

**SPILL PREVENTION CONTROL AND COUNTERMEASURE PLAN  
FOR  
RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY**

Cook/Douglass Campus  
New Brunswick, New Jersey

**Original Date of Plan:** February 2000  
**Date of Last Plan Amendment/P.E. Certification:** June 2003; September 2004  
**Date of Last Plan Review:** February 2018

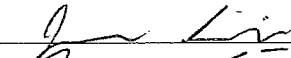

**CERTIFICATION**

I hereby certify that I have examined the facility, and being familiar with the provisions of 40 CFR part 112, and have visited this facility, attest that this SPCC Plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standards, and that procedures for inspection and testing have been established, and that the plan is adequate for this facility.

Engineer: Glenn Vliet  
Registration Number: GE03398800  
State: New Jersey  
Signature: Glenn Vliet  
Date: 2/3/05

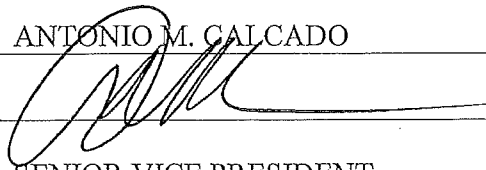
**SPILL PREVENTION CONTROL AND COUNTERMEASURE  
COMPLIANCE INSPECTION PLAN  
REVIEW PAGE**

In accordance with the amendments to the Oil Pollution Prevention Act promulgated under the authority of the Clean Water Act, effective August 16, 2002, and codified under 40 CFR 112, a review and evaluation of this Spill Prevention Control and Countermeasure (SPCC) Plan has been conducted. This plan must be reviewed and updated every five years from the date of the implementation of this plan (February 16, 2003). As a result of this review and evaluation, Rutgers, The State University of New Jersey (Rutgers) will amend the SPCC Plan within six months of the review (August 18, 2003) to include more effective prevention and control technology if: (1) such technology will significantly reduce the likelihood of a spill event from the facility, and (2) if such technology has been field-proven at the time of review. Any amendment to the SPCC Plan shall be certified by a Professional Engineer within six months after a change in the facility design, construction, operation, or maintenance occurs which materially affects the facility's potential for the discharge of oil into or upon the navigable waters of the United States or adjoining shorelines.

Review Dates	Signature
1. 1/6/2016	
2. 2/26/2018	
3.	
4.	

**MANAGEMENT APPROVAL**

Rutgers is committed to the prevention of discharges of oil to navigable waters and the environment, and maintains the highest standards for spill prevention control and countermeasures through regular review, updating, and implementation of this SPCC Plan for the Cook/Douglass Campus.

Authorized  
 Facility Representative: ANTONIO M. CALCADO  
 Signature:   
 SENIOR VICE PRESIDENT  
 Title: INSTITUTIONAL PLANNING & OPERATIONS

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- Attachment C. Standard Operating Procedure – Tank Truck Unloading

## 1. FACILITY OWNER AND OPERATOR

### 1.1. Facility Owner, Address, and Telephone

Rutgers, The State University of New Jersey  
Old Queens  
83 Somerset Street  
New Brunswick, NJ 08901-1281

### 1.2. Facility Operator, Address and Telephone

Rutgers, The State University of New Jersey  
Rutgers Environmental Health and Safety  
Building 4086, Livingston Campus  
27 Road 1  
Piscataway, New Jersey 08854-8036  
(732) 445-2550

## 2. FACILITY CONTACT(S)

**Table 1. Facility Contacts**

Name	Title	Telephone
Facilities, Office of Director	Facility Representative	(848) 445-3705
Utilities, Office of Director	Utilities Representative	(848) 445-4117
REHS Representative	Environmental Health and Safety Office	(848) 455-2550

## 3. FACILITY DESCRIPTION

### 3.1. Facility Operations

*112.7(a)(3) Describe in your Plan the physical layout of the facility and include a facility diagram, which must mark the location and contents of each container. The facility diagram must include completely buried tanks that are otherwise exempted from the requirements of this part under 112.1(d)(4). The facility diagram must also include all transfer stations and connecting pipes.*

The Cook Douglass Campus of Rutgers University is located on the south side of the Raritan River and Route 1 in New Brunswick, New Jersey (Figure No. 1). There are a total of twenty-three (23) areas at the Cook Campus and nine (9) storage areas at the Douglass Campus of Rutgers where petroleum product is stored in underground storage tanks (USTs), aboveground storage tanks (ASTs) and in 55-gallon drums (Figure No.s 2 through 10). Of the 32 areas, six (6) are USTs, nineteen (19) are ASTs and seven (7) are drum storage areas. Various types of petroleum product

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are stored in the tanks, including No. 2 fuel oil, diesel fuel, unleaded gasoline and used oil. The No. 2 fuel oil, and diesel fuel are stored in ASTs and USTs for use in boilers or space heaters that heat buildings and emergency generators, while the unleaded gasoline is stored in both ASTs and USTs to fuel farm trucks and equipment. Used motor oil is stored in a shed outside of building #8323. The USTs at Buildings 6055, 6095, 6280 and 8419 were installed in accordance with the standards of N.J.A.C. 7:14B-4.

The USTs and ASTs at the facility receive product by common carrier via tank truck. Typically, product is delivered by a 3,000-gallon compartmentalized truck which pumps at a rate of 50 to 65 gallons per minute. For 10,000-gallon capacity USTs, a 7,000-gallon tank truck is used. The No. 2 fuel oil is delivered to the 10,000-gallon USTs from the tank truck solely by gravity. Product is distributed from the storage tanks to boilers, emergency generators and fuel dispensers via both underground and aboveground piping.

There are six (6) areas on the Cook Campus and one (1) area on the Douglass Campus where oil is stored in 55-gallon drums. Petroleum (fuel oil, lube oil) is stored in drums at Buildings 6041, 6055, 6084, 6095, 6280, 6297 and 8328.

The buildings on the Cook/Douglass Campus are generally open all day, year-round. Rutgers personnel from Environmental Health and Safety can be reached at all times to respond to an incident regarding the product storage areas.

### **3.2. Facility Oil Storage**

*112.7(a)(3)(i) The type of oil in each container and its storage capacity.*

The following table summarizes the location, size and type of oil storage areas at the Cook/Douglass Campus. Figure 2 shows the location of the containers described in these tables. The oil storage areas include aboveground storage tanks (ASTs), underground storage tanks (USTs) and drum storage. In addition to these areas, smaller quantities of oil are stored in temporary portable storage tanks, in hydraulic systems for building elevators, and in transformers that service buildings. Also, many of the laboratories at the Cook/Douglass Campus contain pint-size containers of mineral oil. Containers smaller than 55 gallons are not regulated under these SPCC plan and are not included in these summaries.

Portable storage tanks are typically emplaced for temporary use at construction areas. The tanks store diesel fuel for use in construction vehicles and equipment. The tanks range in size but are typically 275 gallons.

Hydraulic oil is used in several building elevator systems. The hydraulic system that is primarily used in low-rise buildings consists of a long piston that moves up and down within a cylinder. The car moves up when oil is pumped into the cylinder from a reservoir, raising the piston. The car is lowered when the oil returns to the reservoir. The reservoirs store approximately 70 to 80 gallons of hydraulic oil.

Small pole-mounted and pad-mounted electrical transformers are located at many of the buildings at the Cook/Douglass Campus. The transformers generally store a small quantity of dielectric oil.

