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M E M O R A N D U M  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF WATER  
OFFICE OF WATER RESOURCES MANAGEMENT

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SUBJECT: OWRM Program Guidance No. 94 - 017  
VPA Farm Fertilizer and Chemical Dealerships

TO: Regional Directors

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DATE: December 22, 1994

COPIES: James Adams, OWRM Permits Staff, Regional Permit  
Directors

This memo is to transmit a guidance document for reviewing VPA applications and writing VPA permits for Farm Fertilizer and Chemical Dealerships. The guidance was developed by a regional committee and OWRM. This document should become a part of the VPA Permits Manual.

**VPA FARM FERTILIZER AND CHEMICAL  
DEALERSHIP  
GUIDANCE DOCUMENT**

## Introduction

The purpose of this document is to provide permit writers with additional guidance on the review of the VPA applications for items which may need further explanation. It is strongly suggested that the permit writers hold an initial meeting with the applicant to communicate specific information required for this category. A site inspection checklist is attached for the permit writer's use and is not mandatory.

The SIC (Standard Industrial Classification) Code of the operation is a very important item to note. For many years No Discharge Certificates, and just recently Virginia Pollution Abatement (VPA) Permits were issued for pollution abatement at farm fertilizer and chemical distributors. Recent research by the EPA has shown that runoff from around industrial process areas at such operations often contain pollutants similar to those found in industrial discharges. In 1987 the Clean Water Act was revised to address storm water sources of pollution. These regulations are administered by the Department of Environmental Quality through the VPDES permit program in the State of Virginia.

Companies that have a point source storm water discharge and the following SIC Code(s) must obtain a storm water (VPDES) permit:

- 2873 - manufacturers of nitrogenous fertilizers
- 2874 - manufacturers of phosphatic fertilizer
- 2875 - firms engaged primarily in mixing fertilizer materials
- 2879 - firms that primarily formulate and prepare pesticides

EPA has established effluent guideline limitations for storm water discharges for the fertilizer manufacturing category (40 CFR Part 418). Many of these facilities may already have VPDES permits.

Many operations such as farm cooperatives do not fall under the above SIC Codes, but are categorized under SIC Code 5191 (Farm Supplies) and will not necessarily require a VPDES permit. These operations are generally small and are primarily engaged in the incidental or small scale mixing and blending of fertilizer and/or the wholesale distribution of animal feeds, fertilizers, agricultural chemicals, pesticides, seeds, and other farm supplies except grains. The key word appears to be "wholesale" which in the case of a fertilizer dealership refers to maintaining inventories of goods by breaking down bulk quantities and redistributing them in smaller lots.

Wholesale type operations, such as local farm cooperatives, may require a VPA permit. General areas of concern at such operations are as follows:

- fluid mixer and load-out area
- rinsate handling stations
- dry fertilizer storage and load-out area
- transfer areas on and off site
- liquid storage and load-out areas
- dry fertilizer and blending areas
- pesticide and herbicide mixing
- pesticide and herbicide storage and load-out areas
- truck and railroad unloading areas
- fuel storage areas
- permanent and overnight parking areas for plant vehicles

Most of the farm dealerships sell fertilizer and farm chemicals routinely April through July. Only a limited amount of activity occurs after July with the season ending usually in late September.

Most of the runoff collected during the operational months of April through September is used as makeup water in liquid fertilizer and chemical trucks. Land application occurs during the nonoperational months, usually October through March. Most dealerships will cover loading pads when they are not in use. For those operations that collect runoff from process areas (although not in use) or from fertilizer and chemical truck/equipment parking areas, wastewaters are usually land applied. This wastewater has historically contained very low levels of fertilizer or chemical pollutants. In order to address the concerns regarding pesticides and herbicides, permits that have been issued have required a special condition that wastewater be land applied at an application rate of no more than 200 gallons/acre/year. This special condition is a recommendation of the Virginia Department of Agriculture and Consumer Services as noted in the Farm Chemical Distributors' Guidance Memorandum, dated December 8, 1981, from Paul Douglas to Alan Pollock. This special condition could waive the requirement for wastewater testing.

#### Application Review

To obtain a VPA permit for such operations, Form A and Form C must be completed. The committee also recommends the following:

1. Form C, Part C-I, Item 2 a. All fertilizers and chemicals sold by the company are expected to be identified.
2. Form C, Part C-I, Item 4 a. Wastewater testing requirement may be waived unless land application occurs during the identified operational months and/or the application rate is greater than 200 gallons/acre/year.
2. Form C, Part C-I, Item 9 & Part C-II, Item 8 b. The applicant should demonstrate that enough storage capacity is present on site and land is available to apply wastewater at the recommended land application rate of no more than 200 gallons/acre/year.

