

Industrial Case Study: New York Aggregate Recycling

BACKGROUND

An aggregate recycling company along the Harlem River in New York State had significant amounts of concrete dust getting into their stormwater and the resulting turbidity was noticeable enough that they were approached by the local sewer district and asked to address the problem.

93% Sediment Removal

95% Turbidity Reduction

CHALLENGE

The particle size of the dust in the stormwater runoff was too fine to use a filtration system without causing frequent clogging which would be expensive to maintain in the long-term. The company needed a simple, inexpensive treatment solution that wouldn't take up too much space on their site.

SOLUTION

Water samples collected from the site were tested with a variety of chemical flocculents at various mixing speeds to determine which combination would force the most sediment to clump together after which, it could easily be separated out producing visibly clearer water. The most effective option was found to remove 93% of sediment and reduce turbidity by 95%.



Before and after shots show the effectiveness of chemical flocculents in reducing turbidity

OUTCOME

The recommended product package not only demonstrated strong pollutant removal efficiencies as shown in the graph below, the capital investment was 30% less than using a filtration system

Parameter	Influent	Effluent	% Reduction
TSS (mg/L)	732	35	95.20%
Turbidity (NTUs)	584.6	35.33	95.20%
Copper (mg/L)	0.0814	0.0254	68.80%
Zinc (mg/L)	0.263	0.0396	84.90%
Aluminum (mg/L)	15.7	5.83	62.90%
Iron (mg/L)	21.5	1.43	93.30%