

Profile of the Month



Gray Wilkes

Throughout the years, Marion has looked to our firemen for support during busy times. They often are the missing link in a hectic calendar.

For 15 years, Gray has helped us with difficult projects and has made the difference in completing a job on time and at a level we can be proud of. He is knowledgeable and upbeat and enhances any crew.

Gray has always been a dedicated fireman, a devoted father, and an important member of our crew. We look forward to his continued leadership and hope to have him mentoring responders for many more years to come.

Marion Environmental Inc. is one of the leading providers of environmental consulting, remediation, and emergency response in the southeast. Our goal is to provide cost effective solutions to environmental problems.
Making *our* standard, industry standard.

HAPPENINGS



Andy Lay, Lisa Rollins, Sue Hartline, Sandra Tippens, and Katey Howell

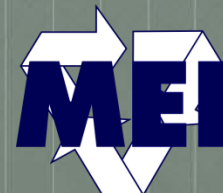
The first half of 2018 has seen our sales explode. Between new offices in Charlotte and Birmingham and a host of new clients all across the southeast, our accounting department has been busier than ever. They have put in many long hours and worked more than their fair share of weekends, but they have risen to the challenge admirably. We are proud and honored to have such dedicated professionals helping us grow and improve.

This month we implemented a new on-line accounting system, specifically tailored for MEI. It will mean better organization and a timelier invoice cycle. The accounting department deserves help, and we think this new technology will lighten the overall work load. They are a great group and deserve every tool we can give them for success.



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CONFINED SPACE SAFETY

Is the Atmosphere Safe?

Without oxygen, a worker in a confined space will be dead in 4 minutes. Testing for oxygen levels and other common dangerous gases is imperative for worker safety in a confined space environment. Ideally this is done before workers enter the space.

A multi-gas detector with an internal pump (or a detector that works in tandem with a manual pump) can test the air in a confined space to determine the safety of the atmosphere before workers enter. Testing must be done in several levels of the space because specific hazardous gases react differently to the rest of the atmosphere. Why? Hydrogen Sulfide is slightly heavier than air, so it tends to sink to the bottom of a tank or other space, while other dangerous gases (such as methane) may be lighter than air and rise to the top. Only by testing all levels of the tank you are about to enter can you be reasonably sure the atmosphere is acceptable for breathing.

Gas monitors typically check for the following:

- Oxygen (O₂) Levels High/Low – Low oxygen levels make breathing difficult and workers become sleepy or lack strength. Extremely low levels will cause a worker to collapse and suffocate. High concentrations of O₂ aid combustion and flammability and are therefore also highly dangerous.
- Carbon monoxide is a toxic gas which replaces oxygen in the blood stream when breathed in and immediately starts destroying cells and oxygen-starving vital organs. Even high concentrations of CO are tasteless and odorless and can render a worker unconscious in a very short period of time. If a flame is present, carbon monoxide is also flammable at high concentrations when combined with air.
- Hydrogen sulfide, also known as “sewer gas”, is characterized by a strong rotten egg smell, and is both flammable and toxic. Prolonged exposure deadens the ability of the worker to sense the strong odor, and can lead to severe breathing problems and respiratory failure. H₂S is dangerous because it can incapacitate a worker with only one breath and have them on the ground in seconds. High concentrations will completely starve vital organs and can kill quickly.
- Lower Explosive Limit (LEL) – This is the level where combustion can occur from gases produced by a variety of organic compounds that mix with oxygen. This dangerous mixture can be ignited by open flame, arcs from electrical equipment, and very hot surfaces as well as from less obvious sources such as static electricity and friction sparks. The level or concentration of explosive gas required for an explosion varies by the type of gas. For instance, Propane and Methane reach their LEL at different concentrations. If possible, your instrument should be calibrated for the gas you expect to encounter.

Will The Atmosphere Stay Safe?

Once you've established that the atmosphere is safe to enter, you next have to know that it will stay that way. Often the work conducted in a confined space contributes to degradation of the breathable atmosphere. Welding or gas powered pumps, for example, can increase dangerous gas levels, and venting may not entirely erase the gas or fume dangers.

Equipment that normally operates within specific confined spaces such as fans and turbines must be locked out (turned off and not able to be turned back on) while work is being completed. A motor that is not intrinsically safe (i.e. may produce a spark or ignition in the right circumstance) can cause a fire or an explosion if, for example, workers are painting with flammable epoxy-based paint without adequate ventilation.

Sometimes the work being completed can affect the quality of the air: groundwater mixing with chalk or limestone can produce CO₂ that displaces oxygen; welding creates nitrogen oxide and carbon monoxide which can do the same thing. In maritime operations a ship's hold may become toxic if cargo ruptures because of movement of the vessel. Dangerous atmospheres can quickly develop when different chemical compounds come together and create a reaction or when heavy gas has nowhere else to go, and begins to overwhelm the breathable air.

There are a variety of site-specific considerations that need to be taken into consideration while work is progressing. Tanks and silos have their own unique dangers where solidification of grain or flour which can create 'bridges' with voids beneath that can collapse when disturbed or stepped upon. A collapsed bridge can easily engulf a worker in a split second, where they can quickly suffocate. Constant gas detection and vigilance to potential danger should be used at all times.

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