



**EPA's QA Handbook**  
**Volume VI: Optical Remote Sensing**

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# Outline

- **Strategy**
- **Outline**
- **What's in There?**
- **Chapter Description**
- **Other Information**
- **What do I need from you!!**



# Strategy

**For several years, Industry, Researchers and State/Local/Federal agencies have been requesting EPA guidance**

**EPA hosted several international workshops on Remote Sensing: In 2008 and 2009**

**The workshops both recommended guidance**

**In late 2009, EPA gathered experts from US and Europe to help create a new Handbook: Volume VI!**

**The strategy was to create a comprehensive, but living document that could be updated periodically**



# What's in there?

**All kinds of stuff!!!**

**Instrument descriptions**

**Method Descriptions**

**QA and QC**

**QAPPs**

**Data Validation and....**

**Wisdom!!!**



# **Outline of the Handbook – Chapter 1**

**Purpose of Handbook**

**Evolution and Updates of Handbook**

**Discussion of EPA Quality System Summary**

**Table of Range, Sensitivity, Measurement Errors and  
Uncertainty**

**Selecting the Right Tool for Program Objectives**



# Outline of the Handbook - Chapter 2

**Introduction: How to collection concentration data/use of hardware**

- **Basic Operation**
- **Pollutants and Relative Levels That Can Be Measured**
- **Typical QA/QC**
- **Example Applications and Vendors**
- **Strengths/Limitations**
- **References**

**2.1 Fourier Transform Infrared Spectroscopy**

**2.2 Tunable Diode Laser**

**2.3 Ultraviolet Differential Optical Absorption Spectrometer**

**2.4 Differential Absorption LIDAR**

**2.5 Thermal Infrared Cameras**



# Outline of the Handbook – Chapter 3

**Measurement and Monitoring Approaches**

**Application of Technology: Do's and Don'ts**

**Approaches that Measure Flux**

**3.2.1 Other Test Method 10**

**3.2.1.1 General Description of Approach**

**3.2.1.2 Verification/Validation Studies**

**3.2.1.3 Typical QA/QC**

**3.2.1.4 Siting Concerns**

**3.2.1.5 Strengths/Limitations**

**3.2.1.6 References**

**Differential Absorption LIDAR**

**Solar Occultation Flux Measurement**



# Outline of the Handbook – Chapter 3

**Tracer Gas**

**Backward Lagrangian Stochastic**

**Fence-line Monitoring**

**1D/3D Radial Plume Mapping**

**Leak Detection Approaches**

**Optical Imaging for Leak Detection Surveys**

**Each of these will be structured the same**



# Outline of the Handbook – Chapter 4/5

## Ancillary Data Collection

**Meteorological Measurements**

**Collection and Extrapolation of Process Information**

**Attribution of Emissions to Source of Interest**

**Data Validation and Verification**



# Other Information

Appendices

Example QAPPS

Method Protocols



# Timeline

**In late 2008, EPA, Industry, Researchers and State/Local/Federal agencies came together to create the outline**

**Outline created in January 2009**

**FACA issue was raised**

**EPA began looking for support from ORD and others**

**Section 2 is currently being written**

**Section 3 will begin Winter 2010**

**First Draft must be finished by December 2010**



# What I need from you!

**We need State/local agency professionals**

**Review sections**

**Give us the State/Local perspective**

**Give overview of the Big Picture!**

