UNIVERSITY OF KENTUCKY
GROUNDWATER PROTECTION PLAN
LEXINGTON MAIN CAMPUS

ENVIRONMENTAL QUALITY MANAGEMENT
UNIVERSITY OF KENTUCKY
LEXINGTON, FAYETTE COUNTY, KENTUCKY

Prepared for:

University of Kentucky

Prepared by:

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A. General Information

This document describes the practices implemented by the University of Kentucky (UK) for the protection of groundwater in accordance with 401 KAR 5:037.

A.1 Name and Address of Facility

Facility Name:	University of Kentucky – Lexington Main Campus
Facility Address:	Environmental Quality Management 355 Cooper Drive Lexington, KY 40506
County:	Fayette
Mailing Address:	Same as facility address above

Latitude:	38° 01' 40" N
Longitude:	84° 30' 25" W

A.2 Person Developing GPP

Facility Contact:	Kevin Lewis
Title:	Water Quality Compliance Manager
Facility Address:	Environmental Quality Management 355 Cooper Drive Lexington, KY 40506
Telephone number:	859-257-3285

Consultant:	Steven B. Vogel, P.E.
Address:	Strand Associates, Inc 651 Perimeter Drive, Suite 220 Lexington, KY 40517
Telephone Number:	859-225-8500

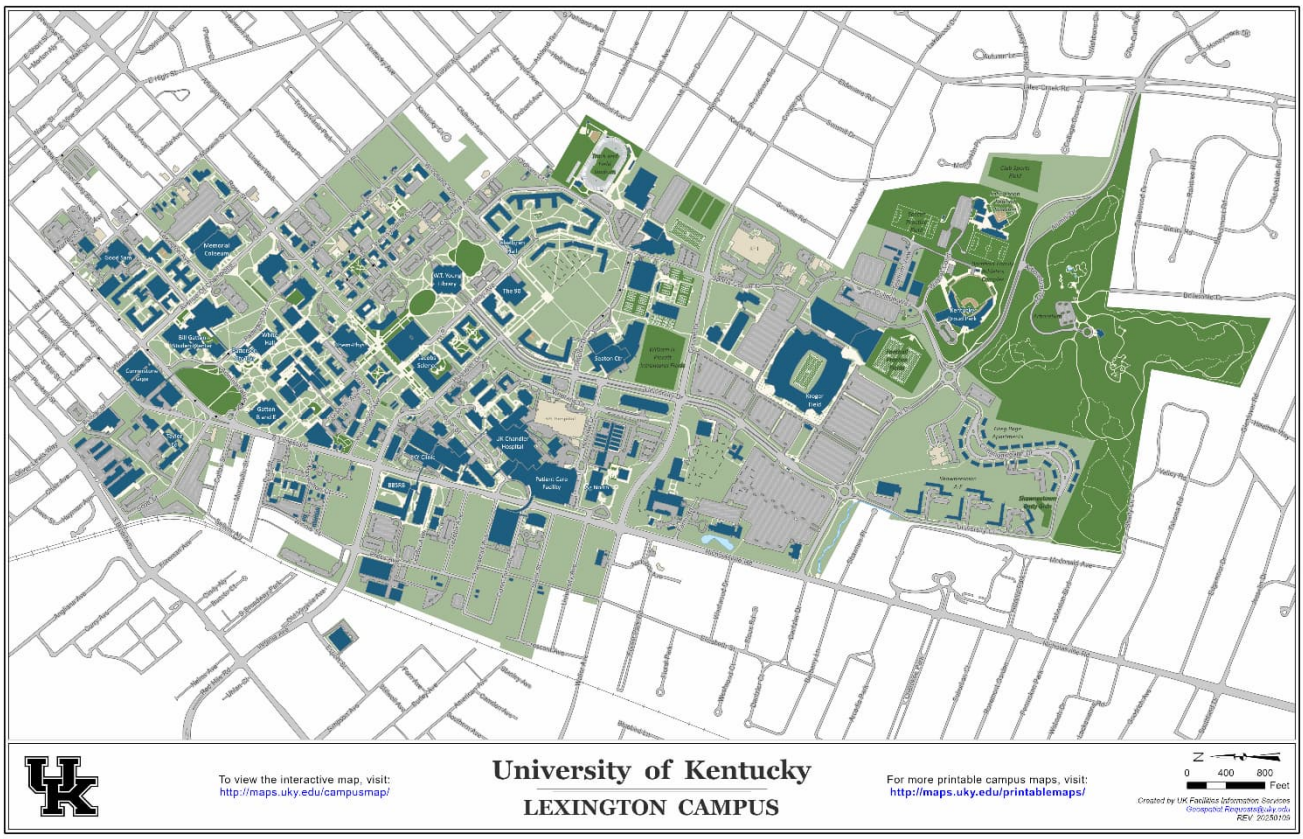
A.3 Person Responsible for Implementing GPP

Name:	Barry Swanson
Title:	Acting Vice President for Facilities Management & Chief Procurement Officer
Address:	322A Peterson Service Building Lexington, Ky. 40506
Telephone Number:	859-257-9101

A.4 Brief Description of Facility Operation

Founded in 1865 as a land-grant institution, the University of Kentucky's (UK's) main campus consists of approximately 850 acres in Lexington, Kentucky as shown on **Figure A.4.A**. From its early beginnings, with only 190 students and 10 professors, UK is now home to more than 34,000 students and approximately 30,000 employees. UK is one of a small number of universities in the United States that has programs in agriculture, engineering, a full complement of health colleges including medicine and pharmacy, law, and fine arts on a single campus. The University consists of 16 academic and professional colleges where students can choose from more than 200 majors and degree programs at the undergraduate and graduate levels. The colleges are Agriculture, Food and Environment; Arts and Sciences; Business and Economics; Communication and Information; Dentistry; Design; Education; Engineering; Fine Arts; Health Sciences; Law; Medicine; Nursing; Pharmacy; Public Health; and Social Work.

Figure A.4.A – University of Kentucky Lexington Main Campus Map



Primary activities at UK include research, teaching, health care, athletics, dining services, student housing, physical plant maintenance, and off-campus agricultural research. Operations are conducted in various buildings scattered throughout campus. The various buildings are surrounded by urban residential and commercial properties. The significant streets that connect the main campus to downtown Lexington includes Woodland Avenue, Rose Street, Limestone Street/Nicholasville Road, Martin Luther King Boulevard, and Broadway Road.

Limestone/Nicholasville Road is the most prominent street corridor through campus with major campus cross streets intersecting Limestone Street/Nicholasville Road including Alumni drive, Cooper Drive, Virginia Avenue/Huguelet Drive, Euclid Avenue/Avenue of Champions, Maxwell Street, and Newtown Pike/Oliver Lewis Way.

A.5 Primary Guidance Documents

The following are the primary regulatory guidance documents that provide the requirements for groundwater protection plans. Please note, where discrepancies exist between this document and permit or contract documents, the more stringent will prevail.

1. 401 KAR 5:037 – Groundwater Protection Plans

   This administrative regulation establishes the requirement to prepare and to implement groundwater protection plans to ensure protection for all current and future uses of groundwater and to prevent groundwater pollution.

2. University of Kentucky Official Design Standards

   The University of Kentucky Standards are a combination of program directives, design criteria, specifications, and drawings, which have been developed by University of Kentucky personnel involved in the design and construction of new and remodeled buildings, facilities, and parts thereof. Their purpose is to establish minimum requirements and expectations for the design and construction of new and remodeled buildings, facilities, and parts thereof.

3. Kentucky Pollutant Discharge Elimination System Permit No.: KYG200000 Permit for Small Municipal Separate Storm Sewer Systems

   As an MS4 permittee, the University is authorized to discharge stormwater through its MS4 to waters of the Commonwealth. The goal of the MS4 permit and the primary objective of the Groundwater Protection Plan is to ensure that stormwater runoff does not adversely impact water quality. To accomplish this the permit has established six categories of Minimum Control Measures (MCMs) that the University is required to implement that includes Illicit Discharge Detection and Elimination and Pollution Prevention/Good Housekeeping which are directly related to groundwater protection.

A.6 Administrative Regulations

Administrative Regulation (AR) 6:3, effective August 24, 2016, and delegated to the Executive Vice President for Finance and Administration as the Responsible Office, specifically mandates compliance, and assigns specific responsibilities associated with the implementation of the university's health, safety and environmental protection programs. Through AR 6:3 the university has established broad, yet comprehensive authority over its population of faculty, staff and students regarding compliance with

local, state, and federal environmental regulations including MS4 Permit requirements. This environmental, health, and safety AR states the following:

> *The University of Kentucky (the University) endeavors to maintain a safe and healthy environment for its students, employees, and visitors through effective environmental health and safety programs. The University positions itself as a leader within the Commonwealth in environmental stewardship, health protection, and safety standards and expects all students, employees, and members of the community to comply with applicable environmental, health, and safety laws and regulations. This regulation mandates compliance and assigns specific responsibilities associated with implementation and maintenance of the University's environmental health and safety programs.*

A.7 Definitions

Best Management Practice (BMP)–A term to describe schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the Commonwealth. Best management practices also include treatment requirements, operating procedures, practices to control site run-off, pollution of surface water and groundwater from nonpoint sources, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. (401 KAR 5:002, Sec. 1(16))

Bulk Quantities–means undivided quantities of any substance equal to or greater than 55 U. S. gallons liquid measure or 100 pounds net dry weight transported or held in an individual container. (401 KAR 5:002, Sec. 1(21))

Commercial–means services at stores, offices, restaurants, warehouses, and other service and nonmanufacturing activities, excluding households and industries. (401 KAR 5:002, Sec. 1(30))

Kentucky Division of Water (KDOW)–The regulatory agency that is responsible for monitoring and assessing the water quality of the Commonwealth's streams, rivers, lakes, and wetlands. Their authority includes the regulatory requirements described by 401 KAR 5:037.

B. Activities with the Potential to Pollute Groundwater

Table B.1 presents the five activities that take place on the UK main campus for which a Groundwater Protection Plan is required as stipulated in the corresponding regulatory citation. Additional details for each activity are provided in **Section C**.

Table B.1 – Regulated Activities at UK

Activity	Regulatory Citation
Pesticide or fertilizer application for institutional lawn care	401 KAR 5:037, Sec.1(1)(d)
Storage, treatment, disposal, or handling of hazardous waste, solid waste, or special waste in drums, or other containers	401 KAR 5:037, Sec. 1(1)(f)
Commercial storing or related handling in bulk quantities of raw materials, intermediate substances or products, finished products, substances held for recycling, or other pollutants held in tanks, drums, or other containers or in piles	401 KAR 5:037, Sec. 1(1)(g)
Storing or related handling of deicing agents at a central location	401 KAR 5:037, Sec. 1(1)(j)
Application or related handling of deicing materials	401 KAR 5:037, Sec. 1(1)(k)

Conversely, **Table B.2** presents those activities that occur on the UK main campus but are specifically excluded from the requirement to be included in a GPP.

