

# Waste Water Clarifier



*Success in this application can be applied to variety of other applications with similar challenges*

## Facts about Waste Water Treatment:

- The treatment of industrial waste water is an important function within an industrial chemical plant. If this function is not performed correctly, it can have a significant impact on the ability of the plant to run efficiently. In a worst case situation, it can cause the plant to shut down until the problem is corrected.
- Some of the common measurements found in the waste water treatment facility of an industrial plant are effluent, influent, odor control and the clarifier.



## Confidently Meeting Environmental Compliance Requirements

— Waste water pH, ORP, and dissolved oxygen monitoring

Depending on the feed entering the waste water facility there can be a wide range of pH. Very low pH liquids can damage parts of the treatment system and potentially kill the good bacteria in the clarifier. Knowing in advance that low pH liquid is entering the process allows the operators to divert influent to protect the system. Because the SE 555 pH electrode is designed for difficult industrial processes, it is a good choice for service where the pH can vary significantly and quick response time along with long service life are required.

Measuring ORP in the clarifier is an excellent method of understanding if the system is in balance, allowing the “bugs” to respire efficiently. Keeping the ORP electrode submerged about ¼ the total depth of the clarifier provides the best indication of the system health. The SE 565 ORP electrode uses the same robust design as our SE555 electrode which allows it to operate in very difficult applications.

Knowing if aerobic microorganisms are getting enough oxygen to convert organic waste into inorganic compounds and reproduce is critical to operations. Therefore, taking accurate dissolved oxygen monitoring readings

is important. The SE 715 digital dissolved oxygen sensor is ideal for submersible service.

All three of the sensors share 2 additional features in common, which is the Memoens® inductive connection and the ability to store the calibration in the sensor. Previously customers had to install all sensor cables into conduit or use potted cables to avoid process liquid from damaging the cable connections. This creates a lot of additional work to replace the sensors when there is maintenance needed such as field calibrations.

M4 Knick has designed a custom submersible sensor assembly which allows the customer to quickly take up to four sensors out of service and replace them with pre-calibrated sensors with minimum down time and reduced time spent at the clarifier. The submersible assembly is attached to a swing-arm system which allows the customer to conveniently lift or submerge the sensor assembly into the clarifier to the correct depth.



## What was this Customer's Return on Investment?

- **Reduced Maintenance Costs:**  
M4 Knick Memosens smart digital sensors can be calibrated in the shop then taken to the field. When plugged into the Stratos Evo/Pro transmitter, the sensors automatically shares its calibration data, thus eliminating the need for calibrations in the field.
- **Time Savings and More Accurate Measurement:**  
Memosens inductive connections allow the pH, ORP, and DO sensors to be lowered 2' below the water surface. This provides a better representative measurement compared to using ridged conduit or slip streams. This significantly saves time, when maintenance to the system is needed. Increased reliability of the sensors has also allowed the customer to put the system into automatic control which was not possible before and has eliminated shutdowns due to process upsets.