SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) AND SPILL BILL PLAN

University of Minnesota
Southern Research and Outreach Center
Waseca, MN

Liquid Plasma Scale-up Test Facility
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Engineer's Certification

I hereby certify that I have examined the University of Minnesota SROC Facility and, being familiar with the provisions of 40 CFR, Part 112 and Minnesota Statutes, Chapter 115E, attest that this Plan has been prepared in accordance with good engineering practices.

Matthew L. Ledvina, PE
Registration Number: 19794 State: Minnesota Date: January 20, 2018

Certification and Management Approval

This document is intended to minimize the potential to adversely impact its environment and to attain/maintain compliance with 40 CFR 112 and Minn. Stat. Chapter 115E.

Full approval is extended by Management at a level with authority to commit the necessary resources.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Forrest Izuno, Southern Research and Outreach Center Professor and Head
Date: 1/22/2018

Ken Kerns, Assistant Vice President
University Health and Safety
Date: 01/22/2018
Part 1. Introduction

1.1 Plan Purpose
The Southern Research and Outreach Center (SROC) is committed to contributing to sustained social and economic development, the wise use of natural resources, and an enhanced quality of life in communities across Minnesota, the nation and the world, through integrity, visionary leadership, and high quality scientific research, education and outreach. Our work is characterized by vibrant exchange and collaboration at all levels. It is both currently relevant and futuristic, utilizing the best technologies and methodologies in the ongoing pursuit of knowledge and truth. We effectively and efficiently apply our resources and strengths to make the greatest contribution within the overall framework of the goals of the College of Food, Agricultural and Natural Resource Sciences and the University of Minnesota.

The Liquid Plasma Scale-up Test Facility (Facility) stores and uses oil in support of the renewable energy research activities. This combined Spill Prevention Control and Countermeasures (SPCC) and Spill Bill Plan (Plan) is developed to provide Facility personnel with a document that outlines the steps for preventing environmental releases of oil products and to ensure the safety of personnel, the community, and the environment should a release occur.

For the purposes of SPCC planning, facilities with an aggregate capacity of more than 1,320 gallons of oil contained in tanks and containers more than 55 gallons in size are required to prepare and implement a Plan.

This document satisfies the requirements of the Federal Oil Pollution Prevention Regulations (40 CFR, Part 112) and the Prevention and Response (P&R) Plan requirements of the Oil and Hazardous Substance Discharge Preparedness Regulations (Minnesota Statutes, Chapter 115 E), also known as the Minnesota Spill Bill.

1.2 Plan Accessibility
The combined SPCC and Spill Bill Plan (Plan) is accessible at the Facility and maintained in the office of the SROC Head. The current version of this Plan is maintained electronically on the DEHS webpage site at: http://www.dehs.umn.edu/envircomp_sp.htm

1.3 Spill History
Although the requirement to provide a Spill History was eliminated with the 2002 revision of the SPCC rule, past spill response and control measure are reviewed to determine if they are a predictor for future spill events. At the Liquid Plasma Scale-up Test Facility, there have been no spills of greater than 42 gallons for the three year period prior to development of this Plan. Records of spill events will be reviewed prior to any Plan revision to determine the need to modify the Plan in response to a spill.

1.4 Responsible Parties and Plan Contact Information

Facility Owner and Operator
University of Minnesota, Southern Research and Outreach Center
35838 120th Street, Waseca, MN  56093

Plan Contact
Forrest Izuno, Southern Research and Outreach Center,
Professor and Head
Cell: (507) 461-0320
Office: (507) 837-5615
1.5 Planning Team

Plan compliance is implemented by the Planning Team, which consists of centralized and site-located staff, as well as operational staff responsible for day-to-day activities in their respective operational areas. It is the responsibility of each group, as defined by this section, to manage regulated containers within their respective group’s geographic area or scope of work. The names of key personnel and telephone numbers are listed as follows, along with responsibilities for each team member.

Facility Director
Forrest Izuno, Southern Research and Outreach Center, Professor and Head
(507) 837-5615

Responsibilities:
- Signatory authority.
- Review and approve all stages of plan development and implementation.
- Direct identified personnel to implement this Plan and the proper implementation of related control measures.
- Direct the training of identified personnel.
- Direct inspections to be completed to ensure compliance with this Plan.
- Direct timely preventive maintenance and good housekeeping procedures be carried out.
- Direct update of this Plan, as needed.
- Direct maintenance of Plan records, including inspection and incident records related to this plan and tanks identified in this plan.

Environmental Health and Safety Staff
Julianne Rantala, Environmental Compliance Specialist, UMTC (651) 626-7957

Responsibilities:
- Emergency contact (Campus EHS staff)
- Review and approve all stages of plan development and implementation.
- Identify appropriate personnel and respective training needs to effectively implement this Plan and the proper implementation of related control measures.
- Implement training of identified personnel.
- Monitor inspections and compile inspection records
- Monitor compliance with the provisions of this Plan, identify non-compliance and corrective actions required. Coordinate completion of corrective actions, notifying management as necessary to direct actions.
- Ensure update of this Plan, as needed.
- Ensure maintenance of Plan records, including inspection and incident records related to this plan and regulated containers identified in this plan.

Maintenance
Jason Stenzel, Farm Manager/Maintenance Supervisor (507) 461-6899

Responsibilities:
- Emergency contact for issues at the Facility.
- Contain and cleanup spills of significant materials.
- Attend training as directed by management.
- Practice good housekeeping and implement other control measures, as directed by management and as specified in this Plan.
- Conduct inspections required by this Plan, as directed by management.
• Initiate investigation and/or corrective action/s related to inspections, test results and other information pertaining to the containers subject to this Plan.
• Initiate the spill response and Spill Reporting Procedure, as necessary. The most recent version of this procedure is maintained electronically on the University EHS webpage at: [http://www.dehs.umn.edu/envircomp_sp.htm](http://www.dehs.umn.edu/envircomp_sp.htm).
• Identify appropriate and timely updates of the Plan, including any site diagrams, maps or attachments, and facilitate update by Environmental Compliance staff.

Part 2. Facility Description

2.1 Facility Location
The Facility is located in Section 13, Township 107N, Range 23W, as indicated on the USGS quadrangle map, Figure 1. The coordinates of the Facility area are Latitude 44.076906, Longitude -93.52882 and the main address of the SROC is 35838 120st Street, Waseca, MN 56093. The layout of buildings for the SROC is shown on the campus map provided as Figure 2. The locations of regulated oil containers and equipment are shown on Figure 3.

2.2 Facility Drainage
This description is provided in accordance with 40 CFR 112.7(e)(1). The elevation of the Facility is approximately 1135 feet above sea level (MSL). The majority of the precipitation that falls on the Facility evaporates, evaporates and/or infiltrates into the soil for porous and vegetated areas. An ephemeral drainageway flows to lowland areas and a pond to the southwest, which is approximately 4,000 feet from the Facility.

For the Facility, the overall surface water flow is to the southwest. Surface water flow is overland and the grading on the west side of the Truck/Tractor Building is westerly, as indicated on Figure 3. There is no storm sewer infrastructure in the vicinity of the Facility.

