



Client: Premier Water, Inc

Project: Product Development, Patent, Sales

Services Provided:

- Evaluate the Products and Technologies for the Startup Company
- Analyze, Improve, and Broaden the Patent Applications
- Organize and Support Company's entrance into Wastewater Treatment Marketplace

Type of Company:

- Three-year-old startup business developing a proprietary wastewater treatment system.

Premier Water, Inc., or PWI, had spent several years developing and demonstrating their proprietary wastewater treatment process. Operating installations in six different locations – four of them temporary – had performed satisfactorily, even *extraordinarily* at several sites. But company investors were anxious to grow the business and reach profitability. *Wastewater Experts, Inc.* was hired to analyze the company and its technologies, evaluate the full-scale operating facilities, help determine the competitiveness of these technologies in the North American Wastewater Marketplace, and develop, refine, and broaden potential patent applications.



The company had invested \$1 million in a technology demonstration plant north of Las Vegas and obtained mixed results, yet found that there was little or no waste sludge production just as they had noticed at other test sites. If the process could indeed eliminate or reduce sludge, then there were potentially huge market implications. Investigation of the operating principals of the technology revealed one or two possible mechanisms to explain the low-sludge phenomenon. However a detailed review of plant operating history and performance capabilities was inconclusive: the appearance of 90% waste sludge reduction was revolutionary, yet the plant setup left too many potential sources of error to be absolutely certain of the numbers. Such a claim would have to be proven by tightly controlled parallel test configurations, operated over the long term, with concurrent analyses of all operating parameters and mineral mass balances in order to provide seamless proof.

Over the next year, *Wastewater Experts:*

- Designed and managed several critical Product Development/Improvement and Performance Test protocols,
- Arranged for the company to receive critical and expensive equipment packages for these tests at little or no charge from other technology companies,

Wastewater Experts, Inc.

Balancing Engineering Realities with Financial Necessities



- Wrote complete Analytical Reports on these tests,
- Organized a national Sales Representative organization to begin marketing,
- Rewrote the technology patent claims and received patent award (assigned to the company) for greatly expanded coverage.



We ultimately proved that the technology did in fact produce excellent effluent quality, significantly improved Ultrafilter flux rates in an MBR application, and significantly reduced waste biosludge production. However we also established a clear dependent relationship between the amount of power applied per unit volume and the amount of sludge reduction. It was necessary to know this relationship at various power densities before the technology could go to the market place and designs made and performance warranties offered. *Wastewater Experts* defined a final series of tests to define that relationship.

At the same time, *Wastewater Experts* assessed several potential market applications to identify both the optimal and the inappropriate markets for the technology. We then reduced the company's estimated total market potential based on the fact that the technology would not be politically marketable or cost-effective at large-scale treatment facilities. The company's investors elected to close the company.