**Table 2. Summary of Locations of Aboveground Oil Storage at Cook Campus**

Building No.	Building Name	Volume (gallons)	Contents
<b>Aboveground Storage Tanks</b>			
3168	Public Safety Building	1,000	Diesel fuel
3168	Public Safety Building	75	Diesel fuel
6024	Bartlett Hall	275	Diesel fuel
6055	Black Smith Shop	1,000	Diesel oil
6084	Hort Farm #3 – Barn	1,000	Unleaded gas
6084	Hort Farm #3 – Barn	1,000	Diesel fuel
6095	Hort Farm #2 – Barn	275	No. 2 fuel oil
6100	Hort Farm #1 – Storage Bldg.	1,000	Unleaded gas
6246	Food Science	600	Diesel fuel
6280	Newell Central Heating Plant	275	Diesel fuel
6347	Foran Hall – basement	275	Diesel fuel
6362	Foran Hall Pump House	275	Diesel fuel
6432	Institute for Food, Nutrition and Health	400	Diesel fuel
		7,450	
<b>Drums/Containers</b>			
6041	Lawn Shop	550	Motor oil & No. 2 fuel oil
6055	Blacksmith Shop	<440	Motor oil & waste oil
6084	Hort Farm #3 – Greenhouse	<400	Motor oil, gasoline & lube oil
6095	Hort Farm #2 - Barn	<550	Motor oil & No. 2 fuel oil
6280	Newell Central Heating Plant	550	Motor oil & No. 2 fuel oil
6297	Cook Chiller	<500	Gasoline, lube oil & waste oil
		2,990	
<b>Total Aboveground Storage</b>		<b>10,440</b>	



**Table 3. Summary of Locations of Underground Oil Storage at Cook Campus**

Building No.	Building Name	Volume (gallons)	Contents
<b>Underground Storage Tanks</b>			
6055*	Blacksmith Shop	5,000	Unleaded gas
6095*	Hort Farm #2 – Barn	1,000	Unleaded gas
6280*	Newell Central Heating Plant	10,000	No. 2 fuel oil
6280*	Newell Central Heating Plant	10,000	No. 2 fuel oil
<b>Total Underground Storage</b>		<b>26,000</b>	
*Exempt as per 40CFR 112.1 (d) (4). These locations are excluded from the combined total storage and do not require monthly facility inspections.			

**Table 4. Summary of Locations of Aboveground Oil Storage at Douglass Campus**

Building No.	Building Name	Volume (gallons)	Contents
<b>Aboveground Storage Tanks</b>			
7502	Boat House (SC)	550	No. 2 fuel oil
7502	Boat House (SC)	1,000	Unleaded gas
8337	Zone 3 (SC)	275	No. 2 fuel oil
8328	Facilities Vehicle Maintenance Shop	275	Used Oil
8419	Walters Hall	336	Diesel Fuel
8444	Global Learning Village	228	Diesel Fuel
<b>Drums/Containers</b>			
8328	Facilities Vehicle Maintenance Shop	<550	Motor oil & No. 2 fuel oil
<b>Total Aboveground Storage</b>		<b>3,214</b>	

**Table 5. Summary of Locations of Underground Oil Storage at Douglass Campus**

Building No.	Building Name	Volume (gallons)	Contents
<b>Underground Storage Tanks</b>			
8419*	Walters Hall	20,000	No. 2 fuel oil
8419*	Walters Hall	20,000	No. 2 fuel oil
<b>Total Underground Storage</b>		<b>40,000</b>	
*Exempt as per 40CFR 112.1 (d) (4). These locations are excluded from the combined total storage and do not require monthly facility inspections.			

### 3.3. Drainage Pathways and Distance to Navigable Waters

*Description of facility's proximity to bays, rivers, streams (perennial or intermittent), creeks, ditches, flood control channels, storm drains, and other waterways. Hydrological systems are described.*

For the purpose of describing navigable waterways and other surface water bodies at the Cook/Douglass Campus, the discussion in this section is divided into: (a) the Main Campus (i.e., north of US Route 1), (b) Horticulture Farm #1, (c) Horticulture Farm #2, and (d) Horticulture Farm #3.

#### Main Campus

There are four surface water bodies and an unnamed drainage swale at or adjacent to the Main Campus. Of the four surface water bodies, there are two reservoirs located to the southeast of the Corwin Dorms and northwest of Building 6008. The reservoirs are constructed above grade (a minimum of 20 feet) and therefore are not predicted to be at risk from a discharge at any adjacent oil storage locations. The third surface water body is an artificial lake, "the Passion Puddle". It is located southeast of Building 6000 (Waller Hall). The lake is 0.79 acres in area and receives storm water runoff from neighboring roadways and parking lots. The fourth surface water body is the Raritan River. The Raritan River is located adjacent to Building 7502 (Boat House).

The unnamed drainage swale is located east of Building 6280 (Newell Central Heating Plant). The swale is not delineated on the USGS Quadrangle Map for the area (New Brunswick, NJ) and the final discharge location of the swale is not known. Based on local topography, it is predicted that the discharge swale discharges to the Raritan River a distance of approximately 3,000 feet to the northeast.

Storm water catch basins are also located along many of the public streets on the Cook/Douglass Campus. The catch basins collect surface water that is then piped into the New Brunswick storm water sewer system. The New Brunswick storm water sewer system discharges to the Raritan River.

#### Horticulture Farm #1

Lawrence Brook and one unnamed pond are near Horticulture Farm #1. Lawrence Brook is located approximately 600 feet to the north of Building 6102. Lawrence Brook discharges to Weston's Mill Pond River approximately 2,000 feet to the northeast. The unnamed pond is estimated to be between 0.5 and 0.75 acres in size. It is located to the west of Building 6100.

#### Horticulture Farm #2

There is one surface water body, Weston's Mill Pond River, near Horticulture Farm #2. It is located approximately 1,800 feet to the east of Building 6095 and 6314.

Horticulture Farm #3

There are two surface water bodies, Weston’s Mill Pond River and Sawmill Brook, near Horticulture Farm #3. Weston’s Mill Pond River is located approximately 600 feet to the west of Building 6081. Sawmill Brook is located approximately 1,200 feet to the south of Building 6081. Sawmill Brook flows to the west where it discharges to Weston’s Mill Pond River.

**4. SPILL HISTORY**

*112.7(a) A facility which has experienced one or more spill events within twelve months prior to the effective date of this part should include a written description of each such spill, corrective action taken and plans for preventing recurrence.*

Table No. 6 indicates that no spills have occurred at this facility.

**Table 6. Spill History**

<b>Location/Date/ Time of Spill</b>	<b>Type &amp; Amount Spilled</b>	<b>Cause</b>	<b>Affected Watercourses</b>	<b>Damages &amp; Cost of Damages</b>	<b>Cleanup Cost</b>	<b>Corrective Action</b>
None						

**5. POTENTIAL SPILL PREDICTIONS**

*112.7(b) Where experience indicates a reasonable potential for equipment failure (such as loading and unloading equipment, tank overflow, rupture, or leakage, or any other equipment known to be a source of a discharge), include in your Plan a prediction of the direction, rate of flow, and total quantity of oil which could be discharged from the facility as a result of each type of major equipment failure.*

Tables 7 and 8 summarize the predicted direction, rate of flow and total quantity of oil that would be discharged at storage areas where there is a reasonable potential for equipment failure, at the Cook and Douglass Campuses, respectively.