2.3 Facility Operations
The Facility has a variety of hours of operation depending on the specific area. Administrative hours are typically 7:00 a.m. to 4:30 p.m., Monday through Friday.

The Facility utilizes a contract vendor for delivery of new oil products on an as-needed basis. Facility by-products (glycerol) are also removed from the Facility by a contract vendor.

2.4 Oil Storage Containers
All fixed and mobile containers that have a capacity of 55 gallons and larger are subject to the requirements of the SPCC Plan, including containers associated with oil-filled equipment. The DEHS Fact Sheet: “Management of Tanks and Containers” (Appendix C) provides guidance on best practices for SPCC regulated containers. Locations of oil products and spill response equipment and materials are shown on Figure 3.

All oil storage containers are used in accordance with the implied intent of the manufacturers and are fully compatible with the material they hold and the environmental conditions to which they can be reasonably expected to be subjected. None of the containers are used to store material at greater than atmospheric pressure.
Total regulated storage capacity of oil products at the Facility is calculated to be approximately 5,700 gallons. Analysis of the potential container and equipment failures that could result in a spill at the Facility is presented in Part 3 of this Plan.

Minnesota Rules chapter 7151 stipulates the requirements for management of above-ground storage tanks (ASTs) in Minnesota. The Minnesota Pollution Control Agency (MPCA) requires the registration of tanks ASTs and USTs greater than 500 gallons in size. ASTs must be labeled indicating the substance stored and the tank capacity. The ASTs located at the Facility are registered, and are otherwise managed in accordance with the referenced rules.

**Bulk Oil Containers**

Bulk containers are required to be located inside a secondary containment dike capable of containing a volume of liquid of the tank capacity plus sufficient freeboard. Alternately, bulk containers are required to be double-walled construction. The storage capacity and contents of bulk containers are shown in Table 1 and locations are indicated on Figure 3.

Appendix E consists of Bulk Container Detail Sheets for each location identified in Table 1 and shown on Figure 3. The sheets provide the physical details, including a photo, site detail map, containment equipment and drainage surface water flow directions (where applicable) for each regulated bulk oil container.
### Table 1. Regulated Container Details by Operational Responsibility

<table>
<thead>
<tr>
<th>Site Map Code</th>
<th>UMN ID</th>
<th>Date Installed</th>
<th>Location</th>
<th>Coordinates</th>
<th>Indoor/Outdoor</th>
<th>Oil Type</th>
<th>Container Capacity, Gal</th>
<th>Container Material</th>
<th>Release Prevention/ Detection Type</th>
<th>Drains in Area</th>
<th>Oil Flow Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>AST001</td>
<td>AST001</td>
<td>8/18/17</td>
<td>West side of Bldg. #086</td>
<td>44.076981, -93.52888</td>
<td>Outdoor</td>
<td>Biodiesel B100</td>
<td>1,900</td>
<td>Steel</td>
<td>Double-walled</td>
<td>none</td>
<td>Westerly overland</td>
</tr>
<tr>
<td>AST003</td>
<td>AST003</td>
<td>8/18/17</td>
<td>West side of Bldg. #086</td>
<td>44.076925, -93.52882</td>
<td>Outdoor</td>
<td>Glycerol</td>
<td>1,900</td>
<td>Steel</td>
<td>Double-walled</td>
<td>none</td>
<td>Westerly overland</td>
</tr>
<tr>
<td>AST004</td>
<td>AST004</td>
<td>8/18/17</td>
<td>West side of Bldg. #086</td>
<td>44.076906, -93.52882</td>
<td>Outdoor</td>
<td>Soy oil</td>
<td>1,900</td>
<td>Steel</td>
<td>Double-walled</td>
<td>none</td>
<td>Westerly overland</td>
</tr>
</tbody>
</table>
2.5 Security

The Facility is illuminated by lights on the west side of the building and is attended by Site personnel during operating hours. SROC personnel conduct surveillance during operating hours. The City of Waseca Police Department and Fire Department (911) are responsible for primary emergency response around the clock.

Operations of vendors related to oil transfers are done under the supervision of SROC personnel in most cases, except when the driver has been previously instructed in safe dispensing and delivery techniques. All contractors are required to follow local, state, and federal requirements during unloading operations of oil.

The Facility is not completely fenced as required by provisions of the SPCC rule. The Facility operations and equipment provide "Equivalent Environmental Protection" to deter acts of vandalism or unauthorized access. This includes:

- Topography and partial fencing for the Facility prevents vehicle access for most regulated oil containers.
- Access to operational components for regulated oil containers is restricted. Equipment cannot be operated without electrical power. This equipment is secured during non-operational hours.
- The Facility has night-time lighting to discourage unauthorized access.
- SROC personnel conduct surveillance on a part-time basis.
- The City of Waseca provides emergency response around the clock.

The Facility does not have master flow valves for oil materials. All primary electrical controls are within secure areas when the Facility is unattended. There are no out-of-service pipelines at the Facility.

2.6 Substantial Harm Determination

The Oil Pollution Act of 1990 requires additional information and submission of the SPCC Plan to the EPA Regional Administrator if the facility could reasonably be expected to cause "substantial harm" to the environment by discharging oil into navigable water. The Facility does not pose "substantial harm" and therefore is not subject to this part of the Rule. A copy of the completed Certification of Substantial Harm Determination Form is included as Appendix H.
Part 3. Spill Prevention Measures
The Facility is designed, operated, and maintained to prevent spills, as documented in this section. The location of spill control equipment is shown on Figure 3.

Table 2 outlines the spill potential for the regulated containers subject to planning. Listed is the potential equipment failure event, spill description, volume potentially released and the rate of release as required by 40 CFR 112.7(b).

**Table 2. Spill Potential for Oil Storage and Operations**

<table>
<thead>
<tr>
<th>Source or Potential Event</th>
<th>Maximum Potential Amount</th>
<th>Spill Direction</th>
<th>Spill Rate</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk Containers and Fueling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Failure of Bulk Container</td>
<td>1,900 gallons</td>
<td>To secondary containment, then westerly overall surface.</td>
<td>Gradual to Instantaneous</td>
<td>Secondary containment. Spill kit materials will be used to contain spill if containment is breached.</td>
</tr>
<tr>
<td>Truck transfer operations at AST001 and AST003</td>
<td>50 gallons</td>
<td>To gravel surface and then westerly overland (max. assumes 100 gpm for 30 seconds)</td>
<td>Gradual to near instantaneous</td>
<td>Attended by personnel. Spill kit materials will be used to contain spill.</td>
</tr>
<tr>
<td>Soy oil delivery for AST004</td>
<td>50 gallons</td>
<td>To gravel surface and then westerly overland (max. assumes 100 gpm for 30 seconds)</td>
<td>Gradual to near instantaneous</td>
<td>Attended by personnel. Spill kit materials will be used to contain spill.</td>
</tr>
</tbody>
</table>

3.1 Demonstration of Facility Practicability
In accordance with 40 CFR 112.7(d), the use of containment and diversionary structures or readily available equipment is practical and effective to prevent discharged oil products from reaching navigable waters for this Facility.

