



The Right Tools to Wipe out the Wipes Crisis

JWC Environmental



Agenda:

1. What's Up With Wipes?
2. Pathways to a Solution
3. JWC's Approach



Meet the Cast of Sewer Debris Characters





What are Muffins?



Who's
hungry?



Muffins

Cotton feminine products
The inspiration for the
Muffin Monster® sewage grinder



Polar Bears?



The Coca-Cola Bears these are not



Polar Bears



Scary
big rags
ball



Porcupines?





Porcupine

Rag balls with
hypodermic needles
sticking out



What's Up With Wipes?

Introduced in early 2000's
for cleaning and
bathroom use

Wipes Fill a Need

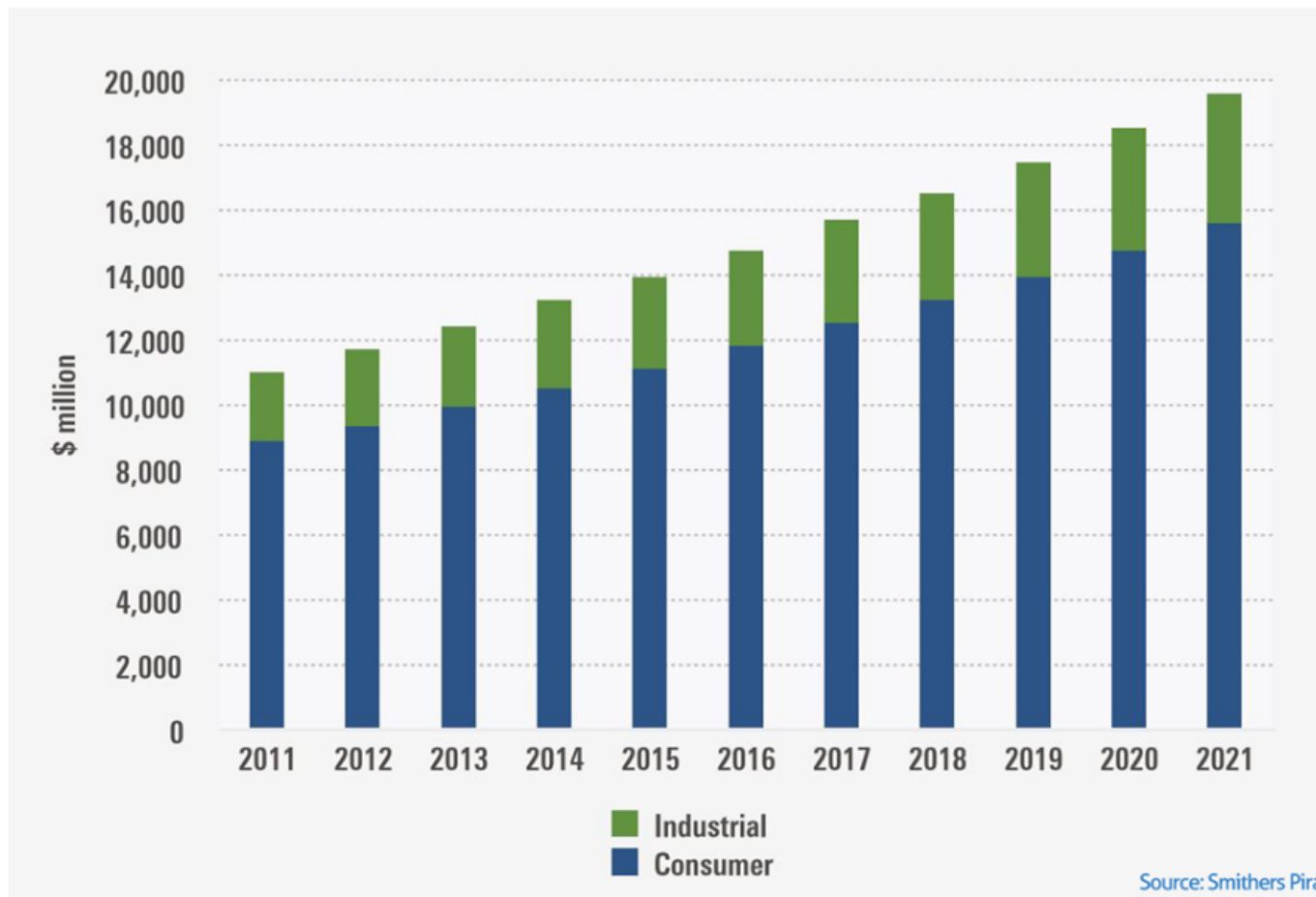
- Hygienic
- Convenient
- High Performance

***All at an attractive
Price Point***





Consumer & Industrial Wipes Sales 2011-2021 (\$ millions)



5.5% Annual Growth Rate

- \$14 Billion per year business in 2016



How Big is the Problem?

- Increased maintenance - \$20-30k/year/station
- Increased electrical costs - \$30k/year/station for Vancouver, WA
- Seattle spends \$500,000/year removing wipes from pump stations



Disposable vs. Flushable vs. Dispersible

- Early Wipes Technology – Spunlaced Nonwovens
 - Rayon, Polyester, Nylon with Cellulose
 - Described by some as “Indestructible pieces of plastic”

Disposable

Designed for single use

Flushable

Will not clog you toilet & plumbing?

or

Will not harm septic or municipal system?

Dispersible

Will breakdown in sewer.....

Like toilet paper?

Some time in the future?



What's Causing the Clog?

