



NEVADA DIVISION OF
**ENVIRONMENTAL
PROTECTION**



Nevada Department of
**CONSERVATION &
NATURAL RESOURCES**

Source Testing

Bureau of Air Pollution Control (BAPC)

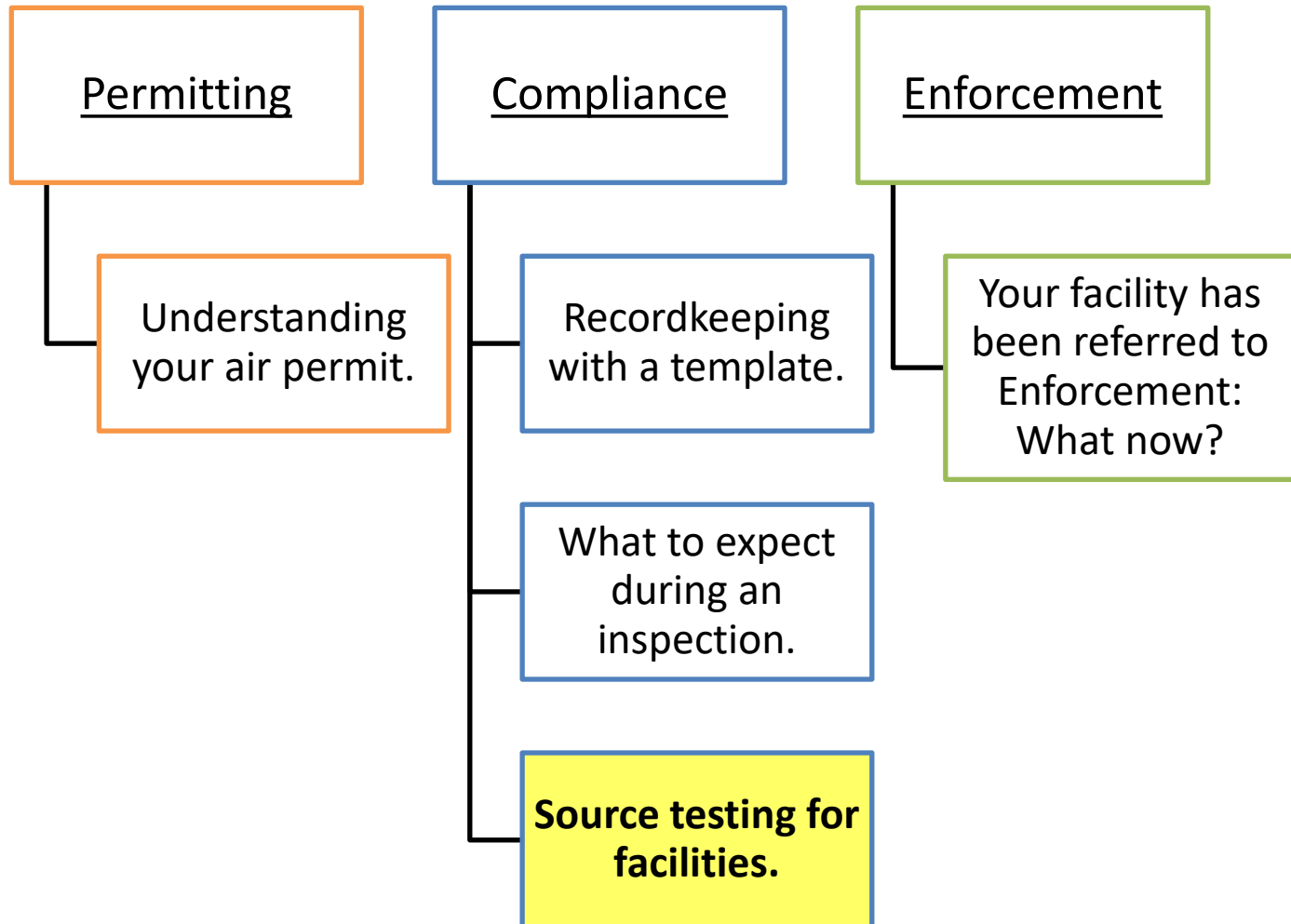
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Presented by

Jens Christiansen, P.E.
Compliance Inspector

LAYOUT OF WEBINAR SERIES

TODAY'S TOPIC: SOURCE TESTING



OVERVIEW

- Clean Air Act and criteria pollutants
- Examples of pollution
- Permitting classifications and testing requirements
- Common reasons for invalidations
- Observing testing
- Testing requirements
- Invalidations or failures

WHY?

