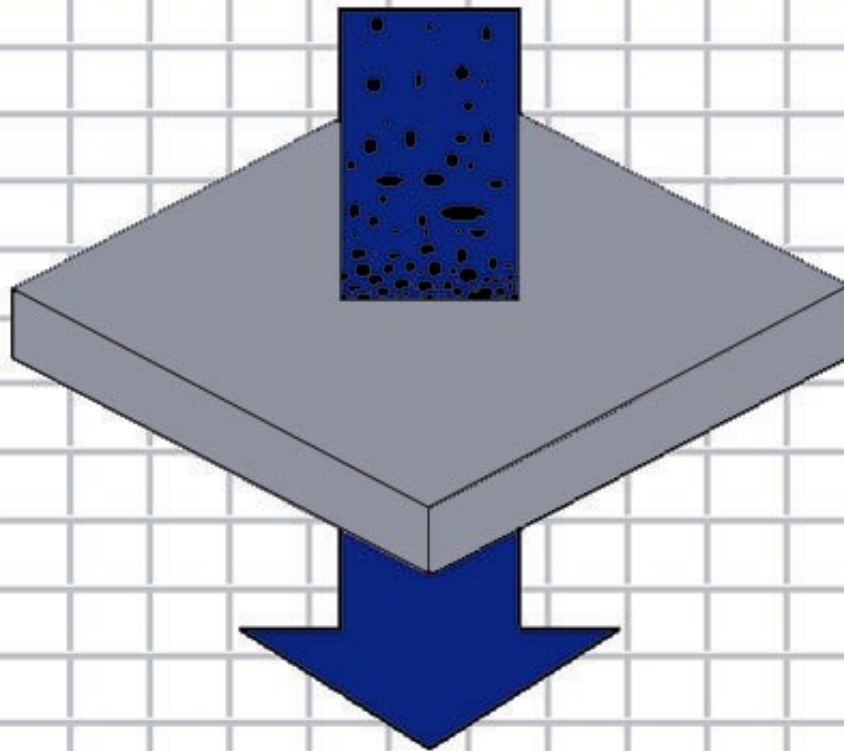




# Gravity Flow Systems Southwest, Inc.

***GFS HAS THE ANSWER***



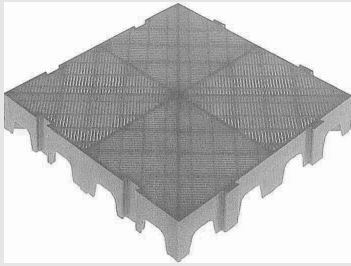
**GFS Wedgewater™  
Filter Bed**

**Waste Treatment that Doesn't  
Waste Time or Money**

# The Wedgewater™ Filter Bed System

## The Advanced Filter Media That Saves You Time and Money in Your Sludge Dewatering Operation

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**Wedgewater™ Filter Bed System** is the result of intensive research, rigorous field testing, and years of experience in screen and filter design and manufacture. It offers highly cost-effective sludge dewatering, with significant advantages over both slow, space-consuming sand drying beds and costly, energy-intensive mechanical dewatering units.

**This unique system** is composed of interlocking 12" x 12" high-density polyurethane filter modules. Practically indestructible, these panels shrug off the effects of sun and environment, are corrosion and abrasion resistant, nonconductive and virtually maintenance free.

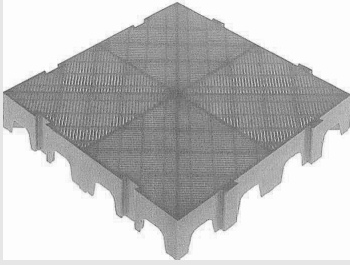
**Each module features** a special non-clogging orifice design, 12% open area, and built-in underdrain which insures continuous dewatering. Integral, molded-in structural elements allow the panels to easily support small front-end loaders for sludge cake removal. The interlocking panel modules make setup and panel replacement a snap ... without tools!

**All Types** of sanitary sewage and water treatment sludges are efficiently dewatered by Wedgewater™ Filter Beds. The system also effectively dewateres most biological and chemical industrial sludges. It is suited to both indoor and outdoor applications. Unaffected by wide variations in concentration, the system can dewater a 1% aerobically digested sludge one day, followed by a 5% primary sludge the next. Even the most dilute sludges can be economically concentrated.

**The filtrate extracted** by the process is of a high quality, usually less than 50 ppm suspended solids, with low BOD and COD levels. The filter panel design maintains sludge porosity, prevents media blinding and maintains filtrate drainage at the optimal rate. The high capture rate and unusually clear filtrate allow many plants to discharge the effluent directly into tertiary processes.