Table B.2 – Specifically Excluded Activities

Activity	Regulatory Citation
Normal use or consumption of products sized and packaged for personal use by individuals	401 KAR 5:037, Sec. 1(3)(a)
Activities conducted entirely inside enclosed buildings, the building has a floor sufficient to prevent the release of pollutants to groundwater and there are no floor drains, or all floor drains within the building are connected to an on-site sewage disposal system	401 KAR 5:037, Sec. 1(3)(c)
Storing municipal solid waste in a container located on property where the municipal solid waste is generated and which is used solely for the purpose of collection and temporary storage of that municipal solid waste prior to off-site disposal	401 KAR 5:037, Sec. 1(3)(e)
Installing and operating sewer lines or water lines approved by the cabinet	401 KAR5:037, Sec. 1(3)(f)
Emergency response activities conducted in accordance with local, state, and federal law	401 KAR 5:037, Sec. 1(3)(j)

C. Practices Selected to Protect Groundwater from Pollution

For each general regulated activity listed in **Table B.1,** this section provides the associated specific UK activity that takes place at its main campus along with the best management practices (BMPs) that will be used by staff, contractors, and anyone else involved in these activities, to protect groundwater.

C.1 Pesticide or Fertilizer Application

Appendix 1 describes those activities and associated groundwater protection BMPs related to the application of pesticides and fertilizers at UK's main campus.

C.2 Storage, Treatment, Disposal, or Handling of Hazardous/Special Wastes

UK operates a facility on the main campus that stores and treats hazardous waste in drums or other containers. The Environmental Quality Management Center (EQMC) is an 11,000-square-foot on-campus facility and is permitted to store and treat hazardous waste generated by UK. Resource Conservation and Recovery Act (RCRA) Facility Permit No. KYD000-830-851 allows for the storage of a wide range of regulated hazardous waste which is maintained in specific locations within the EQMC until such time at it is transferred to a commercial entity for final disposal/treatment at an off-site facility. Per section 401 KAR 5:037, Sec. 2(7), the provisions of this RCRA Facility Permit shall be the GPP for the purposes of addressing the activities described in 401 KAR 5:037, Sec. 1(1)(f) and the permit is included by reference.

No waste is stored, treated, or disposed in landfills, incinerators, surface impoundments or piles at the UK main campus. Furthermore, no special waste (as defined in KRS 224.50-760(1)(a) is stored, treated or disposed at the UK main campus. Solid waste generated by UK is classified as municipal solid waste and is specifically excluded from groundwater protection planning as noted in 401 KAR 5:037, Sec. 1(3)(e).

Appendix 2 includes a table that identifies the GPP requirements and the associated RCRA Facility Permit section.

C.3 Storing or Related Handling of Materials in Bulk Quantities

Appendix 3 describes those activities and associated groundwater protection BMPs designated for the storing or related handling in bulk quantities of raw materials, intermediate substances or products, finished products, substances held for recycling, or other pollutants held in tanks, drums, or other containers or in piles at UK's main campus.

C.4 Storing or Related Handling of Deicing Agents

Appendix 4 describes those activities and associated groundwater protection BMPs that are related to the storing or related handling of deicing agents at UK's main campus.

C.5 Application or Related Handling of Deicing Materials

Appendix 4 describes those activities and associated groundwater protection BMPs that are related to the application or related handling of deicing materials at UK's main campus.

D. Implementation Schedule

All practices described in **Section C** are currently being implemented.

E. Employee Training

Managers or supervisors responsible for facilities or activities covered by this Groundwater Protection Plan are responsible for properly instructing and training personnel to satisfy its requirements. The training requirements for each specific regulated activity that takes place on the UK main campus are provided in the applicable section of Appendix 1 - 4.

In addition, all affected employees receive annual combined Spill Prevention Control & Countermeasures Plan and Groundwater Protection Plan through an online training system. These trainings are assigned to employees by a training coordinator who maintains training completion records. Records for this training are available upon request. The training covers the following topics:

- Content–Review of the Groundwater Protection Plan
- Awareness–Importance of groundwater protection
- Responsibilities–Activities that have the potential to impact groundwater quality, inspection schedule, and spill response

Personnel Briefings are to be conducted at intervals frequent enough to ensure adequate understanding of the requirements with a minimum of once per year. Such training will include reviews of any known spills, other failures (including malfunctioning components and equipment), and new precautionary measures adopted as a result of these events. All new employees shall receive training prior to assuming responsibility for implementing any of the requirements of this Groundwater Protection Plan.

F. Inspection Schedule

Managers and supervisors for facilities and activities covered by this Groundwater Protection Plan are responsible for conducting inspections on a periodic basis commensurate with the complexity, conditions, and circumstances of the covered facility or activity. The inspection schedule for each regulated activity that takes place on the UK main campus are provided in the applicable section of each appendix, if required.

In addition, each covered facility or activity will be inspected annually by a representative of Environmental Quality Management. During these inspections, the site-specific inspection records maintained by the responsible person at the location of each covered facility will be reviewed. EQM will also conduct a visual inspection of applicable areas for evidence of spills, leaks or releases that have potential impact to groundwater. The annual inspection checklists for each regulated activity that takes place on the UK main campus are provided in the appendices, as applicable.

G. Certification Statement

I, Barry Swanson *, certify that this Groundwater Protection Plan complies with the requirements of 401 KAR 5:037. I have reviewed the terms of the plan and will implement its provisions.*

Signature

7/6/2026

Date

H. Record Retention

H.1 Record Retention Duration

As required by 401 KAR 5:037, Sec. 3(1), copies of the GPP along with inspection records and other documentation evidencing compliance with the provisions of the plan shall be maintained and available for review for a minimum of 6 years.

H.2 Recertification and Revision

As required by 401 KAR 5:037, Sec. 3(3), the person responsible for implementing the Groundwater Protection Plan shall review the entire plan every three years. If no changes have occurred in responsible personnel, activities, or protective practices, the plan may be recertified by signing and dating another certification statement under Section G. If changes occur at any time, the plan must be revised and recertified to address the modifications.

H.3 Public Requests for Viewing GPP

As required by 401 KAR 5:037, Sec. 3(7), the public will be allowed to inspect the GPP. The GPP will be posted to the EQM website in a manner that is publicly accessible. Should a written request to review a hard copy of the GPP, inspection records, or other compliance documentation be requested, a review location will be provided within 10 working days.

H.4 GPP Transfer

As required by 401 KAR 5:037, Sec. 3(8), upon transfer of any facility for which a groundwater protection plan has been prepared, a copy of the most recent groundwater protection plan prepared for the facility will be provided with the transfer.

APPENDIX 1

GROUNDWATER PROTECTION PRACTICES
Pesticide or Fertilizer Application for Institutional Lawn Care

Appendix 1–Groundwater Protection Practices for Pesticide or Fertilizer Application for Institutional Lawn Care

This appendix to the Groundwater Protection Plan for UK's main campus provides descriptions of those best management practices (BMPs) designed to protect groundwater quality from activities which involve pesticide or fertilizer application.

A1.1 BEST MANAGEMENT PRACTICES

The BMPs for this activity are provided below in this section and are summarized in **Activity Information Sheet 2.5.001 Pesticide, Herbicide, and Fertilizer Delivery, Storage, and Handling** attached to the end of this appendix.

A1.1.1 Application of Pesticides/Fertilizers

Pesticides and fertilizers are used for grounds and vegetation management on UK property. This includes their storage and their application to facility grounds. The following BMPs are compliant with local, state, and federal law:

- These products are applied according to manufacturer's recommendations.
- UK will only use commercial fertilizers that contain a detailed fertilizer analysis which has been properly registered with the UK's Regulatory Services, Division of Fertilizer Inspection.
- UK will utilize established industry standards to prevent the contamination of surface water and groundwater.
- Slow release and organic formulations are the primary methods of fertilization. Additionally, all fertilizer applications will comply with recommendations from soil and/or tissue analysis conducted by the UK's College of Agriculture Division of Regulatory Services.
- Staff who apply pesticides are licensed applicators. A licensed applicator is a person who has received training, passed a test, and received a license from the state of Kentucky Department of Agriculture. Licensed applicators are personally responsible for maintaining a current license.
- On rare occasions, unlicensed staff may only apply pesticides with the Signal Word: Caution. Unlicensed staff must always be in direct line of site of a licensed applicator during the handling, mixing, hauling, application, or storage of pesticides with the signal word: Caution.
- Staff will apply pesticides and fertilizers using properly maintained and calibrated equipment, utilizing proper application techniques.
- Staff will comply with label recommendations and maintain adequate setback from all bodies of water, riparian areas, and storm water systems.
- Cleaning of spray or applicator equipment is permitted if the location is greater than 100 feet from a creek, stream, drainage ditch, or unprotected storm drain.
- No pesticide or fertilizer may be sprayed on water surfaces or ponds except for those specifically labeled for such applications.

- No pesticide or fertilizer may be disposed of by burying the excess material on site.
- All Applications of pesticides and fertilizers must be recorded and documented. Records must be stored in readily accessible manner and made available within one business day. Records must include the following information:
    - Name and address (GPS location) where the pesticide/fertilizer was applied.
    - Specific crop and site, to which the pesticide/fertilizer was applied.
    - Year, month, day, and time of application.
    - Trade name and EPA registration number of the pesticide(s) applied.
    - Amount of the pesticide applied and percentage of active ingredient per unit of the pesticide used (for every pesticide if a mixture).
    - Type and amount of the pesticide disposed of, method of disposal, date(s) of disposal, and location of the disposal site.
    - Temperature, wind direction, humidity, chance of precipitation.
    - Equipment utilized.
    - Name and license number of applicator.
    - Fertilizer type (granular or liquid).
    - Nutrients ratio including micros.
    - Application rate expressed in pounds per 1,000 square feet.
- UK attempts to limit the volume of pesticide application through spot treatment and using less pesticide when infestations are light. Alternatives to pesticides, such as steam weeding, are also considered.

A1.1.2 Storage of Pesticides/Fertilizers

Good storage practices for pesticides and fertilizers are inexpensive ways of preventing pollution. The following storage practices will be used at UK to reduce stormwater pollution and prevent groundwater impact:

- Expired pesticide and fertilizer containers with product that will not be applied will be collected for disposal through EQM. Fully used product containers are triple rinsed when emptied with the rinse water collected and recycled through the applicator system (i.e. there is no discharge of pesticide or fertilizer contaminated water to the storm sewer or the sanitary sewer).
- All pesticides and fertilizers are stored in their original labeled containers until used in a labeled applicator.
- Pesticides and fertilizers are stored under roof on an impervious surface with adequate secondary containment required to prevent run-off. An interior room with no floor drain is considered adequate secondary containment as long as a spill cannot contaminate groundwater.