3.2 Facility Design Countermeasures

**Spill Prediction**
Table 2 and details for each regulated container (Appendices E), provide an assessment of potential scope for oil releases and a prediction for the direction of the spill. The highest potential for a spill event is associated with bulk transfer operations of new oil, fuels and byproducts. Oils and fuels are brought to the Facility by a number of contract vendors for the SROC. For tank truck deliveries, spills can be contained in the immediate surface vicinity of the transfer connections and recovered with spill control equipment and supplies that are available within the Truck/Tractor building. For a major release, a spill would pool in low spots within the vicinity of the ASTs in landscaped yard areas. In the event of a spill, temporary dikes or absorbent booms will be used to prevent the movement of oil at the location of the spill.

**Valves and Piping**
ASTs and piping are discussed in the following sections. Aboveground oil piping associated with regulated oil storage is adequately supported and insulated, where appropriate. Aboveground pipes, pipe joints and valves are inspected regularly for leaks. Aboveground oil piping at the Facility is not in danger from impact by vehicle traffic. Liquids in secondary containment areas are subject to a visual inspection, and contaminant testing, as described
Spill response equipment and materials are placed in the locations shown on Figure 3. The typical spill response materials may include the following items:

- Absorbent pads/materials
- Personnel protective equipment
- Poly or steel drums
- Tools for mechanical cleanup (broom, shovel, etc).

Monthly inspections verify that adequate spill response equipment and materials is available.

### 3.3 Procedural Countermeasures

Facility operating procedures limit the potential for releases of oil products.

#### Bulk Transfer Operations

Bulk transfer of oil products is required to meet the minimum requirements and regulations of 39 CFR Parts 172 and 177, established by the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration. These regulations require each person who engages in cargo tank loading or unloading operations to perform a “risk assessment” of the loading and unloading operation and develop and implement safe operating procedures based upon the results of the risk assessment.

Prior to the initiation of transfer operations, the delivery personnel will verify the available capacity of the tank by direct reading of the tank. The bill of lading or other shipping documents will be checked to confirm the correct material and quantity is being delivered.

The delivery and loading of products is monitored by the physical presence of the truck driver. Truck drivers prevent premature departure by setting the parking brake prior to transfer. The brakes are not released until the bulk transfer has been completed, the lines stowed, and all of the valves are checked to ensure they are secured. Prior to transfer and departure of a truck, the bottom drain and all outlets are closely examined for leakage, and, if necessary, tightened to make sure no leak occurs.

#### Maintenance

SROC staff are responsible for routine and preventive maintenance to prevent spills and releases in their respective operational area. If, based on inspections or periodic testing, it is determined that the integrity of the containers or auxiliary equipment is or may have been compromised or changes need to be made, the system will be taken out of service, the problem evaluated, and appropriate steps taken to correct deficiencies.

The oil/water separator at the Tractor/Truck building is serviced on a routine basis to remove sediments and floating liquids. The maintenance staff will inspect the oil/water separator every 6 months. The oil/water separator will be pumped annually. This enables the oil/water separator to function as a control measure for intercepting and containing oil spills which may occur. Prior to returning the oil/water separator to service after maintenance, it is refilled with water to ensure proper function in the event of an oil spill.

#### Inspection
Inspection procedures limit the possibility of a spill from equipment malfunction; obvious equipment failures will be repaired promptly.

Monthly inspections are conducted by staff knowledgeable of Facility operations, characteristics of the liquid stored, the type of container and its associated components to comply with the requirements of Minn. R. 7152 (ASTs), and 40 CFR 112.7(e)(8) (SPCC). The inspection checklist included in Appendix I of this Plan covers all regulated containers to make sure the essential equipment is working, and to focus specifically on detecting any change in conditions or signs of product leakage from the container, piping system, and appurtenances.

If there are problems identified during the inspection, staff will take action quickly to resolve these problems and avoid releases.

The Facility is deviating from the integrity testing provision of §112.8(c)(6) based on good engineering practice after considering bulk container installation and alternative measures, the requirements of Steel Tank Institute (STI) Standard SP-001, and alternative measures implemented by the Facility. The “environmental equivalence” for integrity testing is the routine visual inspection and documentation for Facility oil containers.

All containers regulated under SPCC requirements are shop-built, completely above-ground and the surfaces of the containers are visible. The containers are not insulated, and the outside surfaces of the container shell can therefore be observed on an ongoing basis. Under SP-001, SROC ASTs are considered Category 1 tanks (ASTs with spill control and with continuous release detection method) and therefore require periodic inspection of the tank.

3.4 Drainage from Diked Areas

All oil containers are double-walled and therefore the accumulation of precipitation within the secondary containment does not occur. Provisions for precipitation drainage from diked areas are not needed. Liquids in secondary containment areas are subject to a visual inspection, and contaminant testing, as described by the DEHS Environmental Fact Sheet: Evaluation of Liquids in Secondary Containment or Other Sump Areas, included as Appendix D to this Plan.

3.5 Personnel Training

Employees involved in the handling and use of oil products are trained as described by this section. Specific training materials and elements covered are designed to meet the requirements of 40 CFR 112.7(f).

Training includes the following items:
- The environmental hazards of accidental leaks and oil product spills and the necessity of preventative measures.
- Maintenance and inspection procedures.
- The proper operation of unloading, storage, pumping, piping, and other equipment. This includes proper startup and shutdown sequences; proper control procedures and process adjustments; proper valve arrangements; and proper unloading procedures for oil materials.
- The reporting procedure (Appendices A and B) to follow in case of a spill.
- The containment and cleanup procedures to be followed in case of a spill.
New employees will receive training as part of their initial training program. In addition, employees with specifically identified roles receive additional and/or annual training. Annual training may be incorporated into regularly scheduled safety meetings. Records of training are maintained within electronic records.
Part 4. Contingency Plan for Spills

The UMN Department of Environmental Health and Safety provides guidance for managing and reporting spills and releases. The DEHS Environmental Fact Sheet: “Responding to Spills and Releases” is included as Appendix A for spill response guidance. The DEHS Spill Reporting Form is included as Appendix B to the Plan.

Emergency response is initiated by dialing 9-1-1, where spill response is coordinated through the City of Waseca Police and Fire Departments. Technical support following the immediate emergency response is provided as indicated in the documents contained in Appendices A and B, herein.

4.1 Containment and Cleanup

The SROC is committed to responding effectively to incidents involving oil products. The locations for spill cleanup equipment and materials are shown on Figure 3. Access to cleanup materials will be available at all times during oil deliveries and transfers.

Actions to decrease impact of a spill may include any of the following:
- Adequate communication to prevent injury and reduce environmental impacts.
- Control of the source and spread of the discharge.
- Containment of the spill by means of physical barriers, or other.

In most cases, spilled oil product will be contained at the location of the spill. For outdoor locations, containment can be achieved by blocking surface water drainage pathways.

4.2 Reporting Requirements

A spill released to the environment may represent a reportable spill which requires notification to the appropriate regulatory agencies. The Environmental Compliance Specialist determines whether a spill is reportable and to whom the spill must be reported (State Duty Officer, National Response Center, EPA). The Environmental Compliance Specialist will work with the person discovering the spill to make any appropriate reports. Any required written reports are prepared, submitted and maintained by the Environmental Compliance Specialist.

