



**PROBLEM:** Raw, fecal-laden screenings end up at local transfer station

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**SOLUTION:** Screenings Washer Monster

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**CONSULTANT:** Peterson & Matz

### Monster Solutions

## City Puts An End to Fecal-Laden Wastewater Screenings

**Addison, IL** – On any given day at the Village of Addison’s South Wastewater Plant operators have no idea what’s coming down the influent pipe. With a combined storm and sanitary sewer system, the 20” (508mm) inlet pipe can go from a trickle to raging water full with just a few hours of rain.

“We always get bigger than usual equipment installed here because we have to be ready for the bigger flows. (The plant) can go from 1.5 to 20 MGD (237 to 3154 m<sup>3</sup>/h) in a heartbeat,” said Doug Armstrong, the plant’s Chief Operator. “I always tell manufacturers that I need something that’s little, but big.”

The city, located in the suburbs of Chicago, plans carefully so it can maintain high environmental standards at its two wastewater plants. When it appeared strict landfill regulations were coming down the legislative pipeline, the city started investigating new technologies to clean up the tons of wastewater screenings they were sending to a local transfer station each year.

In early 2003 they decided to stay ahead of legislative requirements and install an innovative washer-compactor called the Screenings Washer Monster®, built by JWC

Environmental in Costa Mesa, CA. The positive results have astounded the South Plant’s staff and received rave reviews from the local garbage operators.

“I would say the SWM has exceeded my expectations,” said Armstrong. “I cannot believe how well it washes and removes fecal material, and the reduction of the waste stream is amazing. Cleaner, more compact screenings have an overall effect on the plant, reducing the time and work people must put into handling and cleaning up the wet, sloppy screenings material.”

Stationed next to the plant’s two inlet screens, the SWM model 4018 accepts screenings pulled from the wastewater channel and puts them

through a six-stage process (wash, grind, wash, screen, compact, dewater) before discharging them. When screenings first fall into the SWM’s hopper they are flushed into a central Macho Monster grinder which breaks up clumps, exposes surface area for efficient washing and helps manage the flow of material. Next, spray jets wash solids clean and flush fecal material through a screen and back into the plant, while an Auger compresses the inorganic solid material. Finally, the screenings are further compressed and dewatered as the material moves up and out of a long discharge chute.



*Screenings from the channel fall into the SWM for washing, compacting and dewatering.*

“The SWM is preceded by two inlet screens with 15mm openings, now I wish I had finer screens on there, capturing everything



for the SWM to handle,” said Armstrong, referring to the trend towards fine screens with 3 or 6mm openings. “The discharge is clean, compact and virtually odor free.”

The local refuse contractor is also thrilled with the cleaner screenings results, according to Armstrong. Raw wastewater screenings from several nearby communities are hauled to a local transfer station where “fecal material is just sitting around on the tipping floor,” said Armstrong. “With the visual fecal material absent (from Addison’s screenings) he just loves it.”

The grinding and washing action of the SWM gets screenings cleaner, and also compacts and reduces the cubic volume of material. After 13 months of operation, Armstrong estimates the SWM has helped cut the volume of material headed to the landfill by approximately 90%.

Before the SWM, the plant was hauling away 3 yd<sup>3</sup> (2.3 m<sup>3</sup>) of material each week and in wet weather that could rise to 6 yd<sup>3</sup> (4.6 m<sup>3</sup>) per day. Now with the SWM, the amount of material is “maybe 12 yd<sup>3</sup> (9 m<sup>3</sup>) of debris for the entire year,” said Armstrong. That’s an average discharge rate of just 1 yd<sup>3</sup> (.76 m<sup>3</sup>) per month.

JWC representatives helped with the start-up of the unit, but noticed something unusual at first. “The compaction was so great, it took over eight weeks for material to even fill the chute,” said Dean Wiebenga, a principle with Peterson & Matz, JWC’s local representative. “I’ve seen a great difference in the plant’s operation...Addison has reduced the volume hauled to the landfill greatly.”

Armstrong reports that the SWM is also built tough, true to JWC’s reputation for quality craftsmanship and reliability. One night an operator left the SWM turned off, letting screenings accumulate in the hopper and up into the dis-

charge chute for 16 hours. However, instead of a big mess the next morning, Armstrong said he simply flipped the SWM on, watched it chew all the material up in a matter of minutes and process it cleanly.

“We’ve always had a good relationship with JWC and Peterson & Matz, the local representative,” said Armstrong. “When I call, the engineers and staff are more than helpful.”

The Village of Addison is so pleased with the results they are considering a second SWM at their North Plant. “The Village is very cost payback conscious,” said Wiebenga. With the Screenings Washer Monster’s clean and compacted discharge it looks like everyone benefits and the Village did indeed get the return on investment they were looking for.

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*Clean, compacted screenings discharge is conveyed out the exit chute into a trash receptacle for easy disposal.*

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