

In many sections of the country, particularly the coastal areas of the Southeast, swamp drainage imparts a natural high color to the rivers. This color is chemically similar to that of pulpmill effluents, both being derived from the extraction of lignins and tannins from wood. In these regions there is little or no objection to increased color of streams which are already naturally colored.

However, in the cases of mills discharging to headwaters of otherwise lightly colored streams, particularly those serving as public water supply sources, the discharge of colored wastes may be objectionable. Insofar as fish life is concerned, all available information indicates that the effects of these materials are negligible.

Attempts have been made to adapt biological treatment processes to the oxidation of color bodies but these have not met with success. The matter of decolorization of colored pulping wastes appears to need continuing research, since at the present time no practicable methods have been demonstrated.

Turbidity, due largely to inorganic materials, can cause unsightly opalescence in receiving waters. Extensive research on clarifying such dispersions is conducted at the Western Michigan Center. Removal of such turbidity from some wastes is readily accomplished, but from others, results of treatment is erratic and the coagulants required costly.

As previously stated, techniques have been developed and are now available to treat most industry wastes. Future research activities by the paper industry will be devoted to developing more sophisticated treatment methods. Increasing research attention is being given to the treatment techniques devised for the purpose of reclaiming waste water, so that it may be utilized in an ascending scale of uses, both in the mill and more generally as for municipal purposes.

Research is also being increased on development work, through which methods developed in the laboratory are made available for actual mill use.

I would like to continue from another statement that isn't printed.

Mr. DADDARIO. Please proceed.

Mr. KNOWLTON. For the record, I think it is pertinent to state that the national council alone budgets in excess of \$250,000 per year for research in the above-mentioned field. Beyond that we are making available further funds for extension of these projects as opportunities permit.

As a matter of further interest, we are currently negotiating with the Water Pollution Control Administration a joint project on the subject of decolorization. I believe that this joint approach may well be the most satisfactory way of attacking many of our most difficult problems.

Two weeks ago a formal statement of the position of the American Paper Institute was presented by Mr. William R. Adams, chairman of the institute and president of St. Regis Paper Co., accompanied by Dr. Malcolm Taylor of Union Camp Corp., and Mr. Charles Hickey of West Virginia Pulp & Paper Co. The statement was presented to the House Committee on Public Works. This statement gave strong endorsement to the proposals and provisions of H.R. 16076 for grants and contracts for research development and administration of ad-