The UMN procedure for reporting and tracking of spill incidents is detailed in the Factsheet included as Appendix A of this Plan. The Spill Reporting Form is included in Appendix B.

4.3 Disposal Requirements

Typical wastes generated from spills can be of the following nature:
- Oil-contaminated water.
- Oil-contaminated soil.
- Oil-contaminated debris.
- Oil-contaminated sorbent material.

Oil wastes at this Facility are managed in accordance with the guidance on the DEHS Environmental Fact Sheet: “Management of Tanks and Containers”, found in Appendix C. Specifically, oil wastes are containerized in a closed, labeled container, placed in the designated used oil location at the Facility. It is recommended that the amount of oil waste be kept to a minimum, and shipped off-site every 6 months. Oil wastes are either handled by the used oil vendors at the Facility, or the University Chemical Waste Program. Contact the Chemical Waste Program at (612) 626-1604 or hazwaste@tc.umn.edu to make arrangements to ship waste.
Part 5. Documentation and Recordkeeping

5.1 Regulatory Notifications
Changes to the type, size and location of regulated containers trigger required changes to this Plan, and (depending on the type of container) may require additional notification to the MPCA.

Changes to the size, type, location, use or equipment of an AST may be subject to the notification requirements of Minn. Stat. 116.48, and the revision requirements of this Plan. Tanks that are no longer in service or not actively being used must undergo formal closure and regulatory notification, as appropriate.

Changes to tanks or containers included in this Plan are initiated by the staff through the Environmental Compliance Specialist, who is responsible for completing regulatory contacts and notifications. In some cases, advance notification of activity or soil testing is required. Records related to notifications are maintained locally by the Environmental Compliance Specialist, as well as with other compliance records centrally.

5.2 Recordkeeping
Compliance records pertaining to this Plan are maintained by the Environmental Compliance Specialist for a period of at least three (3) years from the date of the inspection or training.

The following specific records are maintained:

- Plan review and amendments
- Training records, including operator certification records for those identified by role, (3 years past termination of employment)
- AST/SPCC record of monthly inspection results (3 years)
- Maintenance records for ASTs (3 years)

Inspections are conducted and documented in accordance with the schedule indicated herein. Completed checklists are completed by SROC staff as indicated in Part 1.6 of the Plan, and forwarded to the Environmental Compliance Specialist. Each operational area lead is responsible for taking corrective actions and initiating preventive maintenance within their respective work areas, with overall oversight by the EHS specialist.

5.3 Plan Revisions
This Plan is reviewed and amended periodically to ensure that it accurately reflects oil handling locations and activities at the Facility, including the following times:

- Within 6 months of a change in Facility design, construction, operation, or maintenance that materially affects the Facility’s spill potential.
- Within 5 years of the signature date of this Plan, to ensure that the most effective prevention and control technology is implemented to reduce the likelihood of a spill event.
- Within 6 months of any release more than 42 gallons in size from the Facility.

The following table describes the date and nature of each revision made to this Plan; if major changes to the Plan are made, revisions must be recertified by a Professional Engineer.
### Table 3. Log of Plan Revisions

<table>
<thead>
<tr>
<th>Date of Revision</th>
<th>Revision Author Name, Extension</th>
<th>Part(s) of Plan Affected</th>
<th>Description of Revision</th>
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</tbody>
</table>
LEGEND

Facility Boundary

Figure 1

FACILITY LOCATION MAP
Liquid Plasma Scaleup Test Facility
Southern Research and Outreach Center
University of Minnesota
35838 120th Street
Waseca, Minnesota

LANDMARK ENVIRONMENTAL, LLC
Figure 3
FACILITY DIAGRAM
Liquid Plasma Scaleup Test Facility
Southern Research and Outreach Center
University of Minnesota
35838 120th Street
Waseca, Minnesota

LANDMARK ENVIRONMENTAL, LLC

Note: AST 002 contains Undenatured Ethanol (100%) and is not SPCC regulated
This document provides an overview of the state environmental regulations and EHS guidelines for the report of spills and releases to the environment at University projects, sites and buildings.

Small spills and releases at the University of Minnesota Southern Outreach and Research Center (UM SROC) are managed by a coordinated response through UM SROC staff, Environmental Health & Safety (EHS) staff, and if needed, the Waseca Fire Department (WFD).

<table>
<thead>
<tr>
<th>Step</th>
<th>Action required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Contain the spill if possible to do safely</td>
</tr>
<tr>
<td></td>
<td>• Stop the release, if possible, by turning off any pump (use the “Emergency Stop” button, valve or by adding a bucket or other container under the drip or leak to contain the release.)</td>
</tr>
<tr>
<td></td>
<td>• Locate spill kit and other necessary materials, including the Safety Data Sheet for the spilled material.</td>
</tr>
<tr>
<td></td>
<td>• Ensure access to surface water and sewers in blocked using adsorbent pads or other methods to divert flow. Isolate the area from others by blocking it, roping it off or using cones.</td>
</tr>
<tr>
<td>2</td>
<td>Call for help</td>
</tr>
<tr>
<td></td>
<td>• For small spills, call Forrest Izuno at 507.461.0320 UM SROC Management for guidance and direction.</td>
</tr>
<tr>
<td></td>
<td>• For large spills, call 9-1-1 to report the incident. Dispatch will contact WFD and or the Waseca Police Department, as needed.</td>
</tr>
<tr>
<td></td>
<td>• Be prepared to provide the following information:</td>
</tr>
<tr>
<td></td>
<td>o Your name, location and phone number,</td>
</tr>
<tr>
<td></td>
<td>o Location of the incident: building, floor and room number,</td>
</tr>
<tr>
<td></td>
<td>o Time and type of incident,</td>
</tr>
<tr>
<td></td>
<td>o Name and quantity of chemicals involved, to the extent known,</td>
</tr>
<tr>
<td></td>
<td>o The extent of injuries, if any.</td>
</tr>
<tr>
<td></td>
<td>o Type of hazard to health or the environment including (particularly: flammable, oxidizer, highly reactive and air-born toxic or irritant materials), radioactive materials, biohazards).</td>
</tr>
<tr>
<td></td>
<td>o The safest route to approach the spill.</td>
</tr>
<tr>
<td>3</td>
<td>Clean up the spill</td>
</tr>
<tr>
<td></td>
<td>• UM SROC staff make contact and coordinate communications and spill response activities, including managing local responders.</td>
</tr>
<tr>
<td></td>
<td>• If directed to do so, clean up the spill yourself only if:</td>
</tr>
<tr>
<td></td>
<td>o it does not involve injury,</td>
</tr>
<tr>
<td></td>
<td>o the quantity spilled is less than half a quart of a moderately toxic chemical,</td>
</tr>
<tr>
<td></td>
<td>o you have the proper training and proper protective equipment to do the cleanup, and</td>
</tr>
<tr>
<td></td>
<td>o the spill is indoors and contained.</td>
</tr>
<tr>
<td></td>
<td>• Contact a cleanup contractor (West Central Environmental 888.923.2778) for cleanup of any spill that cannot be managed locally.</td>
</tr>
<tr>
<td>4</td>
<td>Report spills to operational managers</td>
</tr>
<tr>
<td></td>
<td>• Report significant spills/releases to Twin Cities UHS and DEM offices.</td>
</tr>
<tr>
<td></td>
<td>• If a notification to the State Duty Officer is required, contact EHS compliance staff at 612.626.7957 prior to making a report.</td>
</tr>
<tr>
<td>5</td>
<td>Additional Reporting for releases to the environment</td>
</tr>
<tr>
<td></td>
<td>• A release to the environment is any spill to the air, land or to the water – including to the storm sewer, sanitary sewer or to a surface water body such as a drainage ditch.</td>
</tr>
<tr>
<td></td>
<td>• EHS verifies that the State Duty Officer (651.649.5451) is contacted soon after the initial on-site evaluation has been completed, but no later than 24-hours after discovery of the release.</td>
</tr>
<tr>
<td></td>
<td>• EHS determines if the release exceeds the Reportable Quantity (RQ) for the chemical released.</td>
</tr>
<tr>
<td></td>
<td>o A convenient online tool to determine RQ is at <a href="http://homer.oml.gov/rq/">http://homer.oml.gov/rq/</a>.</td>
</tr>
<tr>
<td></td>
<td>o Report releases above the RQ to the National Response Center at 800.424.8802.</td>
</tr>
</tbody>
</table>
APPENDIX B

