

## Bulk Fertilizer Secondary Containment

Secondary containment is required when liquid fertilizer storage containers reach a **total capacity of 2,000 gallons**. Fertilizer volume is determined by the total capacity of all storage containers located in one area.

A load pad is required once the volume liquid fertilizer **transferred from the facility reaches 125 tons**.

Liquid fertilizer storage containers are exempt from secondary containment requirements if they are used for mobile or temporary storage no longer than 60 days.

Dry fertilizer must be stored and handled in a manner that prevents pollution and minimizes loss.

The following flow-charts provide a quick and easy way for you to determine if you meet the criteria requiring you to have secondary containment and/or a load pad for bulk fertilizer storage.

- [Liquid Fertilizer Bulk Storage](#)
- [Dry Fertilizer Bulk Storage](#)
- [Mobile Liquid Fertilizer Bulk Storage](#)

If you have any questions about whether you need secondary containment or a load pad, please give us a call.

If you need to submit plans for our review, please use the following application.

- [Secondary Containment Application Instructions](#)

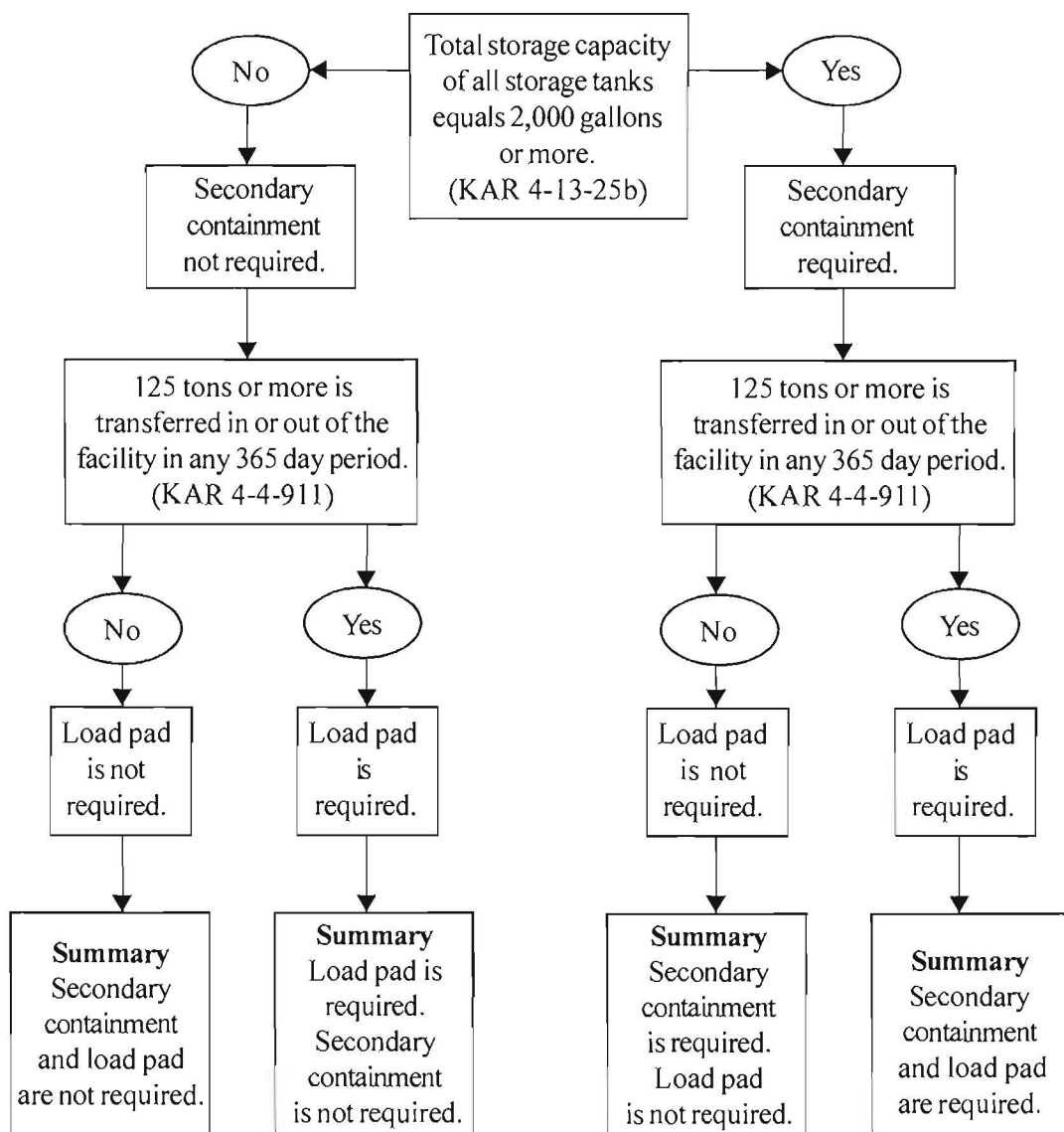


# Liquid Fertilizer Bulk Storage

## Secondary Containment and Load Pad Requirements

This flow chart is a quick, easy way for you to determine if you meet the criteria that would require you to have secondary containment and a load pad for liquid fertilizer bulk storage. If you meet the criteria, you may access the application and any schedules you need on our website at [www.accesskansas.org/kda/Pest&Fert/contain.htm](http://www.accesskansas.org/kda/Pest&Fert/contain.htm), or you can call (785) 296-3786.

**FLOW CHART**



Kansas Department of Agriculture  
 Pesticide and Fertilizer Program  
 109 SW 9th Street, 3rd Floor  
 Topeka, KS 66612  
 (785) 296-3786 / Fax (785) 296-0673

## Resources on the Web

Kansas Department of Agriculture  
[www.accesskansas.org/kda](http://www.accesskansas.org/kda)

Kansas Department of Agriculture  
Statutes and Regulations  
[www.ks-agr.org/kda-laws/welcome.asp](http://www.ks-agr.org/kda-laws/welcome.asp)

Kansas Department of Agriculture  
Applications and Forms  
[www.accesskansas.org/kda/Records/records-forms.htm](http://www.accesskansas.org/kda/Records/records-forms.htm)

Kansas Department of Agriculture  
Pesticide and Fertilizer Program  
[www.accesskansas.org/kda/Pest&Fert/Pest-mainpage.htm](http://www.accesskansas.org/kda/Pest&Fert/Pest-mainpage.htm)

KSU Extension  
Pesticides and Integrated Pest Management  
This website includes an order form for commercial pesticide applicator training manuals, some of which are online.  
[www.oznet.ksu.edu/pesticides-IPM/](http://www.oznet.ksu.edu/pesticides-IPM/)

Environmental Protection Agency  
Compliance and Enforcement  
[www.epa.gov/compliance](http://www.epa.gov/compliance)

Environmental Protection Agency  
Pesticide Best Management Practices  
[www.epa.gov/agriculture/tpes.html](http://www.epa.gov/agriculture/tpes.html)

