

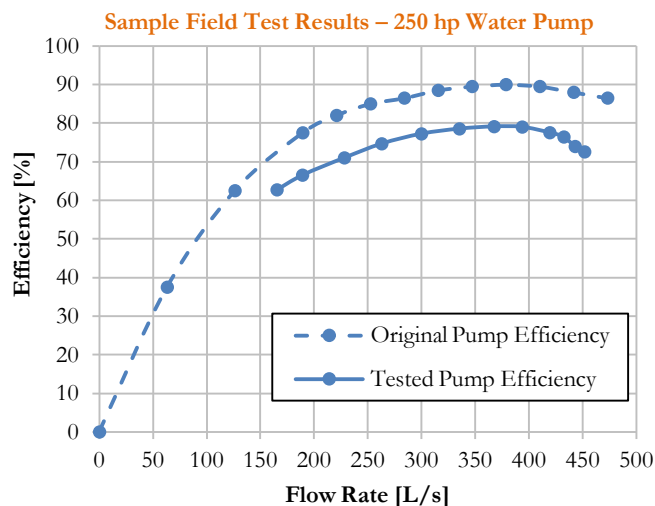
*“...if you are thinking about big challenges, and big threats, and those topics that are likely to dominate humanity over this century, you might think of water and energy.”*

*- Dr. Bryan W. Karney, “The Water-Energy Nexus”*

To assist with water-energy nexus challenges, HydraTek’s unique blend of service offerings includes highly accurate **pump performance and efficiency testing** in water and wastewater applications using industry-leading technology based on the thermodynamic method.

HydraTek is currently undertaking programs with the Ontario Power Authority (OPA) Conservation Fund and the National Research Council of Canada Industrial Research Assistance Program (NRC-IRAP) to test a large number of water and wastewater pumps across the Province of Ontario, respectively. The results of these programs will form the basis for industry benchmarking, raise awareness in energy efficiency performance in municipal pumping systems and help to catalyze conservation efforts in order to minimize the amount of energy consumed by these systems and, in doing so, save municipalities and utilities money.

Pump performance and efficiency testing provides the utility with important information that can support broader-scale system optimization and operational planning efforts. These tests are also used to verify the performance of new pump installations, and are important components of pump station condition assessment studies.



Test reports include the following:

- Actual *in situ* pump characteristic curves (H vs. Q)
- Actual *in situ* pump efficiency curves ( $\eta$  vs. Q)
- Power consumption curves (P vs. Q)
- Comparison with original manufacturer’s curves
- Key energy consumption metrics for comparison against industry standards and benchmarks
- Estimated potential energy savings, cost savings and greenhouse gas (GHG) reductions

### Why the Thermodynamic Method?

The thermodynamic method is recognized as the world’s leading technology for the accurate assessment of pump performance and efficiency. It is based on the premise that energy losses (or inefficiencies) across a pump – that is, the energy which is not converted to increased head – are represented in heat gain which is transferred to the fluid being pumped. Measuring the temperature gain therefore provides a **direct** measurement of efficiency.

This differs from the conventional method of testing which relies upon flow measurements which generally have much wider ranges for error and from which efficiencies are back-calculated (i.e., indirectly measured).

Major pump manufacturers have accordingly adopted this technology for testing their products.



### Contact

To learn more about this service, please contact us:

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