- Pesticides are mixed and loaded on an impervious surface where any spills, leaks, or overflows cannot discharge to groundwater, stormwater, or sanitary. A water supply that has a backflow preventer to dilute chemicals to the needed concentration will be used.
- Empty pesticide and fertilizer containers will be punctured or destroyed prior to disposal. If the containers are not recyclable, they will be disposed of in a landfill permitted by the State of Kentucky Division of Waste Management.
- Safety Data Sheets (SDSs) are maintained at every location/site where pesticides and fertilizers are stored and mixed.
- SDSs are to be inspected annually for accuracy and updated any time a new product is purchased or following significant regulation changes. A cover sheet will be maintained in the SDS Binder to record the inspections and inspectors.
- A copy of both the chemical label and SDS will remain with the applicator during the duration of the application.
- A spill management kit is available in the storage area, and spill kits are readily accessible for every pesticide/fertilizer application. Spill kits are to be inspected monthly and used spill kit materials are to be replaced promptly after use.
- Pesticide and fertilizer inventories will be taken monthly to ensure that product does not become obsolete through lack of use and to confirm that there have been no leaks, spills, or damages to containers.

A1.2 INSPECTIONS

Inspections which are relevant to the application of pesticides or fertilizers include:

- Weekly inspections (during application season) - Including equipment, sprayers, and pumps. Chemical mixing and spraying operations will also be inspected weekly.
- Monthly pesticide and fertilizer inventories.
- Monthly spill kit inspections.
- Annual storage area and safety data sheet inspections.

The inspections listed above are to be conducted by personnel responsible for the storage and application of pesticides/fertilizers.

In addition, this covered facility or activity will be inspected annually by a representative of Environmental Quality Management. During this inspection, the site-specific inspection records maintained by the responsible person at the location of each covered facility will be reviewed. EQM will also conduct a visual inspection of applicable areas for evidence of spills, leaks or releases that have potential impact to groundwater. The inspection checklist for the EQM annual inspection is included in this appendix.

A1.3 TRAINING

Training of personnel responsible for the application of pesticides or fertilizers will include EQM's Spill Prevention Control & Countermeasures and Groundwater Protection Plan training annually. Personnel Briefings are to be conducted by facility personnel at intervals frequent enough to ensure adequate understanding of the plan requirements with a minimum of once per year. Employees responsible for the application of pesticides will receive and maintain an applicator license.

GROUNDWATER PROTECTION PLAN ANNUAL INSPECTION CHECKLIST
PESTICIDE OR FERTILIZER APPLICATION
FOR INSTITUTIONAL LAWN CARE

Instructions: This inspection record will be completed every year. Place a checkmark in the appropriate box for each item. If any response requires elaboration, do so in the Comments and Descriptions space provided. Further comments and description can be made in the Remarks space or attached on a separate sheet of paper if necessary.

Facility: _____ Date: _____

Persons Present: _____ Time: _____

Records Review				
Program Element/Requirement	**Yes**	**No**	**N/A**	**Comments and Descriptions**
All personnel responsible for the application of pesticides or fertilizers complete training annually.				
Personnel briefings are conducted/documented.				
Weekly inspections are conducted/documented.				
Monthly inventories are conducted/documented.				
Monthly spill kit inspections are conducted/ documented.				
Safety Data Sheets are inspected annually and updated any time a new product is purchased with inspections documented.				
All staff who apply or supervise pesticide applications are currently licensed.				
All pesticide and fertilizer applications are properly documented. (*see Application Record Guide*)				
All unused pesticides and fertilizers are disposed of properly.				
Records are maintained for six years.				

Site Inspection				
Loading and Unloading Area	**Yes**	**No**	**N/A**	**Comments and Description**
Safety Data Sheets are maintained at every location for all used or stored products.				
Spill kits are readily accessible.				
Spill kits are appropriately stocked.				
All containers are received without leaks and intact.				
Storage Area	**Yes**	**No**	**N/A**	**Comments and Description**
Only commercial fertilizers are used.				
Products are stored in their original labeled containers.				
Products are stored in a designated area under roof on an impervious surface.				
Adequate secondary containment is provided.				
Pesticides are mixed/loaded on an impervious surface that cannot discharge to groundwater, stormwater, or sanitary.				

Containers are punctured or destroyed prior to disposal.				
Containers are disposed of properly.				
The storage area is inspected annually.				
The storage area is free from evidence of spills or leaks.				
All containers are free from defects and damage.				
All products are used within the expiration date.				
Chemical handling procedures are reviewed annually.				

Application of Pesticides/Fertilizers	**Yes**	**No**	**N/A**	**Comments and Description**
Soil and/or tissue analysis is conducted prior to application.				
Pesticides and fertilizers are applied to the manufacturer's recommendation.				
Copies of the chemical label and Safety Data Sheet are carried with the applicator during the application.				
Spill management kits are available during application.				
Empty pesticide and fertilizer containers are triple rinsed, and the rinse water is collected and recycled through the spray tank.				
Application equipment is properly maintained, calibrated, and operating properly. (i.e. not leaking)				
Applicator tanks are properly labeled with contents.				
The facility has equipment or written procedures to prevent backflow into the water supply.				
Pesticide applications are applied by or supervised by a licensed operator.				

Remarks: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ _____ _____

Name of Inspector Signature Date & Time

Inspection Checklist References and Additional Information

On rare occasions, unlicensed staff may only apply pesticides with the Signal Word: Caution. Unlicensed staff must always be in direct line of site of a licensed applicator during the handling, mixing, hauling, application, or storage of pesticides with the signal word: Caution.

Cleaning of spray or applicator equipment is permitted if the location is greater than 100 feet from a creek, stream, drainage ditch, or unprotected storm drain.

No pesticide or fertilizer may be sprayed on water surfaces or ponds except for those specifically labeled for such applications.

Staff will comply with label recommendations and the UK Groundwater Protection Plan requirements to maintain adequate set back from all bodies of water, riparian areas, and storm water systems.

No pesticide or fertilizer may be disposed of by burying the excess material on site.

Application Record Guide

All Applications of pesticides and fertilizers must be recorded and documented. Records must be stored in readily accessible manner and made available within one business day. Records must include the following information:

- ☐ Name and address (GPS location) where the pesticide/fertilizer was applied.
- ☐ Specific crop and site, to which the pesticide/fertilizer was applied.
- ☐ Year, month, day, and time of application.
- ☐ Trade name and EPA registration number of the pesticide(s) applied.
- ☐ Amount of the pesticide applied and percentage of active ingredient per unit of the pesticide used (for every pesticide if a mixture).
- ☐ Type and amount of the pesticide disposed of, method of disposal, date(s) of disposal, and location of the disposal site.
- ☐ Temperature, wind direction, humidity, chance of precipitation.
- ☐ Equipment utilized.
- ☐ Name and license number of applicator(s).
- ☐ Fertilizer type (granular or liquid).
- ☐ Nutrients ratio including micros.
- ☐ Application rate expressed in pounds per 1,000 square feet.

Environmental Quality Management

PESTICIDE, HERBICIDE, AND FERTILIZER DELIVERY, STORAGE, AND HANDLING

WWW.UKY.ENV/STORMWATER

Pesticides, herbicides, and fertilizers must not be inappropriately discharged to the environment because they can contribute significant pollutants to groundwater and local streams. The University's MS4 Permit only allows clean water discharges into the stormwater system and requires that the University implement Best Management Practices to prevent the discharge of pollutants from campus. Proper delivery, storage, and handling can prevent spills and illicit discharges.

DO

- ✓ Store chemicals in their original labeled container in a clean, dry location with a concrete or paved floor.
- ✓ Triple rinse emptied pesticide and fertilizer containers. Collect and recycle the rinse water through the applicator system to prevent discharge of pesticide or fertilizer contaminated water to the storm sewer or sanitary sewer.
- ✓ Use a water supply that has a backflow preventer to dilute chemicals to the needed concentration.
- ✓ Check spray equipment for leaks before use.
- ✓ Pump or pour chemicals directly into the spray tank.
- ✓ Watch the fill sight tube to avoid overfilling the spray tank.
- ✓ Apply all chemicals according to label directions.
- ✓ Have a spill kit and an empty container available when chemicals are delivered or moved.
- ✓ Contain absorbed material from spills or leaks and distribute it at a target chemical application site, if possible.
- ✓ Clean up spills or leaks quickly using absorptive devices from spill kits.



Required Training: 1 per year with ongoing training occurring as needed.

Relevant UK Departments:

- Environmental Quality Management
- Facilities Management
- Grounds
- Athletics

DON'T

- ✗ Don't spray pesticide or fertilizer on water surfaces or ponds, except for those specifically labeled for such applications.
- ✗ Don't dispose of pesticide or fertilizer by burying the excess material on-site.
- ✗ Don't accept leaking containers from delivery trucks.
- ✗ Don't reuse or burn empty chemical containers.

ADDITIONAL RECOMMENDATIONS/INFORMATION

- ➲ Review the University's Groundwater Protection Plan for additional requirements and Best Management Practices.
- ➲ Containers that cannot be returned or recycled should be punctured and sent to a solid waste landfill that has agreed to accept the containers.
- ➲ Contact UK Environmental Quality Management Department for list of needed spill kit contents.
- ➲ Return spilled chemicals to the spray tank.
- ➲ If absorbed chemical material cannot be used, conduct a waste determination. Cleanup from spilled materials that are found to be non-hazardous can be disposed in a solid waste landfill.
- ➲ Absorbed materials and soils containing hazardous chemicals should be collected and Environmental Quality Management contacted for disposal.
- ➲ If a spill cannot be safely and effectively handled by facility personnel, the facility superintendent will promptly call 911 or 859-257-UKPD (8573) and/or UK Environmental Quality Management at 859-323-6280.

ACTIVITY CHECKLIST

- ☐ Check chemical mixing and spraying operations WEEKLY.
- ☐ Check equipment including sprayers and pumps WEEKLY during application season.
- ☐ Check chemicals spill kits MONTHLY and promptly restock after use.
- ☐ Check pesticide and fertilizer inventories monthly for expired products and to confirm that there have been no leaks, spills, or damages to containers.
- ☐ Check chemical storage location ANNUALLY.
- ☐ Review chemical handling procedures ANNUALLY, improve as needed.
- ☐ Ensure Safety Data Sheets are current and available ANNUALLY.

APPENDIX 2

GROUNDWATER PROTECTION PRACTICES

Storage, Treatment, Disposal or Handling of Hazardous Waste in Drums or Other Containers

Appendix 2–Groundwater Protection Practices for Storage, Treatment, Disposal or Handling of Hazardous Waste in Drums or Other Containers

The Environmental Quality Management Center (EQMC) is an 11,000-square-foot on-campus facility and is permitted to store and treat hazardous waste generated by UK. Resource Conservation and Recovery Act (RCRA) Facility Permit No. KYD000-830-851 allows for the storage of a wide range of regulated hazardous waste which is maintained in specific locations within the EQMC until such time at it is transferred to a commercial entity for final disposal/treatment at an off-site facility. Per section 401 KAR 5:037, Sec. 2(7), the provisions of this RCRA Facility Permit shall be the GPP for the purposes of addressing the activities described in 401 KAR 5:037, Sec. 1(1)(f) and the permit is included by reference. A copy of the RCRA Facility Permit information can be made available upon request.