Environmental Protection Agency  
Compliance Assistance  
[www.epa.gov/Region7/pesticides/general\\_info.htm](http://www.epa.gov/Region7/pesticides/general_info.htm)

## Spill Reporting

Kansas Department of Emergency Management  
[www.accesskansas.org/kdem/](http://www.accesskansas.org/kdem/)

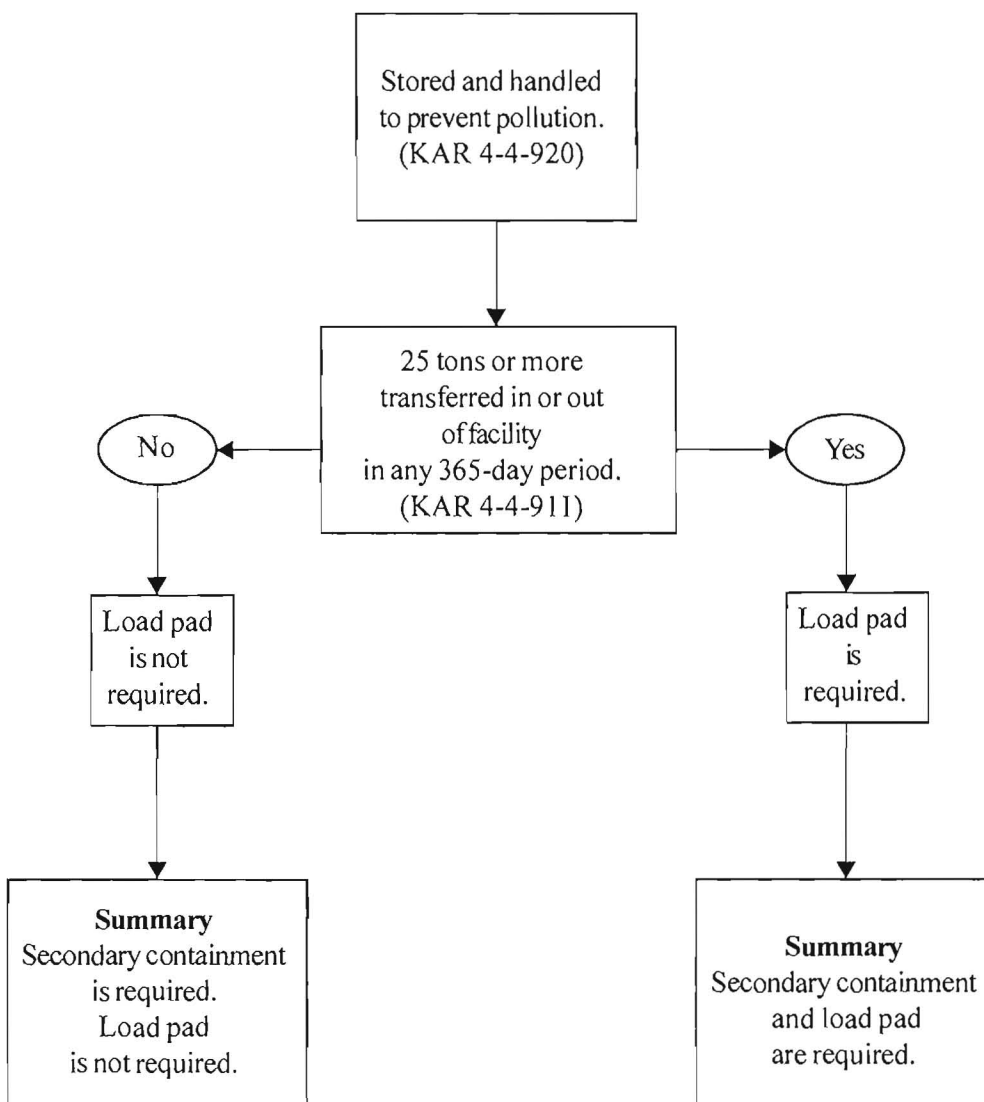
Kansas Department of Health and Environment  
[www.kdhe.state.ks.us/spill/index.html](http://www.kdhe.state.ks.us/spill/index.html)



# Dry Fertilizer Bulk Storage Secondary Containment and Load Pad Requirements

This flow chart is a quick, easy way for you to determine if you meet the criteria that would require you to have secondary containment and a load pad for dry fertilizer bulk storage. If you meet the criteria, you may access the application and any schedules you need on our website at [www.accesskansas.org/kda/Pest&Fert/contain.htm](http://www.accesskansas.org/kda/Pest&Fert/contain.htm), or you can call (785) 296-3786.

**FLOW CHART**



## Resources on the Web

Kansas Department of Agriculture  
[www.accesskansas.org/kda](http://www.accesskansas.org/kda)

Kansas Department of Agriculture  
Statutes and Regulations  
[www.ks-agr.org/kda-laws/welcome.asp](http://www.ks-agr.org/kda-laws/welcome.asp)

Kansas Department of Agriculture  
Applications and Forms  
[www.accesskansas.org/kda/Records/records-forms.htm](http://www.accesskansas.org/kda/Records/records-forms.htm)

Kansas Department of Agriculture  
Pesticide and Fertilizer Program  
[www.accesskansas.org/kda/Pest&Fert/Pest-mainpage.htm](http://www.accesskansas.org/kda/Pest&Fert/Pest-mainpage.htm)

KSU Extension  
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This website includes an order form for commercial pesticide applicator training manuals, some of which are online.  
[www.oznet.ksu.edu/pesticides-IPM/](http://www.oznet.ksu.edu/pesticides-IPM/)

Environmental Protection Agency  
Compliance and Enforcement  
[www.epa.gov/compliance](http://www.epa.gov/compliance)

Environmental Protection Agency  
Pesticide Best Management Practices  
[www.epa.gov/agriculture/tpes.html](http://www.epa.gov/agriculture/tpes.html)

