



CASE STUDY

PROJECT NAME

Farm Island Residence
Farm Island, MN

SYSTEM SPECIFICATIONS

ATU with 585-square foot absorption bed.
Materials delivered over lake ice to site.

PRODUCTS USED

Delta Treatment Systems ECOPOD E50
Infiltrator IM-1060 Septic Tanks (3)
EZflow by Infiltrator geosynthetic
aggregate (200 LF)

INSTALLATION DATE

March 2018

CONTRACTOR

Septic Check
Milaca, MN

ATU System Installation Utilizes Frozen Minnesota Lake to Transport Materials and Technicians to Island Location

SUMMARY

Farm Island sits in Farm Island Lake north of Minneapolis. Septic Check, Milaca, Minnesota was contracted to design and install a new onsite system for a 1,400-square foot year-round recreational dwelling. Most installation work in Minnesota stops during the winter, but Septic Check waited for winter to enable transporting project materials over the frozen lake to the island site.

CHALLENGES

Minnesota regulations require a minimum separation of 3 feet between a conventional system drainfield and the water table. By choosing an Aerobic Treatment Unit (ATU) and including a UV lamp, the required separation was reduced to 1 foot. Septic Check used a snowplow truck to create a 3,400-foot road across of ice to the island. Equipment and supplies were driven across the frozen lake on a trailer and technicians commuted by snowmobile. An auger was used regularly to bore holes to check the thickness and quality of the ice and ensure safety.

SYSTEM DETAILS

The wastewater treatment system is 250 feet from the lakeshore. Wastewater exits the house via 12-feet of PVC pipe to the first of 3 Infiltrator IM-1060 1,000-gallon tanks, where settling and anaerobic treatment occurs. Wastewater then flows by gravity into the second tank where a Delta ECOPOD E50 ATU provides aerobic processing. It leaves the ECOPOD and flows by gravity through a SALCOR UV light to the last Infiltrator tank and is then pumped 65 feet through a 2-inch pipe to the absorption field. The 585-square foot absorption field uses 200 linear feet of EZflow by Infiltrator geosynthetic aggregate divided into 3 beds fed by a manifold of 2-inch pipe. Varying bed sizes maximized the small patch of good soil available on the 1-acre lot. The system is controlled by a Delta Treatment Systems CPR52RCT15SUV control panel.

RESULT

To prevent the soil from freezing prior to the early March 2018 installation, in fall 2017 the site was covered with frost blankets. The installation went smoothly with daily clearing of all piles of dirt to prevent overnight freezing presenting the hardest challenge.



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