

Avogadro Advisor

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NJDEP Draft Memo:

Most Repair And Maintenance Equipment Does NOT Need A Permit

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Author: Heidi Fleming

Avogadro regularly attends meetings of NJDEP’s Industrial Stakeholders Group (ISG). This group focuses on Air Quality Permitting within the State of New Jersey and is composed largely of DEP air quality permitting and air quality enforcement staff as well as representatives of regulated industries. At the February 4th NJDEP ISG Meeting, Mr. John Preczewski of the Air Quality Permitting Program distributed a draft memo regarding Permitting Repair and Maintenance Activities for review and comment.

The memo contains potential clarifications on whether equipment used to conduct repair and maintenance activities should fall under the same air requirements as equipment used to conduct construction activities. This means that if the repair and/or maintenance equipment will be situated at one location for less than 12 months, it does not require an air permit. If the equipment is to remain onsite for more than one year, however, then it will require permitting. This only applies to equipment that is brought onsite in order to conduct the repair or maintenance, and does not become part of the production process.

The memo lists 15 equipment scenarios and whether they are required to obtain a permit. Some specific examples include:

- During stack testing activities, Avogadro’s field crew may need to set up where power is not readily available. In this case, small portable diesel generators can be the best choice to provide power. This temporary equipment does not need to be permitted.

- A facility may need to bring in a crane and compressor to replace a burner in a boiler. In this case, the burner replacement is a permissible activity and would need to be reviewed by DEP. The crane and compressor needed to perform the repair, however, do not need permits.

- A facility is cleaning out a reaction or mixing vessel for a new production load utilizing a compressor/pump. In this case, both vessel cleaning and compressor/pumps would need permits, as they are part of the production process.

- A temporary piece of process equipment or a control device is brought in so that a turnaround can take place on the existing equipment. In this case, since a permitted piece of equipment or control device is being replaced, even though it may be of equal quality and/or for a short period, a permit is required.

Portable lighting powered by diesel engines can be brought onsite to be used during power failures and other out of the ordinary events such as spill cleanups. In this case, if the activity is less than one year in length, no permit is required. However, if the equipment is purchased, instead of rented, the generator for the lighting would be subject to permitting if it’s above subchapter 8 thresholds.

NJDEP encourages interested parties to provide any additional scenarios so that the guidance can be clarified and intends to publish a final document by sometime in the spring of 2011.

If you would like to share any comments on this document with NJDEP, please email john.preczewski@dep.state.nj.us. For more information regarding ISG, please go to <http://www.nj.gov/dep/aqpp/isg.html>.



Dust in the Wind?

USEPA Revises Methods 201A and 202 For Measuring Particulate Matter

Author: Tom Mattei

First A Bit of History

More than 10 years ago, USEPA published Methods 201A and 202. Method 201A (M201A) was designed to measure filterable particulate matter (PM) with an aerodynamic particle size of ≤ 10 microns (PM10). However, because condensable particulate matter (CPM) is less than 10 microns, it could not be measured by M201A. As a result, USEPA published Method 202 (M202) to measure condensable particulate matter (CPM). In one sample system, sampled stack gas first passes through M201A equipment before going through M202 equipment. USEPA Method 5 or USEPA Method 17, which are both used to measure total filterable PM, may also be used with M202. M202 is not meant to be used by itself.

What was revised?

The principle of Method 202 was to scrub CPM out of sampled stack gas by bubbling it through high purity water. The water would then be analyzed for CPM collected in it.

However, by bubbling sampled-gas through water, CPM was believed to be *formed* in the water from things in the stack gas other than just CPM. Instead of just collecting CPM from the sampled-gas, additional artifact CPM would form in the water. Since there's no way to distinguish between collected and formed CPM, the measured CPM would be biased high by any formed CPM. Sulfur dioxide is the biggest possible contributor to formed CPM (by forming sulfuric acid) and was the real focus of the new method development.

