PRICE AND COMPANY, INC.

CASE FILES

Geopro® Learning Tool **February 3, 2005**

Oak Park Washtenaw Heights

Ann Arbor, MI; Summer 2004

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The *Washtenaw County Office of the Drain Commissioner* [WCDC] developed and utilized an innovative approach to processing recovered fluids during an otherwise routine storm sewer cleaning project within the **Oak Park Washtenaw Heights** residential development. The resulting improvements in reducing both the environmental impact and total project cost were substantial, initiating effort by the *WCDC* to overhaul its approach to many, if not all, future storm sewer cleaning operations.

The project involved cleaning and inspecting 33,000 lf of pipes varying in diameter from 12" to 42". In addition, 118 manholes and 145 catch basins were pressure washed and vacuumed. All work was completed using a conventional vac truck equipped with an 1800 gallon waste tank, pressure washing hose and rod-jet system.

While the project scope and equipment used remained conventional, the method of processing recovered fluids was anything but conventional. The *WCDC* set up a small wastewater treatment facility on County property less than a block from the development. This proximity enabled optimization of the vac truck and crew as transportation time was minimized. Further, the facility received the vac truck decant, processed the fluid and discharged clarified water directly into the adjacent storm sewer. As a result, fluid disposal costs were eliminated, only 'clean' water was released to the environment and a substantially reduced quantity of solids required landfill disposal.

The wastewater treatment facility consisted of four parts. First, a tank received vac truck discharges. Next, decant from this tank was pumped into a storage tank. Then, the stored fluid discharged from a bottom port into an active polymer clarification system where the suspended solids were transformed into heavy floc and chelates. Finally, clarified water, floc and chelates flowed into a settling tank and filter system, removing floc and chelates and developing suitably clarified water for discharge to a nearby storm drain.

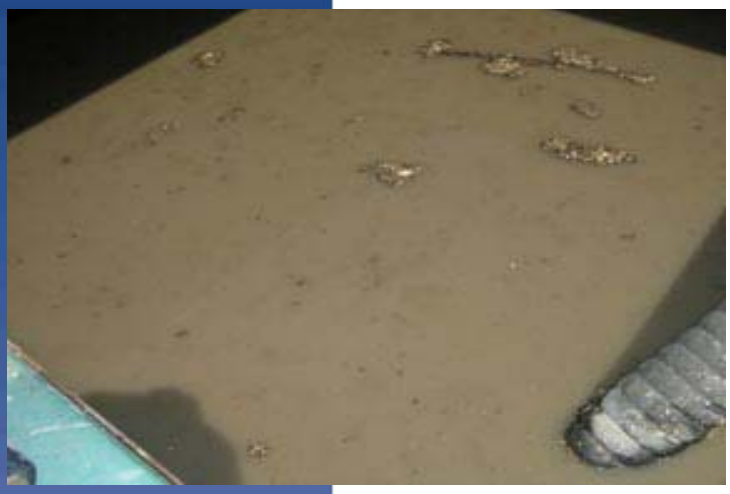
Active polymer clarification systems have been described in ***KeyNotes*** "Active Water Clarification Systems" and "Floc Log Placement [2]", found on the *Price and Company, Inc.* website, under the 'Resources' tab. The **Oak Park Washtenaw Heights** projects used a duplex system consisting of the *Applied Polymer Systems, Inc*. [APS] ***703d*** and ***706b Floc Logs***®.

The entire project was completed by an independent contractor via a bid that recognized use of the clarification system but offered a unit price for fluid disposal. The *WCDC* received the following charges from the contractor:

Pipe Cleaning	$34,206.55
Structure Cleaning	6,710.00
Root Cutting	14,500.00
Video Inspection	20,096.40
Solids Disposal	11,470.00
Total	**$86,982.95**

Using only 'real' savings, the *WCDC* saved $65,337.00 [$75,600.00 - $10,263.00] on a conventional method, total project expenditure of $162,582.95 [$86,982.95 + $75,600.00] – **conservatively, a savings of 40%.**

Chemical analyses were not performed on the fluids delivered by the vac truck during the cleaning process. Only one standard analyses set [surfactants & e.coli] was performed on the clarified water entering the storm drain; this set indicated the discharge met local requirements. In addition, routine monitoring of the discharge water clarity provided a good indication of the system performance.



Discharge From Vac Truck

Discharge from the Settling and Filtration Tank

In addition, the *WCDC* realized the following costs associated with the active polymer clarification system:

Parts	$538.00
Floc Logs	885.00
Tank Rental	8,840.00
Total	**$10,263.00**

Therefore, the total project cost, including both the contracted and direct costs, was $97,246.80.

Savings, both real and estimated, realized from the use of the clarification system included:

Fluid Disposal Fees[1]	$75,600.00
Reduced Transportation[2]	7,500.00
Lost Opportunity[3]	?
Total Savings	**$83,100.00**

[1] 180,000 gallons recovered fluid x $0.42/gal - real
[2] 100 trips x 0.5 hrs [15 miles one way] x $150/hr - estimated
[3] Early completion – several weeks

At project conclusion, Andy Castle of the *WCDC*, who devised the plan to use the waste water treatment facility approach and designed the polymer clarification system stated, *"We wanted to accomplish two things; reduce the disposal costs and preserve the water quality of any water being discharged, which is a high priority of Drain Commissioner Janis Bobrin; the method used addressed both concerns"*.

For more information pertaining to the use of APS Floc Logs to clarify storm and process water, contact your *Price and Company, Inc. Regional Representative.*

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