Source Testing is important but why does NDEP require it?

- The Clean Air Act was passed in 1970 as a federal law that regulates air emissions. Authorizes Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS)
- EPA directs states to adhere to NAAQS
- Emission factors are determined with AP-42 and control efficiencies during the permit application process
- Non criteria pollutants = Hazardous Air Pollutants (HAPs)
 - Mercury, Hydrogen Cyanide, Pentane
- Source testing is the verification that controls are operating as intended



Figure 1.



BAPC field photo. 5

WHERE AND WHEN

Class I Air Quality Operating Permit

- Class I Source (NAC 445B.036), Major Source (NAC 445B.094): a stationary source with facility-wide PTE¹ of either ≥ 100 tpy of any Criteria Pollutant² and/or ≥ 10 tpy of any individual HAP³ or ≥ 25 tpy of a combination of HAPs.
- Subject to federal requirements under 40 CFR⁴ Part 70 (Title V).
- Subject to any other federal subpart requirement(s).
- Major Stationary Source (NAC 445B.0945): *See definition under "Federal Definitions"*.

Class II Air Quality Operating Permit

- Class II Source (NAC 445B.037): a stationary source not subject to any requirement under 40 CFR Part 70 (Title V), not a Class I Source, and with facility-wide PTE equal to or greater than the following pollutants: PM_{2.5} (5 tpy), PM₁₀ (5 tpy), CO (50 tpy), VOC (20 tpy), NO_x (5 tpy), SO₂ (5 tpy), Pb (0.3 tpy), & H₂S (1.0).

Major Source of HAPs

- (40 CFR Part 63.2): any stationary source that emits ≥ 10 tpy of any individual HAP or ≥ 25 tpy of a combination of HAPs.

Area Source of HAPs

- Considered Minor Source of HAPs for emissions under the thresholds above.

1: Potential to Emit (NAC 445B.138): the maximum capacity of a stationary source to emit a regulated air pollutant under its physical and operational design.

2: Criteria Pollutants (NAC 445B.049, 445B.22097): PM₁₀, PM_{2.5}, CO, NO_x, SO₂, Pb, O₃(VOC+NO_x), H₂S

3: Hazardous Air Pollutant

4: Code of Federal Regulations

WHERE AND WHEN

- Class II AQOP
 - Section IV. – Initial Performance Testing + IOCD's
 - Section V. – Testing after Monitoring and Recordkeeping if applicable
- Class I AQOP
 - Section IIA. – Initial Performance Testing + IOCD's
 - Section VI. – Specific operating conditions
- MOPTC permits
 - Section II. – Specific operating conditions
- OPTC's and COLA's
 - Section II. – Specific operating conditions
- Permit Renewal Testing
 - “At least 90 days prior to the expiration of this operating permit, but no earlier than 365 days from the date of expiration.”

MOST COMMON CAUSES FOR INVALIDATION

- Leak checks
- Rinsing of testing equipment
- Isokinetics
 - Holding sample probe
 - Testing off a lift
 - RM201a
- Nonconcurrent testing moisture and gases
- Process operating rates
- Process leaks



BAPC field photo.

