

**Kennedy Energy Audit Proves High Cost of Clogged Pumps**

**SEWAGE PUMP STATION**



**PROBLEM:** The subject pump station averages approximately 800,000 GPD and consists of four (4) 60HP pumps, two of which have VFD's. The biggest issue with the existing pumps was clogging. When a pump becomes clogged, the pump loses its ability to provide the designed flow and head. Changes from the original design parameters also result in the pump operating further from best efficiency point which may lead to vibration, cavitation, and possible catastrophic failure. While most see the cost of clogging pumps in terms of overtime, personnel safety costs, and repair, high costs also lie in energy consumption. A clogged pump requires more energy to operate, resulting in higher utility bills, which can inflict 2-3 times the energy costs of a "non-clogged", efficient pump. Pump #3 at this station became severely clogged and the cost of repair was enough for the customer to evaluate new pumps and the latest Flygt N-Impeller non-clog technology.

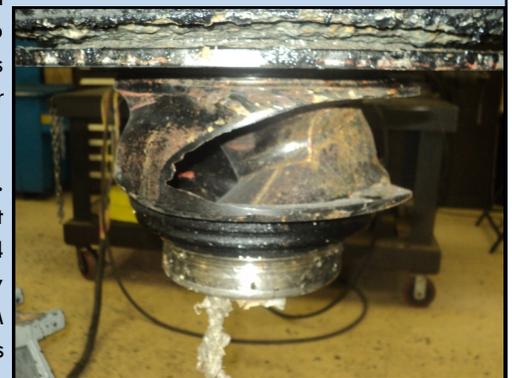
**SOLUTION:** Flygt's patented submersible N-Impeller design has a hardened and sharpened impeller with a recessed relief groove and guide pin which insures the pump will operate without clogging. Kennedy Industries evaluated the application and was able to propose a 60HP pump with the new N-Impeller non-clog design and a spacer block to allow for simple retrofit onto the customers existing guide rail system.

During installation, Kennedy Industries also performed an energy audit at the station. Electrical input readings were taken on all pumps and were translated into Kilowatt Hours per Million Gallons pumped. The new Flygt N-Impeller pump averaged 652.4 KW\*H/MG. While on-site, it was discovered that another existing pump was partially clogged. The partially clogged pump was only able to pump approximately 620 GPM and averaged 1215.1 KW\*H/MG! That is nearly double the Flygt N-Impeller pump!

**KI ENERGY AUDITS FIND  
WAYS TO SAVE YOU MONEY!**

- Identify Inefficiencies in Existing Pumps
- Prove New Pump & VFD Energy Savings
- Provide documentation for Utility Rebates

The new Flygt N-Impeller design is non-clogging and will drastically save the customer money with decreased energy use, pump station down time, repair costs, and improve safety for the community's workers. Kennedy Industries can perform energy audits at new or existing stations to provide information on actual pump performance. These energy audits can also be used to apply for Utility Rebates on new equipment such as VFDs and new pumps.



Clogged Pumps Cost Big \$\$\$

PUMP #	GPM	KW*H/MG	STATUS
#3	1,055 GPM	652.4	OPERATING
#4	620GPM	1215.1	PARTIALLY CLOGGED