

The World of **Watermaster**

NEWSLETTER • 2025

CLEANER, SAFER AND BETTER FUNCTIONING WATERS

Water Security Starts With Maintenance

Smarter Industrial Sediment Management

Reviving Brazil's Paraopeba River



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*Our waters sustain life, protect people and economies, and enable growth.
That's why securing our waters is so important.*

Water is too valuable to waste

Water Security Starts With Maintenance

Our waters — from rivers and lakes to canals, reservoirs, ponds, wetlands, and other waterways — sustain life, protect people, and enable growth. We rely on them for our drinking water, to irrigate crops, to keep industries running, to produce clean energy, and for navigation and transport. Without regular care they fail, bringing floods, pollution, shortages, transport disruptions, and health risks. That's why water security starts with regular maintenance, keeping vital waters in good shape to avoid disasters.

The **changing climate** is putting more pressure on our waters. Storms, floods and droughts hit harder. Eutrophication and invasive plants spread. Sediment builds up in waterways. Much of our water infrastructure was not designed for today's conditions, leaving irrigation canals, hydropower reservoirs, and tailings dams struggling to cope. Too often action is delayed until problems are impossible to ignore. By then the cost is highest: environments and property damaged, businesses disrupted. And in the worst case, lives lost.

Regular, planned maintenance is how we stop this from happening. It's the path to **water security** — safe, accessible water for people and nature, reliable water infrastructure for industry, and functional waterways for transport and trade.

Watermaster eco-dredgers strengthen local water security in over 85 countries. They enable our partners—governments, municipalities, and private companies—to maintain their waterbodies better and reduce the risk of disasters like flooding and water shortages. One amphibious Watermaster does the work of several conventional machines in shallow, challenging sites: suction and backhoe dredging, vegetation removal, and piling. This reduces costs and emissions and makes projects easier to plan and carry out.

Managing industrial sediments well is an important part of water security, and the **focus of our Newsletter this year**. It means keeping processes efficient, preventing environmental harm, and carefully restoring natural waters if leaks occur. On

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pages 6–7 we have a story from Brazil, where in 2019 a tailings dam collapsed and severely impacted the Paraopeba River and nearby communities. Today, a Watermaster is part of the revival work, helping to bring the river back to life. Even when the task is massive, restoration is always worth it.

Valuing water is the first step. In practice, water security means acting on that value every day. It is a process, not a one-time effort. By actively maintaining our waters, we help secure our future.

Yours sincerely
Watermaster Finland

*With Watermaster, sediment management is faster, safer and more efficient
— with fewer machines and lower cost per dredged m³.*

Maintain - Clean - Recover

Smarter Industrial Sediment Management

Industrial sites worldwide generate vast amounts of waste sediments — mine tailings, coal ash, gypsum, chemical sludges — that are stored in ponds. Proper maintenance keeps these ponds running efficiently and safe for the environment. Many also contain valuable materials recoverable with the right machinery and modern processing. Whether you are a contractor servicing several sites, or an industrial operator managing your own ponds, efficiency, safety and cost control are everything. Watermaster delivers you all three in one amphibious, purpose-built vessel that replaces several machines, works where others cannot, and can turn waste into revenue.

MAINTAIN — Keep ponds at full capacity

Tailings and process water ponds gradually fill with sludge, reducing storage, stressing pond walls, and clogging pumps that recycle water back to the plant. Watermaster solves this by removing the sludge effectively.

Watermaster's work efficiency and anchoring stability is in a class of its own thanks to its smart operating method (IWOS). It doesn't need wire cables, anchors or assisting vessels. Watermaster can cover large, irregular, and very shallow ponds where conventional and remote controlled dredgers with wires can't operate properly.

The state-of-the-art Watermaster Cutter Pump delivers up to 900 m³/h, with discharge distances of up to 1.5 km (longer with a

booster). Unlike conventional dredgers, Watermaster's pump is submersible, which means you move more solids and less water. Thanks to IWOS, you also need to reposition less, so you pump more. All this means you get a **lower cost per dredged m³**.

CLEAN — Restore affected waters

When a spill or pond failure happens, there is no time to waste. Watermaster is transported and launched quickly, and it can start recontaining contaminated materials immediately. The Cutter Pump with its patented cutting-knife system handles dense sediment mixed with vegetation or trash, pumping it to storage areas such as settling ponds, or geotextile tubes for tighter containment. From the cabin, the operator keeps the work precise so only the unwanted material is removed.



*The submersible Watermaster Cutter Pump.
Powerful. Efficient. Patented.*

Some waters have been polluted for decades. A mill, mine, or factory may be gone, but the waste it left behind still lies on the bottom. Watermaster can clear it out so the area can be used again — a polluted shoreline becomes a park or marina, an abandoned pond becomes a wetland.

RECOVER — Turn waste into value

Old tailings and process sediments still hold minerals and by-products left by earlier processing. Watermaster can target the right layers and pump a steady, concentrated slurry by pipeline directly to reprocessing or dewatering. This is more efficient than using excavators to first dig the materials to a barge or truck, and then rehandle the same materials when unloading.



