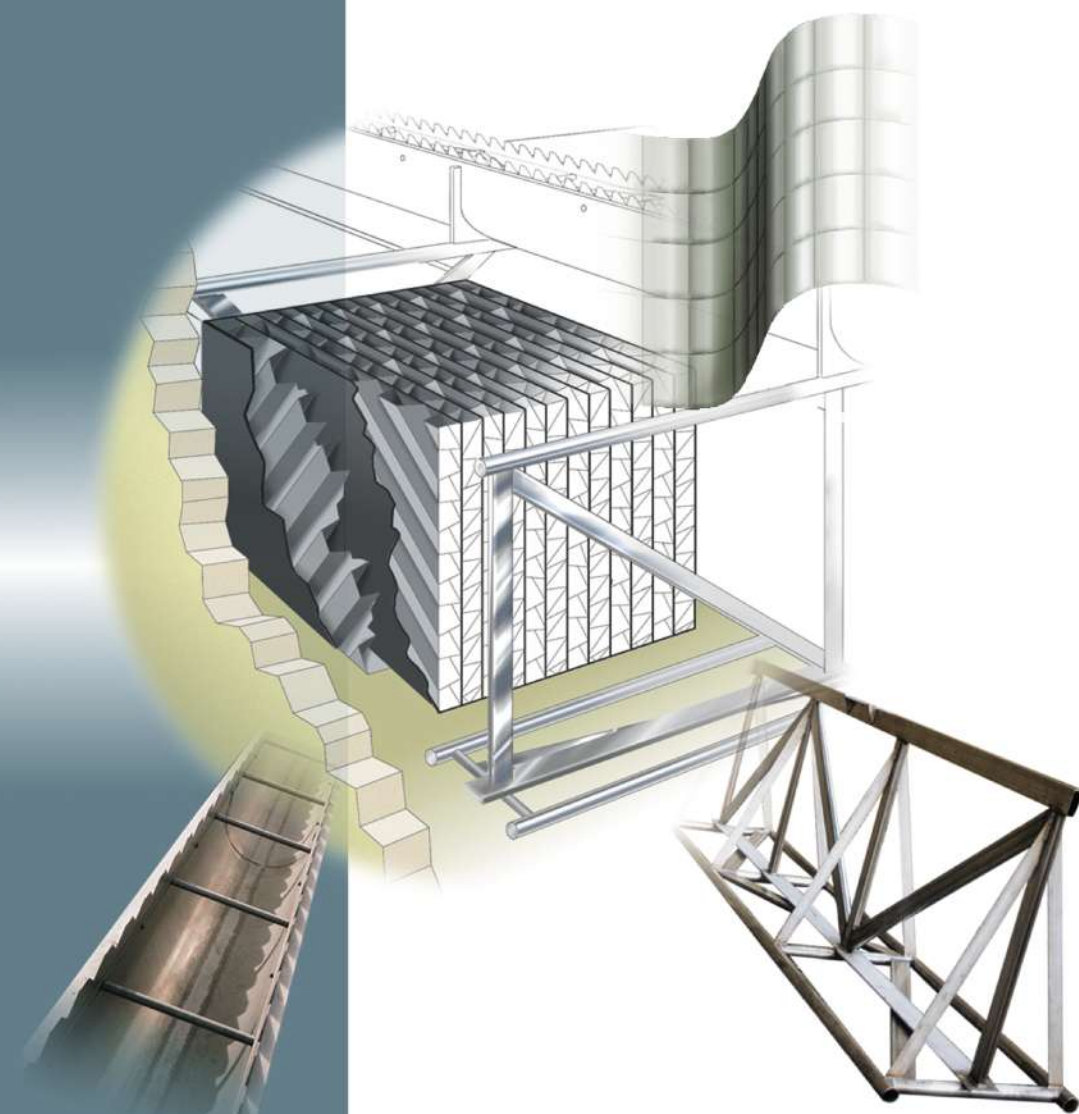


MRI 4' TUBE SETTLERS



*The Complete
Source for
Integrated 4' Tube
Settler Systems*



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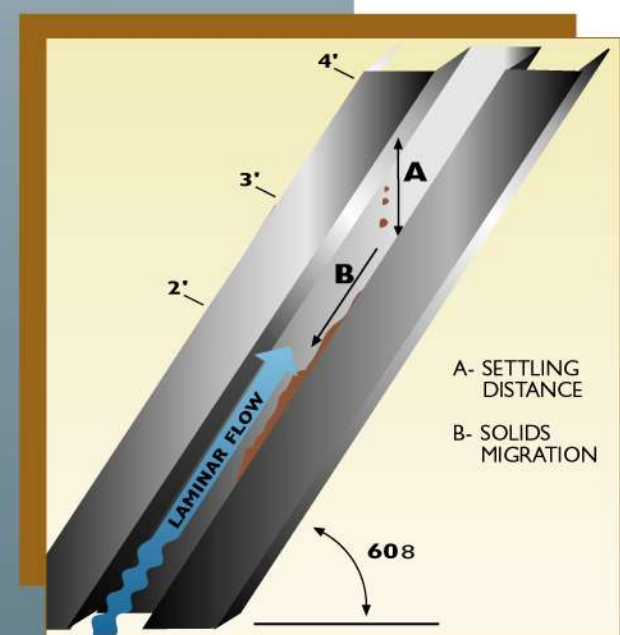
Integrating efficiency, strength and versatility.

To operate at peak performance, a water treatment plant requires a clarification system that can do the same. The equipment needs to deliver optimum flow rates, capacity and solids capture. It should provide the durability to function maintenance-free over time. And just as importantly, it must be adaptable to a facility's specific needs.

Meurer Research, Inc. brings all of these qualities together in one fully integrated tube settler system. Components are designed around modules of 4' inclined tubes that allow more water flow and settling time for more efficient solids removal. The system includes all-stainless steel supports, collection troughs and weirs, which provide corrosion-resistant strength and longevity. In addition, tube settler systems are available in versatile configurations to easily fit new or existing clarifier basins.

Since 1978, MRI has been a leader in the development of tube settlers that utilize shallow-depth sedimentation technology to achieve a highly effective, economical means of water clarification. Today, the company continues its commitment to furnishing utilities and consulting engineers with a single, convenient source for the latest in settleable solids removal products—many of which are patented. From design and manufacturing to service and support, MRI is the complete supplier of integrated 4' tube settler systems.

MRI 4' inclined tube settlers increase solids removal by reducing the distance particles must fall to reach a surface from several feet in a conventional clarifier to four inches or less, which provides for quicker settling time.



Pictured above: ARAMCO Water Treatment Facility, Saudi Arabia—Includes MRI round bottom stainless steel collection troughs and stainless steel supports.

