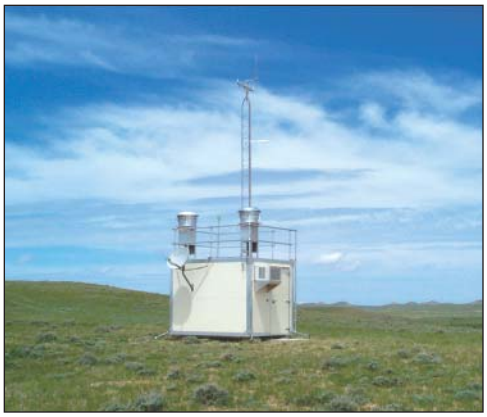
Ambient Air Pollution and Meteorological Monitoring



Air Resource Specialists (ARS) is a leader in ambient air pollution and meteorological monitoring. Experienced, professional scientists will assist you in determining the right approach for your monitoring needs. ARS designs, installs, maintains, and supports monitoring networks that meet a full range of regulatory and special application requirements.

Ambient Gaseous Monitoring

Regulatory Monitoring

- Employs continuous gas analyzers configured as reference or equivalent methods specified by the EPA to monitor ozone, sulfur dioxide, nitrogen oxides, and carbon monoxide
- Provides data to determine NAAQS compliance and to calculate exposure indices
- Provides high quality, traceable data
- Often accompanied by a full range of meteorological parameters

Physical Features:

- Temperature controlled sheltering
- AC electrical power
- Telephone or satellite communication service
- All other parameters

Portable Monitoring

- Generally intended for seasonal use, at locations where regulatory compliance is not required or is not practical
- Continuous ozone and nitrogen oxide analyzers with selected meteorological sensors
- Does not currently meet EPA reference or equivalent method but provides hourly data that may be used as an indicator of NAAQS compliance
- Can provide valuable information in understanding the magnitude and dynamics of local concentrations

Physical Features:

- Low power consumption
- Solar or battery powered
- Remote data collection by cellular telephone or satellite

Air Resource Specialists, Inc.
1901 Sharp Point Drive, Suite E
Fort Collins, CO 80525
Phone: 970-484-7941
Fax: 970-484-3423
Web: www.air-resource.com
E-mail: info@air-resource.com

Integrated Passive Monitoring

- Provides basic information on ozone and other gaseous pollutant exposures
- Can help determine how continuous monitors can be used to fill data gaps, and where best to locate continuous monitors
- Intended for seasonal use at locations where regulatory compliance is not required or is not practical
- Generally deployed to capture one to two week integrated samples
- Samplers analyzed in a laboratory to provide an integrated (average) gas concentration over the sampling period

Physical Features:

- No power required
- No moving parts

Particulate Monitoring

- Both continuous and integrated particulate sampling using a wide range of techniques
- Criteria monitoring of mass for regulatory applications using EPA certified filter-based and continuous measurement technologies
- Supports coarse and fine particle measurement of aerosol species (elemental, ion, or carbon analyses) for operational networks and special studies
- Filter-based measurements in cooperation with selected analytical laboratories based on specific requirements
- Continuous data capture by telephone or satellite communications systems
- Data validation, analysis, and reporting
- Portable monitoring systems available to capture specific events, such as forest fire-related air quality at remote locations - Although these systems are not currently EPA reference or equivalent methods, they provide a wealth of information in areas where data are generally not available

Monitoring is available for the following particulates:

- TSP
- PM_{10}
- $PM_{2.5}$
- Aerosol species (elements, ions, and carbon)

Air Toxics and Hazardous Air Pollutant Monitoring

- Selection of appropriate monitoring techniques and EPA-approved analysis methods for a variety of chemical compounds and concentrations
- Monitoring is performed with evacuated cylinders, canisters, filter packs, continuous monitors, and other techniques

Monitoring is available for the following compounds:

- Volatile organic compounds (VOCs)
- Formaldehyde
- Acetaldehyde
- Metals
- Dioxins (isometer specific)
- Benzapyrene
- Polycyclic aromatic hydrocarbons (PAHs)
- Pesticides
- Other compounds

Meteorology Monitoring

ARS is experienced in both traditional and next-generation monitoring technologies.

- Design, purchase, installation, and operation of systems that best meet each client's needs
- Often in conjunction with gaseous and particulate monitoring stations, but can also stand alone to support:
  - Meteorological modeling
  - Emergency response
  - Safety
  - Road conditions
  - Agricultural or airport applications

ARS employs a broad range of meteorological monitoring systems including:

- PSD systems
- Tall-tower multilevel systems
- Portable systems and remote systems
- SODAR, acoustic radar, and radiosonde systems
- Evapotranspiration systems
- Micrometeorological systems

Site and Network Management

ARS maintains and supports criteria pollutant and meteorological monitoring networks for operational, PSD, and research applications. ARS also provides continuing support to monitoring sites nationwide, including government and private networks in urban, rural, and remote areas.

ARS provides site, network, and special studies management through the design, coordination, implementation, and operation of monitoring tasks:

- Design, fabrication, turnkey installation, operation, and management of monitoring systems
- Site selection and evaluation
- Site preparation for access and utilities
- Instrument procurement and acceptance testing
- Custom fabrication of monitoring and calibration support systems
- Systems and performance audits and quality assurance services
- Quality assurance documentation including preparation of Quality Assurance Project Plans, Quality Management Plans, and supporting standard operating procedures and technical instructions
- Operational field and laboratory maintenance and calibration of network stations
- Intercomparison studies of new instruments and methods in cooperation with instrument manufacturers
- Remote monitoring systems
- Operator training and support
- Comprehensive data management services and systems development including data collection, review, validation, reporting, analysis, and archive

Instrument Maintenance Facility

ARS maintains a fully equipped maintenance and calibration facility with diagnostic tools and support equipment to certify, calibrate, and repair air quality and meteorological instrumentation, dataloggers, and electronic and mechanical support systems.

Calibration and certification equipment traceable to national standards includes reference standards for O_3, SO_2, H_2S, NO_x, and CO; flow calibrators; meteorological calibrators; and other operational support systems to assure accurate and repeatable results.