town and for the installation. The system provides treatment for the installation, with the exception of two buildings and two remote facilities that utilize septic tanks and drain fields for sewage disposal. For a direct release into the sanitary sewer system, the Blackstone WWTP will be notified immediately.

18.1.3 Public Water Distribution Services

The Town of Blackstone currently owns the on-site water treatment plant, wastewater treatment plant and 10-acres surrounding the plants. The WTP is the source of potable water for the installation, with the exception of one facility that obtains its water from an underground well. Water distribution mains are located throughout the installation. A reservoir on the Nottoway River, located on the southwest portion of the installation, supplies water to the water treatment plant. The reservoir is approximately 384 acres and has an average capacity of 772 million gallons. Also located on the installation are three elevated storage tanks and three pumping stations. The

Town of Blackstone provides public water and sanitary sewer services to the area around the facility. No residential wells are found within two miles of the facility.

18.2 PRIORITIES AND MEANS OF PROTECTION

Personnel at MTC-Fort Pickett are trained in spill prevention and response measures and, for small spills and leaks, are capable of using available spill response equipment to prevent discharges to the surface drainage ditches leading to the Nottoway River and drop inlets leading to the WWTP. Preventing a spill from leaving the facility will protect the municipal resources described above. The use of absorbent materials and containment booms in the surface drainage ditches as a means of containing the discharge is standard procedure for MTC-Fort Pickett. In the event of a worst-case discharge or other discharge to the Nottoway River, response activities will be initiated with a spill response contractor listed in Section 13.4 to protect any municipal services.

In the event of a worst case discharge, the MTC-Fort Pickett Environmental Coordinator will notify any potentially impacted municipal services. For a direct release to the sanitary sewer system, Town of Blackstone WWTP will be notified.

19. NOTIFICATION PROCEDURES [40 CFR 109.5(B)]

Notification procedures are established for the purpose of early detection and timely notification of an oil or hazardous substance discharge. NGVA-FMO-ENV will be notified immediately by telephone of all spills of oil or other hazardous substances that meet the following criteria:

- All oil spills >5 gallons to the environment (outside building, parking lot, etc.)
- All oil spills to water source (includes drop inlets, ditches, ponds, creeks)
- All non-petroleum hazardous material/waste related spills

NGVA-FMO-ENV will be responsible for notifications to all federal, state and local agencies as necessary based on the size and type of release.

19.1 CRITICAL WATER USE AREAS [40 CFR 109.5(b)(1)]

Based on the amount of property and the flow pattern of water through the property, critical water use areas are not considered to be endangered by potential spills of oil or hazardous substances from the facility.

19.2 NOTIFICATION LIST [40 CFR 109.5(b)(2)] [9 VAC 25-91-170 A.6]

The current list of responsible persons and alternates on call, organizations and agencies is included below in **Table 9**.

19.3 COMMUNICATION SYSTEM [40 CFR 109.5(b)(3)]

MTC-Fort Pickett facility personnel will be notified of a spill that could pose an immediate threat via telephone, radio system, or word of mouth where practical. Phone numbers for nearby hospitals are also listed in the event of an injury related to a hazardous material release. The installation does not have a written agreement with a specific hospital for the transport and treatment of injuries. The MTC-Fort Pickett Fire Dept/EMS (FPFD) will transport patients to a particular hospital based on the type and severity of the injury. Virginia Commonwealth University (VCU) Medical Center operates a LifeEvac medical helicopter from the Dinwiddie County Airport (approximately 30 miles east of MTC-Fort Pickett) and will be called by the FPFD if needed. The current list of responsible persons and alternates on call, organizations, and agencies is included below in **Table 9**.

Article 11, 62.1-44.34:19.A, of the State Water Control Law requires immediate notification of the VDEQ in the event of a release of 25 gallons or more. When less than 25 gallons of oil are released to state lands, these notifications do not need to be executed. However, recordkeeping requirements identified in Article 11 of the State Water Control Law must be met, and the oil must be cleaned up in accordance with the requirements of Article 11.

The National Response Center (NRC) should be immediately notified by NGVA-FMO-ENV of a reportable quantity spill. The US EPA Region III should be contacted only if it is impractical to immediately notify the NRC.

Table 9 - Emergency Response Agencies and Telephone Numbers

<u>I. MTC-Fort Pickett Contacts (NGVA-FMO-ENV)</u>	
Initial Notification (Environmental Specialist).....	434-298-6407
(Environmental Specialist).....	434-298-6121
<u>II. Emergency Contacts</u>	
Fire, Medical, Police and Emergency.....	911
NGVA-FMO-ENV (Off-Duty hours)	434-298-8734
Virginia Department of Emergency Management.....	800-674-2400
Fort Pickett Fire Department.....	434-292-2217
National Response Center ¹	800-424-8802
US EPA Region III (Emergency Response)	800-438-2474
Virginia Department of Health (Wells/Septic).....	804-864-7470
<u>III. Emergency Support</u>	
Virginia Department of State Police.....	911
Virginia Dept. of Environmental Quality (Central Office)	804-698-4000
Virginia Dept. of Environmental Quality (Blue Ridge Regional Office).....	434-582-5120
Town of Blackstone Wastewater Treatment Plant.....	434-292-3172
Centra Southside Community Hospital (Farmville)	434-315-2530
South Hill Community Memorial Healthcenter.....	434-447-3151
St. Francis Medical Center.....	804-594-7300
US EPA Region III (Main Office).....	215-814-5000
National Poison Control Center.....	800-222-1222

¹ The NRC will notify the U.S. Coast Guard and US EPA.

Contact agencies for sensitive receptors are listed in **Table 10** and may be notified upon identification of a release, as needed. Some of the agencies listed in this table may be notified to gain additional information about specific sensitive receptors, as needed.

Table 10 - Sensitive Receptors and Contact Agency Information

Department of Conservation & Recreation, Division of Natural Heritage.....	804-786-7951
Natural Resource Trustee.....	804-768-0044
Virginia Dept. of Agriculture & Consumer Services, Office of Plant and Pest Services.....	804-371-6561
Virginia Dept. of Game & Inland Fisheries	804-367-1000
U.S. Dept. of Interior, Fish & Wildlife Service	804-693-6694
Virginia Dept. of Historic Resources	804-367-2323

19.4 ASSISTANCE REQUEST PROCEDURE [40 CFR 109.5(b)(4)]

When a significant spill occurs at MTC-Fort Pickett facility, MTC-Fort Pickett Environmental Coordinator will contact the Fire Department for assistance if needed. The Fire Department, upon arrival on the scene or on receipt of information indicating that the spill is too large for them to handle alone, will request the services of the Regional Response Team or an outside private spill response contractor.

19.5 RESOURCE CAPABILITIES [40 CFR 109.5(c)]

Full resource capabilities are identified and described below. These resources can be committed during an oil or hazardous substance discharge situation.

19.5.1 Spill Response Equipment

[40 CFR 109.5(c)(1)][9 VAC 25-91-170 A.12][40 CFR 265.52(e)]

Each tenant organization has an ample supply of spill equipment to control all minor spills that may occur at their facility. MTC-Fort Pickett has a central storage facility for spill equipment at the Hazardous Waste Accumulation Facility, Building 2361. Each tenant organization has approval to pick up any equipment it deems necessary to clean up an accidental release of POLs. The facility has personal protective gear (i.e. gloves, tyvek suits, etc.), booms of various lengths, oil dri, a variety of absorbent pads, 95-gallon over-pack drums filled with various spill equipment, containment pools and pans, empty drums and a roll off container for easy disposal of contaminated soil. The installation's emergency response team, which is primarily the Fire Department, has a 16' HAZMAT trailer with an ample supply of spill equipment. The trailer is always stocked and ready to respond to any spill that might occur at MTC-Fort Pickett. All spill equipment and safety supplies are checked and replenished on an as need basis. A list of spill equipment maintained at the Recycling Facility and the contents of the HAZMAT trailer are included in **Appendix G**.

Response personnel are trained in the use of spill response materials and equipment located on-site. Response equipment is tested periodically and inventoried at least annually, and is replaced following use as needed. Personal protective equipment (PPE), such as safety glasses, are issued to specific persons who, by virtue of their duties, require this equipment daily.

Spill response contractors identified in Section 13.4 also maintain an inventory of spill response equipment. An inventory of outside contractor's spill response equipment is included in **Appendix G**. The response time following notification is expected to be between one and two hours, depending on the amount of assistance requested.

19.5.2 Estimate Of Supplies To Remove Maximum Spill [40 CFR 109.5(c)(2)]

For the purposes of this Plan, the maximum spill is assumed to be the instantaneous release of 4,000-gallon during adverse weather conditions. A release of heating oil in this volume beyond the secondary containment system would flow overland towards the surface drainage conveyences.

Containment of sheet flow over pervious surfaces is not easily accomplished. However, if time permits, shallow trenches or sumps will be dug in the flow path to recover as much released liquid as possible. Once the liquid reaches the surface drainage ditches, check dams or underflow dams will be constructed. Impervious materials (such as sandbags, a waterproof covering, or an inflatable bladder) will be placed in front of the culvert to prevent a release from being discharged off-site. Portable recovery devices (such as explosion proof pumps or vacuum trucks) will be positioned and activated to collect liquid that has been temporarily contained. Available spill response equipment (such as sorbent booms, pillows, pads, and clay) will be deployed to recover residual product as needed. Additional guidance for spill mitigation, containment and cleanup is provided in **Appendix B**.

If required, MTC-Fort Pickett will obtain the services of a spill response contractor to assist with spill containment, recovery, and/or cleanup. The spill response contractor may install spill response equipment, including floating containment booms, along or around the natural resources to attempt to protect them from the spill.

19.5.3 Response Agreements And Arrangements [40 CFR 109.5(c)(3)]

Following an incident that requires the assistance of a spill response contractor, NGVA-FMO-ENV will call in an available spill response contractor listed in Section 13.4. The VAARNG is then authorized to pay for the response.

19.6 PROVISIONS FOR SPECIFIC RESPONSE ACTIONS [40 CFR 109.5(d)]

19.6.1 Designated Response Team [40 CFR 109.5(d)(1)]

The oil discharge response operating team consists of facility personnel that are trained, prepared and available; MTC-Fort Pickett Fire Department personnel; Regional Response Teams; and private spill response contractors.

19.6.2 Predesignated Response Coordinator [40 CFR 109.5(d)(2)][9 VAC 25-91-170 A.7]

MTC-Fort Pickett Environmental Coordinator serves as the predesignated, properly qualified response coordinator for oil discharge and hazardous waste incident response for MTC-Fort Pickett. The MTC-Fort Pickett Environmental Coordinator is charged with the responsibility and delegated authority for directing and coordinating response operations and knows how to request assistance from MTC-Fort Pickett Fire Department, NGVA-FMO-ENV, DEQ, and EPA.

The primary and alternate Predesignated Response Coordinators for MTC-Fort Pickett are identified by position in **Table 11**.

Table 11 - Predesignated Response Coordinators		
	Primary	Alternate
Title:	Environmental Specialist	Environmental Specialist
Work Phone:	434-298-6407	434-298-6121
24-hr Phone (Cell):	434-294-0390	

If none of MTC-Fort Pickett persons listed in this table is present at the facility, the 24-hour telephone number should be used to contact them.

19.6.3 Preplanned Operations Center [40 CFR 109.5(d)(3)]

NGVA-FMO-ENV will serve as the preplanned location for oil discharge response operations center, or will designate an alternative location. Telephone and radio communications are available as needed.

19.6.4 Varying Response Provisions [40 CFR 109.5(d)(4)][40 CFR 265.52 (a), (c) and (d)][40 CFR 265.56 (a) to (j)]

The varying degrees of response efforts depending on the severity of the oil or hazardous substance discharge are provided. Personnel safety takes precedence over environmental protection. The course of action, in the event of a spill, is to contain and clean up the spill using appropriately trained personnel and available spill response equipment.

The flow charts in this section provide simplified response procedures for incidental and major spill events. In general:

The instructions for INCIDENTAL SPILL RESPONSE will be followed if:

- Material released is a routine job exposure for the involved personnel, and
- There is no immediate threat to life, human health, or the environment.

The instructions for MAJOR SPILL RESPONSE will be followed if:

- Material released is an immediate threat to life, human health, or the environment,
- Involved personnel have not been trained in initial response actions for hazardous material releases, or
- Involved personnel do not handle the hazardous material(s) as part of their routine job functions, (and they do not have Hazardous Communications training as required in 29 CFR 1200).

CATASTROPHIC SPILLS will be handled only by the Fire Department or other properly trained personnel.

Specific spill response procedures are described below:

SPILL RESPONSE PROCEDURES		
DISCOVERY		
Discover	Discoverer	Determines whether it is an incidental or major spill. Exercise personal safety. Secure the area. Notify supervisor. Stop the source, if it can be done without endangering personal safety. Meet and direct response personnel to location.
INCIDENTAL SPILL		
Respond	Supervisor	Verify information. Assign personnel to: <ul style="list-style-type: none"> • Contain and control the spill, and • Clean up the spill.
Cleanup	Supervisor	Contact NGVA-FMO-ENV.
MAJOR SPILL		
Respond	Supervisor	Verify information. Notify MTC-Fort Pickett Environmental Coordinator.
	Environmental Coordinator	Verify information. Call 911 for assistance, Fire Department will assign On-Scene Coordinator. Notify NGVA-FMO-ENV.
	On-Scene Coordinator	Supervise Fire Department personnel, requesting additional assistance from the Regional Response Team if required, to: <ul style="list-style-type: none"> • Contain and control the spill.
Cleanup	NGVA-FMO-ENV	Coordinate spill cleanup: <ul style="list-style-type: none"> • Contact properly trained VAARNG staff, and • Contact private spill response contractor.
NOTIFICATIONS		
Notifications	NGVA-FMO-ENV	Notify Public Affairs Officer (PAO), National Guard Bureau. Submit the information listed in 40 CFR 112.4 to the appropriate agencies for: <ul style="list-style-type: none"> • Oil spills that enter state waters: NRC, DEQ, LEPC. • 1,000-gallon discharge, or two “harmful quantity” discharge events in 12 months of oil, or oil to navigable waterway: written report within 60 days to EPA, DEQ Central Office. • Greater than Reportable Quantity (RQ) of Hazardous Substance release: verbal report to EPA, DEQ, LEPC, written report to all if required by EPA. • Hazardous Waste releases: written report within 15 days (40 CFR 265.56(j)) to EPA. • Substances identified as extremely hazardous: LEPC.
	PAO	Provide statements to: <ul style="list-style-type: none"> • Media and State congressional delegation.
	Environmental Coordinator	Complete within five working days: <ul style="list-style-type: none"> • Spill Accident Report, Accidental Release of Hazardous Materials Report Form C.3 can be found in Appendix C.
After action review	Supervisory personnel	Perform after action review and submit documentation within 31 calendar days to NGVA-FMO-ENV. Review shall address: <ul style="list-style-type: none"> • Cause or suspected cause of the release, • Personnel discovering and responding to the event,

SPILL RESPONSE PROCEDURES		
		<ul style="list-style-type: none"> • Operational, procedural, or facility changes recommended to prevent future similar releases; and • Effectiveness of the notification process.
Plan amendments	NGVA-FMO-ENV	Consider ways to prevent the reoccurrence of the spill: <ul style="list-style-type: none"> • Review equipment inspection records; • Reevaluate procedures for certain operations, (i.e., tank filling, tank inspecting, emergency response); and • Investigate options such as: <ol style="list-style-type: none"> 1) purchasing additional spill contingency resources, 2) installing monitoring/ warning devices, 3) constructing new secondary containment devices, and 4) updating storage equipment.

19.6.5 Water Use Protection Priority [40 CFR 109.5(d)(5)]

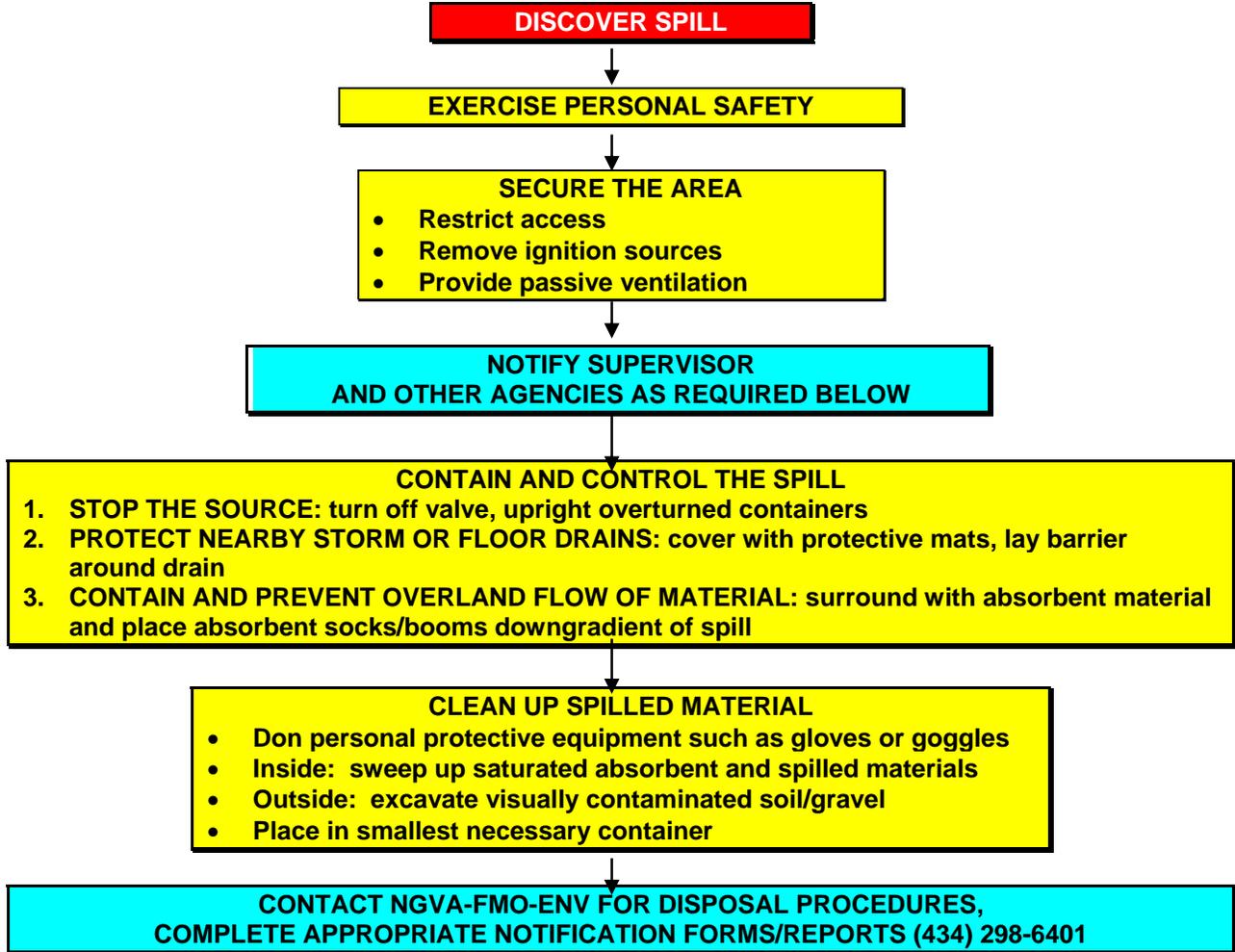
Based on the amount of property and the flow pattern of water through the property, critical water use areas are not considered to be endangered by potential spills of oil or hazardous substances from the facility. Therefore, the specification of priority, in which water uses are to be protected from an oil or hazardous substance discharge, is not required.

19.7 PROCEDURES FOR RECOVERY OF DAMAGES [40 CFR 109.5(e)]

Contracts or agreements with contractors, transporters, or similar personnel for movement of such commodities as the fuel and used oil, in or out of MTC-Fort Pickett facility, should stipulate that the contractor, transporter, or similar person will be responsible for cleanup of all spills on the facility caused by their negligence. The agreement shall also stipulate that the VAARNG takes no responsibility for the activities of contractor personnel outside the physical confines of the facility.

INCIDENTAL SPILL RESPONSE PROCEDURE

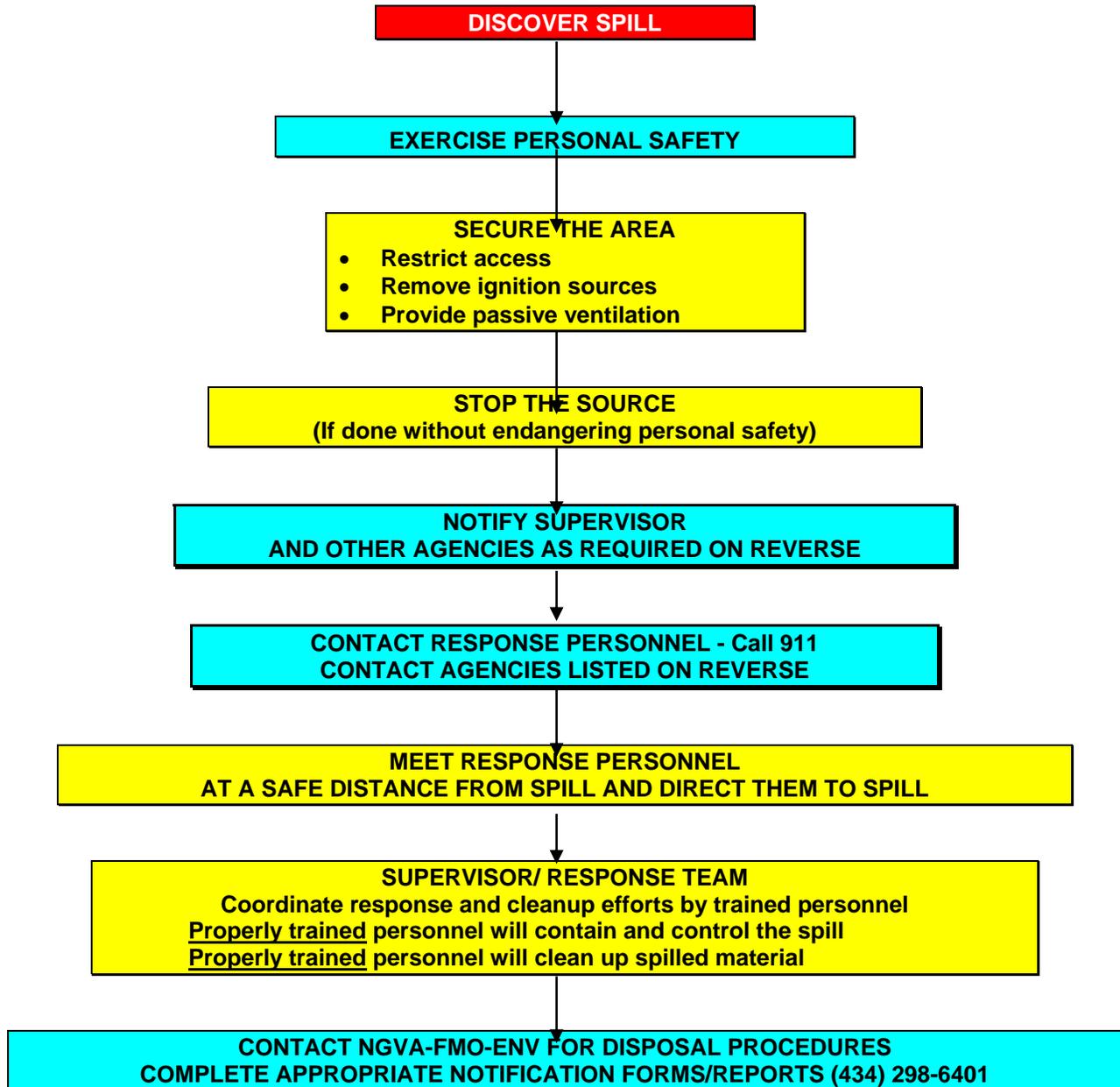
Material released is routine job exposure and there is no immediate threat to life, human health or property (Refer to MSDS)



REQUIRED NOTIFICATIONS	
<u>1. Emergency Support</u> Fire, Medical, Police and Emergency 911 Regional Response Team..... Fire Dept will contact National Poison Control Center 800-222-1222	<u>2. Facility Contact</u> Fort Pickett 434-294-0390 or 434-298-6407 Other Military Installation DPW State Park..... Park Ranger Public Road..... State Police, 800-553-3144 Private Land..... Landowner
<u>Quantity Released</u> Greater than 5 gallons: Notify Facility Contact and NGVA-FMO-ENV. Greater than 25 gallons or entering water: NGVA-FMO-ENV will notify DEQ. Reportable quantity: NGVA-FMO-ENV will immediately notify the NRC. The NRC will notify the US Coast Guard and the USEPA. NGVA-FMO-ENV will contact USEPA Region III only if it is impractical to immediately notify the NRC.	<u>3. Agency Notifications</u> NGVA-FMO-ENV (Duty Hours)..... 434-298-6401 Virginia Dept. of Environmental Quality (Blue Ridge Office) .. 434-582-5120 National Response Center (NRC)..... 800-424-8802 US Region III (Main Office)..... 215-814-5000

MAJOR SPILL RESPONSE PROCEDURE

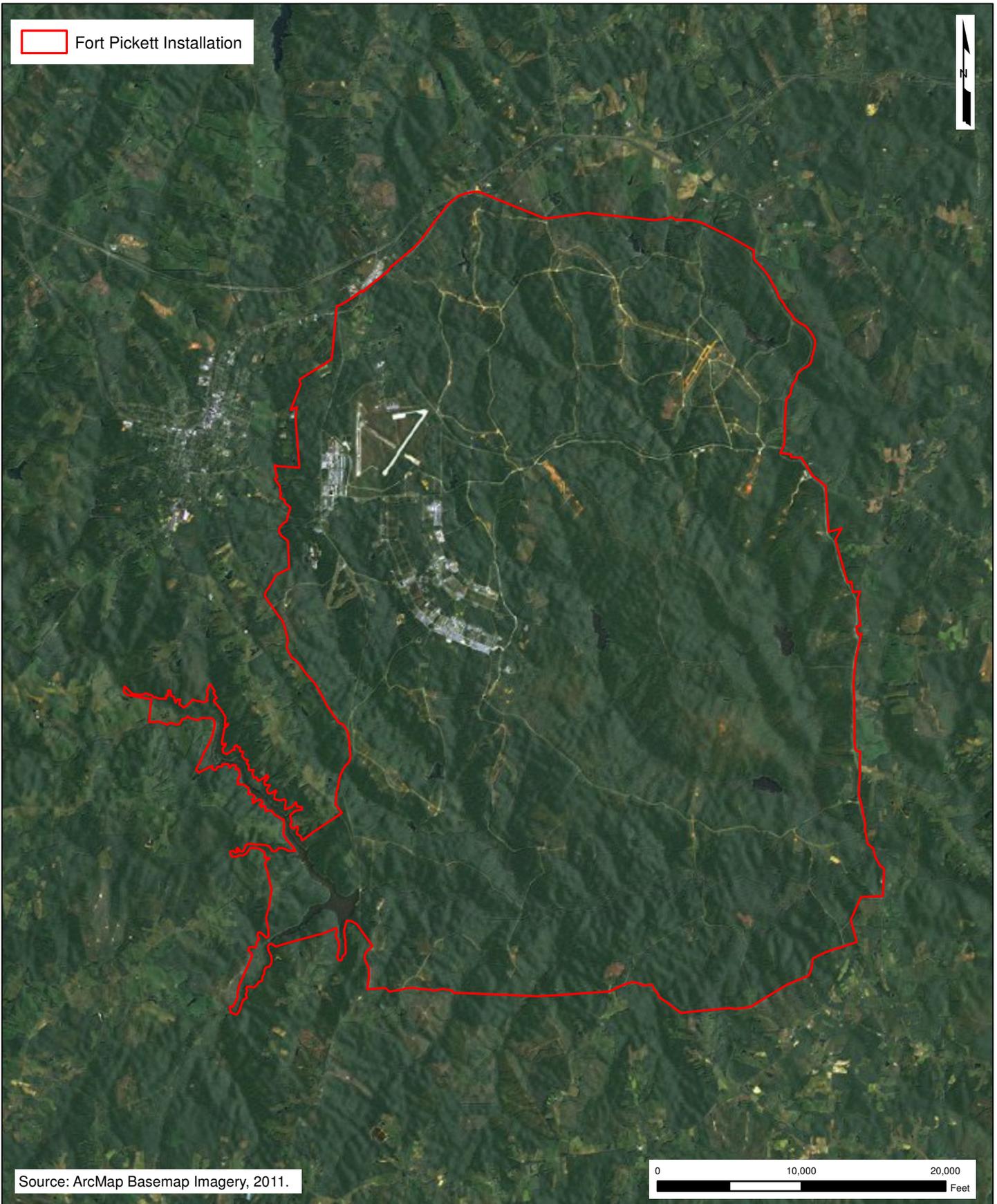
Material released is NOT routine job exposure and/ or there IS immediate threat to life, human health or property
(Refer to MSDS)



FIGURES

- Figure 1a – General Vicinity Map
 - Figure 1b – Site Location Map
 - Figure 2 – 100 Area and MATES Compound
 - Figure 3 – 200, 300, and 400 Areas
 - Figure 4 – Directorate of Public Works (DPW)
 - Figure 5 – ASP and DPW Quarry
 - Figure 6 – 500, 700 and 900 Areas
 - Figure 7 – US Army Reserve Center, 275th Quartermaster, 377th Chemical and 392nd Signal Battalion Motor Pools
 - Figure 8 – 99th RSC 88th Equipment Compound Site (ECS 88)
 - Figure 9 – FORSCOM Petroleum Training Module (FPTM)
 - Figure 10 – 1300, 1500, 1700, 2100, 2300, 2500 Areas
 - Figure 11 – Field Maintenance Shop (FMS) #15
 - Figure 12 – Recycling Center and 90-Day Temporary Waste Accumulation Area
 - Figure 13 – 1400, 1600, 1800, 2000, and 2200 Areas
 - Figure 14 – Vehicle Fuel Station #2
 - Figure 15 – 2400, 2600, 2800, and 3000 Areas
 - Figure 16 – Central Fuel Station #1
 - Figure 17 – Vehicle Fuel Station #3
 - Figure 18 – Blackstone Army Airfield
 - Figure 19 – Surface Water Location Map
-

 Fort Pickett Installation

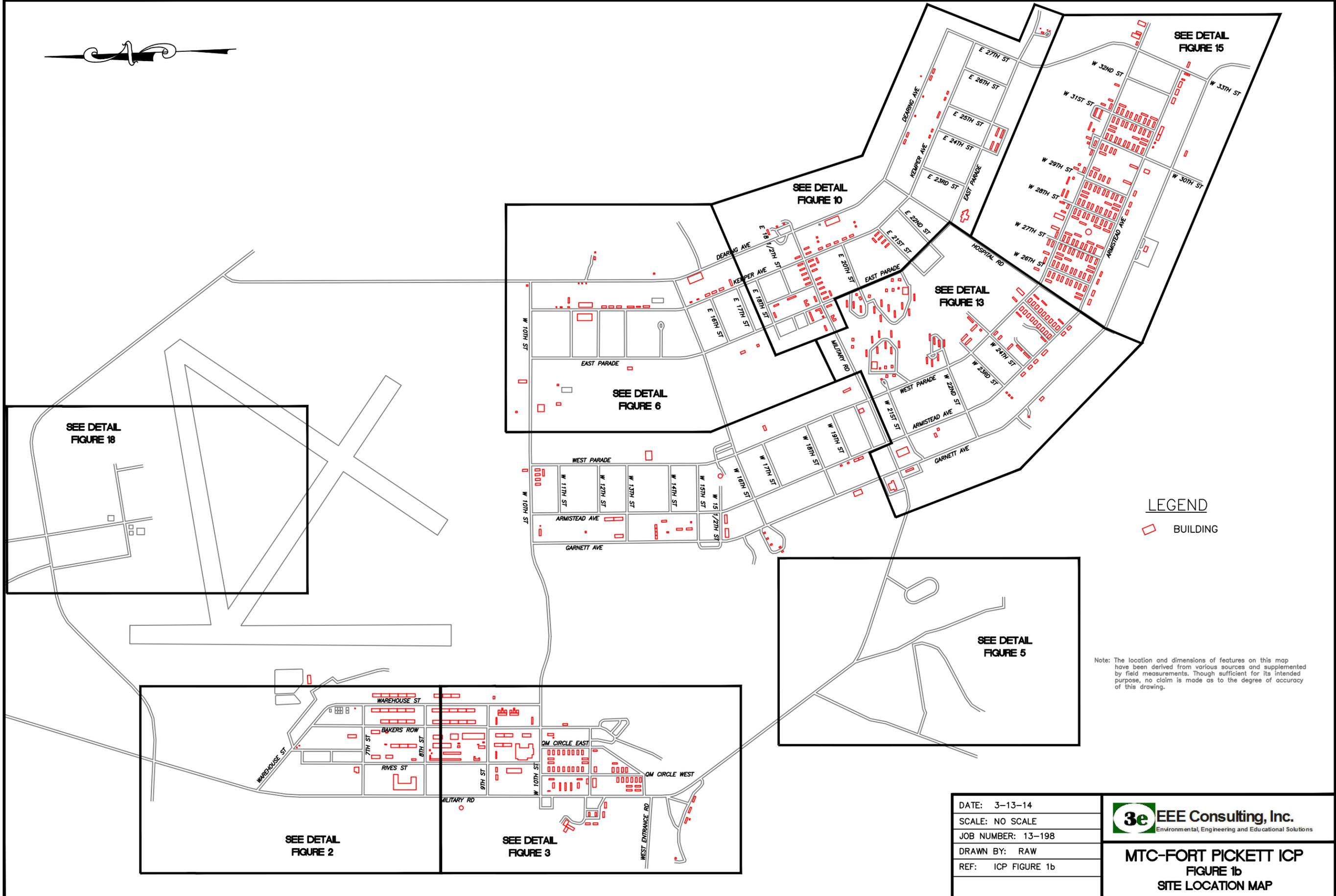


Source: ArcMap Basemap Imagery, 2011.