Spill Reporting Form
Instructions: Complete this form for any spill or other incident involving a petroleum product, hazardous materials/waste or refrigerant. The information provided on this form is used when contacting Emergency Responders and making required regulatory reports. Refer to the DEHS Fact Sheet: Responding to Spills and Releases for more information.

Part A. Caller Information
Name of Reporter: ___________________________ Name of Receiver: ___________________________
Phone Number: ___________________________ Phone Number: ___________________________
- University Employee
- Contractor
- City Employee
- State Duty Officer
- Other:

Part B. Spill Information
Material Spilled:
- Petroleum
- Refrigerant
- Wastewater/Liquid Manure
- SARA Chemical
- Non-SARA Chemical
- Other: ___________________________

Location Spilled:
- Indoors, fully contained
- Outdoors, fully contained
- Indoors, not fully contained
- Outdoors, not fully contained

Discharge to:
- None
- Air
- Sanitary Sewer
- Storm Sewer
- Surface Water

Specific Location of Spill:
GIS Coordinates: X = ___________ Y = ___________

Duration of Spill:
Start Date/Time: __________________ End Date/Time: __________________
Volume of Spill (est): __________________
- Gallons
- Pounds

Cause of Spill:

Corrective Actions Plan:

Part C. Notifications
Name and Badge No/Ext No Ticket No Date/Time
State Duty Officer: ___________________________ ___________________________ ___________________________
National Response Center: ___________________________ ___________________________ ___________________________
DEHS Central: ___________________________ ___________________________ ___________________________
DEHS Campus: ___________________________ ___________________________ ___________________________
Other: ___________________________ ___________________________ ___________________________

1 See http://homer.ornl.gov/ for a convenient online tool to determine SARA chemicals and RQs.
2 Indicate the Campus Number, Building Number and Room Number or closest University asset (such as an electrical, sanitary, communications manhole), street intersections and directionals.
3 Indicate date and time of when spill began and ended. If exact start/stop date is not known, use the date University staff became aware of the spill start/stop.
4 Describe the situation, equipment involved, and other information/causative factors about how the spill occurred.
5 Describe corrective actions taken at the time of spill. DEHS staff to additionally describe any additional corrective actions needed, including time schedule for implementation, and additional reporting. Immediate notification to the State Duty Officer is required for releases to the environment of more than 5 gallons of petroleum product, or any volume of other regulated substances. Immediate notification to the National Response Center is additionally required for releases exceeded the Reportable Quantity (RQ) for identified substances. Consult with central DEHS staff for a determination on when regulatory notifications are required.
6 Notify Campus DEHS and central DEHS staff. Notify CMR or Prime Contractor management if spill is at a construction site. Notify operational unit manager, lead principal investigator (PI) or Project Manager.
APPENDIX C

*Environmental Fact Sheet: Management of Tanks and Containers*
This document provides an overview of environmental regulations and EHS guidelines for the selection of appropriate storage areas, and for the proper storage of materials and wastes in tanks and containers at University projects, sites and buildings. Additional site specific provisions may apply in some cases, including additional requirements for hazardous wastes, and tanks/tank systems.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action required</th>
</tr>
</thead>
</table>
| 1    | Choose proper container storage location  
- Indoors or under cover from elements, away from and down-gradient of floor drains, storm sewer drains and exterior building doors.  
- Protected from vehicle traffic, theft and vandalism.  
- Aisles maintained to visually see and allow spill and emergency response.  
- Surface that is compatible and impervious to the material being stored.  
- On pallets or in rack systems to prevent contact with condensation and other moisture.  
- Area should be clean and dry with a moderate temperature to provide the most stable environment  
- Provide secondary containment for all waste containers and flammables |
| 2    | Choose proper container  
- Leak-proof and in good condition.  
- Correct size for safe and efficient inventory management.  
- Compatible with material being stored. |
| 3    | Label container  
- Label container as soon as anything is placed in it.  
- Place label on the body of any container – not on the cover.  
- All containers – regardless of the waste/product -- with AT LEAST the following information:  
  - Description of the contents (all containers)  
  - NFPA diamond (all containers)  
  - Capacity of the container (if container is >55 gallons)  
  - Tank registration ID from MPCA (if container is ≥ 500 gallons)  
- Oily Wastes (used oil, used oil filters, used oil sorbents and oily rags):  
  - Use the words “Used Oil” with the descriptive name, eg. Used Oil Filters, Used Oil Sorbents. (Do not use “Waste Oil”.)  
- Hazardous Wastes (most chemicals not including petroleum or agricultural chemicals):  
  - USE a “Hazardous Waste” label with the descriptive name.  
  - Accumulation Start Date – indicate the date when you start adding waste to the container  
  - Fill Date – indicate the date when container is filled  
- Special/Universal Wastes (batteries, lamps, mercury containing equipment, pesticides) require special markings:  
  - Use the words “Used” or “Waste” with the description name, eg. “Used Lamps”, “Waste Batteries”. |
| 4    | Close containers.  
- Containers must remain closed and sealed, except when adding or removing materials/wastes.  
  - Closed means bungs and caps are fully screwed in or on,  
  - Open-head drum containers have lids secured by fully-bolted retaining rings or
Spring-loaded rings, and
- Bucket snap-lids are fully engaged.
- If your container has a funnel, it must be screwed into the bung and have a lid that securely latches. Open funnels and lids that shut by gravity alone do not meet these requirements.

5. Store containers properly.
- Do not mix wastes together or keep incompatible materials in the same storage area.
- Keep all material and waste containers in storage area unless in use.
- Maintain spill response materials near storage areas, marking the container “Spill Kit” or similar wording.
- Use dry cleanup methods whenever possible to cleanup spills; contain and label waste from cleanup.
- Inspect container storage areas weekly for spills, container condition, label performance, storage time limits, container protection and aisle space.