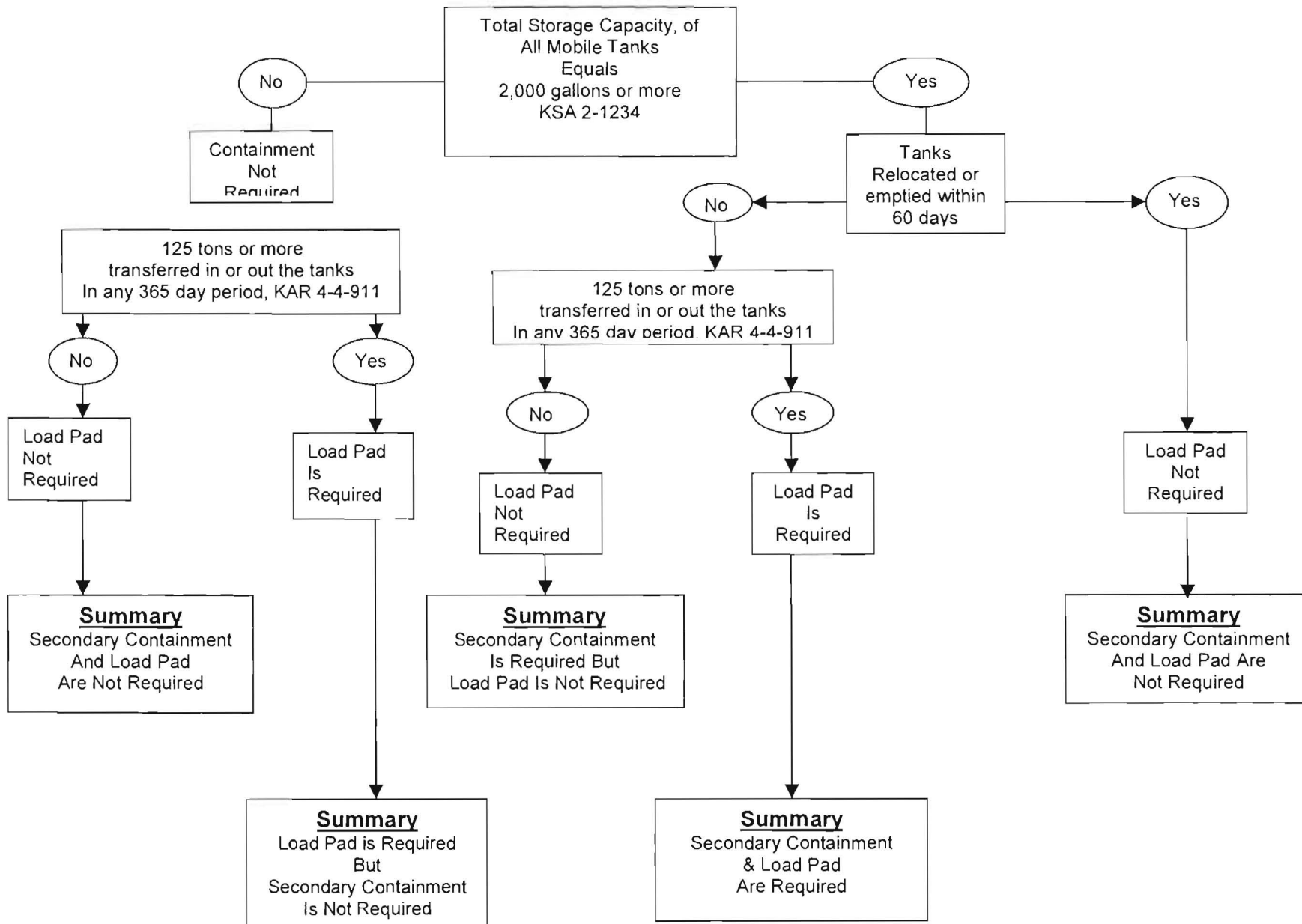
Environmental Protection Agency  
Compliance Assistance  
[www.epa.gov/Region7/pesticides/general\\_info.htm](http://www.epa.gov/Region7/pesticides/general_info.htm)

## Spill Reporting

Kansas Department of Emergency Management  
[www.accesskansas.org/kdem/](http://www.accesskansas.org/kdem/)

Kansas Department of Health and Environment  
[www.kdhe.state.ks.us/spill/index.html](http://www.kdhe.state.ks.us/spill/index.html)

## Liquid Fertilizer Bulk Mobile Container Secondary Containment & Load Pad Requirements



## Application Instructions for Construction Approval - Fertilizer Bulk Storage Facility

The Application for Bulk Fertilizer Storage Facility form must be submitted by all applicants. Schedules that are applicable to the operations at each fertilizer facility must also be submitted. **The application is divided into different schedules, you need complete only the application schedule that applies to your specific type of facility or situation.** Schedule specific instructions are included. The schedules that may be required are:

- Schedule A: New Fertilizer Facility
- Schedule B: Load Pad and Operational Area
- Schedule C: Dry Fertilizer Storage, Handling & Blending
- Schedule D: Facility Modification
- Schedule E: Bladder Tank or Innovative Design

The application, data and information should be typed or legibly printed in ink. All pages should be numbered and organized in the following sequence:

1. Application for Bulk Fertilizer Storage Facility
2. Schedule A: New Fertilizer Facility
3. Location Area Map
4. Plot Plan of Facility
5. Flow Diagram - Water System Protection
6. Operational and Management Practices Plan
7. Construction Plans and Specifications
8. Schedule B: Load Pad and Operational Area
9. Flow Diagram - Collection and Recovery System
10. Construction Plans and Specifications
11. Schedule C: Dry Fertilizer Storage, Handling & Blending
12. Process Flow Diagram - Dry Fertilizer Operations
13. Construction Plans and Specifications
14. Schedule D: Facility Modification
15. Construction Plans and Storage
16. Schedule E: Bladder Tank or Innovative Design
17. Construction Plans and Storage
18. Other Information

Construction plans and drawings item 7, 10, 13, 15 and 17 may be more conveniently grouped as the last section. These drawings are often applicable to more than one schedule. In some cases one plan view may cover both operational and secondary containment systems. In this situation reference the drawing number on the schedules. **It is the responsibility of the applicant to clearly identify all confidential business information submitted with the application package.**

Application Delay for Specific Schedules: If you are not submitting plans for a specific schedule with your application, this should be clearly stated in your cover letter and noted in the comment section of the application form. Estimate the date that the plans will be submitted.

Each application must provide sufficient information to allow the Department to conduct an independent engineering review to determine if the containment systems, structures, and operational practices planned will result in compliance with the applicable statutes KAR 4-4-900 through KAR 4-4-984.

**Detailed instructions are included for each section of the application. These instructions and those on each schedule should allow you to prepare this application.** Contact the Department of Agriculture, telephone number is 785-296-3786, if you have questions. Submit the complete construction application package to:

Kansas Department of Agriculture  
Pesticide & Fertilizer Program  
109 SW Ninth Street, 3<sup>rd</sup> Floor  
Topeka, Kansas 66612

Kansas Department of Agriculture  
Pesticide & Fertilizer Program  
109 SW Ninth Street, 3<sup>rd</sup> Floor  
Topeka, Kansas 66612  
785-296-3786

Application for Bulk Fertilizer Storage Facility

Facility Name \_\_\_\_\_

Mailing Address \_\_\_\_\_  
Street Address City State Zip County

Facility Address \_\_\_\_\_  
Street Address City State Zip County  
Quarter Section Township Range

Application Contact: \_\_\_\_\_ Telephone \_\_\_\_\_

Please check the appropriate boxes to fully describe the nature of the project. This application for construction approval is to verify that proposed plans conform to the requirements of the State of Kansas KAR 4-4-900 through KAR 4-4-984.