WHAT TO LOOK FOR

- Post leak checks
- Rinsing
 - 80% rule
- Gaseous & PM testing
- Moisture content

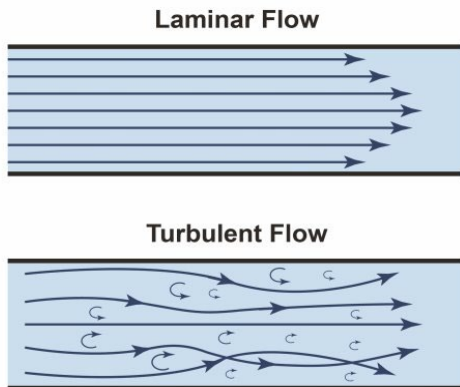


Figure 2.

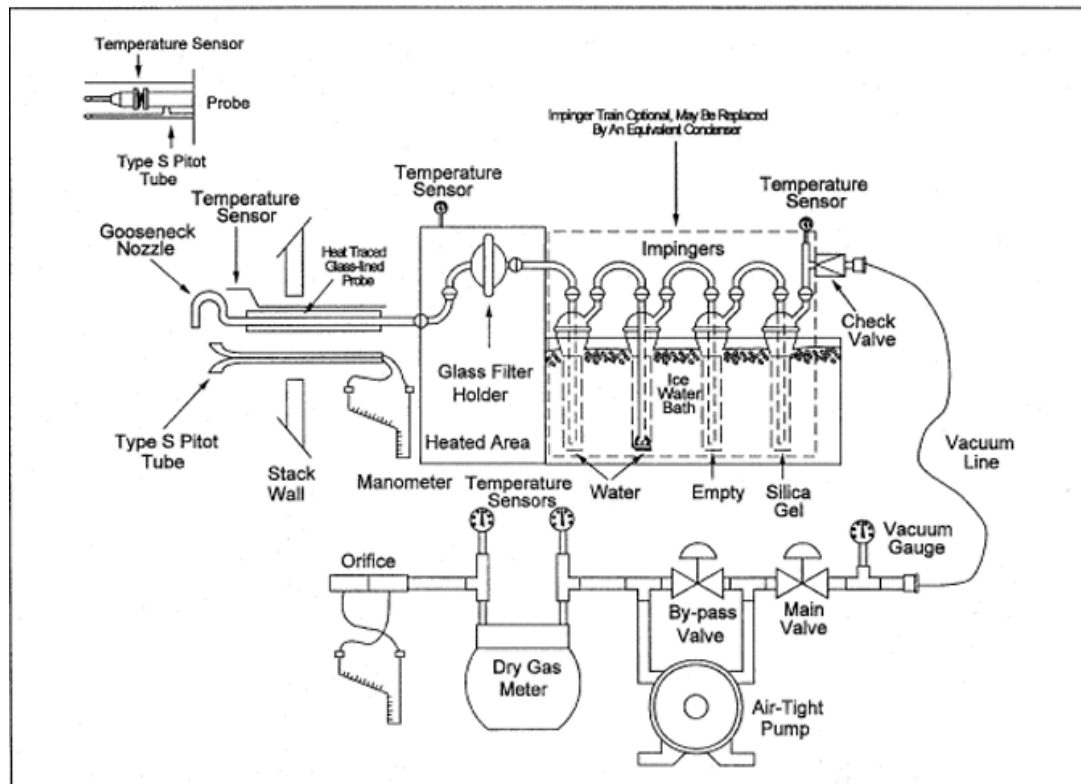


Figure 3.

WHAT TO LOOK FOR

Method 201A

- RM 29 Probe cleanup
 - Nitric acid, brush, Nitric acid, acetone
- RM201A
 - ~60% of source tests using this method are invalid for isokinetic sampling



Figure 4.

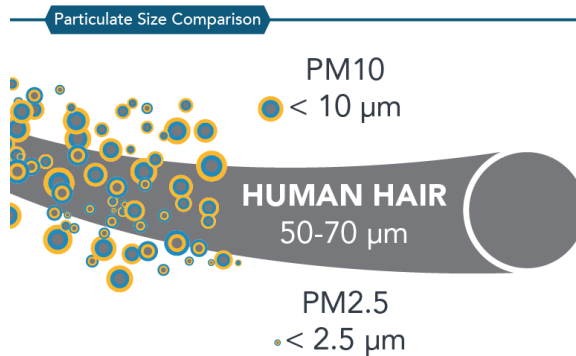


Figure 5.