**Table 7. Summary of Potential Spill Predictions and Prevention Measures at Cook Campus**

Cook Campus -- Rutgers, The State University of New Jersey

Building No. Size & Contents	Type of Failure	Total Volume (gallons)	Flow Rate (gpm)	Direction of Flow	Location of Discharge	Spill Prevention Measures	Prevention Measure Adequate or Corrective Action	Notes
<b>Aboveground Storage Tanks</b>								
3168 1000-G Diesel	Overfill	325	65	West	grass	Portable overfill signal, metered delivery	Adequate	1, 2
	Rupture, leakage	275	-	West	grass	None	Adequate	
	Unloading pipe rupture	325	65	West	asphalt driveway	None	Adequate	1
3168 75-G Diesel	Overfill	75	65	West	grass	Portable overfill signal, metered delivery	Adequate	1, 2
	Rupture, leakage	75	-	West	grass	None	Adequate	
	Unloading pipe rupture	75	65	West	asphalt driveway	None	Adequate	1
6024 275-G Diesel	Overfill	325	65		Building	Portable overfill signal, metered delivery	Adequate	1, 2
	Rupture, leakage	275	-		Building	None	Adequate	
	Unloading pipe rupture	325	65		grass	None	Adequate	1
6055 1000-G Diesel	Overfill	325	65	Southwest	grass	Portable overfill signal, metered delivery	Adequate	1, 2
	Rupture, leakage	275	-	Southwest	grass	None	Adequate	
	Unloading pipe rupture	325	65	Southwest	asphalt driveway to grass	None	Adequate	1
6084 1,000-G Unleaded Gasoline	Overfill	OP	-	-	-	Visual/audible alarms	Adequate	
	Rupture, leakage	SC	-	-	-	Hoover secondary containment vault	Adequate	
	Unloading pipe rupture	325	65	West	grass	None	Adequate	1
6084 1,000-G Diesel	Overfill	OP	-	-	-	Visual/audible alarms	Adequate	
	Rupture, leakage	SC	-	-	-	Hoover secondary containment vault	Adequate	
	Unloading pipe rupture	325	65	West	grass	None	Adequate	1
6095 275-G No. 2	Overfill	325	65	North	gravel	Metered delivery, gauge	Adequate	1, 2
	Rupture, leakage	SC	-	-	-	Highland Tank secondary containment vessel	Adequate	
	Unloading pipe rupture	325	65	North	asphalt driveway to grass	None	Adequate	1
6100 1,000-G Unleaded Gasoline	Overfill	OP	-	-	-	Audible alarm	Adequate	
	Rupture, leakage	SC	-	-	-	Convault secondary containment vault	Adequate	
	Unloading pipe rupture	325	65	Southwest	asphalt driveway to pond	Diversion boom	Adequate	1
6246 600-G Diesel	Overfill	600	-	-	grass	Gauge	Adequate	
	Rupture, leakage	600	-	-	grass	tank/ SC on skid	Adequate	
	Unloading pipe rupture	325	65	E	asphalt driveway to grass	None	Adequate	1
6280 275-G Diesel	Overfill	325	65	West	grass	Portable overfill signal, metered delivery	Adequate	1, 2
	Rupture, leakage	275	-	West	grass	None	Adequate	
	Unloading pipe rupture	325	65	West	asphalt driveway to drainage swale	Diversion boom	Adequate	1
6347 (Basement) 275-G Diesel	Overfill	325	65		-	Containment, Portable overfill signal, metered delivery	Adequate	1, 2
	Rupture, leakage	275	-		-	None	Adequate	
	Unloading pipe rupture	325	65		grass	None	Adequate	1
6362 275-G Diesel	Overfill	325	65		Building	Portable overfill signal, metered delivery	Adequate	1, 2
	Rupture, leakage	275	-		Building	None	Adequate	
	Unloading pipe rupture	325	65		grass	None	Adequate	1
6432 400-G Diesel	Overfill	325	65		Building	Portable overfill signal, metered delivery	Adequate	1, 2
	Rupture, leakage	275	-		Building	None	Adequate	
	Unloading pipe rupture	325	65		grass	None	Adequate	1

**Table 7. Summary of Potential Spill Predictions and Prevention Measures at Cook Campus**  
Cook Campus -- Rutgers, The State University of New Jersey

Building No. Size & Contents	Type of Failure	Total Volume (gallons)	Flow Rate (gpm)	Direction of Flow	Location of Discharge	Spill Prevention Measures	Prevention Measure Adequate or Corrective Action	Notes
<b>Underground Storage Tanks</b>								
6055 5,000-G Unleaded  Gasoline	Overfill	OP	-	-	-	Visual/audible alarms	Adequate	
	Leakage	SC	-	-	-	Double-walled with outer fiberglass-coated steel and interstitial monitoring	Adequate	
	Unloading pipe failure	325	65	N	grass	None	Adequate	1
6092 1,000-G No. 2	Overfill	325	65	E	grass	None	Adequate	1
	Leakage	PT	-	-	-	Pressure testing	Adequate	
	Unloading pipe failure	325	65	NE	grass	None	Adequate	1
6095 1,000-G  Unleaded Gasoline	Overfill	OP	-	-	-	visual/audible alarms	Adequate	
	Leakage	CP	-	-	-	Double-walled with outer fiberglass-coated steel and interstitial monitoring	Adequate	
	Unloading pipe failure	325	65	N	grass	None	Adequate	1
6280 10,000-G No. 4	Overfill	OP	-	-	-	Visual/audible alarms	Adequate	
	Leakage	CP	-	-	-	Double-walled with outer fiberglass-coated steel and interstitial monitoring	Adequate	
	Unloading pipe failure	750	150	E	asphalt driveway to drainage swale	Diversion boom	Adequate	3
6280 10,000-G No. 4	Overfill	OP	-	-	-	Visual/audible alarms	Adequate	
	Leakage	CP	-	-	-	Double-walled with outer fiberglass-coated steel and interstitial monitoring	Adequate	
	Unloading pipe failure	750	150	E	asphalt driveway to drainage swale	Diversion boom	Adequate	3
6095 1,000-G No. 2	Overfill	325	-	-	-	audible alarms	Adequate	
	Leakage	275	-	-	-	Single-walled steel tank	Adequate	
	Unloading pipe failure	325	65	E	grass	Diversion boom	Adequate	1
<b>Drums/Containers</b>								
6280 <10 55-G Drums	Drum rupture	55	55	In building	Secondary containment pallet or in building	Secondary containment pallet or onto impervious building floor	Adequate	
6290 (2) 55-G Drums	Drum rupture	55	55	Asphalt pavement	Dry swale	Spill Pallet	Adequate	
6041 <10 55-G Drums	Drum rupture	55	55	In building	Secondary containment pallet or in building	Secondary containment pallet or onto impervious building floor	Adequate	
6095 <10 55-G Drums	Drum rupture	55	55	In building	Secondary containment pallet or in building	Secondary containment pallet or onto impervious building floor	Adequate	
6084	Drum rupture	55	55	In building	Secondary containment pallet or in building	Spill Pallet	Adequate	
6042	Drum rupture	55	55	In building	Secondary containment pallet or in building	Spill Pallet	Adequate	
6297	Drum rupture	55	55	In building	Secondary containment pallet or in building	Spill Pallet	Adequate	

Abbreviations:

- |  |                               |
|--|-------------------------------|
| OP Tank is equipped with overfill protection.          | - Not applicable.             |
| CP Tank is equipped with corrosion protection.         | AST Aboveground Storage Tank. |
| SC Tank is equipped with secondary containment.        | UST Underground Storage Tank. |
| PT Tank and piping is pressure tested every 36 months. | gpm Gallons per minute.       |

Notes:

- The volume of the worst-case overfill was estimated by calculating the estimated delivery flow rate (a maximum of 65 gallons per minute) by the maximum time in which it would take the delivery person to notice the overfill (assumed to be 5 minutes).
- The delivery tanker truck uses a portable overfill alarm which consists of a pipe fitted with a whistle. The whistle is activated as air is displaced from the AST during filling. When product reaches the bottom of the whistle, it no longer whistles and notifies the delivery person that the AST person programs the number of gallons to be pumped into the tank. When it reaches that quantity, it automatically shuts off.
- Tanks with a capacity greater than 10,000 gallons are typically filled by a tank trailer with a capacity of 7,000 gallons. Product is delivered under gravity drainage in a 3" - 4"-diameter hose. The rate of delivery is estimated to be 150 gpm. The volume of the worst-case overfill or pipe rupture was estimated by calculating the delivery flow rate (150 gpm) by the maximum time in which it would take the delivery person to notice the overfill/rupture (assumed to be 5 minutes).

