



## LAKE LBJ MUD SHARES THEIR EXPERIENCE WITH SEWAGE AIR VALVES



**PUBLISHED BY JIM McCAIN**

Lake LBJ Municipal Utility District is a pioneer in low-pressure sewer collection systems. While most sewer collection systems are constructed to utilize gravity to collect the wastewater from customers the District utilizes a low-pressure sewer system. **The low –pressure sewer system installed by the district was the first to be installed in Texas and now is a popular option for many areas across the United States and the world where rock or groundwater problems exist.**

The main reason for the low pressure sewer system was to avoid high construction costs by utilizing smaller mainlines and laying the line at a constant thirty inches below the ground surface in the Texas Hill Country versus the excessive depth in solid granite rock. After the customers utilize the potable water, it is then collected from the resident's home or business into a grinder pump system basin located on the customer's property, usually within ten feet of the building. The grinder pump system collects the wastewater which is ground up in the process of being pumped through the customer's yard line to the District's sewer main line. The mainlines transport the wastewater to large collection basins called lift stations. The lift stations collect wastewater from a large geographical area usually defined by the topographical nature of the collection area. The wastewater is then pressurized and pumped through large mainlines known as force mains that transport the wastewater to the treatment plant to be treated. **Lake LBJ Municipal Utility District currently maintains twenty six hundred individual grinder pump systems, over sixty-two miles of wastewater mainlines and eight wastewater lift stations in the wastewater collection system.**

Pressure sewer mains in hilly terrain require combination air release and vacuum relief valves to effectively remove the air and sewer gases that accumulate at high points in the piping system. Eight lift stations, over 2600 grinder pumps and 62 miles of pressure pipe is a large system to maintain and operate efficiently.

**Our Operational goals:** (1) Reduce maintenance costs in man-hours and materials replacement. (2) Reduce pumping costs and electrical costs (3) Increase system efficiency (4) Protect our environment and our capital investment.

**Example:** One of our lift stations with a 12" force main had a history of repeated level alarms and excessive run times for the pumps. We replaced 3 conventional air valves with ARI Sewer Valves and solved our alarm problem while reducing the system pumping pressure from 70 psi to 40 psi.

**Our past experience with Sewer Air Valves:** **(1)** Conventional Cast-Iron Sewer Air valves are very heavy, maintenance intensive and expensive to replace **(2)** Grease and sewer gas corrosion cause blockage and sewage overflow discharge **(3)** Field maintenance (flushing and backwashing) is virtually impossible **(4)** Conventional air valves don't function well on small pipe systems, especially under low pressure.



**Conventional Valve beside ARI D-025  
Weight Comparison**



**Typical Air Valve Vault  
D-025 Combination Sewage Air Valve**

**Our experience with ARI Sewer Air Valves:** **(1)** These valves work! **(2)** They don't leak or rust and are easily field maintained with hand tools **(3)** Lightweight valves like these are easy to install and work well with small plastic pipe **(4)** These valves operate at all pressure ranges in our system.

**Our Conclusions:** **(1)** Trying to maintain Cast-Iron Sewer Valves is a losing battle we no longer have to fight. **(2)** This sewage air valve is a problem solver for us that we would recommend ANY utility investigate for pressure sewer systems.

**For more information on innovative valve products for water and wastewater see [www.arivalves.com](http://www.arivalves.com)**