6. Respond to container problems and spills immediately:
- Implement Spill Response Procedure immediately if there is a spill (contact EHS staff for specifics). See EHS Spill Response Factsheet for more information. (http://www.dehs.umn.edu/PDFs/UMN_FactSheet_Release%200715.pdf)
- Overpack or repackage any containers that have failed or are in poor condition if it is safe to do so.
- Add/secure labels as indicated above.

7. Manage empty containers properly:
- Empty aerosol cans should be collected, labeled and managed as a hazardous waste.
- Empty drums and other containers may be retained on-site for reuse or recycle:
  - Remove/blackout previous labels/markings
  - Mark “Empty”
  - Store in a manner to prevent safety and nuisance conditions, and to prevent accumulation of precipitation
    - Indoors or under cover is preferable
    - If outdoors, stored covered, stacked on their side or upright no more than 2 drums high.

8. Ship containers of waste on a timely basis:
- Special/Universal wastes: off-site within 1 year of fill date.
- Oily wastes: minimize amount stored onsite; recommend shipment off-site every 6 months.
- Hazardous wastes: move within 30 days of fill date to central accumulation area; check with Chemical Waste Program for time allowed in central accumulation area (time varies).
- Contact the Chemical Waste Program at (612) 626-1604 or hazwaste@tc.umn.edu to make arrangements to ship waste.
APPENDIX D

Environmental Fact Sheet: Evaluation of Liquids in Secondary Containment or Other Sump Areas
This document provides an overview of the state environmental regulations and EHS guidelines for evaluating liquids discovered in a secondary containment and other sump areas at University projects, sites, and buildings.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action required</th>
</tr>
</thead>
</table>
| 1    | Visually determine if the liquid has any floating layers or portions.  
|      | • If yes, determine whether there is free petroleum or other stored product present. If yes, estimate volume of free product and report to EHS staff as a spill.  
|      | o If safe to do so, recover free product using adsorbent products (pads, booms, socks), storing spent absorbent in a closed, labeled container for Chemical Waste Program disposal (see Step 6, below).  
|      | o Collect a sample on the remaining liquid, and analyze as described by the flow chart below. **Do not discharge liquid.**  
|      | • If no, continue to Step 2. |
| 2    | Visually determine if the liquid has a sheen, odor or color.  
|      | • If yes, collect a sample on the liquid, and analyze as described by the flow chart below. **Do not discharge liquid.**  
|      | • If no, continue to Step 3. |
| 3    | Visually determine if there are any floating or settled solids in the liquid.  
|      | • If there are any floating solids, remove solids and dispose in solid waste.  
|      | • If there are any settled solids, avoid disruption/suction of solids when removing liquid portion by keeping suction inlet above the bottom of the basin and/or using a suction sock over the inlet. **Do not discharge solids with the liquid portion.**  
|      | • Continue to Step 4 after accounting for solids. |
| 4    | Discharge “clean” liquids to vegetated area or to a storm sewer drainage area, if vegetation is not available.  
|      | • If “no” to steps 1 and 2, and solids are managed as described in step 3, the liquid is considered “clean”.  
|      | • When pumping liquids, ensure that the pump inlet remains at the top of the liquid or that the inlet is covered with mesh or filter sock to avoid discharge of solids.  
|      | • Outlet should be to a vegetated area, if possible, with energy dissipation. If vegetation is unavailable, discharge only with erosion prevention and energy dissipation measures in place. Consult with EHS staff for site specific ideas for erosion prevention and/or energy dissipation measures.  
|      | • If draining from a containment plug hole, be sure that solids do not leave containment, and that the drain is closed after use. |
| 5    | Analyze liquids that are not “clean” to determine proper management.  
|      | • If the containment area has limited freeboard available and/or is in danger of overtopping, move liquid to a covered, closed and labeled container until analysis is completed and evaluated.  
|      | • The following parameters should be analyzed using 40 CFR 136 methods, unless otherwise excepted as shown below, where there is **reasonable potential** for the pollutant to be present:  
|      | o VOCs  
|      | ▪ Alt method for benzene, toluene, ethylbenzene: Method 602, 624 or 1624, or EPA
5030/8015 or 5030/8240.
- Alt method for xylenes: Method 8240 or WI method
  - GRO/DRO: WI method
  - PAHs
  - Nitrate-N, Ammonia
  - Total P
  - Total Chlorides

6 Evaluate sample results.
- Samples representing liquids where all analytes are non-detectable (ND) are considered to be “clean”. These liquids can be managed as described in step 4, above.
  - Maintain test results, discharge date, location and duration with other EHS records.
- Samples representing liquids where any analyte value is above the detection level is not considered “clean”. **Do not discharge this liquid to vegetation or to storm sewer.**
  - Provide sample results and a volume estimate to EHS staff, and consult about disposal requirements.
  - In cases with limited pollutant level and/or volume, liquids may be able to be discharged to the sanitary sewer. A letter of no action, or a single-use discharge permit from MCES may be required.
  - In cases with elevated pollutant levels, the liquid may be required to be managed by the Chemical Waste Program (see Step 7, below).
  - Maintain test results and other relevant disposal information with other EHS records.

7 Managed collected wastes timely.
- For collected wastes that cannot be discharged: move within 30 days of fill date to central accumulation area; check with Chemical Waste Program for time allowed in central accumulation area (time varies).
  - Contact Chemical Waste Program at (612) 626-1604 or [hazwaste@tc.umn.edu](mailto:hazwaste@tc.umn.edu) to make arrangements to ship waste.

---

- Liquid is identified in a secondary containment or other sump area
- Does liquid have any floating liquids?
  - No
  - Yes
- Does liquid have a sheen?
  - No
  - Yes
- Liquid is free petroleum or stored product?
  - No
  - Yes
- Take sample of liquid and analyze for pollutants
- Analyze sample for pollutants with 'reasonable' potential using EHS list and sampling methods.
- Are all analytes non-detectable?
  - Yes
  - Determine management reqs with EHS
- No

Remove debris from liquid and dispose in solid waste.
- Yes

Clean liquid may be discharged to a vegetated area, if available, or storm sewer with energy dissipation or erosion protection.
- No

(1) Report as a spill to EHS.
(2) Remove free liquid if safe using adsorbent pad or skimming.
(3) Collect pads and skimmed fluids for disposal as chemical waste.
(4) Collect sample on lower fraction.
### Instructions:
Complete this form for any bulk container of 55 gallons or more that contains petroleum, mineral or food-grade oil (either product or waste). Send completed form to Environmental Health and Safety (EHS) staff for the purposes of Spill Prevention Control and Countermeasures (SPCC) plan development and implementation.

