

DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER DIVISION
OFFICE OF WATER RESOURCES MANAGEMENT

MEMORANDUM

P. O. Box 11143

Richmond, VA 23230

SUBJECT: OWRM Guidance Memo No. 93 - 026
Permitting Strategy for Wood Preserving Operations

TO: Regional Directors

FROM: Larry G. Lawson, P.E.



DATE: December 1, 1993

COPIES: Bob Burnley, Dave Paylor, John Roland, Alan Anthony,
Martin Ferguson, Ron Gregory, Water Resources Managers,
OWRM Permit Staff

INTRODUCTION

Since the agency strategy for the permitting of wood preserving operations was established in 1983 approximately 20 facilities have been permitted under either the VPDES or VPA (or No Discharge Certificate) permits program. Most of these VPDES permits are entering into the second or third round of permit action. As a result of 1) recent Resource Conservation and Recovery Act (RCRA) involvement with the wood preserving operations (drip pads in particular); 2) the new storm water regulations; and 3) the adoption of the new water quality standards for toxics, the need to update the existing strategy becomes apparent.

Therefore, the purpose of this memo is to:

1. Replace the agency guidelines entitled "Guidelines for the Regulation of Wood Preserving Operations" dated July 15, 1983, and the subsequent memo "Guidelines for the Regulation of Wood Preserving Operations" dated January 28, 1985.
2. Provide additional guidance on preparing VPDES permits based on the Water Quality Standards for Toxics and the Storm Water Regulations.
3. Provide a consistent approach on monitoring requirements and special conditions for VPDES and VPA permits issued to wood preserving operations.

BACKGROUND

The wood preserving process generally consists of two basic steps: 1) conditioning the wood to reduce its natural moisture content and increase its permeability; and 2) impregnation of the wood with preservatives. The conditioning of wood raw material

ensures that the preserving chemicals are absorbed in sufficient amounts. Conditioning may be performed through a variety of methods including 1) air drying; 2) dry kiln conditioning; 3) steam conditioning; and 4) Boulton conditioning. The most commonly used preservatives in these treatment processes are creosote, pentachlorophenol (PCP), and various formulations of water soluble inorganic chemicals such as chromated copper arsenate (CCA), ammoniacal copper arsenate (ACA), and fluorochrome arsenate phenol (FCAP). Due to its paintability and lack of objectionable odors, more and more wood preserving operations are moving into a pressure treated CCA operation. Typically, the conditioned wood is exposed to the preservatives in a vacuum and then allowed to remain in the pressure vessel for several hours to collect drippage.

Following removal from the pressure vessel, treated products are placed on a covered concrete drip pad for 48 hours after which they are removed for storage or shipping. Drippage from the covered drip pad is collected in a sump and returned to the system as make-up water.

RCRA INVOLVEMENT

While wood preserving operations are required to be in compliance with the "no discharge of process wastewater" requirement under the NPDES effluent guidelines, most of the facilities who generate hazardous waste may be involved in some RCRA action. Some of these facilities may have a surface impoundment which has been or is being closed under the RCRA rules. In addition, the new RCRA Subpart W rules on wood preserving, promulgated on December 6, 1990, included standards for drip pads used to collect drippage from treated wood. These standards specify requirements for drip pad design, operation, inspections and closure. The rules extend the existing exemption for generators who store hazardous waste in tanks or containers for no more than 90 days. Owners of drip pads will not have to obtain a RCRA Part B permit if: 1) Waste is removed from the drip pad at least every 90 days, 2) The drip pad meets all of the required technical design and operating standards, and 3) The generator complies with the recordkeeping requirements. The rules, however, do not apply to precipitation that comes in contact with a stack of wood in the storage yard. The compliance schedules set by this rulemaking have prompted the wood preserving industries to make decisions on whether to build a new pad or retrofit the old one.

At the state level, the RCRA Subpart W rules have been incorporated into VR 672-10-1 Virginia Hazardous Waste Management Regulations by the Waste Division through Amendment 13. The effective date of Amendment 13 is September 8, 1993.

NEED FOR A PERMIT

When VPDES or VPA permits for wood preserving facilities are due for issuance or reissuance, questions may be raised as to which Division (Waste or Water) of DEQ should regulate these facilities. It should be kept in mind that the Water Division's responsibility is to protect State waters, both surface water and groundwater. Also the storm water regulations require this category of industry to apply for a VPDES permit if there is a point source discharge of storm water. Consequently at this time this Division will continue to permit these facilities individually with either a VPDES or a VPA permit regardless of the Waste Division's activities.

VPDES vs. VPA PERMIT

Based on staff experience, the storage woodyard is often the source of toxic pollutants that are 1) discharged to surface waters via a point source, 2) potentially introduced to ground water, or 3) both. Although recent facility upgrades may include covering of the storage woodyard, the impact on surface water and groundwater from the previous operational activities and from continued access and egress from the storage woodyard may still be present.

In accordance with the storm water regulations, any industrial facility that discharges storm water associated with industrial activity (e.g. woodyard runoff) through any point source must apply for a VPDES permit. A point source is defined in the permit regulation as "any discernible, defined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, vessel or other floating craft, from which pollutants are or may be discharged". Recognizing the great potential of surface water pollution from the woodyard runoff, it is the agency's intent to embrace the broadest possible definition of point source to include any identifiable conveyance from which pollutants might enter State waters.