**Table 8. Summary of Potential Spill Predictions and Prevention Measures at Douglass Campus**  
Douglass Campus -- Rutgers, The State University of New Jersey

Building No. Size & Contents	Type of Failure	Total Volume (gallons)	Flow Rate (gpm)	Direction of Flow	Location of Discharge	Spill Prevention Measures	Prevention Measure Adequate or Corrective Action	Notes
<b>Aboveground Storage Tanks</b>								
7502 550-G No. 2	Overfill	OP	-	-	-	audible alarm	Adequate	
	Rupture, leakage	SC	-	-	-	Hoover s vault w/SC	Adequate	
	Unloading pipe rupture	325	65	SE	catch basin	catch basin cover	Adequate	
7502 1,000-G Unleaded gasoline	Overfill	OP	-	-	-	audible alarm	Adequate	
	Rupture, leakage	SC	-	-	-	Hoover vault/ SC	Adequate	
	Unloading pipe rupture	325	65	NE	asphalt driveway to Raritan River	Diversion boom	Adequate	1
8328 275-G Used Oil	Overfill	-	-	-	-	N/A	N/A	
	Rupture, leakage	SC	-	-	-	SC	Adequate	
	Unloading pipe rupture	100	65	SE	catch basin	catch basin cover	Adequate	1
8337 275-G No. 2	Overfill	-	-	-	-	N/A	N/A	
	Rupture, leakage	SC	-	-	-	SC	Adequate	
	Unloading pipe rupture	100	65	NE	catch basin	catch bsin cover	Adequate	1
8419 336-G No. 2	Overfill	336	-	-	-	Gauge	Adequate	
	Rupture, leakage	336	-	-	-	SC/Interstitial alarm	Adequate	
	Unloading pipe rupture	325	65	E	asphalt driveway to catch basin	Diversion boom/catch basin cover	Adequate	1
8444 228-G No. 2	Overfill	228	-	-	-	Gauge	Adequate	
	Rupture, leakage	228	-	-	-	SC/Interstitial alarm	Adequate	
	Unloading pipe rupture	325	65	E	asphalt driveway to catch basin	Diversion boom/catch basin cover	Adequate	1
<b>Underground Storage Tanks</b>								
8419 (2) 20,000-G No. 2 Fuel Oil	Overfill	OP	-	-	-	Visual/audible alarms	Adequate	
	Leakage	SC	-	-	-	Double-walled with outer fiberglass-coated steel and interstitial monitoring	Adequate	
	Unloading pipe rupture	325	65	W	Asphalt driveway to catch basin	Diversion booms	Adequate	1,3
<b>Drums/Containers</b>								
8328 <10 55-G Drums	Drum rupture	55	55	-	Secondary containment pallet or in building	Secondary containment pallet or onto impervious building floor	Adequate	
8320	Drum rupture	55	55	-	Secondary containment pallet or in building	Secondary containment pallet or onto impervious building floor	Adequate	

Abbreviations:

OP Tank is equipped with overfill protection.  
 CP Tank is equipped with corrosion protection.  
 SC Tank is equipped with secondary containment.  
 PT Tank and piping is pressure tested every 36 months.

- Not applicable.  
 AST Aboveground Storage Tank.  
 UST Underground Storage Tank.  
 gpm Gallons per minute.

Notes:

- The volume of the worst-case overfill was estimated by calculating the estimated delivery flow rate (a maximum of 65 gallons per minute) by the maximum time in which it would take the delivery person to notice the overfill (assumed to be 5 minutes).
- Although corrosion of the UST system is a probable type of failure, an estimate of the volume, rate of discharge and direction of flow is not provided because all of the USTs will either be removed or upgraded to the requirements of N.J.A.C. 7:14B.
- Tanks with a capacity greater than 10,000 gallons are typically filled by a tank trailer with a capacity of 7,000 gallons. Product is delivered under gravity drainage in a 3"- to 4"-diameter hose. The rate of delivery is estimated to be 150 gpm. The volume of the worst-case overfill or pipe rupture was estimated by calculating the delivery flow rate (150 gpm) by the maximum time in which it would take the delivery person to notice the overfill/rupture (assumed to be 5 minutes).

## 6. PREVENTION MEASURES PROVIDED

### 6.1. Summary of Spill Prevention and Control Measures

*112.7(c) Provide appropriate containment and/or diversionary structures or equipment to prevent a discharge as described in 112.1(b). The entire containment system, including walls and floor, must be capable of containing oil and must be constructed so that any discharge from a primary containment system, such as a tank or pipe, will not escape the containment system before clean up occurs. At a minimum, you must use one of the following prevention systems or its equivalent: (1) for onshore facilities: (i) Dikes, berms or retaining walls sufficiently impervious to contain oil; (ii) Curbing; (iii) Culverting, gutters or other drainage systems; (iv) Weirs, booms or other barriers; (v) Spill diversion ponds; (vi) Retention ponds, or; (vii) Sorbent materials. (2) Offshore facilities: (i) Curbing, drip pans, or; (ii) Sumps and collection systems.*

Tables 7 and 8 summarize the spill prevention and control measures that are in-place to minimize the potential for equipment failure at the Cook and Douglass Campuses, respectively. The spill prevention and control measures for the portable storage tanks, elevators and building transformers are summarized below.

When a portable storage tank is used (see Section 3.2), it is positioned to (a) prevent any spilled oil from reaching navigable waters and (b) protect the tank from periodic flooding or washout. A secondary means of containment is provided for the largest single compartment or tank. The type of secondary containment is based on the area where the portable storage tank is positioned.

There are no specific secondary containment measures for the hydraulic oil in elevator systems at the Cook/Douglass Campus. Instead, Rutgers conducts monthly inspections of the hydraulic reservoirs for the elevators. In the event of a loss of hydraulic oil from the reservoir, the loss is reported to the Director of Facility Maintenance, Utility, or Housing Services. A work order is written and the cause of loss is evaluated and repaired. Despite the absence of specific secondary containment, there is a low potential for a discharge from a hydraulic reservoir to affect any navigable waterway at the Cook/Douglass Campus.

There are no specific secondary containment measures for pole- and pad-mounted transformers that service buildings at the Cook/Douglass Campus. Rutgers personnel at a monthly and, in some instances, a quarterly interval, inspect transformers. Additionally, in the event of a loss of dielectric oil from a transformer, the transformer would overheat and cease to function. As such, Rutgers personnel would immediately respond to repair the transformer and address any loss of oil.

Secondary containment for the pint-size containers of mineral oil stored in laboratories across the Cook/Douglass campus is provided. The buildings provide containment in the event of a discharge of mineral oil from the containers.

## **6.2. Facility Drainage**

### **6.2.1. Drainage from diked storage areas**

*112.8(b) (1) Facility drainage. Restrain drainage from diked storage areas by valves to prevent discharge into the drainage system or facility treatment system, except where facility systems are designed to control such discharge. You may empty diked areas by pumps or ejectors; however, you must manually activate these pumps or ejectors and must inspect the condition of the accumulation before starting, to ensure no oil will be discharged.*

Since the facility is a college campus and the oil storage areas are generally comprised of individual tanks at various buildings across the campus, overall facility drainage is not controlled. Instead, drainage is controlled at specific oil storage areas, where necessary to minimize the potential for a discharge to navigable water.

There are no ASTs with diked secondary containment. Of the 17 ASTs, twelve (12) are located within completely enclosed containment vaults preventing the accumulation of precipitation. One of the ASTs is located in a basement (6347), one is located in a shed (8328) and two are located in first floor mechanical rooms (6347 and 6024).

### **6.2.2. Valves used on diked area storage**

*112.8(b) (2) Use valves of manual, open-and-closed design, for the drainage of diked areas. You may not use flapper-type drain valves to drain diked areas. If your facility drainage drains directly into a watercourse and not into an on-site wastewater treatment plant, you must inspect and may drain uncontaminated retained storm water, as provided in paragraphs (c) (3)(ii), (iii), and (iv) of this section*

This section is not applicable to this facility since there are no diked secondary containment areas.

### **6.2.3. Drainage systems from undiked areas**

*112.8(b)(3) Design facility drainage systems from undiked areas with a potential for a discharge such as where piping is located outside containment walls or where tank truck discharges may occur outside the loading area) to flow into ponds, lagoons or catchment basins, designed to retain oil or return it to the facility. You must not locate catchment basins in areas subject to periodic flooding.*

As discussed in Section 6.2.1, there is no diking at the three (3) ASTs that are not equipped with secondary containment vaults and there is no diking at any of the tank truck unloading areas for ASTs or USTs. There are no specific drainage systems for undiked areas at either the Cook or Douglass Campus designed to retain oil in the event of a discharge from either an AST or during tank truck unloading. However, there are only a few oil storage locations where there is a reasonable potential for a discharge to enter either a storm water catch basin or a surface water body.



Specifically, storm water catch basins are located near the truck unloading areas at Buildings 6290, 7502 (550-gallon No. 2 fuel oil AST), 8419, 6024 and 6347. Surface water bodies or drainage swales, which may discharge to navigable waterways, are located adjacent to the truck unloading areas at Buildings 6100, 6280, and 8419. Only the truck unloading area for the 1,000-gallon unleaded gasoline AST at Building 7502 is located immediately adjacent to a navigable waterway (the Raritan River).