The table below identifies the GPP requirements and the associated RCRA Facility Permit section.

Table: GPP Sections and Corresponding RCRA Facility Permit Coverage

GPP Section	Relevant Permit Sections	Notes / Attachments
A. General Information	Section B: Facility Description	Provides general facility info, maps (Attachment B-1 to B-3)
B. Activities That Have the Potential to Pollute Groundwater	Section D: Process Information Section E: Groundwater Monitoring	Covers hazardous waste handling, treatment, and containment
C.2 Storage, Treatment, Disposal, or Handling of Hazardous/Special Wastes	Covered under Standard Permit Conditions – and Section D: Containers & Secondary Containment	Details of hazardous waste storage and containment (Attachments D-5, D-6A, D-6B)
D. Implementation Schedule	Section F: Procedures to Prevent Hazards	Includes security, inspection schedules, emergency equipment
E. Employee Training	Section H: Personnel Training	Covers hazardous waste handling, safety protocols
F. Inspection Schedule	Section F: Inspection Schedule	Weekly & Monthly Inspections detailed (Attachment F-2)
G. Certification Statement	Section L: Certification	Facility compliance certification
H. Record Retention	Section I: Closure Plan	Covers long-term record retention for compliance

APPENDIX 3

GROUNDWATER PROTECTION PRACTICES
Storing or Related Handling of Materials in Bulk Quantities

Appendix 3–Groundwater Protection Practices for Storing or Related Handling of Materials in Bulk Quantities

This appendix to the Groundwater Protection Plan for UK's main campus provides descriptions of those best management practices (BMPs) designed to protect groundwater quality from activities which involve storing or related handling of bulk quantities of raw materials, intermediate substances or products, finished products, substances held for recycling, or other pollutants held in tanks, drums or other containers, or in piles. Any of the above activities that are conducted entirely inside enclosed buildings with a floor sufficient to prevent release of pollutants to groundwater are excluded from this plan.

Those activities on UK's main campus that qualify include the following:

- Storage and handling of palletized materials.
- Storage and dispensing of gasoline, diesel fuel, and fuel oil in aboveground storage tanks (ASTs) or underground storage tanks (USTs) for fueling vehicles, in emergency generators or as fuel for boilers.
- Storage of fats, oils, and grease from Food Service Establishments in ASTs. In most cases, these are pumped directly from the equipment by a commercial contractor that recycles the materials and are not covered by this plan.
- Storage of coal in piles.
- Storage and handling of compost from material generated on site.
- Storage and handling of delivered mulch for use on site.

A3.1 GENERAL STORAGE AND HANDLING OF MATERIALS IN BULK QUANTITIES

This section contains guidance on the general handling of materials in bulk quantities and is focused on smaller deliveries that are still bulk quantities but are not covered by other sections of this plan. These will typically be delivered to campus by a commercial delivery service, and most times are transported on pallets. The guidance included here is focused on these palleted materials but can be extrapolated to other types of containers as well.

A3.1.1 Best Management Practices

General guidance for bulk material stored on pallets is to store them entirely inside enclosed buildings with a floor sufficient to prevent release of pollutants to groundwater. However, in instances where these materials must be stored or handled outside, the BMPs for this activity are provided below in this section and are summarized in **Activity Information Sheet 2.1.002 Storing or Related Handling of Dry Materials in Bulk Quantities** attached to the end of this section. Additional guidance for liquid materials is contained below.

- Before accepting materials, containers will be inspected for damage or leakage. Refusing compromised containers prevents accidental release onto paved or unpaved surfaces where chemicals could infiltrate soil or enter drainage systems.
- All bagged or containerized dry materials will be kept inside a fully enclosed building if possible, to prevent contact with precipitation and moisture. Storing materials on pallets provides separation from the floor, reducing the risk of bag deterioration, leakage, and water intrusion. A weather-tight facility ensures that wind, rain, and humidity cannot cause product degradation or contribute to contaminated runoff that may threaten groundwater.
- Bulk materials will be kept on a durable, impermeable surface such as concrete or asphalt. Outdoor storage exposes materials to precipitation and runoff, which can dissolve substances and create contaminated leachate.
- Placing materials where water naturally accumulates or where runoff could enter the storage zone will be avoided. Wet environments increase the likelihood of bag deterioration, leaching, and groundwater contamination.
- Designated spill kits will be placed near all bulk material storage areas and will be immediately accessible at all times. Readily accessible spill control equipment reduces response time and minimizes the chance of contaminants migrating off-site or infiltrating groundwater. Kits will include absorbents, containment socks, protective equipment, disposal bags, and necessary tools. Having tools such as shovels, brooms, containers, and collection bins on hand supports rapid containment and cleanup, preventing spills from being tracked away by equipment or washed into stormwater conveyances.
- The storage area will be swept routinely to prevent the accumulation of loose material to reduce the risk of contamination and keep material from being washed away by stormwater or tracked off-site by vehicles.
- BMPs will be regularly maintained to prevent clogging, restore treatment capacity, and protect nearby groundwater and surface water resources.
- All waste materials will be managed in accordance with local, state, and federal regulations, and disposed of using approved waste handling methods.

Groundwater protection for palletized and other bulk liquids relies on a system of containment and best management practices to prevent leaks. In addition to what is listed above, BMPs specific to the storage and handling of bulk liquids are provided below in this section and are summarized in **Activity Information Sheet 3.1.002 Handling Bulk Liquids** attached to the end of this section.

- Bulk liquid storage will be positioned in areas designed to allow rapid spill containment and cleanup. Storage areas will be located away from floor drains, storm drains, surface water channels, and any pathways leading to groundwater recharge zones.
- All actively used containers will be placed on engineered spill pallets. These pallets provide built-in containment for leaks, drips, and minor overflows, ensuring that spilled liquids remain contained and can be collected for proper disposal without contaminating soil or groundwater.
- Secondary containment such as containment berms, trays, or double-walled structures will be provided for all storage of bulk liquid. Outdoor containment must hold 110% of the largest

container or 10% of each individual container plus 10% to account for rainfall, whichever is greater.

- All fluid transfers, including dispensing from drums or totes into smaller containers, will take place directly over a spill pallet or containment tray to prevent accidental drips, overfills, or spills from reaching the floor, drains, or surrounding soil.
- When transporting drums, totes, or other bulk containers, they will be secured using chains, straps, or other approved restraints. Proper securing prevents tipping, falling, or rupture during movement, reducing the risk of spills.
- Forklifts will not directly lift drums or totes with forks alone. Specialized drum lifters, barrel clamps, or tote lifting attachments will be used to ensure stability. These tools prevent puncture, container drop, and accidental release of liquids.
- All liquid containers will be fully emptied before being stored for disposal or recycling. Residual liquids left in containers can leak, react, or degrade over time, causing environmental contamination.
- Small containers (gallons, quarts, pails) will be kept in secure, enclosed indoor areas to prevent tampering and protect them from temperature fluctuations or accidental spills. Storing them on spill pallets or inside flammable-storage cabinets provides secondary containment in case of leaks.
- Bulk liquids will be managed as regulated waste and disposed of through approved recycling or waste handling programs. Discharging liquids into drains or onto the ground is illegal and environmentally hazardous.
- All drums containing liquids will be stored indoors or under fully protective cover.
- Fluids susceptible to freezing will not be stored in unheated environments. Freezing can cause container rupture, expansion, and leaks, creating a spill hazard and potential groundwater contamination.

A3.1.2 Inspections

Monthly visual inspections will be conducted of each storage location and any associated BMPs. More frequent inspections will be conducted if warranted by site conditions. **Figure A3-1** provides an example inspection record. In addition, these covered facilities or activities will be inspected annually by a representative of Environmental Quality Management. During this inspection, the site-specific inspection records maintained by the responsible person at the location of each covered facility will be reviewed. EQM will also conduct a visual inspection of applicable areas for evidence of spills, leaks or releases that have the potential to impact groundwater. The inspection checklist for the Environmental Quality Management annual inspection is included in this Appendix.

A3.1.3 Training

Training of personnel responsible for operating and maintaining the storage areas will include EQM's Spill Prevention Control & Countermeasures and Groundwater Protection Plan training annually. Personnel Briefings are to be conducted by facility personnel at intervals frequent enough to ensure adequate understanding of the plan requirements with a minimum of once per year.

FIGURE A3-1
FACILITIES MANAGEMENT
BULK MATERIAL STORAGE AND HANDLING GROUNDWATER PROTECTION PLAN INSPECTION RECORD

DATE	INSPECTED BY	INSPECTED LOCATION	OBSERVATIONS (i.e., Condition of storage area)	ACTIONS TAKEN (if necessary)

Page __ of

GROUNDWATER PROTECTION PLAN ANNUAL INSPECTION CHECKLIST
BULK MATERIAL STORAGE AND HANDLING

Instructions: This inspection record will be completed every year. Place a checkmark in the appropriate box for each item. If any response requires elaboration, do so in the Comments and Description space provided. Further comments and description can be made in the Remarks space or attached on a separate sheet of paper if necessary.

Facility: _____ Date: _____

Persons Present: _____ Time: _____

Records Review				
Program Element/Requirement	**Yes**	**No**	**N/A**	**Comments and Description**
All personnel involved in managing the storage area complete GPP training annually.				
Personnel briefings are conducted as needed and at least once per year.				
Trainings are documented including covered material and sign-in sheets.				
Inspections are conducted (at least) monthly.				
Records are maintained for six years.				

Site Inspection				
Primary Storage Pile / Compost Stockpile	**Yes**	**No**	**N/A**	**Comments and Description**
Storage location is contained within an impervious surface and appropriate containment.				
Berms/containment structures/spill pallets are intact and functional.				
Drain valves, if present, are in the closed and locked position.				
Weather resistant covers are free from defects that would allow rainwater intrusion.				
All bags, drums, and other containers are free of rust, leaks, or bulging.				
All pallets and containers are clearly and accurately labeled.				
Inlet filters, filter bags, and other BMPs are routinely inspected, maintained, and replaced as needed.				
Surrounding area is free from any visible discharges that may impact groundwater, including leaching.				
Site is free from trash or cross contamination of materials.				
Surrounding area is free from spilled material.				
Spill kits are readily available and appropriately stocked.				

Additional structural BMPs are being implemented and maintained properly, if required.				
Equipment is being maintained in good working order and free from any fluid leaks.				

Remarks: _____

_____

_____

_____

_____

_____

_____

_____	_____	_____
Name of Inspector	Signature	Date & Time

Environmental Quality Management

STORING OR RELATED HANDLING OF DRY MATERIALS IN BULK QUANTITIES

WWW.UKY.ENV/STORMWATER

Bulk materials have the potential to pollute stormwater and groundwater through leakage, spills, and improper handling and storage. Other materials must not be discharged because they can contribute significant pollutants to receiving water bodies. The University's MS4 Permit only allows clean water discharges into the stormwater system and requires that the University implement Best Management Practices to prevent the discharge of pollutants from campus. Proper delivery, storage, and handling of these materials can prevent pollution from occurring.

