



Laboratory Analytical Methods & Proper Field Sampling Requirements



AIR & WASTE MANAGEMENT
ASSOCIATION
MIDWEST SECTION | Nebraska, Iowa, Kansas & Missouri



Which Method Do I Use?

- EPA has validated method series that are applicable to Drinking Water, Wastewater, Groundwater, Soils, Hazardous Wastes, etc.
- Most states have their own TPH method requirements
- Some older permits or outdated SOW's refer to methods that are no longer applicable

Safe Drinking Water Act (SDWA)

Potable/Drinking Water

- Inorganics- 100/300/400 series
 - Some of the Wetchem methods are now Standard Methods- 40 CFR MUR
 - pH: EPA 150.1 → SM 4500H+B
 - TSS: EPA 160.2
- Metals- 200 series
 - ICP metals- 200.7, ICP/MS metals- 200.8, Mercury- 245.1
- Organics- 500 series
 - VOC's- EPA 524.2, SVOC's- 525.2, Pesticides- EPA 508.1

Clean Water Act (CWA)

Wastewater, Ambient Water, Sediment & Biosolids

- Inorganics- 100/300/400 series
 - Some of the Wetchem methods are now Standard Methods- 40 CFR MUR
 - pH: EPA 150.1 → SM 4500H+B
 - TSS: EPA 160.2
- Metals- 200 series
 - ICP metals- 200.7, ICP/MS metals- 200.8, Mercury- 245.1
- Organics- 600 series
 - VOC's- EPA 624, SVOC's- 625, Pesticides/PCB- EPA 608.1

Resource Conservation & Recovery Act (RCRA)

Groundwater, Soils, Wastes, UST programs

- Inorganics- Same methods as CWA/SDWA, except for wastes (covered in next slide)
- Metals- 600/700 series
 - ICP metals- 6010, ICP/MS metals- 6020, Mercury- 7470 (water), 7471 (soil)
- Organics- 8000 series
 - VOC's- EPA 8260B, SVOC's- 8270C, Pesticides- EPA 8081 (organochlorine), EPA 8141 (organophosphorus), Herbicides- EPA 8151, PCB's- EPA 8082

Waste Samples

Leachates, Solvents, Product, etc.

- Inorganics- Many of the Wetchem analyses are substituted by 9000 series:
 - Anions by EPA 9056 instead of EPA 300.0
 - TOC by EPA 9060A instead of SM5310C
 - pH by EPA 9045 instead of SM 4500H+B
- Waste Characterization-
 - TCLP- Toxicity Characteristics Leachate Procedure- EPA 1311
 - SPLP- Synthetic Precipitate Leachate Procedure- EPA 1312
 - RCI- Reactivity (Reactive Cyanide & Reactive Sulfide), Corrosivity (pH), Ignitability,

State Specific TPH Methods

- Missouri
 - TPH-GRO by EPA 8260
 - TPH-DRO/ORO by EPA 8270
- Kansas
 - KDHE LRH (EPA 8015M or 8260M)
 - KDHE MRH/HRH (EPA 8015M)
- Oklahoma
 - OK-GRO (EPA 8020/8015M)
 - OK-DRO (EPA 8000/8100M)
- Iowa/NE
 - TPH-GRO by OA1
 - TPH-DRO by OA2

So.... Which Method Do I Use??

- If your Scope of Work doesn't designate a method or nothing is specified on a permit simply ask the lab for the parameter you need and they can let you know the method that they perform
- When requesting Metals, always provide the actual list of metals you need reported and any applicable Reporting Limits

How Do I Collect My Sample??

- Water samples-

- Inorganics- majority of samples are collected in glass jars, plastic containers & some vials
- Volatiles- 40 ml vials, preserved or unpreserved

NO HEADSPACE IN VIALS AFTER COLLECTION OF SAMPLE

- Soil Samples-

- SW 846- 5035 Terracore kits- many different preservatives used in these kits (Bisulfate, TSP, Methanol, etc.)
- Bulk Soil jars

- Air Samples- That is a whole other presentation!!

How Do We Work Together?

- Dedicated Project Manager- One point of contact for all work
 - All lab work, Lenexa lab, as well as Specialty Services, managed by one person
 - All Pace labs connected by central LIMS system
- Preprinted COC and labels
- Bottle orders to your request
 - Ability to order containers by project or bulk supplies
 - Everything needed to return cooler is included in sample kit
 - Bag by well available upon request
- Courier and/or shipping options- location dependent
- Standard 6 business day TAT

How Do I Pack My Cooler??

- <https://www.youtube.com/watch?v=iSO7gjD5KFO>

ICE, ICE BABY!!!!

- Make sure that the appropriate shipping labels are affixed to the cooler
- USDA Regulated Soil labels?
- Make sure to relinquish your COC!

Can I Hand Submit Samples to the Lab??

- Of course! Make sure that your coolers are full of ice
 - Even if you just sampled and added ice to the cooler, the samples will not be down to the EPA recommended temperature preservation
 - Laboratory will note that the samples are on ice and the temperature preservation process has begun



Questions?



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