

Division of Water Quality

July 19, 2004

MEMORANDUM

To: F. Mell Nevils, Land Quality Section Chief
Bradley Bennett
John Dorney

From: Matt Matthews *MM*
Connie Brower *CB*

Through: Coleen Sullins

Subject: **Use of Polyacrylamide (PAM) Products**

WETLANDS / 401 GROUP
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WATER QUALITY SECTION

In North Carolina, PAMs may hold promise for reducing soil erosion and subsequent sedimentation in streams. PAMs applied to sediment-laden waters such as "borrow pits," settling ponds, or applied directly in run-off conveyances downstream of land disturbances also hold great potential for reducing sediments in streams. However, if PAMs are applied over certain levels, they become toxic to aquatic life. It is critical that an application system be in place that minimizes the chances of malfunctions that could result in over-application of PAMs and subsequent adverse effects to aquatic life. It is especially important to be cautious near sensitive streams such as those classified as "High Quality" or "Outstanding Resource Waters." The intent of this memo is to provide guidance that will allow use of PAMs to reduce sediment contributions to the streams, while preventing toxicity to aquatic life.

"Floc logs" are being used in flowing water conveyances with varying degrees of success. However, very little is known about the release rate of the active ingredients, which effectively corresponds to the application rate in this type of use. Therefore, caution should be taken in approving their use. It is recognized that there is a need for development of a standard application methodology for this technology. This methodology would include guidance concerning the appropriate number of logs to be used in given situations. It would also include guidance on physical placement so that the logs do not become covered with silt or dry out, thus reducing their effectiveness.

In using any form of PAM, several basic guidelines should be followed:

1. PAMs should be used **only** after all appropriate physical BMPs have been implemented at a particular site.
2. **Only anionic** PAMs should be used.
3. PAMs must not be applied directly to surface waters of the state.
4. There should be a "stilling basin" or similar structure between the application point of PAMs and surface waters.
5. As individual products are evaluated, a database of products and maximum application rates will be established and made available through the Internet. Before approving the use of powder or liquid application of PAMs to a settling basin or run-off conveyance, we advise submitting a particular product's label, application instructions, and Material Safety Data Sheet (MSDS) to DWQ's Aquatic Toxicology Unit for evaluation and determination of the product's safe application rate. The product's vendor should be able to provide the required information. Once a sufficient number of products have been assessed for safety, contractors applying PAMs may refer to the Internet list to determine whether an appropriate application rate has been established for a prospective PAM. This will prevent resubmission of previously evaluated product information.

PAM information should be submitted to Matt Matthews, email matt.matthews@ncmail.net, fax number (919) 733-9959, and phone (919) 733-2136. For general questions regarding the information in this memo, please call Connie Brower at (919) 733-5083, ext. 572 or Matt Matthews at the number above.

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