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Environmental, Engineering and Educational Solutions

Figure 1a
General Vicinity Map
Fort Pickett
Blackstone, Virginia



LEGEND

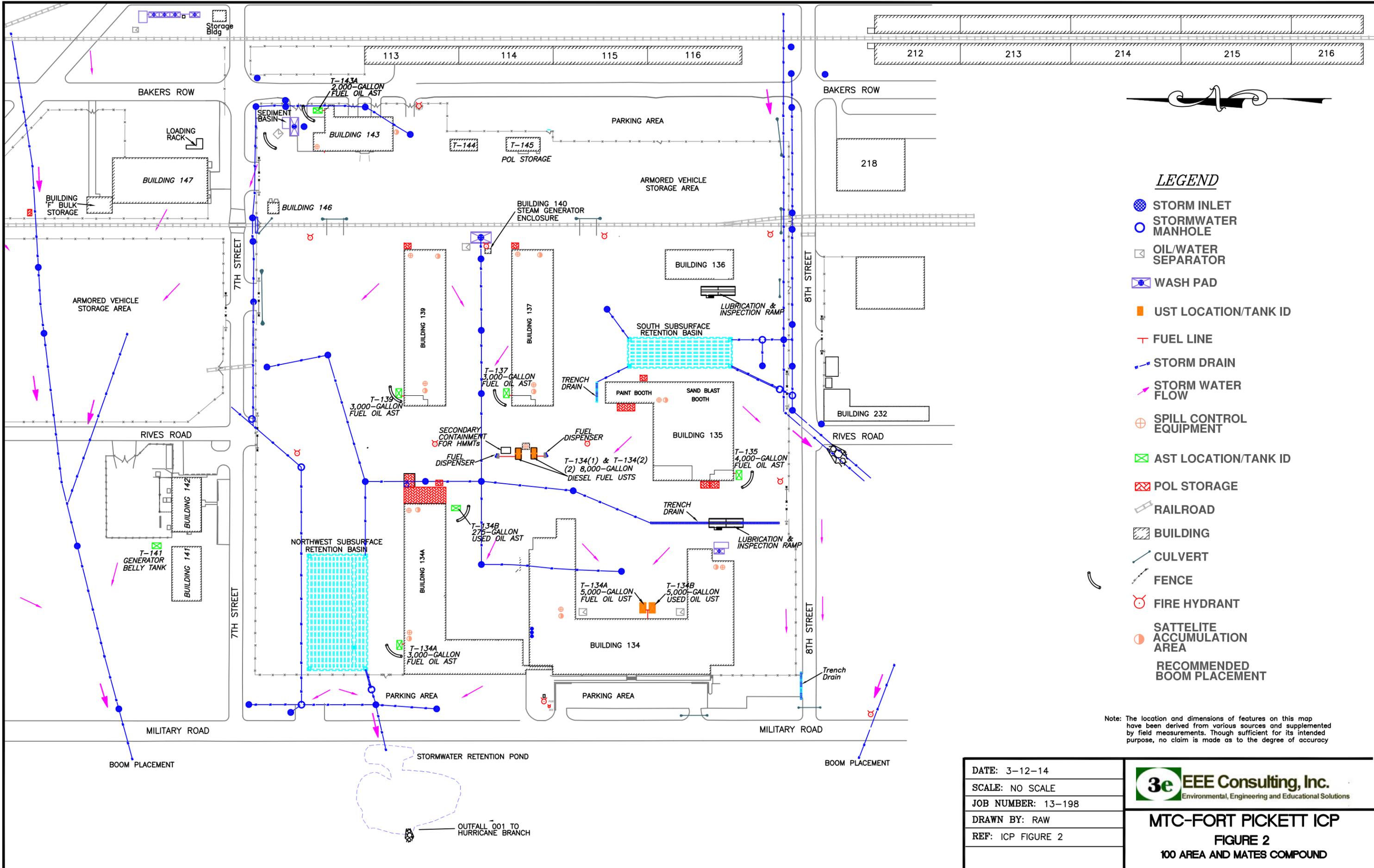
BUILDING

Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE:	3-13-14
SCALE:	NO SCALE
JOB NUMBER:	13-198
DRAWN BY:	RAW
REF:	ICP FIGURE 1b



MTC-FORT PICKETT ICP
FIGURE 1b
SITE LOCATION MAP



LEGEND

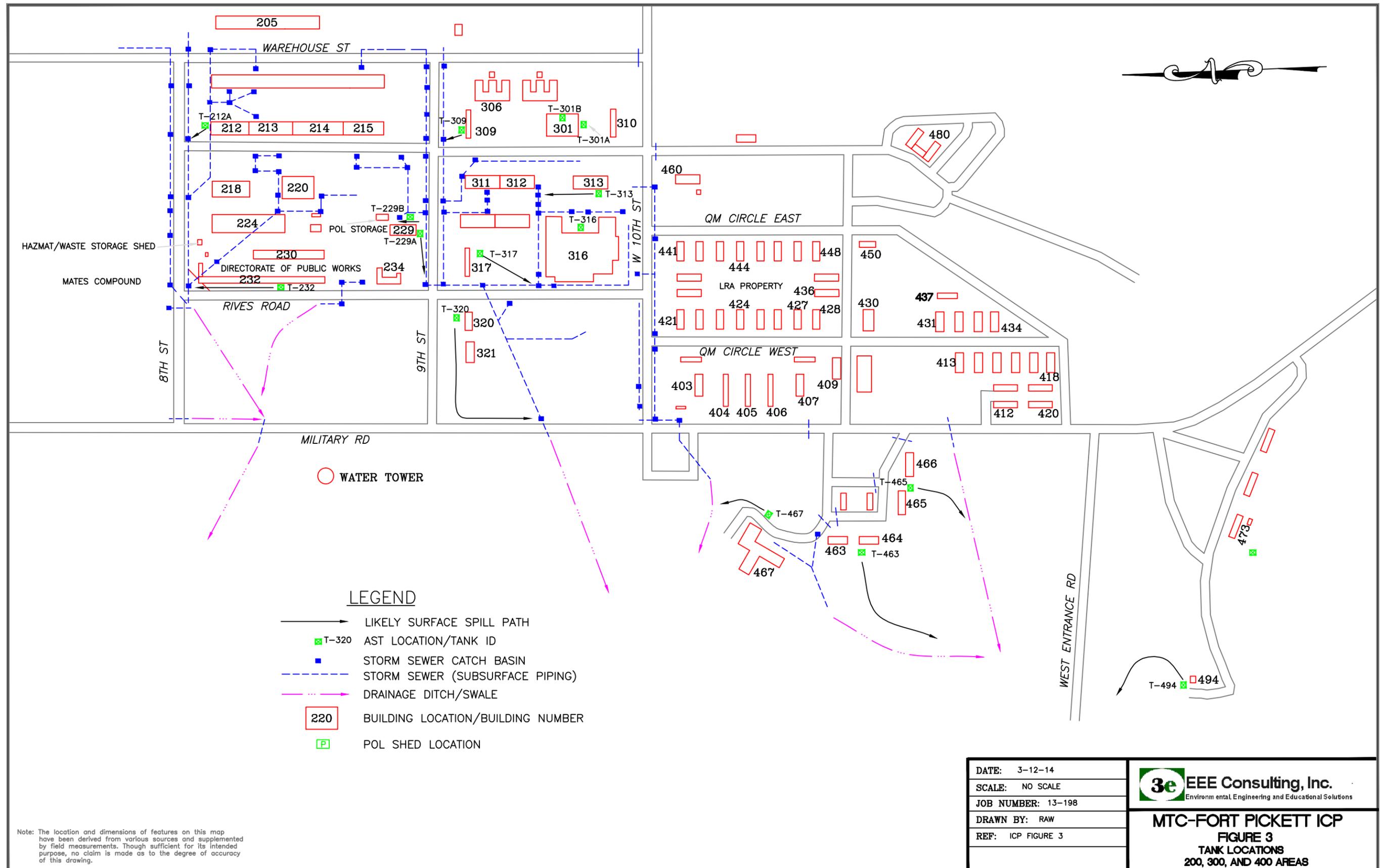
- STORM INLET
- STORMWATER MANHOLE
- OIL/WATER SEPARATOR
- WASH PAD
- UST LOCATION/TANK ID
- FUEL LINE
- STORM DRAIN
- STORM WATER FLOW
- SPILL CONTROL EQUIPMENT
- AST LOCATION/TANK ID
- POL STORAGE
- RAILROAD
- BUILDING
- CULVERT
- FENCE
- FIRE HYDRANT
- SATELLITE ACCUMULATION AREA
- RECOMMENDED BOOM PLACEMENT

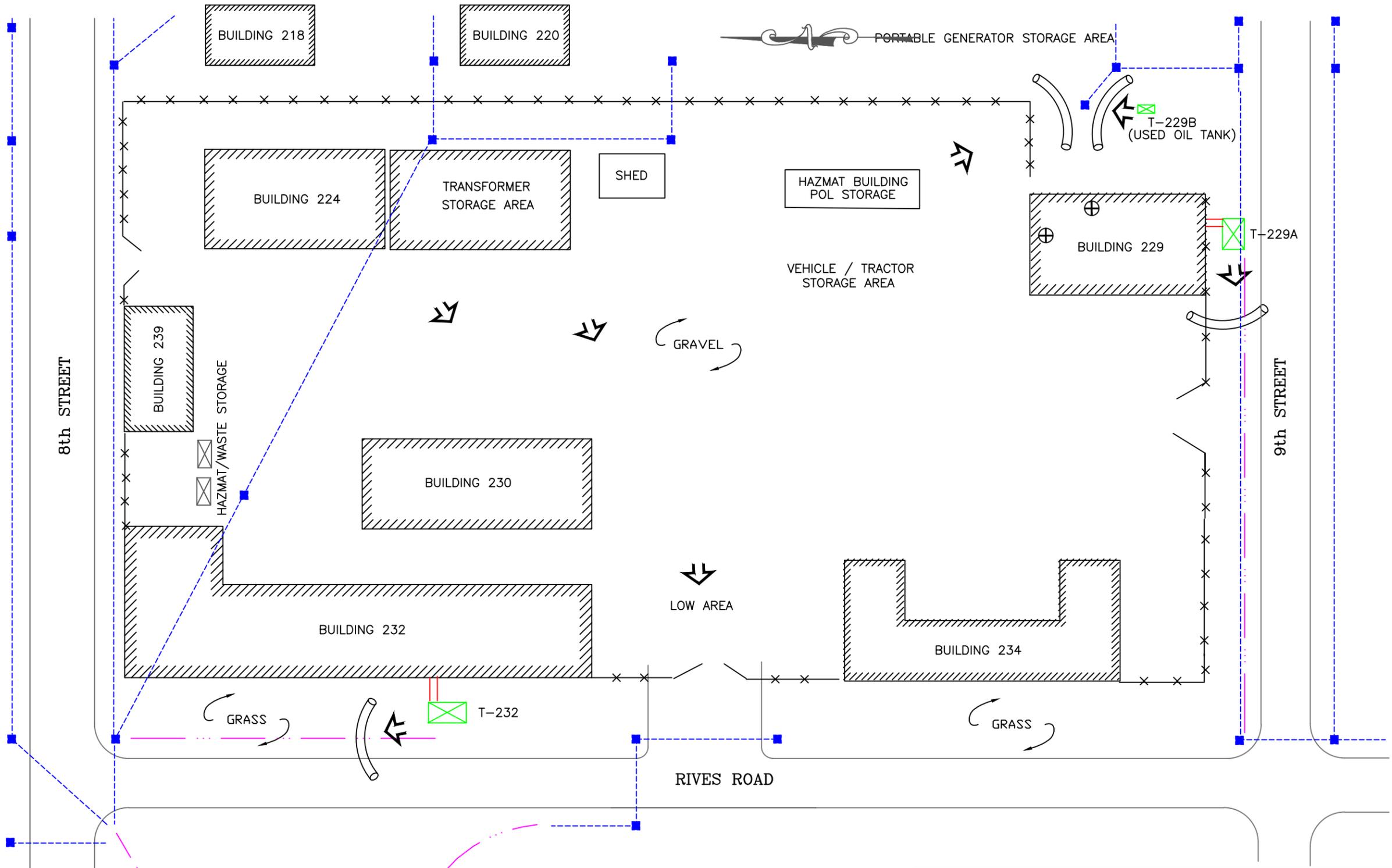
Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy

DATE: 3-12-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: ICP FIGURE 2

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MTC-FORT PICKETT ICP
FIGURE 2
100 AREA AND MATES COMPOUND





Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

LEGEND

	SURFACE FLOW / DRAINAGE		FENCE LINE
	SPILL CONTROL EQUIPMENT		RECOMMENDED BOOM PLACEMENT
	AST LOCATION/TANK ID		SUBSURFACE STORM WATER PIPING
	DRAINAGE DITCH/SWALE		STORM WATER CATCH BASIN

DATE:	3-12-14
SCALE:	NO SCALE
JOB NUMBER:	13-198
DRAWN BY:	RAW
REF:	ICP FIGURE 4

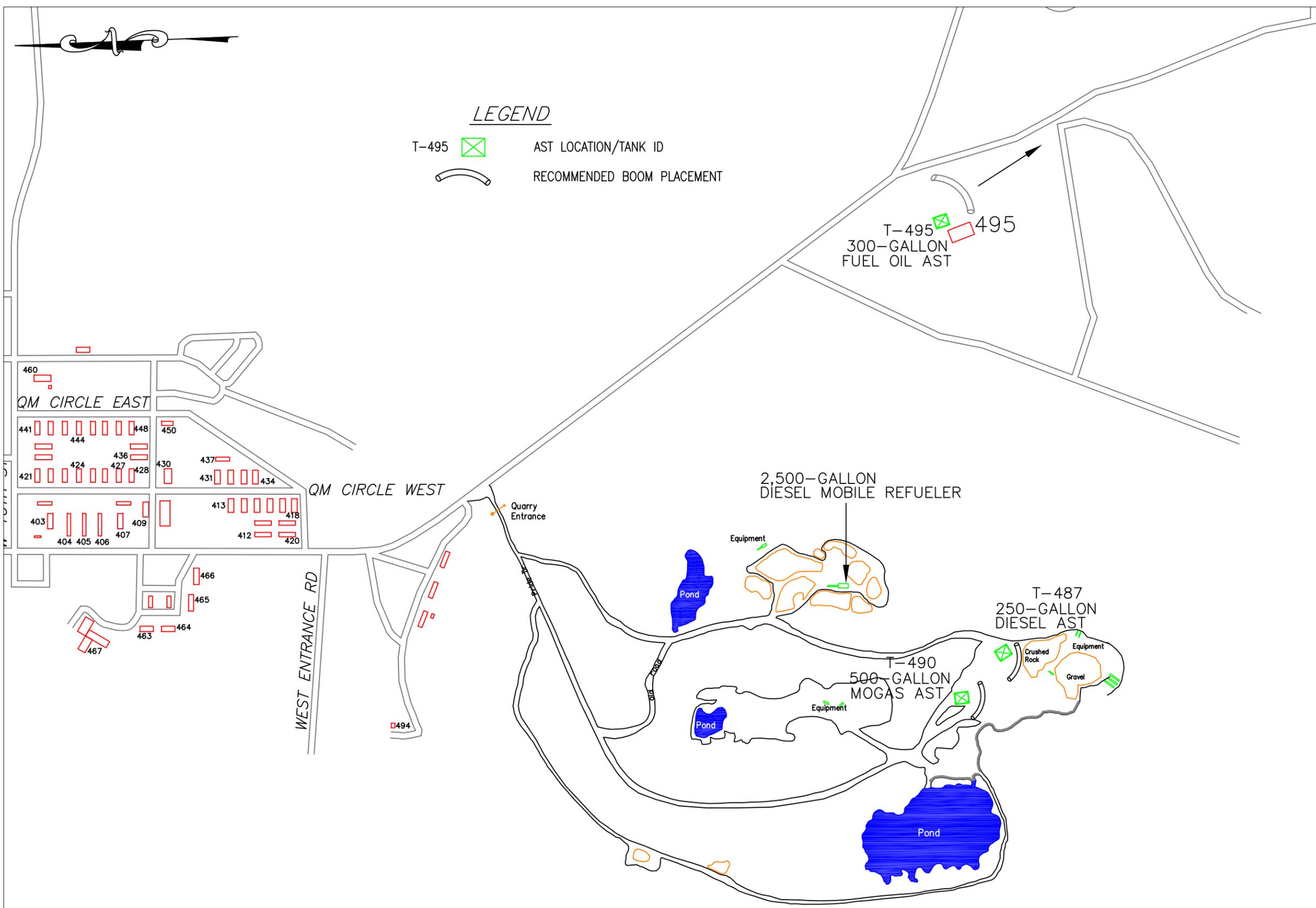


MTC-FORT PICKETT ICP
FIGURE 4
 DIRECTORATE OF PUBLIC WORKS (DPW)



LEGEND

- T-495  AST LOCATION/TANK ID
-  RECOMMENDED BOOM PLACEMENT



Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE: 3-13-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: ICP FIGURE 5



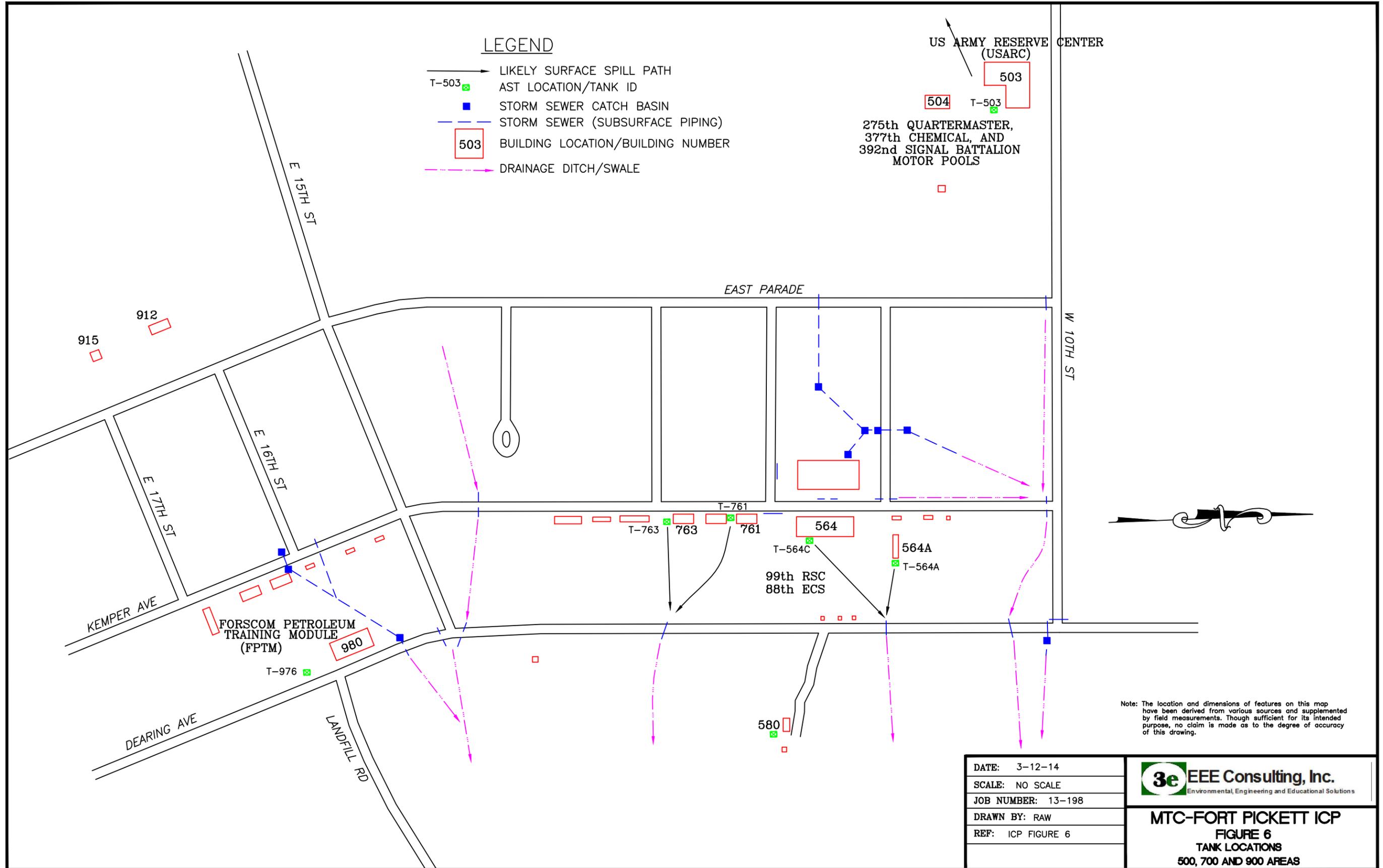
MTC-FORT PICKETT ICP
FIGURE 5
ASP AND DPW QUARRY

LEGEND

- LIKELY SURFACE SPILL PATH
- T-503  AST LOCATION/TANK ID
-  STORM SEWER CATCH BASIN
- - - STORM SEWER (SUBSURFACE PIPING)
-  503 BUILDING LOCATION/BUILDING NUMBER
- - - DRAINAGE DITCH/SWALE

US ARMY RESERVE CENTER (USARC)

503
504 T-503
275th QUARTERMASTER,
377th CHEMICAL, AND
392nd SIGNAL BATTALION
MOTOR POOLS

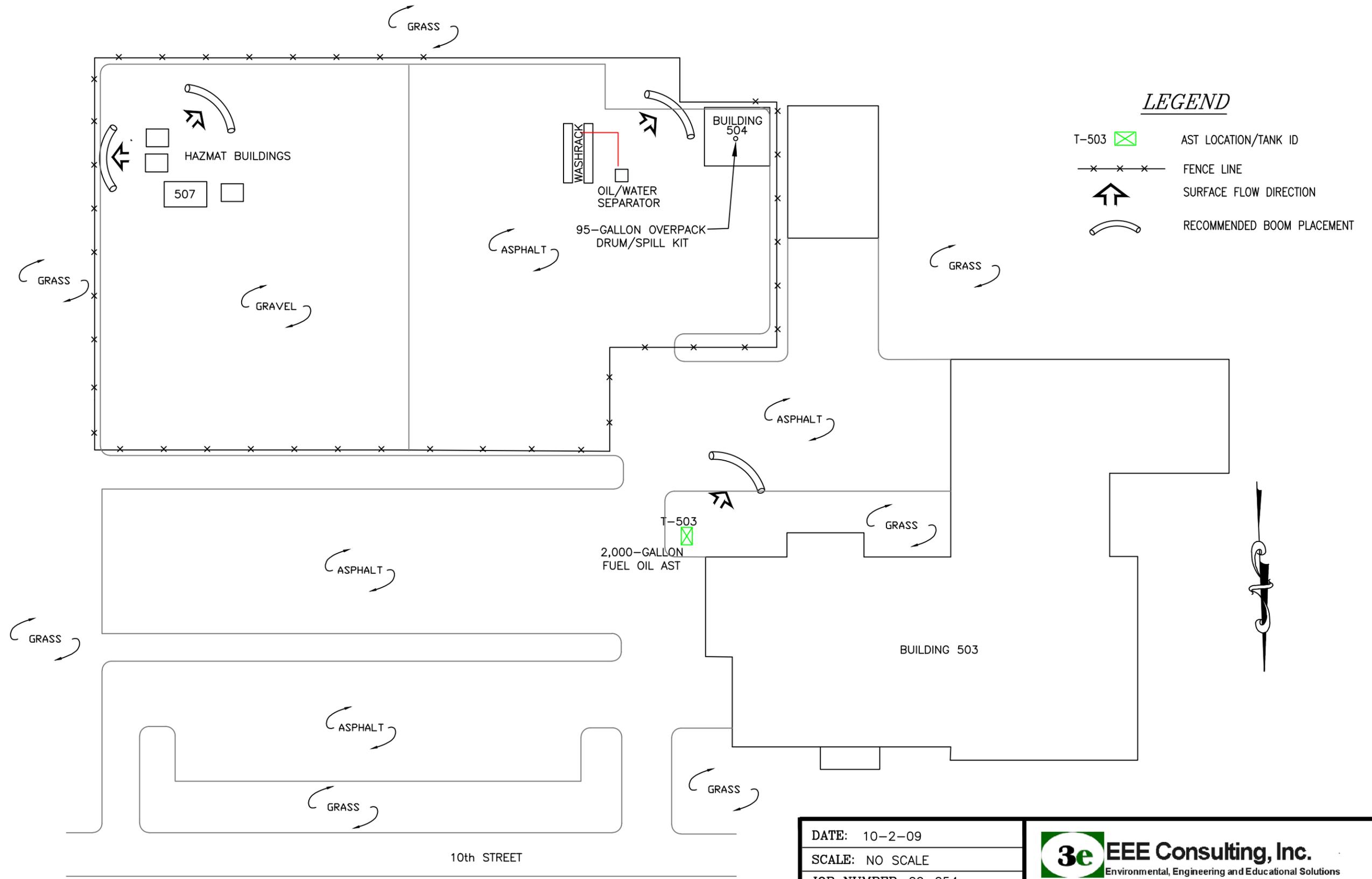


Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE:	3-12-14
SCALE:	NO SCALE
JOB NUMBER:	13-198
DRAWN BY:	RAW
REF:	ICP FIGURE 6



MTC-FORT PICKETT ICP
FIGURE 6
TANK LOCATIONS
500, 700 AND 900 AREAS



LEGEND

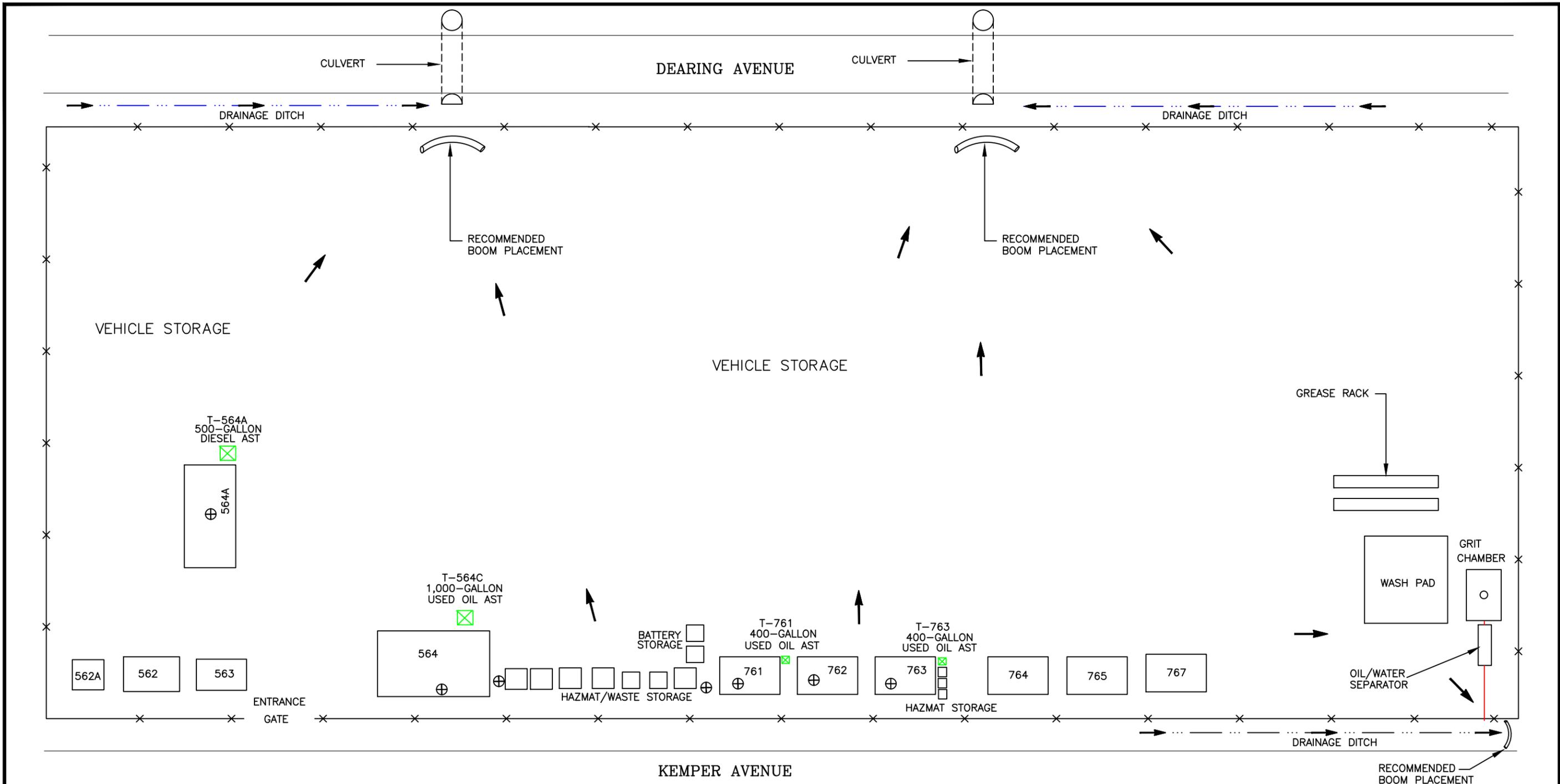
- T-503  AST LOCATION/TANK ID
- x-x-x- FENCE LINE
-  SURFACE FLOW DIRECTION
-  RECOMMENDED BOOM PLACEMENT

Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE: 10-2-09
SCALE: NO SCALE
JOB NUMBER: 09-054
DRAWN BY: RAW
REF: ICP FIGURE 7

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 Environmental, Engineering and Educational Solutions

MTC-FORT PICKETT ICP
FIGURE 7
 U.S. ARMY RESERVE CENTER
 275th QM, 377th CHEMICAL, 392nd SIGNAL



LEGEND

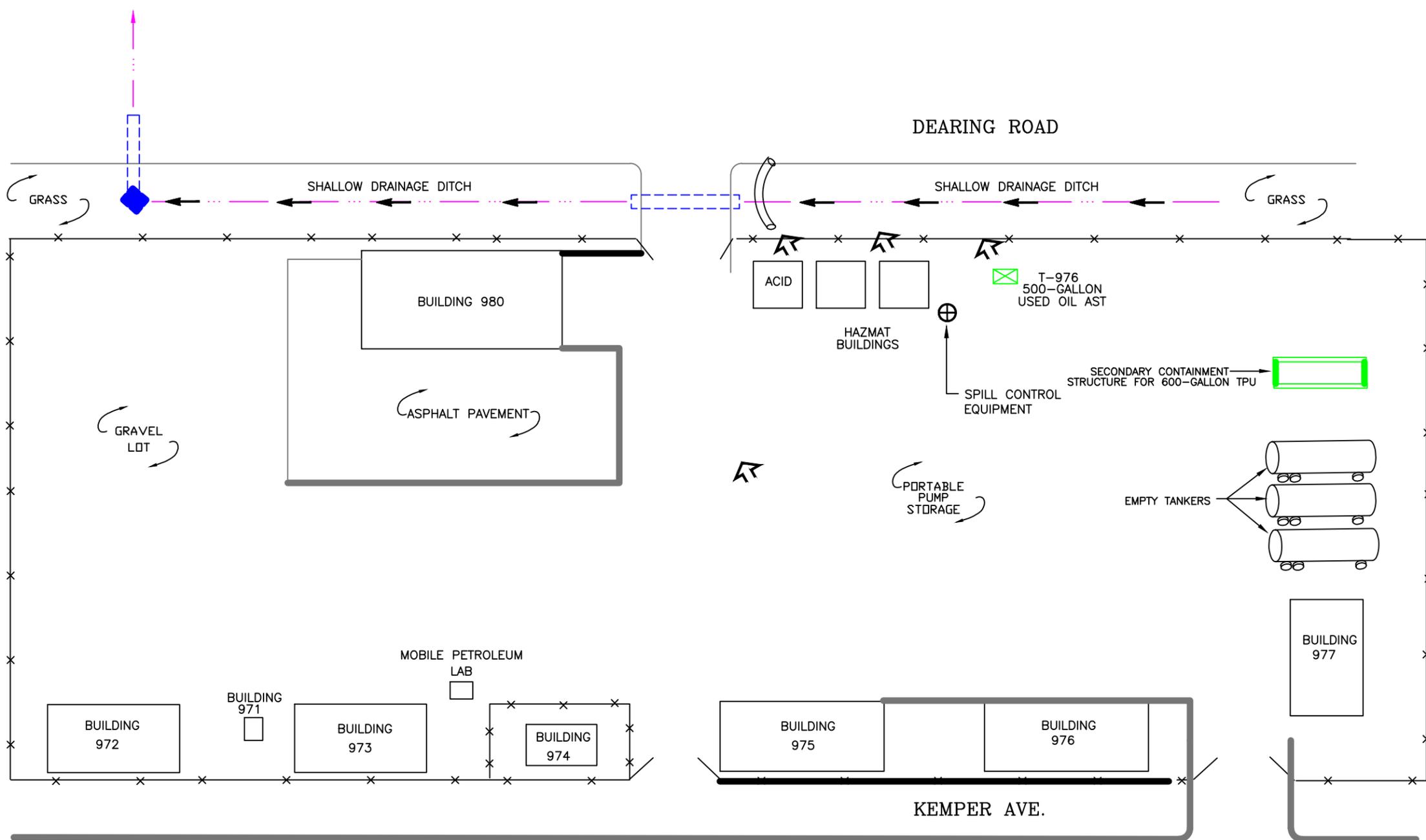
- T-761  AST LOCATION/TANK ID
-  SPILL CONTROL EQUIPMENT
-  SURFACE FLOW
-  FUEL AND SEPARATOR LINES (Drawn from tanks to building)

Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE: 3-12-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: ICP FIGURE 8



MTC-FORT PICKETT ICP
FIGURE 8
 99th RSC 88th EQUIPMENT COMPOUND SITE
 (ECS 88)



LEGEND

- T-976 AST LOCATION/TANK ID
- x-x-x- FENCE LINE
- SURFACE FLOW DIRECTION
- STORM WATER DRAINAGE BASIN
- - - - - SUBSURFACE DRAINAGE PIPING
- RECOMMENDED BOOM PLACEMENT

Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

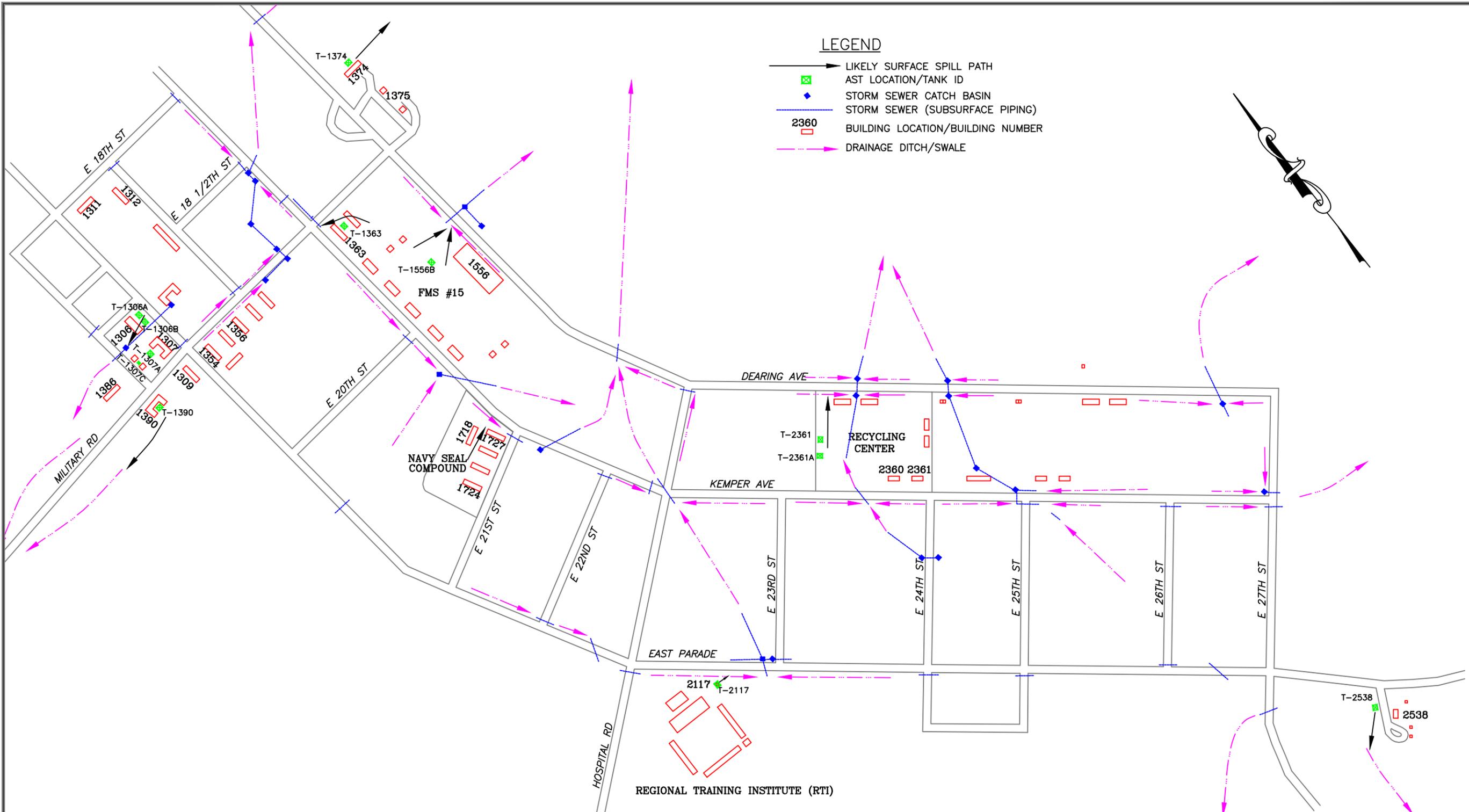
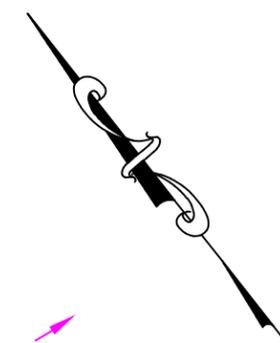
DATE: 3-12-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: ICP FIGURE 9



MTC-FORT PICKETT ICP
FIGURE 9
FORSCOM PETROLEUM TRAINING MODULE
(FPTM)

LEGEND

-  LIKELY SURFACE SPILL PATH
-  AST LOCATION/TANK ID
-  STORM SEWER CATCH BASIN
-  STORM SEWER (SUBSURFACE PIPING)
-  BUILDING LOCATION/BUILDING NUMBER
-  DRAINAGE DITCH/SWALE

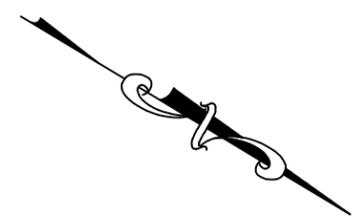
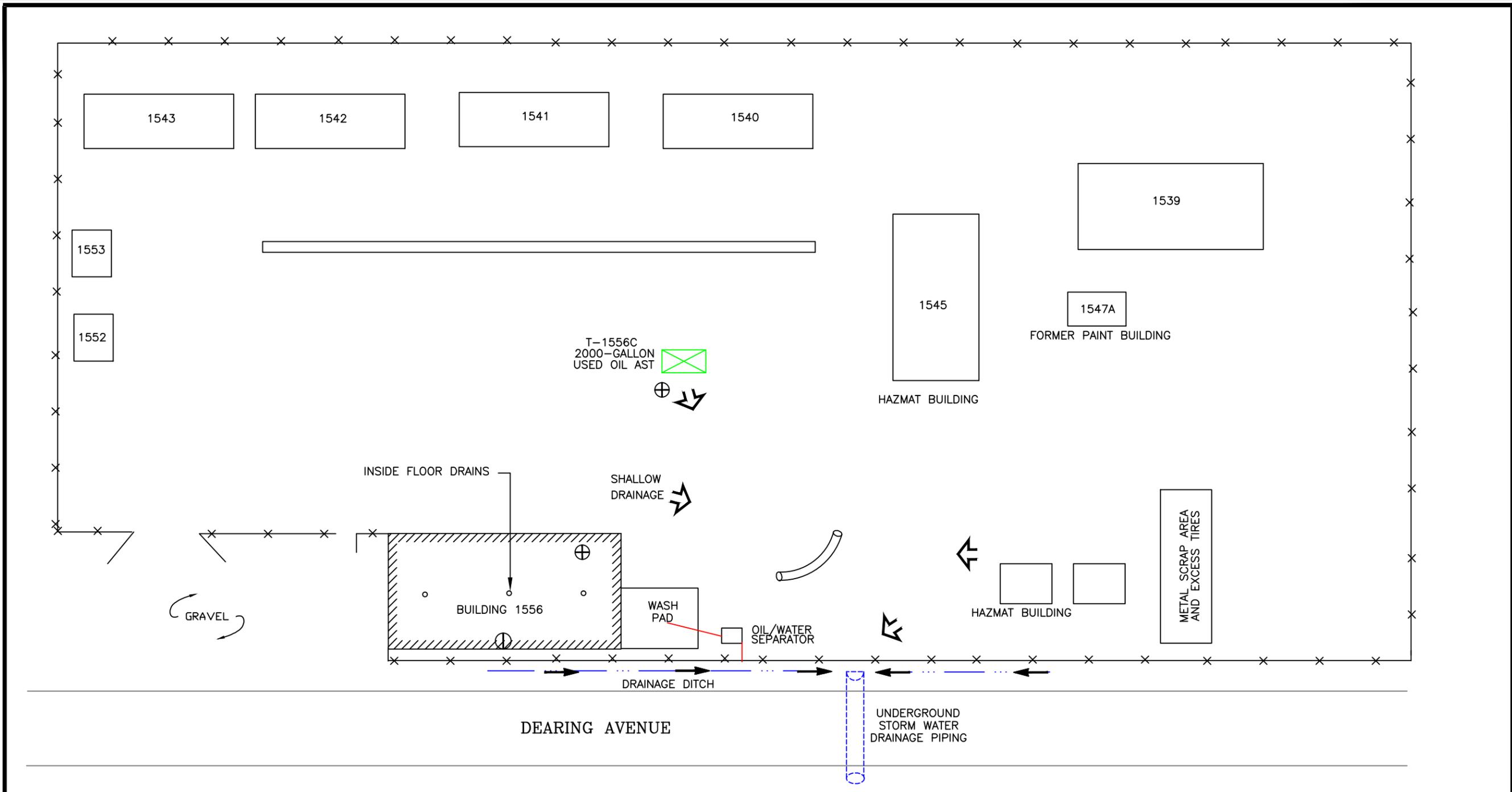


Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE:	3-12-14
SCALE:	NO SCALE
JOB NUMBER:	13-198
DRAWN BY:	RAW
REF:	ICP FIGURE 10

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MTC-FORT PICKETT ICP
FIGURE 10
TANK LOCATIONS
1300, 1500, 1700, 2100, 2300, AND 2500 AREAS



LEGEND

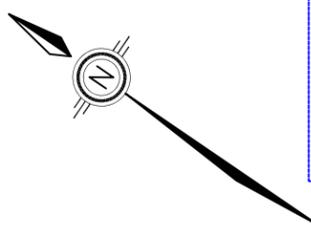
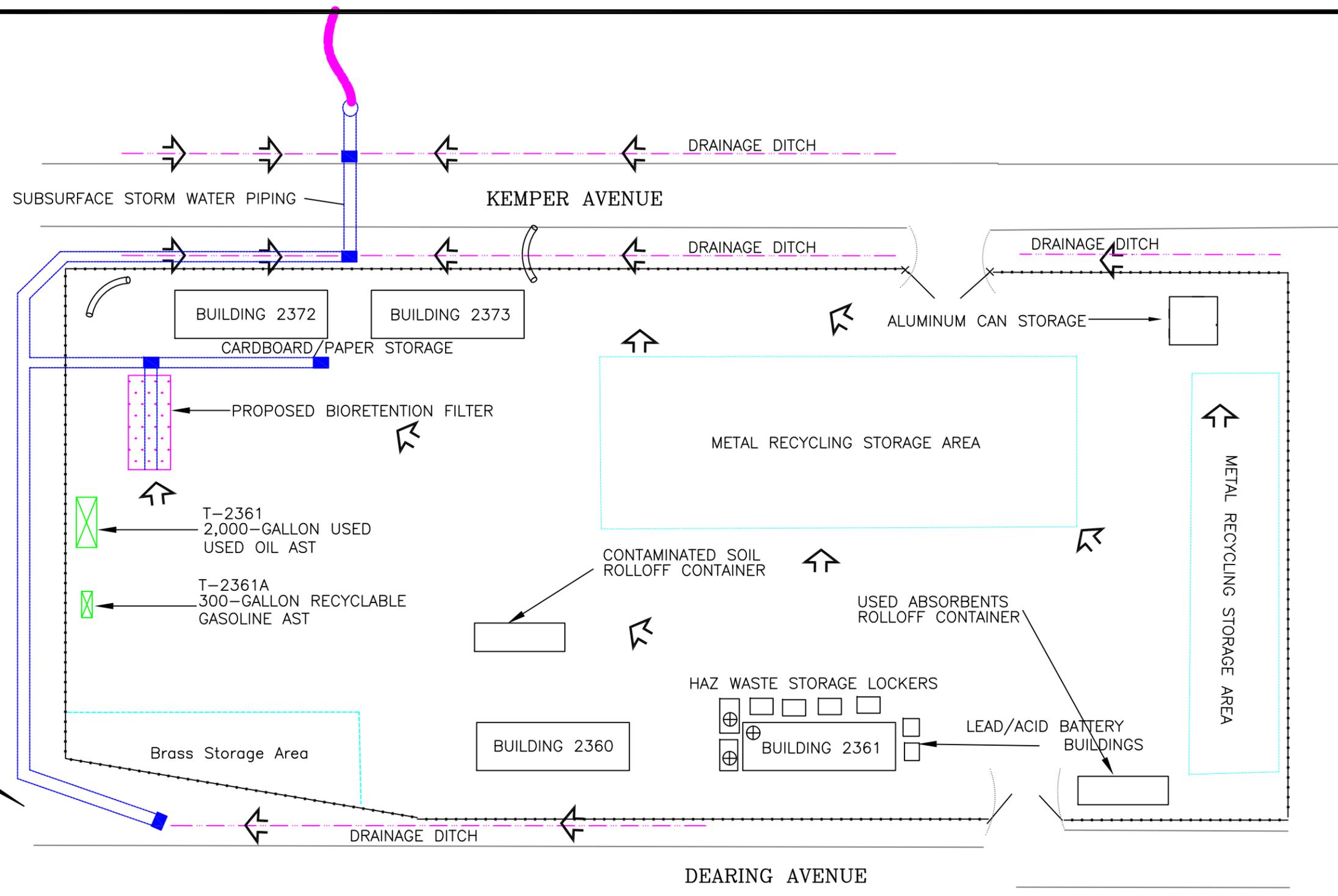
- T-1556B  AST LOCATION/TANK ID
-  SPILL CONTROL EQUIPMENT
-  SURFACE DRAINAGE FLOW DIRECTION
-  RECOMMENDED BOOM PLACEMENT
-  UNDERGROUND SEPARATOR LINES
-  SATELLITE ACCUMULATION AREA

Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE: 3-12-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: ICP FIGURE 11

3e **EEE Consulting, Inc.**
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MTC-FORT PICKETT ICP
FIGURE 11
FIELD MAINTENANCE SHOP (FMS) #15



LEGEND

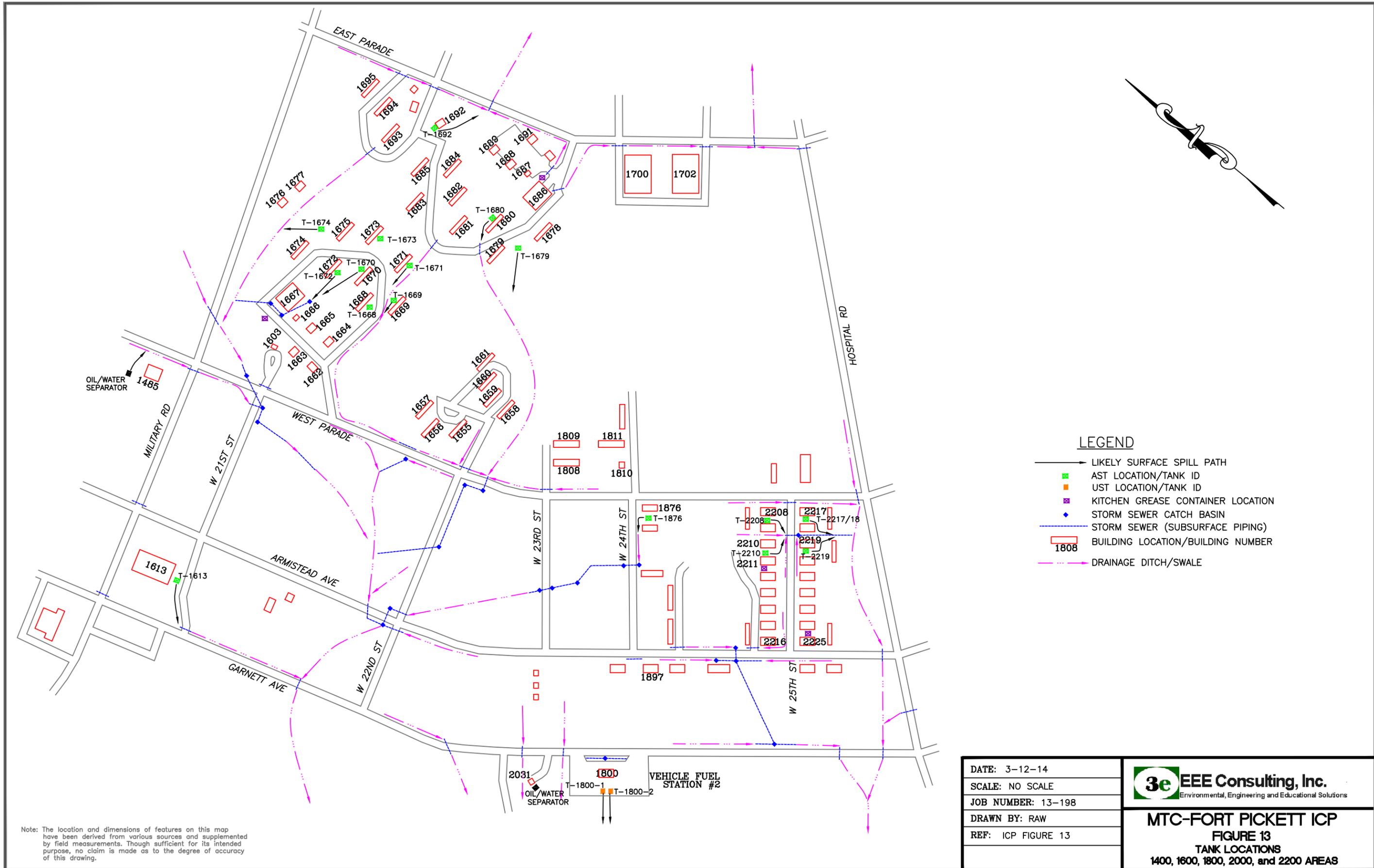
- T-2364 AST LOCATION/TANK ID
- FENCE LINE
- SURFACE FLOW DIRECTION
- RECOMMENDED BOOM PLACEMENT
- SPILL KIT
- STORM WATER CATCH BASIN

Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE: 3-12-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: SWPPP FIGURE B-2



MTC-FORT PICKETT ICP
FIGURE 12
RECYCLING CENTER AND 90-DAY TEMPORARY
WASTE ACCUMULATION AREA

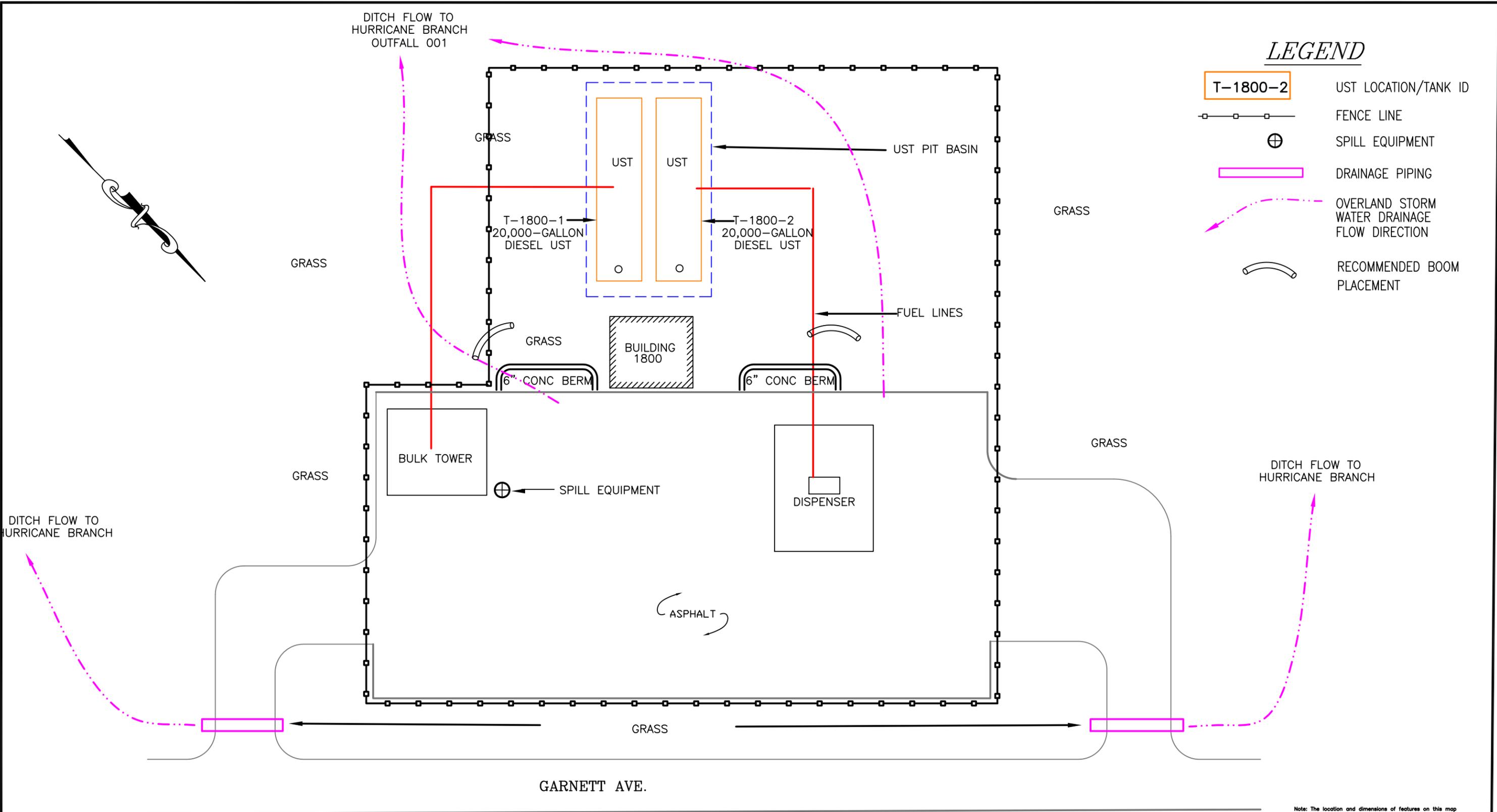


Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE:	3-12-14
SCALE:	NO SCALE
JOB NUMBER:	13-198
DRAWN BY:	RAW
REF:	ICP FIGURE 13



MTC-FORT PICKETT ICP
FIGURE 13
TANK LOCATIONS
1400, 1600, 1800, 2000, and 2200 AREAS



LEGEND

- T-1800-2 UST LOCATION/TANK ID
- FENCE LINE
- ⊕ SPILL EQUIPMENT
- ▭ DRAINAGE PIPING
- OVERLAND STORM WATER DRAINAGE FLOW DIRECTION
- ⤵ RECOMMENDED BOOM PLACEMENT

DITCH FLOW TO HURRICANE BRANCH

DITCH FLOW TO HURRICANE BRANCH
OUTFALL 001

DITCH FLOW TO HURRICANE BRANCH

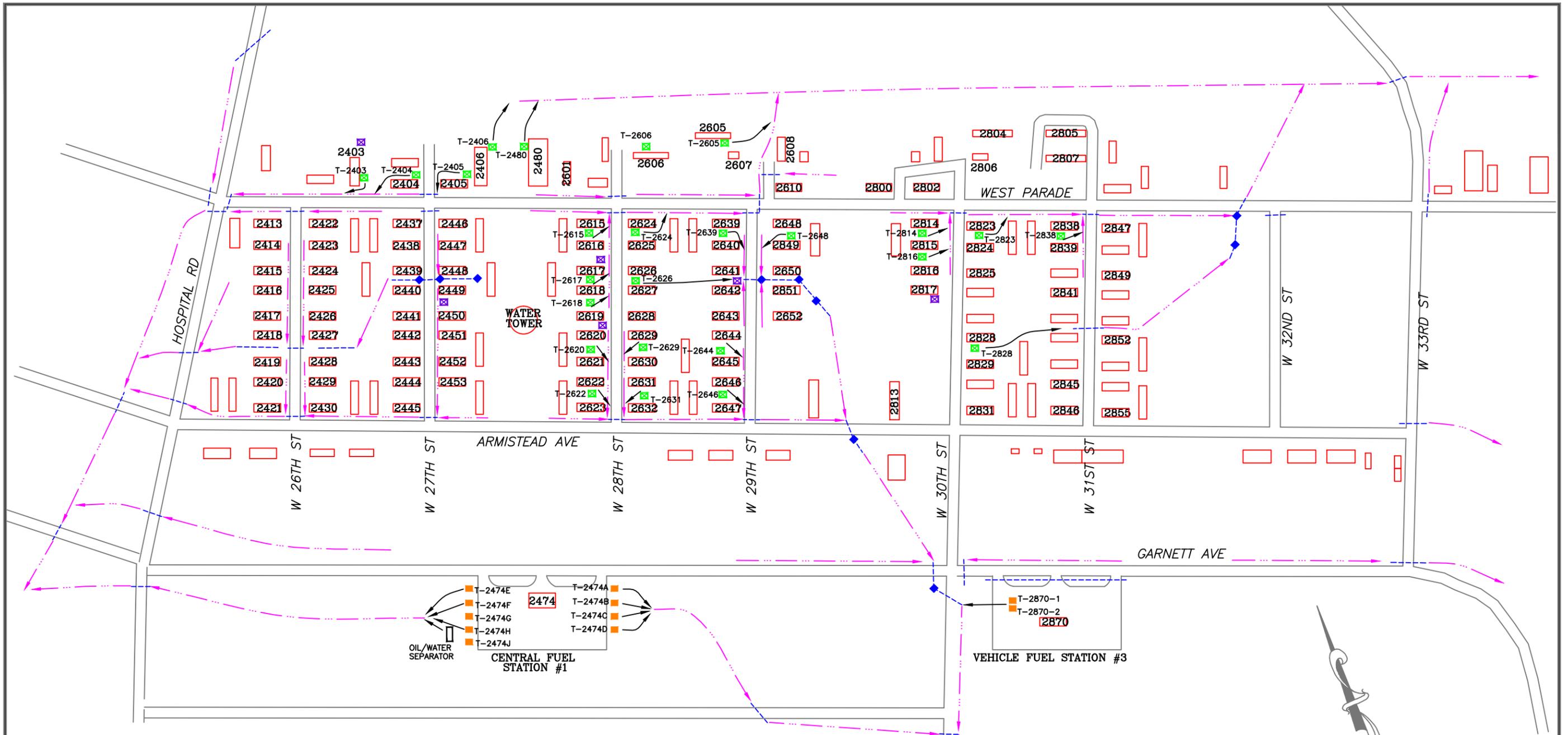
GARNETT AVE.

Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE: 3-13-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: SWPPP FIGURE B-7



MTC-FORT PICKETT ICP
FIGURE 14
VEHICLE FUEL STATION #2 SITE LAYOUT



LEGEND

- LIKELY SURFACE SPILL PATH
- ☒ AST LOCATION/TANK ID
- ☐ UST LOCATION/TANK ID
- ☒ KITCHEN GREASE CONTAINER LOCATION
- ◆ STORM SEWER CATCH BASIN
- - - STORM SEWER (SUBSURFACE PIPING)
- 2430 BUILDING LOCATION/BUILDING NUMBER
- DRAINAGE DITCH/SWALE

Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

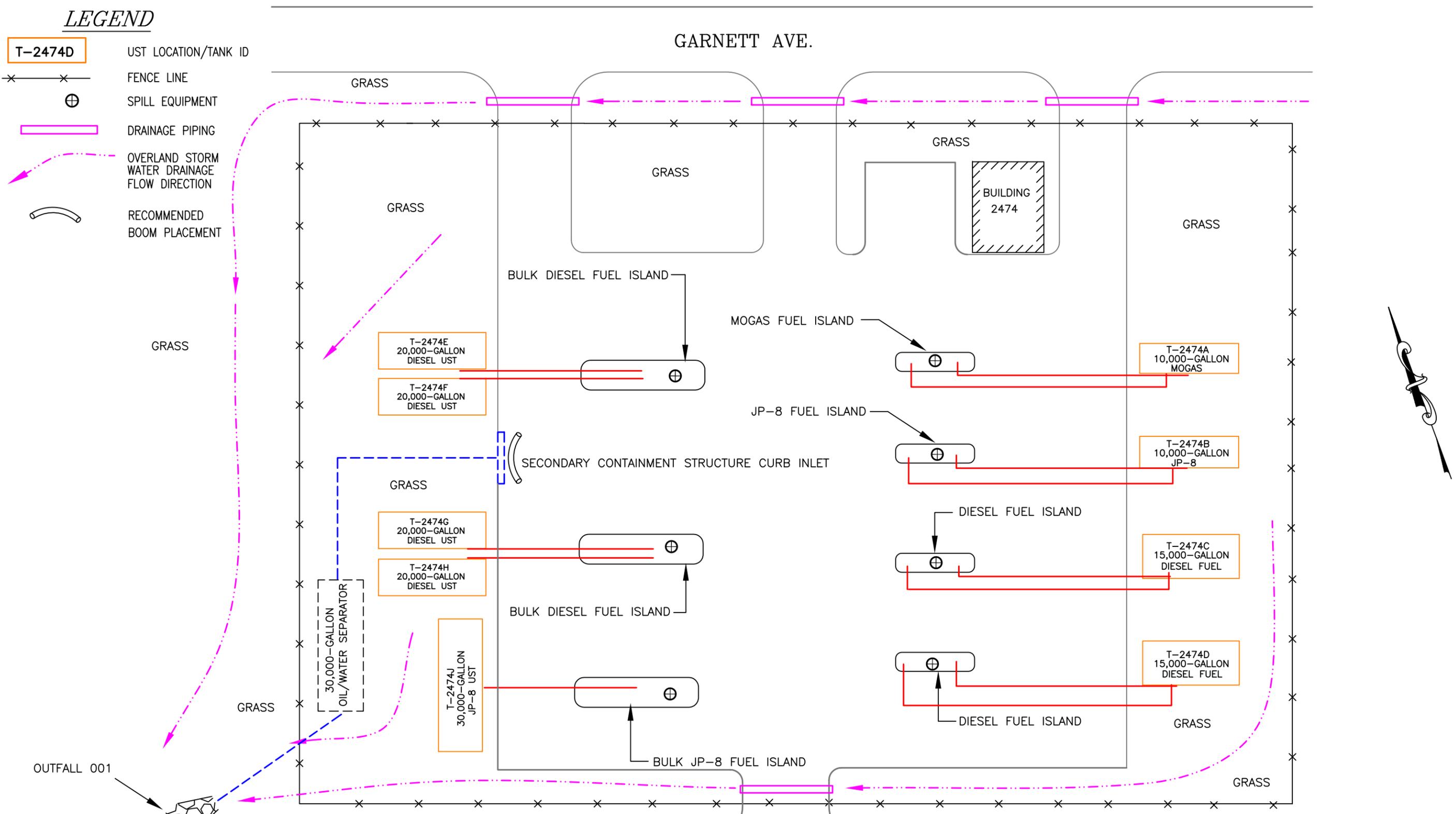
DATE: 3-12-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: ICP FIGURE 15

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 Environmental, Engineering and Educational Solutions

MTC-FORT PICKETT ICP
FIGURE 15
TANK LOCATIONS
2400, 2600, 2800, AND 3000 AREAS

LEGEND

- T-2474D UST LOCATION/TANK ID
- ⊗ FENCE LINE
- ⊕ SPILL EQUIPMENT
- ▭ DRAINAGE PIPING
- OVERLAND STORM WATER DRAINAGE FLOW DIRECTION
- ⤵ RECOMMENDED BOOM PLACEMENT



Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

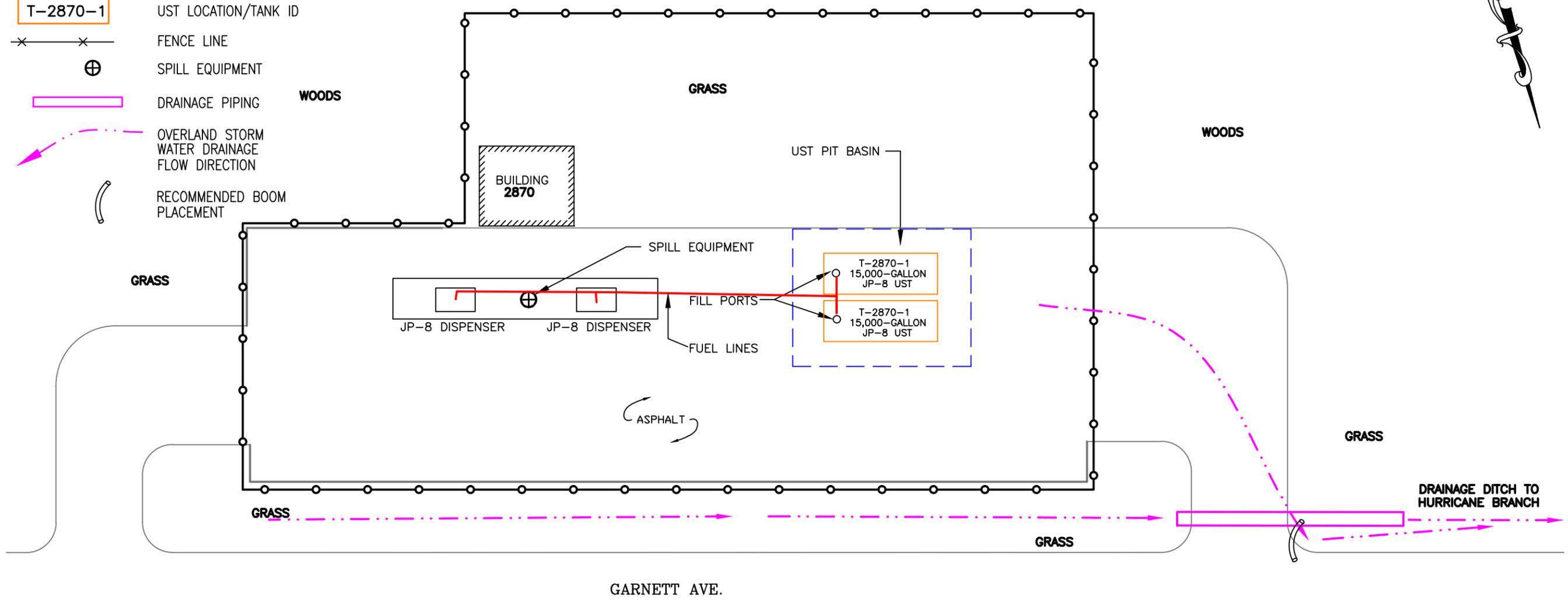
DATE: 3-13-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: SWPPP FIGURE B-6