It is recommended that a VPA permit only be considered for a facility when it meets the following conditions: 1) the storage woodyard is covered, and bermed so as to divert runoff around the site, and 2) there is no defined point source discharge from the site.

In the cases of conversion of a No-Discharge Certificate or reissuance/modification of a VPA permit, a site inspection is recommended prior to the VPA permit application submittal in order to ensure that there is no point source discharge to surface waters from the facility.

As of October 1, 1992, a complete Form 1 and Form 2F are required for a VPDES permit application. For a VPA permit application, a complete Form A and Form C are required.

In reviewing the VPDES permit application, the permit writer should expect any issues with respect to "Virginia Hazardous Waste Management Regulations" and/or "Virginia Solid Waste Management Regulations" to be addressed through Form 2F, Item II. Improvements. This may include but not be limited to the implementation schedules of surface impoundment closure/post closure activities, drip pad upgrade, and status of small generator of hazardous waste. The VPA permit application Form C, Item 3.a. Statement of Plant Operations should provide the similar information.

Although VPDES application Form 2F, Item VII Discharge Information, Part C is designed with flexibility to allow the applicant to test only those pollutants believed present, the principal pollutants of concern, based on the type of preserving operation(s) used at the facility, as listed in the following section should be expected by the permit writer. The permit writer should follow up with the applicant when those pollutants of concern are reported as believed absent.

As provided in the Instructions for VPA permit application Form C, waste characterization for a CCA operation (recycling system) may be substituted by supporting documentation, such as Material Safety Data Sheet (MSDS) or formulation lab sheets.

POLLUTANTS OF CONCERN

Most wood preserving operations in Virginia utilize the CCA pressure treatment process today. However, some of the facilities may have used or continue to use creosote or pentachlorophenol processes.

The following are the principal pollutants of concern based on the type of preservatives commonly used. These lists are supported by the findings from DMR data, TMP data, and groundwater monitoring results. Also the history of the site may be an important aspect for determining pollutants of concern.

1. CCA

Chromium
Chromium VI*
Chromium III*
Copper
Arsenic

Other constituents believed present

(The following metals have been found in some of the permitted facilities: Ni, Pb, Zn, and Hg)

* Not listed in VPDES or VPA applications but may be required through routine monitoring.

2. Creosote

Acenaphthene
Acenaphthylene
Anthracene
Benzo(a)anthracene
Benzo(a)pyrene
Benzo(b)fluoranthene (or 3,4-Benzofluoranthene)
Benzo(ghi)perylene
Benzo(k)fluoranthene
Chrysene
Dibenzo(a,h)anthracene
Fluoranthene
Fluorene
Indeno(1,2,3-cd)pyrene
Naphthalene
Phenanthrene
Pyrene

3. Pentachlorophenol

4-Chloro-3-methylphenol (or p-Chloro-M-Cresol)
2-Chlorophenol
2,4-Dichlorophenol
2,4-Dimethylphenol
2,4-Dinitrophenol
2-Methyl-4,6-dinitrophenol (or 4,6-Dinitro-O-Cresol)
2-Nitrophenol
4-Nitrophenol
Pentachlorophenol
Phenol
2,4,6-Trichlorophenol

4. General

Oil and Grease
pH
Chemical Oxygen Demand
Total Suspended Solids

Due to the fact that some of the facilities may have gone through changes from one type of preservatives to the other in the past, or more than one type of preservatives are being used at the present time, multiple lists of parameters should be considered when reviewing the application and for permit monitoring requirements.

Additional parameters may be considered based on the formulation of the preservatives used. The Material Safety Data Sheet (MSDS) may provide information to determine the respective pollutants of concern.

DEVELOPMENT OF PERMIT LIMITS

Technology Based Limits

Under the Effluent Guidelines 40 CFR Part 429, established for timber products, discharges of process wastewater from wood preserving operations is prohibited. Consequently all VPDES permits for wood preservers must reflect this requirement.

Water Quality Based Limits

If the permit writer has suitable effluent data, OWRM Guidance Memo No. 93-015 or its successor should be applied for facilities that have a point source discharge to surface waters. As the guidance indicates, only the WLA_a (2X acute WQS) needs to be addressed if the discharge is storm water or is otherwise intermittent. The permit writer should be aware that some facilities may have intercepted ground water or have a continuous discharge for one reason or another. These continuous discharges would require an acute as well as chronic WLA. Note that the permit limits should be expressed as daily maximum concentrations only, no monthly average concentrations or any mass limits are necessary.

For CCA operations, different forms of Chromium (Total Recoverable Chromium, Chromium III, and Chromium VI) data may be presently available. The Water Quality Standards include toxic standards for Chromium III and Chromium VI. A testing method for Chromium III is not available at this time. Generally, subtraction of Chromium VI from Total Recoverable Chromium (more accurately, Dissolved Chromium) provides a reasonable estimate for Chromium III. In the case that Chromium III data are not available, this subtraction approach may be used to assess the need of WQS-based limits for Chromium III. The respective average values (expected values) of all available data for Total Recoverable Chromium and Chromium VI are first calculated. (Data screening and selection should follow the guidance provided in the OWRM Guidance Memo No. 93-015 or its successor). The estimated Chromium III is obtained by subtraction of the Chromium VI average from the Total Recoverable Chromium average. The Waste Load Allocation Program can then be run by input of this single datum. This estimated methodology however may be used only to demonstrate that a limit for Chromium III is not needed, it cannot be used to demonstrate that a limit is needed.