40% paper towels
20% baby wipes
15% cleaning wipes

14% feminine products
8% **“flushables”** wipes



Kimberly-Clark



The Wipes
Problems Are
Going Away!

, "Our products meet or exceed the widely accepted industry standards of flushability," and, "..., **Kimberly-Clark is not aware of any instance where a K-C flushable wipe has caused a clog in a municipal sewer.**"

A Kimberly-Clark representative tells 5 EYEWITNESS NEWS



50% of Baby Wipes
Purchased by Households With No Children



WILL YOU BE SEEING THESE SOON ??





How Will We Prevent This?





Lift Station Equipment Solutions for Wipes

Option 1

Pump Wipes to Headworks

Solids
Handling
Pump

Chopper
Pump

Grinder
with
Pump

Option 2

Remove
Wipes

Screens &
Augers



Solids Handling Pumps

How they work

- Screw-type impeller uses the leading edges to shear the solids (Flygt)
- Vortex-style impeller pushes the solids toward the discharge with little contact to impeller (KSB, ABS & Fairbanks)



Considerations

- Moves the problem to downstream equipment
 - Required to change out all pumps
- Rated to pass a spherical non-compressible 3" solid (a baseball)
- Inefficient hydraulically (vortex)
 - Requires more energy to move the same amount of water
- Potential for reweaving





Chopper Pumps

How they work

- Operate at High speed/Low cutting torque
- Blades and wear plates chop like a macerator

Considerations

- Pumps and Chops in a single unit
 - Not optimized for both
- Not able to handle tougher solids
 - Speed to pump reduces torque to cut
- Higher energy costs
 - Needs larger motor
- Typically used in lower flows
- Potential for reweaving of cut wipes





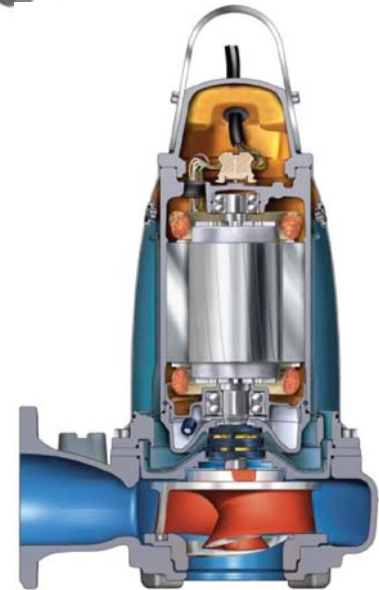
Pumps Are Trying to Change

Multiple Impeller options

- Vortex, Chopper, Screw-Type

But...

- Does it fit hydraulically?
- What else has to be upgraded?
- Is it efficient?
- What is "normal sewage"?





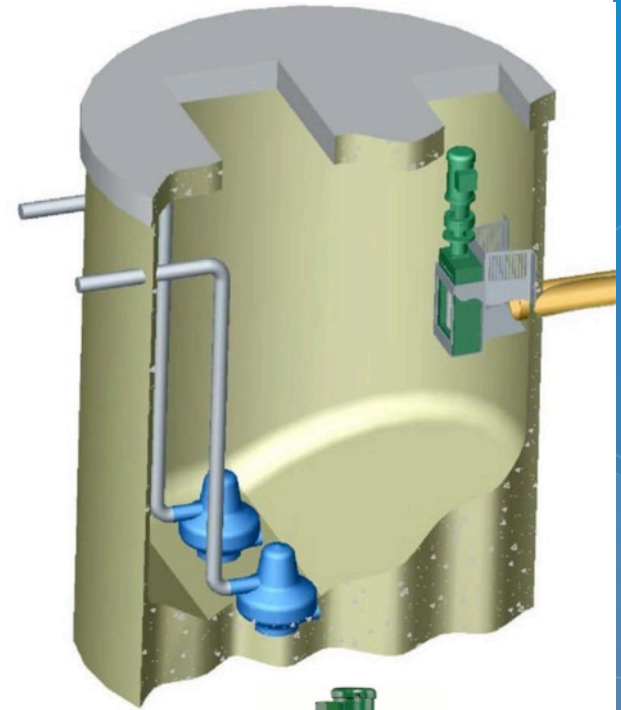
Grinder with Pump

How they work

- Two rotating cutter shafts operate at low speed with high torque to macerate solids
- Solids small enough to be pumped on to headworks

Considerations

- Can be utilized with existing pump systems
- Must have space for installation in wet well or install manhole system upstream
- Some two shafted grinder systems produce long strips which can reweave into ragballs