In all other oil storage areas, a discharge from an AST or tank truck during unloading would either flow to the ground or laterally spread across paved areas. Under this scenario, the discharge could be cleaned prior to affecting any navigable waterway or any route to a navigable waterway.

To minimize the potential for a discharge to the storm water catch basins, surface water bodies or navigable waterways, specific prevention measures are implemented. At areas where there is a storm water catch basin, diversion booms are placed around the tank truck and/or around the catch basin prior to unloading. At areas located adjacent to drainage swales or surface water bodies that may eventually discharge to navigable waterways, (i.e., at Buildings 6100, 6280 and 7502, 8419) a diversion boom is placed around the tank truck. The placement of the diversion boom is designed to direct a discharge away from the swale or surface water body and remains in place until unloading is complete and all connections are secure.

#### **6.2.4. Final discharge of drainage**

*112.8(b) (4) If facility drainage is not engineered as in paragraph (b)(3), of this section, equip the final discharge of all ditches inside the facility a diversion system that would, in the event of an uncontrolled discharge, retain oil in the facility.*

Rutgers does not control the final discharge of storm water from the facility. Therefore, spill prevention measures focus on areas where there is a potential for a discharge from an oil storage area reaching a storm water catch basin or drainage swale. Specifically, as discussed in Section 6.2.3, Rutgers utilizes diversion booms to minimize the potential for a discharge entering a catch basin or drainage swale. If petroleum were ever to enter a catch basin or drainage swale, the emergency contacts listed in Section 6.10 should be immediately contacted.

#### **6.2.5. Facility Drainage Systems and Equipment**

*112.8(b)(5) Where drainage waters are treated in more than one treatment unit and such treatment is continuous, and pump transfer is needed, provide two “lift” pumps and permanently install at least one of these pumps. Whatever techniques are used, you must engineer facility drainage systems to prevent a discharge as described in paragraph 112.1(b) in case there is an equipment failure or human error at the facility.*

This section is not applicable to this facility since there are no facility drainage treatment systems.

### **6.3. Bulk Storage Tanks and Secondary Containment**

#### **6.3.1. Tank compatibility with its contents**

*112.8(c) (1) Bulk storage containers. Not use a container for the storage of oil unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature.*

The material and construction of all USTs is compatible with both the type of oil stored and the conditions of oil storage as summarized in Tables 9 and 10 below.

**Table 9. Summary of AST/UST Compatibility with Contents for Cook Campus**

<b>Building No. Size &amp; Type</b>	<b>Construction <sup>1</sup></b>	<b>Date Installed</b>	<b>Contents</b>	<b>Contents Compatible</b>
<b>3168</b> 1,000-G AST	Steel	2005	No.2 Fuel Oil	Yes
<b>3168</b> 75-G AST	Steel	2005	No.2 Fuel Oil	Yes
<b>6055</b> 5, 000-G UST	Double-walled-inner steel & fiberglass-coated outer steel	1999	Unleaded Gasoline	Yes
<b>6055</b> 1,000-G AST	Steel (Patriot)	2004	Diesel oil	Yes
<b>6084</b> (2) 1,000-G ASTs	Steel (Convault)	1999	Unleaded gasoline & Diesel fuel	Yes
<b>6095</b> 275-G AST	Steel	1980	No. 2 fuel oil	Yes
<b>6095</b> 1, 000-G UST	Steel	1994	Unleaded gasoline	Yes
<b>6100</b> 1, 000-G AST	Steel (Convault)	1994	Unleaded gasoline	Yes
<b>6280</b> 275-G AST	Steel	1992	Diesel fuel	Yes
<b>6280</b> (2) 10,000-G USTs	Double-walled-inner steel & fiberglass-coated outer steel	1999	No. 4 fuel oil	Yes
<b>6024</b> 275 G-AST	Steel	1980	No. 2 fuel oil	Yes
<b>6246</b> 6000-G AST	Double-walled steel on skid	2012	Diesel fuel	Yes
<b>6347</b> (2) 275 G-AST's	Steel	1980	No. 2 fuel oil	Yes

**Table 10. Summary of AST/UST Compatibility with Contents for Douglass Campus**

<b>Building No. Size &amp; Type</b>	<b>Construction <sup>1</sup></b>	<b>Date Installed</b>	<b>Contents</b>	<b>Contents Compatible</b>
<b>7502</b> 550-G AST	Steel (Hoover)	1999	No. 2 fuel oil	Yes
<b>8337</b> 275-G AST	Steel	2003	No. 2 fuel oil	Yes
<b>7502</b> 1, 000-G AST	Steel (Hoover)	1999	Unleaded gasoline	Yes
<b>8419</b> (2) 20,000-G UST	Double-walled-inner steel & fiberglass-coated outer steel	1999	No. 2 fuel oil	Yes
<b>8419</b> 336-G AST	Double-walled steel on skid	2011	Diesel Fuel	Yes

**6.3.2. Diked area construction and containment volume for storage tanks**

*112.8(c)(2) Construct all bulk storage tank installations so that you provide a secondary means of containment for the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation. You must ensure diked areas are sufficiently impervious to contain discharges oil. Dikes, containment curbs, and pits are commonly employed for this purpose. You may use an alternative system consisting of a drainage trench enclosure that must be arranged so that a discharge will be safely confined in an in facility catchment basin or holding pond.*

A secondary containment structure is provided for the ASTs, at Buildings 6084 (1,000-gallon unleaded gasoline and diesel fuel), 6100 (1,000-gallon unleaded gasoline), 8337 (275-gallon), 6280 (275-gallon), 6055 (1,000-gallon), 6095 (275-gallon) 8419 (336-gallon), 6347-basement (275-gallon), 7502 (550-gallon No.2 fuel oil and 1,000-gallon unleaded gasoline) and 8337 (275-used oil). The secondary containment is designed to hold the entire contents of the ASTs in the event of a failure. Additional volume for precipitation is not necessary since the containment structure is fully enclosed.

**6.3.3. Diked area, inspection and drainage of rainwater**

*112.8(c)(3) Not allow drainage of uncontaminated rainwater from the diked area into a storm drain or discharge of an effluent into an open water course, lake, or pond, or bypassing the treatment facility system unless you:*

- (i) Normally keep the bypass valve sealed closed.*
- (ii) Inspect the retained rainwater to ensure its presence will not cause a discharge as described in paragraph 112.1(b).*
- (iii) Open the bypass valve and reseal it following drainage under responsible supervision.*

*(iv) Keep adequate records of such events, for example, any records required under permits issued in accordance with paragraph 122.41(j)(2) and 122.41(m)(3) of this chapter.*

This section is not applicable to the facility since there are no diked storage areas.

#### **6.3.4. Corrosion protection of buried metallic storage tanks**

*112.8(c)(4) Protect any completely buried metallic storage tanks installed after January 10, 1974 from corrosion by coatings or cathodic protection compatible with local soil conditions. You must regularly leak test such completely buried metallic storage tanks.*

The USTs at Buildings 6055, 6280 and 8419 contain corrosion protection in accordance with N.J.A.C. 7:14-4.2 and 40 CFR 280. These USTs are double-walled, consisting of an inner steel tank surrounded by a fiberglass-coated outer steel tank and are equipped with interstitial monitoring. These USTs were designed and installed in compliance with N.J.A.C. 7:14B-4 and 40 CFR 280. They are shown on the storage facility plan and are exempt from these regulations.

#### **6.3.5. Corrosion protection of partially buried metallic tanks**

*112.8(c)(5) Not use partially buried metallic tanks for the storage of oil, unless you protect the buried section of the tank from corrosion. You must protect the partially buried and bunkered tanks from corrosion by coatings or cathodic protection compatible with local soil conditions*

This section is not applicable to the facility since there are no partially buried tanks.

#### **6.3.6. Aboveground tank periodic integrity testing**

*112.8(c)(6) Test each aboveground container for integrity on a regular schedule, and whenever you make material repair. The frequency of and type of testing must take into account container size and design (such as floating roof, skid mounted, elevated, or partially buried). You must combine visual inspection with another testing technique such as hydrostatic testing, radiographic testing, ultrasonic testing, acoustical emissions testing, or another system of non-destructive shell testing. You must keep comparison records and you must also inspect the container's supports and foundations. In addition, you must frequently inspect the outside of the container for signs of deterioration, discharges, or accumulation of oil inside diked areas. Records of inspections and test kept under usual and customary business practices will suffice for purposes of this paragraph*

Rutgers personnel constantly observe ASTs during operating hours. Formal inspections are conducted monthly to examine the exterior of the ASTs and the containment areas.