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Environmental, Engineering and Educational Solutions

MTC-FORT PICKETT
FIGURE 16
CENTRAL FUEL STATION #1 SITE LAYOUT

LEGEND

- T-2870-1 UST LOCATION/TANK ID
- x—x— FENCE LINE
- ⊕ SPILL EQUIPMENT
- ▭ DRAINAGE PIPING
- (dashed) OVERLAND STORM WATER DRAINAGE FLOW DIRECTION
- ⤵ (curved) RECOMMENDED BOOM PLACEMENT



Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE: 3-19-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: ICP FIGURE 17

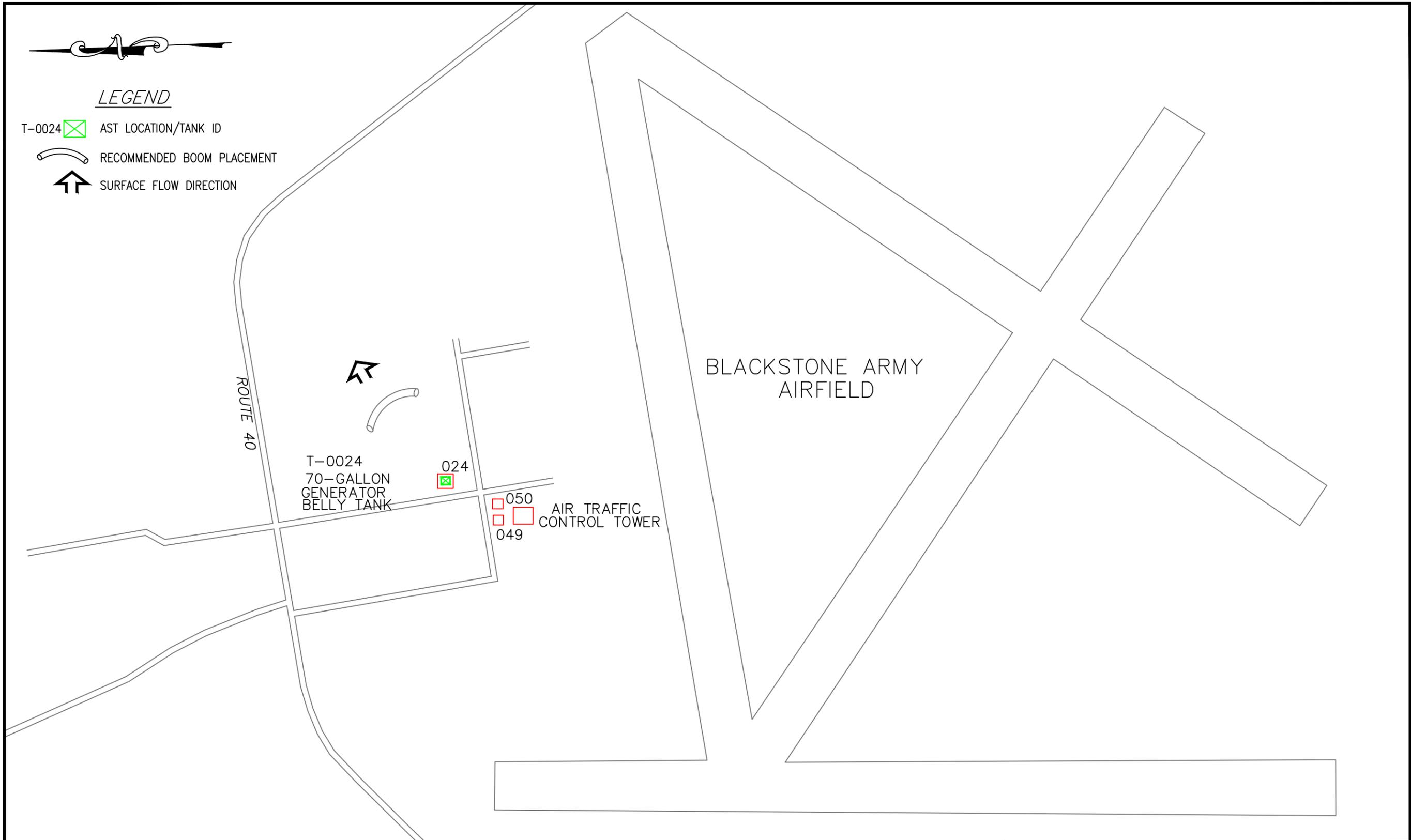


MTC-FORT PICKETT SWPPP
FIGURE 17
VEHICLE FUELING STATION #3



LEGEND

- T-0024  AST LOCATION/TANK ID
-  RECOMMENDED BOOM PLACEMENT
-  SURFACE FLOW DIRECTION



Note: The location and dimensions of features on this map have been derived from various sources and supplemented by field measurements. Though sufficient for its intended purpose, no claim is made as to the degree of accuracy of this drawing.

DATE: 3-13-14
SCALE: NO SCALE
JOB NUMBER: 13-198
DRAWN BY: RAW
REF: ICP FIGURE 18

	3e EEE Consulting, Inc. <small>Environmental, Engineering and Educational Solutions</small>
	MTC-FORT PICKETT ICP FIGURE 18 BLACKSTONE ARMY AIR FIELD

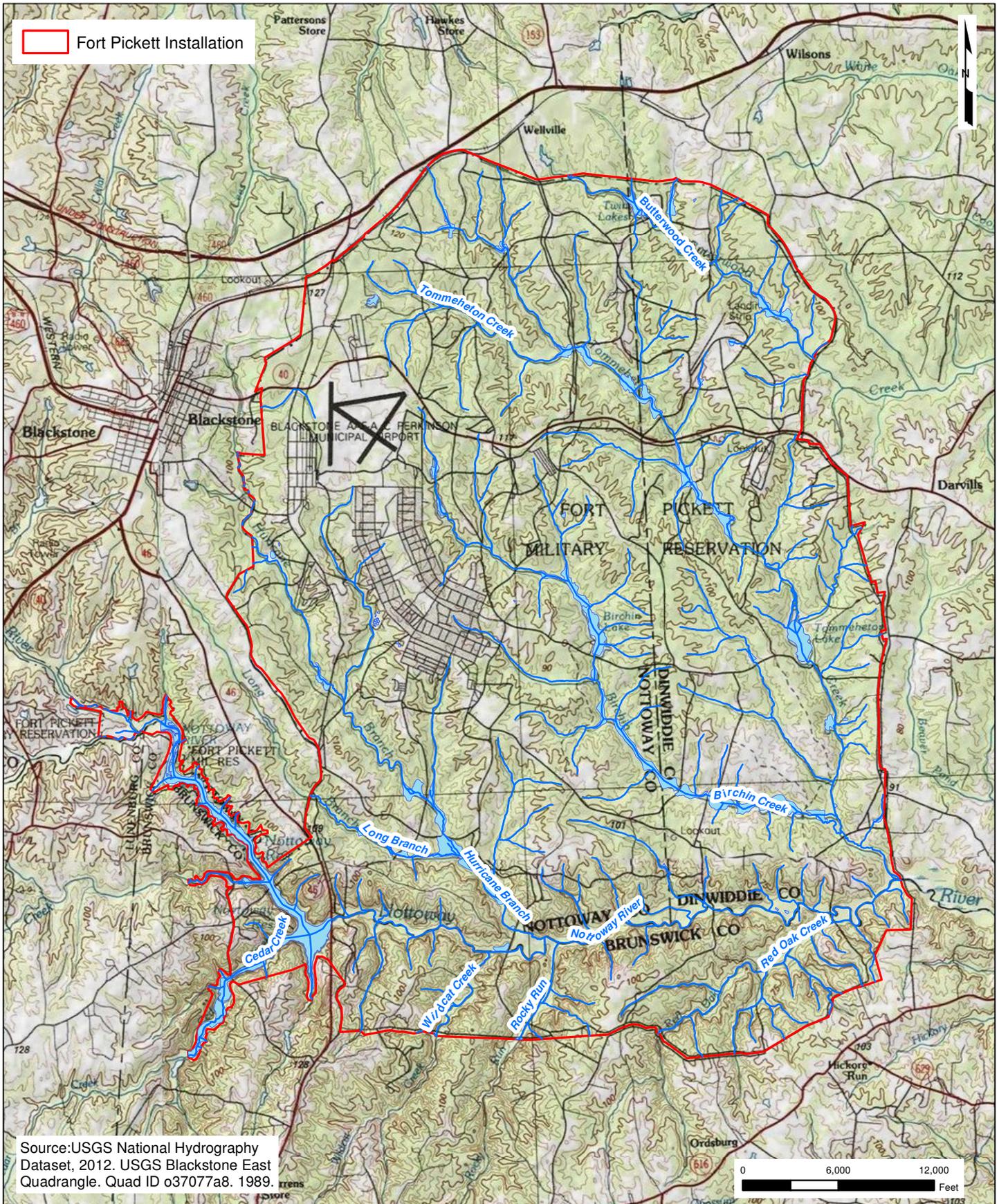


Figure 19
Surface Water
Fort Pickett
Blackstone, Virginia

APPENDIX A: GLOSSARY

A.1	ACRONYMS	A-1
A.1	DEFINITIONS	A-2

A.1 ACRONYMS

AR	Army Regulation
ASP	Ammunition Supply Point
AST	Aboveground Storage Tank
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulation
DEQ	Virginia Department of Environmental Quality
DMA	Virginia Department of Military Affairs
DOD	Department of Defense
DOL	Directorate of Logistics
DOT	Department of Transportation
DPW	Directorate of Public Works
EPA	United States Environmental Protection Agency
FISM	Field In-Storage Maintenance Shop
FPPD	Fort Pickett Fire Department
GAL	Gallon
GAL/MIN	Gallons Per Minute
HAZMAT	Hazardous Material
LEPC	Local Emergency Planning Committee
MOGAS	Motor Vehicle Gasoline
MATES	Maneuver Area Training Equipment Site
MTC	Maneuver Training Center
NGVA-FMO-ENV	Virginia Army National Guard - Facilities Management Office - Environmental
NPDES	National Pollutant Discharge Elimination System
NRC	National Response Center
OSC	On-Scene Commander
OSCP	Oil Spill Contingency Plan
OWS	Oil/ Water Separator
PAO	Public Affairs Office
PE	Professional Engineer
POL	Petroleum, Oil, and Lubricants
RQ	Reportable Quantity
SDO	Storm Water Discharge Outfall
SPCC	Spill Prevention, Control and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
TSCA	Toxic Substances Control Act
TPU	Tank and Pumping Unit
US	United States
USARC	United States Army Reserve Center
UST	Underground Storage Tank
VAARNG	Virginia Army National Guard
VPDES	Virginia Pollution Discharge Elimination System

A.2 DEFINITIONS [40 CFR 112.2]

Catastrophic spill: A catastrophic spill is a sudden, unexpected release of any hazardous material (including POLs) which poses, due to its quantity, toxicity, flammability, or other chemical or physical property, an immediate and severe threat to human health, property, and/or surrounding environmental conditions. Quantities will vary with the type of hazardous materials released and the location of the release.

Discharges: Includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying or dumping of oil or other hazardous material, or any action that violates applicable water quality standards; causes a film, sheen or discoloration of the surface of the water or adjoining shoreline; causes a sludge or emulsion to be deposited beneath the surface of the water or upon the adjoining shoreline; or affects the quality of the groundwater.

Discharge of oil in harmful quantities: Include discharges of oil into or upon the navigable waters of the United States or adjoining shorelines in such quantities that (a) violate applicable water quality standards, or (b) cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines or cause a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

Hazardous Materials: For the purposes of this document, hazardous materials refer to hazardous materials and hazardous wastes.

Hazardous Substance: Any substance designated under section 311 (b)(2)(A) of the Clean Water Act; any CERCLA reportable substance; any hazardous waste; any toxic pollutant listed under section 307 (a) of the Clean Water Act, e.g. National Pollutant Discharge Elimination System (NPDES) effluent limits; and any Toxic Substances Control Act (TSCA) imminently hazardous chemical substance or mixture, e.g., PCBs.

Hazardous Waste: Refer to 40 CFR 261.3.

Incidental spill: An incidental spill is defined as a release of hazardous materials that can be readily and easily handled, with no health or safety risk, by personnel from the immediate vicinity of the release. Quantities will vary with the type of hazardous materials released and the location of the release.

Major spill: A major spill is defined as a release of hazardous materials that cannot be readily and easily handled by facility personnel, may pose health or safety risks, or threatens an environmentally sensitive receptor. Quantities will vary with the type of hazardous materials released and the location of the release.

Navigable Waters: Defined by EPA as all water subject to the ebb and flow of the tide; interstate waters, including interstate wetlands; intrastate lakes, rivers, streams, intermittent streams, mudflats, sandflats and wetlands.

Oil: Oil of any kind or in any form, including but not limited to, petroleum, fuel oil, sludge, oil refuse and oil mixed with waste other than dredged soil.

OSC: The On-Scene Commander is responsible for all spill response activity at the site and for coordinating all response personnel. The senior fire official on the scene will serve as the initial OSC until replaced by the appointed OSC.

Releases: Means any spilling or escaping of oil or hazardous materials into the environment, e.g. navigable waters, any surface water, groundwater, drinking water supply, land surface or subsurface strata, ambient air.

Senior Fire Officer: The individual from the local Fire Department who is in charge of fire fighting and spill response operations.

Spill Event: A discharge of oil into or upon the navigable waters of the United States or adjoining shorelines in harmful quantities, as defined at 40 CFR part 110.

**APPENDIX B:
SPILL MITIGATION ACTION, CONTAINMENT, AND CLEANUP**

B.1	SPILL MITIGATION ACTION	B-1
B.2	CONTAINMENT/ CLEANUP PROCEDURES.....	B-2
B.2.1	SPECIFIC CONTAINMENT/ CLEANUP INFORMATION	B-2
B.2.2	GENERAL CONTAINMENT/ CLEANUP INFORMATION	B-2
B.2.2.1	Equipment and Resources	B-2
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B.2.2.4	Cleanup	B-4

APPENDIX B: SPILL MITIGATION ACTION, CONTAINMENT, AND CLEANUP

B.1 SPILL MITIGATION ACTION

WARNING: Spilled fuel constitutes a hazard of fire and explosion with the threat to human life and destruction of property. Petroleum vapors are also hazardous to personnel due to anesthetic and toxic concentrations below explosive levels. Volatile fuel may cause skin irritation if allowed to remain on the skin (e.g., soaked gloves and/or clothing). Personnel safety and protection of life and limb take precedence over environmental protection. If there is a threat to personnel safety, the local fire department should be the first official agency notified. Special precautions should be exercised when handling JP-8 fuel or MOGAS.

SPILL MITIGATION ACTION	
Aboveground Tanks	
Within a Diked Area	<ol style="list-style-type: none"> 1. NOTIFY MTC-Fort Pickett Environmental Coordinator and convey the following information: <ol style="list-style-type: none"> a. Location of spill, b. Extent/ quantity of spill, c. Source/ cause of spill, d. Whether or not spill flow has been stopped, and e. Action taken to contain the spill. 2. STOP THE SPILL SOURCE if possible. <ol style="list-style-type: none"> 1. INSPECT ALL DRAIN VALVES to ensure they are closed and not leaking; activate any available spill control devices if a release is detected. 2. ESTABLISH FIRE PREVENTION measures around the vicinity of the spill. 3. Refer to General Spill Containment/ Spill Cleanup Procedures outlined below.
At the Tank Unloading Area	<ol style="list-style-type: none"> 1. STOP THE PUMPS. SPREAD ABSORBENT MATERIALS to retard spread of fuel. If the spill occurs at the commercial tanker truck unloading areas, spread absorbent materials to prevent the spilled products from reaching unpaved surfaces or area drains. 2. NOTIFY MTC-Fort Pickett Environmental Coordinator and convey the following information: <ol style="list-style-type: none"> a. Location of spill, b. Extent/ quantity of spill, c. Source/ cause of spill, d. Whether or not spill flow has been stopped, and e. Action taken to contain the spill. 3. ESTABLISH FIRE PREVENTION measures around the vicinity of the spill. 4. Refer to General Spill Containment/ Cleanup Procedures outlined below.
From a Refueler Rupture:	<ol style="list-style-type: none"> 1. SPREAD ABSORBENT MATERIALS to retard the flow of spill. Provide temporary curbing to prevent the spilled materials from reaching any storm drain. 2. NOTIFY MTC-Fort Pickett Environmental Coordinator and convey the following information: <ol style="list-style-type: none"> a. Location of spill, b. Extent/ quantity of spill, c. Source/ cause of spill, d. Whether or not spill flow has been stopped, and e. Action taken to contain the spill. 3. ESTABLISH FIRE PREVENTION measures around the vicinity of the spill. 4. Refer to General Spill Containment/ Cleanup Procedures outlined below.
Underground Tanks	

SPILL MITIGATION ACTION	
If a Spill or Overfill Occurs:	<ol style="list-style-type: none"> 1. STOP THE UNLOADING of product from the tanker truck. 2. SPREAD ABSORBENT MATERIALS to retard the spread of the spill prior to disconnecting product hoses or fittings. Prevent the spilled product from reaching unpaved surfaces or area drains. 3. ESTABLISH FIRE PREVENTION measures around the vicinity of the spill. 4. NOTIFY MTC-Fort Pickett Environmental Coordinator and convey the following information: <ol style="list-style-type: none"> a. Location of spill, b. Extent/ quantity of spill, c. Source/ cause of spill, d. Whether or not spill flow has been stopped, and e. Action taken to contain the spill. 5. Refer to General Spill Containment/ Cleanup Procedures outlined below.

B.2 CONTAINMENT/ CLEANUP PROCEDURES

NOTE: Containment and cleanup of spill incidents which potentially may expose workers to hazardous materials, health hazards, or safety hazards must be performed by personnel properly trained in accordance with OSHA, hazardous waste operations and emergency response training protocol.

B.2.1 SPECIFIC CONTAINMENT/ CLEANUP INFORMATION

Specific spill containment/ spill cleanup information is available on the product Material Safety Data Sheets, which are available in the work areas. Refer to this information for emergency response. This information includes:

- Emergency response,
- Spill containment procedures,
- Cleanup procedures,
- Container,
- Personal Protective Equipment, and
- Fire Extinguisher.
-

B.2.2 GENERAL CONTAINMENT/ CLEANUP INFORMATION

B.2.2.1 Equipment and Resources

Disposable equipment and resources are used for containment and cleanup procedures whenever possible, and are disposed of along with the spilled substance. These items are replaced to their prior inventory level as soon as practically possible. Non-disposable equipment used are properly decontaminated and restored to readiness for future use.

B.2.2.2 Guides To Containment Operations

Table B.1 and Table B.2 below provide information to assist with the containment operations of various types of oil spills.

Table B.1 Guide To Containment Operations On Water Courses		
WATERCOURSE	LARGE AMOUNTS OF OIL AND FIRST STAGE OPERATIONS	SMALL AMOUNTS OF OIL AND SECOND STAGE OPERATIONS
Ditches	Improvised Dam	Absorbent
Streams – Shallow, small flow	Underflow Dam	Absorbent
Streams – Shallow, large flow	Overflow and Fixed Dams	Overflow Dam and Fixed Boom and Absorbent
Pond	Boom plus Sweep Boom	Boom and Absorbent

Table B.2 Guide To Containment Operations On Ground Surfaces		
GROUND SURFACES	LARGE AMOUNTS OF OIL AND FIRST STAGE OPERATIONS	SMALL AMOUNTS OF OIL AND SECOND STAGE OPERATIONS
Asphalt	Boom or Absorbent Pads	Dry Granular Absorbent
Concrete	Boom or Absorbent Pads	Dry Granular Absorbent
Grass	Earth Fill Barrier/ Reservoir	Absorbent Pads
Indoor floors	Absorbent Pads	Dry Granular Absorbent

B.2.2.3 Containment Dams and Barriers

Several approaches to oil spill control are suggested in this section, including dams and barriers.

Earth Fill Dams - An earth fill dam, in one form or another, is commonly used for spill containment. Dams of this type may range from simple, manually constructed fills to more elaborate, controlled-flow structures designed to trap oil on water. Ideally, a spill should be caught in its earliest stage close to the source, thus permitting the simplest means of containment and recovery, and with minimal damage to the surroundings.

Spills that occur on dry land, remote from water, generally provide better prospects for effective containment with an earth fill barrier forming a temporary reservoir. A dry ditch or ravine can be blocked with minimum effort. A shallow holding pond can be formed by trenching and terracing. The options will vary with terrain, spill volume, soil conditions, lead-time, manpower, equipment availability, etc. Lead-time is the most critical factor in an event and dictates where and how containment efforts must proceed.

Dams should be constructed and compacted by whatever means possible. If a track vehicle is available, a width of 6-8 feet is needed at the top. The usual fall angle of the earth will suffice for sloping. The top of the dam should be 3-4 feet higher than the level to which the oil-water layers are expected to rise.

Reservoirs - Construction of a reservoir (dry land) impoundment will buy time to allow removal of the spill material. Complications such as heavy rain washing over the structure, or floating oil over the dam may occur. These hazards must be considered in the initial phases of response and precautions taken.

If surface water drainage is anticipated, preparations should be made to pump or siphon off the water to the downgrade side. Valved pipes of adequate size extended through the dam during construction may offer an alternate solution. If valves are not available, set the intake at an upstream low point (well below oil level) and the discharge at the desired surface level.

This water bypass arrangement is also useful in cases where the spill has already reached a flowing stream or creek. Practical limits depend on flow rate of the stream and being able to provide sufficient water bypass capability. Necessary pipe size for low rates above 30 cu. ft./sec. is in the range of 24 to 30 inches diameter. Multiple pipes can be used; however, it may be more practical to consider some other type of underflow dam.

Sorbent Materials - Commercially supplied sorbent materials may be used if they are available and have the physical characteristics to perform adequately. A boom or barrier must be continuously maintained. At the completion of an emergency, material added to a stream must be removed and disposed of properly.

Placement of a barrier is critical with respect to water velocity. Chances of spill recovery diminish rapidly in water moving faster than 1-1/2 to 2 feet per second. The more quiescent pools of the stream should be selected for containment operations. At least two barriers, and preferably three or more, should be placed in series along the stream leaving work space between barriers for small boats, skimming devices and other necessary equipment. The spill material should be removed before significant seepage occurs.

B.2.2.4 Cleanup

NGVA-FMO-ENV will direct all activity related to the cleanup of a spill site. The restoration of impacted areas of the environment will be conducted after an evaluation of the remedial alternatives and their respective costs. Testing to determine the degree and extent of the environmental impact may be needed during the evaluation process. The Installation Commander has the responsibility of approving the course of action chosen and ensuring the action is carried out.

APPENDIX C: MASTER FORMS

C.1	RELEASE OF SECONDARY CONTAINMENT DRAINAGE	C-1
C.2	REGIONAL ADMINISTRATOR REPORT	C-2
C.3	OIL STORAGE TANK AND PIPING INSPECTION CHECKLIST.....	C-3
	C.3a Monthly/Annual Kitchen Grease Container Checklist	
	C.3b Monthly/Annual AST Oil and Piping Checklist	
	C.3c Monthly/Annual Portable Fuel Tank Checklist	
C.4	TRAINING ROSTER.....	C-4
C.5	ACCIDENTAL RELEASE OF HAZARDOUS MATERIALS REPORT FORM.....	C-5

C.1 RELEASE OF SECONDARY CONTAINMENT DRAINAGE

Building/Area: _____

Date: _____

Inspector: _____

Time: _____

Description of Secondary Containment Structure: _____

A. Visual Observation of Accumulation Rainwater:

ITEM	YES	NO	COMMENTS
COLOR			
FOAM			
SUSPENDED SOLIDS			
OUTFALL STAINING			
OIL SHEEN			
DRY WEATHER FLOW			
<i>OTHER INDICATORS:</i>			

If accumulated rainwater appears contaminated, list actions that were taken to remove contaminants:

B. Release of Accumulated Rainwater:

What was the approximate depth of water released from the containment area?

_____ inches

After the release of the accumulated rainwater, was the secondary containment drain valve properly closed and locked? yes no

C. Comments:

Retain Form for 5 Years

C.2 REGIONAL ADMINISTRATOR REPORT

Complete this information if a single discharge of more than 1000 gallons, or if 2 discharges of more than 42 gallons in a twelve month period, is made to a navigable water or its shoreline, to a water of the contiguous zone, or to natural resources under the exclusive management authority of the United States (e.g. wetlands, non-navigable waters of the U.S., park or forest lands, etc.). Completed copies of this report must be forwarded to the EPA Regional Office and to the Virginia DEQ office within 60 days of the event. Attach additional pages if necessary to provide complete and thorough information.

Facility Name:

Report Compiler's Name:

Location of the Facility:

Maximum storage or handling capacity of the facility: gallons

Average daily throughput: gallons

Describe the corrective actions and countermeasures taken (include a description of equipment repairs or replacement, if appropriate):

Describe the facility (attached site map, flow diagram and topographical map if available):

Describe the cause of the discharge(s) which led to the filing of this report, including a failure analysis of the system involved in the discharge:

Such other information as the Regional Administrator may reasonably require pertinent to the Plan and the discharge:

Retain Form for 5 Years

C.3a MONTHLY/ANNUAL KITCHEN GREASE CONTAINER INSPECTION CHECKLIST

Complete inspection record monthly for each kitchen grease container. Visually inspect container and surrounding area and place a check or X in the appropriate box for each item. If any item needs elaboration, use the comments space provided. Attach any additional information on a separate sheet of paper if necessary. This form also satisfies requirements for annual kitchen grease container inspection.

Facility: MTC-Fort Pickett Date: _____

Inspector: _____ Time: _____

Bldg#/Tank ID	Capacity (gal)	Debris or fire hazard in storage area		Walkways clear and gates/door operable		Visible signs of leakage around tank, container, concrete pad, containment or ground		Noticeable tank/container distortions, buckling, denting or bulging		All tank openings are properly sealed/kept closed		Evidence of corrosion or peeling paint on container		Evidence of cracking or damage to concrete pad, berm or foundation	
		YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO
1667	300														
1686	300														
2211	300														
2249/50	300														
2403	300														
2417	300														
2425/26	300														
2619/20	300														
2642	300														
2817	300														
COMMENTS:															
RETAIN FORM FOR 5 YEARS															

C.3b MONTHLY/ANNUAL OIL STORAGE TANK AND PIPING INSPECTION CHECKLIST

Building #	Tank ID	Are exterior coatings rusted, cracked, bubbled and/or damaged?	Are there noticeable distortions, buckling, denting or bulging of tank/container shell?	Are tank supports deteriorated or buckled?	Do tank bottoms have accumulated rust, scale, micro-organisms, or foreign material?	Are drainage pipes/valves operable?	Is tank foundation eroded, settled or cracked?	Are bolts, rivets, or seams are damaged, cracked, or rusted?	Is emergency vent on tank operable?	Is leak detection system damaged or not operating properly?	Is overfill prevention device in working condition?	Are piping external coatings are bubbled, cracked, or damaged?	Are there visible signs of leakage, dead vegetation or staining near tank and/or piping?	Is tank liquid level gauge readable and in good condition?	Is spill equipment available and accessible?	Is water in primary tank, secondary containment or spill containment?	Is oil accumulation in containment area?	Comments
2823	*T-2823																	
2828/29	*T-2828																	
2838/39	*T-2838																	
Generators/Fire Pumps																		
24	T-0024																	
141	T-141																	
301	T-301A																	
301	T-301B																	
316	T-316																	
473	T-473																	
487	T-487																	
1306	T-1306A																	
1306	T-1306B																	
1307	T-1307 C																	
2117	T-2117																	
UAC	T-ST096																	
229	T-ST095																	

C.3c MONTHLY/ANNUAL PORTABLE FUEL TANK INSPECTION CHECKLIST

Complete inspection record monthly for each AST and associated piping. Visually inspect tank and piping and place a check or X in the appropriate box for each item. If any item needs elaboration, use the comments space provided. Attach any additional information on a separate sheet of paper if necessary. This form also satisfies requirements for annual portable AST inspection.

Building/Area: _____ Date: _____

Inspector: _____ Time: _____

Tank												
Contents												
Capacity												
Location												

	YES	NO										
Debris or fire hazard in storage area												
Visible signs of leakage around tank, truck or ground												
Noticeable tank/container distortions, buckling, denting or bulging												
All tank openings are properly sealed/kept closed												
Evidence of corrosion or peeling paint on container												
Spill equipment readily available/accessible on truck												

COMMENTS:

RETAIN FORM FOR 5 YEARS

C.5 ACCIDENTAL RELEASE OF HAZARDOUS MATERIALS REPORT FORM

INITIAL RESPONSE

Reported by: _____	Notification Date: _____
Phone #: _____	
Discoverer's Name: _____	Discovery Date: _____
Phone #: _____	
Initial Responding Office: _____	
Location of Release: _____	

RELEASE CHARACTERISTICS

Name of HAZMAT Release, if known: _____
Quantity of Release: _____ GAL/LB/Other
Source of Release (stationary fuel tank, HMMV, etc.): _____

Fire or other Hazards (explain): _____

Were storm drains, floor drains, sewer drains, or surface water bodies (lakes, ponds, streams), or other "environmental receptors" such as wetlands affected and how so:

CLEAN-UP AND DISPOSAL

How was spilled material contained and controlled? _____

What is current status of spilled material and the related clean up material (location, container type(s), etc.)? _____

What is current plan for disposal or further remediation? _____

FOR ENVIRONMENTAL OFFICE USE ONLY

VDEQ Contacted? Yes/No Contact Name: _____ Time/Date: _____

**APPENDIX D: APPLICABLE REGULATIONS AND
40 CFR PART 112 CROSS-REFERENCES**

APPENDIX D: APPLICABLE REGULATIONS

1. Army Regulation 200-1, Environmental Protection and Enhancement, August 2007.
2. Public Law 92-500, Federal Water Pollution Control Act Amendments of 1972 as amended by Public Law 95-214, Clean Water Act of 1977, 27 December 1977 and Public Law 95-576, Amendments to the Clean Water Act, 14 October 1978.
3. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (Public Law 96-510, 11 December 1980).

Title 29, CFR, Part 1200.