Reweaving

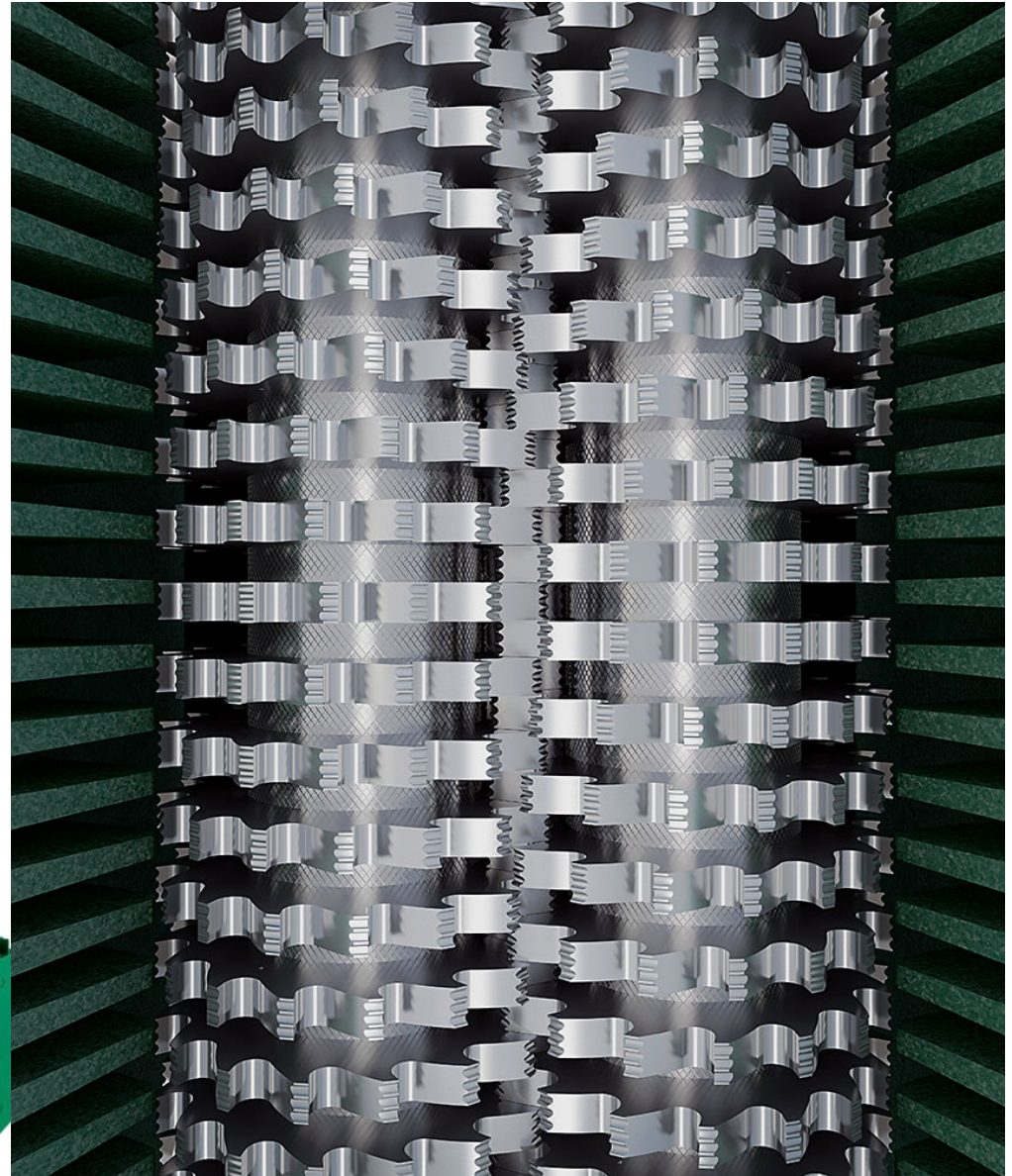
- Whole and cut wipes can “Reweave” in the collections systems
 - Form “mats” in wet wells
 - Form “ropes” in piping
- Problem is worse when combined with FOG and hair
- “Ragballs”, “mats” and “ropes” can not be pumped once they form





Wipes Ready® Technologies

Re-Engineering Sewage Grinders





17 Tooth Serrated Cutters

Wipes Ready® Technology



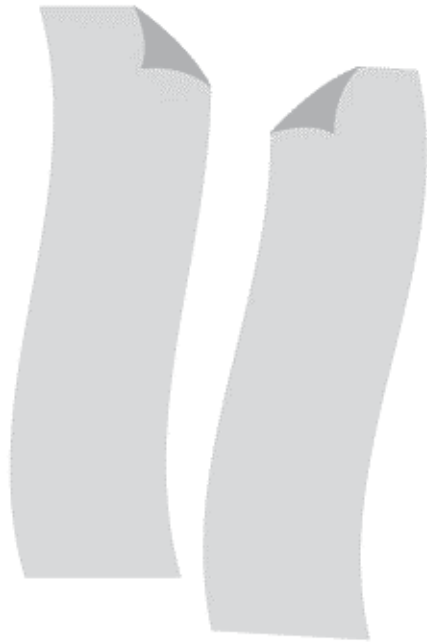
Typical Grinders



17 tooth Wipes Ready

- Cuts 2 directions
- Works against knurled spacer
- Shafts Operating at different speeds
- 51% Reduction in Long Strips





