Production and Integrity Assurance

How ROVs are Changing Water Tank Inspection Methods

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Intertek

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Remotely operated vehicles (ROVs) are changing the way in which potable water tank inspections are being considered, planned and carried out.

Julie Hart, Water Hygiene Technical Manager for Intertek Production and Integrity Assurance, examines the benefits encountered by our microbiology teams when it comes to ROVs and how the equipment can improve potable tank inspection processes in comparison to traditional methods.

Preparing an ROV for water tank entry.

The challenges of inspecting potable water tanks

Potable water tanks are relied upon across a range of industries globally, including on oil and gas platforms and in onshore facilities. Providing water for industrial applications and personal use such as cooking, showering and drinking, it is vital that the central supply remains clean and safe. However, managing this can be a daunting task. Currently, the most common way to perform inspections is to completely drain the tank and arrange for personnel to perform close-up inspections, which presents a confined space hazard. Tanks are then cleaned or treated if necessary, then re-filled. This method can take the tank offline for up to three days, or longer if remedial treatment is required.

The risks of neglecting water tank inspections

A water tank that hasn't undergone inspection within the timeframes recommended could harbour a number of contaminants, including microbial, chemical, hydrocarbon-based and excessive debris and or sediment. These can then pose a risk to human health and the integrity of the tank.

Perhaps the most serious of these risks is the formation of Legionella. The development of corrosion is also serious in terms of tank integrity and the growth of Legionella. Iron is a vital food source for Legionella and in turn, corroded tanks have a higher incidence of positive Legionella results.

Intertek microbiology services

Further to providing water tank inspection guidance, we offer a wide range of microbiology services, including:

- Corrosion testing and management
- Microbiology media test kits
- Scale management
- H_2S scavengers expertise
- Reservoir souring prediction and mitigation
- Sour service testing
- Legionella risk assessments, training and management software
- Potable water testing
- Water system disinfection guidance
- Vessel sampling
- Microbiological surveys

ROVs and their role in tank inspection

ROVs have the potential to improve upon the traditional approaches taken to water tank inspections.

Our teams have encountered the following benefits of using ROVs compared to traditional methods:

- Using an ROV removes the risks associated with confined space entry, which requires permits, planning and paperwork.
- Water tanks do not require discharging or refilling to perform ROV inspections.
- The time-consuming recommissioning step is reduced when using a ROV. When manned entry is undertaken, tank superchlorination is required prior to bringing the tank back online. If using an appropriately deployed ROV, this is not required.
- Following an ROV inspection, if remedial works are needed, the footage can be kept and drawn upon, which can help to inform better planning in the future. This can save time and costs in the long-term.
- In the best case scenario, tanks can be put back online within 12 hours.
- ROV footage offers the kind of detailed, close-up views necessary to inspect a tank's internal condition.
- Some ROVs have enhanced features such as arms that can capture samples from the inside of a tank and measure wall thickness.

However you choose to conduct your tank inspections, it is vital to ensure that your methods follow best-practice and are established with longevity and the safety of your systems and people as priority.

To explore the potential benefits of tank inspection services and for guidance on the usage of ROVs, get in touch with our teams.

Contact us for an informal discussion about your requirements.

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