

Forensic Analytical

Industrial Hygiene and Environmental Consulting Services



Forensic Analytical
Environmental Services Division

Experts in Public Health

- Asbestos Consulting Services
- Lead-based Paint Consulting Services
- Mold Consulting Services
- Industrial Hygiene Consulting Services
- Indoor Air Quality Consulting Services
- Litigation Support Services
- Health and Safety Program Development and Training
- Environmental Site Assessments

Forensic Analytical is a laboratory, consulting group and product developer serving a variety of public health-related markets. Founded in 1986, Forensic Analytical has expanded to a staff of over 100 employees with offices in the San Francisco Bay Area, Los Angeles, Sacramento, Las Vegas, Chicago, and Paris.

Forensic Analytical's Environmental Services Division (ESD) has expanded over the years to become one of the country's largest and most diverse industrial hygiene consulting groups. The Environmental Services Division is staffed with many of today's most experienced certified industrial hygienists (CIHs), asbestos and lead-based paint consultants, health and safety professionals, and site technicians. The group is skilled at providing asbestos, lead and mold surveys, indoor air quality evaluations, occupational exposure monitoring, health and safety plans, litigation support, and a variety of other services. The group frequently services the industrial hygiene needs of contractors, facility managers, hospitals, building owners, attorneys, insurance companies and others.

The staff of the Environmental Services Division is comprised of leaders in the area of industrial hygiene and environmental, health and safety consulting. The staff is frequently called upon for expert testimony, to be instructors in technical seminars, or to provide input on health and safety program development or regulation. In addition to an outstanding staff, Forensic Analytical stays actively involved in professional associations, legislative activity, and scientific research.

Asbestos Consulting Services

Since the inception of the Environmental Services Division in 1988, its staff has been providing professional and effective solutions to clients who seek to survey, manage or abate asbestos. The staff includes certified industrial hygienists, certified asbestos consultants, and certified site surveillance technicians. The group commonly provides professional services to commercial, industrial and government entities. Professional services include asbestos surveys, abatement project design, abatement monitoring, contractor selection assistance, hazard awareness training, operations and maintenance programs, emergency response, and litigation support.

From being able to staff a small abatement clearance project, to writing a detailed specification for a multi-site asbestos abatement project, Forensic Analytical's consulting staff is experienced and capable of handling projects large or small. The staff has a very diverse experience base, with consultants that have worked in virtually every type of structure imaginable, under a variety of conditions.

Asbestos Surveys

Accurate and reliable building inspections are carried out by highly experienced EPA and state certified consultants. Each consultant has a comprehensive knowledge of asbestos issues ranging from analytical methods, to asbestos containing materials and uses in buildings. Their understanding of materials facilitates inspections of dust, insulation materials, vinyl floor tiles, acoustical products, and other potential hazardous materials. Results can be presented in customized building inspection reports with AutoCAD® drawings, which provide a solid foundation for making management or abatement decisions.

- Asbestos Surveys
- Asbestos Abatement Project Design
- Abatement Monitoring
- Contractor Selection Assistance
- Hazard Awareness Training
- Operations and Maintenance Programs
- Emergency Response
- Litigation Support

Asbestos Abatement Consulting Services

Comprehensive asbestos abatement consulting services are offered including specification development, inspection and documentation of work practices, air monitoring and clearance sampling. Emphasis is placed on personnel protection, secure containment, and safe abatement practices.



Lead-based Paint Consulting Services

On-Site Lead-Based Paint XRF Surveys and Risk Assessments

Forensic Analytical offers fast, economical and reliable on-site lead-based paint inspections using a portable X-ray fluorescence (XRF) analyzer. The XRF quickly and accurately measures lead concentrations in painted surfaces without damage to the painted surface.

Forensic Analytical is one of a small number of firms in the nation with both on-site X-ray fluorescence (XRF) and laboratory analytical capabilities using atomic absorption spectroscopy (AAS) or inductively coupled plasma spectroscopy (ICP). While XRF is a good quantitative instrument for smooth, painted surfaces, confirmatory analyses of XRF readings by AAS or ICP are occasionally required. Surfaces that are curved or too small to accommodate the XRF probe must be sampled for laboratory analysis. It is also recommended that surface readings that fall within the inconclusive range of XRF readings be confirmed by laboratory analysis.

Lead-based Paint Management and Remediation Consulting

Forensic Analytical's lead-based paint consultants are also certified as project designers and in project site surveillance. The staff can provide comprehensive services including design and development of remediation projects, assistance in prioritizing the lead-based paint to be abated, estimating the cost of abatement (including material replacement), develop project drawings, blueprints, and bid documents for contractor selection, establishing a project schedule, and recommending practical alternative solutions.

- **XRF Inspections**
- **Risk Assessments**
- **In-place Management**
- **Remediation Design**
- **Remediation Monitoring**
- **Clearance Sampling**
- **Waste Disposal Consultation**
- **Waste Stream Analysis**

During the abatement phase, experienced site technicians and consultants can monitor abatement activities including personnel monitoring, ensure compliance with federal, state and local regulations, as well as the requirements of project specifications. Waste disposal consultation is offered to advise clients of alternative disposal methods and measures that may reduce the volume of lead that must be disposed of as hazardous waste.