Long strips cut in 1
direction



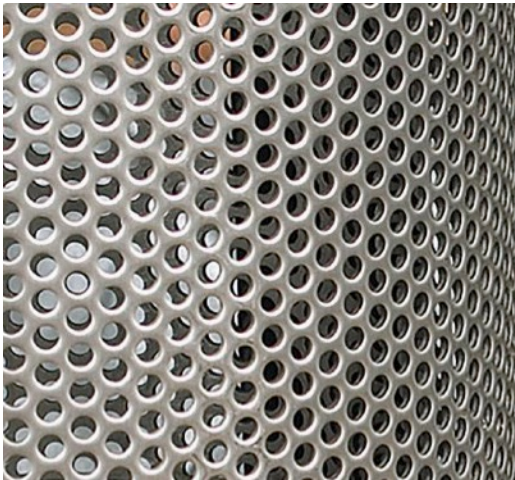
Cut in 2
directions w
cuts 2 ways

2 direction cutting = No Reweaving



CAPTURE: Perforated Drums

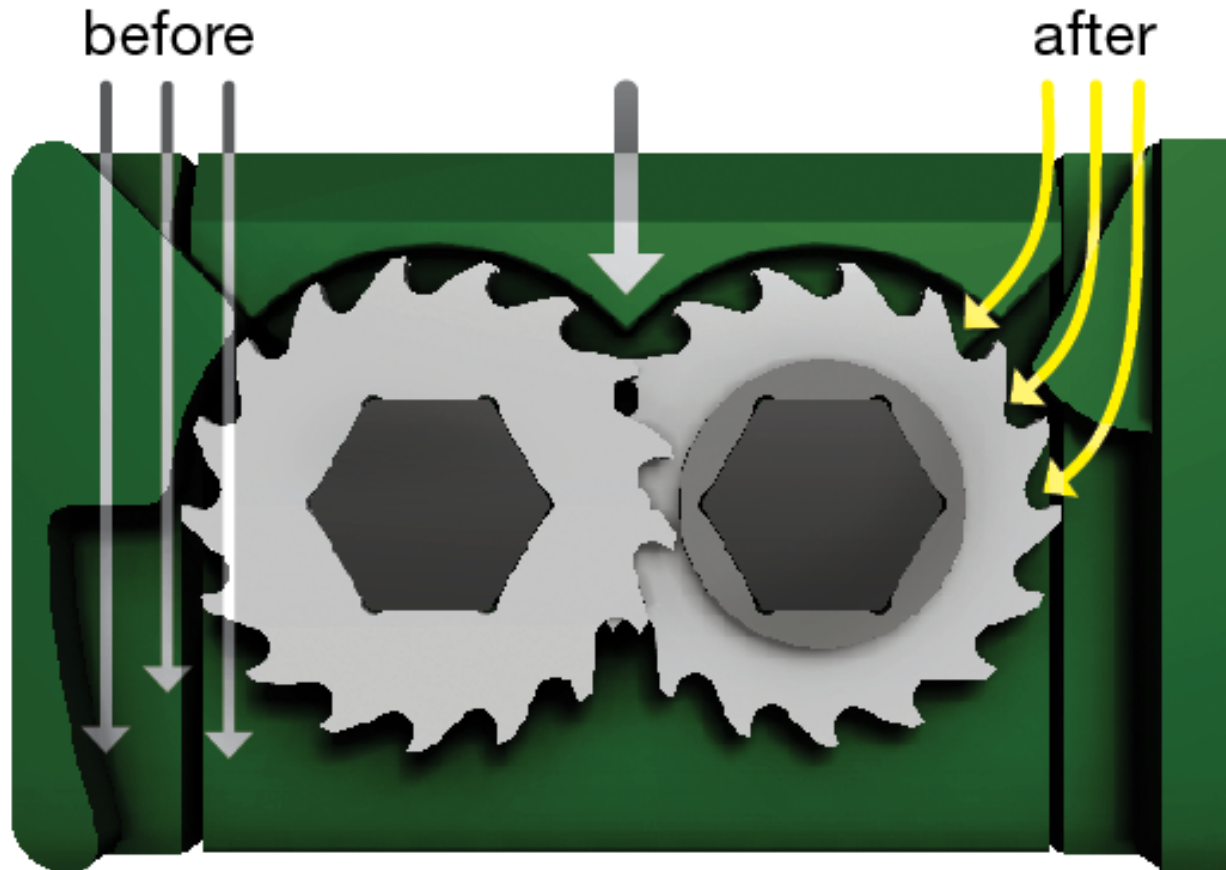
- ½" (12mm) perforated drum
- 59% better capture than coil drum



