

# Client Success Story: Chemetals Corporation



## Company profile

**Application:** Chemetal Corporation of Easthampton, Massachusetts chemically treats the surface of 4x8-foot copper and brass sheets to create interesting patterns and color schemes. The decorative sheets are then sold as laminates for counter tops, furniture making, wall treatments and architectural accents. Each sheet pattern and color scheme requires a different proprietary chemical formulation. Copious amounts of fresh water are used to rinse the sheets between chemical treatment steps.

**Wastewater Description:** The wastewater contains highly variable chemical treatment formulations, including proprietary salts, organic acids, concentrated bases, synthetic dyes and colorants, chlorine bleach, potash, water and substituted ammonium compounds.

**Waste Disposal Goals:** The goal is to recover the associated rinse waters from the manufacturing process, minimize the volume of waste resulting from the process and maximize the dissolved solids content. Ideally, the client wanted to decrease sludge volume and produce a high quality distillate that could be reintroduced into the rinsing process, limiting the use of potable water.

## Wastewater treatment challenge

**Former Process:** The client was using a standard physical chemical process to precipitate metals and dissolved solids. The system utilized coagulation, flocculation, pH control and post filtration.

**Permitting Considerations:** The client was dependent on the local POTW for discharge of their clarified final effluent. The existing POTW permit had strict discharge limits for copper, zinc and molybdenum. Molybdenum was the primary regulatory driver with an allowable discharge limit of 0.06 PPM. The former treatment system had difficulties achieving the permitted molybdenum limit. Regulatory oversight and frequent chemical monitoring by the municipality became a weekly requirement.

**Summary:** The former precipitation system was outdated, expensive to operate, rarely achieved the molybdenum permit requirement and generated high sludge volume. The treated effluent was of poor quality and could not be recycled as process rinse water; it could be discharged to the local POTW.



## CASTion solution

Parameter	Raw PPM	Permit PPM	CAST PPM	Removed %
TDS	3900	No Reg.	39	99.00
Copper	200	1.00	<0.20	99.90
Zinc	150	1.5	<0.14	99.90
Molybdenum	114	0.06	ND	99.99

The CAST treatment system significantly reduced the sludge volume, drastically reduced the treated water flow volume to the POTW, allowed reuse of the distillate in the manufacturing process and decreased the dependency on costly potable water by 90%. The greatly reduced concentrated still bottoms are disposed of offsite as F-006 waste by a licensed carrier. *The client received a return on investment in approximately 18 months with an operating cost of \$0.12 per gallon of raw wastewater treated.*

## Contact CASTion

Chemetal Corporation now operates more efficiently and cost effectively. Contact CASTion today to learn how we can help your company achieve its waste disposal goals.