DO

- ✓ Store bags of fertilizer, dry calcium chloride, or other bulk materials indoors, on pallets, or in clean, dry, weather-tight facilities.
- ✓ Use a storage area with a concrete or paved floor.
- ✓ Keep brooms, shovels, bags, or other containers, in the work area to clean up spills.
- ✓ Keep spill kits in storage areas where spills may occur.
- ✓ Apply smaller quantity bulk materials not in bags or other containers when purchased.
- ✓ Store larger quantity bulk materials (i.e., coal, sand) on impermeable concrete surfaces with barriers to reduce and prevent runoff.
- ✓ Cover bulk material piles to prevent contact with precipitation.
- ✓ Direct surface water runoff from uncovered bulk material piles toward stormwater BMPs (e.g., inlet filters, bioswales).
- ✓ Clean stormwater BMPs associated with bulk material storage routinely, in accordance with the manufacturer's/designer's specifications.
- ✓ Sweep the area surrounding uncovered stored bulk materials routinely.



Required Training: 1 per year with ongoing training occurring as needed.

Relevant UK Departments:

- Environmental Quality Management
- Facilities Management
- Grounds
- Athletics Turf Management
- Utilities and Energy Management

DON'T

- ✗ Don't allow any leaking containers to be unloaded from delivery trucks.
- ✗ Don't store any fertilizer, calcium chloride, or other bulk materials outside.
- ✗ Don't store bulk materials that are not in bags.
- ✗ Don't store bulk materials in wet locations or where rainwater flows toward the storage location.
- ✗ Don't store bags of bulk materials on dirt floors.
- ✗ Don't dispose of unused bulk materials in streams, storm drains, sanitary sewers, or sinkholes.
- ✗ Don't overfill large quantity bulk material storage areas (e.g., coal pile areas).

ADDITIONAL RECOMMENDATIONS

- ➲ Review the University's Groundwater Protection Plan for additional requirements and Best Management Practices.
- ➲ Excess fertilizer should be properly stored.
- ➲ Spilled bulk materials must be swept up for reuse.
- ➲ If spilled materials cannot be reused, contact UK Environmental Quality Management for guidance on disposal.
- ➲ Notify UK Environmental Quality Management when bulk dry materials are or can be exposed to weather.

ACTIVITY CHECKLIST

- ☐ Check ALL bulk liquid deliveries to ensure all containers are intact before unloading.
- ☐ Check liquid bulk storage areas MONTHLY to ensure containers are intact.
- ☐ Check drums for labeling, bulging, rusting or other damage WEEKLY.
- ☐ Check spill kit MONTHLY and promptly restock after use.
- ☐ Sweep the area surrounding large quantity bulk materials WEEKLY when in use.

Environmental Quality Management

HANDLING BULK LIQUIDS

WWW.UKY.ENV/STORMWATER

The discharge of bulk liquids contributes significant pollutants to receiving water bodies. The University's MS4 Permit only allows clean water discharges into the stormwater system and requires that the University implement Best Management Practices to prevent the discharge of pollutants from campus. Proper delivery, storage, and handling of bulk liquids can prevent this type of illicit discharge.

DO

- ✓ Locate the bulk liquid storage area where spill containment can be readily accomplished, away from floor drains, or where spills could reach water.
- ✓ Place containers that are in use on spill pallets.
- ✓ Provide secondary containment (100 percent of the largest container for indoor drums, 110 percent for outdoor drums) for bulk oil (motor, hydraulic, tack) and grease.
- ✓ Transfer fluids from bulk to small containers over a spill pallet.
- ✓ Use a pump or valve and tilt rack to transfer bulk liquids to smaller containers for use.
- ✓ Secure containers with chains or other restraining devices when moving bulk liquids with front-end loaders, backhoes, forklifts, or other equipment.
- ✓ Utilize a barrel or tote lifter when using forklifts to move bulk liquids.
- ✓ Empty containers completely.
- ✓ Store smaller containers indoors in locked cabinets and/or on spill pallets.



Required Training: 1 per year

Relevant UK Departments:

- Environmental Quality Management
- Facilities Management
- Grounds
- Utilities and Energy Management
- Capital Project Management

DON'T

- ✗ Don't allow any leaking containers to be unloaded from delivery trucks.
- ✗ Don't dispose of unused bulk liquids in any floor drains, streams, sinkholes, storm sewers, sanitary sewers, or on the ground.
- ✗ Don't store drums outdoors where water can damage the container and contaminate the contents.
- ✗ Don't store materials that can freeze in unheated areas.

ADDITIONAL RECOMMENDATIONS/INFORMATION

- ➲ Empty drums that are not collected by the vendor should be sent to a solid waste landfill.
- ➲ Purchase/store oil in small containers (less than 55 gallons) to eliminate the need to implement an SPCC plan.
- ➲ SPCC requirements apply to both bulk oil and grease storage.
- ➲ Bulk liquids are those stored in 55 gallon or larger containers.
- ➲ Aboveground Storage Tanks (ASTs) shall be clearly labeled and handled separately.
- ➲ Spilled materials that are suitable for use can be returned to the tank or similar container.
- ➲ Have a spill kit and an empty barrel available at all times to contain spills or leaks.
- ➲ Contact Environmental Quality Management to report any spills.

ACTIVITY CHECKLIST

- ☐ Check ALL bulk liquid deliveries to ensure all containers are intact before unloading.
- ☐ Check liquid bulk storage areas MONTHLY to ensure containers are intact.
- ☐ Check drums for labeling, bulging, rusting, or other damage.
- ☐ Check spill kit MONTHLY and promptly restock after use.

A3.2 UNDERGROUND AND ABOVEGROUND STORAGE TANKS

A3.2.1 Best Management Practices

The storage of bulk quantities of gasoline, diesel fuel, fuel oil, and fats/greases in ASTs or USTs is also regulated by 40 CFR 112 which establishes the procedures, methods, equipment, and other requirements to prevent the discharge of the tanks' contents into surface water. To meet that regulatory obligation UK has developed and maintains a Spill Prevention, Control and Countermeasure (SPCC) Plan for each regulated tank. The responsibility for managing these USTs and ASTs is associated with one of five UK functional units located on the Lexington Main Campus and unique SPCC Plans are available for each of these units as noted below:

- Campus Facilities Management – SPCC Plan, dated November 2023
- Martin-Gatton College of Agriculture, Food, And Environment Facilities – SPCC Plan, dated November 2023
- Medical Center Facilities Management – SPCC Plan, dated October 2023
- Medical Center Facilities Management - Good Samaritan Hospital – SPCC Plan, dated October 2023
- Utilities and Energy Management – SPCC Plan, dated October 2023

Currently, storage of fats, oils, and grease from Food Service Establishments are pumped directly from the equipment by a commercial contractor that recycles the materials and are not covered by this plan. These operations are confirmed annually. If a new food grease tank or combination of tanks over 1,320 gallons is installed, an additional SPCC plan will be developed that covers the specific tank(s) and location.

The ASTs and USTs used for the storage of bulk quantities of gasoline, diesel fuel, fuel oil, and fats/greases by each of the five units are included in Appendix A of each SPCC plan. The groundwater protection BMPs for these tanks are provided in the following sections of each SPCC Plan:

- Section 7.5 - Discharge Prevention Measures
- Section 7.6 - Discharge and Drainage Controls
- Section 7.7 - Discharge Countermeasures

Storage tanks that are regulated by the Kentucky UST program are exempt from SPCC regulations and are instead covered by the requirements of 401 KAR Chapter 42. Per section 401 KAR 5:037, Sec. 2(7), the provisions of Kentucky UST program and SPCC program shall be the GPP for the purpose of addressing the activities described in 401 KAR 5:037, Sec. 1(1)(f) and are included by reference.

BMPs for these activities are summarized in **Activity Information Sheet 3.1.001 Above Ground Storage Tanks** and **Activity Information Sheet 3.1.004 Loading and Unloading Tank Trucks** attached to the end of this section.

A3.2.2 Inspections

The individual SPCC Plans also serve as a guide for the inspections of USTs and ASTs. Therefore, inspections will be performed as required by Section 7.16 of the plans. The owner or operator of a facility subject to 40 CFR § 112 must conduct periodic integrity testing of its bulk containers, periodic integrity and leak testing of the valves and piping, and inspections as required by 40 CFR § 112 in accordance with written procedures that the owner or operator or the certifying engineer develop for the facility. The facility must keep on-file these written procedures and a record of the inspections and tests, signed by the appropriate supervisor or inspector. Records of inspections and tests kept under usual and customary business practices will suffice.

Designated personnel within each of the functional units conduct monthly visual inspections of all the oil storage containers and oil handling areas. Comprehensive annual inspections are also conducted to ensure the monthly visual inspections have been thoroughly and properly conducted. All inspections are documented and signed by the inspector.

A3.2.3 Training

Training of personnel responsible for operating and managing the USTs and ASTs will be conducted as noted in the individual SPCC Plans. Therefore, training will be performed as required by Section 7.17 of the plans. In accordance with the requirements of 40 CFR 112.7(f), training of personnel will include EQM's Spill Prevention Control & Countermeasures and Groundwater Protection Plan training annually. Personnel Briefings, or phase II training, are to be conducted at least annually by facility managers. Each person who participated in the briefing will be listed on the Employee Training Log with printed name, signature, and the date of participation in the training. The training of oil-handling employees will address the following topics:

- The operation and maintenance of equipment to prevent discharges;
- Discharge procedure protocols (including spill communication procedures);
- Applicable pollution control laws, rules and regulations;
- General facility operations;
- The contents of the SPCC plan; and
- Review of any spills that occurred in the previous year.

Leaking above ground storage tanks can contaminate nearby surface water and ground water. The University's MS4 Permit only allows clean water discharges into the stormwater system and requires that the University implement Best Management Practices to prevent the discharge of pollutants from campus. Proper above ground storage tank operation and management reduces the potential for pollutants to enter the stormwater system.

DO

- ✓ Locate tanks on an asphalt or concrete base or on impermeable soil and provide secondary containment.
- ✓ Keep product transfer valves closed when not in use.
- ✓ Check the condition of the tank for damage, spills, leaks, or other issues each time the tank is used.
- ✓ Promptly report concerns to the Superintendent.
- ✓ Transfer fuel and oil from ASTs to small containers over a spill pallet.
- ✓ Have a trained employee present during all filling operations.
- ✓ Ensure that all connections are tight before filling or pump out operations begin.
- ✓ Store smaller containers indoors in locked cabinets and/or on spill pallets.
- ✓ Provide secondary containment for tanks that is at least 110 percent of tank capacity.
- ✓ Remove collected oil before release of rainwater from containment areas.
- ✓ Release rainwater or snowmelt before the depth inside the containment unit reaches one foot.
- ✓ Refer to the Activity Information Sheets for *Used Oil and Oil Filters* for additional recommendations.