Pictured left: Green River Water Treatment Plant, Wyoming—Tube settler modules were manufactured in 12 equal segments to fit a round basin with minimal field cutting.

A quicker, more effective way to remove solids.

Tube settlers significantly accelerate the removal of solids from water by reducing the distance that particles have to fall before reaching a surface. Tube modules inclined at 60° are installed in the clarifier basin just below the water line. Within these modules, a distinct flow pattern is established, with water rising up through the tubes and solids falling to the lower tube surfaces. The settling material masses together, gaining weight and picking up more particles as it slides down the tubes. When the sludge leaves the ends of the tubes, it is heavy enough to resist being re-entrained into the flow stream, and drops to the bottom of the basin where it is finally removed by sludge collection equipment.

MRI 4' tube settlers provide enhanced solids removal because the settling surface area is increased while the vertical settling distance is reduced. Particles inside the tubes only have to drop a distance of four inches or less, rather than several feet in a conventional sedimentation basin, allowing for quicker settling time. And the extended length of MRI settling system tubes keeps the particles in this ideal settling environment longer for optimal solids removal. Moreover, as the larger agglomerated material falls from the tubes, it captures smaller particles in the upcoming stream, which further increases clarifier efficiency.

Engineered for superior performance.

MRI provides the ultimate in clarifier function because all system components are designed specifically to work together for the sole purpose of settling solids. In fact, MRI's tube settler products* represent the only fully integrated system in the industry. And no other water treatment equipment manufacturer offers 4' tubes or all-stainless steel components. Plus, large system structures can be preassembled in MRI's expansive facility before being shipped to the job site, ensuring smooth and easy installation.

