



## Huber's S-Disc Delivers Savings and Improvements Over Centrifuge in Sludge Thickening Process

Flagstaff, Arizona's Wildcat Hill Water Reclamation Plant (WRP) staff replaced a centrifuge unit with a Huber S-Disc with the intention of upgrading the sludge thickening process.

The plant staff's decision to replace the centrifuge with the S-Disc was a good one as the WRP earned a rebate from Arizona Public Service (APS) for energy savings. In addition, the S-Disc improved digester operations due to the consistency of the flow into the digesters causing the retention time to almost double. This will make taking one of the two digesters off-line, for cleaning, much easier. The comparison between the new S-Disc and the existing centrifuge gave plant staff several improvements to celebrate.

	S-Disc	Centrifuge
<b>Energy consuming horsepower</b>	5 HP kW usage 0.54	50 HP kW usage 18.05
<b>Sludge consistency</b>	Stable and consistent	Up and down
<b>Design</b>	Simple – Runs at 5 rpm or less and minimal moving parts	Complex – High speed operation and many moving parts to monitor and maintain
<b>Total solids in vs. total solids out</b>	1.5% vs 5.2%	1.5% vs 3.9%
<b>Volume to thickening process vs. volume to digester</b>	112,373 Gals in vs 39,400 gals out	107,982 gallons in vs 51,036 gallons out
<b>Filtrate reduction</b>	65%	53%
<b>Noise level</b>	No ear protection required	Ear protection required
<b>Easy to operate</b>	24 hour a day operation with only precautionary monitoring	Close attention required for smooth operation
<b>Installation</b>	Easily online in less than 30 days after delivery	Complex as balance and anchorage are critical.

Greater consistency produces a predictable sludge thickening process.

*“Initial runs produced sludge that was actually too thick. But adjusting the sludge thickness was easy for us because the S-Disc is such a simple design. Slight changes in blade tilt percentages make adjustments effective immediately.”*

The centrifuge’s thickening-design is much more complex and requires more operator attention. The Disc Thickener’s simple design and operation just makes things work better.

*“Huber’s S-Disc allows us to feed less to our digesters – which means less water is introduced into the process – and this makes us happy because we have limited digester space.”*

The S-Disc is quiet enough that you can carry on a conversation while it runs nearby. The centrifuge is so loud ear protection is required if you’re anywhere near it when it’s operating.

*“When we were at WEFTEC, I stopped at the Huber booth and showed the S-Disc to our Utility Director. When the unit was fired up, the first*

*thing he noticed was how quiet it was. We could still have a conversation with it running right next to us.”*



The S-Disc is easy to operate and runs 24 hours a day. Once turned on, it requires only precautionary monitoring in the morning and at night. The centrifuge requires more constant attention to ensure smooth operation.

*“We had a few issues with rags activating the high level sensor which resulted in several call-outs. These issues were solved by increasing the speed of the rotation.”*

The S-Disc is simple and straightforward to install.

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*"A mere 24 days after we took delivery on the unit, we were online. We had contractors come in to do the installation, but our electricians wired it. Within 10 days, Huber was onsite to start-up the S-Disc. We've been rockin' and rollin' ever since. We still have a redundant centrifuge unit but never run it. We haven't had a need to."*

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### **Making the Big Decision**

Wildcat Hill team was initially enamored by the totally enclosed design of the Huber S-Disc. Other decision drivers were its:

- Ease of use
- Low maintenance
- Dependability
- Low maintenance
- Durability

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*"Our decision to purchase the S-Disc came after seeing the S-Disc in operation in California. One of the first things that impressed us was its totally enclosed design. We never have spray coming off of it, like some other machines. The team in California had nothing but good things to say about it - it's easy to use, low maintenance, dependable, and durable. So our decision to purchase was a no-brainer."*

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It is rare to get total buy-in on any piece of equipment, but when asked, the team said they "love the new thickener." In fact, when the new S-Disc was started up for the first time, the team exclaimed a unified, "Wow!"

This blanket endorsement paired with the initial unit's outstanding performance gives the Wildcat Hill WRP staff a strong case for purchasing a 2<sup>nd</sup> S-Disc to replace the plant's remaining centrifuge.

The game-changing contribution of the S-Disc to Wildcat Hill WRP's sludge thickening process is clear. It has produced savings on multiple levels and turned the solids handling process into an effective and more efficient operation. The S-Disc is not a needy unit. It is a component in the plant that the Flagstaff team can depend on to just do its job.



**Wildcat Hill Water Reclamation Plant  
Location: Flagstaff, Arizona**

**Website:**

<http://www.flagstaff.az.gov/index.aspx?NID=120>

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