Required Training: 1 per year

Relevant UK Departments:

- Environmental Quality Management
- Facilities Management
- Grounds
- Utilities and Energy Management
- College of Agriculture

DON'T

- ✗ Don't accept deliveries or continue to use tanks that are known or suspected to be leaking.
- ✗ Don't add to storage tanks that are full.
- ✗ Don't allow release of oil or other contaminants.

ADDITIONAL RECOMMENDATIONS/INFORMATION

- ➲ Above Ground Storage Tanks include: oil, used oil, hydraulic fluid, transmission fluid, and antifreeze.
- ➲ A container is any tank or drum and includes stationary and mobile (fuel or hydraulic) tanks.
- ➲ Contain and clean up spills and leaks immediately. Spilled material that are wastes or are suitable for use can be returned to the tank or similar container. Refer to the Activity Information Sheets for *Hazardous, Non-Hazardous, and Petroleum Spills*.)

ACTIVITY CHECKLIST

- ☐ Check tank filling and containment draining DAILY or during activity.
- ☐ Check (visually) the secondary containment and tank area MONTHLY and report leaks, spills, and maintenance issues to the Superintendent immediately.
- ☐ Check valves, automatic shut-off valves and pipes MONTHLY and before materials transfer.
- ☐ Check corrosion resistant tanks and pipes at the manufacturer's recommended schedule.
- ☐ Check spill kit MONTHLY and promptly restock after use. See Activity Information Sheets for Hazardous, Non-Hazardous, and Petroleum Spills.

LOADING AND UNLOADING TANK TRUCKS

WWW.UKY.ENV/STORMWATER

During the transfer of materials while loading and unloading tank trucks, spills can contaminate surface water and ground water and can cause permit violations. The University's MS4 Permit only allows clean water discharges into the stormwater system and requires that the University implement Best Management Practices to prevent the discharge of pollutants from campus. Care should be taken while loading and unloading tank trunks to prevent spills from entering the storm sewer system.

DO

- ✓ Have a qualified UK employee with communication equipment (i.e. cellular phone) observe tanks at all times during the filling process and report any issues at the tank in the instance the truck driver cannot see the tank in question.
- ✓ Inform the vendor of the site layout protocol for entering the facility and unloading the product, and check that the vendor has the necessary equipment to respond to a discharge from the vehicle or fuel delivery hose.
- ✓ Confirm the vendor closes and secures all manhole closures before leaving the site.
- ✓ Confirm the vendor closes all valves and other closures in liquid discharge systems and confirms they are free of leaks. Emergency self-closing valves on MC 338 cargo tanks containing the residue of cryogenic liquids may remain either open or closed during transit.
- ✓ Observe all oil deliveries for new suppliers.
- ✓ Periodically observe deliveries for existing, approved suppliers.
- ✓ Confirm unloading of tank vehicles takes place only in designated areas with appropriate prevention equipment.
- ✓ Provide spill response materials to prevent oil from leaving the oil transfer area in the event of a spill. Typical spill response materials available for cleanup include the following: absorbent socks, pillow and mat pads; absorbent granular media; disposal bags and ties; goggles and nitrite gloves; shovel and broom; and Emergency Response Handbook.
- ✓ Ensure all oil handling personnel have received SPCC training and are familiar with SPCC plan requirements regarding tanker loading and unloading as well as spill contingency requirements.





Required Training: 1 per year

Relevant UK Departments:

- Environmental Quality Management
- Facilities Management
- Capital Project Management
- Utilities and Energy Management

DON'T

- ✗ Don't panic if a spill should occur. Respond calmly and quickly.
- ✗ Don't stop a release if it is hazardous to do so.

ADDITIONAL RECOMMENDATIONS/INFORMATION

- ➲ A person is "qualified" if made aware of the nature of the hazardous material that is to be loaded or unloaded, has been instructed on the procedures to be followed in emergencies, and is authorized to move the cargo tank.
- ➲ All oil vessels should be provided with sufficient secondary containment in the event of tank failure.
- ➲ Passive secondary containment is not provided for some petroleum transfers that are conducted at the bulk petroleum tanks. Active secondary containment and spill response materials are available during petroleum transfer operations.
- ➲ All suppliers and drivers must meet all requirements and regulations for tank truck loading and unloading established by the U.S. Department of Transportation.

- If the spill cannot be safely and effectively handled by facility personnel, the facility superintendent will promptly call 911 or 859-257-UKPD (8573) and UK Environmental Quality Management at 859-323-6280.
- If a spill reaches a waterbody or storm drain, immediately notify UK Environmental Quality Management who will call the KY Environmental Response Team, if required.

ACTIVITY CHECKLIST

- ☐ Check the designated areas for spill response materials, MONTHLY.
- ☐ Check spill kits MONTHLY and promptly restock after use.
- ☐ Check spill response and cleanup procedures ANNUALLY.
- ☐ Check for the presence of copies of SDSs for all products handled via tank trucks ANNUALLY.
- ☐ Check that all employees that handle petroleum product transfers are adequately trained.

A3.3 COAL PILES

A3.3.1 Best Management Practices

The coal for the Medical Center Heating Plant is retrieved from the primary stockpile pile located between Wildcat Court and Stadium View using front-end loading equipment which places the coal into dump-trucks for transport and placement on a concrete pad adjacent to the plant for fuel-stock storage. The primary storage pile is on a diked concrete pad and surface water is directed to one discharge pipe which drains to a concrete underground settling unit. After passing through this unit, water is discharged into a limestone lined drainage ditch that leads to a bioswale feature for additional treatment. This drainage system allows entrained coal sediment to settle out and pH balancing of the runoff to occur. The smaller fuel stock is located on asphalt adjacent to the plant and surface water is directed through a filtration system to remove coal silt and sediment prior to discharge into storm drains.

Groundwater protection BMPs for the bulk storage of coal in piles includes:

- Storing the coal on impervious surfaces equipped with drainage systems capable of directing run-off for treatment prior to discharge.
- Following the manufacturer's recommended frequency for cleaning of the filtration systems.
- Following good housekeeping procedures to eliminate escape of coal from the storage pad. This includes properly storing the coal so that the pile does not become overfilled and using a street sweeper on a monthly basis to perform cleaning of the surfaces adjacent to the piles.

Additionally, the BMPs covered in **Activity Information Sheet 2.1.002 Storing or Related Handling of Dry Materials in Bulk Quantities** included in this appendix applies to this activity.

A3.3.2 Inspections

Monthly visual inspections are conducted of each stockpile and associated BMPs. **Figure A3-2** provides an example inspection record. In addition, these covered facilities or activities will be inspected annually by a representative of Environmental Quality Management. During this inspection, the site-specific inspection records maintained by the responsible person at the location of each covered facility will be reviewed. EQM will also conduct a visual inspection of applicable areas for evidence of spills, leaks or releases that have potential impact to groundwater. The inspection checklist for the Environmental Quality Management annual inspection is included in this Appendix.

A3.3.3 Training

Training of personnel responsible for coal pile storage will include EQM's Spill Prevention Control & Countermeasures and Groundwater Protection Plan training annually. Personnel Briefings are to be conducted by facility personnel at intervals frequent enough to ensure adequate understanding of the plan requirements with a minimum of once per year.

FIGURE A3-2
PHYSICAL PLANT DIVISION
COAL STORAGE PILES GROUNDWATER PROTECTION PLAN INSPECTION RECORD

DATE	INSPECTED BY	INSPECTED ITEM (Check All That Apply)	OBSERVATIONS (i.e., Condition of general area, in-drain filtration units, settling basin)	ACTIONS TAKEN (if necessary)
		□ MC HP Primary Pile □ MC HP Fuel-Stock Pile		
		□ MC HP Primary Pile □ MC HP Fuel-Stock Pile		
		□ MC HP Primary Pile □ MC HP Fuel-Stock Pile		
		□ MC HP Primary Pile □ MC HP Fuel-Stock Pile		
		□ MC HP Primary Pile □ MC HP Fuel-Stock Pile		
		□ MC HP Primary Pile □ MC HP Fuel-Stock Pile		
		□ MC HP Primary Pile □ MC HP Fuel-Stock Pile		
		□ MC HP Primary Pile □ MC HP Fuel-Stock Pile		

MC HP – Medical Center Heating Plant

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GROUNDWATER PROTECTION PLAN ANNUAL INSPECTION CHECKLIST
COAL PILE STORAGE

Instructions: This inspection record will be completed every year. Place a checkmark in the appropriate box for each item. If any response requires elaboration, do so in the Comments and Description space provided. Further comments and description can be made in the Remarks space or attached on a separate sheet of paper if necessary.

Facility: _____ Date: _____

Persons Present: _____ Time: _____

Records Review				
Program Element/Requirement	**Yes**	**No**	**N/A**	**Comments and Descriptions**
All personnel involved in managing the coal piles complete SPCC and GPP training annually.				
Personnel briefings are conducted as needed.				
Inspections are conducted (at least) monthly.				
Records are maintained for six years.				

Site Inspection				
Primary Storage Pile / Fuel Stockpile	**Yes**	**No**	**N/A**	**Comments and Description**
Coal pile is contained on impervious concrete surface.				
Coal pile resides within containment walls.				
The coal pile is contained within the primary storage area.				
The surrounding area is swept monthly. (minimum)				
Inlet filters and filter bags are routinely inspected.				
Inlet filters are properly maintained/cleaned in accordance with manufacturer's guidance.				
All surface water runoff is directed toward inlet filters and adequately drained with no runoff bypassing inlets.				
Additional structural BMPs are being properly maintained, if applicable.				

Remarks: _____

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Name of Inspector Signature Date & Time

Inspection Checklist References and Additional Information

The coal for the Medical Center Heating Plant is retrieved from the primary stockpile pile located between Wildcat Court and Stadium View using front-end loading equipment which places the coal into dump-trucks for transport and placement on a concrete pad adjacent to the plant for fuel stock storage. The primary storage pile is on a diked concrete pad and surface water is directed to one discharge pipe which drains to a concrete underground settling unit. After passing through this unit, water is discharged into an earthen drainage ditch This unit allows any entrained coal sediment to settle out. The smaller fuel stock is located on asphalt adjacent to the plant and surface water is directed through hay bales to remove coal silt and sediment prior to discharge into storm drains.

A3.4 IN-VESSEL COMPOSTERS

A3.4.1 Best Management Practices

UK has installed an in-vessel composter on south campus in the Physical Plant Division's storage area off Stadium View Drive. The composter is fed with pre-sorted food waste generated on campus mixed with a bulking agent such as wood chips, chopped weeds, or leaves. The material is processed in the vessel through auger mixing and positive aeration to produce compost material. Once complete, the compost material is transferred to a covered concrete pad until it is used as mulch around campus.