- New Facility Construction                       Expansion to Existing Facility
- Liquid only                       Dry only                       Liquid & Dry
- Bladder Tank                       Innovative Design

Description of Project: Documents submitted as a part of this application cover the fertilizer items checked below: Complete Application for Construction Approval and all applicable Schedules along with the associated requirements for each as an attachment to the construction application.

- Schedule A                      New Fertilizer Facility
- Schedule B                      Load / Unload Pad Area and Recovery System Plan Schedule
- Schedule C                      Dry Fertilizer Storage, Handling, and Blending Plan
- Schedule D                      Modification or Expansion
- Schedule E                      Bladder Tanks or Innovative Design

Comments: (If additional space is needed, attach a separate sheet.)

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Description - Facility Storage Tanks & Load Pads (Check all applicable sections and complete relative questions in section.)

1. ( ) Liquid Fertilizer Storage Tanks(s) Less than 100,000 Gallons

Receiving: Rail \_\_\_\_\_ Truck \_\_\_\_\_ Barge \_\_\_\_\_

Number of Tanks: \_\_\_\_\_ Capacity of each (gal): \_\_\_\_\_  
\_\_\_\_\_

Does facility have secondary containment for these liquid fertilizer storage tanks?

Yes \_\_\_\_\_ No \_\_\_\_\_

Describe type of secondary containment structure(s):

\_\_\_\_\_  
\_\_\_\_\_

Secondary containment volume: \_\_\_\_\_ Gallons

2. ( ) Liquid Fertilizer Storage Tank(s) 100,000 Gallons or Larger:

Number of Tanks \_\_\_\_\_ Capacity of each \_\_\_\_\_

Leak Detection Method: \_\_\_\_\_  
\_\_\_\_\_

3. ( ) Load/Unload Pad:

Does facility have a load / unload pad that provides for containment and recovery of spillage from blending and loading of fertilizers and equipment washing?

Yes \_\_\_\_\_ No \_\_\_\_\_

Load Pad containment volume: \_\_\_\_\_ Gallons

4. ( ) Dry Fertilizer Storage and Handling:

Receiving: Rail \_\_\_\_\_ Truck \_\_\_\_\_ Barge \_\_\_\_\_

\_\_\_\_\_ Incline conveyor to roof openings

\_\_\_\_\_ Conveyor/Elevator Leg Inside Distribution Conveyor

\_\_\_\_\_ Other: \_\_\_\_\_

Blender: Under Roof \_\_\_\_\_ Outside \_\_\_\_\_

Open Top Blender \_\_\_\_\_ Closed Top Blender \_\_\_\_\_

What type of material is used for the dry load pad?

\_\_\_\_\_

5. ( ) Fertilizer Blending Operations:

Liquid Blending \_\_\_\_\_ Dry Blending \_\_\_\_\_ Both \_\_\_\_\_

Is the process of impregnating dry fertilizer materials with pesticides conducted in facility blending operation?

Yes \_\_\_\_\_ No \_\_\_\_\_ Considering Process \_\_\_\_\_

Does facility have on-board impregnation on application equipment? Yes \_\_\_\_\_ No \_\_\_\_\_

6. ( ) Water Supply - Proximity to Wells & Waters of the State:

\_\_\_\_\_ Facility Well on Site: Depth \_\_\_\_\_ feet;

\_\_\_\_\_ Connection to community / public water system

\_\_\_\_\_ Other water source: \_\_\_\_\_

Does facility have a back-flow protection? Yes \_\_\_\_\_ No \_\_\_\_\_

Describe: \_\_\_\_\_

\_\_\_\_\_

Distance to community wells:

\_\_\_\_\_

Number of off-site private wells within 1320 feet of your property? \_\_\_\_\_

Use of these wells: \_\_\_\_\_

Soil type: \_\_\_\_\_

Nearest Surface Water: Name of stream, river, lake: \_\_\_\_\_

7. ( ) Does your facility have a bio-security plan? Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, please include a copy of your bio-security plan with your application.

8. ( ) Did your facility submit any confidential business information? Yes \_\_\_\_\_ No \_\_\_\_\_  
Confidential business information will be maintained in a segregated file. You must specifically identify individual documents as confidential business information when you submit them to assure segregation.

1. Certification of Construction Plans and Specifications:

a) Certificate by Applicant

I hereby certify that I am familiar with the information contained in this application, the attached schedules, and that to the best of my knowledge and belief such information is true, complete, and accurate, and the construction plans and specifications were prepared by me or a permanent employee under my direction.

Name \_\_\_\_\_ Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

b) Certificate by Design Engineer

I hereby certify that I am familiar with the contents of this application and that the design of the facility containment systems conforms to the requirements of KAR 4-4-900 through KAR 4-4-984., and the construction plans and specifications were prepared by me or under my direction.

Engineer \_\_\_\_\_  
Name Registration No. Seal

Firm \_\_\_\_\_

Address \_\_\_\_\_ Telephone No. \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

2. Certification of Application

I/We hereby certify the I/we are familiar with the contents of this application, the attached schedules, and am/are authorized to sign this application in accordance with KAR 4-4-900 through KAR 4-4-984. I/We agree and understand that conditions of construction approval are the I/we construct and operate the containment system(s) as submitted in this application and conform to all requirements of KAR 4-4-900 through KAR 4-4-984.

Authorized Applicant:

Name \_\_\_\_\_ Title \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Company Name \_\_\_\_\_

Schedule A - New Fertilizer Facility

Facility Name \_\_\_\_\_

Project Location \_\_\_\_\_  
Address City County

This information is required for all fertilizer facility construction applications. Documents and information required by this schedule are to verify that the operational area containment, collection and recovery system(s) conform to the requirements of KAR 4-4-900 through KAR 4-4-984. Construction plans, engineering drawings, flow diagrams, and descriptions must be adequate to illustrate your plans. The summary of specific parts of this information is requested on the back of this form.

1. Location Area Map - Provide a location map of the area surrounding the facility. Identify the relative locations of the following on the map, or by notations, the distance and direction: a) All water wells within 1,320 feet and all abandoned wells within 300 feet of the facility boundary; b) Surface water flow path to area lakes, streams or storm water drains; c) Notation of soil type and approximate ground water depth at the facility location. Preferably, this location map should be done on a copy from the U.S. Geological Survey Quadrangle Map, or the County Plat Book with adequate scale to show required details.
2. Plot Plan - Provide a plot plan showing all facility structures, storage tanks, facility well, connections to public water systems, storm sewers and drainage tile within property boundaries and use of adjacent property. Identify all containment structures and operational areas, including unloading, loading, blending and equipment washing pads. Topography of property can be shown by contour lines or notation and arrows depicting surface water flow across and from facility. The plot plan should be drawn to a reasonable scale or adequately dimensioned.
3. Water Supply/Well Protection Plan - Provide a schematic flow diagram of the facility water distribution system between facility well and/or public water system connection and all process or operational use points. Identify backflow protection (break-tank, fixed air gap, reduced pressure principle backflow valves) on diagram.
4. Operational and Management Practices Plan - This requires a narrative description of the practices that will be employed at the facility for handling recovered materials, accumulated precipitation, and to minimize the volume of recovered materials generated. The following should be included:
  - a) List types of fertilizer handled or stored and total storage capacity available at the facility.
  - b) Methods of storage, reuse, or disposal and estimated quantity of solutions and solids recovered in the operational area containment and recovery system(s).
  - c) Methods for handling storm water collected in operational area and secondary containment systems. This may include practices to keep containment systems clean to prevent storm water contamination and special precaution taken to ensure contaminated storm water is not discharged. Define differences in practices employed off-season such as by-pass or operational area collection systems.
  - d) Methods utilized to minimize the collection or contamination of collected storm water, quantity of rinsates, solutions, and solids. These practices include use of pressure washers, rinsing and washing application equipment in the field, reducing operational spillage, containers to catch predictable spillage, diversion of roof and surface water flow, buildings or covers over containment systems, and management practices to minimize contamination of collected storm water.