#### **6.3.7. Control of leakage through internal heating coils**

*112.8(c)(7) Control leakage through defective internal heating coils by monitoring the steam return and exhaust lines for contamination from internal heating coils that discharge into an open*

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*watercourse, or pass the steam return or exhaust lines through a settling tank, skimmer, or other separation or retention system.*

This section is not applicable to the facility since none of the USTs are equipped with internal heating coils.

### **6.3.8. Tank installation fail-safe engineered**

*112.8(c)(8) Engineer or update each container installation in accordance with good engineering practice to avoid discharges. You must provide at least one of the following devices:*

- (i) High liquid level alarms with an audible or visual signal at a constantly attended operation or surveillance station. In smaller facilities an audible air vent may suffice.*
- (ii) High liquid level pump cutoff devices set to stop flow at a predetermined container content level.*
- (iii) Direct audible or code signal communication between the tank gauger and the pumping station.*
- (iv) A fast response system for determining the liquid level of each bulk storage container such as digital computers, telepulse, or direct vision gauges. If you use this alternative, a person must be present to monitor gauges and the overall filling of bulk storage containers.*
- (v) You must regularly test liquid level sensing devices to ensure proper operation.*

Several ASTs and USTs are equipped with fail-safe engineering systems as summarized in the following Table 11.

**Table 11. Summary of Fail-Safe Engineering Systems.**

<b>Building No. Size &amp; Type</b>	<b>High Liquid Level Audible Alarm</b>	<b>High Liquid Level Visual Alarm</b>	<b>Pump Cutoff Device</b>	<b>Fast Response System for Liquid Level Gauging</b>	<b>Direct Communication between Gauger and Pumper</b>
<b>3168</b> 1,000-G AST	Yes	Yes	No	No	Yes
<b>6055</b> 5,000-G UST	Yes	Yes	Yes	No	Yes
<b>6084</b> 1,000-G AST	Yes	Yes	No	No	Yes
<b>6084</b> 1,000-G AST	Yes	Yes	No	No	Yes
<b>6100</b> 1,000-G AST	Yes	No	No	No	Yes
<b>6280</b> (2) 10,000-G USTs	Yes	Yes	Yes	No	Yes
<b>7502</b> 550-G AST	Yes	No	No	No	Yes
<b>7502</b> 1,000-G AST	Yes	No	No	No	Yes
<b>8419</b> (2) 20,000-G USTs	Yes	No	No	No	Yes

The ASTs and USTs listed in the table above are equipped with either visual or audible alarms or both. The visual and audible alarms are installed such that the tank truck operator can respond quickly in the event that an alarm is triggered. The high-level alarms are activated when product reaches 95% of the storage capacity of the UST.

The remaining ASTs and USTs are not equipped with fail-safe engineering systems but there is a low probability for an overflow to affect either a storm water catch basin or surface water body and the installation of fail-safe engineering systems at these areas would not provide protection from a discharge affecting a navigable waterway commensurate with the cost of installing the engineering system. For the ASTs at Buildings 6084, 6095, 6024 and 6347 the predicted quantity of an overflow is small (i.e., 550 gallons and less), the AST is not located adjacent to any storm water catch basins nor surface water bodies, and alternative spill prevention measures are utilized (i.e., diversion booms, portable overflow signals or metered delivery systems). The AST at Building

8419 is fully enclosed, booms are deployed around the tank truck, the adjacent storm water catch basin is covered when fueling and the predicted quantity of an overflow is small (336 gallons and less).

### **6.3.9. Observation of disposal facilities for effluent discharge**

*112.8(c)(9) Observe effluent treatment facilities frequently enough to detect possible system upsets that could cause a discharge as described in paragraph 112.1(b).*

This section is not applicable to the facility since there are no disposal facilities.

### **6.3.10. Visible oil leak corrections from tank seams and gaskets**

*112.8(c)(10) Promptly correct visible oil leaks which result in a loss of oil from the container, including but not limited to seams, gaskets, piping, pumps, valves, and bolts. You must promptly remove any accumulations of oil in diked areas.*

Visible oil leaks are reported to the Director of Facility Maintenance Services (see Section 2). Subsequent to reporting, a work order is written and the tank is repaired prior to being reused.

### **6.3.11. Appropriate position of mobile or portable oil storage tanks**

*112.8(c)(11) Position or locate mobile or portable oil storage containers to prevent a discharge as describe in paragraph 112.1(b). You must furnish secondary means of containment, such as dikes or catchment basins, should be furnish a secondary means of containment, sufficient to contain the capacity of the largest single compartment or container with sufficient freeboard to contain precipitation.*

In addition, when a portable storage tank is used (see Section 3.2), it is positioned to (a) prevent any spilled oil from reaching navigable waters and (b) protect the tank from periodic flooding or washout. A secondary means of containment is provided for the largest single compartment or tank. The type of secondary containment is based on the area where the portable storage tank is positioned.

## **6.4. Bulk Storage Piping**

### **6.4.1. Underground Piping**

*112.8(d)(1) Provide buried piping that is installed after August 16, 2002 with a protective wrapping and coating. You must also cathodically protect such buried piping installations or otherwise satisfy the corrosion protection standards for piping in part 280 of this chapter or a state program approved under part 281 of this chapter. If a section of buried line is exposed for any reason, it should be carefully inspect it for deterioration. If you find corrosion damage, you must undertake, additional examination and corrective action as indicated by the magnitude of the damage.*



All underground piping associated with USTs is either constructed in accordance with N.J.A.C. 7:14-4.2 or is subjected to pressure testing every 36 months. The underground piping at the 5,000-gallon UST at Building 6055; two, 10,000-gallon USTs at Building 6280; and two 20,000-gallon USTs at Building 8419 is double-walled, fiberglass-coated outer steel and is equipped with interstitial monitoring and alarm systems. The underground piping at the remainder of the USTs is subjected to pressure testing every 36 months.

#### **6.4.2. Provisions for piping not in service**

*112.8(d)(2) Cap or blank flange the terminal connection at the transfer point and mark it as to origin when piping is not in service for an extended period of time.*

When aboveground piping at the ASTs is not in use, the terminal connection at the transfer point, where applicable, is capped. All aboveground piping is labeled with product content, origin and direction of flow.

#### **6.4.3. Aboveground Piping Support**

*112.8(d)(3) Properly design pipe supports to minimize abrasion and corrosion and allow for expansion and contraction.*

All aboveground piping is properly supported. The aboveground piping associated with ASTs at Buildings 6095 and 6280 does not require supports external to the building, since the ASTs are located immediately adjacent to the building. At these locations, the AST and building provide sufficient support of aboveground piping.

The aboveground piping associated with ASTs at Buildings 6084 (1,000-G unleaded gasoline and 1,000-G diesel fuel), 6100 (1,000-G unleaded gasoline) and 7502 (550-G No. 2 fuel oil and 1,000-G unleaded gasoline) is also properly supported. The containment vault installed at each of these ASTs supports the aboveground piping.

#### **6.4.4. Aboveground valve and pipeline examination**

*112.8(d)(4) Regularly inspect all aboveground valves, piping and appurtenances. During the inspection you must assess the general conditions of items, such as flange joints, expansion joints, valve glands and bodies, catch pans, pipeline supports, locking of valves, and metal surfaces. You must conduct integrity and leak testing of buried metal piping at the time of installation, construction, relocation, or replacement.*

Aboveground piping and valves are inspected at the time facility inspections are conducted on a monthly basis. Records of these inspections are documented and signed by the inspector.

The only aboveground piping located in an area where a discharge could potentially affect either a storm water catch basin or surface water body is at the 1,000-gallon unleaded gasoline AST at Building 6100 and the 550-gallon No. 2 fuel oil and the 1,000-gallon unleaded gasoline AST at

Building 7502. The aboveground piping at these ASTs is subjected to pressure testing every 36 months.