Title 29, CFR, Part 1910.120(q).
4. Title 40, CFR, Part 109, Criteria for State, Local and Regional Oil Removal Contingency Plans.
5. Title 40, CFR, Part 110, Discharge of Oil.
6. Title 40, CFR, Part 112, Oil Pollution Prevention.
7. Title 40, CFR, Part 116, Designation of Hazardous Substances.
8. Title 40, CFR, Part 117, Determination of Reportable Quantities for Hazardous Substances.
9. Title 40, CFR, Part 280, Underground Storage Tanks.
10. Title 40, CFR, Part 300, National Oil and Hazardous Substance Spill Contingency Plan.
11. National Fire Protection Association, NFPA 329, Underground Leakage of Flammable and Combustible Liquids, 1983.
12. Oil and Hazardous Substance Spill Prevention and Response Plan, Virginia Air National Guard, 192nd Fighter Wing, Sandston, Virginia, August 1998.
13. Final Rule, National Oil and Hazardous Substances Contingency Plan, 47 Federal Register 31180, 16 July 1982.
14. 9 VAC 25-91-10 *et seq.*, Facility and Aboveground Storage Tank Regulation, June 24, 1998.
15. 40 CFR 265 Subpart D, Contingency Plan and Emergency Procedures

REGULATORY CROSS REFERENCE MATRICES	
	ICP Citation(s)
EPA's Oil Pollution Prevention (40 CFR 112)	
40 CFR 112, Subpart A – Applicability, Definitions, and General Requirements for All Facilities and All Types of Oils	
40 CFR 112.1 General applicability.	
(a)(1-2)	1.1
(b)(1-4)	1.2
(c)	1.2.1
(d)(1-6)	1.2.1
(e)	1.2.1
(f)(1-5)	Not Applicable
40 CFR 112.2 Definitions.	
2, Appendix A	
40 CFR 112.3 Requirement to Prepare and Implement a Spill Prevention, Control and Countermeasure Plan.	
(a)	3.1
(b)	3.2
(c)	3.3
(d)(1-2)	3.4
(e)(1-2)	3.5
(f)(1-3)	3.6
40 CFR 112.4 Amendment of SPCC Plan by Regional Administrator	
(a)(1-9)	4.1
(b)	4.2
(c)	4.3
(d)	4.4
(e)	4.4
(f)	4.4
40 CFR 112.5 Amendment of SPCC Plan by owners or operators	
(a)	5.1
(b)	5.1
(c)	5.2
40 CFR 112.6 Reserved.	
6	
40 CFR 112.7 General Requirements for SPCC Plans	
(a)(1-4)	7.1, 7.2
(b)	7.3
(c)(1-2)	7.3.5, 7.3.5
(d)(1-2)	7.4
(e)	7.5

REGULATORY CROSS REFERENCE MATRICES	
40 CFR 112.7 General Requirements for SPCC Plans	ICP Citation(s)
(f)(1-3)	7.6
(g)(1-5)	7.8
(h)(1-3)	7.12
(i)	7.14
(j)	7.15
40 CFR 112, Subpart B – Requirements for Petroleum Oils and Non-Petroleum Oils, Except Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils (Including Oils from Seeds, Nuts, Fruits, and Kernels)	
40 CFR 112.8 SPCC Plan Requirements for Onshore Facilities (excluding production facilities).	
(a)	8.1
(b)(1-5)	8.2
(c)(1-11)	8.3, 8.4, 8.5, 8.6
(d)(1-5)	8.7
40 CFR 112.9 SPCC Plan requirements for onshore oil production facilities.	8.9
40 CFR 112.10 SPCC Plan requirements for onshore oil drilling and workover facilities.	8.10
40 CFR 112.11 SPCC Plan requirements for offshore drilling, production, or workover facilities.	8.11
40 CFR 112, Subpart C – Requirements for Animal Fats and Oils and Greases, and Fish and Marine Mammal Oils; and Vegetable Oils, Including Oils from Seeds, Nuts, Fruits, and Kernels.	Not Applicable
40 CFR 112, Subpart D – Response Requirements	
40 CFR 112.20 Facility Response Plans	9
40 CFR 109.5 State, Local, and Regional Oil Removal Contingency Plans	
40 CFR 109.5, State, Local, and Regional Oil Removal Contingency Plans	
(a)	10
(b)(1-4)	16.1 - 16.4
(c) (1-3)	16.5
(d)	16.6
(e)	16.7
Oil Discharge Contingency Plan (9 VAC 25-91-170)	
9 VAC 25-91-170 A.1	7.1.3
9 VAC 25-91-170 A.2	7.1.2
9 VAC 25-91-170 A.3	7.1.4

REGULATORY CROSS REFERENCE MATRICES	
9 VAC 25-91-170 A.4	Appendix F
9 VAC 25-91-170 A.5	7.2.1, Tables 1&2
9 VAC 25-91-170 A.6	19.2, Tables 9&10
9 VAC 25-91-170 A.7	19.6.2
9 VAC 25-91-170 A.8	13.3
9 VAC 25-91-170 A.9	13.3
9 VAC 25-91-170 A.10	13.4
9 VAC 25-91-170 A.11	13.5
9 VAC 25-91-170 A.12	19.5.1
9 VAC 25-91-170 A.13	14.1
(a)	N/A
(b)	N/A
9 VAC 25-91-170 A.14	14.1.1,14.1.3
9 VAC 25-91-170 A.15	N/A
9 VAC 25-91-170 A.16	7.7
9 VAC 25-91-170 A.17	7.13
9 VAC 25-91-170 A.18	7.9
9 VAC 25-91-170 A.19	7.10
9 VAC 25-91-170 A.20	8.8
9 VAC 25-91-170 A.21	7.8
9 VAC 25-91-170 A.22	7.11
RCRA (40 CFR Part 265 Subpart D)	
40 CFR 265.52 Content of Contingency Plan	
(a)	16.6.4
(b)	5
(c)	16.6.4
(d)	16.6.4
(e)	16.5.1
(f)	7.1.4
40 CFR 265.53 Copies of Contingency Plan	3.5
40 CFR 265.54 Amendment of Contingency Plan	5
40 CFR 265.55 Emergency Coordinator	16.6.4
40 CFR 265.56 Emergency Procedures	
(a)	16.6.4
(b)	16.6.4
(c)	16.6.4
(d)	16.6.4

REGULATORY CROSS REFERENCE MATRICES	
(e)	16.6.4
40 CFR 265.56 Emergency Procedures	
(g)	16.6.4
(h)	16.6.4
(i)	16.6.4
(j)	16.6.4

APPENDIX E: CERTIFICATIONS, REVIEWS AND AMENDMENTS

E.1	PROFESSIONAL ENGINEER CERTIFICATION	E-1
E.2	MANAGEMENT APPROVAL	E-2
E.3	RECORD OF REVIEW/ REVISION	E-3
E.4	CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA	E-4

E.1 PROFESSIONAL ENGINEER CERTIFICATION [40 CFR 112.3(d)]

The Plan has been reviewed and certified by a Registered Professional Engineer as follows:

"I hereby certify that, being familiar with the provisions of Federal Regulation 40 CFR 112 and I or my agent having visited the facility, this Plan has been prepared in accordance with reasonable and prudent engineering practices, this Plan satisfies the current requirements of the aforementioned regulations, this Plan provides for the required inspections and testing, and this Plan is adequate for the facility."

Name: Maria Mutuc
Signature: *Maria Mutuc*
Date: 11/7/2014
Registration No.: 043911
State: Virginia



E.2 MANAGEMENT APPROVAL [40 CFR 112.7(d)(2)]

This ICP, which includes elements of an SPCC Plan, OCDP, and OSCP, has been carefully reviewed by Management. Management concurs and supports the programs and procedures which are to be implemented, periodically reviewed, and updated in accordance with Federal Regulation 40 CFR 112 (Oil Pollution Prevention) and AR 200-1 (Environmental Protection and Enhancement). Management approval has been extended at a level with authority to commit the necessary resources.

Signature: _____

E.4 CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA
(Attachment C-II, 40 CFR 112.20)

Facility Name: Virginia Army National Guard, Maneuver Training Center (MTC)
Facility Address: Fort Pickett, Blackstone, VA

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?
Yes _____ No X
2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?
Yes _____ No X
3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response plans: Fish and Wildlife and Sensitive Environments" (See Appendix E to this part, section 10, for availability) and the applicable Area Contingency Plan.
Yes _____ No X
4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula) such that a discharge from the facility would shut down a public drinking water intake?
Yes _____ No X
5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
Yes _____ No X

Certification

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

Signature: _____

Name (please type or print): _____

Title: _____

Date: _____

APPENDIX F: MATERIAL SAFETY DATA SHEETS

Valero
Corporate Health and Safety
P.O. Box 696000
San Antonio, TX 78269-6000



JAMES RIVER PETROLEUM INC.

804 3596307

Jul 04, 2014

Attn: Safety/Right-To-Know Coordinator

Dear Customer:

Copies of Safety Data Sheet(s) (SDS), which have been prepared in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200) are enclosed for the listed products manufactured by Valero. SDS are being provided to you either :

- as a result of your being authorized to purchase the products,
- a result of your request for SDS or
- in compliance with the supplier notification requirements in 40 CFR, Part 372, Subpart C.

Please compare the dates on the attached SDS with those in your file and replace any older SDS with the more recent one. OSHA regulations may require that you make the attached information available to your employees and/or your customers.

EPA Regulations 40 CFR, Part 372, in support of Section 313 of SARA, Title III, requires all manufacturers to notify suppliers annually of the concentrations of certain chemicals in products. The list of these chemicals can be found in 40 CFR 372.65. This notification is accomplished by an annual distribution (in January) of a report listing each product and the concentration of the regulated components. This distribution also covers the notification for Section 312 of SARA, Title III Tier II for chemical inventory reporting.

The following MSDS are attached:

MSDS Number	Description
ULSD	Diesel Fuels

MSDS Assistance: (210)345-4593



SAFETY DATA SHEET

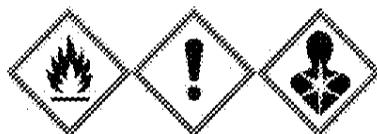
1. Identification

Product identifier	DIESEL FUELS
Other means of identification	
SDS number	102-GHS
Synonyms	Diesel Fuels All Grades, Diesel Fuel No.2, Fuel Oil No.2, High Sulfur Diesel Fuel, Low Sulfur Diesel Fuel, Ultra Low Sulfur Diesel Fuel, CARB (California Air Resource Board) Diesel Fuel, Off-Road Diesel Fuel, Dyed Diesel Fuel, X Grade Diesel Fuel, X-1 Diesel Fuel, R5 ULSD, B5 ULS D See section 16 for complete information.
Recommended use	Motor Fuel Refinery feedstock.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Manufacturer/Supplier	Valero Marketing & Supply Company and Affiliates One Valero Way San Antonio, TX 78269-6000 210-345-4593 CorpHSE@valero.com
General Assistance	
E-Mail	CorpHSE@valero.com
Contact Person	Industrial Hygienist
Emergency Telephone	24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Flammable liquid and vapor. Harmful if inhaled. Causes skin irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure. May be fatal if swallowed and enters airways.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Do not breathe mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area.

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Response	If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If exposed or concerned: Get medical advice/attention. If swallowed: Immediately call a poison center/doctor. Take off contaminated clothing and wash before reuse. In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Fuels, diesel, no. 2	68476-34-6	85 - 100
Biodiesel - Fatty acid methyl esters	67762-38-3	0 - 10
Fuels, diesel, C9-18-alkane branched and linear	1159170-26-9	0 - 5
n-Nonane	111-84-2	1 - 3
Octane (All isomers)	111-65-9	1 - 2
Hexane (Other isomers)	96-14-0	0 - 1
Naphthalene	91-20-3	0 - 1
n-Heptane	142-82-5	0 - 1
n-Hexane	110-54-3	0 - 1

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash. The toxicological properties of this product have not been thoroughly investigated. Use appropriate precautions. Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed. The toxicological properties of this material have not been fully investigated.
General information	If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use.

5. Fire-fighting measures

Suitable extinguishing media Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

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Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. Thermal decomposition or combustion may liberate toxic gases or fumes.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire-fighting equipment/instructions	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.

Methods and materials for containment and cleaning up Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Local authorities should be advised if significant spillages cannot be contained. Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas.

Use non-sparking tools and explosion-proof equipment.

Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste.

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment.

Clean up in accordance with all applicable regulations.

Environmental precautions If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300.

7. Handling and storage

Precautions for safe handling Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Wear personal protective equipment. Avoid breathing mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities

Flammable liquid storage. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value
Naphthalene (CAS 91-20-3)	PEL	50 mg/m ³ 10 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m ³ 500 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m ³ 500 ppm
Octane (All isomers) (CAS 111-65-9)	PEL	2350 mg/m ³ 500 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Fuels, diesel, no. 2 (CAS 68476-34-6)	TWA	100 mg/m ³	Inhalable fraction and vapor.
Hexane (Other isomers) (CAS 96-14-0)	STEL	1000 ppm	
	TWA	500 ppm	
Naphthalene (CAS 91-20-3)	STEL	15 ppm	
	TWA	10 ppm	
n-Heptane (CAS 142-82-5)	STEL	500 ppm	
	TWA	400 ppm	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
n-Nonane (CAS 111-84-2)	TWA	200 ppm	
Octane (All isomers) (CAS 111-65-9)	TWA	300 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Hexane (Other isomers) (CAS 96-14-0)	Ceiling	1800 mg/m ³
		510 ppm
	TWA	350 mg/m ³ 100 ppm
Naphthalene (CAS 91-20-3)	STEL	75 mg/m ³ 15 ppm
	TWA	50 mg/m ³ 10 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m ³ 440 ppm
	TWA	350 mg/m ³ 85 ppm
n-Hexane (CAS 110-54-3)	TWA	180 mg/m ³ 50 ppm
n-Nonane (CAS 111-84-2)	TWA	1050 mg/m ³ 200 ppm
Octane (All isomers) (CAS 111-65-9)	Ceiling	1800 mg/m ³
		385 ppm
	TWA	350 mg/m ³ 75 ppm

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Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedion, without hydrolysis	Urine	*
	0.4 mg/l	2,5-Hexanedion, without hydrolysis		*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

n-Hexane (CAS 110-54-3)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Fuels, diesel, no. 2 (CAS 68476-34-6)

Can be absorbed through the skin.

Naphthalene (CAS 91-20-3)

Can be absorbed through the skin.

n-Hexane (CAS 110-54-3)

Can be absorbed through the skin.

Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

Skin protection**Hand protection**

Wear chemical-resistant, impervious gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Other

Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.

Respiratory protection

Use a properly fitted, air-purifying or air-fed 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 workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties**Appearance**

Liquid (may be dyed red).

Physical state

Liquid.

Form

Liquid.

Color

Clear. Straw.

Odor

Kerosene (strong).

Odor threshold

Not available.

pH

Not available.

Melting point/freezing point

-60.07 °F (-51.15 °C) Estimated

Initial boiling point and boiling range

325 - 700 °F (162.78 - 371.11 °C)

Flash point

> 100.0 °F (> 37.8 °C) Closed Cup

Evaporation rate

0.02

Flammability (solid, gas)

Not available.

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Upper/lower flammability or explosive limits

Flammability limit - lower (%)	0.4 %
Flammability limit - upper (%)	8 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 1 mm Hg (20°C)
Vapor density	3 (Air = 1)
Relative density	0.82 - 0.87
Relative density temperature	60 °F (15.56 °C)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	494.96 °F (257.2 °C)
Decomposition temperature	Not available.
Viscosity	2 - 4.5 mm ² /s

10. Stability and reactivity

Reactivity	Stable at normal conditions.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information**Information on likely routes of exposure**

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Harmful if inhaled. In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.
Skin contact	Causes skin irritation.
Eye contact	May cause eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash. The toxicological properties of this product have not been thoroughly investigated. Use appropriate precautions.

Information on toxicological effects

Acute toxicity	Harmful if inhaled. Harmful: may cause lung damage if swallowed. The toxicological properties of this material have not been fully investigated.
----------------	--

Components	Species	Test Results
Fuels, diesel, no. 2 (CAS 68476-34-6)		
Acute		
Inhalation		
LC50	Rat	4.1 mg/l, 4 hours

Components	Species	Test Results
Naphthalene (CAS 91-20-3)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 2 g/kg
<i>Oral</i>		
LD50	Rat	490 mg/kg
n-Heptane (CAS 142-82-5)		
Acute		
<i>Inhalation</i>		
LC50	Rat	103 mg/l, 4 Hours
n-Hexane (CAS 110-54-3)		
Acute		
<i>Oral</i>		
LD50	Rat	28710 mg/kg
n-Nonane (CAS 111-84-2)		
Acute		
<i>Inhalation</i>		
LC50	Rat	3200 mg/l, 4 Hours
Octane (All isomers) (CAS 111-65-9)		
Acute		
<i>Inhalation</i>		
LC50	Rat	118 mg/l, 4 Hours
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Based on available data, the classification criteria are not met.	
Respiratory or skin sensitization		
Respiratory sensitization	Based on available data, the classification criteria are not met.	
Skin sensitization	Based on available data, the classification criteria are not met.	
Germ cell mutagenicity	Based on available data, the classification criteria are not met.	
Carcinogenicity	Suspected of causing cancer. International Agency for Research on Cancer (IARC): Whole diesel engine exhaust – IARC Group 1. Exposure may cause lung cancer and also noted a positive association with an increased risk of bladder cancer. Diesel exhaust has been reported to be an occupational hazard due to NIOSH-reported potential carcinogenic properties.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Fuels, diesel, no. 2 (CAS 68476-34-6)	3 Not classifiable as to carcinogenicity to humans.	
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.	
NTP Report on Carcinogens		
Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.	
Reproductive toxicity	Suspected of damaging fertility or the unborn child. Naphthalene interferes with embryo development in experimental animals at dose levels that cause maternal toxicity. In humans, excessive exposure to this agent may cause hemolytic anemia in the mother and fetus.	
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.	
Specific target organ toxicity - repeated exposure	May cause damage to the following organs through prolonged or repeated exposure: Blood. Liver. Thymus.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	Contains organic solvents which in case of overexposure may depress the central nervous system causing dizziness and intoxication. Repeated exposure to naphthalene may cause cataracts, allergic skin rashes, destruction of red blood cells, and anemia, jaundice, kidney and liver damage. Danger of serious damage to health by prolonged exposure. Prolonged or repeated overexposure may cause central nervous system, kidney, liver, and lung damage.	

Further information

Symptoms may be delayed. Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere. Toxicological properties of this material have not been fully investigated.

12. Ecological information

Ecotoxicity Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Components	Species	Test Results
Fuels, diesel, no. 2 (CAS 68476-34-6)		
Aquatic		
<i>Acute</i>		
Crustacea	EL50	Daphnia magna 68 mg/l, 48 hours
Fish	LL50	Oncorhynchus mykiss 65 mg/l, 96 hours
Naphthalene (CAS 91-20-3)		
Aquatic		
Crustacea	EC50	Water flea (Daphnia magna) 1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha) 0.95 - 1.62 mg/l, 96 hours
n-Heptane (CAS 142-82-5)		
Aquatic		
Fish	LC50	Western mosquitofish (Gambusia affinis) 4924 mg/l, 96 hours
n-Hexane (CAS 110-54-3)		
Aquatic		
Fish	LC50	Fathead minnow (Pimephales promelas) 2.101 - 2.981 mg/l, 96 hours

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Hexane (Other isomers) (CAS 96-14-0)	3.6
Octane (All isomers) (CAS 111-65-9)	5.18
n-Heptane (CAS 142-82-5)	4.66
n-Hexane (CAS 110-54-3)	3.9
n-Nonane (CAS 111-84-2)	5.46

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Hazardous waste code D001: Waste Flammable material with a flash point <140 °F

US RCRA Hazardous Waste U List: Reference

Naphthalene (CAS 91-20-3) U165

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Offer rinsed packaging material to local recycling facilities.

14. Transport information**DOT**

UN number	UN1202
UN proper shipping name	Diesel fuel
Transport hazard class(es)	
Class	Combustible Liquid
Subsidiary risk	-
Packing group	III

DIESEL FUELS

913579 Version #: 04 Revision date: 23-May-2014 Print date: 23-May-2014

Prepared by 3E Company

Environmental hazards

Marine pollutant Yes
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions 144, B1, IB3, T2, TP1
Packaging exceptions 150
Packaging non bulk 203
Packaging bulk 242

IATA

UN number UN1202
UN proper shipping name Diesel fuel
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group III
Environmental hazards Yes
ERG Code 3L
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1202
UN proper shipping name DIESEL FUEL
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group III
Environmental hazards
Marine pollutant Yes
EmS F-E, S-E

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

15. Regulatory information**US federal regulations****TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

n-Nonane (CAS 111-84-2) 1.0 % One-Time Export Notification only.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hexane (Other isomers) (CAS 96-14-0)	LISTED
Naphthalene (CAS 91-20-3)	LISTED
n-Heptane (CAS 142-82-5)	LISTED
n-Hexane (CAS 110-54-3)	LISTED
n-Nonane (CAS 111-84-2)	LISTED
Octane (All isomers) (CAS 111-65-9)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
 Delayed Hazard - No
 Fire Hazard - No
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

DIESEL FUELS

913579 Version #: 04 Revision date: 23-May-2014 Print date: 23-May-2014

Prepared by 3E Company

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Naphthalene	91-20-3	0 - 1

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Naphthalene (CAS 91-20-3)

n-Hexane (CAS 110-54-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**US state regulations**

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Hexane (Other isomers) (CAS 96-14-0)

Naphthalene (CAS 91-20-3)

n-Heptane (CAS 142-82-5)

n-Hexane (CAS 110-54-3)

n-Nonane (CAS 111-84-2)

Octane (All isomers) (CAS 111-65-9)

US. New Jersey Worker and Community Right-to-Know Act

Fuels, diesel, no. 2 (CAS 68476-34-6)

Naphthalene (CAS 91-20-3)

n-Heptane (CAS 142-82-5)

n-Hexane (CAS 110-54-3)

n-Nonane (CAS 111-84-2)

Octane (All isomers) (CAS 111-65-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Fuels, diesel, no. 2 (CAS 68476-34-6)

Hexane (Other isomers) (CAS 96-14-0)

Naphthalene (CAS 91-20-3)

n-Heptane (CAS 142-82-5)

n-Hexane (CAS 110-54-3)

n-Nonane (CAS 111-84-2)

Octane (All isomers) (CAS 111-65-9)

US. Rhode Island RTK

Naphthalene (CAS 91-20-3)

n-Hexane (CAS 110-54-3)

US. California Proposition 65**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Benzene (CAS 71-43-2)

Toluene (CAS 108-88-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No

DIESEL FUELS

913579 Version #: 04 Revision date: 23-May-2014 Print date: 23-May-2014

Prepared by 3E Company

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Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

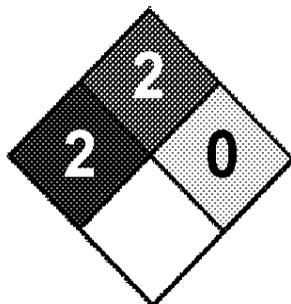
Issue date 13-May-2013

Revision date 23-May-2014

Version # 04

Further information HMIS® is a registered trade and service mark of the NPCA.

NFPA Ratings



Disclaimer

This material Safety Data Sheet (SDS) was prepared in accordance with 29 CFR 1910.1200 by Valero Marketing & Supply Co., ("VALERO"). VALERO does not assume any liability arising out of product use by others. The information, recommendations, and suggestions presented in this SDS are based upon test results and data believed to be reliable. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use, the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all the scientific and study information in the format of this document, plus additional information may be necessary under exceptional conditions of use, or because of applicable laws or government regulations.



MATERIAL SAFETY DATA SHEET

Jet Fuel JP-8

MSDS No. 4088

EMERGENCY OVERVIEW

CAUTION!

COMBUSTIBLE LIQUID - SLIGHT TO MODERATE IRRITANT
EFFECTS CENTRAL NERVOUS SYSTEM
HARMFUL OR FATAL IF SWALLOWED



NFPA 704 (Section 16)

Moderate fire hazard. Avoid breathing vapors or mists. May cause dizziness and drowsiness. May cause eye irritation and skin irritation (rash). Long-term, repeated exposure may cause skin cancer.

If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs).

1. CHEMICAL PRODUCT and COMPANY INFORMATION

HOVENSA LLC
1 Estate Hope
Christiansted, VI 00820-5652

EMERGENCY TELEPHONE NUMBER (24 hrs):
COMPANY CONTACT (business hours):

CHEMTREC (800)424-9300
(340) 692-3000

SYNONYMS: Military Aviation Jet Fuel JP -8
See Section 16 for abbreviations and acronyms.

2. COMPOSITION and INFORMATION ON INGREDIENTS

INGREDIENT NAME (CAS No.)	CONCENTRATION PERCENT BY WEIGHT
Kerosene (8008-20-6)	100
Naphthalene (91-20-3)	Typically 0.04

A complex combination of hydrocarbons including naphthenes, paraffins, and aromatics.

3. HAZARDS IDENTIFICATION

EYES

Contact with liquid or vapor may cause mild irritation.

SKIN

May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

INGESTION

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

INHALATION

Excessive exposure may cause irritation to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.



MATERIAL SAFETY DATA SHEET

Jet Fuel JP-8

MSDS No. 4088

CHRONIC EFFECTS and CARCINOGENICITY

Similar products produced skin cancer and systemic toxicity in laboratory animals following repeated applications. The significance of these results to human exposures has not been determined - see Section 11 Toxicological Information.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Irritation from skin exposure may aggravate existing open wounds, skin disorders, and dermatitis (rash).

4. FIRST AID MEASURES

EYES

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

SKIN

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or waterless hand cleanser. Obtain medical attention if irritation or redness develops. Thermal burns require immediate medical attention depending on the severity and the area of the body burned.

INGESTION

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

INHALATION

Remove person to fresh air. If person is not breathing provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT:	> 100 °F (38 °C) TCC
AUTOIGNITION POINT:	410 °F (210 °C)
OSHA/NFPA FLAMMABILITY CLASS:	2 (COMBUSTIBLE)
LOWER EXPLOSIVE LIMIT (%):	0.7
UPPER EXPLOSIVE LIMIT (%):	5.0

FIRE AND EXPLOSION HAZARDS

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

EXTINGUISHING MEDIA

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO₂, water spray, fire fighting foam, or Halon.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

FIRE FIGHTING INSTRUCTIONS

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment.

Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing.

Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may



MATERIAL SAFETY DATA SHEET

Jet Fuel JP-8

MSDS No. 4088

be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

See Section 16 for the NFPA 704 Hazard Rating.

6. ACCIDENTAL RELEASE MEASURES

ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN.

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

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

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

7. HANDLING and STORAGE

HANDLING PRECAUTIONS

Handle as a combustible liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when higher flash point material (such as fuel oil) is loaded into tanks previously containing low flash point products (such as this product) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents.

STORAGE PRECAUTIONS

Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

WORK/HYGIENIC PRACTICES

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



MATERIAL SAFETY DATA SHEET

Jet Fuel JP-8

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8. EXPOSURE CONTROLS and PERSONAL PROTECTION

EXPOSURE LIMITS

Components (CAS No.)	Source	Exposure Limits		Note
		TWA/STEL		
Kerosene (8008-20-6)	OSHA	5 mg/m ³ as mineral oil mist		
	ACGIH	100 mg/m ³ TWA		A3
Naphthalene (91-20-3)	OSHA	10 ppm		
	ACGIH	10 ppm TWA/ 15 ppm STEL		A4

ENGINEERING CONTROLS

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

EYE/FACE PROTECTION

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying

SKIN PROTECTION

Gloves constructed of nitrile, neoprene, or PVC are recommended. Chemical protective clothing such as of E.I. DuPont Tyvek QC®, Saranex®, TyChem® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information

RESPIRATORY PROTECTION

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited. Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

WORK/HYGIENIC PRACTICES

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

9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE

Pale yellow to water-white liquid

ODOR

Characteristic petroleum distillate odor



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BASIC PHYSICAL PROPERTIES

BOILING RANGE: 280 to 572 °F (140 to 300 °C)
VAPOR PRESSURE: 0.029 psia @ 100 °F (38 °C)
VAPOR DENSITY (air = 1): AP 4.5
SPECIFIC GRAVITY (H₂O = 1): 0.75 - 0.80
PERCENT VOLATILES: 100 %
EVAPORATION RATE: Slow; varies with conditions
SOLUBILITY (H₂O): Negligible

10. STABILITY and REACTIVITY

STABILITY: Stable. Hazardous polymerization will not occur.

CONDITIONS TO AVOID and INCOMPATIBLE MATERIALS

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources. Keep away from strong oxidizers such as nitric and sulfuric acids.

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

11. TOXICOLOGICAL PROPERTIES

CHRONIC EFFECTS AND CARCINOGENICITY

Carcinogenicity: OSHA: NO IARC: NO NTP: NO ACGIH: 1997 NOIC: A3
Dermal carcinogenicity: positive (mice)

ACUTE TOXICITY

Acute dermal LD50 (rabbits): > 5 g/kg
Acute oral LD50 (rats): > 25 g/kg
Primary dermal irritation: mildly irritating (rabbits)
Primary eye irritation: mildly irritating (rabbits)
Guinea pig sensitization: negative

Studies have shown that similar products produce skin cancer or skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

12. ECOLOGICAL INFORMATION

Keep out of sewers, drainage and waterways. Report spills and releases, as applicable, under Federal and State regulations.

13. DISPOSAL CONSIDERATIONS

Consult federal, state and local waste regulations to determine appropriate disposal options.

14. TRANSPORTATION INFORMATION

DOT PROPER SHIPPING NAME: Fuel, Aviation, Turbine Engine
DOT HAZARD CLASS and PACKING GROUP: 3, PG III
DOT IDENTIFICATION NUMBER: UN 1863
DOT SHIPPING LABEL: FLAMMABLE LIQUID

PLACARD:



May be reclassified for transportation as a COMBUSTIBLE LIQUID under conditions of DOT 49 CFR 173.120(b)(2).



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15. REGULATORY INFORMATION

U.S. FEDERAL, STATE, and LOCAL REGULATORY INFORMATION

This product and its constituents listed herein are on the EPA TSCA Inventory. Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to federal, state and/or local reporting requirements. This product and/or its constituents may also be subject to other regulations at the state and/or local level. Consult those regulations applicable to your facility/operation.

CLEAN WATER ACT (OIL SPILLS)

Any spill or release of this product to "navigable waters" (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit of a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802) or, if not practical, the U.S. Coast Guard with follow-up to the National Response Center, as required by U.S. Federal Law. Also contact appropriate state and local regulatory agencies as required.

CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil, refined, and unrefined petroleum products and any indigenous components of such. However, other federal reporting requirements (e.g., SARA Section 304 as well as the Clean Water Act if the spill occurs on navigable waters) may still apply.

SARA SECTION 311/312 - HAZARD CLASSES

ACUTE HEALTH	CHRONIC HEALTH	FIRE	SUDDEN RELEASE OF PRESSURE	REACTIVE
X	X	X	--	--

SARA SECTION 313 - SUPPLIER NOTIFICATION

This product may contain listed chemicals below the de minimis levels which therefore are not subject to the supplier notification requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372. If you may be required to report releases of chemicals listed in 40 CFR 372.28, you may contact Hess Corporate Safety if you require additional information regarding this product.

CANADIAN REGULATORY INFORMATION (WHMIS)

Class B, Division 3 (Combustible Liquid) Class D, Division 2, Subdivision B (Toxic by other means)

CALIFORNIA PROPOSITION 65 LIST OF CHEMICALS

This product contains the following chemicals that are included on the Proposition 65 "List of Chemicals" required by the California Safe Drinking Water and Toxic Enforcement Act of 1986:

INGREDIENT NAME (CAS NUMBER)	Date Listed
Naphthalene	04/19/2002

16. OTHER INFORMATION

NFPA® HAZARD RATING	HEALTH:	0
	FIRE:	2
	REACTIVITY:	0

Refer to NJPA 704 "Identification of the Fire Hazards of Materials" for further information

HMIS® HAZARD RATING	HEALTH:	1*	Slight
	FIRE:	2	Moderate
	PHYSICAL:	0	Negligible
*Chronic			

SUPERSEDES MSDS DATED: 1/13/99



MATERIAL SAFETY DATA SHEET

Jet Fuel JP-8

MSDS No. 4088

ABBREVIATIONS:

AP = Approximately < = Less than > = Greater than
N/A = Not Applicable N/D = Not Determined ppm = parts per million

ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
AIHA	American Industrial Hygiene Association	OPA	Oil Pollution Act of 1990
ANSI	American National Standards Institute (212)642-4900	OSHA	U.S. Occupational Safety & Health Administration
API	American Petroleum Institute (202)682-8000	PEL	Permissible Exposure Limit (OSHA)
CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act	RCRA	Resource Conservation and Recovery Act
DOT	U.S. Department of Transportation [General info: (800)467-4922]	REL	Recommended Exposure Limit (NIOSH)
EPA	U.S. Environmental Protection Agency	SARA	Superfund Amendments and Reauthorization Act of 1986 Title III
HMIS	Hazardous Materials Information System	SCBA	Self-Contained Breathing Apparatus
IARC	International Agency For Research On Cancer	SPCC	Spill Prevention, Control, and Countermeasures
MSHA	Mine Safety and Health Administration	STEL	Short-Term Exposure Limit (generally 15 minutes)
NFPA	National Fire Protection Association (617)770-3000	TLV	Threshold Limit Value (ACGIH)
NIOSH	National Institute of Occupational Safety and Health	TSCA	Toxic Substances Control Act
NOIC	Notice of Intended Change (proposed change to ACGIH TLV)	TWA	Time Weighted Average (8 hr.)
		WEEL	Workplace Environmental Exposure Level (AIHA)
		WHMIS	Canadian Workplace Hazardous Materials Information System

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.



CITGO No. 2 Fuel Oil, All Grades

Material Safety Data Sheet

CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210

MSDS No. AG2FO
Revision Date 12/31/2007

IMPORTANT: This MSDS is prepared in accordance with 29 CFR 1910.1200. Read this MSDS before transporting, handling, storing or disposing of this product and forward this information to employees, customers and users of this product.

Hazard Rankings		
	HMIS	NFPA
Health Hazard	* 2	0
Fire Hazard	2	2
Reactivity	0	0

* = Chronic Health Hazard

Emergency Overview			
Physical State	Liquid.		
Color	Red.	Odor	Characteristic, Kerosene-like.
WARNING!			
Combustible liquid and vapor. - Can cause flash fire.			
Harmful or fatal if swallowed - can enter lungs and cause damage.			
Can cause eye, skin or respiratory tract irritation.			
May be harmful if inhaled or absorbed through the skin.			
Overexposure can cause central nervous system (CNS) depression and/or other target organ effects.			
Possible Cancer Hazard (See Section 3)			
Harmful to aquatic organisms.			

Protective Equipment
Minimum Recommended See Section 8 for Details
  

SECTION 1. PRODUCT IDENTIFICATION

Trade Name	CITGO No. 2 Fuel Oil, All Grades	Technical Contact	(832) 486-5940
Product Number	Various	Medical Emergency	(832) 486-4700
CAS Number	68476-30-2	CHEMTREC Emergency (United States Only)	(800) 424-9300
Product Family	Fuels.		
Synonyms	Heating Oil; Home Heating Oil; Furnace Oil; Burner Fuel; Fuel Oil No. 2; No. 2 Heating Oil; K-2 Fuel Oil; Grade 2 Distillate Fuel; High Sulfur Fuel Oil; C9-C25 Petroleum Hydrocarbons		

SECTION 2. COMPOSITION

This product may be composed, in whole or in part, of any of the following refinery streams:

- Fuel Oil, No. 2 [CAS No.: 68476-30-2]
- Hydrodesulfurized Middle Distillate (petroleum) [CAS No.: 64742-80-9]
- Straight-run middle distillate (petroleum) [CAS No.: 64741-44-2]
- Hydrodesulfurized Light Catalytic Cracked Distillate (Petroleum) [CAS No.: 68333-25-5]
- Kerosene [CAS No.: 8008-20-6]
- Hydrodesulfurized Kerosine (Petroleum) [CAS No.: 64742-81-0]
- Light catalytic cracked distillate (petroleum) [CAS No.: 64741-59-9]

This product contains the following chemical components:

Component Name(s)	CAS Registry No.	Concentration (%)
-------------------	------------------	-------------------

CITGO No. 2 Fuel Oil, All Grades

Nonane, all isomers	Mixture	1 - 10
Trimethylbenzenes, all isomers	25551-13-7	0 - 2
Naphthalene	91-20-3	0 - 2
Cumene	98-82-8	0 - 1
Ethylbenzene	100-41-4	0 - 1

SECTION 3. HAZARDS IDENTIFICATION

Also see Emergency Overview and Hazard Ratings on the top of Page 1 of this MSDS.

