Seeing the big picture

Huber’s New Q-Press

Presented by:
Steve Macomber
Huber Technology, Inc.
RoS3Q
Next Generation - Inclined Screw Dewatering Press
Traditional Process Schematic

Coagulant

Service water

Dosing pump

Feed pump

Static mixer

Constant speed - RoS 3 Screw Press
RoS3Q Design – Pressurized inlet and feedback

- Auger drive
- Pressure monitoring
- Filter basket
- Auger
- Pressure cone
- Pneumatic cylinders
- Auger bearing
- Cake discharge
- Pressurized sludge feed
- Filtrate outlet
Q-PRESS unique features

- Wash cycle
- Dewatering mode
Ros3Q Design - The Wedgewire difference.

- 95 – 99% Capture Ratio
- Improved performance when compared to perforated plate.
Artificial plug formation, three basket sections, Auto start/Stop
RoS3Q Design – Automatic basket washing system

Close spraybar, 360 degree washing, no extra moving parts
Washwater System – A messy alternative
Q-PRESS unique features
Pressure monitoring, Process upset recovery
RoS3Q Design – Plugging recovery

Power Monitoring, process upset recovery
Q-PRESS unique features

"patented wiper"
Q-PRESS unique features
Q-PRESS unique features
Maintenance

- Grease bearing 500 hrs
- Weekly spraydown of the machine
FKC – Maintenance

- **FKC**
  - Lower clamshell is the sacrificial part
  - Periodic measuring of the gap is required
  - Shims to be removed to take up gap

- **Huber**
  - Basket is not a wear item
  - Brush to be replaced 3-4 years
### Design Benefits
- Compact unit
- Complete enclosure
- Passivated stainless steel

### Operational Benefits
- Full-automatic continuous operation
- Minimal operator attendance
- Fast start-up and shut-down
- Few wear parts
- Easy maintenance
- No need for hosing-down
- No noise or vibrations

### Cost Benefits
- Very low wash water consumption
- Low power consumption
- Little operator attendance
- Very low maintenance costs
competition – belt filter presses
RoS 3Q – advantages compared to belt filter presses

- better cake solids
- 60 – 70 % less energy consumption (if wash water booster pump inc.)
- 80 – 90 % less wash water consumption

<table>
<thead>
<tr>
<th></th>
<th>22 GPM</th>
<th>52 GPM</th>
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<tbody>
<tr>
<td>nomimal power</td>
<td>RoS 3Q 440</td>
<td>belt press</td>
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<tr>
<td></td>
<td>1.5 kW</td>
<td>1.1 + 3</td>
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<tr>
<td></td>
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<td>3.1 kW</td>
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<td>real power consumption</td>
<td>&lt; 1.0 kW</td>
<td>~ 0.8 + 2.5</td>
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<td>wash water consumption</td>
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<td>35.2 GPM</td>
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</table>

- unattended operation possible, even with slightly varying feed solids
- typical daily operator attention <= 30 min
- no leakage, odors or spray due to completely enclosed housing
  - reduced danger of corrosion
competition - centrifuges
RoS 3Q – advantages compared to centrifuges

- comparable cake solids
- 80 – 90 % less energy consumption

<table>
<thead>
<tr>
<th></th>
<th>22 GPM</th>
<th>52 GPM</th>
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<tr>
<td></td>
<td>RoS 3Q 440 centrifuge</td>
<td>RoS 3Q 800 centrifuge</td>
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<td>consumption</td>
<td>&lt; 2.0 kW</td>
<td>&lt; 9 + 3 kW</td>
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<td>~ 8 kW</td>
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- unattended operation possible, even with slightly varying feed solids
- less operator skills required, easy to adjust
- < 1 rpm compared to >> 3000 rpm causes less wear and less noise
  - noise level <= 70 dBA
RoS3Q Design

RoS3Q 280
RoS3Q Design

RoS3Q 440 (2 units with option for pressure or gravity feed)
RoS3Q Design
Not Every Sludge Is The Same!

- Primary Sludge - high portion of organic matters, as feces, vegetables, fruits, textiles, paper etc.
- Secondary Sludge – waste activated sludge that discharges from reactors or clarifiers.
- Digested Sludge - Anaerobic vs. Aerobic
- Digestion Process – Break down of organic material (i.e proteins, sugars) into organic acids which are converted into methane or carbon dioxide gases.
Let’s test!
Effect of Volatile Solids % on Dewatering Performance

Cake [%DS] (VSS [%])

- blend
- aer
- an
- WAS
- IND
- total

- Log. (blend)
- Log. (aer)
- Log. (an)
- Log. (WAS)
- Log. (IND)
- Log. (total)
### Polymer Use, Cake Solids - Sludge Type

<table>
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<tr>
<th></th>
<th>Blend</th>
<th>WAS</th>
<th>Aerobically digested</th>
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<td>19.9</td>
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RoS3Q – Screwpress sizing
Installation Examples

Automated load out conveyor 4 point discharge.
Local installation at Newberg, OR

Producing 19% Cake from WAS
Huber Technology - Capability

ECUA, Pensicola, FL
# Huber Screwpress Experience

## Ros3

<table>
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<th>Country</th>
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**pieces: 785**

## Ros3Q

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**pieces: 402**

Now over 1500 screwpresses worldwide!
You are our priority. Your satisfaction is our bottom line.
Huber Technology, Inc. Service Leadership Award

Frost & Sullivan

2013 Best Practices Award

North American Solid / Liquid Separation Technology Customer Service Leadership Award
Spare and wear parts

- Spare parts located in Huntersville NC
- Dedicated weekly shipments between parent company and Huber Technology US
- We are available with advice and support in the selection of the best original spare or wear parts for your machine.
After Market Sales & Service HUS

Manufacturing Services

Full service repair and manufacturing facility (15,000 sq. ft.) at our headquarters in Huntersville NC. 
This will allow us to provide local based manufacturing and machine rebuild services
Conclusions

- Significant Reduction in Energy Usage
- Minimal Operator Attention
- No Pre-Thickening Required
- Extremely High Capture Rates
- Minimal Water Consumption (20 gpm @ 60 psi)
- Higher Cake Solids compared to BFP, RDP and other ISP’s
Heritage of commitment & quality

Five generation owned company founded 1867

Worldwide presence

Steady pattern of growth

Original source manufacturer

ISO 9001 & 14001 rated
Our Approach.

We are Huber Technology. We believe that water is the most valuable resource on the planet. We are committed to reserving this resource.

We also believe that our customers deserve the highest return on their investment in the equipment that accomplishes this goal. This is why we use only the highest quality of materials and craftsmanship and offer unparalleled service and support in everything we do.

We are Huber Technology and we manufacturer Wastewater treatment equipment that will solve your specific need in this specific way.
Thank you