

# ***CORPORATE QUALIFICATIONS MANUAL***

**Revision 7  
June 2009**

***ENERGY LABORATORIES, INC.***

***Billings, Montana  
Helena, Montana  
Casper, Wyoming  
Gillette, Wyoming  
Rapid City, South Dakota  
College Station, Texas***



APPROVED FOR CORPORATE USE AT ALL BRANCH LABS

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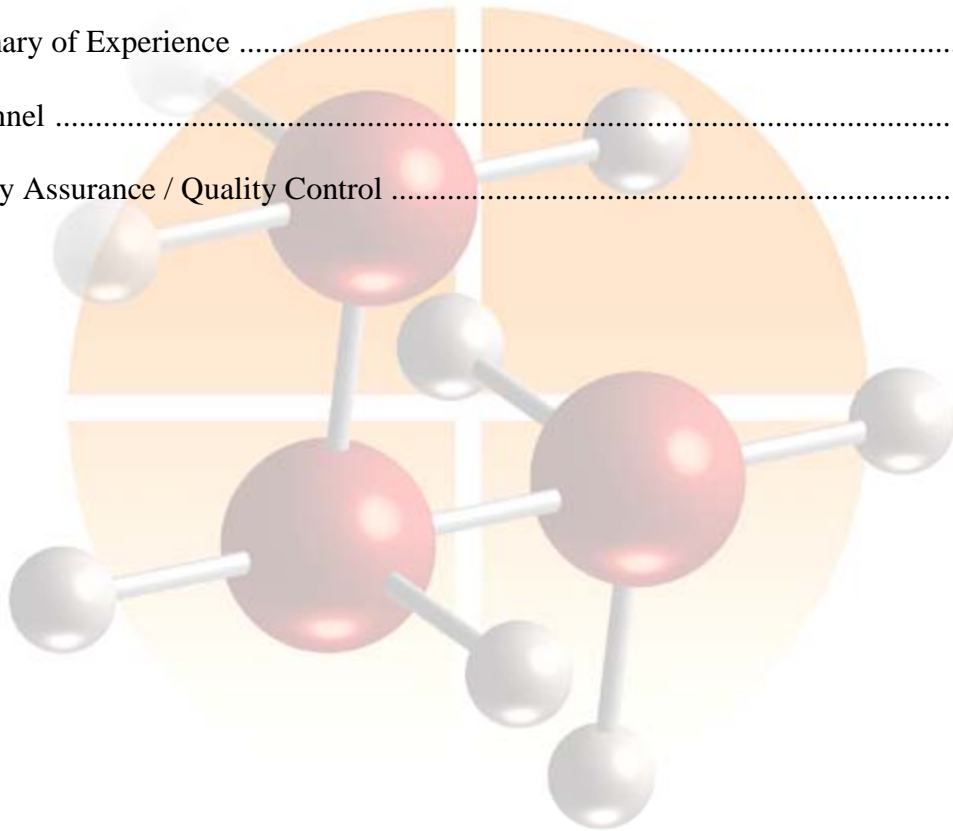
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## Comprehensive Analytical Services

<p><b>Aquatic Toxicity Services</b></p> <ul style="list-style-type: none"><li>▪ Acute Toxicity</li><li>▪ Chronic Toxicity</li><li>▪ Toxicity Reduction Evaluation</li></ul> <p><b>Organic Chemistry Services</b></p> <ul style="list-style-type: none"><li>▪ Drinking Water Analysis</li><li>▪ Volatiles</li><li>▪ Petroleum, UST, LUST Related Analysis</li><li>▪ Semi-Volatiles</li><li>▪ Herbicides and Pesticides</li><li>▪ Other Organics</li></ul> <p><b>Radiochemical Analyses Services</b></p> <ul style="list-style-type: none"><li>▪ Matrix Specific Digestions</li><li>▪ Radiochemical Analyses</li><li>▪ Bioassay</li><li>▪ Radiological Field Services</li><li>▪ Radiological Equipment Calibration and Repair</li><li>▪ Agricultural Soils</li><li>▪ Acid-Base Accounting</li><li>▪ Non-Metals</li><li>▪ Metals</li><li>▪ Cyanides</li><li>▪ Geotechnical Soils Analyses</li><li>▪ ICAP Scan</li><li>▪ Organic Contaminants</li><li>▪ Petroleum Contaminated Soils</li><li>▪ Radiochemical</li></ul> <p><b>Reporting Options</b></p> <ul style="list-style-type: none"><li>▪ Electronic deliverables</li><li>▪ NELAC reporting</li><li>▪ Level IV reports</li></ul>	<p><b>Wastes Services</b></p> <ul style="list-style-type: none"><li>▪ Resource Conservation and Recovery Act (RCRA) Characteristics – Ignitability, Corrosivity, Reactivity, and Toxicity</li><li>▪ Waste Oil Analysis</li><li>▪ Hydrocarbons and Hydrocarbons Contaminated Materials</li><li>▪ ICAP Scan</li><li>▪ Other Analyses of Waste</li></ul> <p><b>Water Services</b></p> <ul style="list-style-type: none"><li>▪ Metals</li><li>▪ Non-Metals</li><li>▪ Radiochemistry</li><li>▪ Bacterial</li><li>▪ Other Services<ul style="list-style-type: none"><li>✓ Domestic Water Analysis</li><li>✓ Bacteriological</li><li>✓ Livestock Suitability</li><li>✓ Drinking Water Radiochemical Analysis</li><li>✓ Landfill Groundwater Analyses</li><li>✓ Priority Pollutants</li><li>✓ ICAP Scan</li><li>✓ Safe Drinking Water Act – Phase II &amp; V</li></ul></li></ul> <p><b>Other Services</b></p> <ul style="list-style-type: none"><li>▪ Crude Oil and Petroleum Products</li><li>▪ Oilfield Water Analysis</li><li>▪ Natural Gas &amp; Liquefied Petroleum Gas (LPG) Analysis</li><li>▪ Feeds</li><li>▪ Special Services</li></ul>
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## *List of Acronyms*

