



LET CUSTOMER SUCCESS STORY

CLIENT: Eden Valley Institute
LOCATION: Loveland, CO
APPLICATION: BOD, TSS, Ammonia treatment
PRODUCT: LemTec™ MBBR

BACKGROUND

The Eden Valley Institute is a small, rural community located twelve miles west of Loveland, Colorado. The community consists of a group of homes, an organic farm, a lifestyle center, a country store and a church. The community was faced with the decision of upgrading or replacing its existing mechanical treatment plant in order to meet more stringent effluent requirements. Requiring a technology that was cost effective, simple to operate and provide effective treatment lead them to select the LemTec™ MBBR treatment process.



LET SOLUTION

Lemna Technologies' unique LemTec™ Moving Bed Bio Reactor (MBBR) is a wastewater treatment system specifically designed for treating low flows of domestic, commercial, and light industrial wastewater. The process includes three components: 1) septic tanks, 2) MBBR, and 3) settling tanks.

The septic tanks are used to settle solids and retain scum. The MBBR units downstream of the septic tanks are engineered to house biofilm media. The media provides a surface area for bacteria to grow on and is suspended by aeration and

prevented from flowing downstream by media retention screens. Under aerobic conditions, bacteria on the suspended media degrade soluble organics and ammonia that is present in the influent. The MBBR reactor at Eden Valley was sized using standard practices utilized in designing biofilm reactors.

The final unit in the process is a settling tank. It is designed to promote the settlement of bacterial solids that have sloughed (fallen) off of the media. The sloughed solids are collected on the floor of the settling tank and routinely pumped back to the septic tanks with sludge pumps.

RESULTS

The MBBR installed in Eden Valley is an effective, reliable, and affordable treatment process capable of achieving year-round effluent limits as low as 10 mg/l BOD, 10 mg/l TSS and 2 mg/l NH₃-N at a fraction of the cost of a mechanical system. With a reduced footprint, a process that is extremely reliable, and simple to operate, the MBR is the highest performance package in the world and offers numerous advantages over other systems, including lower capital and operating costs, expandability and low maintenance.

The community is now able to confidently discharge to the local stream, knowing that they will be able to meet their permit requirements while protecting their natural resources now and in the future.



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