#### **6.4.5. Aboveground piping protection from vehicular traffic**

*112.8(b)(5) Warn all vehicles entering the facility to be sure that no vehicle will endanger aboveground piping or other oil transfer operations.*

All aboveground piping is protected from vehicular traffic. The aboveground piping associated with ASTs at Buildings 6095 and 6280 is situated between the AST and the building. Aboveground piping associated with ASTs at Buildings 6084 (1,000-G unleaded gasoline and 1,000-G diesel fuel), 6100 (1,000-G unleaded gasoline) and 7502 are protected by concrete bollards.

### **6.5. Facility Truck Unloading**

#### **6.5.1. Unloading procedures meet DOT regulations**

Rutgers requires all drivers to comply with DOT regulations in 49 CFR part 177 and a facility standard operating procedure (see Attachment D).

#### **6.5.2. Secondary containment for tank trucks**

*112.7(h)(1) Facility tank car and tank truck loading/unloading rack (excluding offshore facilities). Where loading/unloading area drainage does not flow into a catchment basin or treatment facility designed to handle discharges, use a quick drainage system for tank truck loading and unloading areas. You must design a containment system to hold at least the maximum capacity of any single compartment of a tank car or tank truck loaded or unloaded at the facility.*

All tank truck unloading areas associated with oil storage areas are undiked. However, the only areas where there is a reasonable potential for a discharge to either reach a storm water catch basin or surface water body are at Buildings 6100, 6280, 7502 and 8419. To minimize the potential for a discharge to either the storm water catch basins or surface water body, prevention measures are utilized at these locations during unloading. At areas where there is a catch basin (550-G AST at Building 7502, 336-G AST and (2) 20,000-G USTs at Building 8419), a diversion boom is emplaced around the tanker truck and/or catch basin prior to unloading.

At areas where there is a potential for a discharge to a surface water body or a drainage swale, a diversion boom is placed around the tank truck. The placement of the diversion boom is designed to direct a discharge away from the adjacent tributary. Diversion booms are used at the 1,000-G AST at Building 6100; 275-G AST at Building 6280; two 10,000-G USTs at Building 6280 and at the 550-gallon AST and the 1,000-G AST at Building 7502.

In other areas, a discharge during truck unloading would either flow to the ground or laterally spread across paved areas. Under this scenario, the discharge could be cleaned prior to affecting any navigable waterway or any route to a navigable waterway.

### **6.5.3. Warning or barrier system for vehicles**

*112.7(h)(2) Provide an interlocked warning light or physical barrier system, warning signs, wheel chocks, or vehicle break interlock system in loading/unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed transfer lines.*

Warning signs are posted in all the unloading areas for the ASTs and USTs to prevent vehicular departure before disconnecting flexible or fixed transfer lines.

### **6.5.4. Vehicles examined for lowermost drainage outlets before leaving**

*112.7(h)(3) Prior to filling and departure of any tank car or tank truck closely inspect for discharges the lowermost drain and all outlets of such vehicles, if necessary, ensure that they are tightened, adjusted, or replaced to prevent liquid discharge while in transit.*

Warning signs are posted in all the unloading areas for the ASTs and USTs to remind drivers to examine drain outlets prior to departure.

## **6.6. Inspections and Record keeping**

*112.7(e) Conduct inspections and test required of this part in accordance with written procedures that you or the certifying engineer develop for the facility. You must keep these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector, with the SPCC Plan for a period of three years. Records of inspections and tests kept under usual and customary business practices will suffice for purposes of this paragraph*

### Facility inspection procedures:

Formal facility inspections are conducted monthly and records of these inspections are documented and signed by the inspector. During the monthly inspections, all unloading areas, containment structures, valves, pipelines, and other equipment are inspected. The checklist used for these inspections can be found in Attachment B.

### Length of time records kept:

Inspection, training, and tank integrity testing records are retained for at least three years.

## **6.7. Site Security**

### **6.7.1. Fencing**

*112.7(g)(1) Fully fence each facility handling, processing, and storing oil and lock and/or guard entrance gates the facility is not in production or is unattended.*

Fencing is not provided around all of the oil storage areas since the facility is a college and access to the areas in which the ASTs and USTs are located cannot be restricted. Fencing is provided around the ASTs at Buildings 3168, 6246, 6100 and 7502.

Despite the lack of fencing at other ASTs, there is a low probability for a discharge to affect a navigable waterway. Additionally, there is a low probability that a discharge could occur as a result of unauthorized access to a UST area; therefore, fencing is not provided in all UST areas.

### **6.7.2. Flow valves locked**

*112.7(g)(2) Security. Ensure the master flow and drain valves and any other valves permitting direct outward flow of the container's contents to the surface have adequate securely measures so that they remain in the closed position when in non-operating or nonstandby status.*

The only ASTs where there is piping, which could result in the tank contents flowing to the ground surface, are at the ASTs at Buildings 6084 (1,000-G unleaded gasoline and 1,000-G diesel fuel), 6100 (1,000-G unleaded gasoline) and 7502 (1,000-G and 550-G dual oil unleaded gasoline). The piping for these ASTs is connected to a fuel dispenser. An electronic key card protects the fuel dispensers.

### **6.7.3. Starter controls locked**

*112.7(g)(3) Lock the starter control on each oil pump in the 'off' position and locate it at a site accessible only to authorized personnel when the pumps are in a non-operating or non-standby status.*

Starter controls for pumps associated with boilers and the emergency generators are located in areas accessible only to authorized Rutgers personnel. Starter controls for fuel dispensers which service the ASTs at Buildings 6084 (1,000-G unleaded gasoline and 1,000-G diesel fuel), 6100 (1,000-G unleaded gasoline) and 7502 (1,000-G unleaded gasoline) are protected by either locks or electronic key cards. The starter controls for the fuel dispensers that serve the USTs at Building 6095 (1,000-G unleaded gasoline) and Building 6055 (5,000-G unleaded gasoline) are protected by electronic key cards.

### **6.7.4. Fill piping connections securely capped**

*112.7(g)(4) Securely cap or blank flange the loading/unloading connections of oil pipelines or facility piping when not in service or standby service.*

All fill piping connections are securely capped when they are not in use and blank-flanged when they are in standby service for an extended time.

#### **6.7.5. *Lighting adequate to detect spills***

*112.7(g)(5) Provide facility lighting commensurate with the type and location of the facility that will assist in the:*

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

*(ii) Prevention of spills occurring through acts of vandalism.*

Lights illuminate the oil storage areas. Lights are automatically turned on. Lighting is adequate to detect spills during nighttime hours and deter vandalism.

### **6.8. Personnel Training and Spill Prevention Procedures**

#### **6.8.1. *Personnel instructions***

*112.7(f)(1) Personnel, training and discharge prevention procedures. At a minimum, train your oil handling personnel in the operation and maintenance of equipment to prevent the discharges; discharge procedure protocols; applicable pollution control laws, rules and regulations; general facility operations; and, the contents of the SPCC Plan.*

Any oil handling personnel responsible for implementing the provisions of this SPCC Plan are required to have spill prevention training that includes a complete review of Rutgers' SPCC Plan. Rutgers conducts yearly training to ensure that these personnel are familiar with the SPCC Plan and the measures to be implemented in the event of a discharge.

#### **6.8.2. *Designated person accountable for spill prevention***

*112.7(f)(2) Designate a person at each applicable facility who is accountable for oil spill prevention and who reports to facility management.*

The person with the title of, Director of Facilities, is the designated person accountable for spill prevention at Rutgers Cook/ Douglass Campus.

#### **6.8.3. *Spill prevention briefings***

*112.7(f)(3) Schedule and conduct discharge prevention briefings for your oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for that facility. Such briefings must highlight and describe known discharges in paragraph 112.1(b) or failures, malfunctioning components, and recently developed precautionary measures.*

During yearly safety briefings, spill prevention is discussed. Any incidents are discussed in these briefings in order to prevent them from recurring. Employee feedback and recommendations are encouraged in spill prevention and operation.

**6.9. Spill Control Equipment**

Spill control equipment on site includes absorbent pads and booms; granular absorbent, empty drums, brooms, and shovels. Spill equipment is stored in facility/housing maintenance areas.