Patented



New: DELTA P Side Rails



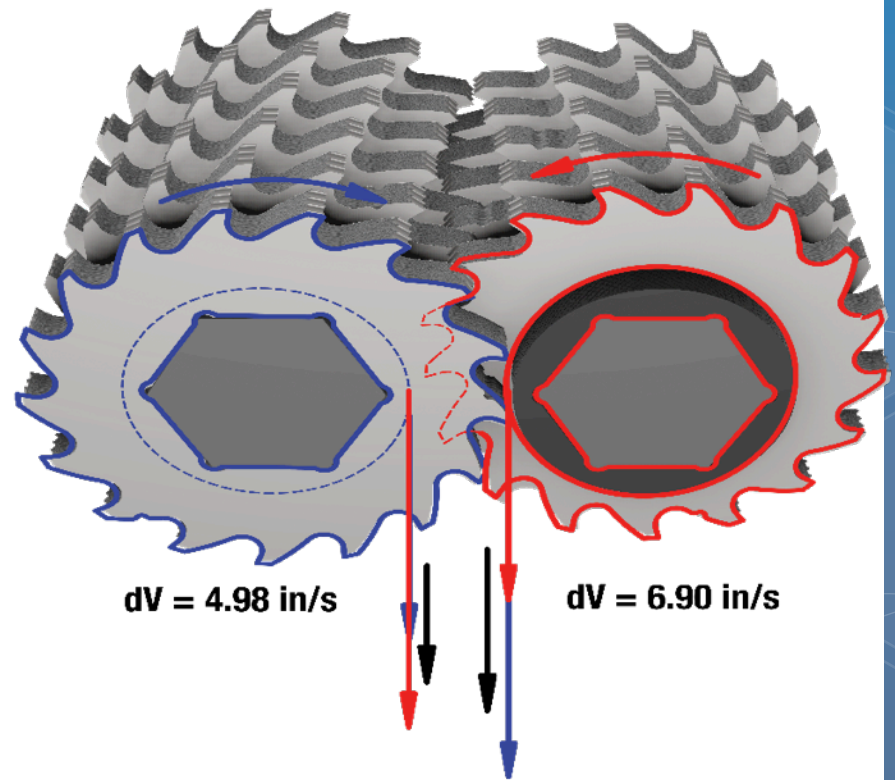
patent pending



New: Optimized Cut Control

New drive gearing optimizes shaft speeds

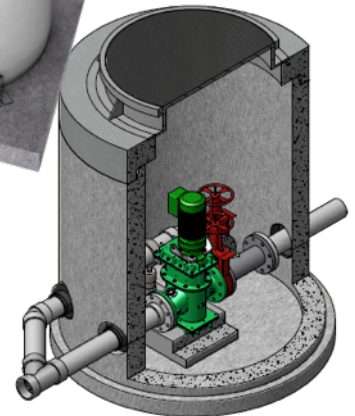
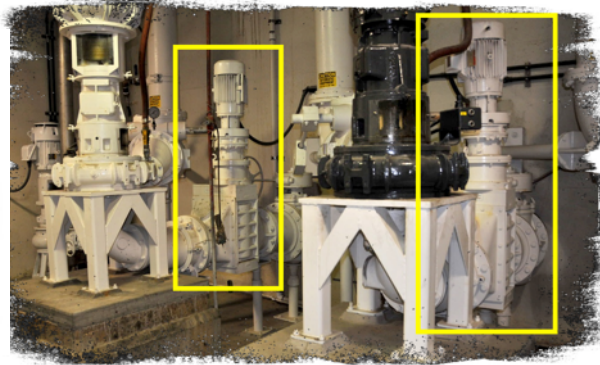
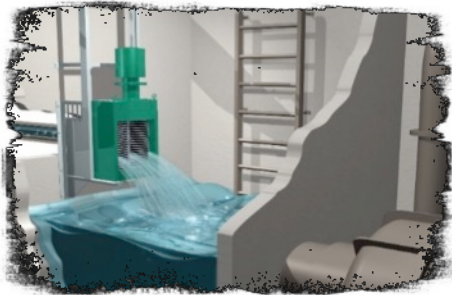
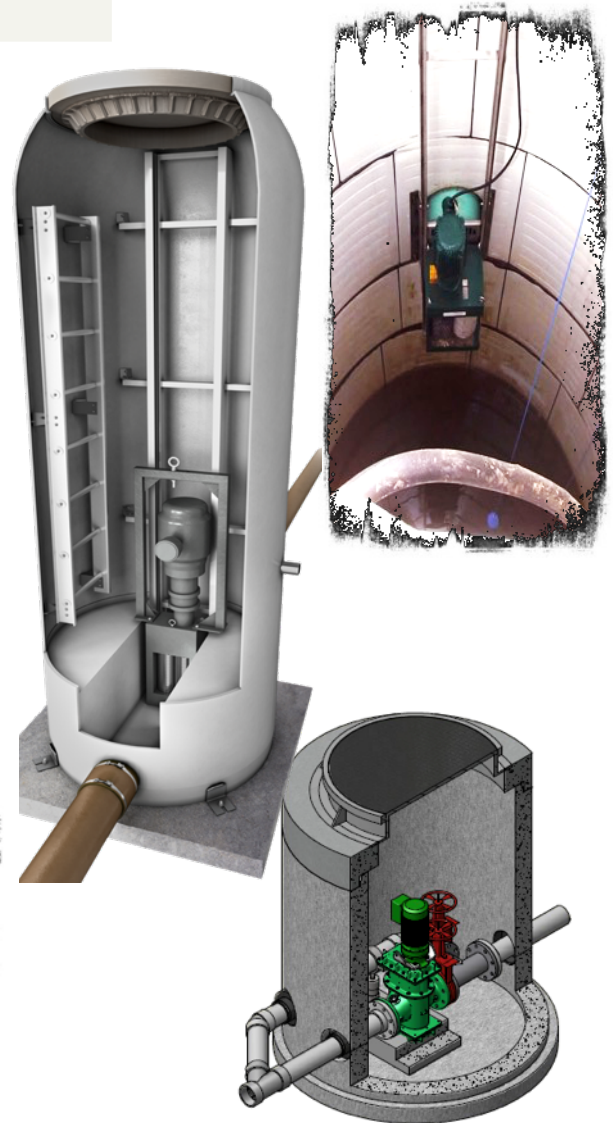
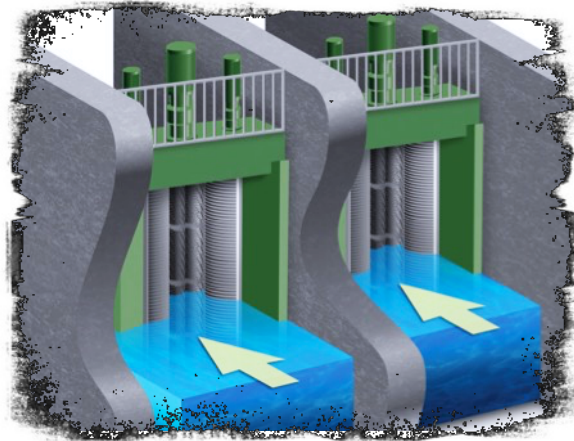
- Closer relative speed
- Better cutter clean-out
- Better cutting to small strips
- Reducers remain the same



