

# Primary Wastewater Treatment: Influent Monitoring

## BENEFITS

- Less maintenance with long life sensor
- Monitor off spec effluent
- Dual sensors monitor potential chemical contaminants



## BACKGROUND

The raw sewage entering a wastewater treatment plant comes from a variety of sources. In addition to effluent from domestic users, effluent from industrial users and storm water run off can be present.

Off spec effluent from industrial users or accidental spills entering the sanitary sewer system can cause problems in the wastewater treatment process, by killing the bacteria used in the activated sludge process, or by upsetting the disinfection process.

## PROCESS

Monitoring the influent can alert the plant operators that contaminated raw sewage is entering the plant. This allows the influent to be diverted and treated to avoid process upsets.

pH is used to detect excess acid or base in the raw sewage that can come from a spill or abnormally large discharge from an industrial user.

The raw sewage is a dirty sample, and large masses of solid material can accumulate on the pH sensor. The usual practice is to remove the sensor and clean it. A recessed tip (to protect the face), polypropylene body (for maximum chemical resistance), and an oversized reference junction (to resist fouling) combine to make the TUpH™ Model 396P the ideal choice for dirty applications. It is easily submersed in the stream on a length of pipe and, being disposable,

has the advantage of reducing the maintenance time typically associated with rebuildable sensors. Other than the potential for coating, raw sewage does not contain components that poison the reference electrode or pose material compatibility problems. Figure 1 shows a typical waste water treatment plant inlet.

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## INSTRUMENTATION

In harsh, dirty applications an analyzer offering diagnostics on the status of the sensor can be a real advantage. The Model 1056 offers a dual-input pH sensor to reduce the cost per loop and simplify the analyzer installation. The Model 1056 has optional HART communications protocol, allowing access to critical sensor diagnostics in AMS.

In certain situations, other analyzers are used in addition to pH. This occurs when there is an industrial user on the sanitary sewer system with the potential of releasing large amounts of a certain chemical that can upset the treatment plant. Depending on the potential chemical contaminant, ORP, conductivity, or even chlorine analyzers can be used for monitoring or alarming. For these applications requiring two sensors, the Rosemount Analytical Dual Sensor Input Model 1056 is the ideal instrument since it will accept any two sensor inputs.

## INSTRUMENTATION

### Model 1056 Analyzer

- East to use menu structure.
- Large, easy to read display.
- Robust NEMA 4X (IP65) Enclosure
- Any two sensor inputs possible



### Model 396P pH/ORP TuPH Sensor

- Polypropylene reference junction and helical pathway mean longer sensor life in process solutions containing heavy solids.
- Disposable, one-piece construction is convenient and economical where minimal troubleshooting and maintenance downtime are of prime importance.
- Versatile. Can be used in numerous loop configurations with all Rosemount Analytical and other manufacturers' instruments.

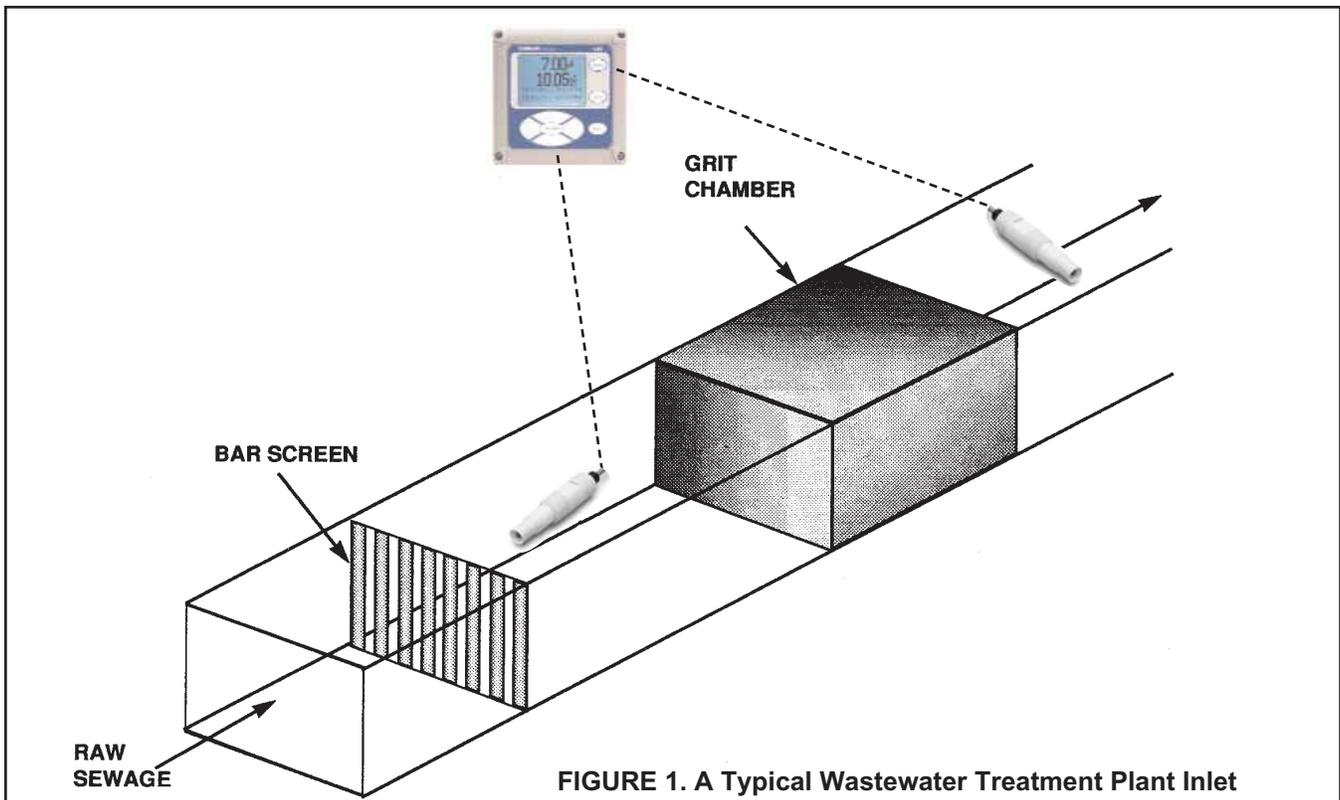


FIGURE 1. A Typical Wastewater Treatment Plant Inlet

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