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AA	Atomic Absorption Spectrophotometer
AIHA	American Industrial Hygienists Association
ANSI	American National Standards Institute
APHA	American Public Health Association
ASQC	American Society for Quality Control
ASTM	American Society for Testing and Materials
BTU	British Thermal Unit
CIH	Certified Industrial Hygienist
CAS	Chemical Abstract Service
ECD	Electron Capture Detector
ELCD	Electrolytic Conductivity Detector
ELI	Energy Laboratories, Inc.
EPA	U.S. Environmental Protection Agency
FDA	Food and Drug Administration
FIA	Flow-Injection Analyzers
FID	Flame Ionization Detector
GC-FID	Gas Chromatograph Flame Ionization Detector
GC-MS	Gas Chromatograph Mass Spectrometer
GC	Gas Chromatograph
HPLC	High-Performance Liquid Chromatograph
ICAP	Inductively Coupled Argon Plasma
ICAP-AES	ICAP Atomic Emission Spectrometry
ICAP-MS	ICAP Mass Spectrophotometer
ICAP-OES	Inductively Coupled Plasma Optical Emission Spectrophotometer
ISO	International Organization for Standardization
IR	Infrared Spectrophotometer
LIMS	Laboratory Information Management System
LPG	Liquefied Petroleum Gas
LUST	Leaking Underground Storage Tank
MS	Mass Spectrometers
NELAC	National Environmental Laboratory Accreditation Council
NELAP	National Environmental Laboratory Accreditation Program
NIOSH	National Institute of Occupational Safety and Health
NORM	Naturally Occurring Radioactive Materials
NRC	U.S. Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PID	Photo-Ionization Detector
PM	Particulate Matter
PT	Proficiency Testing
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RSO	Radiation Safety Officer
SOP	Standard Operating Procedures
UST	Underground Storage Tanks
UV/VIS	Ultraviolet/Visible Spectrophotometer

## *Preface*

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Energy Laboratories, Inc.'s (ELI) *Qualifications Manual* outlines the ability and dedication of its professional staff members to provide accurate, properly documented, and defensibly obtained analytical data.

ELI's commitment to quality requires that ELI:

- offer a variety of analytical services;
- provide flexibility in analytical methodologies to meet individual client needs;
- employ personnel throughout the company with a variety of experience in mining, industry, municipal governments, oil field, and process engineering;
- employ properly trained personnel;
- offer adequate levels of supervision;
- control, check, and document all work for quality; and
- deliver accurate, cost effective, and timely results.

ELI is proud of its laboratories' capabilities and dedicated staff, as well as customer satisfaction and retention.

If additional information is required after review of this manual, please call the manager of the ELI branch office in your area. For general pricing information, ask for a copy of our current Technical Services and Fee Schedule Catalog.

## ***1. Energy Laboratories, Inc. – An Introduction***

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### ***Independent, Locally Owned***

Energy Laboratories, Inc. (ELI) provides independent, confidential, quality-controlled services in chemical and environmental analysis. ELI operates six branch laboratories, easily accessible to clients in the western, mid-west and southern United States. ELI also serves clientele throughout the United States and foreign countries. ELI's Corporate headquarters is located in Billings, Montana. Listed below are ELI's laboratories with contact information referenced. Energy Laboratories Inc. maintains an Internet site at [www.energylab.com](http://www.energylab.com) for access to further information about the company and its branch locations..