3. Form C, Part C-II, Items 1-9. All farm fields used for land application should be identified on the required topographic maps along with other required information; however, it is not necessary to conduct soil sampling or borings, address soil identification (except for wet areas), perform land area determination calculations except as previously described, develop a nutrient management plan or a ground water monitoring plan. Agronomic practices do not have to be addressed except for the crops generally grown in each field. If more than 200 gallons/acre/year rate is proposed, a comprehensive review is recommended and none of the above items should be waived.
4. Most dealerships are located in a town or city while the land application sites are located in rural areas. This generally means that two or more LGOF forms may be needed.
5. "Authorization to Land Apply Waste" forms should be signed when it is applicable.

#### The VPA Permit

When developing the VPA permit for dealerships that land apply wastewater, the following special conditions should be considered as a minimum:

1. Wastewater shall be applied only at the sites identified in (Part I.A. or Attachment A).
2. There shall be no discharge of pollutants to surface waters from this operation except in the case of a 25 year-24 hour or greater storm event. The operation of the facilities of the owner permitted herein shall not contravene the Water Quality Standards, as adopted and amended by the Department of Environmental Quality, or any provision of the Water Control Law.
3. **(For facilities with materials storage)**  
Any and all product, materials, industrial wastes, and/or other wastes resulting from the purchase, sale, mining, extraction, transport, preparation, and/or storage of raw or intermediate materials, final product, by-product or wastes, shall be handled, disposed of, and/or stored in such a manner so as not to permit a discharge of such product, materials, industrial wastes, and/or other wastes to State waters, except as expressly authorized.

4. **(For facilities without an approved O & M Manual)**  
The owner shall develop an Operations and Maintenance (O & M) Manual for the treatment works/pollutant management system permitted herein. This manual shall detail practices and procedures, including applicable Best Management Practices, which will be followed to ensure compliance with the requirements of this permit. **The manual shall be submitted for staff approval within 90 days of the (effective/modification) date of this permit (and approved prior to start-up of operations).** The owner shall operate the treatment works/pollutant management system in accordance with the approved O & M Manual which becomes an enforceable part of the permit.
5. **(For facilities with an approved O & M Manual)**  
The owner shall maintain an **Operations and Maintenance (O & M) Manual** for the treatment works/pollutant management system permitted herein. This manual shall reflect the practices and procedures, including applicable Best Management Practices, followed by the permittee to ensure compliance with the requirements of this permit. **Any changes in those practices and procedures** shall be documented and submitted for staff approval **within 90 days of the effective date of the changes.** Upon approval of the submitted manual change, the revised manual becomes an enforceable part of the permit.
6. Wastewater shall not be applied within 50 feet of limestone outcrops nor shall it be applied in such a manner that it would discharge to sinkholes that may exist in the area.
7. Buffer zone requirements for land application of wastewater are to be as follows:
  - a. 50 feet from surface water courses including wet weather streams.
  - b. 100 feet from water supply wells or springs.
  - c. 25 feet from the nearest improved edge of primary and secondary roads and drainage structures (ditches, etc.).
  - d. 25 feet from property lines of others, unless adjoining property owner concurs in writing with a reduced buffer strip.
8. Wastewater shall be uniformly applied at a rate not to exceed 200 gallons per acre per year.

9. Wastewater is not to be applied to ground which is covered with ice or snow or to frozen ground.
10. An annual project summary report shall be prepared and submitted by the 10th of each February, detailing the following:
  - a. the yearly water balance showing drawdown (in gallons) from the holding facilities and the loading rate of each site (in gals/acre) used for waste disposal.
  - b. a general statement of past system performance and the status of the facilities with regard to meeting VPA Permit surface and ground water requirements

Note: All special conditions in Part I.B. of the permit should be numbered consecutively, starting with the above General Special Conditions. Any Site Specific Special Conditions in Part I.C. of the permit should be numbered consecutively beginning with 1.

**VPA SITE INSPECTION  
CHECKLIST**

## FERTILIZER DEALERSHIP SITE INSPECTION CHECKLIST

Adapted from: "Groundwater Protection at Retail Fertilizer Operations", Salladay et al, TVA National Fertilizer & Environmental Research Center.