THE MRI INTEGRATED 4' TUBE SETTLER SYSTEM IN ACTION —

After the influent enters the clarifier basin, water makes its way upward through the tube settler modules, where solids are quickly settled out of the flow stream. The clarified effluent emerges from the top of the modules and exits the basin via the collection troughs.

TUBE SETTLERS—

MRI's inclined tube settler modules, also available in 2' and 3' lengths, are readily adaptable to most circular and rectangular clarifier designs.

SUPPORT SYSTEMS—

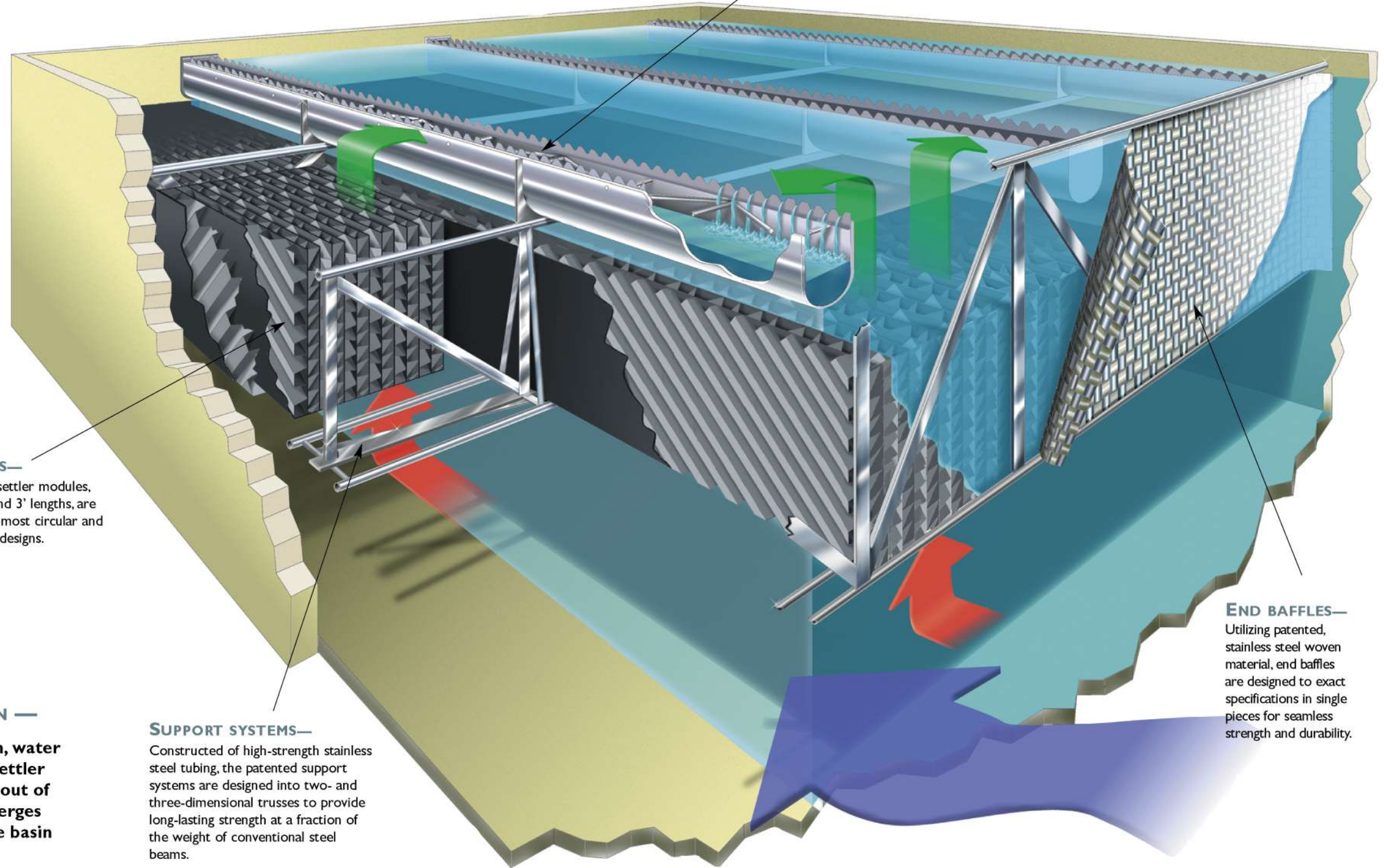
Constructed of high-strength stainless steel tubing, the patented support systems are designed into two- and three-dimensional trusses to provide long-lasting strength at a fraction of the weight of conventional steel beams.