To address this issue, USEPA published Other Test Method 028 (OTM-28). Late last year, USEPA promulgated this method as Method 202 and it replaced the existing version of the method. "New" M202 is substantially different from "old" M202. In old M202, the water also cooled the sampled-gas, which is needed to properly collect CPM. In new M202, a water-jacketed condenser system is used to cool the stack gas to the point where CPM will efficiently collect in the condenser system, on a filter and in moisture condensed from the stack gas. Most importantly, with new M202, no longer does sampled gas bubble through water. Thus, the opportunity for CPM to be formed in the sample is greatly reduced, which improves the accuracy of new M202 over old M202.

What about Method 201A?

The principle of Method 201A was to separate PM10 from larger PM with a cyclone.

Once separated, filterable PM10 would collect on a filter.

However, recent years have seen the advent of emissions standards for PM with an aerodynamic particle size of ≤ 2.5 microns (PM2.5). Some sources have limits for both PM10 and PM2.5.

To measure PM2.5, USEPA added a second cyclone to M201A to separate filterable 2.5 from larger PM. Sampled gas goes through the PM10 cyclone and then the PM2.5 cyclone. They dubbed the sample system Other Test Method 027 (OTM-27). At the same time Method 202 was revised, USEPA promulgated this method as M201A and it replaced the existing version of M201A.

"New" Method 201A provides two key measurements; filterable PM ≤ 10 microns, but > 2.5 microns and filterable PM ≤ 2.5 microns. New M201A has provisions for using one cyclone or the other at one time. Thus, by choosing one cyclone or the other, measurements can be limited to just filterable PM10 or just filterable PM2.5.

How This Affects You

- Revised Method 202 should provide higher quality condensable emission data, especially for sources which emit high concentrations of sulfur dioxide.
- Revised Method 201A is really just the old version of the method, enhanced to include collection of PM2.5 along with PM10. However, M201A can't be used at sample locations where water droplets are entrained in the stack gas. In this situation the most common approach is to measure total filterable PM by Method 5 or Method 17.
- Since PM2.5 and/or PM10 measurements almost always include condensable PM, be sure revised Method 202 will also be used.

When seeking stack emission testing services, be sure revised Method 202 and revised Method 201A will be used. Avogadro has experience with both the original and revised versions of both methods on a wide variety of emission sources. If you need PM2.5 and/or PM10 emissions measured, and the sample location contains entrained water droplets, Avogadro can help you to understand the available emission sampling options. To download a copy of the promulgated rule, go to the EPA's website.



Introducing.... The NEW Technical Support Services!!

Author: Kristine Gilbert

Formerly known only as the Reporting Staff, Avogadro’s Technical Support Services has taken on a new name. This change in title more accurately represents the various services the group provides to our clients, as well as to fellow staff members. Led by the Technical Support Services Supervisor, Laurie Snyder, are Janeen Maruskanic, Aya Hayashi and Brittany Febert as Air Quality Scientists.

This department provides dependable, timely and accurate support to clients, project managers and field staff. Some of their responsibilities include:

- Protocol and report preparation.
- Field data tabulation and compilation with assessment of data quality.
- Laboratory analysis and reporting.
- Opacity field observations.
- Preparation of hazardous samples for shipping to external laboratories for analysis.
- Supporting the field staff with equipment, supplies and delivery needs during projects.
- Maintenance and distribution of laboratory supplies.
- Tracking and ordering of gas cylinder stock.
- Communication with clients and regulators to facilitate project progression.



Pictured from left to right: Laurie Snyder, Janeen Maruskanic, Aya Hayashi & Brittany Febert

The Technical Support Services team brings tremendous value to the testing and reporting process with their specialized full circle service. Projects begin with the group preparing protocols and corresponding with clients and regulators to facilitate project initiation. Projects are completed by the group compiling all data in order to prepare the tangible product that will be submitted to regulators for determination of our client’s compliance. Laurie, Janeen, Aya and Brittany are trained to specialize in technical writing, laboratory practices and sample shipping to exceed the quality standards established by state and federal agencies. They carefully track and meet all internal and regulatory timelines.

The team has successfully streamlined various field data sheets, templates and spreadsheets for reporting and data collection which have greatly improved efficiency. They take special care to maintain adequate supplies to ensure availability to the field staff no matter what the testing situation. One of the most important characteristics of this dynamic group is their flexibility in executing time sensitive requests; always striving to provide clients with accurate and professionally reported data within sometimes difficult timelines.

