Las Vizcachas Water Treatment Plant, Chile

The Vizcachas Water Treatment Plant that supplies 70% of the water supply to Santiago is rated for a capacity of 1,296 MLD. The owner, Aguas Andinas, is embarking on the renovation and rehabilitation of the 34 existing filters. The existing filters date back several decades and it is the intention to renovate 16 existing filters. There are many design challenges and conditions that are encountered in this process in order to provide a system that will provide sufficient water quantity along while meeting the Chilean Standard NCh409 Drinking Water Quality Standards. The following is a partial list of the major challenges and conditions that must be considered:

- Designing for varying influent conditions: The filter media must be designed for both a river and reservoir source. The varying high influent turbidity means designing for solids retention along with considering run time and effluent water quality.
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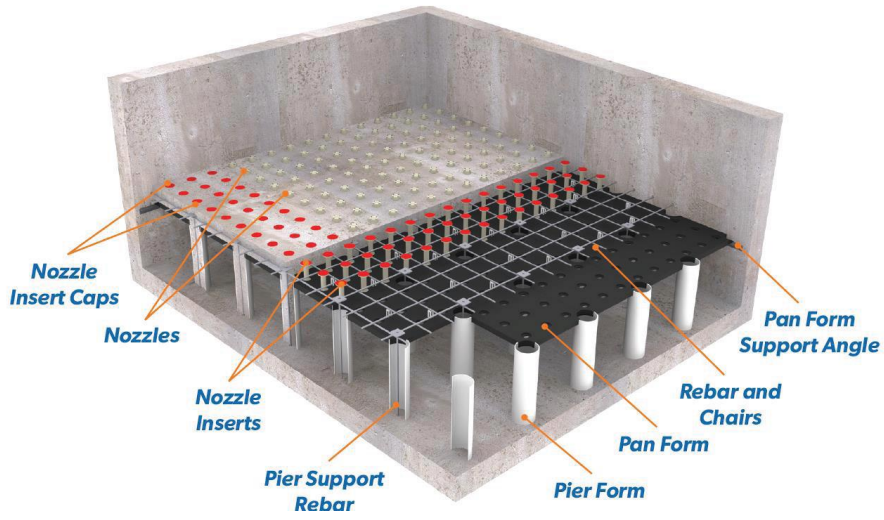
- Backwash water will be provided by 2 ponds of 1000 m^3 capacity each and are located in the highest part of the complex. The backwash water will be conducted from these ponds to 16 filters renewed through existing pipelines washing, without the need to build new pipelines for such effects.

In addition to the Chilean Standard NCh409 (Standard calls for < 2 NTU monthly average) the filtered water should have less than 1.0 NTU 100% of the time with influent turbidity between 7 and 17 NTU. The source water will be clarified water from the existing plant.



ETA is providing process engineering support for the upgrade of the gravity filters. The gravity filters will be outfitted with a complete new underdrain system that will incorporate a simultaneous air/water backwash. Provision are made for filter-to-waste to ensure that the filtered water that enters the clearwell is always below 0.35 NTU.