The following questions need to be addressed to address groundwater and surface water protection:

1. What is the depth to the groundwater beneath the facility?
2. Which direction does the groundwater flow?  
Has a groundwater study even performed?
3. Has the groundwater been recently tested for contamination?
4. Are any water-soluble materials stored on the soil or in lined pits?
5. Are any fluid materials disposed of in unlined pits, ponds, or lagoons?
6. Does any contaminated stormwater from your facility enter a wetland, drainage ditch, stream, or body of water?  
What is the SIC Code for activities at the facility?
7. Is there any visible evidence, such as stains or dead vegetation, indicative of chemical spills or flow of contaminants on the facility's property or onto adjacent property?
8. Has any hazardous waste, or other waste, ever been dumped or buried on the property underlying your facility prior to your purchasing the property?
9. Do you discharge sewage to a municipal facility?
10. Do you discharge spilled material or process wastes to your sewage system or septic tank?
11. Are wells located at least 100 feet from all chemical (fertilizer, pesticide, solvent, fuel) storage and handling areas?
12. Are wellheads protected against entrance of surface water by being elevated or curbed above the level of the surrounding area?
13. Are wellheads or municipal water supply lines protected against backflow of chemicals or contaminated water by air gaps or self-actuating valves?

14. Are impermeable surfaces (concrete, asphalt, etc.) provided beneath all agri-chemical and fertilizer load-ins, storage areas, load-outs, and rinse stations?
15. Are load pads for dry chemicals bermed or sloped to retain spilled material, but exclude stormwater run-on?
16. Are load pads for fluid materials constructed with sumps of adequate size to contain the volume of the largest tank being loaded?
17. Do rinse pads contain a sump of adequate size to contain all rinsate or, if not, is the rinsate pumped to a holding tank for later use?
18. Are sumps emptied daily to avoid being classed as underground storage tanks? Are in-ground and below ground sumps periodically tested for leaking?
19. Does the fluid mixer have secondary containment?
20. Is the dry blender located on an impermeable pad?
21. Are petroleum products (gasoline, diesel, kerosene) and oils (lubricating, vegetable and mineral) dispensed or otherwise transferred on a concrete pad or other surface.
22. Are solvents, especially chlorinated solvents, stored and used on an impermeable surface? Is your parts cleaner tank kept covered except when putting parts in or taking them out?
23. Are solvent containers kept closed except when in immediate use?

## CONTAINMENT

fertilizer plants modified to comply with new environmental containment laws have predominately handled liquid fertilizers. The typical plant has storage tanks within a concrete containment wall having a capacity of 110 percent (125 percent in some states) of the volume of the largest tank within the containment. In Illinois, the containment must have a volume equal to the largest tank plus 6 inches of rain. Tanks must be on raised pads or anchored to prevent them from floating and damaging plumbing. A few inches of water can float an empty tank, causing other tanks connected to a common manifold to fail. Site gages will be allowed if a normally closed stainless steel valve is used between the tank and the bottom of the gage. (Provide site specific comments.)

The load-out area must be paved and sloped to collect spills as large as the largest transport truck. For this reason, load-out basins are designed to spill over or drain into the tank containment. Otherwise, the depth of the basin is such that vehicle access becomes difficult. (Provide site specific comments.) What is the size of largest truck?

Concrete is used for the floor and walls of containment basins. If blocks are used for walls, they must be reinforced with steel and filled with concrete. In at least one state, masonry is not permitted for containment walls. Asphalt sealed with a petroleum-based resin is often used in areas where rainfall must be collected. (Provide site specific comments.)

Load-out pads and other areas that are frequently in contact with fertilizer and pesticides should be made of concrete and sloped two percent to minimize the corrosive effects of these materials. In one case, environmental officials approved the use of unpacked earth for the walls of a large containment area. The use of earth with a layer of bentonite clay has been proposed for large tanks, built on site. (Provide site specific comments.)

Sumps are provided to collect spills for transfer to above-ground tanks, not for storing fertilizer or pesticide rinse water. Some states may restrict retention of spills or rinsates in sumps to no more than 24 to 72 hours. In California, double-walled stainless steel tanks with a monitoring port between the walls are used for sumps. Having a built-in secondary containment, these sumps are emptied less frequently.

Open sumps are preferred. Most states prohibit the use of underground tanks or sealed pits. Either a screen or small dam is used to trap dirt and debris before it enters the sump. One novel scheme for removing solids from rinsate involves three sumps in series. Liquid for recycling is pumped from the third sump; the other two serve as solids collectors.

Good housekeeping is essential to avoid the discharge of rainwater. Otherwise, it must be diverted by a roof, recycled into mixtures, or land applied. (Provide site specific comments.)

Similar methodologies are used for secondary containment of fertilizer and ag-chemical mixtures, transfer areas, and equipment washout areas of the dealership. Studies of representative dealerships have shows that these transfer areas are most prone to soil and water contamination. (Provide site specific comments.)