COLLECTION TROUGHS & WEIRS—

MRI manufactures stainless steel troughs in a variety of configurations, including round bottom and rectangular shapes. Fiberglass troughs and PVC launders are also available, and stainless steel weirs are standard with any trough configuration.

END BAFFLES—

Utilizing patented, stainless steel woven material, end baffles are designed to exact specifications in single pieces for seamless strength and durability.



* MRI equipment is protected by patents foreign and domestic, issued and pending.

MRI 4' TUBE SETTLERS



Efficient and cost effective by design.

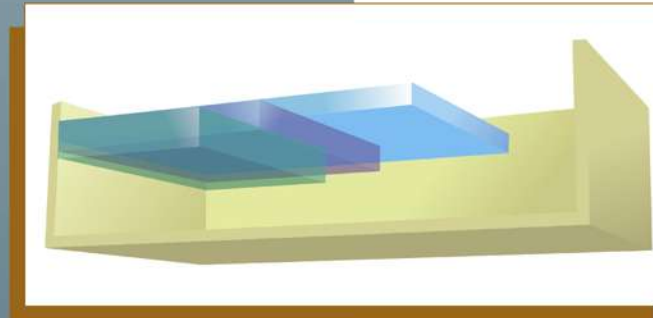
Years of experience in manufacturing tube settlers have led to the development of a system that delivers maximum solids capture. MRI's 4' tube settler modules, inclined at 60° angles, are designed to isolate suspended solids from the currents in the rest of the basin. Particles remain in this calmer environment for a longer time due to the extended length of the tubes, which also increases the effective clarifier settling surface area. The result is a greatly improved flow rate, as well as faster solids settling and agglomeration with reduced use of coagulant chemicals.

Besides helping water treatment facilities achieve more efficiency, an investment in the MRI integrated 4' tube settler system will pay off in significant cost savings. The tube settler modules provide higher flows and solids removal while using up less space in the sedimentation basin. They also allow for fewer backwash cycles in downstream filters, and reduced solids in plant recycle or discharge streams.

The illustration below shows the basin area required to treat a given amount of flow with various tube settler lengths, based on the following loading rates:

