

CASE STUDY:

Wastewater Treatment Plant Sludge Basin Rehabilitation

CLIENT

Alabama Wastewater Treatment Plant

PROBLEM

Exfiltration from a sludge basin was allowing wastewater to migrate into an unintended chamber within the facility's solids separation building. Despite dye testing confirming the source, no visible defects were identified in the concrete structure.

RESULTS

Basin 1 was prepared and lined with SprayShield Green to address suspected exfiltration pathways while preserving the existing concrete structure.

A Wastewater Treatment Plant in Alabama experienced an exfiltration issue involving one of its two parallel sludge basin chambers. Small amounts of wastewater were reaching a chamber inside the solids separation building that was not designed to receive these flows.

Dye testing confirmed that the wastewater originated from the sludge basin. When Basin 1 was taken offline, the unintended flow stopped, further isolating the source of the issue. However, after cleaning and inspecting the basin, no visible defects were identified in the concrete structure, presenting a unique rehabilitation challenge.

SOLUTION

Sprayroq Certified Partner Video Industrial Services selected SprayShield Green to address suspected leakage pathways within Basin 1 while preserving the existing concrete structure.

Surface preparation began with pressure washing the basin walls and applying degreasing agents to remove contaminants that could interfere with adhesion. A hydraulic cement toe was installed around the lower interior perimeter of the basin wall, and a groove was cut along the top to establish a defined termination point for the liner.

Because the basin was an open-top structure, additional measures were required to establish suitable application conditions. A tarp was installed over the basin, and a 500,000 BTU indirect-fired heater was ducted into the enclosed area to dry the concrete surfaces and increase the substrate temperature for proper liner adhesion.

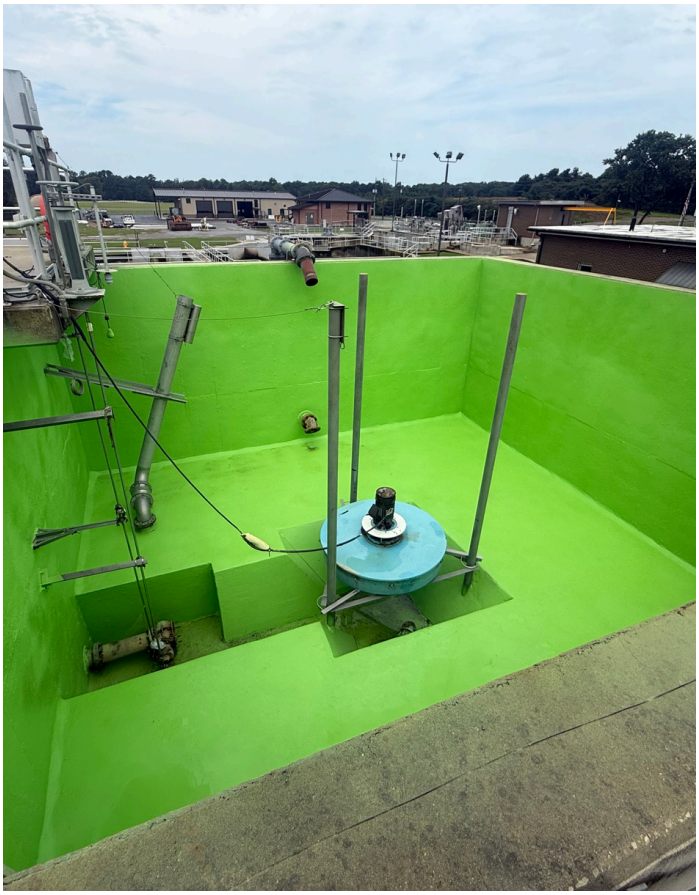
RESULTS

The project demonstrated how SprayShield Green can be applied to a wastewater basin even when suspected leakage pathways are not visible during inspection. The rehabilitation targeted the exfiltration issue without requiring replacement of the existing basin.

CONCLUSION

This project highlights the value of SprayShield Green for rehabilitating wastewater infrastructure with difficult-to-identify leakage pathways. The project also underscores the importance of thorough surface preparation and controlled application conditions when working within existing treatment facilities.





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