Schedule A - New Fertilizer Facility Summary

Facility Name \_\_\_\_\_

1. Location Area Map included in application: Yes \_\_\_\_\_ No \_\_\_\_\_
- Community Well(s) within 1,320 feet? No \_\_\_\_\_ Yes \_\_\_\_\_ Feet \_\_\_\_\_
- Private Well(s) within 1320 feet? No \_\_\_\_\_ Yes \_\_\_\_\_ Feet \_\_\_\_\_
- Approximate Groundwater Depth \_\_\_\_\_ Feet Soil Type \_\_\_\_\_
- Abandoned Well(s) within 300 feet? No \_\_\_\_\_ Yes \_\_\_\_\_ Feet \_\_\_\_\_
- Oil \_\_\_\_\_ Gas \_\_\_\_\_ Water \_\_\_\_\_

Nearest Down Gradient Surface Water - Name of lake, stream and approximate distance:

\_\_\_\_\_  
\_\_\_\_\_

Distance in feet to nearest: Residence \_\_\_\_\_ Municipality \_\_\_\_\_  
Hospital \_\_\_\_\_ Institution \_\_\_\_\_ Commercial Business \_\_\_\_\_

2. Plot Plan is included in application: Yes \_\_\_\_\_ No \_\_\_\_\_
- Approximate size of facility property: \_\_\_\_\_ x \_\_\_\_\_ feet
3. Water System Protection Flow Diagram attached: Yes \_\_\_\_\_ No \_\_\_\_\_
- Facility well at location? No \_\_\_\_\_ Yes \_\_\_\_\_, Depth \_\_\_\_\_ feet
- Connection to public water system? Yes \_\_\_\_\_ No \_\_\_\_\_

Indicate Backflow Protection type, E = existing or P = planned, and installation date(s):

\_\_\_\_ Break Tank (\_\_\_\_/\_\_\_\_/\_\_\_\_)

\_\_\_\_ Fixed Air Gap (\_\_\_\_/\_\_\_\_/\_\_\_\_)

\_\_\_\_ Reduced Pressure Principle Backflow Valves (\_\_\_\_/\_\_\_\_/\_\_\_\_)

4. Operational & Management Practices Plan attached: Yes \_\_\_\_\_ No \_\_\_\_\_

List fertilizers handled and stored and the total storage capacity at facility: \_\_\_\_\_

\_\_\_\_\_

Do you wash application vehicles at the facility? Yes \_\_\_\_\_ No \_\_\_\_\_

Is a storm water by-pass arrangement used or planned for your operational area?

No \_\_\_\_\_ Yes, explain \_\_\_\_\_

\_\_\_\_\_

## Schedule B - Load Pad and Operational Area

Facility Name \_\_\_\_\_

Project Location \_\_\_\_\_

Documents and information required by this schedule are to verify that the operational area containment, collection and recovery system(s) conform to the requirements of KAR 4-4-900 through KAR 4-4-984. Construction plans, engineering drawings, flow diagrams, and descriptions must be adequate to illustrate your plans.

1. Construction plans and specifications: Provide plans and elevation drawings of all operational area containment structures and the collection and recovery system with overall and component dimensions and elevations referenced to a single facility bench mark. Cross-sections must show construction details, elevations, and dimensions of loading pad floor, curbs, sumps, catchment basins, and all transfer structures and piping. Identify all construction materials and specifications.
2. Loading Area Containment: On the containment structure drawing show capacity and layout of collection and recovery system, including storage tanks, pumps and piping system. Provide detailed drawing notes indicating a) capacity in gallons of the largest vehicle tank normally loaded; b) Total gallon capacity of containment structure; c) Gravity or automatic transfer system tank capacity in gallons used for containment; d) Capacity of largest blending or makeup tank over pad.
3. Collection and Recovery System Flow Diagram: Provide a schematic flow diagram of the collection and recovery system from the containment collection sump to recovery storage tanks and to reuse loading or mixing operation, and any provisions for storm water by-pass. Show and label all components showing pertinent features, sizes, capacities, and flow rates.
4. Unloading Area Containment: Describe methods or systems used to catch and recover spillage from unloading operation. Provide drawings of permanent structures.
5. Washing Area Containment: Provide drawing of wash pad and recovery system if a separate structure is used for this purpose.
6. Blending Area Containment: Describe methods or systems used to catch and recover spillage from these operations. Provide sketches or drawings if necessary to explain.
7. Transfer Structures: Describe preventative maintenance practices to ensure below grade transfer structures (sumps, collections tanks, wet wells, scale pits, etc.) are sealed to prevent leakage.
8. Construction Time Table: Provide approximate dates on summary.

Schedule B - Load Pad and Operational Area Summary

Facility Name \_\_\_\_\_

1. Construction plans and specifications are provided for systems checked:

- \_\_\_\_\_ Loading area containment
- \_\_\_\_\_ Unloading area containment
- \_\_\_\_\_ List Other Systems \_\_\_\_\_

2. Loading Area Containment Capacity - Provide gallons for each:

- Capacity of largest vehicle tank loaded..... \_\_\_\_\_
- Total capacity of containment structure and sumps..... \_\_\_\_\_
- Available collection tank capacity with automatic transfer..... \_\_\_\_\_
- Capacity of largest mixing tank or make-up tank over pad ..... \_\_\_\_\_

3. Collection and Recovery System Flow Diagram

Number or recovery storage tanks \_\_\_\_\_ Capacity of each \_\_\_\_\_

Are provisions provided for storm water by-pass? Yes \_\_\_\_\_ No \_\_\_\_\_

4. Unloading Area Containment - Describe system used and note drawing number: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

5. Blending Area Containment - Describe system used and note drawing number: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

6. Washing Area Containment - Describe methods and note drawing number: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

7. Transfer Structures - Are any below grade structures used for spill collection in the containment systems? No \_\_\_\_\_ Yes \_\_\_\_\_ If yes, check type below and provide details including capacity and material of construction.