All of these qualities demonstrate how the Technical Support Services team works hard to ensure that Avogadro is the client’s *Best Choice Partner*.

tech·ni·cal *adj* \ 'tek-ni-kəl\

- having special and usually practical knowledge especially of a mechanical or scientific subject
- marked by or characteristic of specialization



Know Your Hazardous Chemicals

Author: David Alexander

Did you know that chemicals play an important role in Air Monitoring and Testing? There are many USEPA methods that require the use of hazardous substances to perform testing. As a result, it is important to take precautions when dealing with these substances.

Chemicals are characterized by the type hazard they can pose. The four main hazard types are:

Corrosivity: Classification of chemicals that are known to destroy or irreversibly damage another surface or substance upon contact. The main hazards to people include damage to the eyes, the skin, and the tissue under the skin; inhalation or ingestion of a corrosive substance can damage the respiratory and gastrointestinal tracts. Exposure results in chemical burns. Corrosive chemicals can be either acid or base. Examples: Sodium hydroxide, nitric acid, sulfuric acid.

Toxicity: Also known as poisons, toxic chemicals are defined as any chemical which, through its chemical action on life processes, can cause death, transitory incapacitation, or permanent harm to humans or animals. Examples: methylene chloride, cyanide, and heavy metals (mercury, lead, chromium).

Reactivity: Substances that are reactive include those which are naturally unstable and vulnerable to rapid decomposition as well as chemicals which, under specific conditions, can react alone, or with other substances in a violent uncontrolled manner. Examples: potassium permanganate, 30% hydrogen peroxide.



Storage of Chemicals

Because of the hazards, chemicals must be stored in a manner that prevents mixing of, and reactions from spilled chemicals. Below is an example of the chemical compatibility matrix which is useful in determining if two chemicals can be stored together.

With storage of liquid chemicals, a secondary containment unit must be used to minimize the impact of a spill. The size of the containment must be sufficient to contain the larger of:

- 10% of the total volume of containers or
- Total volume of the largest container

What About Hazardous WASTE?

The use of the word **WASTE** has very specific meaning when applied to hazardous materials and triggers additional requirements. Facilities must be authorized to generate WASTE and there are different requirements and limits on how much WASTE a facility may generate. It is also important to note that Hazardous WASTE has additional transportation requirements. In addition to the hazardous materials transportation requirements, any movement of hazardous WASTE must also comply with EPA regulations for hazardous WASTE. Many of the federal requirements for hazardous WASTE and hazardous materials transport can be found in The Electronic Code of Federal Regulations at <http://ecfr.gpoaccess.gov> by searching for the following: **40 CFR Part 260-260** and **49 CFR Part 177.848**.

(Continued on page 5)

Chemical Compatibility Matrix

	Inorganic Acids	Oxidizing Acids	Organic Acids	Bases (alkalis)	Oxidizers	Reducers	Inorganic Poisons	Organic Poisons	Organic Flammables	Non-Reactives
Inorganic Acids			X	X			X	X	X	
Oxidizing Acids			X	X		X	X	X	X	
Organic Acids	X	X		X	X		X	X		
Bases (alkalis)	X	X	X			X		X	X	
Oxidizers			X			X		X	X	
Reducers		X		X	X					
Inorganic Poisons	X	X	X					X	X	
Organic Poisons	X	X	X	X	X		X			
Organic Flammables	X	X		X	X		X			
Non-Reactives										





From The (E) Mailbag

Dear Avogadro,

Thank you for the quality and expeditious work you have provided to me. You and your organization have been very helpful to La Brea in all the work that's been done.

Gary McArthur-La Brea Bakery Director of Engineering

Hi Tom,

We were pleased with the team that was here to conduct the RATA testing; I especially appreciate their attitude and willingness to push through to finish all of the testing, even though it made for a long day. Please express our thanks to them once again.

Einar Peters, Kimberly Clark Pennsylvania, LLC

(Hazardous Chemicals continued from page 4)

Because individual states may impose additional requirements, it is important to research individual state regulations, contact an attorney, or call Avogadro Environmental for more information.

The chemicals required to perform air testing can be hazardous and require diligence in managing. Only by understanding the hazards associated with each chemical can we safely store, use and dispose of hazardous chemicals. At Avogadro, we are consistently working to improve our processes and handle hazardous chemicals in the safest way possible through employee training programs.