A testing method for Arsenic III is also not available at this time. Available Total Recoverable Arsenic data however may be used to demonstrate that a limit is not needed for Arsenic III but it cannot be used to demonstrate that a limit is needed.

Unless limits have been determined for Dissolved Chromium VI, Total Recoverable Copper, and Total Recoverable Arsenic, any new, modified, or reissued permits should require the Dissolved form

of Chromium III, Chromium VI, Copper, and Arsenic be monitored and reported for future limits determination.

In accordance with the OWRM Guidance Memo No. 93-010 or its successor, the subject Section 313 water priority chemicals (other than those already identified) should be listed in Part I. A. effluent monitoring page with monitoring frequency of 1/6M.

An example of Part I. A. effluent monitoring page for a CCA operation is provided in Attachment A.

MONITORING REQUIREMENTS

Contamination of the storage woodyard could be a result of: 1) continuing drippage of preservative chemicals in the storage yard; 2) precipitation carrying preservative from the treated wood; and 3) management of other wastes in the storage yard.

As an integral part of controlling and evaluating environmental impacts from both existing and proposed wood preserving operations, monitoring plans for groundwater and (where determined necessary by staff) surface water should be considered as permit requirements. The decision by the staff to require monitoring in any or all of these areas should include an evaluation of such factors as site history, type of treatment facilities used, method of wood preservation, existing or proposed housekeeping practices, proximity of treatment facilities to surface water and groundwater, geologic and hydrogeologic features of the site, exposure of treated wood to rainfall, tracking of contaminants by vehicles and other factors as may be pertinent.

Requirements for such monitoring should be in accordance with the following guidelines :

1. Groundwater Monitoring

Groundwater monitoring should generally be required for all wood preserving operations unless the owner can demonstrate to the staff's satisfaction that, due to design and operation techniques, groundwater would not be adversely impacted. Such techniques may be a leachate detection sump or other means of detecting potential seepage or leakage of pollutants into groundwater.

For proposed facilities or existing facilities without a groundwater monitoring program in place, the groundwater monitoring plan may be developed, and submitted to the Regional Office for approval through a permit special condition. An example of such a site specific special condition under Part I. B is provided in Attachment A.

At a minimum, the groundwater monitoring plan should include one well hydrologically upgradient from the operation and two wells hydrologically downgradient from the potential sources of contamination. Justification for monitoring well location will be the responsibility of the owner.

Due to the complex layout of some facilities, there may be cases where the groundwater monitoring has been conducted or addressed by other requirements set under the RCRA rules. The permittee may justify such, however the permitting process should not be delayed due to pending approval of other plans (such as closure or post closure plans) from the Waste Division.

It should be noted that the groundwater monitoring plan required for the surface impoundment closure (under the RCRA rules) often does not serve the need of the groundwater protection measure for the storage woodyard.

Sampling frequency should be once per quarter at a minimum. Sampling method, testing parameters, and reporting requirements should be addressed in the draft permit on a case by case basis. Background samples should be required prior to start-up for proposed new facilities. Metals should be analyzed for dissolved form.

For a facility that already has an approved groundwater monitoring program, an example of Part I. A. groundwater monitoring page for a CCA operation is provided in Attachment A.

2. Surface Water Monitoring

Depending upon the proximity of storage woodyard and/or treatment facilities to surface water, and the site specific hydrogeology, surface water monitoring may be required for a VPA permit.

This program should include upstream and downstream monitoring points with sampling frequency, testing parameters, and reporting requirements addressed in the draft permit by the staff on a case by case basis. Background samples should be taken for new operations prior to start-up. An example of Part I. A. surface water monitoring page for a VPA permit issued to a CCA operation is provided in Attachment A.

Under certain circumstances, surface water (in-stream) monitoring may be warranted for a VPDES permit. Such site specific monitoring requirements should be placed under Part I. B. Other Requirements and Special Conditions.

REQUIREMENTS FOR CLOSURE

A facility closure plan should be provided by the owner of both existing and proposed facilities through the O & M Manual submittal. The plan should address the entire facility closure except those RCRA regulated units with the following specifics:

1. Temporary shutdown conditions - how process water or wastewater will be handled during this period, and
2. Final shutdown - closure of operation areas including, but not limited to, disposition of contaminated soils and groundwater, and disposal of all wastewater and process chemicals.

The Regional Office may require a detailed plan be submitted and approved prior to implementation of the plan. Such requirement can be carried out through a conditional approval of the O & M Manual.

The owner will be responsible to coordinate with the Waste Division any closure actions which are regulated under the "Virginia Hazardous Waste Management Regulations".

PERMIT SPECIAL CONDITIONS

Boiler plate type special conditions - Part I. B. Other Requirement or Special Conditions for wood preserving operations are provided in Attachment A as part of a model permit package. These special conditions supersede the language provided in the VPA and VPDES permit manuals.