Major Route(s) of Entry Skin contact. Inhalation.

Signs and Symptoms of Acute Exposure

Inhalation Breathing high concentrations may be harmful. Mist or vapor can irritate the throat and lungs. Breathing this material may cause central nervous system depression with symptoms including nausea, headache, dizziness, fatigue, drowsiness, or unconsciousness.

Eye Contact This material can cause eye irritation with tearing, redness, or a stinging or burning feeling. Further, it can cause swelling of the eyes with blurred vision. Effects may become more serious with repeated or prolonged contact.

Skin Contact This material can cause skin irritation. Symptoms include redness, itching, and burning of the skin. This material can be absorbed by the skin and produce central nervous system depression (headache, nausea, fatigue and/or other symptoms including unconsciousness). If the skin is damaged, absorption increases. Prolonged and/or repeated contact may cause severe dermatitis and/or more serious skin disorders. Chronic symptoms may include drying, swelling, scaling, blistering, cracking, and/or severe tissue damage.

Ingestion If swallowed, this material may irritate the mouth, throat, and esophagus. It can be absorbed into the blood stream through the stomach and intestinal tract. Symptoms may include a burning sensation of the mouth and esophagus, nausea and vomiting. In addition, it can cause central nervous system effects characterized by dizziness, staggering, drowsiness, delirium and/or loss of consciousness.

Because of the low viscosity, this material can enter the lungs directly by aspiration during swallowing or subsequent vomiting. Aspiration of a small amount of liquid can cause severe lung damage and/or death.

Chronic Health Effects Summary Secondary effects of ingestion and subsequent aspiration into the lungs may cause pneumatocele (lung cavity) formation and chronic lung dysfunction.

This product contains petroleum middle distillates similar to those shown to produce skin tumors on laboratory rodents following repeated application. All tumors appeared during the latter portion of the typical 2-year lifespan of the animals. Certain studies have shown that washing the exposed skin of the test animal with soap and water between treatments greatly reduces the potential tumorigenic effects. These data suggest that good personal hygiene is effective in reducing the risk of this potential adverse health effect.

This material and/or its components have been associated with developmental toxicity, reproductive toxicity, genotoxicity, immunotoxicity, and/or carcinogenicity. Refer to Section 11 of this MSDS for additional health-related information.

Conditions Aggravated by Exposure Disorders of the following organs or organ systems that may be aggravated by significant exposure to this material or its components include: Skin, Respiratory System, Liver, Kidneys, Central Nervous System (CNS)

Target Organs May cause damage to the following organs: kidneys, liver, upper respiratory tract, skin, eyes, central nervous system (CNS).

Carcinogenic Potential

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This material may contain ethylbenzene and naphthalene at concentrations above 0.1%. IARC has identified ethylbenzene and naphthalene as possibly carcinogenic to humans (Group 2B) based on laboratory animal studies. The NTP has determined that naphthalene is *reasonably anticipated to be a human carcinogen* based on sufficient evidence from studies in experimental animals. NTP has determined that exposure to diesel exhaust particulates, a complex mixture of combustion products of diesel fuel, is reasonably anticipated to be a human carcinogen.

OSHA Hazard Classification is indicated by an "X" in the box adjacent to the hazard title. If no "X" is present, the product does not exhibit the hazard as defined in the OSHA Hazard Communication Standard (29 CFR 1910.1200).

OSHA Health Hazard Classification				OSHA Physical Hazard Classification			
Irritant	<input checked="" type="checkbox"/>	Sensitizer	<input type="checkbox"/>	Combustible	<input checked="" type="checkbox"/>	Explosive	<input type="checkbox"/>
Toxic	<input type="checkbox"/>	Highly Toxic	<input type="checkbox"/>	Flammable	<input type="checkbox"/>	Oxidizer	<input type="checkbox"/>
Corrosive	<input type="checkbox"/>	Carcinogenic	<input type="checkbox"/>	Compressed Gas	<input type="checkbox"/>	Organic Peroxide	<input type="checkbox"/>
						Pyrophoric	<input type="checkbox"/>
						Water-reactive	<input type="checkbox"/>
						Unstable	<input type="checkbox"/>

SECTION 4. FIRST AID MEASURES

Take proper precautions to ensure your own health and safety before attempting rescue or providing first aid. For more specific information, refer to Exposure Controls and Personal Protection in Section 8 of this MSDS.

Inhalation	Move victim to fresh air. If victim is not breathing, immediately begin rescue breathing. If breathing is difficult, 100 percent humidified oxygen should be administered by a qualified individual. Seek medical attention immediately. Keep the affected individual warm and at rest.
Eye Contact	Check for and remove contact lenses. Flush eyes with cool, clean, low-pressure water for at least 15 minutes while occasionally lifting and lowering eyelids. Do not use eye ointment unless directed to by a physician. Seek medical attention if excessive tearing, irritation, or pain persists.
Skin Contact	Remove contaminated shoes and clothing. Flush affected area with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. Do not use ointments. If skin surface is not damaged, clean affected area thoroughly with mild soap and water. Seek medical attention if tissue appears damaged or if pain or irritation persists.
Ingestion	Do not induce vomiting. If spontaneous vomiting is about to occur, place victim's head below knees. If victim is drowsy or unconscious, place on the left side with head down. Never give anything by mouth to a person who is not fully conscious. Do not leave victim unattended. Seek medical attention immediately.
Notes to Physician	<p>INHALATION: Inhalation overexposure can produce toxic effects. Monitor for respiratory distress. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Administer supplemental oxygen with assisted ventilation, as required.</p> <p>INGESTION: 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.</p>

SECTION 5. FIRE FIGHTING MEASURES

NFPA Flammability Classification	NFPA Class-II combustible liquid.	
Flash Point	Closed cup: AP 52°C (AP 125°F). (Pensky-Martens.)	
Lower Flammable Limit	AP 0.6 %	Upper Flammable Limit AP 7.5 %
Autoignition Temperature	>254°C (>489°F)	
Hazardous Combustion Products	Carbon dioxide, carbon monoxide, smoke, fumes, unburned hydrocarbons and oxides of sulfur and nitrogen.	
Special Properties	Combustible Liquid! This material releases vapors when heated above ambient temperatures. Vapors can cause a flash fire. Vapors can travel to a source of ignition and flashback. A vapor and air mixture can create an explosion hazard in confined spaces such as sewers. Use only with adequate ventilation. If container is not properly cooled, it can rupture in the heat of a fire.	
Extinguishing Media	SMALL FIRE: Use dry chemicals, carbon dioxide, foam, water fog, or inert gas (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, autoignition or explosion. DO NOT use a solid stream of water directly on the fire as the water may spread the fire to a larger area.	
Protection of Fire Fighters	Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles. Cover pooling liquid with foam. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines. Be aware that burning liquid will float on water. Notify appropriate authorities of potential fire and explosion hazard if liquid enter sewers or waterways.	

SECTION 6. ACCIDENTAL RELEASE MEASURES

Take proper precautions to ensure your own health and safety before attempting spill control or clean-up. For more specific information, refer to the Emergency Overview on Page 1, Exposure Controls and Personal Protection in Section 8 and Disposal Considerations in Section 13 of this MSDS.

Combustible Liquid! Release can result in a fire hazard. Evacuate all non-essential personnel from release area. Establish a regulated zone with site control and security. Eliminate all ignition sources. Stop the leak if it can be done without risk. A vapor-suppressing foam may be used to reduce vapors. Properly bond or ground all equipment used when handling this material. Avoid skin contact. Do not walk through spilled material. Verify that responders are properly trained and wearing appropriate personnel protective equipment. Dike far ahead of a liquid spill. Do not allow released material to enter waterways, sewers, basements, or confined areas. This material will float on water. Absorb or cover with dry earth, sand or other non-combustible material. Use clean, non-sparking tools to collect absorbed material. Place spent sorbent materials, free liquids and other clean-up debris into proper waste containers for appropriate disposal. Certain releases must be reported to the National Response Center (800/424-8802) and state or regulatory authorities. Comply with all laws and regulations.

SECTION 7. HANDLING AND STORAGE

Handling

Combustible Liquid!

A static electrical charge can accumulate when this material is flowing through pipes, nozzles or filters and when it is agitated. A static spark discharge can ignite accumulated vapors particularly during dry weather conditions. Always bond receiving containers to the fill pipe before and during loading. 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 containing gasoline or similar low flash point products).

Fire hazard increases as product temperature approaches its flash point. Keep container closed and drum bungs in place. Remove spillage immediately from walking areas. Do not handle or store near heat, sparks or other potential ignition sources. Do not handle or store with oxidizing agents. Avoid breathing mist or vapor. Never siphon by mouth. Do not taste or swallow. Avoid contact with eyes, skin and clothing. Use gloves constructed of impervious materials and protective clothing if direct contact is anticipated. Provide ventilation to maintain exposure potential below applicable exposure levels. Avoid water contamination. Wash thoroughly after handling. Prevent contact with food or tobacco products.

When performing repairs and maintenance on contaminated equipment, keep unnecessary persons from hazard area. Eliminate heat, flame and other potential ignition sources. Drain and purge equipment, as necessary, to remove material residues. Remove contaminated clothing. Wash exposed skin thoroughly with soap and water after handling.

Do not use this material as fuel for equipment, such as portable heaters, in enclosed areas. Hazardous combustion products can cause death.

Protect the environment from releases of this material. Prevent discharges to surface waters and groundwater. Maintain handling, transfer and storage equipment in proper working order.

Misuse of empty containers can be dangerous. Empty containers may contain material residues which can ignite with explosive force. **Cutting or welding of empty containers can cause fire, explosion, or release of toxic fumes from residues** Do not pressurize or expose empty containers to open flame, sparks, or heat. Keep container closed and drum bungs in place. All label warnings and precautions must be observed. Return empty drums to a qualified reconditioner. Consult appropriate federal, state and local authorities before reusing, reconditioning, reclaiming, recycling, or disposing of empty containers and/or waste residues of this material.

Storage

Store in a cool, dry, well-ventilated place. Keep containers tightly closed. Do not store this product near heat, flame or other potential ignition sources. Do not store with oxidizers. Do not store this product in unlabeled containers. Do not puncture or incinerate containers. Ground all equipment containing this material. All electrical equipment in areas where this material is stored or handled must meet all applicable requirements of the NFPA's National Electrical Code (NEC). Store and transport in accordance with all applicable laws.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls

Provide ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits indicated below. All electrical equipment should comply with the National Electric Code. An emergency eye wash station and safety shower should be located near the work-station.

Personal Protective Equipment

Personal protective equipment should be selected based upon the conditions under which this material is used. A hazard assessment of the work area for PPE requirements should be conducted by a qualified professional pursuant to OSHA regulations. The following pictograms represent the minimum requirements for personal protective equipment. For certain operations, additional PPE may be required.

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- Eye Protection** Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Chemical goggles should be worn during transfer operations or when there is a likelihood of misting, splashing, or spraying of this material. A suitable emergency eye wash water and safety shower should be located near the work station.
- Hand Protection** Avoid skin contact. Use heavy duty gloves constructed of chemical resistant materials such as Viton® or heavy nitrile rubber. Wash hands with plenty of mild soap and water before eating, drinking, smoking, use of toilet facilities or leaving work. DO NOT use gasoline, kerosene, solvents or harsh abrasives as skin cleaners.
- Body Protection** Avoid skin contact. Wear long-sleeved fire-retardant garments (e.g., Nomex®) while working with flammable and combustible liquids. Additional chemical-resistant protective gear may be required if splashing or spraying conditions exist. This may include an apron, boots and additional facial protection. If product comes in contact with clothing, immediately remove soaked clothing and shower. Promptly remove and discard contaminated leather goods.
- Respiratory Protection** Airborne concentration will determine the level of respiratory protection required. Respiratory protection is normally not required unless the product is heated or misted. For known or anticipated vapor or mist concentrations above the occupational exposure guidelines (see below), use a NIOSH-approved organic vapor respirator equipped with a dust/mist prefilter if adequate protection is provided. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).
- General Comments** Warning! Use of this material in spaces without adequate ventilation may result in generation of hazardous levels of combustion products and/or inadequate oxygen levels for breathing. Odor is an inadequate warning for hazardous conditions.

Occupational Exposure Guidelines

Substance	Applicable Workplace Exposure Levels
Nonane, all isomers	ACGIH (United States). TWA: 200 ppm 8 hour(s).
Ethylmethylbenzene, all isomers	Not available.
Diesel exhaust particulate	Not available.
Trimethylbenzenes, all isomers	ACGIH (United States). TWA: 25 ppm 8 hour(s).
Naphthalene	ACGIH (United States). Skin TWA: 10 ppm 8 hour(s). STEL: 15 ppm 15 minute(s). OSHA (United States). TWA: 10 ppm 8 hour(s).
1, 2, 4 Trimethylbenzene	Not available.
Cumene	ACGIH (United States). TWA: 50 ppm 8 hour(s). OSHA (United States). Skin TWA: 50 ppm 8 hour(s).
Ethylbenzene	ACGIH (United States). TWA: 100 ppm 8 hour(s). STEL: 125 ppm 15 minute(s). OSHA (United States). TWA: 100 ppm 8 hour(s).
Xylene, all isomers	ACGIH (United States). TWA: 100 ppm 8 hour(s). STEL: 150 ppm 15 minute(s). OSHA (United States). TWA: 100 ppm 8 hour(s).
Sulfur	ACGIH (United States, 1996).

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	TWA: 2 ppm STEL: 5 ppm OSHA (United States). TWA: 5 ppm NIOSH TWA: 2 ppm STEL: 5 ppm ACGIH (United States). Skin TWA: 0.5 ppm 8 hour(s). STEL: 2.5 ppm 15 minute(s). OSHA (United States). Skin Notes: See Table Z-2 for exclusions in 20 CFR 1910.1028 to the PEL. TWA: 1 ppm 8 hour(s). STEL: 5 ppm 15 minute(s).
Benzene	ACGIH (United States). Skin TWA: 20ppm 8 hour(s). OSHA (United States). TWA: 200 ppm 8 hour(s). CEIL: 300 ppm PEAK: 500 ppm
Toluene	ACGIH TLV (United States). TWA: 100 ppm 8 hour(s). NIOSH REL (United States). TWA: 100 mg/m ³ 8 hour(s).
Middle distillates, petroleum	Not available.
Kerosene	Not available.
Hydrodesulfurized Kerosine (Petroleum)	Not available.
Hydrodesulfurized middle distillate (petroleum)	Not available.
Straight-run middle distillate (petroleum)	ACGIH (United States, 1998). Skin TWA: 100 mg/m ³
Fuel Oil, No. 2	Not available.
Distillates, petroleum, hydrodesulfurized light catalytic cracked	Not available.
Middle distillates, petroleum	Not available.
Distillates, petroleum, light catalytic cracked	Not available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES (TYPICAL)

Physical State	Liquid.	Color	Red.	Odor	Characteristic, Kerosene-like.
Specific Gravity	0.84 (AP Water = 1)	pH	Not Applicable.	Vapor Density	AP 5 (Air = 1)
Boiling Range	AP 154°C (AP 309°F) to AP 371° C (AP 700° F)	Melting/Freezing Point			Not available.
Vapor Pressure	<0.3 kPa (<2 mm Hg) (at 20°C)	Volatility			AP 840 g/l VOC (W%) (ASTM D2369) =
Solubility in Water	Very slightly soluble in cold water.	Viscosity (cSt @ 40°C)			AP 3
Flash Point	Closed cup: AP 52°C (AP 125°F). (Pensky-Martens.)				
Additional Properties	Density = AP 7.0 lbs/gal.; Viscosity (ASTM D2161) = 30 - 40 SUS @ 100° F				

SECTION 10. STABILITY AND REACTIVITY

Chemical Stability	Stable.	Hazardous Polymerization	Not expected to occur.
Conditions to Avoid	Keep away from heat, flame and other potential ignition sources. Keep away from strong oxidizing conditions and agents.		
Materials Incompatibility	Strong acids, alkalis, and oxidizers such as liquid chlorine, other halogens, hydrogen peroxide and oxygen.		
Hazardous Decomposition Products	No additional hazardous decomposition products were identified other than the combustion products identified in Section 5 of this MSDS.		

SECTION 11. TOXICOLOGICAL INFORMATION

For other health-related information, refer to the Emergency Overview on Page 1 and the Hazards Identification in Section 3 of this MSDS.

Toxicity Data

Diesel exhaust particulate

Lung tumor and lymphomas were identified in rats and mice exposed to unfiltered diesel fuel exhaust in chronic inhalation studies. Further, epidemiological studies have identified increase incidences of lung cancer in US railroad workers and bladder cancer in bus and truck drivers possibly associated with exposure to diesel engine exhaust. NTP has determined that exposure to diesel exhaust particulates, a complex mixture of combustion products of diesel fuel, is reasonably anticipated to be a human carcinogen. In addition, NIOSH has identified complete diesel exhaust as a potential carcinogen.

Trimethylbenzenes, all isomers

Studies of Workers:

Levels of total hydrocarbon vapors present in the breathing atmosphere of these workers ranged from 10 to 60 ppm. The TCLo for humans is 10 ppm, with somnolence and respiratory tract irritation noted.

Studies in Laboratory Animals:

In inhalation studies with rats, four of ten animals died after exposures of 2400 ppm for 24 hours. An oral dose of 5 mL/kg resulted in death in one of ten rats. Minimum lethal intraperitoneal doses were 1.5 to 2.0 mL/kg in rats and 1.13 to 12 mL/kg in guinea pigs. Mesitylene (1, 3, 5 Trimethylbenzene) inhalation at concentrations of 1.5, 3.0, and 6.0 mg/L for six hours was associated with dose-related changes in white blood cell counts in rats. No significant effects on the complete blood count were noted with six hours per day exposure for five weeks, but elevations of alkaline phosphatase and SGOT were observed. Central nervous system depression and ataxia were noted in rats exposed to 5,100 to 9,180 ppm for two hours.

Naphthalene

Studies in Humans Overexposed to Naphthalene:

Severe jaundice, neurotoxicity (kernicterus) and fatalities have been reported in young children and infants as a result of hemolytic anemia from over-exposure to naphthalene. Persons with Glucose 6-phosphate dehydrogenase (G6PD) deficiency are more prone to the hemolytic effects of naphthalene. Adverse effects on the kidney have also been reported from over-exposure to naphthalene but these effects are believed to be a consequence of hemolytic anemia, and not a direct effect.

Studies in Laboratory Animals:

Hemolytic anemia has been observed in laboratory animals exposed to naphthalene. Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract. Cataracts and other adverse effects on the eye have been observed in laboratory animals exposed to high levels of naphthalene. Findings from a large number of bacterial

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and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) *in vitro*.

Ethylbenzene

Effects from Acute Exposure:

ORAL (LD50), Acute: 3,500 mg/kg [Rat].

DERMAL (LD50), Acute: 17,800 uL/kg [Rabbit].

INTRAPERITONEAL (LD50), Acute: 2,624 mg/kg [Rat].

Effects from Prolonged or Repeated Exposure:

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). Studies in laboratory animals indicate some evidence of post-implantation deaths following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time. 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. Studies in laboratory animals indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland.

Middle distillates, petroleum

The products represented by this MSDS contain a mixture of petroleum hydrocarbons commonly referred to as "middle distillates." Laboratory data have associated some middle distillates with skin cancer when the material is applied repeatedly over the lifetime of the test animal. Middle distillates similar to the products represented by this MSDS have been associated with liver and kidney damage in subchronic (90-day) inhalation studies of male rats. The relevance of these findings to human health is unclear.

Hydrodesulfurized middle distillate (petroleum)

INHALATION LC50, Acute: 4.6 to 7.64 mg/L for four hours [Rat] - Dyspnea, nasal discharge, alopecia and excessive salivation.

ORAL LD50, Acute >500 g/kg [Rat Screening Level] Diarrhea, hyperactivity, ptosis and somnolence.

DERMAL LD50, Acute: >2,000 mg/kg [Rabbit Screening Level]

BUEHLER DERMAL, Acute: Non-sensitizing [Guinea Pig].

14-Day DERMAL, Subchronic: 0.05 ml/kg applied 3 times per week [Mouse, Human skin grafted to Athymic nude Mice] - Irritation and epidermal hyperplasia.

62-Week DERMAL, Chronic: 0.05 ml/kg applied 3 times per week [Mouse] - Extreme skin irritation; moderate increase in contact-point skin tumors.

Straight-run middle distillate (petroleum)

INHALATION, LC50, Acute: 1.72 mg/L for four hours [Male Rat].

INHALATION, LC50, Acute: 1.82 mg/L for 4 hours [Female Rat].

ORAL, LD50, Acute: >5,000 mg/kg [Rat screening level] - Diarrhea, hypoactivity and somnolence.

DERMAL, LD50, Acute: >2,000 mg/kg [Rabbit screen].

BUEHLER DERMAL, Acute: Non-sensitizing [Guinea Pig].

28-Day DERMAL, Subchronic: Moderate irritation at 200 to 2,000 mg/kg with no other treatment-related clinical effects observed.

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ORAL LD50, Acute: 12,000 to 17,500 mg/kg or 9.0 ml/kg [Rat]

DERMAL LD50, Acute: >5.0 ml/kg [Rabbit screen level].

DRAIZE EYE, Acute: Mild irritant [Rabbit]

DRAIZE DERMAL, Acute: Severe skin irritant [Rabbit].

BUEHLER DERMAL, Acute: Non-sensitizing [Guinea Pig]

14-Day DERMAL, Sub-chronic: 0% and 67% mortality at 4.0 and 8.0 ml/kg [Rabbit]

62-Week DERMAL, Chronic: 0.05 ml/kg 3x/week [Mouse] - Extreme skin irritation.

97-Week DERMAL, Chronic: 243 g/kg applied 3x/week [Mouse] - Extreme skin irritation.

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Moderate increase in contact-point skin tumors.

MUTAGENICITY:

Modified Ames Assay: Negative. [Salmonella typhimurium]

In-vitro SCE Ovary Assay: Negative. [Chinese Hamster]

In-vitro Lymphoma Assay: Negative. [Mouse]

In-vivo Dominant Lethal Assay: Negative. [Mouse]

In-vivo Bone Marrow Assay: Clastogenic at 2.0 ml/kg and 6.0 ml/kg [Rat]

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Freshwater Toxicity:

Concentration: 2400 ppm Exposure: 48 hrs. Species: Juven. Am. Shad (*Squalius cephalus*) Effect: TLM

Concentration: >127 ppm Exposure: 96 hrs. Species: Bluegill (*Lepomis macrochirus*) Effect: LC50

Saltwater Toxicity

Concentration: 10 ppm Exposure: 96 hrs. Species: Menhaden (*Brevoortia patronus*) Effect: LC50

Concentration: 10 ppm Exposure: 96 hrs. Species: Grass Shrimp Effect: LC50

Environmental Fate

If spilled, this material will normally evaporate. Hydrocarbon components may contribute to atmospheric smog. If released to the subsoils, petroleum middle distillate fuels will strongly adsorb to soils. Groundwater should be considered as an exposure pathway. Liquid and vapor can migrate through the subsurface and preferential pathways (such as utility line backfill) to downgradient receptors.

Middle distillates are potentially toxic to freshwater and saltwater ecosystems. Distillate fuels will normally float on water. In stagnant or slow-flowing waterways, a hydrocarbon layer can cover a large surface area. As a result, this oil layer can limit or eliminate natural atmospheric oxygen transport into the water. With time, if not removed, oxygen depletion in the waterway can cause a fish kill or create an anaerobic environment. Also, this coating action can also kill plankton, algae, and water birds.

SECTION 13. DISPOSAL CONSIDERATIONS

Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly, it is the responsibility of the user to determine the proper storage, transportation, treatment and/or disposal methodologies for spent materials and residues at the time of disposition.

Maximize material recovery for reuse or recycling. Recovered non-usable material may be regulated by US EPA as a hazardous waste due to its ignitability (D001) and/or its toxic (D018) characteristics. In addition, conditions of use may cause this material to become a hazardous waste, as defined by Federal or State regulations. It is the responsibility of the user to determine if the material is a hazardous waste at the time of disposal. Transportation, treatment, storage, and disposal of waste material must be conducted in accordance with RCRA regulations (see 40 CFR Parts 260 through 271). Contact your regional US EPA office for guidance concerning case specific disposal issues. State and/or local regulations might be even more restrictive.

SECTION 14. TRANSPORT INFORMATION

The shipping description below may not represent requirements for all modes of transportation, shipping methods or locations outside of the United States.

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US DOT Status	A U.S. Department of Transportation (DOT) regulated material. The following U. S. DOT hazardous materials shipping description applies to bulk packaged material that is transported by highway or rail. Alternate shipping descriptions may be required for product transported by marine vessel, air or other method and for non-bulk packaged material.		
Proper Shipping Name	Fuel Oil No. 2, Combustible liquid, NA1993, PG III		
Hazard Class	DOT Class: Combustible liquid with a flash point greater than 37.8°C (100°F).	Packing Group	III
		UN/NA Number	NA 1993
Reportable Quantity	A Reportable Quantity (RQ) has not been established for this material.		
Placard(s)		Emergency Response Guide No.	128
		MARPOL III Status	Not a DOT "Marine Pollutant" per 49 CFR 171.8.

SECTION 15. REGULATORY INFORMATION

TSCA Inventory	This product and/or its components are listed on the Toxic Substances Control Act (TSCA) inventory.
SARA 302/304 Emergency Planning and Notification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to Subparts 302 and 304 to submit emergency planning and notification information based on Threshold Planning Quantities (TPQs) and Reportable Quantities (RQs) for "Extremely Hazardous Substances" listed in 40 CFR 302.4 and 40 CFR 355. No components were identified.
SARA 311/312 Hazard Identification	The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III requires facilities subject to this subpart to submit aggregate information on chemicals by "Hazard Category" as defined in 40 CFR 370.2. This material would be classified under the following hazard categories: fire, Acute (Immediate) Health Hazard, Chronic (Delayed) Health Hazard
SARA 313 Toxic Chemical Notification and Release Reporting	This product contains the following components in concentrations above <i>de minimis</i> levels that are listed as toxic chemicals in 40 CFR Part 372 pursuant to the requirements of Section 313 of SARA: Naphthalene [CAS No.: 91-20-3] Concentration: 2% Ethylbenzene [CAS No.: 100-41-4] Concentration: 0.9%
CERCLA	The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires notification of the National Response Center concerning release of quantities of "hazardous substances" equal to or greater than the reportable quantities (RQ's) listed in 40 CFR 302.4. As defined by CERCLA, the term "hazardous substance" does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically designated in 40 CFR 302.4. Chemical substances present in this product or refinery stream that may be subject to this statute are: Naphthalene [CAS No.: 91-20-3] RQ = 100 lbs. (45.36 kg) Concentration: 2% Cumene [CAS No.: 98-82-8] RQ = 5000 lbs. (2268 kg) Concentration: 0.9% Ethylbenzene [CAS No.: 100-41-4] RQ = 1000 lbs. (453.6 kg) Concentration: 0.9% Xylene, all isomers [CAS No.: 1330-20-7] RQ = 100 lbs. (45.36 kg) Concentration: 0.9% Benzene [CAS No.: 71-43-2] RQ = 10 lbs. (4.536 kg) Concentration: 0.045%
Clean Water Act (CWA)	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.

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California Proposition 65

This material may contain the following components which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Diesel exhaust particulate

Naphthalene: 1.98%

Ethylbenzene: 0.9%

Benzene: 0.045%

Toluene: 0.045%

New Jersey Right-to-Know Label

Fuel Oil

Additional Remarks

Federal Hazardous Substances Act, related statutes, and Consumer Product Safety Commission regulations, as defined by 16 CFR 1500.14(b)(3) and 1500.83(a)(13): This product contains "Petroleum Distillates" which may require special labeling if distributed in a manner intended or packaged in a form suitable for use in the household or by children. Precautionary label dialogue should display the following: **DANGER: Contains Petroleum Distillates! Harmful or fatal if swallowed! Call Physician Immediately. KEEP OUT OF REACH OF CHILDREN!**

SECTION 16. OTHER INFORMATION

Refer to the top of Page 1 for the HMIS and NFPA Hazard Ratings for this product.

REVISION INFORMATION

Version Number 3.1
Revision Date 12/31/2007

ABBREVIATIONS

AP: Approximately EQ: Equal >: Greater Than <: Less Than NA: Not Applicable ND: No Data NE: Not Established
ACGIH: American Conference of Governmental Industrial Hygienists AIHA: American Industrial Hygiene Association
IARC: International Agency for Research on Cancer NTP: National Toxicology Program
NIOSH: National Institute of Occupational Safety and Health OSHA: Occupational Safety and Health Administration
NPCA: National Paint and Coating Manufacturers Association HMIS: Hazardous Materials Information System
NFPA: National Fire Protection Association EPA: US Environmental Protection Agency

DISCLAIMER OF LIABILITY

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***** END OF MSDS *****



MATERIAL SAFETY DATA SHEET

Conventional Gasoline

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Conventional Gasoline
Synonyms: Gasoline, Unleaded, Conventional (All Grades);
Gasoline, Low Sulfur Unleaded (All Grades)
Intended Use: Fuel

Responsible Party: ConocoPhillips
600 N. Dairy Ashford
Houston, Texas 77079-1175

MSDS Information: 800-762-0942
MSDS@conocophillips.com

Customer Service: 800-527-5476
Technical Information: 800-527-5476

Emergency Overview

24 Hour Emergency Telephone Numbers:

Spill, Leak, Fire or Accident Call CHEMTREC:
North America: (800) 424-9300
Others: (703) 527-3887 (collect)

California Poison Control System: (800) 356-3219

Health Hazards/Precautionary Measures: Cancer hazard. Contains benzene. Causes skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with ventilation adequate to keep exposure below recommended limits, if any. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Wear appropriate personal protective equipment. Do not taste or swallow.

Physical Hazards/Precautionary Measures: Extremely flammable liquid and vapor. Vapor can cause flash fire. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Clear to amber
Physical Form: Liquid
Odor: Gasoline

NFPA 704 Hazard Class:

Health: 1 (Slight)
Flammability: 3 (High)
Instability: 0 (Least)

2. COMPOSITION / INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS					
Component / CAS No:	Percent (%)	ACGIH:	OSHA:	NIOSH:	Other:
Gasoline NONE	100	300 ppm TWA 890 mg/m ³ TWA 500 ppm STEL 1480 mg/m ³ STEL	NE	NE	---
Xylenes 1330-20-7	0 - 21	100 ppm TWA 434 mg/m ³ TWA 150 ppm STEL 651 mg/m ³ STEL	100 ppm TWA 435 mg/m ³ TWA	900 ppm IDLH	---
Toluene 108-88-3	0 - 15	50 ppm TWA SKIN	200 ppm TWA 300 ppm CEIL 500 ppm 10 min. peak	500 ppm IDLH	---
Ethyl Benzene 100-41-4	0 - 5	100 ppm TWA 434 mg/m ³ TWA 125 ppm STEL 543 mg/m ³ STEL	100 ppm TWA 435 mg/m ³ TWA	800 ppm IDLH	---
Benzene 71-43-2	0 - 5	0.5 ppm TWA-SKIN 2.5 ppm STEL- SKIN	1 ppm TWA ppm STEL	500 ppm IDLH	---
1,2,4-Trimethyl Benzene 95-63-6	0 - 5	25 ppm TWA 123 mg/m ³ TWA	NE	NE	Mixed Isomers
n-Hexane 110-54-3	0 - 4	50 ppm TWA SKIN	500 ppm TWA	1100 ppm IDLH	---
Cyclohexane 110-82-7	0 - 2	100 ppm TWA	300 ppm TWA 1050 mg/m ³ TWA	1300 ppm IDLH	---

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

1%=10,000 PPM.

NE=Not Established

Contains benzene. If exposure concentrations exceed the 0.5 ppm action level, OSHA requirements for personal protective equipment, exposure monitoring, and training may apply (29CFR1910.1028). Also see Section 4.

3. HAZARDS IDENTIFICATION

Potential Health Effects

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Skin irritant. Contact may cause redness, itching, burning, and skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not acutely toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): Low to moderate degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD - This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the respiratory tract, irritation of the digestive tract, nausea, vomiting, flushing, blurred vision, transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue), tremors, respiratory failure, unconsciousness, convulsions, death.

Cancer: This material is a possible cancer hazard (see Sections 11 and 15).

Target Organs: Inadequate evidence available for this material. See Section 11 for target-organ toxicity information of individual components, if any.

Developmental: No harm to the fetus was observed in laboratory animal studies.

Other Comments: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as Solvent or Painters' Syndrome). Intentional misuse by deliberately concentrating and inhaling this material may be harmful or fatal.

Pre-Existing Medical Conditions: Exposure to high concentrations of this material may increase the sensitivity of the heart to certain drugs. Persons with pre-existing heart disorders may be more susceptible to this effect (see Section 4 - Note to Physicians).

Conditions aggravated by exposure may include respiratory (asthma-like) disorders, skin disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Remove contaminated shoes and clothing, and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek medical attention.

Inhalation (Breathing): If respiratory symptoms or other symptoms of exposure develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek immediate medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard: Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

Notes to Physician: Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to high concentrations of hydrocarbon solvents (e.g., in enclosed spaces or with deliberate abuse). The use of other drugs with less arrhythmogenic potential should be considered. If sympathomimetic drugs are administered, observe for the development of cardiac arrhythmias.

