

Monitoring Solution for Influent Toxicity Helps Protect the Wastewater Treatment

Problem

The customer required a complete single source plug and play integrated system including online analyser / analyser housing / preconditioning / commissioning and training to achieve real time online analysis of toxicity in the influent of his wastewater treatment plant. Influent toxicity represents a major risk (inhibition of wastewater biology) to the efficiency of biological treatment plants and can lead to permanent damage.

Solution

Hach® was awarded a contract for the design, construction and delivery of a complete integrated solution. Through their 100 % owned subsidiary AppliTek, all online analyser equipment could be integrated in one protective AnaShell shelter type AS3000 prefabricated and equipped with all necessary equipment, systems and utilities. The shelter was delivered as a complete solution with all parts tested prior to shipment.

Benefits

The addition of the Hach online monitoring technology with an EZ7900 Toxicity analyser helped protect the wastewater treatment plant's biomass from toxic substances in the influent. The risk of process failure and resulting discharge compliance violations was mitigated. The analytical shelter enabled the customer to install the analyser independent of existing buildings at the optimum sampling point.



EZ7900 Toxicity analyser

Background

The customer is a chemical plant in the south-east of France. Products are mostly vitamins, antioxidants and pigments for nutritional products, animal feed, cosmetics and pharmaceuticals. The company's own treatment plant takes care of the wastewater streams coming from the different production lines

Potential sources of influent Toxicity are

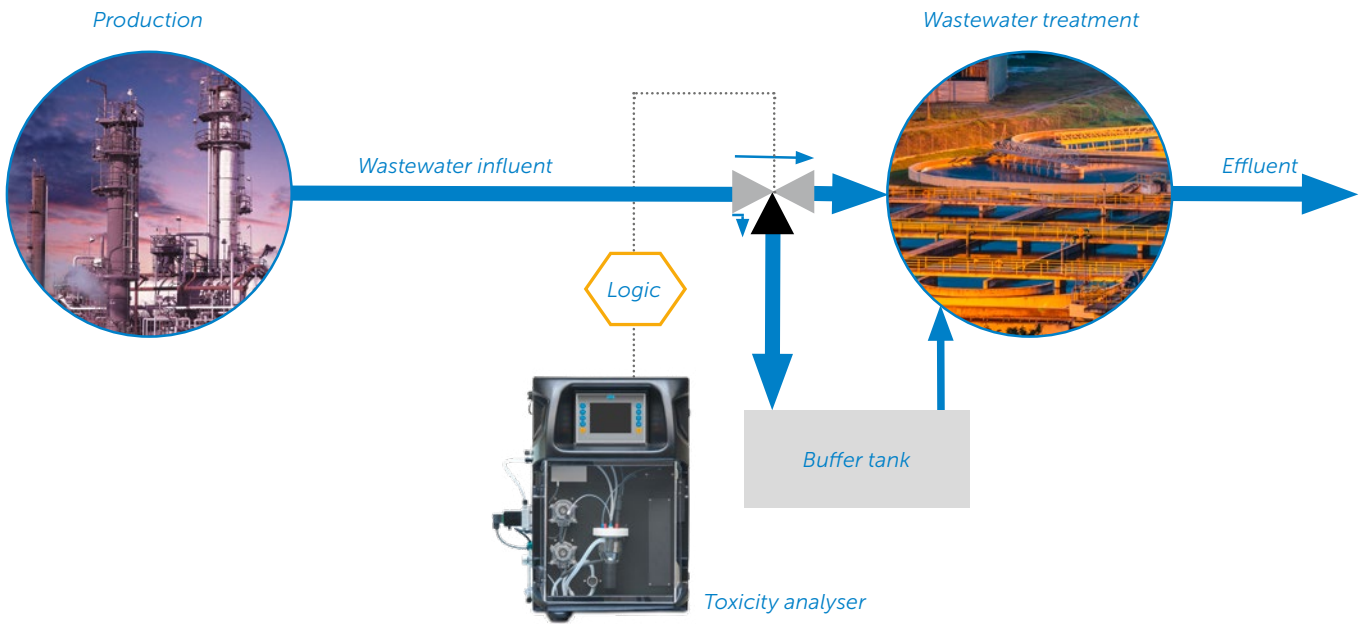
- Product discharge
- Clean In Place (CIP) processes
- High salt concentrations

The EZ Toxicity analyser uses respirometry to quickly and efficiently assess the effect of wastewater influent on the metabolic condition of the microorganisms in the activated sludge.

Integrated Solution Influent Toxicity

Challenge

Early warning system with acute Toxicity alert to protect the activated sludge in the wastewater treatment plant against irreversible damage.



