



Headworks Commissions First IFAS System in Costa Rica

Introduction

In late 2013, Headworks Inc. was awarded a contract with General Contractor Soluciones Tecnicas Ambientales, S.A. (SOLAMSA) to supply an IFAS system to upgrade the existing Ptar El Roble conventional activated sludge (CAS) treatment facility in Puntarenas, Costa Rica. Working in close conjunction with the Costa Rican Water and Sanitation Institute (AyA), the responsible government authority, Headworks has completed commissioning of the first IFAS installation in the country.

Design

The integrated fixed-film activated sludge (IFAS) process is typically installed as a retrofit solution for conventional activated sludge systems that are at or beyond capacity. IFAS upgrades offer an extremely cost-effective retrofit solution to municipal wastewater plant expansions, taking full advantage of existing systems, equipment, process knowledge, training, and operator skills.

The IFAS variation of the moving bed biofilm reactor (MBBR) process gets its name from the integration of biofilm carrier technology within conventional activated sludge. This hybrid process enables activated sludge systems to achieve dramatic

Customer: Solamsa, PTAR El Roble
Industry: Municipal

gains in volumetric productivity without increasing mixed liquor suspended solids levels in the process. By doing so, IFAS systems deliver improved performance while reducing the solids impact on clarification processes. As a result, clarification processes actually benefit from implementing IFAS technology.

KEY FACTS

- **Design Flow:** 6,912 m³/day (1.83 MGD)
- **BOD₅:** Influent 243 mg/L
Effluent limit < 50 mg/L
- **COD:** Influent 506 mg/L
Effluent limit < 150 mg/L
- **TSS:** Influent 235 mg/L
Effluent limit < 50 mg/L
- **pH:** 6.2 – 7.9
- **Temperature:** 24 – 30 °C (75.2 – 86 °F)

Results

For the Ptar El Roble facility, the CAS aeration basins were divided into two basins in each of the existing two trains. The first aeration basin in each train was then retrofitted as an IFAS basin with upgraded aeration, MBBR media, retention screens and new aeration blowers. This simple and cost effective upgrade has allowed a 45 % flow increase from 4.75 million litres per day to almost 7 million litres per day, all while making use of existing tanks, clarifiers, RAS pumps and other existing infrastructure. In the future, further capacity upgrades are also possible by further converting the second aeration basin (still a CAS basin) into an IFAS basin.

“ Our experience with Headworks was very rewarding. Our client, AyA, the national institution in charge of drinking water and waste water, is very satisfied, proud and enthusiastic with the new system. ”

*- Rodolfo Gonzalez
Director of Solamsa*

Indeed, during the commissioning visit, the first effluent test report was received showing complete compliance with the regulations already, shortly after the system had been restarted following the completion of the upgrade. Headworks BIO is very proud to have been part of this successful project, bringing greater treatment capacity to the good people of Costa Rica.

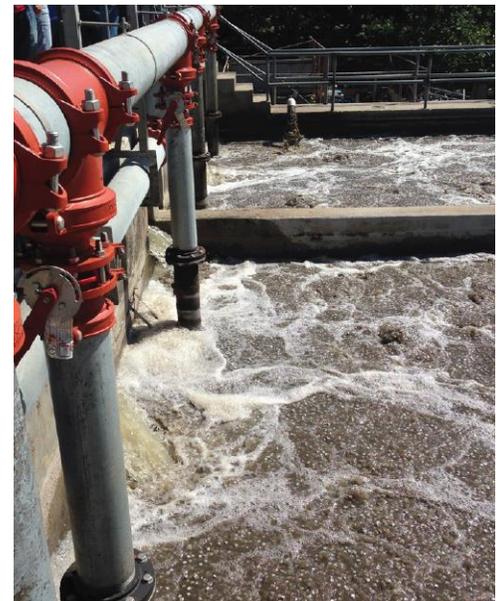
Does your system need improved effluent quality and increase in treated flow? Contact one of our helpful manufacturers’ representatives in your area or one of our expert MBBR/IFAS process engineers.



ActiveCell media increases productivity through providing protected surface area to support growth of bacteria.



IFAS basin with upgraded aeration MBBR media, retention screens and new aeration blowers.



The installed IFAS upgrade allows a 45 % flow increase from 4.75 million litres per day to almost 7 million litres per day.