Federal regulations (29 CFR 1910.1028) specify medical surveillance programs for certain exposures to benzene above the action level or PEL (specified in Section (i)(1)(i) of the Standard). In addition, employees exposed in an emergency situation shall, as described in Section (i)(4)(i), provide a urine sample at the end of the shift for measurement of urine phenol.

5. FIRE-FIGHTING MEASURES

Flammable Properties:

Flash Point:	-49°F / -45°C
Test Method:	Test Method Unknown
OSHA Flammability Class:	Flammable Liquid
LEL%:	1.4
UEL%:	7.6
Autoignition Temperature:	833°F / 444°C

Unusual Fire & Explosion Hazards: This material is extremely flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Vapors are heavier than air and can accumulate in low areas.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Extremely flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof electrical equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate absorbent material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharge. The use of explosion-proof electrical equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Wash thoroughly after handling. Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

"Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSI Z49.1, and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area `No Smoking or Open Flame.` Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

Portable Containers: Static electricity may ignite gasoline vapors when filling portable containers. To avoid static buildup do not use a nozzle lock open device. Use only approved containers for the storage of gasoline. Place the container on the ground before filling. Keep the nozzle in contact with the container during filling. Do not fill any portable container in or on a vehicle or marine craft.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additional engineering controls may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: The use of respiratory protection is advised when concentrations are expected to exceed the established exposure limits (see Section 2). Depending on the airborne concentration, use a respirator with appropriate cartridges (NIOSH certified) or supplied-air equipment.

If benzene values equal or exceed applicable exposure limits the use of respiratory protection should comply with the requirements in OSHA 29 CFR 1910.1028-Benzene.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation, and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eye/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed.

Suggestions for the use of specific protective materials are based on readily available published data. Users should check with specific manufacturers to confirm the performance of their products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Appearance:	Clear to amber
Physical Form:	Liquid
Odor:	Gasoline
Odor Threshold:	No data
pH:	Not applicable
Vapor Pressure (mm Hg):	7-25 psi @ 100°F (38°C), 350-750 mm Hg
Vapor Density (air=1):	No data
Boiling Point:	80-440°F / 26-227°C
Melting/Freezing Point:	No data
Solubility in Water:	Negligible
Partition Coefficient (n-octanol/water) (Kow):	No data
Specific Gravity:	0.72 - 0.75 @ 60°F
Bulk Density:	6.17 lbs/gal
Percent Volatile:	100%
Evaporation Rate (nBuAc=1):	>1
Flash Point:	-49°F / -45°C
Test Method:	Test Method Unknown
LEL%:	1.4
UEL%:	7.6
Autoignition Temperature:	833°F / 444°C

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Extremely flammable liquid and vapor. Vapor can cause flash fire.

Conditions to Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Contact with strong oxidizing agents such as acids, chlorine, dichromates, or permanganates can cause fire or explosion.

Hazardous Decomposition Products: The use of hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. See Section 11 for additional information on hazards of engine exhaust.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Chronic Data:

Gasoline - NONE

Carcinogenicity: Two year inhalation studies of wholly vaporized unleaded gasoline produced increased incidences of kidney tumors in male rats and liver tumors in female mice. Follow-up studies suggest that occurrence of the kidney tumors may be linked to alpha-2-u-globulin nephropathy, and most likely unique to the male rat. Epidemiology data collected from a study of more than 18,000 petroleum marketing and distribution workers showed no increased risk of leukemia, multiple myeloma, or kidney cancer from gasoline exposure. Unleaded gasoline has been identified as a possible carcinogen by IARC. Because solvent extracts of gasoline exhaust particulates caused skin cancer in laboratory animals, IARC has categorized gasoline engine exhaust as a possible human cancer hazard.

Target Organs: A two year inhalation study of wholly vaporized unleaded gasoline produced nephropathy in male rats, characterized by the accumulation of alpha-2-u-globulin in epithelial cells of the proximal tubules, and necrosis and hyperplasia of surrounding cells. Follow-up studies suggest that these changes are unique to the male rat. Although prolonged exposure to n-hexane, a component of gasoline, has resulted in adverse male reproductive effects in experimental animal studies, no adverse male reproductive effects were found in studies conducted with gasoline.

Developmental: No evidence of developmental toxicity was found in pregnant laboratory animals (rats and mice) exposed to up to 9,000 ppm vapor of unleaded gasoline via inhalation.

Xylenes - 1330-20-7

Target Organs: Rats exposed to 800, 1000 or 1200 ppm 14 hours daily for 6 weeks demonstrated high frequency hearing loss. Another study in rats exposed to 1800 ppm 8 hours daily for 5 days demonstrated middle frequency hearing loss.

Developmental: Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions.

Toluene - 108-88-3

Target Organs: Epidemiology studies suggest that chronic occupational overexposure to toluene may damage color vision. Subchronic and chronic inhalation studies with toluene produced kidney and liver damage, hearing loss and central nervous system (brain) damage in laboratory animals. Intentional misuse by deliberate inhalation of high concentrations of toluene has been shown to cause liver, kidney, and central nervous system damage, including hearing loss and visual disturbances.

Developmental: Exposure to toluene during pregnancy has demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased fetal body weight and increased skeletal variations in both inhalation and oral studies.

Ethyl Benzene - 100-41-4

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC. Ethyl benzene has not been listed as a carcinogen by NTP, or OSHA.

Target Organs: In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilic foci, hypertrophy, necrosis), thyroid (hyperplasia) and pituitary (hyperplasia).

Benzene - 71-43-2

Carcinogenicity: Benzene is known to cause cancer of the blood-forming organs in humans, including acute myelogenous leukemia. It has been identified as a human carcinogen by NTP, IARC and OSHA.

Target Organs: Prolonged or repeated exposures to benzene vapors can cause damage to the blood and blood forming organs, including disorders like leukopenia, thrombocytopenia, and aplastic anemia.

Developmental: Exposure to benzene during pregnancy demonstrated limited evidence of developmental toxicity in laboratory animals. The effects seen include decreased body weight and increased skeletal variations in rodents. Alterations in hematopoiesis have been observed in the fetuses and offspring of pregnant mice.

Mutagenic Effects: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells, and DNA damage in mammalian cells in vitro.

n-Hexane - 110-54-3

Target Organs: Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone. Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) has resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

Acute Data:

Gasoline - CAS: NONE

Dermal LD50 = >5 ml/kg (Rabbit)
LC50 = > 4500 ppm (Rat)
Oral LD50 = 18.75 ml/kg. (Rat)

Xylenes - CAS: 1330-20-7

Dermal LD50 = >3.16 ml/kg (Rabbit)
LC50 = 5000 ppm/4 hr. (Rat)
Oral LD50 = 4300 mg/kg (Rat)

Toluene - CAS: 108-88-3

Dermal LD50 = 14 g/kg (Rabbit)
LC50 = 8,000 ppm; 49 g/m³ (4-hr., Rat)
Oral LD50 = 2.5 - 7.9 g/kg (Rat)

Ethyl Benzene - CAS: 100-41-4

Dermal LD50 = 17,800 mg/kg (Rabbit)
LC50 = 4000 ppm/4 hr.; 13367 ppm (Rat)
Oral LD50 = 3500 mg/kg (Rat)

Benzene - CAS: 71-43-2*Dermal LD50* = > 9400 mg/kg (Rabbit)*LC50* = 10000 ppm/7hr. (Rat)*Oral LD50* = 930 mg/kg (Rat)**1,2,4-Trimethyl Benzene - CAS: 95-63-6***Dermal LD50* = No data available*LC50* = 18 gm/m³/4hr (Rat)*Oral LD50* = 3-6 g/kg (Rat)**n-Hexane - CAS: 110-54-3***Dermal LD50* = >2,000 mg/kg (Rabbit)*LC50* = >3,367 ppm (4-hr., Rat)*Oral LD50* = 25,000 g/kg (Rat): 28.7 g/kg(Rat)**Cyclohexane - CAS: 110-82-7***Dermal LD50* = >180.2 g/kg (Rabbit)*LC50* = 18,500 ppm (Rabbit)*Oral LD50* = >12.7 g/kg (Rat)

12. ECOLOGICAL INFORMATION

The individual hydrocarbon components of this material are differentially soluble in water with aromatic hydrocarbons tending to be more water soluble than aliphatic hydrocarbons. If spilled, the more volatile components will evaporate rapidly. Factors such as local environmental conditions (temperature, wind, soil type, mixing or wave action in water, etc), photo-oxidation, biodegradation and adsorption onto suspended sediments, contribute to the weathering of spilled material. Because of their differential solubility, the occurrence of hydrocarbons in groundwater will be at different proportions than the parent material.

The potential for bioaccumulation and/or long term persistence of these materials in the environment is low to non-existent. In laboratory soil column experiments, the half-time of unleaded gasoline was reported as 1.2 to 2.7 days in sand, loam or clay soils. Microorganisms present in sediments and in the water are capable of degrading gasoline and naphtha containing hydrocarbons. Simpler hydrocarbons are more readily degraded than complex molecules. Adaptation of bacteria in gasoline-contaminated groundwater to the soluble constituents has been reported.

In general, naphtha streams exhibit some short-term toxicity to freshwater and marine organisms, especially under closed vessel or flow-through exposure conditions in the laboratory. The components most likely causing toxicity are also highly volatile and can be readily biodegraded by microorganisms.

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, is not a RCRA "listed" hazardous waste. However, it should be fully characterized for ignitability (D001) and benzene (D018) prior to disposal (40 CFR 261). Use which results in chemical or physical change or contamination may subject it to regulation as a hazardous waste. Along with properly characterizing all waste materials, consult state and local regulations regarding the proper disposal of this material.

Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

14. TRANSPORTATION INFORMATION

DOT

Shipping Description: Gasoline, 3 UN1203, II**Bulk Package/Placard Marking:** Flammable/1203**Non-Bulk Package Marking:** Gasoline, UN1203**Non-Bulk Package Labeling:** Flammable**Packaging - References (Exceptions, Non-Bulk, Bulk):** 49 CFR 173.150, 173.202, 173.242**Hazardous Substance:** None

Emergency Response Guide: 128

IMDG

Shipping Description: UN1203, Gasoline, 3, II (<-45°C)
Non-Bulk Package Marking: Gasoline, UN 1203
Labels: Flammable
Placards/Marking (Bulk): Flammable/1203
Packaging - Non-Bulk: P001
EMS: F-E, S-E

ICAO/IATA

UN/ID #: UN1203
Proper Shipping Name: Gasoline
Hazard Class/Division: 3
Packing Group: II
Subsidiary risk: None
Non-Bulk Package Marking: Gasoline, UN1203
Labels: Flammable
ERG Code: 3H

	LTD. QTY.	Passenger Aircraft	Cargo Aircraft Only
Packaging Instruction #:	Y305	305	307
Max. Net Qty. Per Package:	1 L	5 L	60 L

15. REGULATORY INFORMATION

U.S. Regulations:

EPA SARA 311/312 (Title III Hazard Categories)

Acute Health: Yes
Chronic Health: Yes
Fire Hazard: Yes
Pressure Hazard: No
Reactive Hazard: No

SARA - Section 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Xylenes.....1330-20-7.....0 - 21%
Toluene.....108-88-3.....0 - 15 %
Ethyl Benzene.....100-41-4.....0 - 5%
Benzene.....71-43-2.....0 - 5%
1,2,4-Trimethyl Benzene.....95-63-6.....0 - 5%
n-Hexane.....110-54-3.....0 - 4%
Cyclohexane.....110-82-7.....0 - 2%

EPA (CERCLA) Reportable Quantity (in pounds):

EPA's Petroleum Exclusion applies to this material - (CERCLA 101(14)).

CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs (in pounds):

This material contains the following chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372:

-- None Known --

California Proposition 65:

Warning: This material contains the following chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Benzene -- Cancer, Developmental and Reproductive Toxicant
Toluene -- Developmental Toxicant
Unleaded Gasoline (wholly vaporized) -- Cancer

Carcinogen Identification:

Unleaded gasoline has been identified as a carcinogen by IARC. For carcinogenicity information on individual components, see Section 11.

TSCA:

All components are listed on the TSCA inventory.

Canadian Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Domestic Substances List: Listed

WHMIS Hazard Class:

B2 - Flammable Liquids

D2A - Materials Causing Other Toxic Effects - Very Toxic Material

D2B - Materials Causing Other Toxic Effects - Toxic Material

16. OTHER INFORMATION

Issue Date:	25-Oct-2005
Previous Issue Date:	1-Aug-2005
Revised Sections or Basis for Revision:	Periodic review and update
MSDS Code:	251720

Disclaimer of Expressed and implied Warranties:

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APPENDIX G: SPILL RESPONSE CONTRACTOR INFORMATION

August 19, 2014

Mr Matt Thompson
Department of Military Affairs
Fort Picket
Blackstone, VA

Subject: 24-hour Emergency Response Spill Services-Fort Pickett

Cardno MM&A

10988 Richardson Road
Ashland, VA 23005
USA

Phone +1 804 798 6525
Fax +1 804 798 5907
www.cardno.com

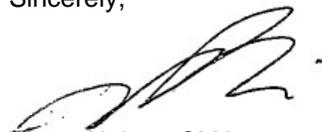
www.cardnomma.com

Dear Mr. Thompson:

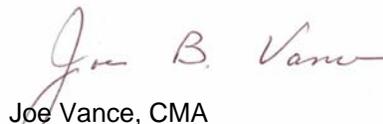
Cardno MM&A is pleased to provide you with this letter of intent to provide remediation and 24-hour Emergency Spill Response Services for Fort Pickett in Blackstone, VA. Our response time from our Ashland, Virginia office is within one hour and thirty minutes of notification.

MM&A appreciates having the opportunity to provide your facility with our professional services.

Sincerely,



Vince Alaimo, CMA
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Enclosure

Cardno/MMA

Emergency Response Equipment Inventory

Latex Gloves	Bow saw
Nozzle for garden hose	Claw hammers
Sledge hammer	Bung wrenchs
Quart of motor oil 10w30	Nylon string
Drum Dolly	Floor brushes
Water coolers	20- 55-gallon steel drums w/removable lids
Traffic cones	4-mil sample vials w/preservative
Hand towels	Small pry bar
Contractor trash bags	Protective coveralls
Air Compressor	PVC Overboots
Sample vials	Oil bugs 25lb cans
12' aluminum ladder	100' 1" pump hose
Swing blade	Lincoln 1" double diaphragm pump
Flat shovels	10 mil plastic
Street brooms	Yard rakes
Garden hoe	Axe
Hard hats	4' Carpenter level
Safety vests	5 gallon gasoline can
Caution tape	Ventilation Blower
Duct tape	Post hole diggers
PVC Knee boots	Pitch fork
Hip waders	Standard straw broom
Squeege mops	Shop vacuum
Garden hoses	Extension cord
4" PVC pipes	Round shovel
Clay Absorbent	Zep ® Citrus cleaner
Desert dry absorbent	House mop (cotton)
65-gallon overpacks	Well pipe
Large pry bar	24" tank squeege
Flat head axe	Light stand w/2 lights
Jig saw	Drum labels
Tool box w/small tools	Electric drill
Bright Orange spray paint	Electric jig saw
Grass seed	Fullface Respirators
Respirator Cartridges	Saranex Suits
Chemboots	Tyvek Suits
Tychem QC Suits	Decon Tubs
Air monitoring Kits	4- SCOTT 4.5 SCBA's (60 min)
12- Supplied Air Bottles 4.5	30 gallon overpacks
Trash bags	First Aid Kits

Eye Wash Station

Generators

300 ft. River Boom w/12in. skirt

20 bales of absorbent sweep

10 absorbent blankets 36"x150'

Negative Air Dehumidifier

1- 14ft. jon boat

1- 18ft response trailer

1- lowboy

1- 10ft. Drum trailer

Filter fence material

Portable light Stands

Air compressors

100 ft. 12" Bantam Boom

20 bales of 18"x 18" absorbent pads

20 bags Fiber perl

4- 500 gallon portable storage tanks

1- 18ft fiberglass boat

1- 12ft response trailer

1- 18ft response trailer

Straw bales

Various size diaphragm portable pumps

Various size and lengths of transfer hose

IMS EQUIPMENT LIST	IMS-Norfolk, VA	IMS- Chesapeake, VA	IMS-Richmond, VA	IMS-Fredericksburg, VA	IMS-Baltimore, MD	IMS - Morehead City, NC	IMS- Raleigh, NC	TOTAL
	Cars, Trucks and Trailers							
CAR	1	1						2
PICK-UP TRUCK- 2WD	13	10	3	3	3		2	34
PICK-UP TRUCK- 4WD	1		1		1		1	4
ONE TO FIVE TON STAKE BODY TRUCK -	2	2	1	2	2		1	10
FLATBED TRUCK, 7.5 TON		1						1
8 TON TRUCK, W/22 FT. BOX & LIFT GATE					1			1
FLATBED 5 TON TRUCK-W/ KNUCKLE CRANE	1							1
DUMP TRUCK,17 CUBIC YARD CAPACITY	2							2
DUMP TRUCK, 10 TONS, SINGLE AXLE					1			1
OVER-THE-ROAD DIESEL TRACTOR	3		1		1			5
TANKER TRAILER - 5,000 GAL. OR LARGER	14		3	2	4		1	24
15 PASSENGER VAN	2							2
CARGO VAN	2							2
FULLY EQUIPPED HAZMAT VAN/TRAILER	1							1
SPILL QUICK RESPONSE TRAILER	4		1	1	3	1	1	11
SPILL CONTAINMENT TRAILER	6		1	1	2	1		11
SPILL MISC. EQUIPMENT TRAILER	1		2		1	1		5
LOWBOY TRAILER/FLATBED TRAILER	2			1	1		1	5
INCIDENT COMMAND CENTER TRAILER - 30 FT	1		1					2
BOX TRAILER		2	3					5
Material Handling/Vacuum Equipment								
VACUUM TRUCK - 2,000 GAL					1			1
VACUUM TRUCK - 3,000-3500 GALLON	2		1	2	1			6
INDUSTRIAL VAC.LOADER - (SOLIDS & LIQUIDS)	2				1			3
VACUUM TRAILER - 5,000 GAL	3		1					4
VACUUM TRL, STAINLESS STEEL-5,000 GAL					1			1
Heavy Equipment								
DRILL RIG - MOBILE B47		1						1
DRILL RIG - MOBILE B53, 4 WHEEL DRIVE		1						1
GEOPROBE-DIRECT PUSH SAMPLER		1						1
PRESSURE GROUTING MACHINE		1						1
JOHN DEERE WHEEL LOADER W/TOOL ATT.	1							1
CASE 580 BACKHOE/EQUIV.	3				1			4
MINI EXCAVATOR-ARTICULATED BOOM	1			1				2
Boats & Marine Equipment								
MOBILE, HIGH SPEED WEIR SKIMMER, 450HP	1							1
MOBILE, D.I.P. SKIMMER	1							1
SPILL SURVEY BOAT 20-23 FT	3				2			5
O.S.R.V/WORKBOAT 56 FT. STEEL HULL	1				1			2
BOAT MOTORS 15 - 30 HP	9	2	4	2	3	2	2	24
JON BOAT (14-20 FT.) W/TRAILER	10	2	4	3	3	1	2	25
OIL SKIMMER - OIL MOP	1							1
OIL SKIMMER - PSI OIL HAWG	5							5
OIL SKIMMER - SKIM PAK	1							1
BOOM- 7" DRAFT (100' SECTIONS)	24		3	2	9	1.5		39.5
BOOM - 18" DRAFT (100' SECTIONS)	120		28	5	50	24	5	232
Chemical Transfer/Pumping Equipment								
A.D.A.P.T. PUMPING SYSTEM (1,000 GPM)	1							1
PUMP W/ HYDRAULIC POWERPACK	2							2
DIAPHRAGM PUMP 1", 1.5", 2", 3"	42	11	5	8	2	2	4	74
STAINLESS STEEL DIAPHRAGM PUMP 2"	4							4
PUMP HOSE - 1"-3" (100' SECTIONS)	150	2	24.5	4	11	4		195.5

IMS EQUIPMENT LIST	IMS-Norfolk, VA	IMS- Chesapeake, VA	IMS-Richmond, VA	IMS-Fredericksburg, VA	IMS-Baltimore, MD	IMS - Morehead City, NC	IMS- Raleigh, NC	TOTAL
CHEMICAL TRANSFER PUMP	2		1					3
CENTRIFUGAL PUMP- GAS, 2"-3"	3						2	5
WELL DEVELOPMENT PUMP		1						1
TRASH PUMP- 3"	1		2					3
FLUSHING PUMP 9.5 HP	10			1				11
PUMPING/TRANSFER EQUIP TRAILER	2							2
Recovery, Treatment & Storage Equipment								
MOBILE LIQUID RING G/W TREATMENT UNIT				1				1
HOLDING TANK 5,000 GAL	2							2
MOBILE HOLDING TANK 25,000 GAL	4		2	2				8
OIL RECOVERY SYSTEM		6		2				8
RECOVERY/SEPARATOR SYSTEM	1							1
FLOW METER - 4-6"				2				2
IN-LINE BAG FILTER	1							1
AIR STRIPPER < 75 GPM		1						1
WATER PURIFICATION UNIT		1						1
Pressure & Washing Equipment								
HI-PRESSURE WATER-2,000 PSI	1						1	2
HI-PRESSURE HOTWATER-3,000 PSI	2		1	2	3			8
PRESSURE WASHER, HOTWATER	3	2	1		3			9
AIR BLOWER - 1,000 CFM	9		1					10
Compressors, Generators, & Lighting Equipment								
AIR COMPRESSOR, PORTABLE- 3-5 HP	2	2		3			1	8
AIR COMPRESSOR - 40 CFM					1			1
AIR COMPRESSOR - 185 CFM	7	1	2	1	1			12
GENERATOR - 5 - 15 KW	2	3	1	1	1		1	9
Field Analytical Equipment								
O2/LEL (COMBUSTIBLE GAS METERS)	8	4	2	1	3	2		20
4 GAS METER (O2, LEL, CO, H2S)	5	2	1	1	1		1	11
AIR SAMPLING PUMPS	1	1		1				3
ANEMOMETER		3	1	3				7
AMBIENT AIR SAMPLER				2				2
COMBUSTIBLE GAS ALARM	4		1					5
DETECTOR PUMP	3	1		1	1			6
WATER ANALYZER		1		1				2
FLASH POINT ANALYZER	1							1
HALOGEN METER				1				1
PH METER	3	3	2	2			1	11
PH CONTROLLER	1	5	1	4			1	12
PHOTOIONIZATION DETECTOR	1	5	1	4			1	12
ORGANIC VAPOR ANALYZER (FID)	1	1						2
DISSOLVED OXYGEN METER		3						3
OIL/WATER LEVEL INDICATOR	1	6	2	2			3	14
Miscellaneous Tools and Equipment								
PNEUMATIC TANK CUTTER	1				1			2
SURVEY INSTRUMENT SET		1		1			1	3
WELDER, MOBILE	2			1			1	4
MERCURY VACUUM		2						2
HEPA VAC PAC	1							1
HAMMER DRILL	1	1		1			1	4
JACKHAMMER		2						2
CHAINSAW	2	1	1				1	5
RADIO - HAND HELD, INTRINSICALLY SAFE	40	1	4		5		3	53

IMS EQUIPMENT LIST	IMS-Norfolk, VA	IMS- Chesapeake, VA	IMS-Richmond, VA	IMS-Fredericksburg, VA	IMS-Baltimore, MD	IMS - Morehead City, NC	IMS- Raleigh, NC	TOTAL
EAR-MIKE COMMUNICATION SYSTEM	6							6
EAR-MIKE II - EAR MOLD KIT	40							40
RADIO - VHF MARINE	7							7
RADIO VHF BASE STATION	1		1					2
MOBILE RADIOS-VEHICLE MOUNTED	24	12	6	8	6		1	57
GUN "SCARE AWAY"- PROPANE	3							3
FORKLIFT	1	1	1	1	1			5
LAP TOP COMPUTERS W/ MODEMS	3	2	1	1	1		1	9
Safety and Protective Equipment								
LEVEL A CHEMICAL SUIT W/FLASH PROT.	4		4		4			12
LEVEL B CHEMICAL SUIT	30		30	30	30			120
LEVEL C PVC SUIT	24		24	24	26	6	6	110
LEVEL D TYVEK SUIT	50	20	50	50	70	6	20	266
SPLASH SUIT (SARANEX)	75		50	50	50	6	6	237
COVERALLS (SARANEX)	75		50	50	50	6	6	237
HARDHAT	100	25	25	25	25	6	6	212
GLOVE TESTER	1							1
CHEMICAL SPLASH GOGGLES	100	25	50	25	50	6	6	262
COVERALLS (COTTON)	30						6	36
COVERALLS (NOMEX)	10		12					22
OUTER GLOVES (NEOPRENE)	75	30	30	30	30	6	6	207
OUTER GLOVES (BUTYL)	75	30	30	30	30	6	6	207
OUTER GLOVES (NITRILE)	75	30	30	30	30	6	6	207
OUTER GLOVES (VITON)	75	30	30	30	30	6	6	207
INNER GLOVES (SILVER SHIELD)	24	12	12	12	12	6	6	84
INNER GLOVES (NITRILE)	200	50	50	50	50	10	10	420
OUTER BOOTS	100	25	25	25	25	6	6	212
BOOTIES	50	50	50	50	50	6	6	262
PRESSURE TEST KIT	1							1
AIR PURIFYING RESPIRATOR. - FULL FACE	25	3	6	5	8		3	50
AIR PURIFYING RESPIRATOR. - HALF FACE	24		12	12	12		12	72
SCBA EQUIPMENT	10	3	3		2			18
CASCADE BREATHING SYSTEM	4		1					5
RHINE AIR PUMPS	3				1			4
ESCAPE BOTTLE	5		3	1	1			10
CONFINED SPACE RESCUE SYSTEM	3		1		1			5
VENTILATION BLOWERS	3		1	1	2			7
VENTILATION HORNS	4		1					5

Fort Pickett Fire Rescue
Haz-Mat trailer Inventory

- 4 10 ft absorbent booms
- 500 ft floating water booms
- 1 pipe patch kit
- 1 drum patch kit
- 1 drain plug kit
- 1 lid-loc kit
- 2 non-sparking tool kit
- 5 grounding straps
- 1 case chem. Tape
- 30 traffic cones
- 2 30 gal trash cans
- 20 large trash bags
- 3 50 ft water hoses with nozzles
- 2 3 gal decon sprayers
- 2 20ft x 20ft tarps
- 3 5 ft sections 4 inch pvc pipe
- 4 5 ft sections 2 inch pvc pipe
- 1 150 gal containment pond
- 5 5 gal buckets
- 1 decon shower
- 3 decon pools
- 1 5 gal solvent absorbent
- 1 5 gal caustic neutralizer
- 1 5 gal acid neutralizer
- 1 burpless drum funnel
- 1 65 gal over-pak drum (oil, water, solvents)
- 1 65 gal over-pak drum (acids)
- 1 4500 kw generator
- 2 portable lights
- 2 100 ft extension cords
- 3 oil, coolant drain pans
- 8 bags oil dry
- 2 bags absorbent pads
- 1 power blower with 50 ft vent hose
- 1 exhaust fan
- 1 roll absorbent pads, 50 ft
- 6 cool vest
- 12 hard hats
- 7 Blankets
- 2 tyvex jump suits

- 3 Portable tents
- 4 large grain scoops, plastic
- 2 small plastic shovels
- 3 steel shovels
- 2 steel spades
- 1 flat head axe
- 1 pitch fork
- 1 garden rake
- 12 sand bags
- 1 water manifold
- 3 safety glasses
- 12 over shoe boot protectors
- 200 ft utility rope
- 1 abc fire extinguisher
- 1 hand truck
- 2 back boards
- 1 stokes basket
- 3 scrub brush
- 2 hydrent adapters

Fort Pickett Temporary Waste Accumulation Facility Spill Equipment Inventory

20 packs Universal Absorbent Pads (200/pack)
10 packs Oil-Only Absorbent Pads (200/pack)
2 Oil-Only Absorbent Roll (30" W x 150' L each)
2 Oil-Only Spaghetti Booms (8" W x 10' L each)
16 Universal Spill Kits in Tote Bags
5 boxes Universal Absorbent Socks (3" diameter x 42" L each) (40 socks/box)
20 Outdoor Oil Absorbent Pans
5 boxes Absorbent Socks 3" diameter x 24" L each) (36 socks/box)
10 boxes Yellow Polyethylene Disposal Bags (25 bags/box)
20 Large Absorbent Pillows (17" W x 21" L x 2" H)
5 Universal Chemical Absorbent Socks (11" x 10' each)
2 Elephant Mats (75' L x 33" W)
1 58 qt. Capacity Truck Recovery Drain Pan
3 Small Drip Pans
2 Large Drip Pans
10 bags Bio-AAbsorb Micron-N (30 lbs/bag)
20 bags NAPA Diatomite Oil Absorbent (25 lbs/bag)
8 bags Lite-Dri Absorbent (22 lbs/bag)
25 XL Tyvek Coveralls
25 Large Tyvek Coveralls
Shovels and other necessary tools
55-gal, 30-gal, 20-gal and 10-gal closed-top and open-top drums available for spill cleanup materials
15-ton rolloff container for oil-contaminated soil

APPENDIX H: AST DRAWINGS AND SPECIFICATIONS



SPECIFICATIONS

HOOVER VAULT™ TANK UL LISTED 2085 PROTECTED SECONDARY CONTAINMENT TANK (RECTANGULAR DESIGN)

1.0 GENERAL TANK DESCRIPTION:

- 1.1 Hoover Vault™ Tanks are constructed and listed in accordance with Underwriters Laboratories Inc. Standard 2085 for Insulated Secondary Containment Aboveground Tanks for Flammable and Combustible Liquids, Protected Type. This 2 Hour fire rating shall exceed all requirements of The National Fire Protection Association Sections 30 and 30A for "fire resistant" tanks and meet the requirements of The Uniform Fire Code Articles 52 and 79, Appendix II-F and Appendix Standard A-II-F-1 for "protected" aboveground tanks.
- 1.2 The standard model Hoover Vault Tank is constructed as a UL 142 listed secondary containment tank, utilizing steel inner and outer tanks.
- 1.3 All Vault Tank designs are resistant to bullet penetration according to Appendix II-F of the Uniform Fire Code.
- 1.4 Lightweight concrete surrounds the primary storage tank and shall be UL listed to allow the detection of leaks from the primary tank.
- 1.5 The tanks shall have Certification from CARB for Phase I and II Vapor Recovery.
Note: If tank is required to have CARB certification in accordance with Executive Order VR-302-B, "Standing Loss Control Vapor Recovery System for New Installations of Aboveground Storage Tanks, then all tanks less than 1,000 gallons in capacity will be fabricated with 6" of insulating material, and will be painted white.
- 1.6 The anchoring tie downs shall be welded to the bottom of the secondary tank and meet Zone 4 Seismic requirements.
- 1.7 The tanks must be off-loaded on site with a crane.
- 1.8 All openings shall be from the top, with threaded NPT risers.
- 1.9 The Vault Tank to include a Warranty for 30 years, see warranty documents.
- 1.10 The tank manufacturer shall provide proof of a minimum 10 years of manufacturing vault tanks.

2.0 PRIMARY STORAGE TANKS:

- 2.1 The standard primary storage tank shall be rectangular in design. It shall be constructed of UL 142 specified steel thickness, with continuous welds.
- 2.2 The primary storage tank shall be constructed of optional ASTM A-569 or A-36 carbon steel, or ASTM A-240 type 304 or 316 stainless steel, as required for compatibility of product being stored.
- 2.3 The primary storage tank shall be constructed and listed in accordance with UL 142 Standards.
- 2.4 The primary tank shall be fitted with: a 4" or 6" Fill Port, a 2" Normal Vent Port, either a 4", 6", 8", or 10" Emergency Vent Port, a 2" Liquid Gauging Port, a 2" Port for Dispensing Pump, a 4" Phase I Vapor Recovery Port, and a 18" manway (for tanks with capacities 5,000 gallons and greater). An optional 15 gallon Spill Containment with Lockable Lid and Drain Port to the primary tank is available.
- 2.5 The primary tank shall be pressure tested to UL 142 Standard (minimum 3 to maximum 5 psi) at the factory, and shall be field tested by the contractor to a maximum 3 psi.
- 2.6 The primary steel tank shall be designed to store M85 (methanol), alcohol and petroleum blends.

3.0 FIRE PROTECTION:

- 3.1 The standard fire protection material shall be lightweight concrete and surround the primary tank. The tank design shall provide a minimum two (2) hour fire rating per UFC Appendix Standard A-II-F (formerly UFC 79-7), and UL 2085 Protected Secondary Containment Tanks.
- 3.2 The fire protective material shall allow liquid leaking from the primary tank to penetrate the material and communicate with the leak detection tube according to UL 2085 Protected Secondary Containment Tanks.
- 3.3 The fire protective material shall be of a monolithic pour, poured at the factory.
- 3.4 The fire protective material shall provide a minimum of an R-10 insulating factor.

4.0 BULLET RESISTANCE:

- 4.1 The fire protected primary tank shall be tested by a qualified engineering firm to be resistant to penetration of the primary tank by a 150 grain, M 2 Bullet, traveling at a velocity of at least 2700 feet per second, when fired from a .30 caliber rifle, located a maximum of 100 feet from the target.
- 4.2 The fire protected tank must be able to be repaired in the field by a factory representative, when impacted by a bullet.
- 4.3 The factory representative must be able to certify that the primary and secondary containment do not leak, and that the fire protective material regains its minimum two (2) hour protection.