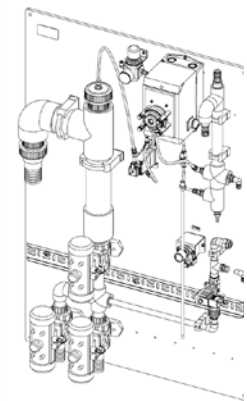
Concept

Protective AnaShell Shelter Type AS3000

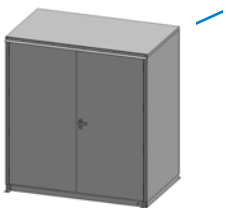
EZ9120 Filtration System for Sludge

EZ9110 Filtration System for Wastewater

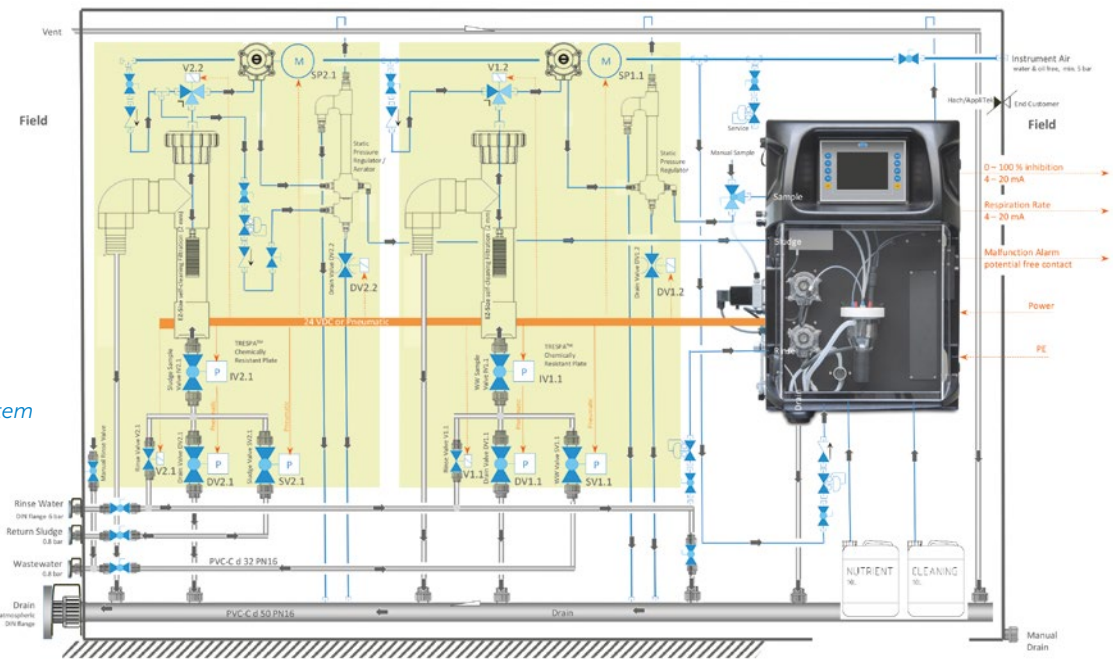
EZ7900 Toxicity Analyser



Self-cleaning Filtration System



AnaShell Type AS3000



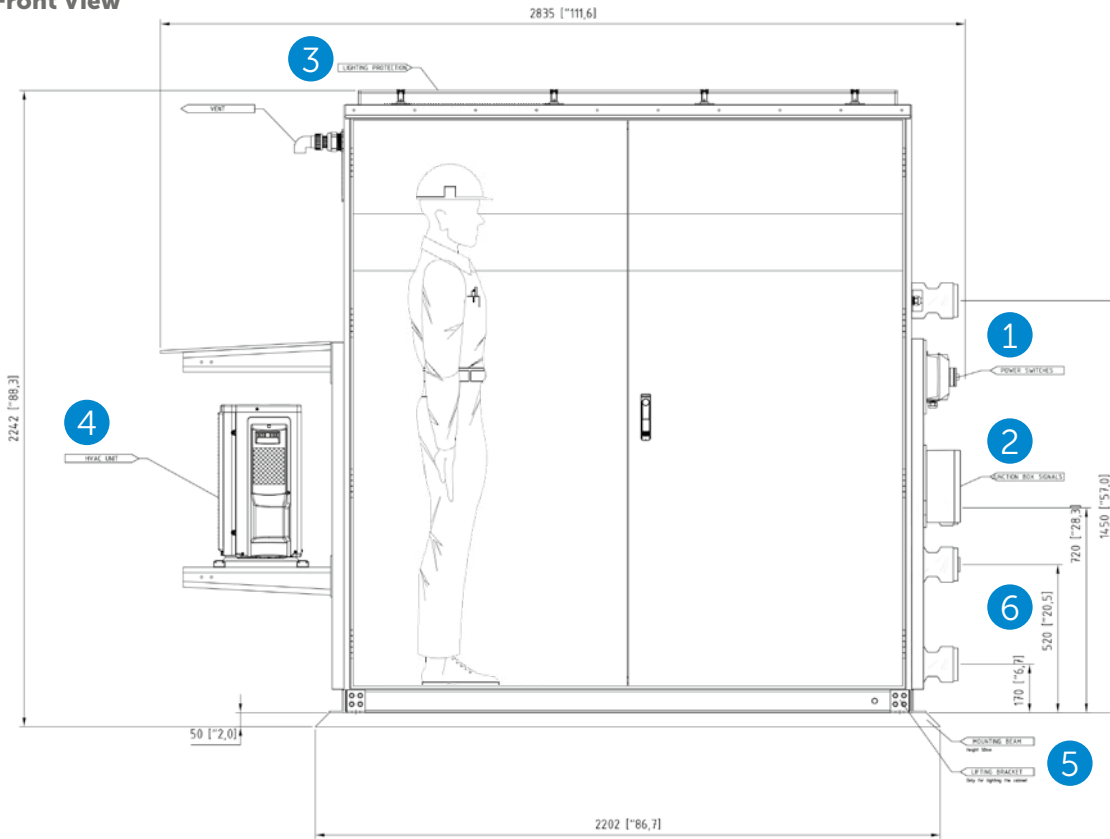
The protective AnaShell shelter type AS3000 is prefabricated and equipped with all necessary equipment, systems and utilities. The complete unit will be delivered as a total with all parts tested before delivery.