**6.10. Emergency Contacts**

*Part 110-Discharge of Oil: 110.10 Notice. Any person in charge of a vessel or of an onshore or offshore facility shall, as soon as he or she has knowledge of any discharge of oil from such vessel or facility in violation of §110.6, immediately notify the National Response Center (NRC) (800-424-8802; in the Washington, DC metropolitan area, 426-2675). If direct reporting to the NRC is not practicable, reports may be made to the Coast Guard or EPA predesignated On-Scene Coordinator (OSC) for the geographic area where the discharge occurs. All such reports shall be promptly relayed to the NRC. If it is not possible to notify the NRC or the predesignated OCS immediately, reports may be made immediately to the nearest Coast Guard unit, provided that the person in charge of the vessel or onshore or offshore facility notifies the NRC as soon as possible. The reports shall be made in accordance with such procedures as the Secretary of Transportation may prescribe. The procedures for such notice are set forth in U.S. Coast Guard regulations, 33 CFR part 153, subpart B and in the National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR part 300, subpart E. (Approved by the Office of Management and Budget under the control number 2050-0046).*

In the event of discharge, the person who is at the scene shall first contact the Rutgers Police. The Rutgers Police shall then contact REHS and Emergency Personnel, as necessary. Emergency contacts as listed in Table No.12.

**Table 12. Emergency Contacts**

Name/Organization	Phone Number
<b>Rutgers Police</b>	<b>(732) 932-7211</b>
Federal National Response Center	(800) 424-8802
NJDEP Spill Hotline	(877) WARN DEP
New Brunswick Health Department	(732) 745-5021
New Brunswick Fire/Police Department	9-1-1

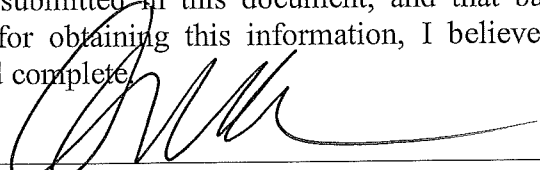
**ATTACHMENT A**  
**Certification of the Applicability of the Substantial Harm Criteria (40 CFR 112.20)**

**Certification of the Applicability of the Substantial Harm Criteria (40 CFR 112.20)**

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 such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?  
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 such that a discharge from the facility would shut down a public 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:** Antonio M. Calcado  
**Title:** Senior Vice President Institutional Planning & Operations  
**Date:** 2/8/16



**ATTACHMENT B**  
**Monthly Facility Inspection Checklist**

# MONTHLY FACILITY INSPECTION CHECKLIST

Location: Example - Generator Diesel AST (500 g)

Date:

Inspector:

### ALL QUESTIONS ARE TO BE ANSWERED

**X = Satisfactory, N/A = Not Applicable, O = Repair or Adjustment Required**

**Explain All "O" Answers in Comments / Remarks / Recommendations**

#### Drainage (Out of Doors Areas)

X	N/A	O	
			Any noticeable oil sheen on runoff.
			Containment area drainage valves are closed and locked.
			Oil / Water separator systems working properly.
			Effluent from oil / water separator inspected.
			No visible oil sheen in containment area.
			No standing water in containment area.
			Valves, flanges, and gaskets are free from leaks.
			Containment walls are intact.

#### AST's

X	N/A	O	
			Tank surfaces checked for signs of leakage.
			Tank condition good (no rusting, corrosion, pitting)
			Bolts, rivets or seams are not damaged.
			Tank foundations intact.
			Level gauges and alarms working properly.
			Vents are not obstructed.
			Containers properly labeled.
			Containment free of liquid (i.e. rain/product)

#### Pipelines

X	N/A	O	
			No signs of corrosion damage to pipelines or supports.
			Buried pipelines are not exposed.
			Out-of service pipes capped.
			Signs / barriers to protect pipelines from vehicles are in place.
			No leaks at valves, flanges or other fittings.
			Containment curbing or trenches are intact.
			Connections are capped or blank-flanged.

#### Truck Loading / Unloading Area

X	N/A	O	
			Warning signs posted.
			No standing water in rack area.
			No leaks in hoses.
			Drip pans not overflowing
			Catch basins free of contamination.

#### Security

X	N/A	O	
			Fence and gates intact.
			Gates locked and secure.
			Entrance door secure.
			AST's locked when not in use.
			Starter controls for pumps locked when not in use.
			Lighting is working properly.

#### Drums/Containers & Oil Filled Equipment

X	N/A	O	
			Containers condition good (i.e. no bulging, no leaks)
			Containers properly labeled/identified (product or waste)
			Containers properly closed
			Proper containment
			Containment free of liquid (i.e. rain/product)
			Transformers in good condition

#### UST's

X	N/A	O	
			Are sumps free of product/water/debris
			Are manways free of product/water/debris
			Are fill ports marked
			Have any alarms sounded in the last month
			Level gauges and alarms working properly.
			Vents are not obstructed.

#### Spill Kit Supplies

X	N/A	O	
			Spill Kit on site / available

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### Comments / Remarks / Recommendations

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**ATTACHMENT C**  
**Standard Operating Procedure – Tank Truck Unloading**

## **STANDARD OPERATING PROCEDURE – TANKER TRUCK UNLOADING**

This standard operating procedure (SOP) is for the unloading of petroleum products only at Rutgers University. The SOP is intended to be used for unloading from tanker trucks into above ground or underground storage tanks.

### **PRIOR TO UNLOADING**

1. Ensure that tanker truck is positioned in approved location for unloading.
2. Make sure that parking brakes on tanker trucks are engaged. Secure the loading/unloading vehicle prior to transfer operations with physical barriers such as wheel chocks and interlocks, to safeguard against accidental movement and rupture of transfer lines.
3. If applicable to the storage location, verify that containment structures are intact and spill control equipment is readily available.
4. Inspect condition of all storage tank flanges, joints, connections, and outlets. Tighten, adjust, or replace as necessary prior to unloading.
5. Properly lock in the closed position all drainage valves in the secondary containment structure.
6. Closely examine the lowermost drain and all outlets of the tanker truck for leakage or defects. If necessary, properly tighten, adjust, or replace to prevent liquid leakage while in transit.
7. Establish adequate bonding/grounding of the tanker truck and receiving container before connecting to the fuel transfer point.
8. Keep hose ends tightly capped while moving hoses into position.
9. Position transfer hoses inside containment structures.
10. Check the pumping circuit and verify the proper alignment of valves.
11. Gauge storage tank to determine volume required.
12. The transfer of Class 3 (flammable liquids) materials, shut off motors of the tank truck when making and breaking hose connections. If unloading is done without requiring the use of the motor of the tank truck to operate pumps, keep the motor shut off throughout unloading.

### **DURING UNLOADING**

1. The driver, operator and/or attendant of a tanker truck should remain in the immediate area but outside the vehicle during unloading.
2. When unloading, keep the internal and external valves on the receiving tank open.
3. Make sure that communication is maintained between the pumping and receiving operators at all times.
4. Periodically inspect the condition of the alligator clips, especially the joint between the bonding wire and the clip, to ensure effective bonding circuits.
5. Monitor all hose couplings during unloading.

6. Monitor the liquid level in the receiving tank during unloading to prevent overflow.
7. Monitor flow meters to determine rate of flow during unloading>
8. Reduce flow rate while topping off the tank to provide sufficient reaction time for pump shutdown without overflow of the receiving tank.
9. Never completely fill the receiving tank; provide a minimum of 1 percent ullage to prevent leakage due to thermal expansion.

#### **SUBSEQUENT TO UNLOADING**

1. Make sure all material has been transferred to tank prior to disconnecting any transfer hoses.
2. Close all tank valves and tanker truck internal, external, and dome-cover valves before disconnecting.
3. Secure all hatches.
4. Disconnect grounding/bonding wires.
5. Prior to vehicle departure, make sure that all connections, fill lines, and grounding/bonding wires are disconnected.
6. Use a drip pan when breaking a connection.
7. Make sure that the hoses are drained, vented, or blown down, to remove the remaining oil before moving them away from their connections.
8. Cap the end of the hose or other connecting devices before moving them, to prevent uncontrolled oil leakage.
9. Disconnect, drain, and support out-of-service or standby hoses, to avoid crushing or excessive strain.
10. Cap associated hose risers.
11. Close all hose riser valves not in use.
12. Remove wheel chocks.