

# TURBIDITY CONTROL BEFORE, DURING AND AFTER CONSTRUCTION

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# Flocculation Defined

- Anionic polymers react with clay particles in water by acting as flocculants, where they bridge positively charged sites on clay particles and form larger, heavier clumps called flocs. The resulting flocs are heavy enough to settle out of suspension



# Process

- Anionic polymers are long-chain molecules with negative charges. Clay particles have both negative (basal surfaces) and positive (edge surfaces) charges.
  - When the PAM is added to water containing clay, the polymers are attracted chemically to form the larger groups of particles that settle out.
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Mixing is the key to success





# Practice Standards and Specifications

## 6.86

- Definition and purpose of flocculants
  - Conditions where the practice applies
  - Planning considerations
  - Design criteria
  - Construction specifications
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# Before construction begins

- Consider having a PAM action and management plan
  - Look at passive and active treatment methods
  - Be aware of what is downstream from the site
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# During construction

- Follow the E & SC plan
  - Use various PAM methods to enhance the existing measures and keep turbidity levels at acceptable levels.
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# Open ditch leading to storm drain





# Rough graded street with storm drain inlet



Add floc logs to storm drain system for passive treatment in every rain event





# Drop the floc log into the manhole




A photograph of a blue metal frame, possibly a ladder or scaffolding, against a light-colored wall. A diagonal black overlay covers the left side of the image, and white text is superimposed on it.

# TIE OFF THE ROPE EXTENSION







A low-angle, silhouette-style photograph of a construction site at sunset. The sky is a vibrant orange and yellow, with the sun low on the horizon, creating a strong backlight effect. Several large tower cranes are visible, their long jibs extending across the upper half of the frame. In the foreground and middle ground, there are complex structures of scaffolding and rebar, with several workers silhouetted against the bright sky as they work on the framework. The overall mood is one of industriousness and the end of a day's work.

# LATE IN THE CONSTRUCTION PROCESS

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A woman with blonde hair in a ponytail, wearing a grey button-down shirt, is shouting into a black telephone receiver. She has a frustrated expression, with her mouth wide open and her right hand clenched into a fist. The background is a light grey gradient with dark blue triangular accents in the top-left and bottom-right corners.

# WHEN THE COMPLAINTS COME IN

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# Let's play in the pond











PROCESS







# Water sample from surface – 18 hours later





# Water from the skimmer











OKAY TO  
DEWATER?

# Different situation and application

Johnston Community  
College campus

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graph TD; A[Johnston Community College campus] --> B[New parking lot]; B --> C[Cement stabilization used]; C --> D[It rained and made the pond cloudy];
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New parking lot

Cement stabilization  
used

It rained and made  
the pond cloudy

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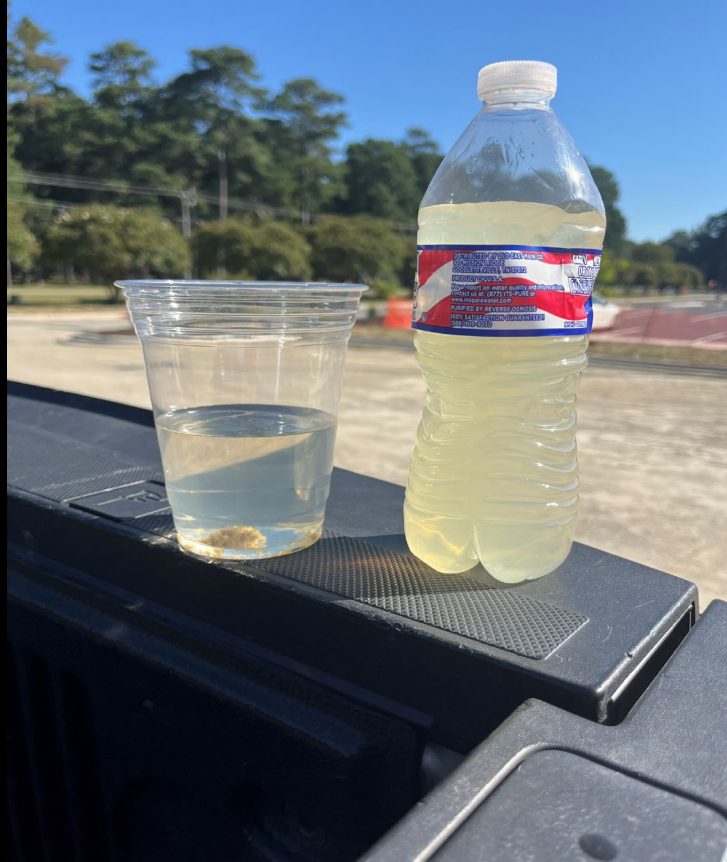




# Water test needed

- Took water sample
- Tested floc logs, floc rolls and granular
- Determined what the best solution would be

# The right combination



# Alternate agitation method

- Tied floc log to the fountain
- Treated the pond surface with selected PAM
- Turned on the fountain









# Summary

- Flocculants work very well when properly tested and applied
  - Flocculants are used to enhance E&SC measures
  - Can be applied Before, During and After Construction
  - Help provide peace when the complaints come in.
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- QUESTIONS?
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