



ONSITE

ENGINEERING, PLLC

Unity Acres Rehabilitation Center

CASE STUDY



Situation

Unity Acres is a 150 bed, dormitory type residence for the disadvantaged. The original collection system including 8" diameter intercepting sewer and manholes were installed in the 1940s, and an installation of a septic tank in the 1970s. In 1999 a second septic tank and other treatment devices were installed. The effluent receiving sand filters were found to be under stress as early as 1986 with "puddles of partially treated wastewater in a few areas on top of the sand bed". An investigation found that the pipes in the single pass sand filter were clogged with solids.

QUICK FACTS

Location: Orwell, NY

Application:

Rejuvenate an organically overloaded single pass sand filter that was pushing untreated wastewater to the surface.

Designer: Eric E. Murdock, P.E.

Product:

White Knight
Microbial
Inoculator
Generator

Solution

White Knight microbial inoculator generator was installed in the second compartment of the second septic tank. Its function is to introduce task specific microorganisms and a steady stream of fine bubbles to reduce organic strength. Auxiliary diffusers were installed in the filter station and the pumping station, which added a continuous flow of fine bubbles in order to promote an aerobic environment. The pre-treated effluent would thus have the capacity to biologically digest the organic clogging layer that is believed to be responsible for the breakout in the sand filters.



Before (Flooded with wastewater)



After (Land is dry and usable)

Results

During a follow up inspection, the area of the former breakout was found to be mostly healed. No evidence of untreated septage or ponding of water on the ground or foul odors were observed. The ground remained damp however had dried out enough for the owner to be able to mow the grass in the area of the former breakout. Similar results were observed during a site inspection a month and a half later. That is the ground was damp but no foul odors or untreated septage was observed. Based on the observed success of these recent activities, no additional work is recommended at this time. Unity Acres has hired Knight Treatment Systems, Inc. for continued maintenance and inspection.



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