TO: John Kauffman; [illegible] ald; Paul Hoelderle; Art Dean
Ed Grossenbac[illegible]

MILL EFFLUENT SYSTEM RECOMMENDATIONS

After an extensive survey and discussions with other individuals, the following report is being made in conjunction with the waste water project being conducted.

An extensive sewer survey has led to the following recommendations for increasing the efficiency of our present treatment system by diverting the fresh water in the system to the river, and to clean up the effluent to the river by putting all contaminated waters into the treatment plant.

The recommendations are as follows:

NO. 2 MACHINE AREA

1. The sweco screen and starch tank area below No. 2 Size Press should be channeled into a sumping station which would pump into the former storm sewer line between No. 2 and No. 3 Machines through one of the existing roof drain lines. The drains from the Size Press directly overhead should also be piped into this sumping station.
2. A second sumping station should be installed under the wet end to take care of the drains from the vacuum pumps, sewer line from the seal box, press pit drain, and floor drains around the wire section. This too would be pumped to the former storm sewer.

Sumping stations are being recommended, through discussion with Ed MacDonald, as being the least expensive means of diverting this flow.

3. The roof drains presently dumping into the former storm sewer should be piped into a manifold arrangement which would dump into No. 2 sewer which will be a fresh water sewer dumping directly into the river.

4. A baffle, tray, or funnel arrangement should be incorporated on the front and backside of the wire to minimize the loss of white water that should go into the couch pit.

5. The tray on the backside of No. 2 needs to be sealed on the one corner to minimize the loss of white water to the sewer. This is a source of considerable loss.

NO. 3 MACHINE AND NO. 4 MACHINE AREA

1. A sumping station should be installed on No. 3 and No. 4 for the sweco screen and starch tank area with the size press sewers also dumping into the sump pit. Both of these sumping stations could be piped to a common line which would be dumped into a contaminated sewer.

2. It is recommended also to remove the dam that was recently placed in the sewer under No. 4 Machine and a new one placed just around the corner in the sewer to the Waste Treatment Plant. This allows the sewer on the backside of No. 4 to go to the river.

3. The sewers between No. 3 and No.4 in the basement might require widening or deepening. The capacity has been inadequate on several occasions.

3. The large condensate water line from No. 4 should definitely be piped into No. 4 fresh water sewer.
4. Assuming that all the fresh water is removed from the Chemical Department sewer, a sumping station for the Chemical Department should be installed that is capable of pumping 140 gal./min. or 215,000 gal./day. This should be enough to take care of any normal clean-ups. A normal engineering safety factor should be added to this figure.

OTHER MISCELLANEOUS INFORMATION

1. Kent Smith was here September 30th from Dow Chemical. Better retention aids were discussed, but Separan PG-2 still appears as their favorite. Also, the idea of putting retention aid in at the savealls was discussed. It was his opinion that about .3#/ton added at the save-all as well as at the head box would be the most desireable. A trial is in the making.
2. Bob Smith, also from Dow, was also here September 30th. Flocculating aids for use in the primary treatment tank were discussed. He has material to clarify mill effluents. He plans to be back in about a month when the sewer reorganization is completed. In the meantime, he will send samples and a letter with directions, a manual on his materials and comments on our problem.
He was interested in the fact that we have done no river surveying. He said it would be in our best interest to survey the river, both up and downstream, and also recommended a river profile check, up and downstream. His reasoning was that the state bases its conclusions on only two or three tests in most cases and would serve

as good data in the event that a rebuttal would be to our benefit.

3. More information about and pictures of the surface aerator at Fitchburg have been received. This is well worth investigating further.

4. Bob Thurston was here Saturday and Sunday, October 2 and 3, from Impco Company. He made a thorough check of No. 3 Save-all mechanically. He removed each leaf and inspected it. He found eight broken face wires on segments and replaced them. Bolts had been jammed into two inserts and these inserts had to be replaced. He checked the valve clearance and found the core has under cut the valve face by .020" to .025". A new formica segment is needed and was reported already ordered. He expressed a concern that our present wire mesh (60 x 42) may have a mesh that is too large. He will notify us as to his findings.

5. The Save-all and white water system have been studied and the flow arrangement which is desired appears to be functioning properly.

Art Dean

Ed Grossenbacher

AD/EG:rc

Plant Treatment Data

	Total Primary B.O.D		Total Primary B.O.D	% B.O.D Removed
Yearly Average 1925 To Dec 1925	3500#/day	Yearly Average 1925 Total Primary Tank	2700#/day	22.9%
Monthly Ave - Dec 1925 Operating Days Only	4500#/day	Monthly Ave - Dec 1925 Operating Days Only	2850#/day	37.8%
Monthly Ave - Dec 1925 Complete Month	3300#/day	Monthly Ave - Dec 1925 Complete Month	2150#/day	34.9%

Average Flow To Primary Dec 3 to 24 only — 1.15 million gallons per day

Dec 3 to 24 Average Flow to Sewers Gallons/day		Dec 3 to 24 Average B.O.D to Sewers Per day
No 1	195,000	678#
No 2	434,000	531.0#
No 3	665,000	404.0#

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