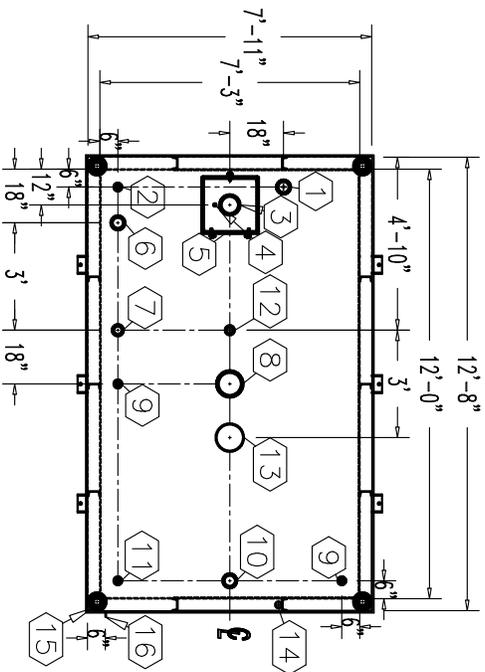
5.0 SECONDARY LEAK CONTAINMENT TANK:

- 5.1 The secondary leak containment tank shall be rectangular in design and listed according to UL 2085 insulated secondary aboveground tanks for flammable and combustible liquids, protected type.
- 5.2 The secondary tank shall be tested liquid tight at the factory (minimum 3 to maximum 5 psi), and shall also be field tested by the contractor to a maximum 3 psi.
- 5.3 The secondary tank shall provide reinforcement for the lightweight concrete to remain in place around the primary tank.
- 5.4 The secondary tank shall provide true 360° Radius “pressure testable” containment for the primary tank.
- 5.5 The secondary tank shall be fitted with : a 2” Annular Space Monitoring Tube, a 2” Normal Vent Port and either a 4”, 6”, 8” or 10” Emergency Vent Port, in addition to openings for all ports in the primary tank.
- 5.6 The port openings in the top of the secondary tank shall be constructed with full welds to prevent moisture from seeping between the fire proofing material and secondary and primary tanks.
- 5.7 The top of the secondary tank shall be sloped so that water will not accumulate on top of the tank.
- 5.8 The secondary tank shall have a two (2) inch monitoring port including a tube which provides a means to detect product leakage from the primary tank into fire protection material that directly surrounds the primary tank. This design shall be listed under UL 2085.

6.0 COATINGS:

- 6.1 The exterior surface of the secondary tank shall be cleansed of foreign material and coated with a corrosion resistant industrial paint (3 to 5 mils dry film thickness).
- 6.2 The standard color shall be desert sand.
Note: Per section 1.5, if the tank is less than 1,000 gallons and needs to have CARB certification, the tank will be painted white. This requirement is only applicable to tanks storing gasoline in the state of California.
- 6.3 Optional FIBERVAULT[®] coating can be applied to the exterior surface of the secondary tank to provide resistance to corrosive environments such as salt water spray.
 - 6.3.1 The total dry thickness shall be a minimum of 1/8 inch.
 - 6.3.2 All threaded openings and flanges shall be protected during the coating process.
 - 6.3.3 The coating shall be applied only when the work area and the secondary steel tank are between the temperatures of 32 and 103 degrees F.
 - 6.3.4 The standard color shall be desert sand.
 - 6.3.5 The coating shall provide a 10 year warranty.

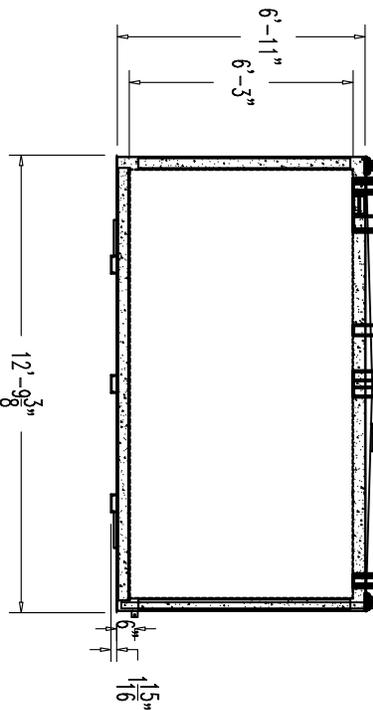
NOTE:
OVERALL SHIPPING DIMENSION: 13'-0" L X 8'-6" W X 8'-0" H



TOP VIEW

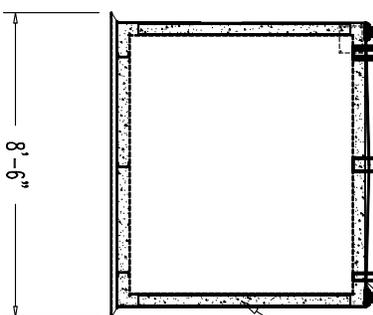
THREADED CONNECTION
(TYP.) SEE TOP VIEW

2" STD. PIPE FOR
MONITOR ACCESS



ELEVATION

END VIEW



4" SPACE BETWEEN
INNER & OUTER TANKS
FILLED WITH LIGHT WEIGHT
FIRE-RATED MATERIAL

SEAL WELD ALL
FITTINGS AND TANK

TANK SPECIFICATIONS
VENTING CAPACITY: PRIMARY TANK - 288,000 CUBIC FEET PER HOUR
SECONDARY TANK - 312,000 CUBIC FEET PER HOUR
MATERIAL: PRIMARY TANK - 1/4" THICK
SECONDARY TANK - 3/16" THICK

ITEM	SIZE	SUGGESTED FUNCTION
1	4"	PHASE 1 VAPOR RECOVERY/SPARE
2	2"	MECHANICAL GAUGE
3	6"	FILL
4	1/2"	DRAIN FOR SPILLBOX
5	15 GAL	SPILLBOX, DWG."SBB001"
6	4"	ELECTRONIC LEVEL GAUGE
7	3"	PRIMARY WORKING VENT
8	8"	PRIMARY TANK EMERGENCY VENT
9	2"	SPARE
10	4"	SUBMERSIBLE PUMP
11	2"	SUCTION PUMP/SPARE
12	2"	SECONDARY WORKING VENT
13	8"	SECONDARY CONTAINMENT EMERGENCY VENT
14	2"	SECONDARY MONITOR PIPE
15	4"	FIRE RATED MATERIAL FILL
16	2" X 2"	GROUND CLIP, DWG."MCB004"

PRODUCT CODE	GALLONS	DESCRIPTION	OVERALL SIZE	SHIP WT.
VAAA10AMWS001	4,000	U/L-2085 ABOVE GROUND VAULT TANK W/SPILLBOX	12'-8" L X 7'-11" W X 7'-1" H	19,000 LBS.

THIS DRAWING AND DESIGN SHOWN HEREIN IS THE PROPERTY OF CONTAINMENT SOLUTIONS. USE OR COPIES THEREOF CANNOT BE MADE WITHOUT WRITTEN CONSENT.

CUSTOMER NAME: **APPROVED** BY: _____

DATE: _____



DRAWN BY: D. ROVANG
DATE DRAWN: 07-01-09
DWG NUMBER: 5100007
SCALE: 1:64
REV: _____ REV BY: _____ DATE: _____ SHEET: 1 OF 1



SPECIFICATIONS

1. The Insulated Secondary Containment Aboveground Storage Tank Systems for Flammable and Combustible Liquids, Protected Type: Vehicle Impact Protected, and Projectile Resistant shall be tested to and listed for the following:
 - A. **UL - 142**, aboveground steel tanks for flammable and combustible liquids.
 - B. **UL - 2085**, two-hour furnace fire test and two hour simulated pool fire test for insulated and protected tanks.
 - C. **UL - 2085 and UFC Test Standard (Article 79 or APPENDIX #A-II-F-1)**, for both Vehicle Impact Protection and Projectile Resistance.
 - D. **UL - 2085**, Protected aboveground tanks for flammable and combustible liquids.
 - E. **UL - 2085**, Non-Metallic Secondary Containment protected tanks for flammable and combustible liquids with secondary containment Emergency Venting by "Form of Construction".
 - F. **CAN/ULC - S601 (ORD - 142.18)**, Standard for shop fabricated steel aboveground horizontal tanks for flammable and combustible liquids.
 - G. **CAN/ULC - S655 (ORD - C 142.16)**, Standard for protected aboveground tank assemblies for flammable and combustible liquids
 - H. **CAN/ULC - (ORD - C 142.5)**, Standard for concrete encased aboveground tank assemblies for flammable and combustible liquids.
 - I. **CAN/ULC - (ORD - C 142.16)**, the furnace burn requirements for two hour fire rating.
 - J. **CAN/ULC - (ORD - C 142.25)**, the open (pool) fire testing for two-hour flammable liquid fire test.
 - K. **CAN/ULC - (ORD - 142.23)**, for aboveground tanks for used oil.
 - L. **The requirement** for Uniform Fire Code (UFC) for two-hour (firewall) test.
 - M. **To be tested and certified** by the California Air Resources Board (CARB) for Balanced Phase 1 and Phase 2 Vapor Recovery including methanol and ethanol.
 - N. **High Explosive (HE) Blast Resistance:** The tank system design shall be the subject of a Blast Effects Analysis (BEA) for resistance under the following blast threat load scenarios:
 1. a 50-pound HE man-portable improvised explosive device (MPIED) at the standoff distance of 5 feet;
 2. a 500-pound HE vehicle-borne improvised explosive device (VBIED) at the standoff distance of 20 feet; and
 3. a vapor cloud explosion (VCE) with a load of 10 psi.The BEA shall conclude that the tank system shall resist the explosion loads and remain intact, without failure of the primary tank. The engineering consultants performing the BEA shall be a nationally recognized firm with over 10 years

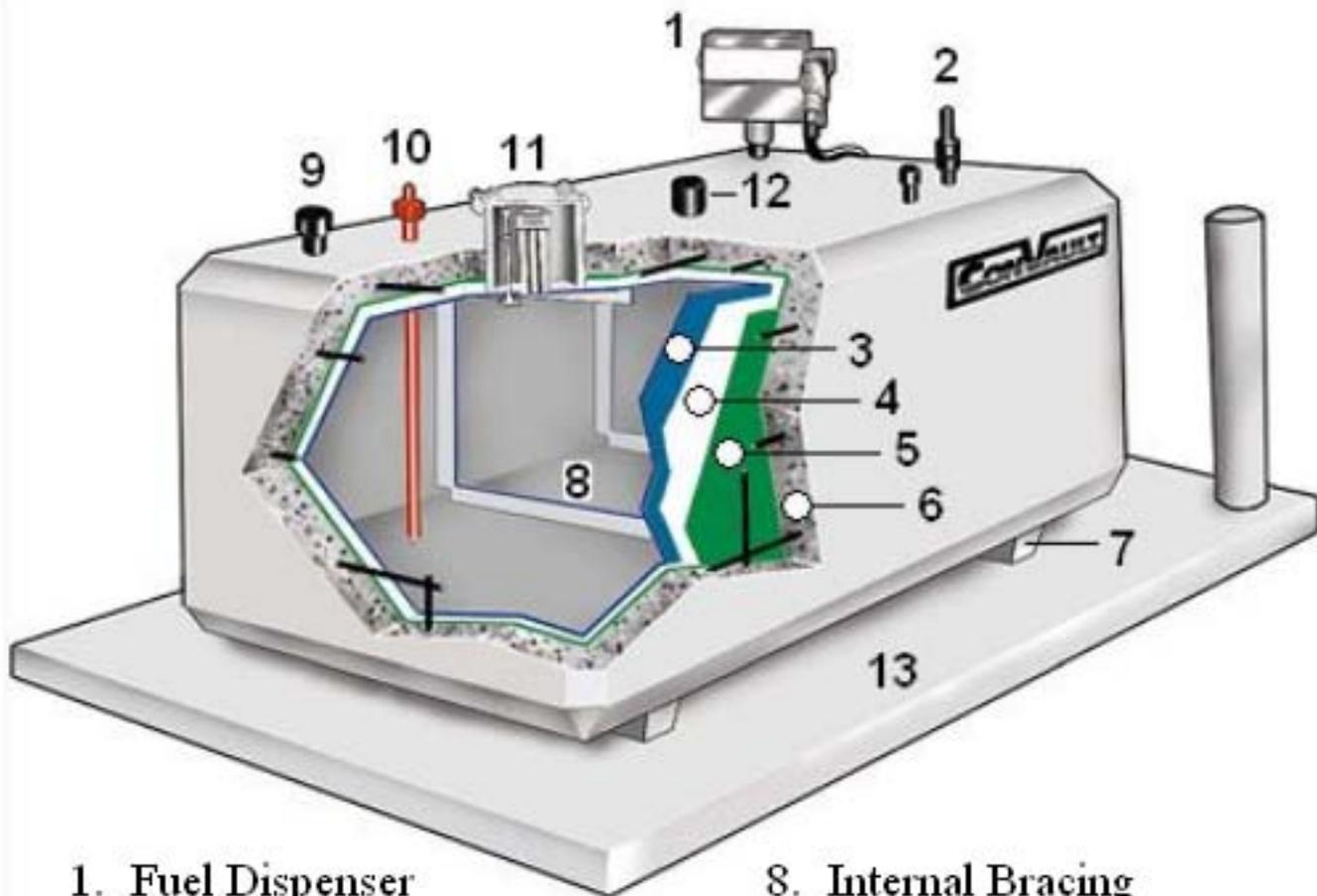
experience offering comprehensive services related to blast and impact effects analysis, explosive safety design, vulnerability assessments and threat mitigation.

2. The primary steel tank shall be rectangular in shape and have continuous welds on all exterior seams, manufactured in accordance with UL listing requirements and UL Standard 142.
3. The primary steel tank shall be pressure tested at 5 psig for 24 to 48 hours.
4. The primary steel tanks shall have "emergency vent" system as per NFPA 30 Code requirements.
5. The protected and insulated AST systems shall have a thru-tank leak detector tube to allow for physical checkup and monitoring capability between the primary and the secondary containment.
6. The primary steel tank shall be pressurized at 5 psig during concrete encasement.
7. The outer surface of the primary steel tank shall be covered by a minimum of 1/4" thick (6.4 mm) Styrofoam insulation panels.
8. The secondary containment shall consist of a 30 Mil thick (0.76 mm) High-Density Polyethylene membrane enclosing the steel tank and insulation material.
9. The primary steel tank and the secondary containment shall be encased in six inches of monolithic reinforced concrete, with minimum design strength of 4,000 and 5,000 psi at 28 days depending on the tank size. The concrete design shall include the following for long-term durability: air entrainment, water reducing admixture, and steel reinforcement. Concrete encasements with seams will not be approved.
10. The protected and insulated AST systems shall be of concrete exterior and a continuous and visually verifiable monolithic (seamless) pour on top, bottom, ends, and sides and contain no cold joints or heat sinks (heat transfer points). The AST must be shop fabricated and tested in accordance with the UL listings. Designs that use two layers of steel with insulation material between them will not be approved.
11. No steel or insulating material shall come in contact with the concrete or other corrosive material.
12. All openings shall be from the top only.
13. All exposed metal with the exception of stainless steel must be powder coated to inhibit corrosion.
14. The protected and insulated AST systems shall include a 7 or 15-gallon powder coated or stainless steel, UL listed spill containment, and shall include normally closed valve to release spilled product into the primary steel tank. Spill containment which route the spilled product into interstitial area will not be approved.
15. The protected and insulated AST systems shall have a coated concrete exterior to resist weather and reflect sunlight. Models with steel exteriors will not be approved.
16. The protected and insulated AST systems shall have a warranty of 30 years for systems 2,000 gallon capacity and larger and 20 years for systems 1,000 gallon capacity and smaller with optional 30-year warranty.
17. The protected and insulated AST systems design shall have been in use for a minimum of twenty (20) years. The manufacturer must stipulate no reportable AST containment system failure in 30,000 units produced.

18. The protected and insulated AST systems shall have two (2) bolts for connecting grounding conductors for lightning protection in accordance with NFPA 780.

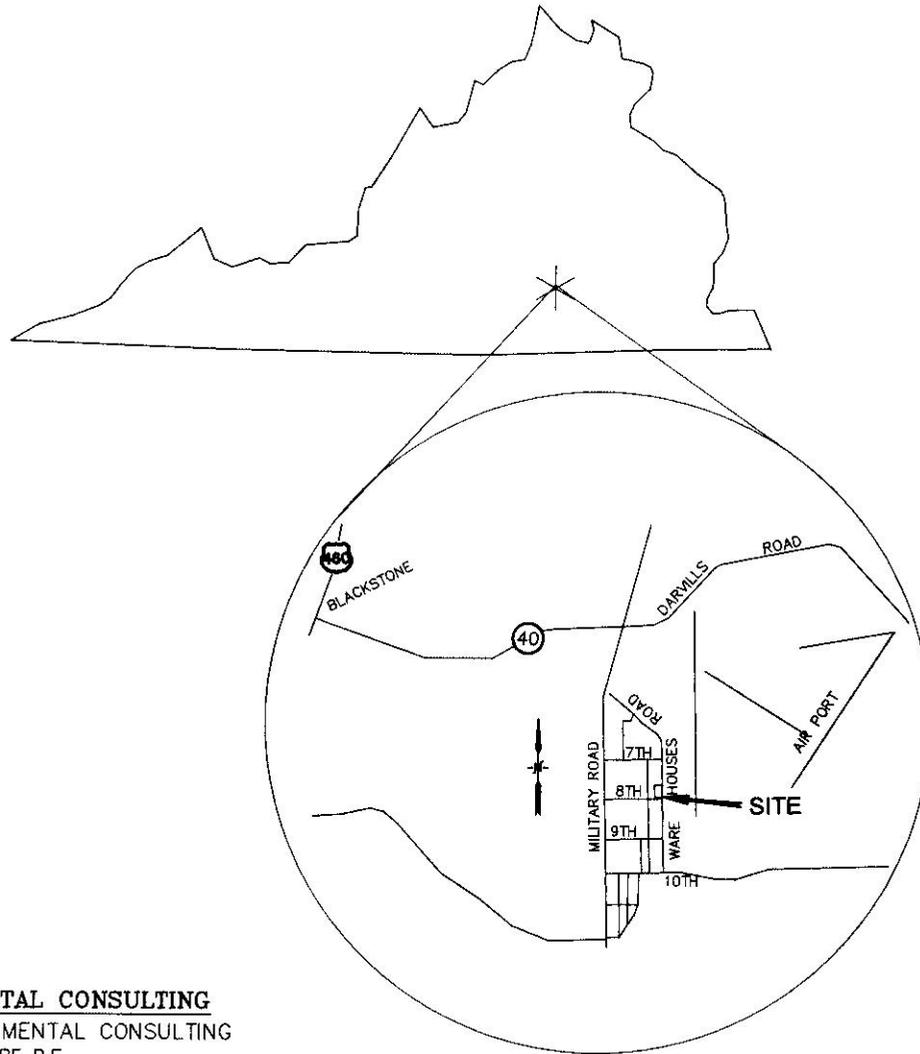
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ConVault Cutaway



- | | |
|------------------------|--------------------------|
| 1. Fuel Dispenser | 8. Internal Bracing |
| 2. Level Indicator | 9. Atmospheric Vent |
| 3. Steel Primary Tank | 10. Leak Detector Tube |
| 4. Polystyrene Layer | 11. Overfill Containment |
| 5. HDPE Liner | 12. Emergency Vent |
| 6. Reinforced Concrete | 13. Concrete Slab |
| 7. Support Legs | |

APPENDIX I: FIELD CONSTRUCTED CONTAINER SPECIFICATIONS



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 (434)292-0032

Francis H. Gilmore
 FRANCIS H. GILMORE P.E.
 109 W. BROAD ST.
 BLACKSTONE, VA. 23824

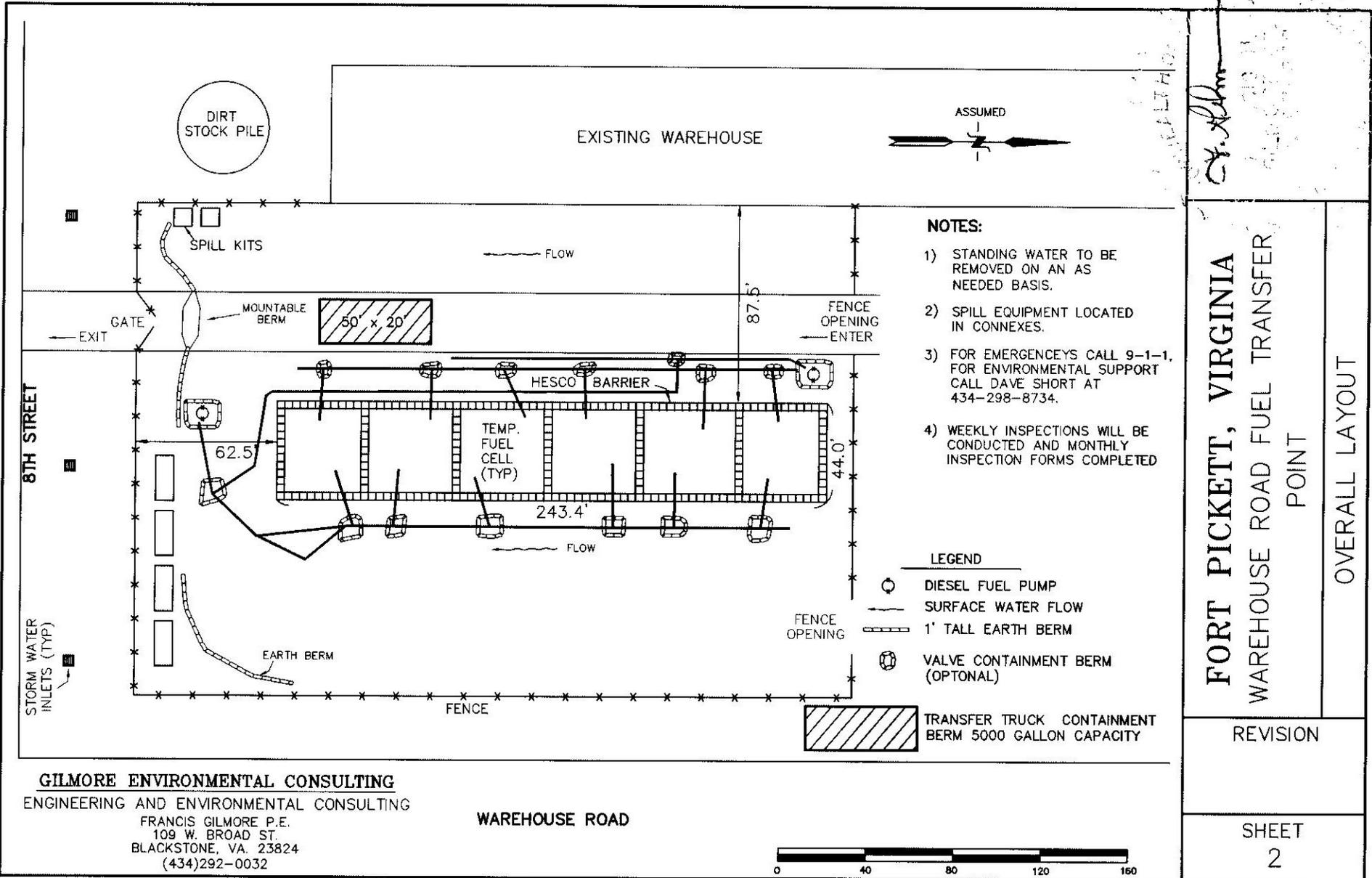
FORT PICKETT, VIRGINIA
WAREHOUSE ROAD FUEL TRANSFER
POINT

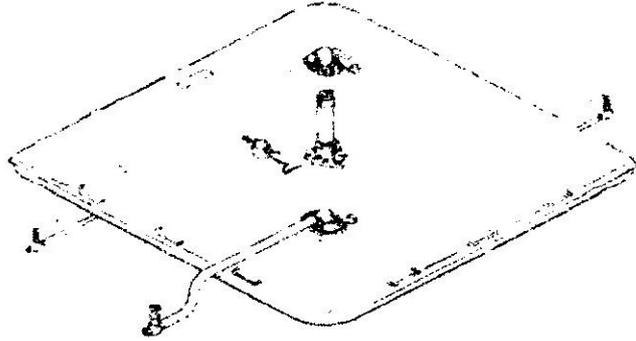
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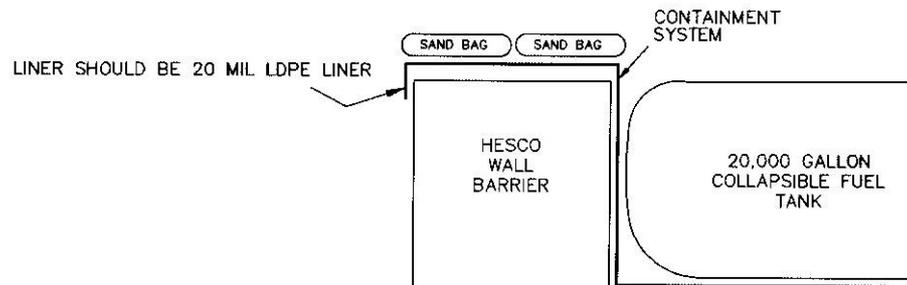


NOTES:

- 1) 20,000 GALLON COLLAPSIBLE FUEL TANK REQUIRED.
- 2) TANK TO BE PLACED AND INSTALLED IAW ARMY TM 5-5430-219-23P
- 3) TANK TO BE PLACE WITHIN HESCO BARRIER WALLS ON LEVEL GROUND FREE FROM OBSTRUCTION.
- 4) COLLAPSIBLE TANK SHOULD MEET MILSPEC PER MIL-PRT-32233A.

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 PROJECT NO. 13054
 DATE 10/10/08

TYPICAL CROSS SECTION



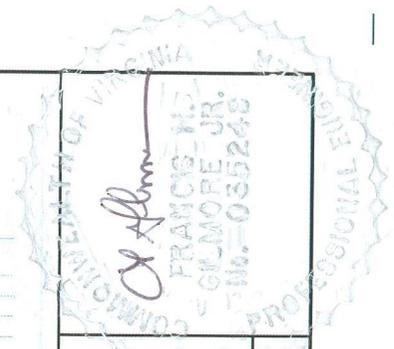
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TANK DETAILS AND X-SECTIONS

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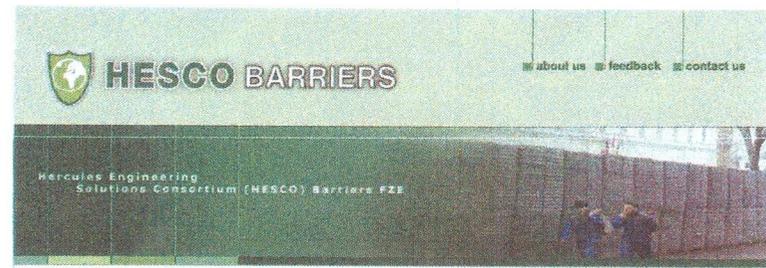


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FUEL TRANSFER PUMP DETAILS

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HESCO Barriers Blast Wall Plus EEC

HESCO Barriers Blast Wall Plus EEC has been a key component in providing Force Protection since the 1991 Gulf War. It has been deployed with the U.S. Military, NATO, The United Nations and other military forces through out the world.

HESCO Barriers Blast Wall is extensively used in the protection of personnel and key assets in military, peacekeeping, humanitarian and civilian operations.

Features, Application & Use

- A pre-fabricated gabion of galvanised welded-mesh steel fitted with a UV-protected Polypropylene geo-textile liner.
- Filling material is an easily-obtained mix of sand and small stones.
- Can be connected together to any length, and can be stacked for additional height.
- Primary military use is as force protection against blast and projectiles.
- Other military uses include as barriers of all types including:
 - general walling for sensitive and/or high-value installations,
 - traffic control points such as check points or border points,
 - aircraft revetments,
 - ammunition and fuel storage bunding.
- Shipped and stored as a flat-pack unit.
- Faster to erect than sandbags:
 - 10 men filling and erecting 1,500 sandbags = 7 hours
 - 2 men + MHE erecting the same size Hesco Barriers wall = 30 minutes
 - Minimal training requirement for very good results.

A Typical HESCO Barriers Blast Wall Unit.

Schematic Drawing

SPECIFICATIONS

National stock number	Pumping assembly, water -- NSN 4320-01-526-6278 Pumping assembly, fuel -- NSN 4320-01-524-4467
Pump capacity	350 GPM, 275 feet total head, 2,320 rpm, 75 Sp. Gr.
Unit size	203.2 cm x 177.8 cm x 180.3 cm / 80 inches x 70 inches x 71 inches
Unit weight	1043.3 kg / 2,300 lbs
Operating temperature range	-37.7 °C to 48.9°C / -25 °F to 120°F
Storage temperature range	-53.9°C to 68.3°C / -65°F to 155°F
Maximum towable speed	20 mph
Bonding capability	76.2 cm / 30 inches
Fuel tank capacity	71.9 liters / 19 gallons
Engine specifications	John Deere, Model 4024FE270
Number of cylinders	4
Bore	86 mm / 3.4 inches
Stroke	104 mm / 4.1 inches
Displacement	2.44 L / 149 cubic inch
Emissions	Tier II
Working principle	Four-stroke diesel with turbocharger
Power output	69 hp at 2,400 rpm
Fuel	DF1, DF2, JET A, Jet A1, JP4, JP5 or JP8
Compression ratio	18.2:1
Pump specifications	Gorman-Rupp, Model 04A134F3L
Pump type	Self-priming centrifugal
Design working pressure	723.9 kPa / 125 psi
Suction and discharge size capacities	101 mm / 4 inch camlock connectors (2 suction, 2 discharge)

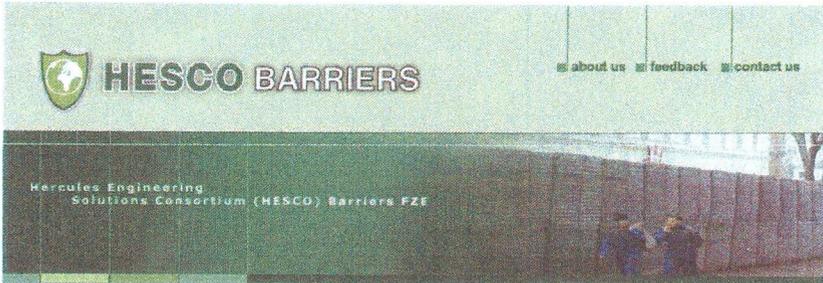
NOTES:

- 1) PUMPS SHOULD BE INSTALLED AND USED PER SUPPLIERS RECOMINDATIONS.
- 2) PUMPS SHOULD BE PLACED ON LEVEL GROUND
- 3) PUMPS SHOULD BE CONNECTED TO FUEL CONTAINMENT TANKS AND TEMPORARY FILLING STATIONS USING RECOMMENDED HOSES.

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NOTES:

- 1) HESCO BARRIER SHOULD BE USED AND PLACED PER SUPPLIERS REQUIREMENTS.
- 2) BARRIER SHOULD BE A MINIMUM OF FOUR FEET IN HEIGHT.
- 3) BARRIER SHOULD BE FILLED TO FACTORY SPECIFICATION AND USING SUITABLE MATERIAL FOR FILL.



- HESCO BARRIERS BLAST WALL PLUS EEC
- HESCO BARRIERS BLAST WALL TEST REPORT
- HESCO BARRIERS BLAST WALL INSTALLATIONS
- HESCO E.O.P.S (EXTENDED OVERHEAD PROTECTION SYSTEM)
- HESCO BARBED WIRE, FENCING & CONCERTINA RAZOR BLADE
- HESCO SECURITY GATES
- HESCO BLAST FILM ULTRA
- HESCO CAMERA CCTV SERIES
- HESCO ACCESS CONTROL & BUILDING MANAGEMENT SYSTEM
- HESCO MOBILE LIGHT TOWER & VEHICLE LIFT LIGHT SERIES
- HESCO SCANNER & SECURITY DEVICES
- HESCO EMERGENCY & FIRST AID
- HESCO CONTAINERISED MEDICAL SYSTEMS
- HESCO MODULAR ACCOMMODATION

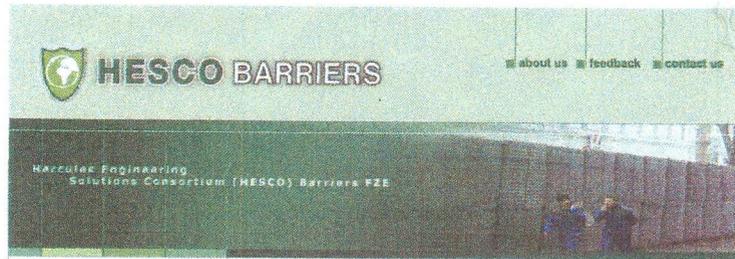
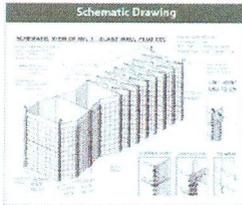
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- Filling material is an easily-obtained mix of sand and small stones.
- Can be connected together to any length, and can be stacked for additional height.
- Primary military use is as force protection against blast and projectiles.
- Other military uses include as barriers of all types including:
 - general walling for sensitive and/or high-value installations,
 - traffic control points such as check points or border points,
 - aircraft revetments,
 - ammunition and fuel storage bunding.
- Shipped and stored as a flat-pack unit.
- Faster to erect than sandbags:
 - 10 men filling and erecting 1,500 sandbags = 7 hours
 - 2 men + MHE erecting the same size Hesco Barriers wall = 30 minutes
 - Minimal training requirement for very good results.



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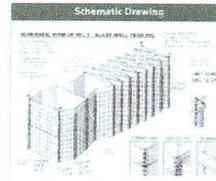
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CONTAINMENT SYSTEM DETAILS

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