In the case of VPDES permits, appropriate special conditions regarding compliance schedule, and quantification levels as indicated in the OWRM Guidance Memo No. 93-015 or its successor should be included as applicable. Additional chemical monitoring however would not be necessary since the expected pollutants have been identified and evaluated by the staff at the time of application review, and appropriate monitoring or limits will be addressed in Part I. A.

A specific TMP should be developed for each individual VPDES permit as part of Part I. B. Other Requirements and Special Conditions.

In addition, as indicated in the OWRM Guidance Memo No. 93-010 or its successor, storm water management plan requirements should be incorporated into a VPDES permit. A complete Part I. C. Storm Water Management is provided in Attachment A.

The term of these permits (VPA and VPDES) should be limited to five years.

Attachment A

MODEL PERMIT PACKAGE

1. Example of Part I. A. Pages For A CCA Operation
2. Part I. B. Other Requirements or Special Conditions
3. Part I. C. Storm Water Management

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to discharge from outfall(s) serial number(s).

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS		
	Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NA	NA	NL	1/D-M	Estimate*
pH (standard units)	NA	NA			1/D-M	Grab**
COD	NA	NA	NA	NL	1/D-M	Grab**
Suspended Solids	NA	NA	NA	NL	1/D-M	Grab**
Oil & Grease	NA	NA	NA	NL	1/D-M	Grab**
Dissolved Chromium III ³	NA	NA	NA		1/D-M	Grab**
Dissolved Chromium VI ³	NA	NA	NA		1/D-M	Grab**
Copper ³	NA	NA	NA		1/D-M	Grab**
Arsenic ³	NA	NA	NA		1/D-M	Grab**
Hardness	NA	NA	NA	NL	1/D-M	Grab**
(Section 313 water priority chemicals, see note below)	NA	NA	NA	NL	1/6M	Grab**

NL = No Limitation, monitoring required
NA = Not Applicable
1/D-M = One sample for each month in which there is a discharge

2. All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 72 hours from the previously measurable (greater than 0.1 inch rainfall) storm event.

3. See Part I. B.6 for quantification levels.

4. There shall be no discharge of floating solids or visible foam in other than trace amounts.

* Estimate of the total volume of the discharge during the storm event.

** The grab sample shall be taken within the first three hours of the discharge.

Note to Permit Writers:

1) If limits are required, express metals in total recoverable form, except for Cr III and Cr VI (dissolved).

2) If monitoring only, express metals in dissolved form.

3) List the Section 313 water priority chemicals (see OWRM Guidance Memo No. 93-010 or its successor) for which the facility is subject to reporting requirements under Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and where there is the potential for these chemicals to mix with storm water discharges.

(VPDES or VPA Permits)

Permit No. VPA00000
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PART I

A. MONITORING REQUIREMENTS

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage pollutants (State facility name and location)

The pollutants shall be limited and monitored by the permittee as specified below:

GROUNDWATER MONITORING

<u>PARAMETERS</u>	<u>LIMITATIONS</u>	<u>UNITS</u>	<u>MONITORING REQUIREMENTS</u>	
			<u>Frequency</u>	<u>Sample Type Measured</u>
Static Water Level	NL	ft	1/3 Months	Grab
pH	NL	S.U.	1/3 Months	Grab
Dissolved Chromium	NL	mg/l	1/3 Months	Grab
Dissolved Copper	NL	mg/l	1/3 Months	Grab
Dissolved Arsenic	NL	mg/l	1/3 Months	Grab

NL = No Limit, this is a monitoring requirement only

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): (State monitoring location(s) or refer to O & M manual).
3. The static water level shall be measured prior to bailing the well water for sampling. At least 3 well volumes of groundwater shall be withdrawn immediately prior to sampling each monitoring well. The sample to be analyzed for the above metals shall be filtered in the field and tested for pH prior to preservation measures (acidification). (Note to Permit Writers: Sample to be analyzed for organics (phenols etc.) shall not be filtered in the field prior to preservation)
4. Samples shall be taken and analyzed during the periods specified below: January-March, April-June, July-September, October-December. (Data shall be reported in the forms in Attachment A, and) shall be submitted with DMR ending the specified period.)

(VPA Permits)

Permit No. VPA00000
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PART I

A. MONITORING REQUIREMENTS

1. During the period beginning with the permit's effective date and lasting until the permit's expiration date, the permittee is authorized to manage pollutants (**State facility name and location**)

The pollutants shall be limited and monitored by the permittee as specified below:

SURFACE WATER MONITORING

<u>PARAMETERS</u>	<u>LIMITATIONS</u>	<u>UNITS</u>	<u>MONITORING REQUIREMENTS</u>
			<u>Frequency</u> <u>Sample Type</u>
pH	NL	S.U.	1/3 Months Grab
Dissolved Chromium VI	NL	ug/l	1/3 Months Grab
Dissolved Chromium III	NL	ug/l	1/3 Months Grab
Dissolved Copper	NL	ug/l	1/3 Months Grab
Dissolved Arsenic	NL	ug/l	1/3 Months Grab
Hardness	NL	mg/l	1/3 Months Grab

NL = No Limit, this is a monitoring requirement only

2. Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location(s): (**State monitoring location(s) or refer to O & M manual**).