patent pending



Grinders Can Fit Almost Anywhere





Lift Station Equipment Solutions for Wipes

Option 1

Pump Wipes to Headworks

Solids
Handling
Pump

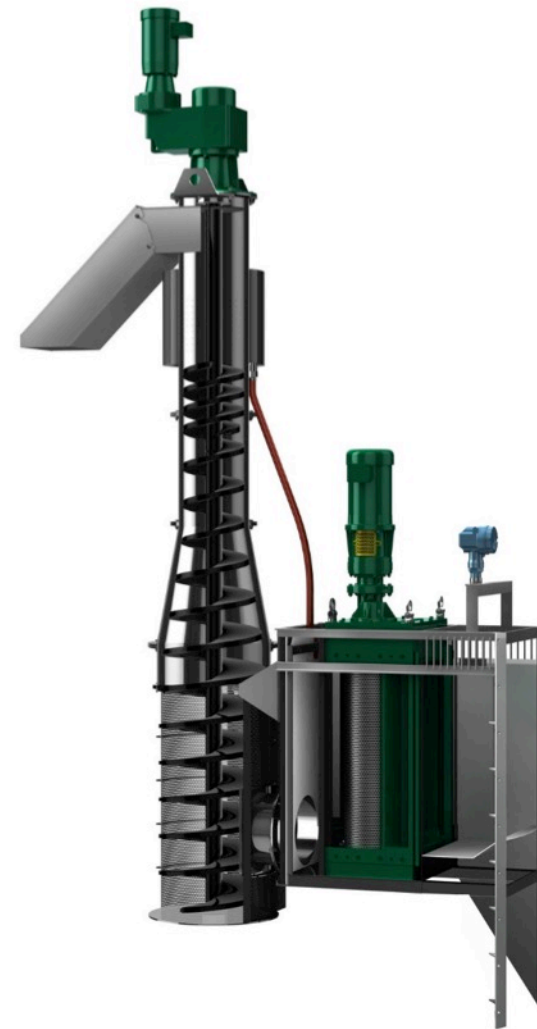
Chopper
Pump

Grinder
with
Pump

Option 2

Remove
Wipes

Screens &
Augers



Capture/Cut/Remove at Lift Station



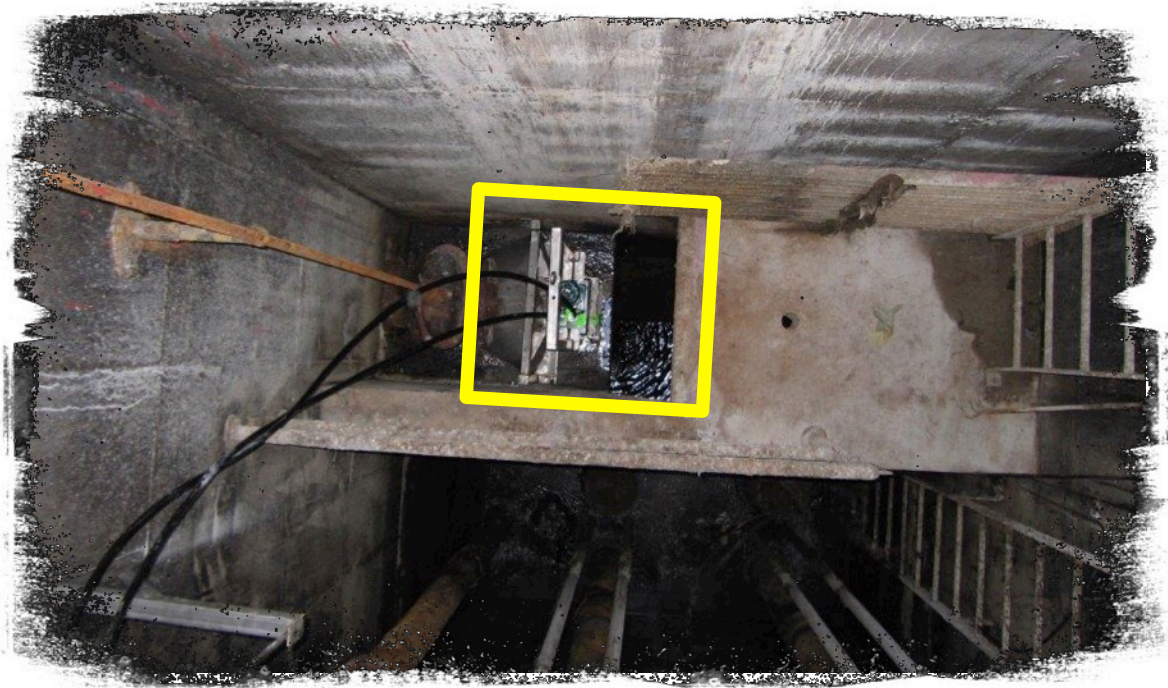
Remove