- \_\_\_\_\_ Scale Pit \_\_\_\_\_
- \_\_\_\_\_ Below Pad Tank \_\_\_\_\_
- \_\_\_\_\_ Gravity Fill Tank \_\_\_\_\_
- \_\_\_\_\_ Other: \_\_\_\_\_

8. Construction Time Schedule Dates:

- Start Date: (\_\_\_\_/\_\_\_\_/\_\_\_\_)
- Completion Date: (\_\_\_\_/\_\_\_\_/\_\_\_\_)
- Operational Date: (\_\_\_\_/\_\_\_\_/\_\_\_\_)

Schedule C - Dry Fertilizer Storage, Handling and Blending

Facility Name \_\_\_\_\_

Project Location \_\_\_\_\_  
Street Address City County

Documents and information required by this schedule are to verify that dry fertilizer storage, handling, and blending operations conform with the requirements of KAR 4-4-900 through KAR 4-4-984.. Narrative, drawings, or schematic flow diagrams may be used to describe the facility storage methods and operational processes and to illustrate your plans for containment and recovery of spillage and to minimize emissions.

1. Plot Plan: On the facility plat plan (Schedule A) or a separate drawing, show the storage building, blending area, unloading and loading locations, and the distance and location of the nearest residence and commercial building.
2. Process Flow Diagram: Provide a schematic flow diagram of all processes including: Truck/Rail Unloading, Storage, Weighing, Blending, Impregnation, applicator/Truck Loading, and all associated conveyor and front-end loader transfer operations. Identify each function or process, show flow rates and type of conveyors, blender and other equipment. Show by graphics or notations the processes that are enclosed or under roof.
3. Storage Facilities: Describe storage buildings and, if necessary, provisions to prevent ground or surface water pollution. If additional space is needed, attach a separate sheet.
4. Containment and Recovery of Spillage: Describe the containment or collection of spillage and the clean-up practices or recovery methods planned for all exposed outdoor operational processes. These may include unloading, loading, conveying, front-end loader handling, weighing, and blending. Describe the provisions for the diversion of surface water flow around the operations. If additional space is needed, attach a separate sheet.

Describe or provide drawings of operational containment and recovery systems for pesticide impregnation operations including provisions for blender/equipment wash water collection. If additional space is needed, attach a separate sheet.

5. Particulate Emission Control: Describe methods, equipment or techniques used to minimize particulate matter/dust emissions. If additional space is needed, attach a separate sheet.
6. Blending Operations, Herbicide Impregnation, and Compliance Time Schedule: Provide information requested in summary.



Schedule C - Dry Fertilizer Storage, Handling and Blending Summary

Facility Name \_\_\_\_\_

1. Dry fertilizer facilities, distance and location of nearest residence(s) and/or commercial building(s) shown on: (check)

Plot Plan \_\_\_\_\_ Separate Drawing \_\_\_\_\_

2. Process Flow Diagram is attached: Yes \_\_\_\_\_ No \_\_\_\_\_  
On each process below, place an "E" to designate enclosed, "R" to designate under-roof only, or an "O" for any exposed outdoor operation.

\_\_\_\_\_ Unloading    \_\_\_\_\_ Storage    \_\_\_\_\_ Front End Loader Handling  
\_\_\_\_\_ Weighing    \_\_\_\_\_ Blending    \_\_\_\_\_ Loading    \_\_\_\_\_ Conveyor

3. Storage Facilities: Describe \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Containment and Recovery of Spillage: Describe for each process exposed outdoors and note drawing number(s) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Particulate Emission Control: Describe for each process exposed outdoors: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. Blending Operations, Herbicide Impregnation, and Compliance Time Schedule. Herbicide Impregnation process in blender? No \_\_\_\_\_ Yes \_\_\_\_\_, then provide

Herbicides Used	Annual Amounts
_____	_____
_____	_____
_____	_____
_____	_____

Odor Emission Control Methods: \_\_\_\_\_  
\_\_\_\_\_

Operational Date: ( \_\_\_ / \_\_\_ / \_\_\_ )

Schedule D - Facility Modification Schedule

Facility Name \_\_\_\_\_

Project Location \_\_\_\_\_  
Street Address City County

KAR 4-4-900 through KAR 4-4-984 requires that a facility be approved prior to any modification. By definition "Modification" means changes in structures, processes, or activities at a fertilizer facility which alters the efficiency of containment structures or systems. Construction plans, engineering drawings, flow diagrams, and descriptions must be adequate to illustrate your plans.

This includes any change that modifies the approved facility design capability of secondary or operational area containment structures. An obvious example is a change or addition to storage tanks within the containment area resulting in increased tank base displacement volume or increased volume for largest tank.

1. Application for Facility Modification: Complete the Application for Construction Approval form with the appropriate approval signatures and submit along with this schedule. Configuration changes in containment structures may require amendment to previous drawings and/or the related schedule. In many cases the facility modification can be adequately covered on this schedule.

2. Reference to Existing Application: Schedule \_\_\_\_\_ Drawing Number \_\_\_\_\_  
Description of containment structure or system involved: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Storage Tank Changes: Describe Tank Change \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Containment Capacity: Existing \_\_\_\_\_ gal. Modified \_\_\_\_\_ gal.

Minimum capacity required by KAR 4-4-900 through KAR 4-4-984 \_\_\_\_\_ gal.

4. Other Modification: Describe the planned changes: (If additional space is needed, attach a separate sheet.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Describe the change in structure or system efficiency: (If additional space is needed, attach a separate sheet.)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Schedule E - Bladder Tank or Innovative Design

Facility Name \_\_\_\_\_

Project Location \_\_\_\_\_

Documents and information required by this schedule are to verify that the secondary containment structure and capacity conforms to the requirements of KAR 4-4-900 through KAR 4-4-984. Construction plans, engineering drawings, flow diagrams, and descriptions must be adequate to illustrate your plans. Indicate the secondary containment plans submitted in this schedule by checking the fertilizer storage system(s) below:

\_\_\_\_\_ Bladder Tank Application

\_\_\_\_\_ Innovative Design Application

Number of Liquid Fertilizer Tanks:

\_\_\_\_\_ Less than 100,000 gallons

\_\_\_\_\_ 100,000 gallons or larger

1. Certified Engineering Plans and specifications: Provide plan and elevation drawings with overall and component dimensions and elevations referenced to single facility bench mark. Include cross-sections to indicate construction details, elevations, and dimensions of walls, floor, sumps and all other piping and components. Identify all materials and applicable construction specifications. Note manufacturer, trade name of all synthetic liners or prefabricated materials and provide written confirmation of compatibility and estimate of life expectancy from the manufacturer. When necessary, to prevent tank flotation, show details of anchoring method. Bladder tank or innovative design plans must be certified and stamped by a professional engineer.
2. Storage Tank Schedule: Show location and assigned tank number of each storage tank within the secondary containment on the plan view. Provide tank capacity, dimensions, and the product contained in each tank on the plan view or by tank schedule referencing tank numbers. Illustrate provisions for placement of future tank(s) by broken lines.
3. Secondary Containment Capacity: Note the following on the drawing: a) The minimum required containment capacity to satisfy KAR 4-4-900 through KAR 4-4-984 for current storage tanks. b) The actual containment volume in gallons provided. c) Specific provisions for future tank(s) within the containment.
4. Construction Time Schedule: Provide approximate dates (on the summary form) that construction will begin, be completed and put in operation.