(VPDES Permit)

B. Other Requirements or Special Conditions

1. There shall be no discharge of process wastewater pollutants to State waters. The term "process wastewater" specifically excludes material storage yard runoff (either raw material or processed wood storage).
2. This permit shall be modified, or alternatively, revoked and reissued to comply with any applicable effluent standard or limitation issued or approved under Section 301 (b) (2) (c), (d) and (e), 304(b)(2)(3)(4) and 307(a)(2) of the Clean Water Act, if the effluent standard or limitations so issued or approved.
 - a. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit, or
 - b. controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

Immediately after EPA's promulgation of applicable standards, the new requirements shall be sent to the permittee.

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. The owner shall develop an Operations and Maintenance (O&M) Manual for the facility permitted herein. This manual shall detail practices and procedures 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 facility in accordance with the approved O & M Manual. This manual shall include, but not be limited to:

- a. techniques to be employed in the collection, preservation, and analysis of (effluent), and (groundwater) samples;
- b. discussion of routine preventative maintenance tasks;
- c. a Facility Closure Plan.

5. Operations shall be conducted in such manner that treated lumber will be retained on the drip pad for a minimum of 48 hours before being removed to the treated wood storage area.

6. Quantification Levels

- a. Quantification Level Goals shall be as follows:

<u>Effluent Characteristic</u>	<u>Quantification Level (ug/l)</u>
XXX	---

- b. (USE WHERE APPLICABLE) The permit limitation for (XXX) is lower than the quantification level required. The quantification level required shall be considered as the threshold for compliance determinations.
- c. Where a permittee conducts monitoring once per month or more and all values obtained are less than the required quantification level or "not detected" at the required quantification level, an "NQ" should be reported on the Discharge Monitoring Report (DMR). "NQ" means not quantifiable at the level required by this permit.

7. (TMP Requirements)

(VPA Permit)

B. Other Requirements or Special Conditions

1. 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 Board, or any provision of the Water Control Law.
2. **(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.
3. The owner shall develop an Operations and Maintenance (O&M) Manual for the facility permitted herein. This manual shall detail practices and procedures 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 facility in accordance with the approved O & M Manual. This manual shall include, but not be limited to:
 - a. techniques to be employed in the collection, preservation, and analysis of (groundwater), and (surface water) samples;
 - b. discussion of routine preventative maintenance tasks;
 - c. a Facility Closure Plan.
4. Operations shall be conducted in such manner that treated lumber will be retained on the drip pad for a minimum of 48 hours before being removed to the treated wood storage area.

(VPDES and VPA Permits - Site Specific Condition -
Groundwater Monitoring Plan)

B. Other Requirements or Special Conditions (Continued)

1. Within 180 days of the permit (issuance/modification), the permittee shall submit a groundwater monitoring plan for the purpose of evaluation of any groundwater impacts from the operation of this facility. The proposed monitoring program shall be subject to review and approval by the staff of the (RO). After approval by the staff of the (RO), the requirements of the groundwater monitoring plan shall become an enforceable part of the permit.

(VPDES Permits)

C. STORM WATER MANAGEMENT

1. Recording of Results

For each measurement or sample taken pursuant to the storm event monitoring requirements of this permit, the permittee shall record and report with the Discharge Monitoring Report the following information:

- a. The date and duration (in hours) of the storm event(s) sampled;
- b. The rainfall measurements or estimates (in inches) of the storm event which generated the sampled discharge; and
- c. The duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event.

2. Storm Water Pollution Prevention Plan

A storm water pollution prevention plan shall be developed for the facility. The plan shall be prepared in accordance with good engineering practices. The plan shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. In addition, the plan shall describe and ensure the implementation of practices which are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit. The permittee must implement the provisions of the storm water pollution prevention plan required under this part as a condition of this permit.

3. Deadlines for Plan Preparation and Compliance

The storm water pollution prevention plan shall be prepared within 180 days after the effective date of this permit and shall provide for implementation and compliance with the terms of the plan within 365 days after the effective date of this permit.

Portions of the plan addressing additional requirements for storm water discharges from facilities subject to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) shall provide for compliance with the

requirements identified in Part I.C.6.e not later than 3 years from the effective date of this permit except as provided below. Facilities which are not required to report under EPCRA Section 313 prior to the effective date of this permit, shall provide for compliance with the requirements identified in Parts I.C.6.e not later than three years after the date on which the facility is first required to report under EPCRA Section 313. However, plans for facilities subject to the additional requirements of Parts I.C.6.e shall provide for compliance with the other terms and conditions of this permit in accordance with the appropriate dates provided in this permit.

4. Plan Review

The plan shall be retained on-site at the facility which generates the storm water discharge.

The permittee shall make plans available upon request to the Regional Office. The Regional Office may notify the permittee at any time that the plan does not meet one or more of the requirements of this Part. Such notification shall identify those provisions of the permit which are not being met by the plan, and identify which provisions of the plan requires modifications in order to meet the minimum requirements of this Part. Within 30 days of such notification, the permittee shall make the required changes to the plan and shall submit to the Regional Office a written certification that the requested changes have been made.