Better Sewer Technologies - Finescreens



Cut Pump Run Time & De-ragging



Case Study

*Virginia Beach,
Virginia*

*30K Series
Muffin Monster*

Immersible motor

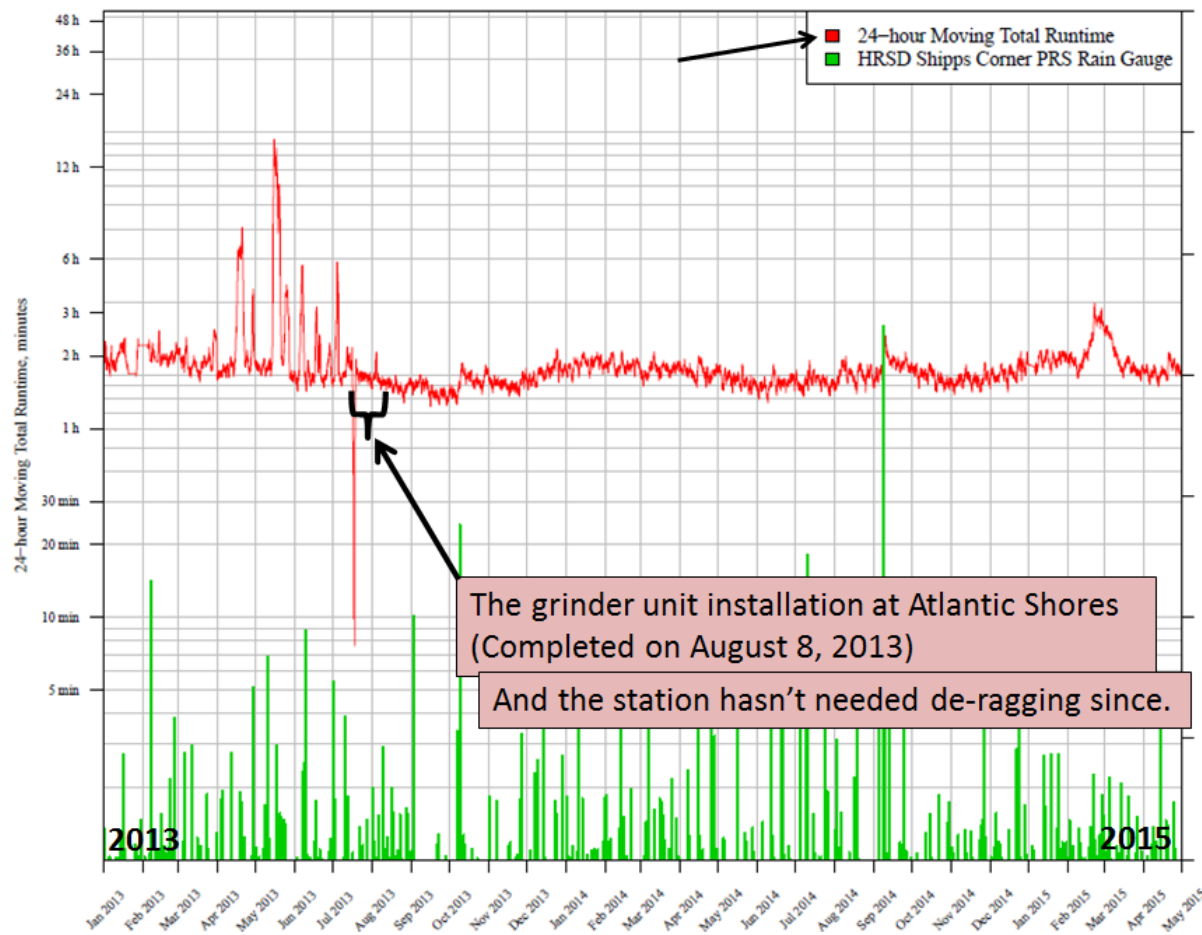
*Grinder can handle 700,000
GPD*

Grinder Reduced Total Pump
Run Time to 2 Hours/Day



Virginia Beach – Pump Run Time Before & After

Pump Station 628 Atlantic Shores (PUMP / SUBMERSIBLE)