Schedule E - Bladder Tank or Innovative Design Summary

Facility Name \_\_\_\_\_

Secondary Containment for \_\_\_\_\_

1. Engineering Plans & Specifications: Material(s) of construction \_\_\_\_\_

2. Storage Tank Schedule: Complete table below. If additional space is needed, attach a separate sheet.

Tank No.	Product	Capacity Gal.	Dimensions Dia. x Ht.	Material of Construction

3. Secondary Containment Capacity:

Minimum required capacity \_\_\_\_\_ gallons

Facility design capacity \_\_\_\_\_ gallons

Containment dimensions: Length \_\_\_\_\_ ft.; Width \_\_\_\_\_ ft.; Height \_\_\_\_\_ ft.

Provisions for future tanks? No \_\_\_\_\_ Yes \_\_\_\_\_ Number and Size \_\_\_\_\_

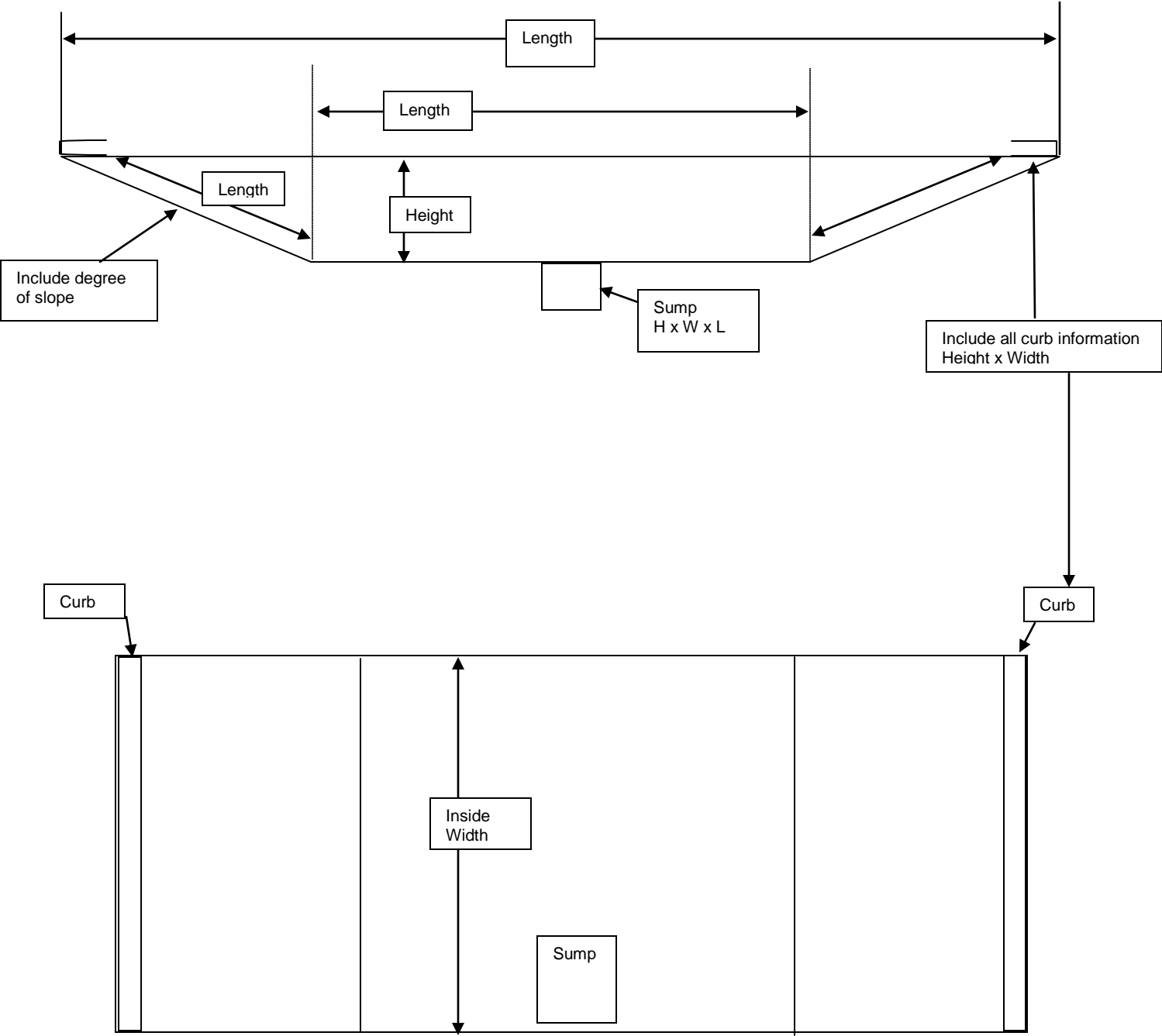
4. Construction Time Table Dates:

Start Date: ( \_\_\_/\_\_\_/\_\_\_ )

Completion Date: ( \_\_\_/\_\_\_/\_\_\_ )

Operational Date: ( \_\_\_/\_\_\_/\_\_\_ )

