

# CASE FILE



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SITE CIVIL IMPROVEMENT ↔ EROSION CONTROL ↔ SURFACE WATER QUALITY

GeoPro® Learning Tool

October 27, 2006

## O'Hare South Basin - Large Scale Stormwater Clarification

### Chicago, IL

Massive earth moving operations create large areas of exposed soils ... often for extended periods. The *City of Chicago OMP's* upgrading at O'Hare International Airport proved to be no exception. And when this site combined the exposed soil runoff to that of established structures and pavements, a very large detention basin was required [O'Hare South Basin] ... filled with a lot of sediment-contaminated water - specifically, 75 million gallons.

Even with the South Basin's size and depth, the colloidal suspension prevented acceptable discharges into Crystal Creek under the regulatory statutes of the Kane-DuPage SWCD. With a fast-filling basin, fall rains approaching and winter shutdown in sight, *City of Chicago OMP* requested the assistance of *Ero-Tex*, the Illinois & Wisconsin distributor for *Applied Polymer Systems, Inc.* [APS], a manufacturer of environmentally safe, water quality improvement chemicals. The task set before *Ero-Tex* was straightforward - develop an economical system to obtain discharge-acceptable water being delivered to the receiving waters at 6000 gpm by a 12" pump ... and the system could not disrupt any other construction activities or flight operations on this rather congested site.

After reviewing site plans, available operation locations, and hydraulic requirements/conditions, *Ero-Tex's* system suggestion involved the use of the South Basin's discharge infrastructure for chemical introduction, appropriate mixing and floc [soil-polymer agglomeration] removal. The one concern in using this in-place infrastructure approach: no fail-safe system was available - the water had to be continuously clarified from pump start-up to system shutdown during the 3-4 week, 24/7 pumping schedule. Regardless, all parties agreed that *Ero-Tex's* plan was both logical and economical.



O'Hare South Basin - 75 million gallons in October 2008



Pump discharge into South Basins outlet structure

laboratory analyses of the South Basin water's chemistry. In effect, the site specific analyses pinpointed which *APS* polymer blend provided the best results and offered guidance relative to dosage rates, mix time requirements,



System set-up by *Kiewit-Reyes Joint Venture* [contractor] took only a day due to *APS's*

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and floc characteristics, critical information for efficient project system set-up and proper system performance. Armed with this site-specific information, *Kiewit-Reyes JV* personnel set the APS **706b Floc Logs®** and **Erosion Eels™** [water mixing ‘bumps’] into the twin 66" diameter x 1100+' long infrastructure pipes immediately down-gradient of the inlet structure. In addition, they installed organic nets down-gradient of the pipes to catch floc remaining suspended in the discharge flow<sup>1</sup>.

Simple in concept, fast to deploy and easy to maintain<sup>2</sup>, this *APS* based stormwater clarification system performed to expectations during the entire O'Hare South Basin dewatering process. And due to its performance success, other site waters were diverted to the South Basin so that similar discharge quality could be maintained and construction activities could be conducted sooner than originally planned.

For more information pertaining to the *APS* family of environmentally safe polymer blends, visit the web sites of any of the following companies:

*Applied Polymer Systems, Inc.*

*Ero-Tex*

*Price and Company, Inc.*

- <sup>1</sup> Floc type and subsequent removal processes are site specific factors based on contaminant-water-polymer chemistries. Without proper analyses, water clarification systems using polymers will not likely perform as desired.
- <sup>2</sup> The use of polymer blends to create floc formation is a sediment control BMP. As with all such BMP's maintenance is required. In the case of systems similar to that of the O'Hare South Basin, maintenance might involve polymer replenishment, mixing bump adjustments, organic net replacement, floc removal, etc.

*Floc Log* is a trademark of Applied Polymer Systems, Inc.

*Erosion Eel* is a trademark of Friendly Environment

Ero-Tex & Price and Company, Inc. work in unison to provide safe, performance-oriented solutions when deploying APS technologies.



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