

CASE HISTORY  
EASTMAN CHEMICAL COMPANY  
KINGSPORT, TENNESSEE

DATE OF SERVICE: April 26, 2007

WATER ENVIRONMENTAL CONSULTANTS received an emergency telephone call from the wastewater treatment supervisor, Mr. Bethany Thompson-P.E., on Tuesday, April 24, 2007 requesting a visit within 72 hours. Problems with SVI, clarification, cost of polymer being used, polymer floating on top of clarifiers and poor liquid/solids separation were all poor performance in the secondary clarification processes. Eastman Chemical had already directly contact Dr. Michael Richards, microbiologist, and shipped a sample from the aeration basins for detail examination.

Upon arrival on Thursday, April 26, 2007, a tour of the clarification process was conducted by Donald L. Seagle. Immediately the identification of overdosing of polymer was evident, poor mixing of the water polymer was observed and a series of jar testing performed. Immediate and expert advice, knowledge and 30 years experience in this type of upset was used to identify and correct all problems within 30 hours from time of arrival.

Jar testing in Eastman Chemical laboratories were started using their current polymer. It was obvious that an overdose of cationic emulsion polymer was a standard practice and poor physical mixing of the polymer was allowing straight emulsion polymer to exit the make down system into the clarifiers (4).

Recommendations provided and placed into action:

- 1) Increase mixing time of the water/polymer by 50%.
- 2) Reduced dosage 2 ppm every 12 hours until dosage reached 4 ppm. Down from 16 ppm
- 3) Reduce cost of polymer from \$3,000 per day down to less than \$500 per day
- 4) Reviewed Dr. Richards microbiology report which showed a filamentous outbreak. Since increase wasting was not an option, recommended increasing salt level in basins from 0.15 to 0.30% .
- 5) Target SVI's to <50, had been >200 seconds.
- 6) Initiated an internal lab test method to test polymer solution strength daily which would identify the solution strength of critical polymer solution.

You may call Mrs. Bethany Thompson, P.E., at 423/229-8774 or e:mail [bethanyt@eastman.com](mailto:bethanyt@eastman.com)

A copy of her e:mail to WATER ENVIRONMENTAL CONSULTANTS has been forward to your attention. WATER ENVIRONMENTAL CONSULTANTS get the job done using 30+ years experience and knowledge.