5. Plan Modifications

The permittee shall amend the plan whenever there is a change in design, construction, operation, or maintenance which has a significant effect on the potential for the discharge of pollutants to the waters of the State or if the storm water pollution prevention plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified in the plan, or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with industrial activity.

6. Contents of Plan

The plan shall include, at a minimum, the following items:

- a. Pollution Prevention Team Each plan shall identify a specific individual or individuals within the facility organization as members of a storm water Pollution Prevention Team that are responsible for developing the

storm water pollution prevention plan and assisting the facility or plant manager in its implementation, maintenance, and revision. The plan shall clearly identify the responsibilities of each team member. The activities and responsibilities of the team shall address all aspects of the facility's storm water pollution prevention plan.

- b. Description of Potential Pollutant Sources Each plan shall provide a description of potential sources which may reasonably be expected to add significant amounts of pollutants to storm water discharges. Each plan shall identify all activities and significant materials which may potentially be significant pollutant sources. Each plan shall include, at a minimum:

(1) Drainage

- (a) A site map indicating an outline of the drainage area, within the facility boundaries, of each outfall that contains storm water runoff, each existing structural control measure to reduce pollutants in storm water runoff, surface water bodies, locations where significant materials are exposed to precipitation, locations where major spills or leaks have occurred, and the locations of the following activities: fueling stations, vehicle and equipment maintenance and/or cleaning areas, loading/unloading areas, locations used for the treatment, storage or disposal of wastes, liquid storage tanks, processing areas and storage areas.
- (b) For each area of the facility that generates storm water discharges associated with industrial activity with a reasonable potential for containing significant amounts of pollutants, a prediction of the direction of flow, and an identification of the types of pollutants which are likely to be present in the storm water discharges. Factors to consider include the toxicity of chemicals; quantity of chemicals used, produced or discharged; the likelihood of contact with storm water; and history of significant leaks or spills of toxic or hazardous pollutants. Flows with a significant potential for causing erosion shall be identified.

- (2) Inventory of Exposed Materials An inventory of the types of materials handled at the site that potentially may be exposed to precipitation. Such inventory shall include a narrative description of

significant materials that have been handled, treated, stored or disposed in a manner to allow exposure to storm water between the time of three years prior to the effective date of this permit and the present; method and location of on-site storage or disposal; materials management practices employed to minimize contact of materials with storm water runoff between the time of three years prior to the effective date of this permit and the present; the location and a description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and a description of any treatment the storm water receives.

(3) Spills and Leaks A list of significant spills and significant leaks of toxic or hazardous pollutants that occurred at areas that are exposed to precipitation or that otherwise drain to a storm water conveyance at the facility after the date of three years prior to the effective date of this permit. Such list shall be updated as appropriate during the term of the permit.

(4) Sampling Data A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility, including a summary of sampling data collected during the term of this permit.

(5) Risk Identification and Summary of Potential Pollutant Sources A narrative description of the potential pollutant sources from the following activities: loading and unloading operations; outdoor storage activities; outdoor manufacturing or processing activities; significant dust or particulate generating processes; and on-site waste disposal practices. The description shall specifically list any significant potential source of pollutants at the site and for each potential source, any pollutant or pollutant parameter (e.g. biochemical oxygen demand, etc.) of concern shall be identified.

c. Measures and Controls A description of storm water management controls appropriate for the facility shall be developed. These controls shall be implemented as part of this plan. The appropriateness and priorities of controls in a plan shall reflect identified potential sources of pollutants at the facility. The description of storm water management controls shall address the following minimum components, including a

schedule for implementing such controls:

- (1) Good Housekeeping Good housekeeping requires the maintenance of areas which may contribute pollutants to storm waters discharges, in a clean, orderly manner.
- (2) Preventive Maintenance A preventive maintenance program shall involve timely inspection and maintenance of storm water management devices (e.g. cleaning oil/water separators, catch basins) as well as inspecting and testing facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment and systems.
- (3) Spill Prevention and Response Procedures Areas where potential spills which can contribute pollutants to storm water discharges can occur, and their accompanying drainage points shall be identified clearly in the storm water pollution prevention plan. Where appropriate, specifying material handling procedures, storage requirements, and use of equipment such as diversion valves in the plan should be considered. Procedures for cleaning up spills shall be identified in the plan and made available to the appropriate personnel. The necessary equipment to implement a clean up should be available to personnel.
- (4) Inspections In addition to or as part of the comprehensive site evaluation required under Part I.C.6.d, qualified facility personnel shall be identified to inspect designated equipment and areas of the facility at appropriate intervals specified in the plan. A set of tracking or followup procedures shall be used to ensure that appropriate actions are taken in response to the inspections. Records of inspections shall be maintained.
- (5) Employee Training Employee training programs shall inform personnel responsible for implementing activities identified in the storm water pollution prevention plan or otherwise responsible for storm water management at all levels of responsibility of the components and goals of the storm water pollution prevention plan. Training should address topics such as

spill response, good housekeeping and material management practices. The pollution prevention plan shall identify periodic dates for such training.