If you have further questions about chemicals, please feel free to contact:

David Alexander

Air Emissions Test Team
Leader 610-559-8776 x 105

EMPLOYEE OF THE QUARTER



Mark Johnson
Senior CEMS
Technical Engineer

Mark Johnson has been selected as our employee of the quarter. Mark worked tirelessly 6 days a week for 4 weeks while managing a project in Lorton, VA . He did an excellent job meeting our client's expectations as well as managing the subcontractor who supported Avogadro on the job. During this time frame he continued to communicate with Avogadro associates in the office to support the needs of other clients and continued to oversee the parts sales efforts.

Mark's hard work and dedication to his job are an encouragement to others. Thanks for your continued efforts Mark!!



Maximizing CEMS Uptime, Eliminate Regulatory Violations

Author: Tom Brown

What a crazy day and its only 10 a.m.! I didn't even get a cup of coffee and the line foreman was outside my office frantic because the CEMS was in alarm again. I had guests coming in to tour the facility in a half hour and wasn't exactly prepared to get my hands dirty. The CEMS is old, but not that old ...and the CEMS is just a small part of my responsibilities, I have so much more on my plate! I can hear the Production Manager now. Maintenance issues cost me productivity! In reviewing the maintenance log, it has been almost 5 months since anyone looked at the unit. Come to think of it that was an emergency service call. Boy, did that cost me a pretty penny both for the repair and the process downtime! Maybe I should look into a routine maintenance schedule. don't have a filter we have very little in the way of inventory at all. I better cancel the tour and get on the phone. What a waste of my time, I need to plan better!

In the world of Continuous Emission Monitoring Systems (CEMS), we often see the conflict between maintenance and purchasing arise affecting equipment capacity. If the CEMS is not functioning or functioning properly, a facility may be in violation of its air permit and inefficiencies abound. Many maintenance labor delays are related to issues concerning spare parts. Because the purchasing function typically procures the materials and sometimes has a limited understanding of the value it brings to the operation, it can have a big impact on maintenance productivity. There are a number of problems that can impact labor productivity such as late deliveries from vendors, wrong parts delivered, and parts that are damaged and cannot be used when they arrive.

By maintaining an inventory of consumable and manufacturer recommended spare parts, and performing routine maintenance one ensures that the company's assets

perform properly and at maximum productivity.

Avogadro can support your organization on both fronts; providing scheduled maintenance (often in conjunction with your quarterly audit) and maintaining inventory either in your company storeroom or ours. Planning is the key! We offer a no obligation evaluation of your maintenance and inventory programs.

[Click here to request an evaluation](#)



FAMOUS QUOTES

There's a myth that time is money. In fact, time is more precious than money. It's a nonrenewable resource. Once you've spent it, and if you've spent it badly, it's gone forever.

Neil Fiore

Many of the things you can count, don't count. Many of the things you can't count, really count.

Albert Einstein

Anyone who stops learning is old, whether at 20 or 80. Anyone who keeps learning stays young.

Henry Ford

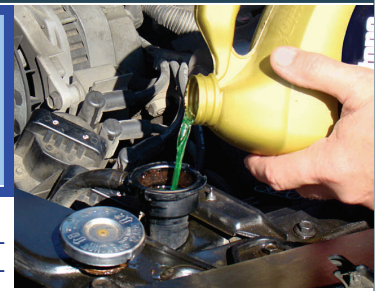
Man can live about forty days without food, about three days without water, about eight minutes without air ... But only for one second without hope.

Hal Lindsey

Chinese proverb

If you want happiness for an hour, take a nap. If you want happiness for a day, go fishing. If you want happiness for a month, get married. If you want happiness for a year, inherit a fortune. If you want happiness for a lifetime, help others.

Keeping your Car Happy During the Winter Months



Author: Kristine Gilbert

Unless you live way up north ...

A 50-50 antifreeze mix is probably best for your car's cooling system.

It's a common mistake for do-it-yourselfers. Before the coldest weather, or when they suddenly realize the below-zero stuff is approaching, they drain their radiators. So far so good.

