

CASE HISTORY

SEMICONDUCTOR
SOLAR
PHARMA
POWER GENERATION
FOOD & BEVERAGE
PULP AND PAPER
CHEMICAL
OIL AND GAS
MINING
AEROSPACE AND TRANSPORT
METAL FINISHING
MUNICIPAL



Toveko Filters

M&M - Surface Treatment in Canada



M&M started their business in Toronto in 1962. The majority of their clients are in the car, military and aerospace industries and the Canadian Government. In line with their business as a quality contract electroplater, the company is keen to provide services that fit into their customers' needs and are ISO 9000 certified.



M&M in Scarborough, Toronto, Ontario, Canada

M&M has approximately 50 employees and an annual turnover of about £2 million.

M&M apply high quality zinc, zinc-nickel and cadmium electroplated finishes to their clients' components, many of which are very expensive. In order to produce high quality finishes with good corrosion resistance, product cleanliness is essential throughout the production sequence. This uses large volumes of rinse water.

The contaminated rinse water is treated before being disposed to sewer. Treated effluent discharge requirements are not too stringent but at M&M they are determined to achieve better quality than this at all times so that they are free to concentrate on the quality of their clients' products. According to plant manager Jerry Mazor, environmental awareness has increased during the last 2-4 years: "It is very important for us and our clients that we have a high environmental friendly profile".

Mains water is used for rinsing. Water consumption has risen continuously. In 1994, M&M consumed around 20 m³/h; today that figure has nearly doubled. Of the 36 m³/h that is now used, about 10-15% is recirculated and they have reached the point where it is no longer possible to increase the water intake due to supply limitations. They therefore decided to install a TOVEKO filter on the end of their effluent treatment plant, not only to enable partial water recycling, but also to improve the quality of their discharge.



Rodrigrez with his Toveko CX filter

The wastewater treatment plant at M&M consists of:

1. Cyanide treatment
2. Chromium reduction
3. Neutralisation
4. Precipitation/Flocculation
5. Lamella sedimentation
6. Filtration through a TOVEKO CX filter, type S-300



Treated wastewater from M&M's upgraded effluent plant

The quality requirements of discharged effluent are set by the city. The provincial and federal governments are responsible for the supervision.

	<u>Initial Requirements</u>	<u>Anticipated revised requirements</u>
Zn	less than 3mg/l	less than 2mg/l
Ni	less than 5mg/l	less than 3mg/l
Cr	less than 3mg/l	less than 2mg/l
Cd	less than 2mg/l	less than 1mg/l
Cu	less than 3mg/l	less than 2mg/l

At M&M, discharging treated effluent which is much better than the requirements is a matter of pride and typical heavy metals concentrations in their discharge are half of the expected new requirements or less. It is the TOVEKO filter that enables them to guarantee such high quality on a consistent and regular basis.

DATE	pH	Zn	Cu	Cr	Fe	Cd	C.I.	Count
6/11	9.32	0.28	0.008	—	—	—	—	GRAB SAMPLE
6/11	9.94	0.32	0.004	—	—	—	—	—
6/11	9.38	0.31	0.008	—	—	—	—	—
MANUAL 6/11	9.45	0.25	0.008	0.005	—	—	—	—
6/12	9.21	0.27	0.008	—	—	—	—	—
6/14	9.42	0.39	0.008	—	—	—	—	—
6/14	9.43	1.27	0.008	0.004	—	—	—	—
MANUAL 6/14	9.37	0.26	0.30	—	—	—	—	—
6/14	9.26	0.23	0.008	—	—	—	—	—
6/15	9.43	0.25	0.16	—	—	—	—	—
6/15	9.43	0.30	0.21	—	—	—	—	—
MANUAL 6/15	9.47	0.37	0.11	0.001	—	—	—	—
6/15	9.42	0.42	0.05	—	—	—	—	—

Daily analysis of the treated effluent discharge

From the start, M&M expected to increase the quantity of water recirculated. To make further recirculation possible, an ion-exchange system is necessary to ensure high quality water suitable for process use. However, the pre-requisite for this is water free from suspended solids. Their TOVEKO filter will continue to give them this long into the future

H+E ranks among the world's leading suppliers in the fields of: water & wastewater treatment, and energy efficiency. Based on its global presence, the **H+E GROUP** has completed projects in over 50 countries.



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