Groundwater protection BMPs for storage and transfer of compost from material generated on site includes:

- Bulking agents will be stored only on designated concrete surfaces that fully contain the material and prevent contact with soil or stormwater. Proper containment prevents material from washing into drainage pathways during rain events. Maintaining defined storage areas also supports orderly operations and reduces the likelihood of accidental spills.
- All materials to be composted will be stored on the covered load-end concrete pad to prevent exposure to precipitation and potential runoff. Covering these materials reduces the generation of excess leachate and prevents contaminated stormwater from leaving the site.
- The composting vessel and surrounding areas will be kept free of any visible discharges, leaks, or spills that could pose a risk to groundwater. Regular monitoring helps identify equipment issues early, preventing small leaks from turning into significant releases. Maintaining clean surroundings demonstrates effective operational control and reduces groundwater exposure risks.
- The unload-end concrete surface will remain free of spilled compost, and any spills will be promptly cleaned. Quick spill response prevents organic material from impacting groundwater.
- Finished compost will be stored on a covered concrete surface designed to prevent leaching or uncontrolled discharge. Proper storage protects compost quality and prevents rewetting, which can create nutrient-rich runoff.
- Enclosures will be maintained in good condition to ensure they effectively prevent leaching and contain all stored materials.
- Roofing structures will be routinely inspected and maintained to ensure they remain free of defects that could allow rainwater intrusion. Preventing stormwater entry is essential for minimizing the volume of leachate generated within storage areas.
- Surrounding areas will be kept clean and free from spilled bulking agent, unprocessed material, or compost to prevent material contact with stormwater or soil.
- Inlet filters, filter bags, and related air-handling components will be routinely inspected, maintained, and replaced as needed to ensure proper operation.
- Additional structural BMPs required for the system will be implemented, inspected, and maintained as needed to ensure ongoing groundwater protection. These may include berms,

curbing, drainage controls, or secondary containment systems designed to prevent runoff migration.

- All composting and handling equipment will be maintained in good working order and kept free of hydraulic, fuel, or oil leaks that could contaminate soil or groundwater.
- The operator will follow the manufacturer's recommended frequency for maintenance of the in-vessel composting system.
- Staff will inspect all concrete storage pads annually for cracks or structural issues and complete any required repairs to maintain containment integrity. Annual inspections and prompt repair of cracks ensure that pads remain watertight and help eliminate pathways for runoff to impact groundwater.

Additionally, the BMPs covered in **Activity Information Sheet 2.1.002 Storing or Related Handling of Dry Materials in Bulk Quantities** and **Activity Information Sheet 2.6.005 Mulch Storage and Application** both included in this appendix apply to this activity.

A3.4.2 Inspections

Monthly visual inspections will be conducted at the in-vessel composter and storage area. **Figure A3-3** provides an example inspection record. In addition, the covered facilities or activities will be inspected annually by a representative of Environmental Quality Management (EQM). During this inspection, the site-specific inspection records maintained by the responsible person at the facility will be reviewed. EQM will also conduct a visual inspection of applicable areas for evidence of spills, leaks, or releases that have potential impact to groundwater. The inspection checklist for the EQM annual inspection is attached to this Appendix.

A3.4.3 Training

Training of personnel responsible for operating and maintaining the in-vessel composter and storage area will include EQM's Spill Prevention Control & Countermeasures and Groundwater Protection Plan training annually. Personnel Briefings are to be conducted by facility personnel at intervals frequent enough to ensure adequate understanding of the plan requirements.

FIGURE A3-3
PHYSICAL PLANT DIVISION
IN-VESSEL COMPOSTER GROUNDWATER PROTECTION PLAN INSPECTION RECORD

DATE	INSPECTED BY	INSPECTED ITEM (Check All That Apply)	OBSERVATIONS (i.e., Condition of area around composter and storage area)	ACTIONS TAKEN (if necessary)
		□ PPD-SC Composter □ PPD-SC Covered Storage		
		□ PPD-SC Composter □ PPD-SC Covered Storage		
		□ PPD-SC Composter □ PPD-SC Covered Storage		
		□ PPD-SC Composter □ PPD-SC Covered Storage		
		□ PPD-SC Composter □ PPD-SC Covered Storage		
		□ PPD-SC Composter □ PPD-SC Covered Storage		
		□ PPD-SC Composter □ PPD-SC Covered Storage		
		□ PPD-SC Composter □ PPD-SC Covered Storage		

PPD-SC – Physical Plant Division-South Campus

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GROUNDWATER PROTECTION PLAN ANNUAL INSPECTION CHECKLIST IN-VESSEL COMPOSTER

Instructions: This inspection record will be completed every year. Place a checkmark in the appropriate box for each item. If any response requires elaboration, do so in the Comments and Description space provided. Further comments and description can be made in the Remarks space or attached on a separate sheet of paper if necessary.

Facility: _____ Date: _____

Persons Present: _____ Time: _____

Records Review				
Program Element/Requirement	**Yes**	**No**	**N/A**	**Comments and Description**
All personnel involved in managing the in-vessel composter complete training annually.				
Personnel briefings are conducted as needed.				
Trainings are documented, including material covered and sign-in sheets.				
Inspections are conducted (at least) monthly.				
Concrete storage pads are inspected annually for cracks and repaired if needed.				
Records are maintained for six years.				

Site Inspection				
Primary Storage Pile / Compost Stockpile	**Yes**	**No**	**N/A**	**Comments and Description**
Bulking agent is contained within the storage area concrete surface.				
Material to be composted is contained within the covered load-end concrete surface.				
Vessel and surrounding area are free from any visible discharges that may impact groundwater.				
Unload-end concrete surface is free from spilled compost.				
Composted material is contained within the covered storage concrete surface.				
Enclosures adequately prevent leaching from the storage area.				
Roofing structures are free from defects that would allow rainwater intrusion.				
Surrounding area is free from spilled material to be composted, bulking agent, or compost.				
Inlet filters and filter bags are routinely inspected, maintained, and replaced as needed.				
Additional structural BMPs are being implemented and maintained properly, if required.				
Equipment is being maintained in good working order and free from any fluid leaks.				

Remarks: _____

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Name of Inspector	Signature	Date & Time

A3.5 MULCH STORAGE AND HANDLING

A3.5.1 Best Management Practices

Mulch is used extensively across the campus for landscaping, erosion control, and aesthetic enhancement. UK accepts delivery of mulch in bulk quantities, stores it in piles at various locations around campus, and reloads it for application around campus. The BMPs for this activity are provided below in this section and are summarized in **Activity Information Sheet 2.6.005 Mulch Storage and Application** attached to the end of this section.

Groundwater protection BMPs for storage and handling of mulch for use on site includes:

- Bulk mulch will be stored on a compacted, impervious surface (e.g., concrete or asphalt) or alternatively compact low-permeable liner (e.g., clay or synthetic liner) to minimize infiltration and leaching of organic compounds or sediment.
- Storage piles will be located a minimum of 100 feet away from surface waters, storm drains, sinkholes, or other environmentally sensitive features.
- Piles will be shaped in such a way to shed water easily with no flat tops or depressions where water can pool.
- Runoff containment including berms, silt fencing, or vegetative buffer zones will be installed to prevent migration of mulch or leachate from the storage area to adjacent drainage systems or soil.
- Piles will be managed to minimize spontaneous combustion risk by avoiding heights of more than 10 feet and by turning the pile regularly to allow proper aeration.
- Piles will be kept separate from other materials and the area will be free from trash to prevent cross contamination of stored materials.
- No additive colorants, chemicals, or compost accelerants will be applied to mulch while it is stored unless approved for safe environmental use and documented in the GPP.
- Mulch will be handled and moved using clean, leak-free equipment to avoid contamination of the storage area.
- Good housekeeping procedures will be followed to prevent spilling material while receiving delivery of mulch, during storage, and during handling mulch prior to being applied to locations around campus. Any spilled mulch or loose materials scattered outside the designated storage area will be promptly swept up and returned to the pile or appropriately disposed of.

A3.5.2 Inspections

While in use, weekly inspection of the mulch pile area, including containment structures, ground surface, and drainage systems will be conducted to confirm BMPs are being implemented. Post-rainfall inspections for leachate production will be considered in instances where mulch piles were not covered. Monthly inspections will be conducted throughout the year and when not in use to review storage structures and runoff containment practices for potential groundwater impacts. **Figure A3-4** provides an example inspection record.

In addition, the mulch storage facilities or activities will be inspected annually by a representative of Environmental Quality Management (EQM). During this inspection, the site-specific inspection records maintained by the responsible person at the facility will be reviewed. EQM will also conduct a visual inspection of applicable areas for evidence of excessive leachate or releases that have potential impact to groundwater. The inspection checklist for the EQM annual inspection is attached to this Appendix.

A3.5.3 Training

Training of personnel responsible for operating and maintaining the mulch storage area will include EQM's Spill Prevention Control & Countermeasures and Groundwater Protection Plan training annually. Personnel Briefings are to be conducted by facility personnel at intervals frequent enough to ensure adequate understanding of the plan requirements with a minimum of once per year.

FIGURE A3-4
FACILITIES MANAGEMENT
MULCH STORAGE AND HANDLING GROUNDWATER PROTECTION PLAN INSPECTION RECORD

DATE	INSPECTED BY	INSPECTED LOCATION	OBSERVATIONS (i.e., Condition of storage area)	ACTIONS TAKEN (if necessary)

Page __ of

GROUNDWATER PROTECTION PLAN ANNUAL INSPECTION CHECKLIST
MULCH STORAGE AND HANDLING

Instructions: This inspection record will be completed every year. Place a checkmark in the appropriate box for each item. If any response requires elaboration, do so in the Comments and Description space provided. Further comments and description can be made in the Remarks space or attached on a separate sheet of paper if necessary.

Facility: _____ Date: _____

Persons Present: _____ Time: _____

Records Review				
Program Element/Requirement	**Yes**	**No**	**N/A**	**Comments and Description**
All personnel involved in managing the mulch storage complete GPP training annually.				
Personnel briefings are conducted as needed and at least once per year.				
Trainings are documented including material covered and sign-in sheets.				
Weekly inspections are conducted while in use.				
Inspections are conducted (at least) monthly throughout the rest of the year.				
Storage pads are inspected annually for cracks and repaired if needed.				
Records are maintained for six years.				

Site Inspection				
Primary Storage Pile / Compost Stockpile	**Yes**	**No**	**N/A**	**Comments and Description**
Mulch pile is contained within the storage area impervious surface and appropriate containment.				
Berms/containment structures are intact and functional.				
Adequate setbacks from surface waters and stormwater infrastructure are being maintained.				
Inlet filters and filter bags are routinely inspected, maintained, and replaced as needed.				
Pile height and configuration are managed to prevent combustion.				
Mulch is adequately protected from precipitation.				
Roofing structures are free from defects that would allow rainwater intrusion.				
Surrounding area is free from any visible discharges that may impact groundwater, including leaching.				
Site is free from trash or cross contamination of materials.				
Surrounding area is free from spilled material.				

Additional structural BMPs are being implemented and maintained properly, if required.				
Equipment is being maintained in good working order and free from any fluid leaks.				