After completion of a remediation project, consulting staff can prepare a comprehensive record of the project, including notifications to regulatory agencies, waste disposal manifests, medical monitoring and training records of contractor's employees, records of air and wipe sample analysis, status of any remaining lead and recommendations to prevent future contamination.

Mold Consulting Services

Mold Investigations

Forensic Analytical's team of industrial hygienists and microbiologists are highly-experienced in locating the potential sources of water intrusion, identifying the location and type of mold growth, developing plans to remove mold contamination, and working with qualified contractors to ensure that buildings are remediated properly.

Forensic Analytical's staff takes a comprehensive approach to performing mold investigations, as many different factors must be considered when trying to identify the source of contamination. A thorough building and occupant history, followed by a detailed visual inspection to identify sources and conditions, form the basis of the investigation. Clear objectives and criteria are established before any sampling or analysis is undertaken to ensure that useful and sensible data is generated in the complex arena of mold contamination. A wide variety of sophisticated field tools are used to help sample and identify the types of mold and the extent of mold contamination. The consulting staff uses the latest in field survey and monitoring equipment to provide exacting answers and solutions to a mold contamination problem.

Mold Remediation/Decontamination Plans and Oversight

Forensic Analytical's field staff can provide an effective plan for the remediation or decontamination of any size or type of building. Abating affected building materials, in conjunction with the corrective actions associated with moisture intrusion, is the goal in any mold abatement activity. The extent of removal, the engineering controls to be used, worker protection, and the cleanup procedures are strategies that must be developed, typically on a

- Mold Investigations
- Mold Remediation Specifications
- Mold Remediation Monitoring
- Clearance Sampling
- Operations and Maintenance Programs
- Litigation Support

site-specific basis. Forensic Analytical can assist in selecting a qualified mold remediation contractor experienced in the execution of the plan that has been developed. During the remediation process, trained specialists can monitor the project to help ensure safety, and that the project stays within budget and on schedule.

O&M Program Development

Implementation of a comprehensive operations and maintenance (O&M) program is critical to controlling costs and eliminating liability. O&M programs typically include a delineation of material type, location, amount and condition, coupled with effective maintenance and management recommendations. Procedures for periodic re-inspections, contingencies, and requirements for notification, training, and record keeping are also addressed. Extensive experience in this field provides the timely development of programs to suit any facility. The most effective O&M program is one that minimizes workplace disruption, and reduces risk and liability.

Industrial Hygiene Consulting Services

Forensic Analytical's industrial hygienists commonly perform industrial exposure monitoring on employees that are potentially exposed to chemicals above permissible levels. Solvents, volatile organic compounds, toxic organic and inorganic chemicals are routinely samples. Results of real-time sampling and/or samples submitted to a laboratory are interpreted by highly experienced staff. Specific recommendations are made to ensure the health and safety of employees. Forensic Analytical's Environmental Services Division has a vast amount of experience performing OSHA compliance monitoring. The staff is also experienced in performing NIOSH and ASTM standard sampling protocols.

Industrial hygiene consulting services that the group is capable of providing include:

- **Chemical Hygiene Exposure Assessment**
 - Industrial
 - Laboratory
 - Combustion Exhaust
 - Solvent Use
 - Carcinogens
- **Dust Exposures**
 - Industrial
 - Construction
- **Noise Exposures/Hearing Conservation**
- **Electromagnetic Field Exposure**
- **Solvent Use**
- **Industrial Hygiene Program Development**
 - Health and Safety Programs and Training
 - Hazard Communication Programs and Training
 - Material Data Safety Sheets (MSDSs)
 - Respiratory Protection Programs and Training
 - Confined Space Entry



Indoor Air Quality Consulting Services

New scientific knowledge and media attention has increased the awareness of facility managers, workers, attorneys, and industrial hygienists about the potential of indoor air quality problems. Many of the problems are related to the “tightening” of buildings in order to become more energy efficient. Other problems are related to synthetic building materials, a lack of fresh air in the HVAC system, various outdoor sources, high humidity, temperature levels, and mold growth.

The result of poor indoor air quality can range from allergies, to infections, to toxic reactions. More common signs of an indoor air quality problem include watery eyes, running nose, sneezing, nasal congestion, itching, coughing, wheezing, difficulty breathing, headache, and fatigue. Infectious diseases that spread through indoor air quality induce flu, measles, chicken pox, tuberculosis, Legionnaire’s disease, and Pontiac Fever.

Forensic Analytical provides consulting and laboratory services that can effectively solve indoor air quality problems. Our team of qualified indoor air quality specialists can inspect and evaluate a variety of buildings from single family homes to office buildings.

