

# DELIVERY AND START-UP OF THE SLUDGE DEWATERING COMPLEX BASED ON MULTIDISC SCREW DEHYDRATORS IN POULTRY SLAUGHTERHOUSE

<b>PURCHASER</b>	Nijhuis Industries Central Europe Sp. z o.o.
<b>OBJEKT</b>	Meat factory, poultry slaughterhouse
<b>SEDIMENT TYPE</b>	Excessive activated sludge, initial flotation sludge
<b>DESIGNED CAPACITY</b>	5000 m <sup>3</sup> /day



## OBJECTIVE

Sludges coming from the treatment of wastewater from meat processing services show specific parameters for this type of industry. They contain increased fat amounts and generally understood animal protein, which in turn requires use of dedicated technology for dewatering of this type of industrial sludge.

The sewage treatment plant is located around 20 km from Kutno, in the Łódź province. The initial entering sewage is a mixture of industrial wastewater from the production lines and biological wastewater which is formed as a result of the daily work of the plant.

The main goal of the investment was the construction of the wastewater treatment plant at the newly built production factory and as part of that the supply and commissioning of two independent and fully automated sludge dewatering complexes.

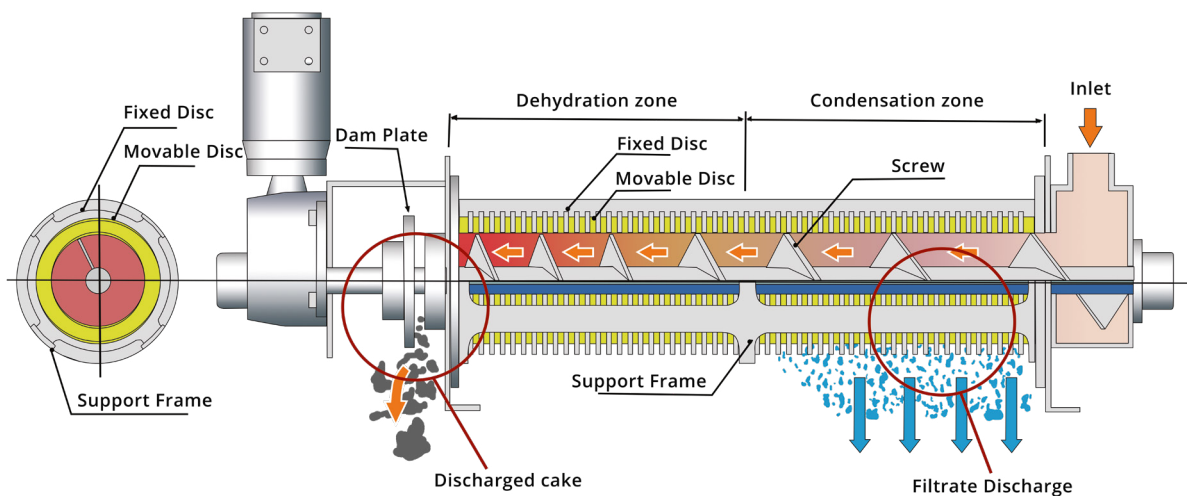
## WORK PROGRESS

To determine the efficiency of sludge dewatering, first laboratory tests were performed. Because the plant in which this technology meant to be implemented was still under construction, the tests were carried out in another plant, which had an identical production line and purification technology to the built one. When selecting the device, the experience of EKOTON PRODEKO-EŁK was used as a supplier of comprehensive solutions based on modern technologies.

The analysis of advantages and disadvantages of the use of various sludge dewatering devices at a given facility has led to the selection of the multidisc screw dehydrators (MDQs), whose main advantages are:

- simple operation
- low energy, flocculant, water consumption
- very low noise
- the ability to work in automatic mode

The scope of delivery included two independent drainage lines. Each of them consisted of a multidisc screw press, an automatic polymer preparation station, a sludge feed pump and a polymer dosing pump.



Pic. 1. Structure of Multi-Disc Screw Press's Dewatering Drum

## OBJECTIVE

<b>PLANT CAPACITY</b>	5 000 m <sup>3</sup> /day
<b>SEWAGE TYPE</b>	Industrial/poultry slaughterhouse
<b>SLUDGE TYPE</b>	Flotation + biological
<b>TOTAL AMOUNT OF SLUDGE</b>	228 m <sup>3</sup> /day
<b>AVERAGE DRY SOLIDS (DS) IN SLUDGE</b>	5,6 %
<b>AVERAGE WEIGHT OF SOLID SEDIMENTS</b>	12 845 kg DS/day
<b>FLOTATION SLUDGE</b>	
<b>INITIAL AMOUNT</b>	85 m <sup>3</sup> /day
<b>DS IN INITIAL SLUDGE</b>	10 %
<b>WEIGHT OF SOLID SEDIMENTS</b>	8 544 kg DS/day
<b>BIOLOGICAL SLUDGE</b>	
<b>INITIAL AMOUNT</b>	143 m <sup>3</sup> /Day
<b>DS IN INITIAL SLUDGE</b>	3 %
<b>WEIGHT OF SOLID SEDIMENTS</b>	4 300 kg DS/d
<b>DS CONTENT IN SLUDGE CAKE</b>	22%-26% +/-1%

## WORK PROGRESS

Multidisc screw dewatering units and the other supplied devices work efficiently and reliably. The operating parameters of the sludge treatment units in both lines enable them to obtain sludges with the level of DS up to 34%. Equipped with full automation, it allows the user to optimise the dewatering process and meakes the sludge management much easier.

