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CELDAR ® TECHNOLOGY

Case history

HEAVY METAL REMOVAL – GALVANIC INDUSTRY

Location	POLAND
PRODUCED WASTEWATER	25 cubic meter/hour
Typical problems in wastewater	High Heavy metal residual concentration

TREATMENT PRINCIPLES AND AIMS

To optimize the performances of **wastewater treatment plant**, the customer asked us to evaluate the **ELECTROCOAGULATION SYSTEM** for the **removal of Heavy metals** and to be able to drain the treated water into the sewer system.
Another option required was the **ZERO liquid discharge** and therefore the possibility of reusing the treated water with the least amount of consumption possible.
This option is possible using an **ELECTROCOAGULATION PLANT** since no chemicals are used and therefore the physical and chemical characteristics of the water to be treated have little variation compared to the treated water.

Number of electrodes	20
Type of alloy	CELDAR
Volt applied	8
AMPERES	55
Reaction time	1 hour
Temperature	38 °C
Final treatment	Flocculation

The removal of the various pollutants: metals and not metals, has a different kinetics but the electrocoagulation system in a limited time is able to give very satisfactory results already after one hour of electrolysis.

The obtained results and working conditions are below

		AS IT	After 60 min.		REMOVAL
pH		1,5	8,6	Correction	
Conductivity	milliSiemens	6,9	5,1		
COD	ppm	75,0	18,0		76,00
NH 3	ppm	38,0	15,0		60,53
P	ppm	36,0	1,8		95,00
Turb.	NTU *100	1,4	0,6		60,71
Cu	ppm	12,0	0,1		99,17
Ni	ppm	190,0	0,1		99,95
Cr	ppm	3,9	0,0		99,74
Tens. (NI)	ppm	9,0	2,0		77,78
Tens. (A)	ppm	10,0	1,0		90,00