### Identification
| SPCC Name: AST001 |
| Coordinates: Lat. 44.076981, Long. -93.52888 |
| Location: West of Truck/Tractor Building, Bldg #086 |
| Known issues or past spills: none |

### Details
| UMN Asset ID #: |
| Shell Capacity (gallons): 1,900 |
| Dimensions (Dia x L): 64” x 144” |
| Contents: B100 Biodiesel |
| Tank material: Steel |
| Type of inventory control: visual gauge |
| Maximum rate of transfer at fill point: 100 gpm est. |
| Who controls tank operations (contact #): Test facility personnel |

### Facility Site Location Map (Drawing)

#### Surface water Drainage
- Piping: none
- Roads: x
- Containment: Integral
- Lighting: Building x
- North Arrow: x
- Fencing/Security: Concrete barrier
- Stormwater & Sanitary Inlets: none
<table>
<thead>
<tr>
<th><strong>Bulk Tanks</strong></th>
<th>Is there drainage from area of tanks to storm sewer? No storm sewers in immediate area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Are buried tanks protected by corrosion controls? NA</td>
</tr>
<tr>
<td></td>
<td>Are tanks tested for integrity? Method? Shop Built, no integrity testing required</td>
</tr>
<tr>
<td></td>
<td>Are tanks heated internally? No</td>
</tr>
<tr>
<td></td>
<td>Do tanks have:</td>
</tr>
<tr>
<td></td>
<td>Visual gauges Yes</td>
</tr>
<tr>
<td></td>
<td>High level alarms No</td>
</tr>
<tr>
<td></td>
<td>High level cutoff No</td>
</tr>
<tr>
<td></td>
<td>Portable/mobile (positioned in containment) NA</td>
</tr>
<tr>
<td></td>
<td>If underground, corrosion protection? No piping</td>
</tr>
<tr>
<td><strong>Piping</strong></td>
<td>Inspection records? NA</td>
</tr>
<tr>
<td></td>
<td>Security from vehicles? Yes, concrete</td>
</tr>
<tr>
<td></td>
<td>Pressure Testing Completed? NA</td>
</tr>
<tr>
<td></td>
<td>Diagram, if unique system (dikes, curbs, drains, building walls)</td>
</tr>
<tr>
<td><strong>Secondary Containment</strong> (N/A for double-walled tanks)</td>
<td>Dimensions and Volume</td>
</tr>
<tr>
<td></td>
<td>Materials &amp; Condition</td>
</tr>
<tr>
<td></td>
<td>Liners</td>
</tr>
<tr>
<td></td>
<td>Is drainage from dikes restrained? NA</td>
</tr>
<tr>
<td><strong>Containment Drainage</strong></td>
<td>Are valves for drainage open or closed types? NA</td>
</tr>
<tr>
<td></td>
<td>Where would drainage flow? NA</td>
</tr>
<tr>
<td></td>
<td>Are lift pumps used? NA</td>
</tr>
</tbody>
</table>
**Instructions:** Complete this form for any bulk container of 55 gallons or more that contains petroleum, mineral or food-grade oil (either product or waste). Send completed form to Environmental Health and Safety (EHS) staff for the purposes of Spill Prevention Control and Countermeasures (SPCC) plan development and implementation.

<table>
<thead>
<tr>
<th><strong>Identification</strong></th>
<th><strong>Details</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>SPCC Name: AST003</td>
<td>UMN Asset ID #:</td>
</tr>
<tr>
<td></td>
<td>Shell Capacity (gallons): 1900</td>
</tr>
<tr>
<td></td>
<td>Dimensions (Dia x L): 64” x 144”</td>
</tr>
<tr>
<td></td>
<td>Contents: Glycerol</td>
</tr>
<tr>
<td></td>
<td>Tank material: Steel</td>
</tr>
<tr>
<td></td>
<td>Type of inventory control: visual gauge</td>
</tr>
<tr>
<td></td>
<td>Maximum rate of transfer at fill point: 100 gpm est.</td>
</tr>
<tr>
<td></td>
<td>Who controls tank operations (contact #): Test facility personnel</td>
</tr>
</tbody>
</table>

**Facility Site Location Map (Drawing)**

Surface water Drainage

- **Piping:** x
- **Roads:** x
- **Containment:** Integral  □
- **Lighting:** Building x
- **North Arrow:** x
- **Fencing/Security:** concrete barrier  □
- **Stormwater & Sanitary Inlets:** none
### Bulk Tanks

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there drainage from area of tanks to storm sewer?</td>
<td>No storm sewers in immediate area</td>
</tr>
<tr>
<td>Are buried tanks protected by corrosion controls?</td>
<td>NA</td>
</tr>
<tr>
<td>Are tanks tested for integrity? Method?</td>
<td>Shop Built, no integrity testing required</td>
</tr>
<tr>
<td>Are tanks heated internally?</td>
<td>No</td>
</tr>
<tr>
<td>Do tanks have:</td>
<td></td>
</tr>
<tr>
<td>Visual gauges</td>
<td>Yes</td>
</tr>
<tr>
<td>High level alarms</td>
<td>No</td>
</tr>
<tr>
<td>High level cutoff</td>
<td>No</td>
</tr>
<tr>
<td>Portable/mobile (positioned in containment)</td>
<td>NA</td>
</tr>
</tbody>
</table>

If underground, corrosion protection? No piping

### Piping

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection records?</td>
<td>NA</td>
</tr>
<tr>
<td>Security from vehicles?</td>
<td>Yes, concrete</td>
</tr>
<tr>
<td>Pressure Testing Completed?</td>
<td>NA</td>
</tr>
</tbody>
</table>

Diagram, if unique system (dikes, curbs, drains, building walls)

Double-walled tank construction

### Secondary Containment (N/A for double-walled tanks)

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions and Volume</td>
<td></td>
</tr>
</tbody>
</table>

Materials & Condition

| Liners                                                                  |                               |

Is drainage from dikes restrained? NA

### Containment Drainage

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are valves for drainage open or closed types?</td>
<td>NA</td>
</tr>
<tr>
<td>Where would drainage flow?</td>
<td>NA</td>
</tr>
<tr>
<td>Are lift pumps used?</td>
<td>NA</td>
</tr>
</tbody>
</table>
Instructions: Complete this form for any bulk container of 55 gallons or more that contains petroleum, mineral or food-grade oil (either product or waste). Send completed form to Environmental Health and Safety (EHS) staff for the purposes of Spill Prevention Control and Countermeasures (SPCC) plan development and implementation.

