

## HeadCell® Sedimentation Basin Replacement

### Project Details

Hydro International was recently contacted by a large tomato processor to find a more effective sediment removal system for product conveyance flume water treatment operation. Their existing system, an earthen sedimentation system was 300' long, 100' wide, and 18' deep. Flows would enter one basin and then be allowed to overflow into the next basin until enough sediment had settled to allow water to be reused in the flume.

It was only taking the plant 3 months to entirely fill these basins with enough sediment to make them unusable and the detention time had been reduced to the point that the water would not be clean enough for reuse. The sedimentation system had good removal rates when they were empty, but as they filled over time the detention time lessened, reducing efficiency. This prevented the plant from knowing what actual performance was at any given time without careful monitoring of sediment loading rates and continual measurement of actual sediment levels in each of the basins.

Once the performance had degraded enough, the lagoons required dredging which could only remove a portion of the materials. After that backhoes were sent in to the un-shored earthen lagoons to reclaim their holding capacity. This was not only time consuming and labor intensive, it was also dangerous.

Their existing lagoons required a 30,000 square foot (0.7 acre) footprint and a whopping 540,000 cubic feet of volume. A HeadCell® system was sized that would provide better and faster sediment removal rates – in a 325 square foot footprint (<2% of the space) and require just 6,500 cubic feet of volume. Additionally, the HeadCell® based system would be provided with dewatering equipment, to continuously dewater removed sediment making it much easier to handle and send to disposal and / or land application. Unlike their existing sedimentation system, the HeadCell is not subject to impacts from wind, weather, or thermal short-circuiting.

***HeadCell® System Provided Better Performance than a 30,000 ft<sup>2</sup> Sedimentation Basin in <2% of the footprint.***

