CASE STUDY Municipal Water Supply Location: Hanoi, Vietnam

Technology: Katayst Light









BACKGROUND

Watch Water is a rapidly growing global leader in manufacturing Scale Prevention, Adsorbers, Filter Media, and Instant Dosing Solutions for the water and wastewater treatment industry.

This case study highlights the successful usage of Watch Water's **KATALYST LIGHT** filtration media for the municipal treatment of drinking water in the city of Hanoi, Vietnam.



CLIENT PROFILE

In 2016, the **Ha Dong** Clean Water company had a meeting to discuss about the implementation of a domestic water treatment plant with capacity of 30,000 m3/day. The source of water was from a **borewell** and had high levels of iron and heavy metals in water. The Ha Dong district committee of Hanoi asked the Ha Dong water company to provide use at Watch Water with all the referral data like test reports, drilling diagrams and the project's technology line design profile. After thorough research and analysis of the available data, we successfully installed and integrated our Katalyst Light media with the Dynasand system designed by Nordic Water. When the much-needed new drinking water plant for the Ha Dong district was planned, our Katalyst Light media, delivered the promise capacity and water quality, along with the ease of operation.

WHAT IS KATALYST LIGHT?

KATALYST LIGHT is a revolutionary advanced filtration media with a unique gamma coating of Manganese Dioxide (10%) on the high capacity filter material 'Zeosorb' allowing it to remove various contaminants like **iron**, **manganese**, **H2S**, **and other heavy metals** from water.

A combination of mechanical filtration, catalytic precipitation, and subsequently adsorption are the core strengths of Katalyst light. Katalyst Light does not require any regeneration chemicals under ideal conditions. The only maintenance required is intermittent backwashing. It is extremely light weight and hence require very Less backwash water.







KATALYST LIGHT is certified according to NSF/ANSI/CAN - 61 standards for drinking water applications and has met the NSF/ANSI 372 lead free compliance. With a bulk density similar to water, Katalyst Light is extremely light weight and helps is reducing energy consumption while backwashing. Katalyst Light has high affinity for iron and manganese removal and is the industry leading for the same. The major advantage of Katalyst-Light is the slower head loss which leads to longer operation time.

SYSTEM SPECIFICATIONS

Our Katalyst Light Media was filled inside the well proven, continuous filtration unit, Dynasand from Nordic Water. The water was purified by the upward flow in the filter bed. Impurities were retained in the layer of our Katalyst Light. The filtered water exited the filter via a filtrate overflow. A centric air-lift pump integrated in the inlet pipe transported the soiled media from the cone up to the sand washer which was then further washed by a minimal partial flow of the filtrate in the sand washer and hence, Katalyst Light was returned to the filter bed. The DynaSand vessels filled with Katalyst Light ensured constant high filter quality and simple treatment of rinsing wastewater.

The filter unit did not require a wash water pump. The rinsing effluent (approx. 2 - 4.4 m3/h/filter), extracted from the filtrate, flow out at 5.6 m above set-up area. The inlet required a primary pressure of approx. 7.5 - 8 m above the set-up area. Due to continuous rinsing, this primary pressure was constant to a large extent. Up to 80 % of the wash water and the required compressed air was saved by using our media in this advanced system.

PROCESS DATA

Set-up of the filter	Outdoor arrangement			
Flow Rate	1250 m ³ /h			
Filtration area (design)	150 m²			
Katalyst Light Media Used	375000 Litres			
Surface loading rate / filter velocity	8.3 m/h			







A total of **30 pieces** of DynaLox units (Katalox Light + Dynasand) were installed in a total area of 150m². Each filter was 5m² and the total area was divided into 3 rows with 10 filters in each row. Total height of each filter was 6.1m with a 2m bed height. Each row of filters was provided with a service platform. Since, it was drinking water application, high quality OIL FREE air compressors from Kaeser Boge were installed as well.









RESULTS

The continuous running Katalyst Light installation proved to be simpler to use than the other solutions available, and it delivered the desired quality and ease of operation. In comparison to employing a membrane/backwash approach, this installation had the following benefits:

- Simple to use
- Lower investment costs Smaller size
- Less components
- Less material

On July 8, 2018, the Ha Dong Municipal Drinking Water Plant was commissioned.

FACTS- HA DONG DRINKING WATER PLANT, HANOI, VIETNAM

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	30 Katalyst Light Filters Installed		250,0 inhabi Serv			30, (000 m3/d Flow Capacity			
		Influen	Influent		Outlet Requirement		Actual Outlet			
Turbitity		3.35 -	3.35 - 7.29 NTU		< 2.0 NTU		0.13 - 0.21 NTU			
Iron > 3mg/L		< 0.3 mg/L		C	0.03 - 0.15 mg/L					
Arsenic > 0.101 mg/L		< 0.01 ma/L		<	< 0.01 mg/L					

The above requirements were met and Katalyst Light proved to be an effective solution.

WATCH WATER GMBH

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