Remarks: _____

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Name of Inspector Signature Date & Time

Inspection Checklist References and Additional Information

"Bulk quantities" means undivided quantities of any substance equal to or greater than 55 U. S. gallons liquid measure or 100 pounds net dry weight transported or held in an individual container. (401 KAR 5:037, Sec. 1(5))

"Best management practices" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the Commonwealth. Best management practices also include treatment requirements, operating procedures, and practices to control plant site run-off, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. (401 KAR 5:037, Sec. 1(3))

MULCH STORAGE AND APPLICATION

WWW.UKY.ENV/STORMWATER

Mulch storage areas are capable of contributing high levels of organic contaminants, nutrients, and other pollutants to stormwater. As a result, care should be taken to prevent mulch and mulch by-product runoff from entering the storm sewer system. The University's MS4 Permit only allows clean water discharges into the stormwater system and requires that the University implement Best Management Practices to prevent the discharge of pollutants from campus.

DO

- ✓ Store bulk quantities of mulch on compact impervious surfaces (e.g., concrete or asphalt) or on a compact low-permeable liner (e.g., clay or synthetic liner).
- ✓ Locate storage piles a minimum of 100 feet away from surface waters, storm drains, sinkholes, or other environmentally sensitive features.
- ✓ Shape piles in such a way to shed water easily (no flat tops or depressions where water can pool). Piles should not be greater than 10 feet in height.
- ✓ Equip storage areas with containment tools (e.g., berms, silt fencing, vegetative buffer zones, etc.) to prevent migration of mulch or leachate.
- ✓ Handle and move mulch using clean, leak-free equipment to avoid any contamination of the storage area.
- ✓ Hydraulically apply or appropriately anchor mulch on steep slopes, greater than 2.5:1, or where mulch is susceptible to movement by wind or water.



Required Training: 1 per year

Relevant UK Departments:

- Grounds
- Athletics

DON'T

- ✗ Don't allow the release of leachate or runoff from mulch piles to enter storm drains.
- ✗ Don't ignore spilled or wind-blown mulch. Loose material should be cleaned up promptly.
- ✗ Don't allow mulch piles to become compacted and flat-topped, this prevents proper drainage and can lead to pooling and leachate runoff.
- ✗ Don't add chemicals, colorants, or compost accelerants to mulch while in storage. Any additive usage should be approved and documented.

ADDITIONAL RECOMMENDATIONS

- ➲ Consider covering mulch piles with breathable tarps during prolonged storage or wet weather to reduce moisture saturation and runoff.
- ➲ Inspect mulch storage and application areas after major rain events to check for erosion, leachate, staining, or movement.

ACTIVITY CHECKLIST

- ☐ Check and replace mulch that has been disturbed after intense weather events or episodes of high winds.
- ☐ Inspect mulch piles and surrounding areas when in use.
- ☐ Inspect and review storage areas and structures MONTHLY.
- ☐ Review and inspect runoff and containment procedures MONTHLY.
- ☐ Ensure personnel responsible for operating and maintaining mulch storage areas complete training ANNUALLY.
- ☐ Conduct personnel briefings with staff responsible for mulch handling/storage minimum ANNUALLY.

APPENDIX 4

GROUNDWATER PROTECTION PRACTICES
Storing or Related Handling and Application of Deicing Agents

Appendix 4–Storing or Related Handling and Application of Deicing Agents

This appendix to the Groundwater Protection Plan for UK's main campus provides descriptions of those best management practices (BMPs) designed to protect groundwater quality from activities which involve handling and application of deicing agents.

A4.1 BEST MANAGEMENT PRACTICES

The BMPs for this activity are provided below in this section and are summarized in **Activity Information Sheet 2.6.005 Storing or Related Handling and Application of Deicing Agents** attached to the end of this appendix.

- The salt storage pile will be contained under roof on an impervious surface. Keep salt dry by covering the dome entrance or the face of the salt pile with tarps. Store dry calcium chloride indoors on pallets.
- Sweep the storage areas clean before salt delivery and sweep up spilled salt after delivery. Move delivered salt into storage immediately. If salt is stored on an uncovered concrete or asphalt pad, shape the salt pile to avoid pooling water and cover immediately with a tarp weighted with sandbags, cinder blocks, tires on ropes, etc.
- To prevent salt tracking watch for and move salt away from storage entrances where rain is blown in.
- Load salt trucks on a paved surface and sweep any spilled salt back into storage.
- Load only what is needed for the job and return unused product to storage.
- Calibrate spreader to apply product per manufacturer recommendations. Do not apply excessive amounts of deicing agents.

A4.2 INSPECTIONS

The inspections which have been established for handling and application of deicing agents include:

- Daily Inspections (during active application) to check the following:
  - Signs of runoff issues or white chloride deposits.
  - Salt storage domes and sheds for water-tight roof & floors.
  - Tarp or covers for entrances.
  - Building damage.
- Weekly Inspections (during rest of year) for white chloride deposits.
- Monthly Inspections (May through September) for structural integrity and runoff issues.
- Annual Inspections (Summer) to check salt pads for cracks and wear.

In addition, these covered facilities or activities will be inspected annually by a representative of Environmental Quality Management. During this inspection, the site-specific inspection records maintained by the responsible person at the location of each covered facility will be reviewed. EQM will also conduct a visual inspection of applicable areas for evidence of spills, leaks or releases that have potential impact to groundwater. The inspection checklist for the Environmental Quality Management annual inspection is included in this Appendix.

A4.3 TRAINING

Training of personnel responsible for coal pile storage will include EQM's Spill Prevention Control & Countermeasures and Groundwater Protection Plan training annually. Personnel Briefings are to be conducted by facility personnel at intervals frequent enough to ensure adequate understanding of the plan requirements with a minimum of once per year.

GROUNDWATER PROTECTION PLAN ANNUAL INSPECTION CHECKLIST STORING OR RELATED HANDLING AND APPLICATION OF DEICING AGENTS

Instructions: This inspection record will be completed every year. Place a checkmark in the appropriate box for each item. If any response requires elaboration, do so in the Comments and Description space provided. Further comments and description can be made in the Remarks space or attached on a separate sheet of paper if necessary.

Facility: _____ Date: _____

Persons Present: _____ Time: _____

Records Review				
Program Element/Requirement	**Yes**	**No**	**N/A**	**Comments and Description**
All personnel responsible for storing or related handling and application of deicing agents complete SPCC and GPP training annually.				
Personnel briefings are conducted as needed and documented as required.				
Daily inspections are conducted during snow/ice season and documented as required.				
Weekly inspections are conducted during the rest of the year and documented as required.				
Monthly inspections are conducted between May and September and documented as required.				
The salt pad is inspected annually for cracks and wear.				
Annual inspections are documented.				
Records are maintained for six years.				

Site Inspection				
Program Element/Requirement	**Yes**	**No**	**N/A**	**Comments and Description**
Spreaders are calibrated to apply product per manufacturer's recommendations.				
Pile is contained within a covered storage unit.				
Storage unit structure is free of defects.				
Pile is contained on an impervious surface.				
Face of the pile is covered when not in use.				
Pile is contained within the containment walls.				
Loading surface is paved and free of defects.				
All salt is located within the storage area. (No piles or bagged salt are located in other areas on site.)				
Any loose salt is being properly swept/returned to the pile after loading.				
Surrounding area is free of white chloride deposits.				
Storage area adequately prevents water from entering the pile.				
Secondary piles are properly covered.				

Dry calcium chloride is stored indoors on pallets.				
Each salt delivery operation is supervised/checked.				
Additional structural BMPs are being implemented and maintained properly, if required.				

Remarks: _____

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Name of Inspector Signature Date & Time

Inspection Checklist References and Additional Information

"Bulk quantities" means undivided quantities of any substance equal to or greater than 55 U. S. gallons liquid measure or 100 pounds net dry weight transported or held in an individual container. (401 KAR 5:037, Sec. 1(5))

"Best management practices" means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the Commonwealth. Best management practices also include treatment requirements, operating procedures, and practices to control plant site run-off, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. (401 KAR 5:037, Sec. 1(3))

Environmental Quality Management

STORING OR RELATED HANDLING AND APPLICATION OF DEICING AGENTS

WWW.UKY.ENV/STORMWATER

Salts and other deicing agents are used to keep streets and sidewalks free from ice buildup during winter. When handled incorrectly, these items can mix with stormwater and can be harmful to the environment and water quality. The University's MS4 Permit only allows clean water discharges into the stormwater system and requires that the University implement Best Management Practices to prevent the discharge of pollutants from campus. By storing and handling deicing agents properly, pollutants can be reduced from entering the stormwater system.

DO

- ✓ Check for and correct deficiencies in salt storage units.
- ✓ Keep salt dry by covering the dome entrance or the face of the salt pile with tarps.
- ✓ Sweep the storage areas clean before salt delivery and sweep up spilled salt after delivery.
- ✓ Move delivered salt into storage immediately.
- ✓ Shape salt piles stored on uncovered concrete or asphalt pads to avoid pooling water and cover immediately with a weighted tarpaulin.
- ✓ Store dry calcium chloride indoors on pallets.
- ✓ Load salt trucks on a paved surface.
- ✓ Sweep the paved staging area before loading trucks and sweep spilled salt back into storage.
- ✓ Load only what is needed for each task and return unused product to storage.
- ✓ Calibrate spreader to the manufacturer provided application rate.
- ✓ Use downspout, grading, berms, swales, curbs, and dikes to direct stormwater away from storage and loading areas.



Required Training: 1 per year with ongoing training occurring as needed.

Relevant UK Departments:

- Environmental Quality Management
- Grounds
- Athletics

DON'T

- ✗ Don't leave salt unprotected from weather or store salt on permeable surfaces.
- ✗ Don't use building walls as a backing for loading or overfill storage areas.
- ✗ Don't apply excessive amounts of deicing agents.

ADDITIONAL RECOMMENDATIONS/INFORMATION

- ➲ Review the University's Groundwater Protection Plan for additional requirements and Best Management Practices.
- ➲ If bags of dry calcium chloride break open, sweep up and put into a new bag or clean container for future use.
- ➲ If rainfall pools around salt storage areas, construct a drainage ditch, dikes, or regrade the area to send runoff to an area treated by a Stormwater Best Management Practice.
- ➲ If possible, the entrances of new salt storage facilities should face away from prevailing weather.
- ➲ Traffic dividers can be used to improve the shape of salt stockpiles.

ACTIVITY CHECKLIST

- ☐ Monitor EACH salt delivery operation.
- ☐ When is use, check salt pads DAILY for proper cover with tarps and signs of runoff.
- ☐ Check salt storage domes and sheds DAILY during snow and ice season (October to April) for water-tight roof and floors, tarpaulin covers for entrances, ventilation fans, lights, and building damage. Immediately report repair needs to the facility superintendent.
- ☐ Check salt storage areas for white chloride deposits DAILY during snow and ice season and WEEKLY during the rest of the year.
- ☐ Check salt domes, sheds, and pads MONTHLY between May and September for structural integrity issues.
- ☐ Check salt pads ANNUALLY during summer for cracks and wear and repair as needed.