- (6) Recordkeeping and Internal Reporting Procedures A description of incidents such as spills, or other discharges, along with other information describing the quality and quantity of storm water discharges shall be included in the plan required under this part. Inspections and maintenance activities shall be documented and records of such activities shall be incorporated into the plan.
- (7) Sediment and Erosion Control The plan shall identify areas which, due to topography, activities, or other factors, have a high potential for significant soil erosion, and identify structural, vegetative, and/or stabilization measures to be used to limit erosion.
- (8) Management of Runoff The plan shall contain a narrative consideration of the appropriateness of traditional storm water management practices (practices other than those which control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The plan shall provide for the implementation and maintenance of measures that the permittee determines to be reasonable and appropriate. The potential of various sources at the facility to contribute pollutants to storm water discharges associated with industrial activity shall be considered when determining reasonable and appropriate measures. Appropriate measures may include: vegetative swales and practices, reuse of collected storm water (such as for a process or as an irrigation source), inlet controls (such as oil/water separators), snow management activities, infiltration devices, and wet detention/retention devices.

d. Comprehensive Site Compliance Evaluation Qualified personnel shall conduct site compliance evaluations at appropriate intervals specified in the plan, but, in no case less than once a year. Such evaluations shall provide:

- (1) Areas contributing to a storm water discharge

associated with industrial activity shall be visually inspected for evidence of, or the potential for, pollutants entering the drainage system. Measures to reduce pollutant loadings shall be evaluated to determine whether they are adequate and properly implemented in accordance with the terms of the permit or whether additional control measures are needed. Structural storm water management measures, sediment and erosion control measures, and other structural pollution prevention measures identified in the plan shall be observed to ensure that they are operating correctly. A visual inspection of equipment needed to implement the plan, such as spill response equipment, shall be made.

- (2) Based on the results of the inspection, the description of potential pollutant sources identified in the plan and pollution prevention measures and controls identified in the plan shall be revised as appropriate within 14 days of such inspection and shall provide for implementation of any changes to the plan in a timely manner, but in no case more than 90 days after the inspection.
- (3) A report summarizing the scope of the inspection, personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the storm water pollution prevention plan, and actions taken in accordance with paragraph (2) (above) shall be made and retained as part of the storm water pollution prevention plan. The report shall identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report shall contain a certification that the facility is in compliance with the storm water pollution prevention plan and this permit. The report shall be signed in accordance with 40 CFR Part 122.22 (1992).

- e. Additional Requirements for Storm Water Discharges Associated with Industrial Activity from Facilities Subject to Emergency Planning and Community Right-to-Know Act (EPCRA) Section 313 Requirements In addition to the requirements of Parts I.C.6. a through d of this permit and other applicable conditions of this permit, storm water pollution prevention plans for facilities subject to reporting requirements under EPCRA Section 313 for chemicals which are classified as 'Section 313 water priority chemicals' and where there is the potential for the these chemicals to mix with storm

water discharges, shall describe and ensure the implementation of practices which are necessary to provide for conformance with the following guidelines:

- (1) In areas where Section 313 water priority chemicals are stored, processed or otherwise handled and where there is the potential for these chemicals to mix with storm water discharges, appropriate containment, drainage control and/or diversionary structures shall be provided. At a minimum, one of the following preventive systems or its equivalent shall be used:
 - (a) Curbing, culverting, gutters, sewers or other forms of drainage control to prevent or minimize the potential for storm water runoff to come into contact with significant sources of pollutants; or
 - (b) Roofs, covers or other forms of appropriate protection to prevent storage piles from exposure to storm water and wind.
- (2) In addition to the minimum standards listed under Part I.C.6.e.(1) (above), the storm water pollution prevention plan shall include a complete discussion of measures taken to conform with the following applicable guidelines:
 - (a) Liquid storage areas where storm water comes into contact with any equipment, tank, container, or other vessel used for Section 313 water priority chemicals
 - i. No tank or container shall be used for the storage of a Section 313 water priority chemical unless its material and construction are compatible with the material stored and conditions of storage such as pressure and temperature, etc.
 - ii. Liquid storage areas for Section 313 water priority chemicals shall be operated to minimize discharges of Section 313 chemicals. Appropriate measures to minimize discharges of Section 313 chemicals may include secondary containment provided for at least the entire contents of the largest single tank plus sufficient freeboard to allow for precipitation, a strong spill contingency and integrity testing plan, and/or other equivalent measures.

- (b) Material storage areas for Section 313 water priority chemicals other than liquids Material storage areas for Section 313 water priority chemicals other than liquids which are subject to storm water runoff, leaching, or wind shall incorporate drainage or other control features which will minimize the discharge of Section 313 water priority chemicals by reducing storm water contact with Section 313 water priority chemicals.
- (c) Truck and rail car loading and unloading areas for liquid Section 313 water priority chemicals Truck and rail car loading and unloading areas for liquid Section 313 water priority chemicals shall be operated to minimize discharges of Section 313 water priority chemicals. Protection such as overhangs or door skirts to enclose trailer ends at truck loading/unloading docks shall be provided as appropriate. Appropriate measures to minimize discharges of Section 313 chemicals may include: the placement and maintenance of drip pans (including the proper disposal of materials collected in the drip pans) where spillage may occur (such as hose connections, hose reels and filler nozzles) for use when making and breaking hose connections; a strong spill contingency and integrity testing plan; and/or other equivalent measures.
- (d) Areas where Section 313 water priority chemicals are transferred, processed or otherwise handled and where there is the potential for these chemicals to mix with storm water discharges Processing equipment and materials handling equipment shall be operated so as to minimize discharges of Section 313 water priority chemicals. Materials used in piping and equipment shall be compatible with the substances handled. Drainage from process and materials handling areas shall minimize storm water contact with section 313 water priority chemicals. Additional protection such as covers or guards to prevent exposure to wind, spraying or releases from pressure relief vents from causing a discharge of Section 313 water priority chemicals to the drainage system shall be provided as appropriate. Visual inspections or leak tests shall be provided for overhead piping conveying Section 313 water priority chemicals without secondary containment.
- (e) Discharges from areas covered by paragraphs (a), (b), (c) or (e)

