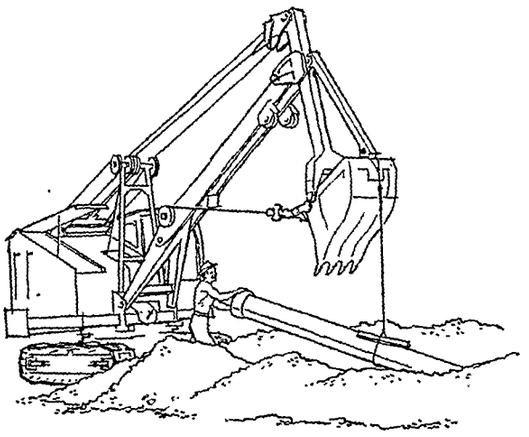
PLAINTIFF'S EXHIBIT
JMMC-241



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CLOW CAST IRON PIPE

Substitute pipe all too often pyramids water system costs far beyond the first...and final ...cost of cast iron pipe. Too late, the real cost of water pipe of substitute materials shows up in service interruptions, wasteful water leakages, torn up streets, costly repairs and doubtful longevity.

At such times a community rarely considers replacing with anything but cast iron pipe. Actually cast iron pipe is the only true low-cost pipe. It is the only pipe that is time-tested and proved to give generations of dependable service.

Don't buy trouble on the installment plan. Specify CLOW cast iron pipe...the pipe that will be on the job a hundred years from now. Let CLOW prove to you that cast iron pipe is the best value for your job. Write or call today.

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NOTES

STABILITY

with PFT controlled activated sludge

When the Springfield, Illinois Waste Treatment Plant faced the problem of frequent, peak overloads it seemed like the only answer was expensive additions to the existing plant . . . *but it wasn't.*

The answer to Springfield's problem was PFT! Operation under the PFT Controlled Activated Sludge Process incorporating the Kraus Nitrified Sludge Interchange Process and the Kraus Dual Aeration Process provides complete control and stabilization of the activated sludge giving effective treatment at all times.

Prior to 1956 flows had increased to the extent that maintenance of a settleable activated sludge was impossible with all five aeration tanks in service.

Since the conversion to the PFT Controlled Activated Sludge Process in 1958 the sludge index has averaged 50. Even with the increased flow, only four aeration tanks are now required. The results shown in the table are proof-positive of the stability of the PFT Controlled Activated Sludge Process.

YEARLY AVERAGES

	1956		1957		1960	
FLOWS						
Total Raw (mgd)	13.4		13.7		14.8	
Primary Treatment (mgd)	13.4		13.7		14.8	
Complete Treatment (mgd)	9.5		9.5		14.8	
AERATION TANKS @ 77,000 cu. ft. each						
Available	5		5		6	
In Use	5		5		4	
Used for Aeration	5		5		3	
Used for Nitrification	—		—		1	
DETENTIONS @ VOLUMES USED						
Aeration only (hrs)	7.30		7.30		2.81	
Aeration & Nitrification (hrs)	—		—		3.75	
RAW SEWAGE ANALYSIS						
BOD (ppm)	118		102		100	
Suspended Solids .. ss (ppm)	146		131		156	
REMOVALS	**BOD**	**SS**	**BOD**	**SS**	**BOD**	**SS**
Primary (%)	20	37	22	43	21	38
Part to complete treatment (%)	90	88	92	91	91	89
Total Raw (%)	60	59	57	68	91	89
Discharged to stream (ppm)	47	60	44	42	9	17
AIR						
Lower Air @ 8.0 psi (mcfd)	7.56		6.54		5.54	
Upper Air @ 4.0 psi (mcfd)	—		—		7.71	
Total (hp equivalent @ 8.0 psi)	7.56		6.54		9.39	
Provided by Gas Engines (%)	69		72		79	
SLUDGE VOLUME INDEX						
Average	73		71		50	
Maximum Month	141		145		60	
Maximum Day	228		255		65	

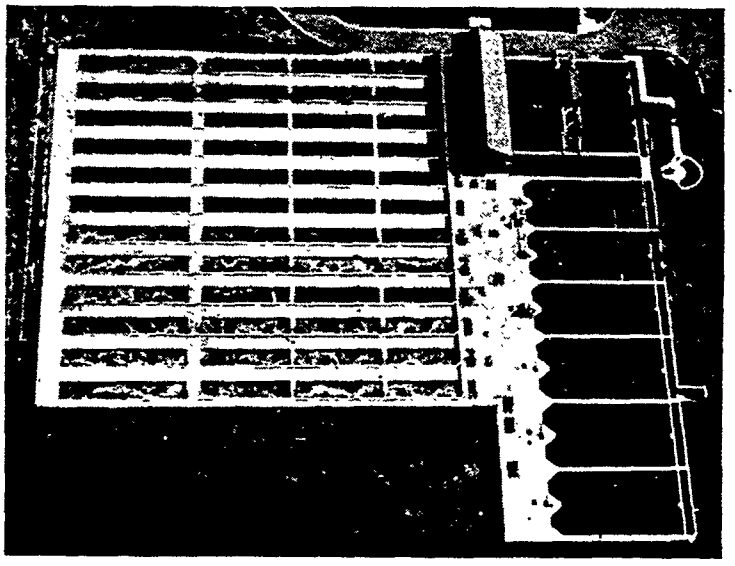

Photo shows Springfield's aeration tanks. The plant was designed by the Consulting Engineering firm of Jenkins, Merchant and Nankivil, Springfield.

P.F.T.

waste treatment equipment exclusively since 1893

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