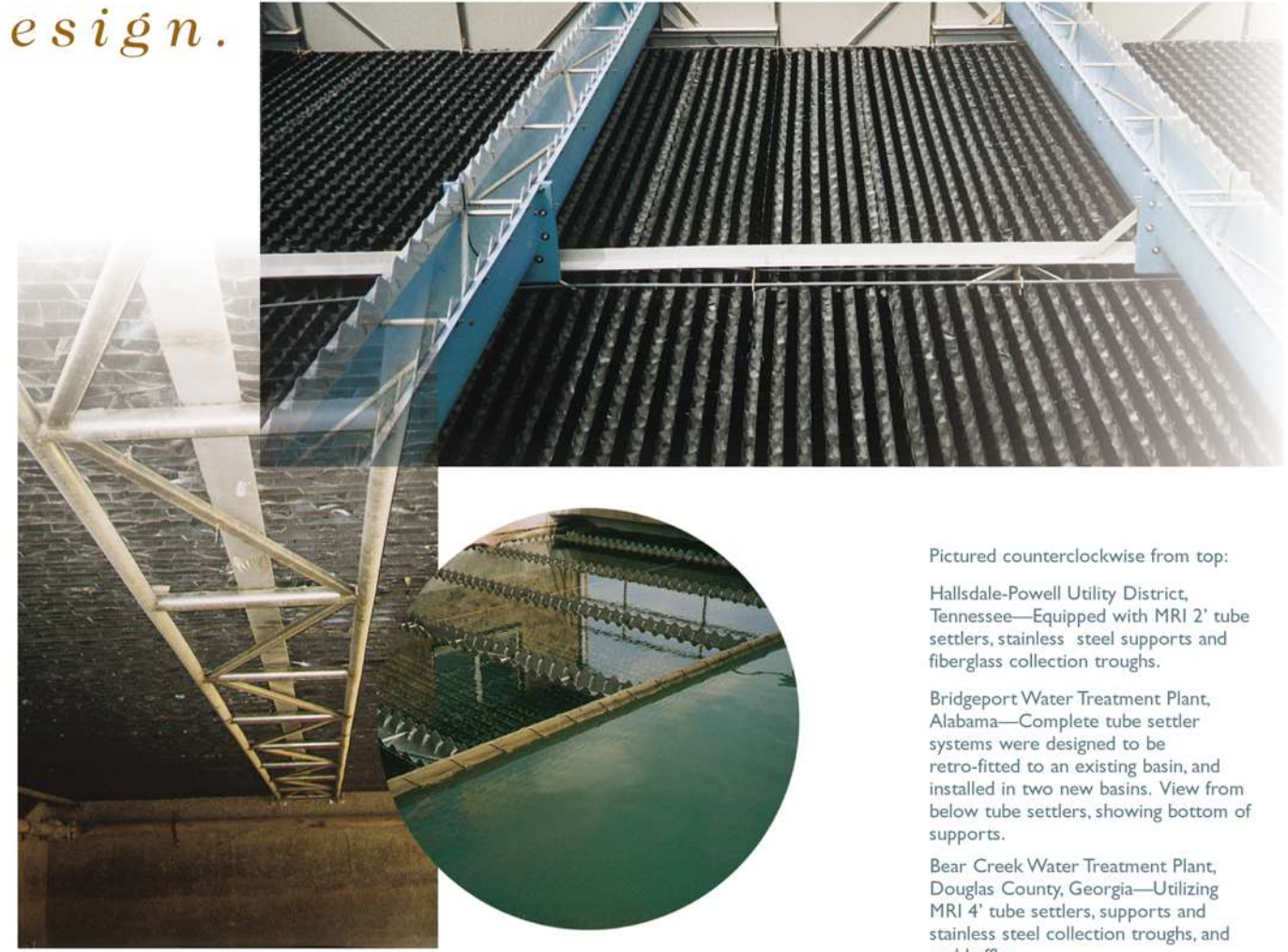
Tube Settler Length	Loading Rate
2' (Blue)	1.5 GPM/ft ²
3' (Purple)	2.5 GPM/ft ²
4' (Green)	3.5 GPM/ft ²

In addition to requiring reduced basin space, MRI 4' tube settlers require less support structure and installation time.



Installation options to fit a variety of needs.

What makes MRI tube settling systems such a practical choice is the fact that they can be adapted to virtually any water treatment facility. Existing plants can upgrade with 4' tube settlers to substantially improve capacity and performance while avoiding the expense of adding new basins. A tube settler system can be designed for quick, easy installation in either rectangular or circular clarifiers to accommodate more flow in the same space as 2' or 3' settlers.



Pictured counterclockwise from top:
 Hallsdale-Powell Utility District, Tennessee—Equipped with MRI 2' tube settlers, stainless steel supports and fiberglass collection troughs.
 Bridgeport Water Treatment Plant, Alabama—Complete tube settler systems were designed to be retro-fitted to an existing basin, and installed in two new basins. View from below tube settlers, showing bottom of supports.
 Bear Creek Water Treatment Plant, Douglas County, Georgia—Utilizing MRI 4' tube settlers, supports and stainless steel collection troughs, and end baffles.

In new facilities, clarifier basins—as well as overall plant size—can be reduced because the longer tubes provide larger flow capacity. Building water treatment plants with 4' tube settler systems in mind will not only result in lower construction costs and minimal land usage, but a higher quality effluent with less coagulant chemical consumption.

Both new and existing plants can reap the benefits of immediate cost savings and increased efficiency by installing tube settler modules in a partial section of the clarifier only. That way, as the future demand for water increases, modules can be added without constructing more basins.

Whether upgrading an established utility or planning a new one, MRI's fully integrated package of products is the key to getting the most out of a clarification system. All components—including patented products—are designed and manufactured by a single supplier to provide more efficient performance, long-lasting strength and unmatched versatility. Because when it comes to superior water treatment, Meurer Research, Inc. is the complete source for integrated 4' tube settler systems.