Case Study

Virginia Beach,
Virginia

Station needed frequent
deragging

After Grinder Installation –
No Deragging

Significantly less pump run
time



In-Channel Grinder Success

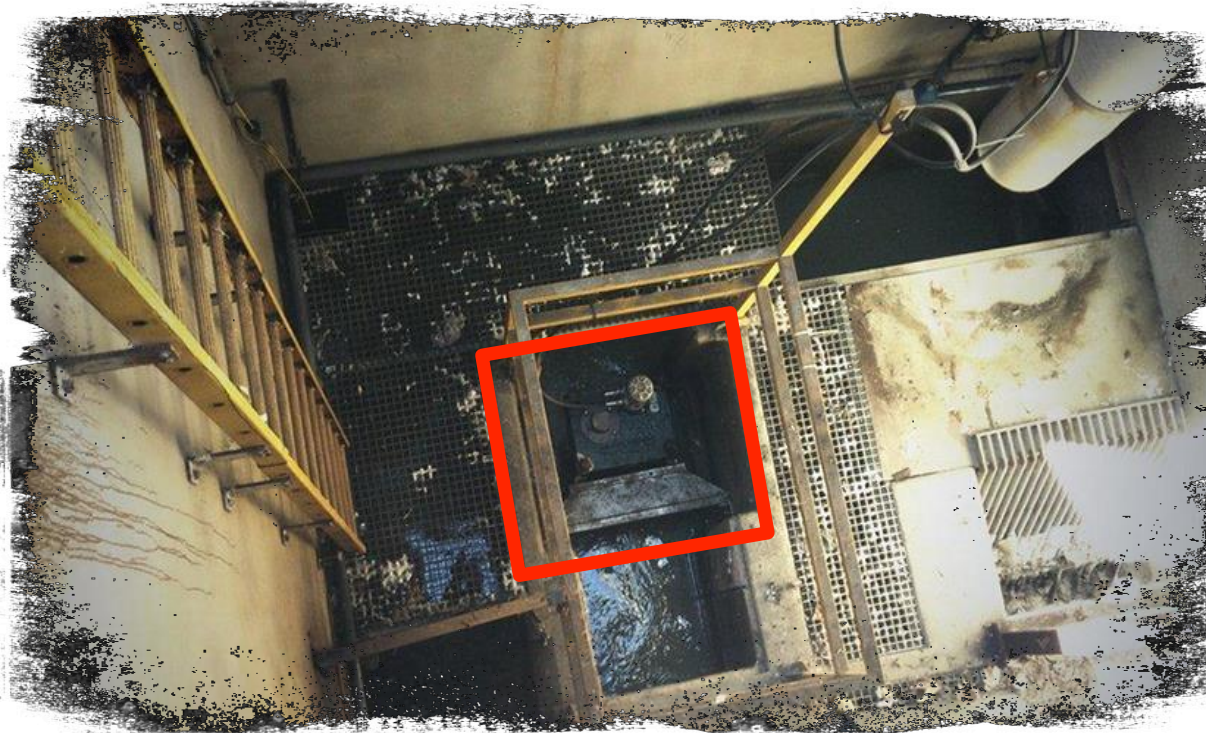
Case Study

*Santa Margarita WD
Orange County, California*

Channel Monster

"This upgrade cost significantly less than new pumps. Plus, this solution will completely eliminate the pump clogging problems we were having."

- Plant Superintendent



Sliced Annual Pumping Energy Costs by \$78k



Aftermarket Wipes Ready Options

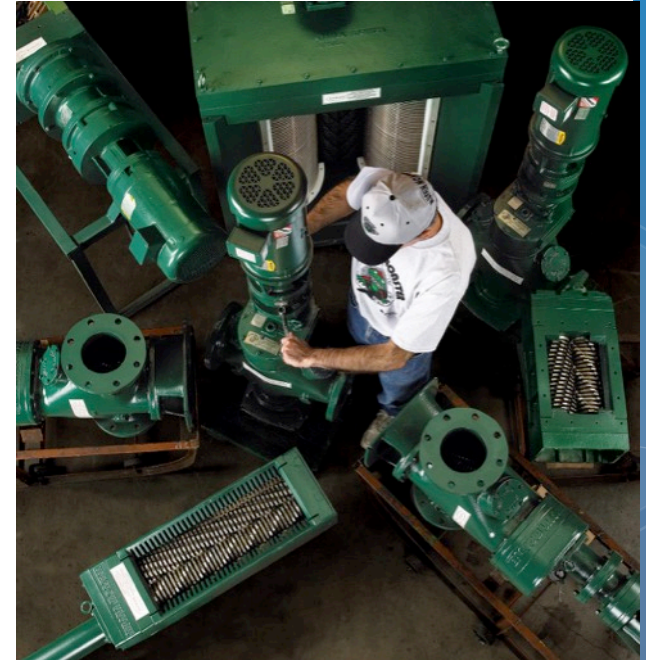
Easy Factory Upgrades for Currently Installed Units

- 30004T/30005
- 2.0 CMD/CDD up to 60"
- Contact Service Team for a quote
- Upgrades must get all features

Wipes Ready Not Available on:

- Muffin Monster 30001 or 30002
- Mini-Monster
- GTS, MS, AD Channel Monster

But – Upgrade Your Grinder to Latest Technologies



Ask your JWC rep for a custom quote to exchange old technology for new Wipes Ready

Time for an upgrade!



Stay Up To Date on Wipes Issues – go to

www.Nomorewipes.com

Sign up for Wipes Alert Quarterly Newsletter

WIPES READY?

Home Choose A Grinder Choose A Screen Why A Monster? Request a Quote Sign-up

Raleigh isn't Buying INDA's "Flushable" Claims

Posted on February 13, 2017 by muffinmonster

Wipes makers continue to block allegations...and pipes.

So What's Up With Wipes?

This blog chronicles the ever evolving story of wipes in sewer pipes. Baby wipes, cleaning wipes, flushable wipes and healthcare wipes - why all the wipes? Consumers love the convenience and health benefits of them, but flush the wrong wipe and they'll clog pumps and cause sewage back-ups. Yuck! That's where the Muffin Monster grinder comes in - it loves to grind up wipes so debris flows harmlessly through sewer pumps. Debris is then removed at the treatment plant by screens. Have an opinion on wipes? Send us feedback- we love hearing from you!

Search

Recent Posts

- Raleigh isn't Buying INDA's "Flushable" Claims
- Sewer Blockage causes 10,000-Gallon Sewage Spill in Newport Beach, CA
- Kimberly-Clark Expanded their Baby Wipes Business to New International Playing Grounds
- Smartphone Wipes in Japanese Bathrooms – Are they Flushable?
- The Future of Global Wipes to 2021

WIPES ALERT

A Bright Future For Global Wipes Market Through 2021

Extensive Market Research shows a steady growth across the board for the Non-Wovens Industry sales.

In mature geographic regions, new products and increased interest in sustainability will drive growth; while emerging market regions continue to discover the efficiencies offered to institutions by industrial wipes, and the convenience and time-saving offered to increasingly affluent consumers. >>> [Read More](#)

Wipes News

Lawyers Sorting Through Minnesota Sewage

The ECO Guide To Wet Wipes

ACC to take Kimberly-Clark Australia to Court

Kimberly-Clark Doubles Down on International Wipes Business



Don't be a Fatberg – Let's Solve this



Questions & Answers