**After dewatering,** the sludge is left suspended on a dry media. The circulation of air both above and below the layer of sludge speeds drying. The sludge cake can then be easily removed with mechanical loaders.

**Save time and money** in your dewatering operations — contact your Gravity Flow Systems Southwest, Inc. representative for a complete proposal on implementing the cost-effective Wedgewater™ Filter Bed System.



### ***Near Perfect Reliability***

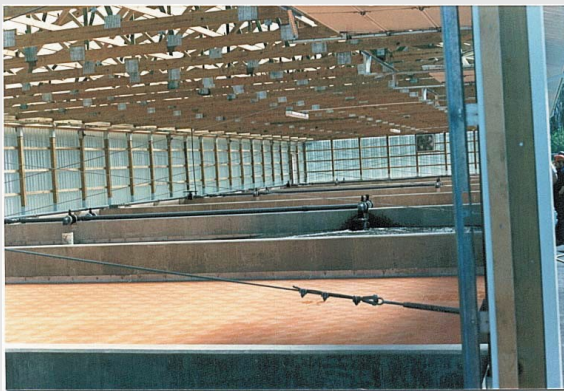
The Wedgewater™ Filter Bed System is so simple, practically nothing can go wrong. Since there are no moving parts, there is no possibility of mechanical failure. The system is virtually maintenance free, requiring only a quick wash down at the end of each cycle and a semi-annual check of the tank and media perimeter seal. Should an individual panel ever be damaged, it can easily be replaced on-the-spot by your own personnel — without special tools or skills.

### ***Saves Space***

Wedgewater™ Filter Beds require a mere 1/6 to 1/10 the space of outmoded sand drying beds. Use the space saved for other plant needs, or expand the area devoted to Wedgewater™ Filter Beds - and exponentially increase your dewatering capacity.

### ***Improved Operating Environment***

Because it uses gravity to do the work, Wedgewater™ Filter Beds consume no power, and produce no by-products or emissions. Operation is noiseless, so there is no on-site hearing loss or off-site complaints. The efficiency of the system and high quality filtrate produced, dramatically improve overall plant performance.



**Lebanon, Ohio** This 3.5 MGD low-load counter current aeration system plant desired a non-mechanical dewatering system. GFS had the answer: install 10,000 square feet of Wedgewater™ Filter Beds enclosed in a translucent building. Dewatering takes place year

round utilizing gravity alone with no mechanized equipment used for the dewatering cycle. Original design called for 70,000 square feet of conventional sand beds. Wedgewater™ beds were able to reduce that area by one-seventh.

### ***Quick, Effortless Dewatering***

The Wedgewater™ system dewateres in 2 to 3 days, rather than the weeks required by conventional sand beds. Mechanical sludge cake removal is almost effortless. The entire process is as easy as 1-2-3 . . .

Just flood the filter bed . . . Wait . . . remove the sludge cake. Then, cycle again.



**George's Creek, Maryland**  
***Extended Operating Season***

This 1.0 MGD oxidation ditch plant needed to extend the operating season of their dewatering cycle to at least eight months of the year. GFS had the answer: dewatering indoors. GFS recommended Wedgewater™ Filter Beds enclosed in a translucent structure, sheltering the sludge from seasonal rains and taking advantage of passive solar heating to extend the months of operation.



**Clermont County**  
**Middle East Fork Wastewater Treatment**  
**Plant**  
**Batavia, OH** — Design Flow: 7.2 MGD  
Waste Activated Sludge



**La Place, Louisiana Wastewater Treatment Plant** — Four 1800 square foot Wedgewater™ Filter Beds



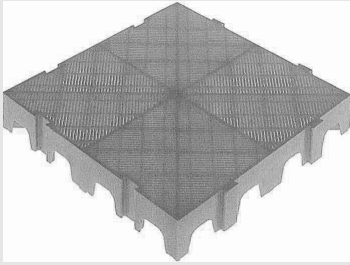
**Bay Minette, Alabama**

This 2.0 MGD low-load counter current extended aeration system plant desired a dewatering system that was non-mechanical, required minimal maintenance and operator attention. GFS had the answer: install three 1250 square foot beds enabling them to dewater 3 tons of dry solids per week.

