Case Study

WASTE and DRINKING WATER TREATMENT PLANTS

Wastewater treatment plants play a vital role in water management, whether for a city, town, or village. They collect and process the raw wastewater from multiple sources, clean it, and discharge it back into the environment.

PROBLEM

Wastewater treatment plants are mostly located downstream meant to in-take all sorts of raw water, whether from residential or industrial sources, oil contamination still poses a considerable threat. Oil polluted waste water can foul the membrane filters, destroy bio-reactors, or clog the sand filters leading to potentially long plant shutdowns. Plant shutdowns are particular adverse when oil contamination exceeds the ability of the plant to handle. To protect a wastewater treatment plant from oil contamination, the critical requirement is safeguarding the water inlets.

LDI has consistently sold to water facilities around the world. Our clients include Irish, Scottish, and Bratislava Water in Europe, Guangzhou Water in China, Public Utilities Board (PUB) in Singapore, K-Water in South Korea, and the Taiwan Water Corp. Whether waste or drinking water monitoring, the application is simply a matter of location; both facilities monitor water at the inlet. Drinking water facilities monitor upstream pollutants for early warning against potential oil spill pollutants, while wastewater plants would monitor downstream closer to the in-take so contaminated water can be diverted away from the plant.

Recommendations

- SENSITIVE SHEEN AND EMULSION DETECTION
- REAL TIME ALERTS OVER SMS & EMAIL
- RANGE FINDER FOR WATER LEVEL CHANGES
- REAL TIME, WIRELESS ONLINE DATALOGGING
- SYSTEM EMBEDDED INTO EXISTING PLC SOFTWARE

SOLUTION

Installing a network of autonomous ROW oil spill detectors in the area leading to the water inlets allow for early detection of potential threats. This provides the operator the necessary reaction time to make a decision, whether to use physical containment (booms, absorbent material etc), or to divert water away from the treatment plant. Sometimes, the unfortunate solution of contaminating the environment would be easiest to clean and mitigate than fixing the damage to a waste or drinking water treatment plant.

For ROW installations, notification of a spill in the proximity of the plant gives time to shut down pumping to water inlet until the pollution is confirmed and dealt with. Data can be logged in real-time and integrated seamlessly into the plant controller systems. The ROW offers both surface and emulsion oil detection making it ideal to be part of the early warning water monitoring apparatus to safe guard water facilities around the world.

LDI offers two ROW models: the standard and Light Fraction sensors. While the standard model can detect larger oil spills, the Light Fraction ROW has up to 10x more sensitivity and can even detect oil in water emulsions - that's the difference between a cup of oil to a teaspoon.