Low Installation Cost at Site / Fast Start-up: Unload | Hook-up sample and utilities at the battery limits of the shelter | Commissioning | Start-up of pre-tested unit.

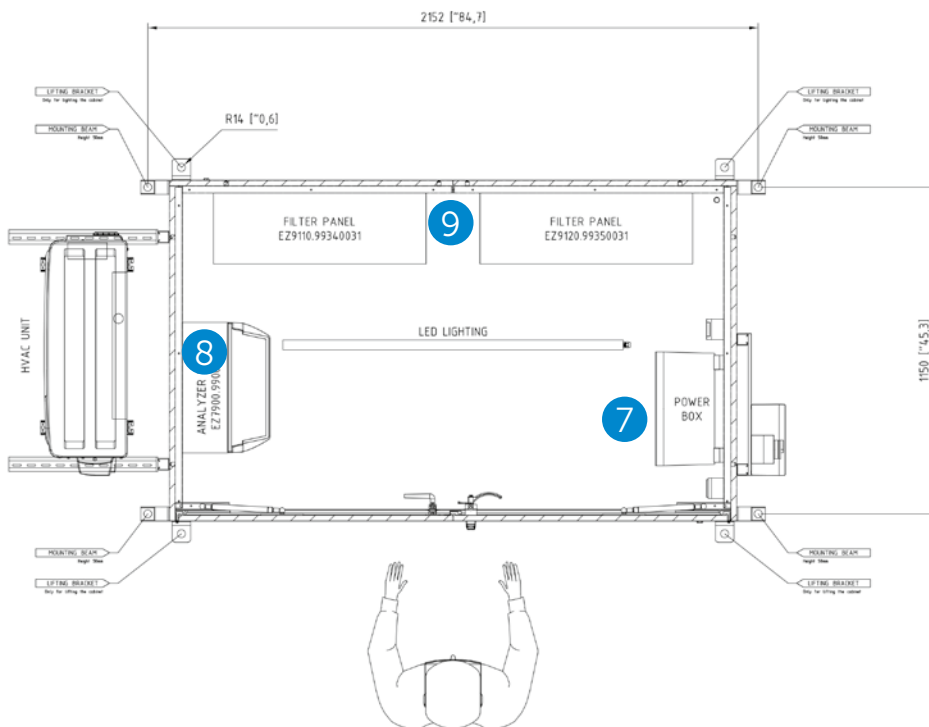


Execution

Front View



Top View



- 1 Main Power Switch
- 2 Signal junction box
- 3 Lightning protection
- 4 Air conditioning
- 5 Lifting / Mounting bracket
- 6 Sample inlets

- 7 Local power distribution panel
- 8 Analyser
- 9 Sample preconditioning panel

Integrated Solution Influent Toxicity



Interior and exterior of the integrated solution for Influent Toxicity

