

Location: Oude Steeg municipality of Zevenaar

case study: 03-2021

Reliasource®*The Pump People®***BACKGROUND**

A booster pumping station is a pumping station that is used in the outskirts of a municipality as an intermediate station for pumping sewage water over greater distances. In some municipalities the distances from the outlying area to the municipal free-fall sewer are too great to be able to bridge this with 1 pump, after all we want to be able to use a speed of at least 0.7 m / sec in the system in order to ensure that pressure pipe. The boost pumping station is a pumping station, often of double construction, in which sewage water is collected and pumped up again. This pumping station is often equipped with a by-pass, in order to still have certainty of discharge in case of calamities.

THE CHALLENGE

In Zevenaar, the Oude Steeg booster unit proved to be a problematic pumping station. The biggest pain points were:

- Blockage of the pump
- Pollution of the receiving pit
- High maintenance costs
- Odor problems for local residents

The municipality also wanted to make an adjustment to the pipeline system, which meant that a second booster station could be discontinued. This would mean an extension of the already long discharge pipe. Can this be achieved with the same electric power?



Interior sewage booster pumping station.

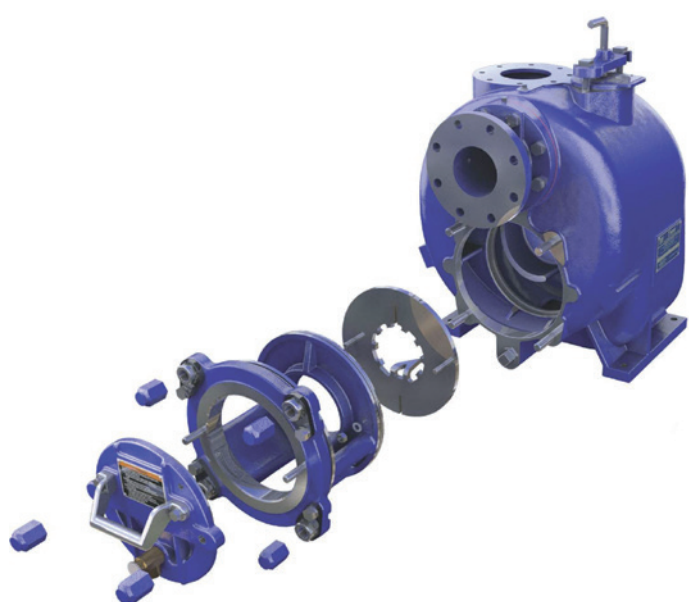
THE SOLUTION

With a Reliasource® above ground sewage pumping station of Gorman-Rupp, we have been able to solve the above mentioned problems.

Blockages in the pump are solved with the addition of the Gorman-Rupp Eradicator® system. This is a reliable system, integrated into the pumps which prevents clogging through fibrous materials such as wet wipes, cloths, rope, plastic bags etc. keeping downtimes to a minimum.

Contamination of the receiving pit is prevented by a backwashing system with which – completely automatically – the sedimentation in the pit is stirred up weekly, thus preventing the buildup of excessive pollution in the sump.

This system drastically reduces cleaning costs. As indicated, the application of the Eradicator® system reduces blockages. If however the pump is clogged due to very large contamination, this blockage can be remedied very easily and quickly, because the pumps are easily accessible, positioned above ground level. All this leads to a drastic reduction in maintenance costs.

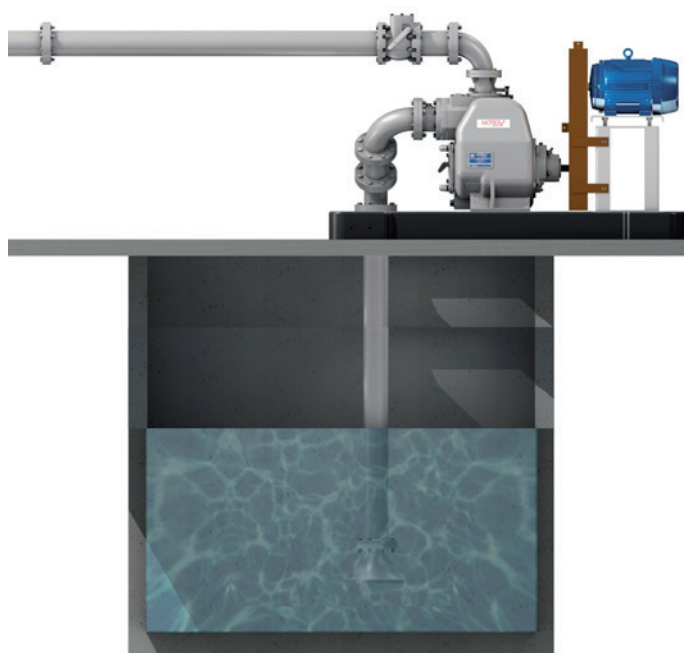


Eradicator® exploded view.

The odor problem for local residents has been solved because the switch-on/off frequency of the pumps is higher than that of the existing submersible pumps. The pressure build-up in the well, as a result of flooding, is thus limited, so that we can close the well airtightly due to the small difference between the entry and exit levels. In order to be sure in the event of an emergency that the receiving wet well will not be damaged, an overpressure relieve valve is also fitted to the system.

Finally, the municipality wished to eliminate a secondary pumping station between the sewage pumping station described here, and the municipal main sewer line. This meant an extra length in the discharge pipe of 400 meter! Due to the high efficiency of the installed Gorman-Rupp pumps and the pressure that can be built up as a result, this wish could also be realized with the same electric motor power as foreseen in the first design. Eliminating the secondary station also saves maintenance costs.

The five most important questions from the municipality have been effectively resolved with the installation of the Reliasource® above-ground sewage pumping station. In



Schematische voorstelling bovengronds opgestelde centrifugaalpomp.

addition, there are several advantages of this system compared to a traditional submersible pumping station:

- Due to the small difference between the entry and exit levels, contamination and grease deposits will be further counteracted, which in turn has a positive effect on maintenance costs.
- In the event of malfunctions, the work can be easily carried out without having to lift the pumps from the pit, as is the case with a submersible pumping station. That is also a considerable saving in costs.
- Routine inspections of an above-ground pump are very easy to perform, allowing future problems to be detected early and remedied before they lead to malfunctions.
- Finally, the prefab construction of the complete Reliasource® sewage pumping station allows for a considerable reduction of the construction time and -costs.

The municipality is very satisfied with this installation, they save on maintenance and operating costs, maintenance is simpler (after all, everything is above ground) and above all more hygienic, and odor nuisance for local residents is a thing of the past.



The end result.

RELIA SOURCE®

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