- i. Drainage from areas covered by paragraphs (a), (b), (c) or (d) of this section should be restrained by valves or other positive means to prevent the discharge of a spill or other excessive leakage of Section 313 water priority chemicals. Where containment units are employed, such units may be emptied by pumps or ejectors; however, these shall be manually activated.
 - ii. Flapper-type drain valves shall not be used to drain containment areas. Valves used for the drainage of containment areas should, as far as is practical, be of manual, open-and-closed design.
 - iii. If facility drainage is not engineered as above, the final discharge of all in-facility storm sewers shall be equipped to be equivalent with a diversion system that could, in the event of an uncontrolled spill of Section 313 water priority chemicals, return the spilled material to the facility.
 - iv. Records shall be kept of the frequency and estimated volume (in gallons) of discharges from containment areas.
- (f) Facility site runoff other than from areas covered by (a), (b), (c) or (d) Other areas of the facility (those not addressed in paragraphs (a), (b), (c) or (d)), from which runoff which may contain Section 313 water priority chemicals or where spills of Section 313 water priority chemicals could cause a discharge, shall incorporate the necessary drainage or other control features to prevent discharge of spilled or improperly disposed material and ensure the mitigation of pollutants in storm water runoff or leachate.
- (g) Preventive maintenance and housekeeping All areas of the facility shall be inspected at specific intervals identified in the plan for leaks or conditions that could lead to discharges of Section 313 water priority chemicals or for direct contact of storm water with raw materials, intermediate materials, waste materials or products. In particular, facility piping, pumps, storage tanks and bins, pressure vessels, process and material handling equipment, and material bulk storage areas shall be examined for any conditions

or failures which could cause a discharge. Inspection shall include examination for leaks, wind blowing, corrosion, support or foundation failure, or other forms of deterioration or noncontainment. Inspection intervals shall be specified in the plan and shall be based on design and operational experience. Different areas may require different inspection intervals. Where a leak or other condition is discovered which may result in significant releases of Section 313 water priority chemicals to waters of the State, action to stop the leak or otherwise prevent the significant release of Section 313 water priority chemicals to waters of the state shall be immediately taken or the unit or process shut down until such action can be taken. When a leak or noncontainment of a Section 313 water priority chemical has occurred, contaminated soil, debris, or other material must be promptly removed and disposed in accordance with Federal, State, and local requirements and as described in the plan.

- (h) Facility Security Facilities shall have the necessary security systems to prevent accidental or intentional entry which could cause a discharge. Security systems described in the plan shall address fencing, lighting, vehicular traffic control, and securing of equipment and buildings.
- (i) Training Facility employees and contractor personnel that work in areas where Section 313 water priority chemicals are used or stored and where there is the potential for these chemicals to mix with storm water discharges shall be trained in and informed of preventive measures at the facility. Employee training shall be conducted at intervals specified in the plan, but not less than once per year, in matters of pollution control laws and regulations, and in the storm water pollution prevention plan and the particular features of the facility and its operation which are designed to minimize discharges of Section 313 water priority chemicals. The plan shall designate a person who is accountable for spill prevention at the facility and who will set up the necessary spill emergency procedures and reporting requirements so that spills and emergency releases of Section 313 water priority chemicals can be isolated and contained before a discharge of a Section 313 water priority chemical can occur. Contractor or temporary personnel shall be informed of facility

operation and design features in order to prevent discharges or spills from occurring.

- (j) Engineering Certification The storm water pollution prevention plan for a facility subject to EPCRA Section 313 requirements for chemicals which are classified as 'Section 313 water priority chemicals' and where there is the potential for these chemicals to mix with storm water discharges, shall be reviewed by a Registered Professional Engineer and certified to by such Professional Engineer. A Registered Professional Engineer shall recertify the plan every three years thereafter or as soon as practicable after significant modification are made to the facility. By means of these certifications the engineer, having examined the facility and being familiar with the provisions of this part, shall attest that the storm water pollution prevention plan has been prepared in accordance with good engineering practices. Such certifications shall in no way relieve the owner or operator of a facility covered by the plan of their duty to prepare and fully implement such plan.

7. Requirements for Salt Storage

Storage piles of salt used for deicing or other commercial or industrial purposes and which generate a storm water discharge associated with industrial activity which is discharged to waters of the State shall be enclosed or covered to prevent exposure to precipitation, except for exposure resulting from adding or removing materials from the pile. Dischargers shall demonstrate compliance with this provision not later than 3 years from the effective date of this permit. Piles do not need to be enclosed or covered where storm water from the pile is not discharged to waters of the State.