

A handy device to monitor hydrogen sulphide levels

For \$345, you can provide personnel working around liquid manure systems with a relatively cheap and effective early warning system

by RON MACDONALD

The hazards of hydrogen sulphide gases in liquid manure storages are well known. As well, the livestock and poultry industries continue to suffer financial losses from gas poisoning. These include death losses as well as reduced production.

A new device has been developed to monitor this gas, a small device that simply clips onto a piece of clothing. When first turned on, it emits one quick beep to indicate power supply. Then, a green light emitting diode (LED) lamp lights up every few seconds to indicate it is operating. As long as no excessive levels of hydrogen sulphide gas are emitted, it continues to operate this way.

However, once it encounters the deadly gas, the gas monitor starts to do its job. As soon as gas levels reach at least 10 parts per million (PPM) of gas in the air, it starts to emit a slow regular beep. The LED lamp flashes yellow, indicating caution is required. Note that the Occupational Health and Safety Association has determined that concentrations of H₂S at or below 10 PPM do not present human health and safety concerns. However, the potential for higher, more hazardous levels is obviously present.

Extreme care is thus recommended at this level. Depending on the situation, immediate action to remove people from the area and then eliminate the source of gas is a minimal response to this warning.

There is also a second warning level. At or above 20 PPM, the monitor emits a rapid beep with rapidly flashing red LED lamp. At this level, health and safety is at a high risk and



immediate action to protect people is required.

I recently had direct experience with the gas monitor. In the facility, liquid manure was being directly hit with high-pressure wash water in a pit, causing a 20 PPM-plus alarm. In this case, ventilation system changes were made that helped lower levels.

Shortly after, pit plugs were pulled in the same room. The gas badge beeped at the 10 and 20 PPM levels as soon as a plug was pulled. Corrective action was taken for safety by vacating the area until pits were drained and ensuring the ventilation system was set optimally.

Note that the setting of the ventila-

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tion system plays a key role in managing levels of hydrogen sulphide gas. However, due to the variances in pits, plugs, ventilation systems and the like, there is no "standard" method of management.

In the same facility at another location, a pull plug was partially dislodged in a shipping area. It again sounded the alarm and, once more, corrective action was taken to eliminate the source — in this case by firmly placing the plug and cleaning the obstruction in the hole out.

The gas monitor costs about \$345 and requires an annual factory calibration. This is a relatively cheap and effective system to provide early warning to personnel working around liquid manure systems.

However, it should still be noted that the best method of protection still involves training and adequate precautions. A gas this deadly deserves nothing less. **BP**

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