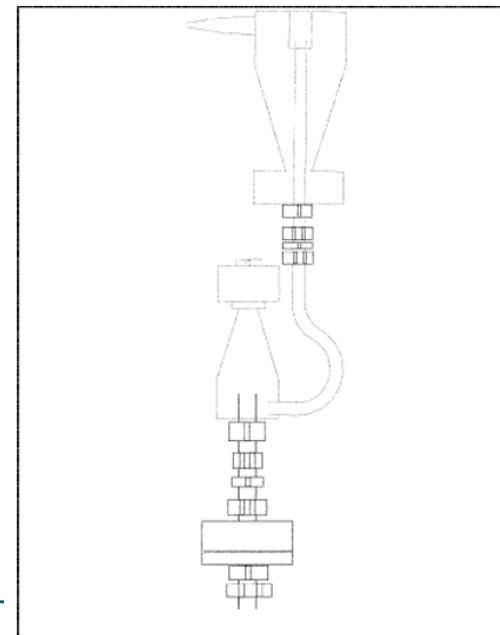
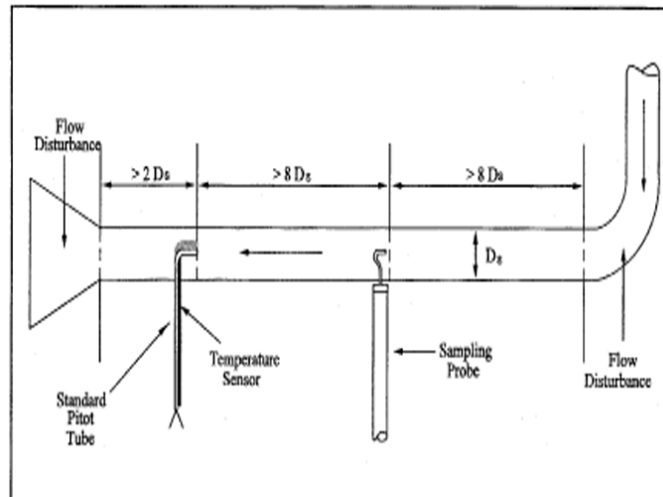


Figure 2. Combined Cyclone Sampling Head

Figure 6.

TESTING REQUIREMENTS HIGHLIGHTS

- Representative operating condition
 - Generally, 80% of normal operation or maximum
- Provide operations information to testers
- Stack diameters
- Preventing sample dilution at the test ports
 - Port covers or rags
- Man lifts



BAPC field photo.

Figure 7.

INVALIDATIONS OR FAILURES

- Invalidations
 - Methodology
 - Operating conditions
- Failures
 - exceeding permitted emission limits
- Report failed Source test to NDEP
 - 24 hour and 15 day reporting
- Retesting
 - 60 days
- Enforcement may follow



Valid



Invalid



**Exceeds
Limit**

REFERENCES

1. <https://www.sciencefriday.com/educational-resources/air-pollution-around-the-world/>
2. <https://www.automation.com/en-us/articles/2018/demystifying-fluid-turbulence-velocity-and-flow-me>
3. https://www.epa.gov/sites/default/files/2021-05/documents/method_5_-_2020_12_07_0.pdf
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5. <https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health>
6. https://www.epa.gov/sites/default/files/2019-08/documents/method_201a_0.pdf
7. https://www.epa.gov/sites/default/files/2017-08/documents/method_1a.pdf

8. NDEP testing guidance: https://ndep.nv.gov/uploads/air-permitting-docs/230816_website_testing_requirements.pdf

Questions?



Jens Christiansen

-Compliance Inspector

-Phone: 775-687-9350

Email: jchristiansen@ndep.nv.gov