

CASE STUDY #5

Client:	Municipal Treatment Plant – Slurry phase
Location:	2800 North El Paso Road, Flagstaff, Arizona 86004 USA
Plant Type:	Activated Sludge
Starting Date:	November 15, 1994
Date of Evaluation:	January 1, 1995
Characteristics:	Average Daily Flow: 1.4 MGD Influent Type: Domestic sewage and some food processing effluent.
Overview:	The plant accepts liquid waste from septic/grease and industrial waste haulers. The waste is emptied into a 60,000-gallon tank where they were trying to reduce Grease, BOD, TSS and Hydrocarbon levels by using aeration and the addition of cleaning agents, enzymes, and catalysts.
Problems to be Solved:	Had to run two air blowers at 500 cfm to keep current biological degradation working. Had to manually slug dose the tank with the current powder enzymes and catalysts, daily. Exceeding permit levels for oil and grease. Solids adhering to walls of tank. Crusting of sludge and grease balls forming in tank. Grease build-up in line exiting tank leading to plant. Had to keep temperature at 85 F. to keep grease from solidifying.
Solution Using Biological Treatment:	The plant stopped using current products and switched to PDM-7 WT (Waste Treatment Bacteria mixture, which is in liquid form).
Major Objectives:	To eliminate the use of one blower (aerator) which would save the Plant \$20,000 annually. Be able to reduce the temperature down to 55 F. Match current cost of products being used.

Microbe Distribution

Installed our MDU with the necessary delivery system outside unit (MDU Location: next to grease tank. Used a metering device to inject PDM-7 WT Bacteria through the lid of the grease tank. Used isopropyl alcohol and special neoprene tubing to keep liquid from freezing (winter).

Results:

Spectacular improvement in treatment efficiency by using more advanced methods of adding the bacterial product.
Eliminated the use of the second blower (aerator), which is a saving of \$20,000.00 annually.
Able to reduce temperature from 85 F. to 63 F. and still have a greater reduction in grease.
Sludge in digester became more liquid thus eliminating crusting and grease balls.
Improved sludge settling in tank.
Sludge no longer adhered to digester walls & most importantly the oil and grease levels were reduced to below 100 ppm.

Conclusion:

Energy use reduced by 50% in aeration of tank, which resulted in cash savings.
Reduced labor requirements and reduced sludge production due to superior product and injection system.
To date the plant supervisor is very satisfied with the results.