**Jacksonville, Florida Naval Air Station**  
Four 750 square foot Wedgewater™ Filter Beds  
Aerobically Digested Sludge







### ***Low Initial Cost***

Since it is modular in design, the Wedgewater™ Filter Bed System can be sized to your exact needs now, yet it can be easily expanded later, eliminating costly over-capacity. Wedgewater™ Filter Beds offer dramatic cost savings over mechanical dewatering equipment. The entire system consists of a bed of Wedgewater™ Filter Panels, tankage, and minor auxiliary pumps, equipment and appurtenances.

### ***Low Operating Cost***

The system functions continuously by force of gravity without any supervision. The dewatering process therefore costs practically *nothing* to operate ...

... the only energy costs are the minor requirements of the auxiliary equipment. This unique means of low pressure dewatering requires less polyelectrolyte than other advanced systems. The use of front-end loaders speeds sludge cake removal, minimizing labor costs, and with Wedgewater™ Filter Beds, there is absolutely no media loss.



#### **Cypress Walk, Florida**

This 1.0 MGD waste activated treatment facility serves the famed Grand Cypress Planned Unit Development in Orlando, Florida. The engineer in charge specified that the dewatering system be noiseless, require minimal maintenance, and be aesthetically pleasing. GFS had the answer: the contemporary design-appeal of a mosaic of Wedgewater™ Filter Media. The installation is attractive, requires no power to operate and requires very little maintenance.

### ***Experience***

GFS sets the standard, with over 350 installations of Wedgewater™ Filter Beds spanning 20 years. We are the oldest in the business, and have the experience to make sure your installation works the way it is supposed to ... First time, every time.



### **Saint Bernard Parish, Louisiana Dravo Sewage Treatment Plant**

This 3.5 MGD contact stabilization activated sludge plant required a dewatering system with minimal space requirements and minimal manpower requirements. GFS had the answer: install 7200 square feet of Wedgewater™ Filter Beds covered with a translucent roof. Mechanical dewatering methods were rejected due to increased maintenance and operational costs. Outdated sand beds were rejected due to space limitations and increased manpower requirements. The Wedgewater™ Filter Beds utilized one-tenth of the area with virtually no maintenance, significantly reduced manpower requirements, and greatly reduced operational costs. Dewatering efficiency was increased while overall operating expenses were decreased, freeing up man-hours to be utilized for normal everyday operation and maintenance of the treatment plant.

**Hohenwald, Tennessee  
Wastewater Treatment Plant -**  
Two 1000 square foot Wedgewater™ Filter Beds



### **Kingston, Tennessee**

This 1.0 MGD low-load oxidation ditch plant needed a dewatering system that would require little maintenance and be space efficient. Original design called for 20,000 square feet of sand drying beds. GFS had the answer: Utilize one-tenth of that space. By installing two 20' x 50' Wedgewater™ Filter Beds, dewatering capacity is not diminished while total area was significantly decreased.

**SLUDGE TYPE****% DRY SOLIDS****CAPACITY**

<b>Sanitary</b>	Final Solids after 24 hours		Pounds Dry Solids/ ft <sup>2</sup> /load
	Initial Solids		
Raw Primary	2-6%	18-24%	1-4.25
Waste Activated	1-3%	8-14%	0.75-2
Aerobic Digested	1-3%	8-14%	0.75-2
Anaerobic Digested	2-8%	14-18%	1-5.75
Chlorine Stabilized	0.75-1.5%	10-14%	0.5-1
Aerobic Digested with Aluminum	1-3%	10-16%	0.75-2

**Water and Industrial**

Aluminum Clarification	1-4%	8-13%	0.75-2.5
Lime Clarification	8-12%	25-35%	4-8
Aluminum Hydroxide	0.5-1.5%	8-12%	0.5-1
Iron Hydroxide	1-4%	11-15%	0.75-2.5
Zinc Hydroxide	0.5-1.5%	8-12%	0.5-1
Lead Hydroxide	0.75-2%	8-12%	0.5-1.25
Copper/Nickel Hydroxide	1-3%	10-14%	0.5-2
Iron Clarification	2-6%	14-20%	1-4
Paper Mill Waste	1-3%	7-12%	0.75-2
Tanning Waste	1-3%	12-15%	0.75-2

\*This chart illustrates operating results and capabilities from typical municipal and industrial installations employing Wedgewater™ Filter Beds, or from pilot plant demonstrations. The concentrations and capabilities listed from each type of sludge are for *general information purposes only*. Because variation in concentration and capacities may be experienced

due to the individual nature of a particular sludge, contact Gravity Flow Systems Southwest for specific design data. Gravity Flow Systems Southwest, Inc. accepts no responsibility for any operational or design data not submitted in writing directly from Gravity Flow Systems Southwest, Inc.



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*Locally represented by:*