<table>
<thead>
<tr>
<th>Identification</th>
<th>SPCC Name: AST004</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coordinates: Lat. 44.076906, Long. -93.52882</td>
</tr>
<tr>
<td></td>
<td>Location: West of Truck/Tractor Building, Bldg #086</td>
</tr>
<tr>
<td></td>
<td>Known issues or past spills: none</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details</th>
<th>UMN Asset ID #:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shell Capacity (gallons): 1900</td>
</tr>
<tr>
<td></td>
<td>Dimensions (Dia x L): 64” x 144”</td>
</tr>
<tr>
<td></td>
<td>Contents: Soy oil</td>
</tr>
<tr>
<td></td>
<td>Tank material: Steel</td>
</tr>
<tr>
<td></td>
<td>Type of inventory control: visual gauge</td>
</tr>
<tr>
<td></td>
<td>Maximum rate of transfer at fill point: 100 gpm est.</td>
</tr>
<tr>
<td></td>
<td>Who controls tank operations (contact #): Test facility personnel</td>
</tr>
</tbody>
</table>

Facility Site Location Map (Drawing)

Surface water Drainage

<p>| Piping: none | x |
| Roads | x |
| Containment: Integral | □ |
| Lighting: Building | x |
| North Arrow | x |
| Fencing/Security: concrete barrier | □ |
| Stormwater &amp; Sanitary Inlets: none | |</p>
<table>
<thead>
<tr>
<th><strong>Bulk Tanks</strong></th>
<th><strong>Secondary Containment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there drainage from area of tanks to storm sewer?  No storm sewers in immediate area</td>
<td>Dimensions and Volume</td>
</tr>
<tr>
<td>Are buried tanks protected by corrosion controls?  NA</td>
<td>Materials &amp; Condition</td>
</tr>
<tr>
<td>Are tanks tested for integrity? Method?  Shop Built, no integrity testing required</td>
<td>Liners</td>
</tr>
<tr>
<td>Are tanks heated internally?  No</td>
<td>Is drainage from dikes restrained?  NA</td>
</tr>
<tr>
<td>Do tanks have:</td>
<td>Containment Drainage</td>
</tr>
<tr>
<td>Visual gauges  Yes</td>
<td>Are valves for drainage open or closed types? NA</td>
</tr>
<tr>
<td>High level alarms  No</td>
<td>Where would drainage flow?  NA</td>
</tr>
<tr>
<td>High level cutoff  No</td>
<td>Are lift pumps used?  NA</td>
</tr>
<tr>
<td>Portable/mobile (positioned in containment)  NA</td>
<td></td>
</tr>
</tbody>
</table>

If underground, corrosion protection?  No piping

**Piping**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection records?  NA</td>
<td>Double-walled tank construction</td>
</tr>
<tr>
<td>Security from vehicles?  Yes, concrete</td>
<td></td>
</tr>
<tr>
<td>Pressure Testing Completed?  NA</td>
<td></td>
</tr>
<tr>
<td>Diagram, if unique system (dikes, curbs, drains, building walls)</td>
<td></td>
</tr>
</tbody>
</table>

**Containment Drainage**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Are valves for drainage open or closed types? NA</td>
<td></td>
</tr>
<tr>
<td>Where would drainage flow?  NA</td>
<td></td>
</tr>
<tr>
<td>Are lift pumps used?  NA</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F

Certification of Substantial Harm Determination Form

Facility Name: University of Minnesota Southern Research and Outreach Center
Facility Address: Waseca, MN

1. Does the facility transfer oil over water to or from vessels and does the facility have total oil storage capacity greater than or equal to 42,000 gallons?
   □ Yes    ☑ No

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest above-ground oil storage tank plus sufficient freeboard to allow for precipitation within any above-ground storage tank area?
   □ Yes    ☑ No

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments?
   □ Yes    ☑ No

4. Does the facility have a total oil storage capacity greater than or equal or 1 million gallons and is the facility located at a distance such that a discharge from the facility would shut down a public drinking water intake?
   □ Yes    ☑ No

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil spill in an amount greater than or equal to 10,000 gallons within the last 5 years?
   □ Yes    ☑ No

Ken Kerns, Assistant Vice President
University Health and Safety

Date: 01/22/2018

For the purposes of 40 CFR Part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).
APPENDIX G

Plan Inspection Checklist
### Instructions:
This form is specific to the facility noted above. Complete this inspection form monthly for each regulated tank or container at the Facility for proper operation, damage, leaks and suitability for continued service. Forward completed checklists monthly to U of MN EHS staff. Inspection documentation is also maintained onsite for 3 years from the date of the inspection.

<table>
<thead>
<tr>
<th>Date and time of inspection:</th>
<th>Name of inspector:</th>
</tr>
</thead>
</table>

### Part A. Tank /Container Visual Check

Review all containers and tanks, piping and associated equipment and indicate whether the following criteria are met. Indicate "X", "No" or "N/A" for each item. For any answer indicated as "No", indicate specific finding, corrective action(s) required, along with the date, time and person(s) notified of actions required.

<table>
<thead>
<tr>
<th>Item</th>
<th>Container Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Labels and signage for tank/containment area in place, legible and accurate (USTs must be color-coded).</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>2. Exterior of tank or container/s, including paint and coatings, is in good condition, with no evidence of leaking around the tank/container, concrete pad or ground.</td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>3. Tank openings are properly sealed and vents are clear of obstructions.</td>
<td><img src="image3.png" alt="Image" /></td>
</tr>
<tr>
<td>4. Above-ground piping, valves, pumps, tank sensors and associated equipment are in good condition with no evidence of leaking.</td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td>5. Below-ground piping, valves, pumps, tank sensors and associated equipment are in good condition with no evidence of leaking.</td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
<tr>
<td>6. Dispenser and pump area, including hose, swivels, nozzle &amp; breakaway (if present) are in good condition and with no evidence of leaking.</td>
<td><img src="image6.png" alt="Image" /></td>
</tr>
<tr>
<td>7. Level gauge/sight glass (if present) is readable and in good condition.</td>
<td><img src="image7.png" alt="Image" /></td>
</tr>
<tr>
<td>8. Foundations and supports are structurally sound, free from corrosion and other damage, and in good condition.</td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td>9. Grounding straps, wires and sensors are secure, free from corrosion and other damage and in good condition.</td>
<td><img src="image9.png" alt="Image" /></td>
</tr>
<tr>
<td>10. Individual containers are closed, labeled and completely in containment area.</td>
<td><img src="image10.png" alt="Image" /></td>
</tr>
<tr>
<td>11. Individual containers do not have any noticeable container distortions, buckling, denting or bulging evident.</td>
<td><img src="image11.png" alt="Image" /></td>
</tr>
</tbody>
</table>
### Part B. Containment Areas and Release Detection Equipment

<table>
<thead>
<tr>
<th></th>
<th>AST001 – Biodiesel B100 (1900 gallons)</th>
<th>AST003 – Glycerol (1900 gallons)</th>
<th>AST004 – Soy Oil (1900 gallons)</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Containment area is dry or has a minimal level of standing water.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>There is no evidence of release or regulated substance in containment area or interstitial space between tanks (check pop-up sensor).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Drain valves are secured in closed position and have no debris or fire hazard present. All valves in tank system function properly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Containment structures are in good condition and free from cracks, chipping or other damage, and in good condition.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>For tank equipped with leak detection, overfill or gauging equipment installed, system is functioning properly.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>For underground tank, tank sump and spill bucket (fill line) does not have evidence of free product, water and debris.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Part C. Safety Precautions & General Conditions

<table>
<thead>
<tr>
<th></th>
<th>AST001 – Biodiesel B100 (1900 gallons)</th>
<th>AST003 – Glycerol (1900 gallons)</th>
<th>AST004 – Soy Oil (1900 gallons)</th>
<th>Other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Safety equipment is in place and operative. Fire extinguishers in place.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Tank system secured to prevent vandalism and unauthorized use.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Spill response supply at each location is adequate to respond to spill at that location.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>There are no other conditions that should be addressed for continued safe operation or that may affect the site SPCC plan.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Information on site map is complete and accurate.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Findings/Comments: