Time To Wake Up To Progress In Odour Technology

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As social and economical views on the environment and the way in which we treat our waste are becoming a part of common culture, within the public arena, the importance of odour control is coming to the fore. It can be seen by the increased interest by both Governmental bodies and the media that the issue of odour control is now more apparent. The Introduction of IPPC across a variety of sectors has already led to an increased interest in odour control and this was amplified with the release of the IPPC H4 guidance notes on odour regulation and permitting in May 2009 (Working Draft). Alongside this, the majority of the wastewater industry has adopted the non-statutory code of practice for odour control brought in, in April 2006 (Statutory in Scotland).

As these industries are becoming more regulated the result is a change in the way in which odour control is viewed. In the past odour control has been delegated out and a general perception has been given that a quick, simple and cheap solution is all that is required, often resulting in the most convincing sales pitch being the solution selected. The resulting odour control systems ranged drastically in their performance and suitability and have shaped many of the perceptions seen within today's industry.

However the new perspective given to odour control is of much more scientific nature. This has seen specialists being employed to manage odour control and an increased importance being placed on odour surveying and dispersion modelling.

This is especially true of the wastewater industry which, in general, is a more mature market than that of the other waste treatment processes.

In the wastewater industry; as per the odour control code of practice, the development of odour improvement and odour management plans not only lead to more practical and economical solutions for the prevention and control of odour but also allows treatment systems, when required, to be designed effectively.

This is achieved by using the information collated in the odour improvement plans to optimise existing processes and place into effect procedures for odour minimising treatment and good housekeeping on site. The importance of knowing the chemical constituents of the extracted air stream hasn't always been given the significance it deserves, knowing this allows technologies to be type specific and to be developed to greater efficiencies and effectiveness.

One of the biggest advantages of using odour improvement and odour management plans is the new importance placed on analysing odour surveys and dispersion models of a site. From this the main causes of odour on site can be targeted, through this method of determining and quantifying the odorous contaminates within an airstream the treatment can now be chemical specific and hence much more effective.

These plans now allow the odour impact of a site to be seen as a whole putting odour nuisance into perspective, quantifying the economical, environmental and social effect a site has on its local community and making the solutions more economical, feasible and robust. The location of odour control systems can now be such that the dispersion of odours on site are pulled away from its borders, giving a greater overall effect at the site boundary for the least amount of effort and obvious expenditure.

In providing bespoke solutions, rather than "shoehorned" technologies, Odour Services International Ltd recognises that each individual scheme is exactly that, an individual scheme. Unique in its problem and requiring a unique solution, most often, without the unique cost too!!

With an in-house capability to design, manufacture, build, install, commission, service and maintain your system, Odour Services International Ltd is THE company for all your odour control requirements.

Each problem presents its own unique requirements for an effective solution. Odour Services International Ltd has developed its own range of technologies using Biofiltration, Dry Media adsorption, Wet Scrubbing systems either Bio or Chemical, Thermal Oxidisation, simple dosing or a simple change in process to negate odour production.

It is a widely seen misconception that odour control has not changed within the last 20 years. It is true to say that there are still the main 3 categories of odour control; chemical scrubbing, biofiltration/ bioscrubbing and adsorption. However the advancements within these processes is often not acknowledged or documented. This is most apparent in bio-scrubbing and adsorption processes. For example in the draft H4 document the example for retention time for bio-filtration is given as 30 – 60 seconds. Whilst this would be a true indication of the retention needed on traditional biofilter media such as peat, heather and wood based products the development of new bio-scrubbing media has dramatically decreased the required retention times whilst increasing the efficiency of this type of system by significant amounts.

New permanent bio-scrubbing media can halve the footprint of a traditional filter whilst increasing its efficiency from 80% to >98%. Adsorption media such as activated carbons and alumina are constantly under development to improve both adsorption capacity and chemical specificity. A range of impregnated carbons (and to some extent Alumina) are now available on the market place allowing selection of the most appropriate for any specific contaminate stream or moisture handling capability. By combining these dry media it is now possible to treat a vast array of compounds within a single stream where once this was not achievable.

Unfortunately, due to inappropriate use and complete absence of service & maintenance for some technologies we have seen subsequent schemes being over-complicated, over specified and expensive to both run and maintain with the general perception that some technologies will not be considered at all as a solution route.

Having carried out extensive research and development Odour Services International Ltd have managed to push the boundaries that have, traditionally, been the Achilles heel for some technologies. For example, a bio-scrubber handling in excess of 900ppm of hydrogen sulphide with a removal efficiency of 97% in an ambient temperature approaching 42 deg C. The system, installed on a sludge processing facility in Dubai, has impressed the client so much that it is the only non chemical technology being considered for the new Jebel Ali Waste Water treatment plant.

In proposing its own LavaRok® Bioscrubbing technology Odour Services International Ltd are able to offer a media life for biofilter media of 25 years and, coupled together with their own CuCARB® impregnated carbon technology, can offer a true wastewater odour treatment system able to treat a range sulphonated species rather than just hydrogen sulphide.

By developing a range of inoculums that are designed purposely to treat odorous contaminates the LavaRok® bio-scrubber can now treat effectively a range of compounds to a greater than 95% removal, this includes the

standard wastewater contaminates; Hydrogen Sulphide, Mercaptans and the various other organosulphides present, but also includes a variety of other compounds such as VOC's, amines and Ammonia. This now allows the use of biological systems within a much wider field and opens up options within, for example, the solid waste industries that have yet to be fully explored.

We are however only now at the brink of discovering the true range of technologies that can be used within the odour control industry. New methods such as clean plasma and UV technologies are being developed and marketed as well as the significant developments being made in new biological systems and chemi-adsorption systems.

The environmental demands now placed on us all increases the interest in more long-term, energy efficient systems and places much more emphasis on consideration of the end of life problems that can be caused by the use of chemical systems.

Before

After

Often the most environmentally friendly method of odour control is the re-use and maintenance of what already exists. How many systems are all too often simply switched off and never looked at again? Old odour control units can often either be re-furbished or converted into new more efficient systems. Frequently this has the added bonus of being able to increase the airflow treated by the system as newer technologies work on lower retention times. The long-term planned maintenance of these systems not only ensures that they are operational but also elongates their serviceable lifetime and ensures that the system is running efficiently keeping energy requirements at a minimum.

In securing service and maintenance contracts in Australia, through its Melbourne office, Odour Services International Ltd are taking its expertise and experience to a market place that has suffered over the years resulting in very high expenditure in emergency odour prevention schemes. Clients are already seeing the benefit of having a planned maintenance system in place.

Further to this the energy efficiency of the systems being installed is currently being addressed by the use of high efficiency fan motors and lower pressure drops across the newer systems

With the urban encroachment of ever increasing not to say, expensive, housing on waste treatment sites across all waste sectors, coupled with the decreasing acceptance of the general public towards these processes, it is now apparent that more understanding, better technologies and long-term investment is needed to rectify odour nuisance.