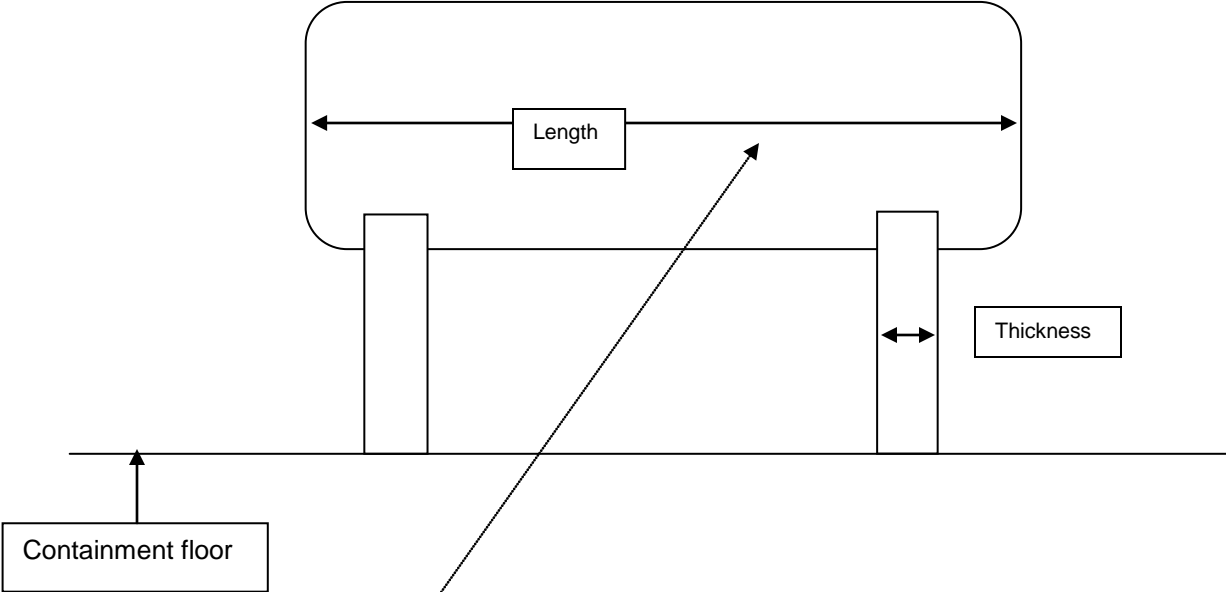
# Load Pad Dimension Requirements



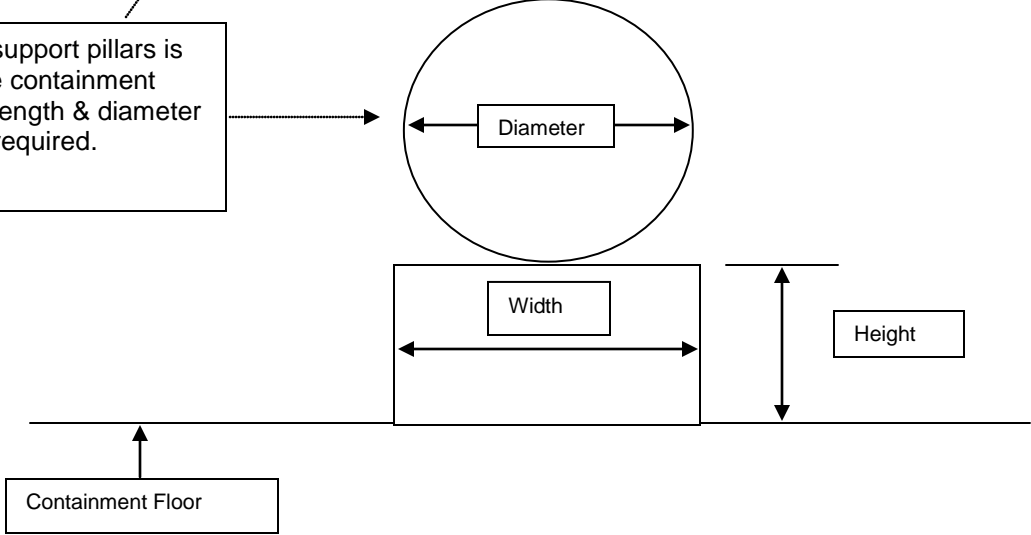
Include construction material information

# Horizontal Tank Dimension Requirements

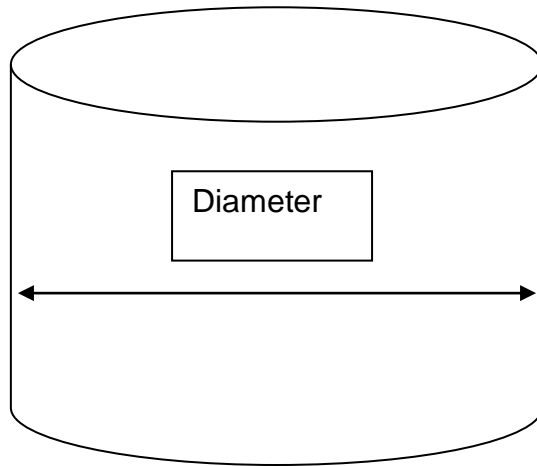
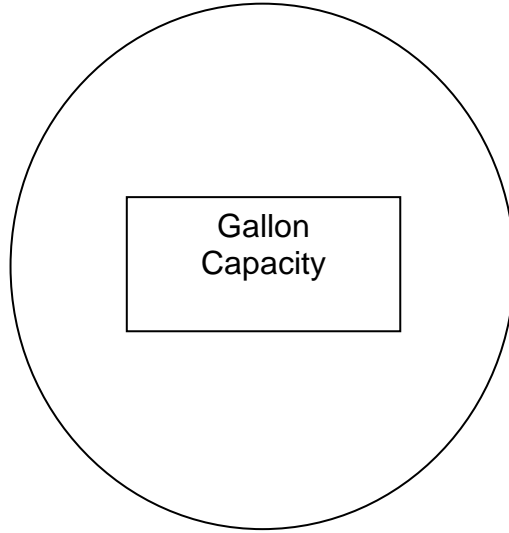
Side view



If the height of the support pillars is below the top of the containment wall, then the tank length & diameter information is also required.



# Flat Bottom Tank Dimension Requirements



**Kansas Department of Agriculture**  
**Secondary Containment Calculation Form**

Facility Name: \_\_\_\_\_

City: \_\_\_\_\_ Date: \_\_\_\_\_

Loading Pad:

L \_\_\_\_\_ x W \_\_\_\_\_ x H \_\_\_\_\_ x 7.5 = \_\_\_\_\_ gallons

Sump:

L \_\_\_\_\_ x W \_\_\_\_\_ x H \_\_\_\_\_ x 7.5 = \_\_\_\_\_ gallons

Total Load Pad Containment \_\_\_\_\_

Largest Tank on load pad: \_\_\_\_\_

Containment Area:

L \_\_\_\_\_ x W \_\_\_\_\_ x H \_\_\_\_\_ x 7.5 = \_\_\_\_\_ gallons

Sump:

L \_\_\_\_\_ x W \_\_\_\_\_ x H \_\_\_\_\_ x 7.5 = \_\_\_\_\_ gallons

Displacement (Do Not include the displacement of the largest tank.):

Use:  $\pi r^2 h \times 7.5$                        $\pi = 3.1416$                       h = height of dike wall

1. Diameter \_\_\_\_\_ = \_\_\_\_\_ gallons                      Largest Tank: \_\_\_\_\_ gallons

2. Diameter \_\_\_\_\_ = \_\_\_\_\_ gallons                      110% of Largest Tank: \_\_\_\_\_ gallons

3. Diameter \_\_\_\_\_ = \_\_\_\_\_ gallons

4. Diameter \_\_\_\_\_ = \_\_\_\_\_ gallons

Total Displacement \_\_\_\_\_

Summary:

1. Containment Capacity: \_\_\_\_\_

2. Total Displacement: \_\_\_\_\_

3. Containment less Displacement: \_\_\_\_\_

4. 110% of Largest Tank \_\_\_\_\_

5. Subtract #4 from #3 \_\_\_\_\_

If the answer to #5 is a positive number, you have sufficient capacity.