

# SIDE INDUSTRIE DIP System innovative and sustainable technology

Oct 13, 2017



**The French DIP System innovative and sustainable technology: the safe and clean Direct In-line Pumping System for economic and environmental wastewater lift stations!**

[SIDE INDUSTRIE](#), a family company specialized for over 30 years in solutions for the pumping of (difficult fluids), invented a new clean and safe way on how to lift raw effluents through the concept of Direct In-Line pumping with no wet well, also called (wastewater circulation), patented and called DIP Systeme®.

Traditional lift stations use submersible pumps in a wet well. The pumps are activated by float switches when the water reaches a preset level. The pumps then run at full speed to empty the wet well. A primary issue with submersible pumps in wet wells is clogging with wipes and other flushable materials. The float switches are subject to fouling with fats, oils and grease and may require frequent cleaning to keep them operable.

In addition, wet wells occasionally have to be cleaned out, typically with a vacuum truck. Then you have hydrogen sulfide gas that can corrode electrical components, anything made of steel or iron, and even concrete. Not to mention the odors and complaints.

These pump clogging issues that are being experienced in many countries today were addressed and resolved years ago by a French innovator, Stephane Dumonceaux, GM of SIDE Industrie and inventor of the DIP Systeme®.

### **The first DIP Systeme**

The first DIP Systeme® was patented, installed and proven successful in 2003 and since then there are over 1,500 of these systems in use in municipalities (for example in Disneyland Paris) throughout France as well as in USA, Canada, Cambodia, Portugal, Ivory Coast and Caribbean Island. Based on practical expertise in the field, the development of its product range (56 models with flow rate: from 2 to 2000 m<sup>3</sup>/h (20 to 10.000 gpm)/unit and head from 1 to 110m (3 to 300 ft)) is the result of 35 years of research, and from listening to the daily concerns of its 1500 users worldwide, enabling them today to offer a modern alternative to wastewater lift stations that saves time and money by logically solving issues such as: dangerous gases (H<sub>2</sub>S), odors, sand and grease accumulation, hazardous access, variable flow, clogging, and dirty jobs.

### **DIP Systeme® lifts and boosts variable flows**

How? Because DIP Systeme® lifts and boosts variable flows from the sewer line invert to the discharge pipe with no need of any wet well. By lifting gravity effluent directly at the point of entry, without water loading or a wet well, the DIP Systeme® overcomes the drawbacks of retained volumes of effluent such as: dangerous gases (H<sub>2</sub>S), smells, sand and grease accumulation, equipment corrosion, structural erosion, clogged floaters; and offers access safety.

The absence of a collection tank eliminates costly cleaning operations of traditional units and eliminates in the same time the complaints from residents living close to an installation that produces unpleasant odors and the risks for maintenance technicians.

### **DIPCut**

In today's global and throw-away society, the "enemy" is fibrous waste such as wipes; therefore SIDE Industrie designed in 2012 a special impeller called DIPCut®: a patented impeller that becomes a "Shredder" when it changes direction of rotation. DIPCut® combines the advantages of the conical Vortex impeller when pumping sand, gases or big solid wastes and the shredding function cutting long fibrous materials into shreds.

When the torque increases, the pump senses that it is becoming clogged. It then automatically slows down, stops and reverses direction. When it does that, knives on the impeller pop up and slice up any trash. When the pump senses that it is running free again, it slows down, stops and returns to the normal pumping direction.

All this happens without operator intervention. Indeed, these self-cleaning pumps are connected and can be monitored and managed with a smart phone or with a tablet or a desk top from anywhere in the world thanks to the included web assistance OmniDIP®!

### **OmniDIP®**

OmniDIP® is a Self-monitoring system dedicated to the DIP Systeme®. It checks automatically and continuously all the processes through 230 parameters per pump in order to guarantee the optimal operation as long as possible and in order to avoid any useless intervention of a technician. It analyzes so precisely that it allows forecasting and optimizing and not only to inform when there is a technical fault nor to only log data.

The factory service is as well checking or updating the system via OmniDIP® and will handle as well automatically preventive alerts sent by the DIP Systeme®. Thanks to the remote control system OmniDIP®, the DIP Systeme® solution brings intervention comfort, safety and long term savings, energy included!

Knowing that cleaning out a classical pumping system costs on average \$350 that is equivalent to an electric consumption of 3.500kW/h, DIPCut® allows the savings of those clogs and uses less power. Contrary to others as Grinder or shear and cut and pump, the DIPCut® impeller keeps its high hydraulic pumping efficiency. Moreover, while shredding, all the power of the motor is used only by the 4 “knives” that use little energy.

Result: Efficiency doubled in comparison to other pump systems, so no motor oversize.

The DIP Systeme® has many applications and is particularly suitable for treatment plants, sanitation, public works, but as well for pumping washing water, industrial effluent, waste water and as well sea water in the stainless steel version L316.

### **The Norton project**

For example, end 2015 our distributor C&B Equipment won the Norton project and installed a DIP101 at the Norton Correctional Facility in Norton, KS, in April 2016. The Norton project was a special one as they used a fiberglass tank with the pump pre-installed prior to shipment. With this arrangement the job consisted of contractor selection (by bid to state of Kansas). Installation was to replace an old dry pit system that continually clogged. The installation process was completed within only three days.

The contractor excavated, poured concrete footer, lowered tank with DIP Inside in excavation, connected inlet and discharge and backfilled, connected cables to provided cabinet and started up. C&B Equipment has released a video case study detailing the results of the region's first Direct In-Line Pump System (or DIP Systeme®) installation and providing the testimony of Mr Joel Hrabec, Deputy Warden of the Norton Correctional Facility about the DIP System installation: <https://www.youtube.com/watch?v=YIBddKrOSbU&feature=youtu.be>.

One of the main reason why the DIP Systeme® has been chosen for this project is that it is designed to make wastewater lift stations much less maintenance intensive while effectively dealing with the trash, wipes and clothing that clog pumps and sewer lines. The DIP Systeme® automatically shreds these materials, allowing for uninterrupted flow. This also eliminates the labor and costs associated with physically removing and disposing of the materials.

With the “old dry pit system”, the maintenance team of the Norton correctional Facility had to unclog the pumps every day! C&B's video case study identifies several key benefits to municipalities and facilities converting their existing wet well pumping stations to the DIP Systeme®. They include:

- System is self-sufficient and can adapt speed automatically to flow intake
- System can be managed remotely, eliminating the need to send a crew to the site
- Reduced manpower required to remove and reinstall clogged pumps
- Rapid install and less excavation needed for new construction.

These have proved true for the Norton Correctional Facility in the five months since installation. We thank as well Mr Joel Hrabec, Deputy Warden of the Norton Correctional Facility, for his testimony on the video:

“Our application here at our facility is a little unique. We never know for sure what's going to get flushed down the wastewater system. We absolutely have not had to shut our sewer system down to repair, pull pumps, to unclog pumps—none of that has happened since installation. I would recommend the DIP Systeme® wholeheartedly.”