

FACT SHEET

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BIOREMEDIATION: NATURE'S WAY TO A CLEANER ENVIRONMENT

The bioremediation facility is an essential component of the Wadi Hanifah environmental restoration project.

The problem:

Large quantities of urban wastewater loaded with harmful bacteria and nutrients that were being derived from decomposing sewage.

- This was creating an environmental health problem that limited the public use of Wadi Hanifah, the watershed running through the Saudi capital.
- Water quality needed to be restored as an essential first step.

The solution:

Moriyama & Teshima Planners developed a design to address the specific water quality problems which included: harmful coliform bacteria, excess nutrients and hydrocarbon contamination.

- Developed the first bioremediation facility for cleaning water that is purely biological, rather than mechanical.
- The facility's function is to reduce coliform bacteria, de-nitrify the water and bio-accumulate excess nutrients using a food chain.

The result:

- This design, now proven successful after one year of operation, can be applied around the world at any scale for significantly less cost than a mechanical water treatment facility.
- On-going water testing is showing the facility is performing beyond design expectations and producing water clean enough for human contact and non-potable use.
- Mass reduction of harmful excess nutrients:
 - Fecal coliform bacteria by 97%;
 - Total coliform by 87%,
 - Emonia by 92%,
 - Biological oxygen demand (BOD) by 60%;
 - Phosphorous by 48%
 - Suspended solids by 97%.