*Dredging a coal plant ash pond in Australia
— boosting efficiency and preventing leaks.*

MAINTAIN

**Restore pond capacity. Prevent pond failures.
Keep processes running efficiently.**



*Cleaning an old pulp mill waste lake in Finland
— transforming it for new use.*

CLEAN

**Recontain leaked sediments. Protect natural waters.
Transform old industrial sites for new use.**



*Recovering copper from a process water pond in Chile
— turning waste into revenue.*

RECOVER

**Recover valuable materials from ponds. Avoid new mining costs.
Turn waste into revenue.**

Watermaster

SMARTER INDUSTRIAL SEDIMENT MANAGEMENT



WORK WHERE OTHERS CANNOT

**Independent and safe operation from small lined ponds
to vast irregular basins and hard-to-reach natural waters.**



ADAPT TO ANY JOB

**All tasks with one machine — suction dredging,
excavating, hammering, piling, clamshell dredging.**



MOVE MORE SOLIDS AT LOWER COST

**900 m³/h submersible pump — more solids, less water.
Less repositioning, more dredging at lower cost per m³.**



PUT SAFETY FIRST

**Watermaster is purpose-built for shallow waters.
Safe and trusted in industrial projects worldwide.**

Watermaster enables restoration
where access is hardest

Even when the task is massive, restoration is always worth it

Reviving Brazil's Paraopeba River

In January 2019, a tailings dam collapsed in Brumadinho, releasing a large volume of mining residues into the Paraopeba River. As part of the mining company's recovery program, Construtora Vale Verde is now removing tailings from a 6 km stretch of the river. The toughest areas are where the water is very shallow, the banks unstable and road access is limited. To reach them without building new roads or other temporary works, the team uses an amphibious Watermaster Classic V — the first in Brazil. It reaches and works in the most challenging sections of the river where the rest of the fleet cannot. The goal is to remove the tailings safely so the Paraopeba and the communities along it can recover.

WHERE THE TAILINGS ARE

Most tailings are near the riverbanks on shallow bars and inside bends where the current is slow. They block small water intakes and farm pumps. When water is low, some stretches are too shallow for boats, and local ferries must stop. After rain, the deposits move, muddy the water again, and erode the banks. Muddy water harms fish and plants and lowers water quality for local use.

WHY WATERMASTER IS NEEDED

Vale Verde's fleet includes work barges with 20-ton excavators, transport barges, a tugboat, a workboat and a cutter-suction dredger (CSD). These are conventional floating units, not amphibious, so they

need draft to operate and have limited mobility. They cannot access or work in the most shallow parts of the river.

The amphibious Watermaster handles those shallow areas. It reaches remote banks without building new access roads or temporary floating platforms/bridges. It walks in to water from land using its rear spuds and excavator arm, so no crane is needed. From there it self-propels through deeper parts and crawls over very shallow or dry sections to reach the work site. On site, it sets its four stabilizers (front and rear spuds) into the uneven riverbed and works safely from a stable position in water up to 6 metres deep.



The site is a 6 km stretch of the Paraopeba River near Brumadinho, 50 km south of Belo Horizonte.

Although this is the first Watermaster Classic V in Brazil, maintaining it is easy. Watermaster is a well documented serial product with clear operating, service and safety manuals. It uses top components such as a Caterpillar engine and Bosch Rexroth hydraulics, so parts and service are easily available locally. Aquamec in Finland provides direct technical support and can send spare parts quickly from stock.

Aquamec's trainer came from Finland to commission the machine and work two weeks alongside local operators and mechanics, training them in its safe and efficient use.



Watermaster excavating to open access for the other dredgers



Watermaster dredging tailings with its submersible cutter pump (up to 900 m³/h)



Stones in the river can block access. Watermaster breaks them with its hydraulic hammer to open the way

OPENING ACCESS TO THE TAILINGS

Watermaster's first task is to open the shallow stretches of river sediment that block access to the tailings. With its bucket, it clears these bars and creates the draft needed for the CSD and the excavators on barges to work. It also helps maintain the CSD's discharge pipeline. If large rocks are in the way, Watermaster breaks them with its hydraulic hammer to keep the way open for the larger units.

Watermaster can also suction dredge. Because its submersible pump is integrated with the cutter head under water the slurry enters the pump immediately, giving higher solids concentration and lower turbidity compared to conventional pumps on deck.

After rain the current grows stronger and moves the river's sediments. Shallow spots appear in new places and access routes can close. Watermaster is valuable here because it reopens these sections quickly and keeps the whole operation moving.

REMOVING THE TAILINGS

The work takes place in a sensitive river environment. Turbidity limits are strict and water quality is monitored daily upstream and downstream by environmental agencies.

Vale Verde manages the site from start to finish. The work is carried out safely with careful technical planning and environmental responsibility.

The CSD removes tailings by suction dredging the slurry through a pipeline to a dewatering area on land. On this stretch the pumping distance is about 3 km with 25 metres of lift using a booster.

Excavators on barges work alongside the CSD. They dig tailings and load transport barges. Loaded barges leave for the dewatering area while an empty barge takes their place. This shuttle keeps the loading point working without pauses.

Progress is documented with daily production reports and regular riverbed surveys, so the quantities removed and their locations are clear to the client and the authorities.

WHY RESTORATION IS IMPORTANT

As **Hugo Soares**, CEO of Construtora Vale Verde, explains: **"We respect the riparian forest and the river's life. This work is a milestone for the region's recovery and a step forward for riverside communities."**

The work is done so the river can recover and people nearby can keep living as usual. Each load removed reduces the risk of material being carried downstream. Cleaner water supports fish and plants in the river. Stronger banks protect communities and keep river crossings, water supply and local transport running.

Day by day, the Paraopeba River becomes clearer, safer and healthier as it returns toward its natural state.

Amphibious Watermaster was the missing link needed for accessing difficult restoration areas



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SMART SOLUTION FOR HARD WORK

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