Because they want to be extra nice to a car, they fill the radiator with straight, uncut antifreeze. According to Tom and Ray (Click and Clack, the Tappet Brothers), this is a mistake.

On good authority, they say antifreeze mixed half-and-half with water has a lower freezing point and a higher boiling point. The 50-50 mix offers freeze protection up to -34 degrees and boil-over protection up to 265 degrees.

For colder climates, a mix of 70 percent coolant and 30 percent water gives freeze protection to -84 degrees and boil over protection to 275 degrees.

Antifreeze has another function. It keeps the cooling system from rusting. The rust protection breaks down over time. Change coolant every year or as recommended by your owner's manual. It also removes dirt and rust particles that can plug up the system and cause problems either in winter or summer.

Green-colored antifreeze can be used in any car. Long-life coolants in other colors should be used on recent models. It can damage gaskets in older cars.

An engine that boils over or freezes can cause any number of dangerous situations, all of which are avoidable.

If your coolant boils and expands, or if it freezes, the engine block will be permanently damaged. That brings a very, very expensive repair job.

YEAR OF THE RABBIT

According to astrologers, people born in the year of the Rabbit are generally calm, gentle, and loving. While they may sometimes be perceived as timid, people born under this sign view themselves as wise and cautious. They are rarely known to act or jump into situation without first carefully considering all their options. At work, they are noted to excel by remaining cool and collected. They can be relied upon for extreme tact in delicate business dealings. Chinese tradition has it that the Rabbit ushers in a year in which we can all "catch our breath and calm our nerves." It is a time for negotiation and diplomacy.

Think about it...

Rehashing an insult can actually do you good!

Sometimes a put-down or insult is obvious, and sometimes it doesn't dawn on you until later. Either way, it can grind away on your concentration as it comes back to you many times.

Replaying an incident over and over is called ruminating. The silent suffering can make you testy and unpleasant to be around. Usually, it's far too late to come up with a clever reply.

That is, unless you can come up with a few good ones in your mind. Replaying the conversation with a new outcome makes you a winner every time because it's easier to win an argument with someone who isn't there. Creating a new ending could make you feel better even if no one else knows about it.

Psychiatrists at the University of Wisconsin say boredom can also drive away the sting. That's one reason people do crossword puzzles and Sudoku. After a while, the slight no longer has the effect it once did.

Some incidents can leave you wondering if you should be angry or not. In this case, make a firm decision to just let it go.



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Important dates



March 1	Tier I/II Reports due (CRTK in NJ)
March 1	Annual Air Emission Statements due in PA, CT
April 30	EEMPR for 1st Quarter due
May 15	Annual Air Emission Statements in NJ due
July 1	EPA Form R Report due (RPPR in NJ)
July 30	EEMPR for 2nd Quarter due
July 30	Semi-Annual Title V compliance Certification due in NJ, VA, CT
October 30	EEMPR for 3rd Quarter due

How well do you know....

GEORGE WASHINGTON

George Washington was the only president who was unanimously elected. He ran unopposed for both terms. He declined to run for a third term, setting a precedent which held until 1940.

- Born February 22, 1732 in Westmoreland County, Virginia
- Through several lines of ancestry, Washington can trace descent from English royalty.
- Married to Martha Dandridge Washington, a widow with children.
- He suffered from the following illnesses : malaria, smallpox, tuberculosis, malaria, dysentery and pneumonia
- He was one of the richest men in America
- Age at Death - 67 years old , from a throat infection.

ABRAHAM LINCOLN

Abraham Lincoln served as the 16th President of the United States He successfully led the country through its greatest constitutional, military and moral crisis--the American civil War --by preserving the Union by force while ending slavery and promoting economic modernization

- He was born on February 12th 1809, and died April 15th 1865 at the age of fifty six.
- He was president for four years from 1861-1865, when he was assassinated.
- With his wife Mary Tood, Abraham had four children, Robert Todd Lincoln, Edward Lincoln, Willie Lincoln, Tad Lincoln. Only Robert Todd Lincoln survived into adulthood.
- Lincoln, one week before his death, had a dream of someone crying in the White House, when he found the room; he looked in and asked who had passed away. The man in the room said the President. When he looked in the coffin it was his own face he saw.