Data is gathered through visual inspection and using on-site instrumentation that measure indoor air pollutants. Specific **analytes** that are examined may include carbon monoxide, carbon dioxide, total and respirable dust, fiberglass, formaldehyde, volatile organic compounds, endotoxins, tobacco smoke, temperature and relative humidity. If necessary, the team can take biological samples to evaluate a potentially

- Visual Inspections
- On-site Monitoring and Sampling
- Remediation Design and Oversight
- Operations and Maintenance Programs

dangerous mold or bacteria problem. After analysis of the data and a determination of the problem has been made, a report is provided that details the investigation’s findings. Finally, the group can provide design, monitoring and supervision of remediation, if necessary.

Sometimes the best solution is on-going monitoring of the problem or potential problem. Forensic Analytical’s industrial hygienists can design and implement a customized indoor air quality management plan and conduct follow up investigations and periodic inspections.



Litigation Support Services

Forensic Analytical has had extensive experience providing litigation support services. Typically centered on uncontrolled releases of hazardous materials, our consulting staff has provided expert testimony, trial strategy, sampling, analysis, and regulatory review for the purpose of risk assessment or hazard evaluation. Forensic Analytical's clients have included insurance companies, property owners, manufacturers, contractors, and homeowners. Forensic Analytical provides services to either the plaintiff or defendant in its' search and evaluation of objective scientific data.

Led by David Kahane, Certified Industrial Hygienist, the litigation support team is capable of determining the presence of and exposure to asbestos, lead-based paint, particulate, and microbiological hazards within residential, commercial, industrial, or public settings. Our blend of scientists and industrial hygienists allows the litigation support team to collect, analyze, and interpret the significance of hazardous materials to which individuals may be exposed.

Litigation Support for:

- Asbestos contamination
- Lead-based paint
- Indoor air quality & mold
- Occupational exposures
- Laboratory quality assurance

A wide range of microscopical and chemical techniques for the analysis of various matrices (air, bulk material, water, dust) are available from our nationally accredited laboratories, and include published methods from NIOSH, EPA, OSHA, and ASTM, as well as in-house specialty techniques developed by our laboratory experts.



Health and Safety Program Development

and Training

The effectiveness of an organization's environmental health and safety program depends on how well employees understand the program and how it is implemented and operated. Well-trained employees are more productive, less likely to suffer workplace injury, less likely to violate OSHA, EPA, and other regulations and are able to avoid or prevent health hazards. Training and education are also beneficial to building tenants and other occupants affected by building renovations, environmental remediation, and abatement projects.

Forensic Analytical offers a variety of health and safety program development and training services. The Environmental Services Division can develop custom environmental and safety management programs that include asbestos, lead, and other hazardous materials, personal protection, indoor air quality, workplace safety, and ergonomic procedures. Our written programs include policies and procedures, performance checklists, and record keeping forms.

Forensic Analytical also offers comprehensive training services, which include environmental and safety program development and follow-up services to help minimize workplace injuries and ensure regulatory compliance.

Programs developed by Forensic Analytical include:

- Hazard Communication Program
- Respirator Protection Program
- Chemical Hygiene Plan
- Chemical Sampling Plans
- Lead Compliance Program
- Lead Hazard Control Plan
- Asbestos Operations & Maintenance Program
- Mold Operations and Maintenance Programs
- Injury Illness and Prevention Program (IIPP)
- Confined Space Entry Program
- Process Safety Management (PSM) and Risk Management Plan
- Personal Protective Equipment Program
- Health and Safety Compliance Audits

Environmental Site Assessments

Concerns regarding environmental liability have created a great incentive to conduct environmental site assessments. Real estate transactions (including acquisition, refinancing, or foreclosure), estate distribution, and business mergers or joint-ventures all commonly call for environmental due diligence.

Over the past few years, Phase I assessments have evolved into a somewhat standardized investigative process. This process includes site and vicinity reconnaissance, review of regulatory agency information, historical land use research, and interviews with persons knowledgeable about the site.

Many companies and organizations that routinely contract for these investigations have developed their own specific scopes of work for conducting Phase I assessments. For those clients working without specific guidelines, Forensic Analytical has developed an approach based on the widely recognized standard prepared by The American Society of Testing and Materials (ASTM E-1527-94 and E 1528-93).

Increasingly, other environmental inquiries (asbestos, mold, lead sampling, radon screening, indoor air quality) are being conducted concurrently with the site assessments. The combination of Forensic Analytical's Environmental Services and Laboratory Services Divisions uniquely positions us to accommodate these comprehensive investigations.

Our team of experienced environmental site assessors includes professionals with the following credentials:

- **Cal-OSHA Certified Asbestos Consultants (CACs)**
- **Cal-OSHA Certified Site Surveillance Technicians (CSSTs)**
- **Cal-EPA Registered Environmental Assessors (REAs)**
- **DHS Interim-Certified Lead Inspectors and Risk Assessors**
- **Certified Industrial Hygienists (CIHs)**
- **Certified Hazardous Materials Manager**
- **Certified Indoor Air Quality Consultants (CIAQC)**

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