#### ***BILLINGS, MONTANA***

1120 South 27<sup>th</sup> Street (59107)

PO Box 30916

Billings, MT 59107-0916

Voice: (406) 252-6325

Fax: (406) 252-6069

Toll Free: (800) 735-4489

Lab Director: John M. Standish

Web Site: [eli@energylab.com](mailto:eli@energylab.com)

#### ***CASPER, WYOMING***

2393 Salt Creek Highway (82601)

PO Box 3258

Casper, WY 82602-3258

Voice: (307) 235-0515

Fax: (307) 234-1639

Toll Free: (888) 235-0515

Branch Manager: David N. Poelstra

E-mail: [casper@energylab.com](mailto:casper@energylab.com)

#### ***RAPID CITY, SOUTH DAKOTA***

2821 Plant Street (57702)

PO Box 2470

Rapid City, SD 57709-2470

Voice: (605) 342-1225

Fax: (605) 342-1397

Toll Free: (888) 672-1225

Branch Manager: Linda Larson

E-mail: [rapid\\_city@energylab.com](mailto:rapid_city@energylab.com)

#### ***GILLETTE, WYOMING***

400 West Boxelder Road

Gillette, WY 82718

Voice: (307) 686-7175

Fax: (307) 682-4625

Toll Free: (866) 686-7175

Branch Manager: Terry L. Friedlan

E-mail: [gillette@energylab.com](mailto:gillette@energylab.com)

#### ***HELENA, MONTANA***

3161 East Lyndale Avenue

PO Box 5688

Helena, Montana 59604-5688

Voice: (406) 442-0711

Fax: (406) 442-0712

Toll Free: (877) 472-0711

Branch Manager: Roger Pasch

E-mail: [helena@energylab.com](mailto:helena@energylab.com)

#### ***COLLEGE STATION, TEXAS***

415 Graham Road

College Station, TX 77845

Voice: (979) 690-2217

Fax: (979) 690-2045

Toll Free: (888) 690-2218

Branch Manager: Gary Pudge

Web Site: [cseli@energylab.com](http://cseli@energylab.com)

## *History*

Founded in 1952, ELI has provided environmental analytical services to Rocky Mountain region clientele for more than 50 years. With the addition of the College Station laboratory, service was expanded to include the Gulf Coast states as well. Before 1979, the company was known as Y, S, & B Laboratories; and Energy and Environmental Resource Consultants. ELI expanded its original focus from testing and engineering for the petroleum exploration industry to complete analytical services.

## *Management Style*

The owners and managers of ELI are deeply involved in the daily work and management of the company. Their expertise and accessibility allow for daily contact with employees and clients.

## *Full-Service*

All ELI branch laboratories offer broad-based analytical services, state-of-the-art computerized data management systems, advisory services on sampling procedures, and compliance with all analytical methodology requirements.

Specifically, ELI focuses on the following sample types:

- Water
- Wastes
- Soil
- Air
- Petroleum products
- Biomass

ELI's analytical capabilities equal or exceed those of other full service laboratories found throughout the United States. ELI is certified by the U.S. Environmental Protection Agency (EPA), the National Environmental Laboratory Accreditation Council (NELAC), and various state agencies for all regulated drinking water parameters. A rigorous Quality Assurance/Quality Control (QA/QC) program is maintained which meets or exceed the requirements of the EPA, U.S. Nuclear Regulatory Commission (NRC), and individual state agencies.

The **BILLINGS** laboratory analyzes water, waste, soil, and air for organic and inorganic contaminants. This includes volatile organics, semi-volatile organics, herbicides, pesticides, heavy metals, major minerals, bacteria, and nutrients. ELI's *Aquatic Toxicity Department* is in Billings.

The **CASPER** laboratory analyzes water, waste, soil, and air for radionuclides, inorganic, volatile organic, pesticides, and bacterial contaminants. ELI's *Radiochemistry Department* is in Casper.

The **GILLETTE** laboratory serves the mining, oil, and natural gas industries in the Rocky Mountain region. The laboratory analyzes water, natural gas, crude oil, gasoline, diesel fuel, and bacterial contaminants.

The **HELENA** laboratory analyzes water, waste, soil, and air for inorganic, volatile organic, and bacterial contaminants.

The **RAPID CITY** laboratory analyzes water, waste, soil, and air for inorganic, volatile organic, and bacterial contaminants. They also provide weathered / commingled fuel identification services.

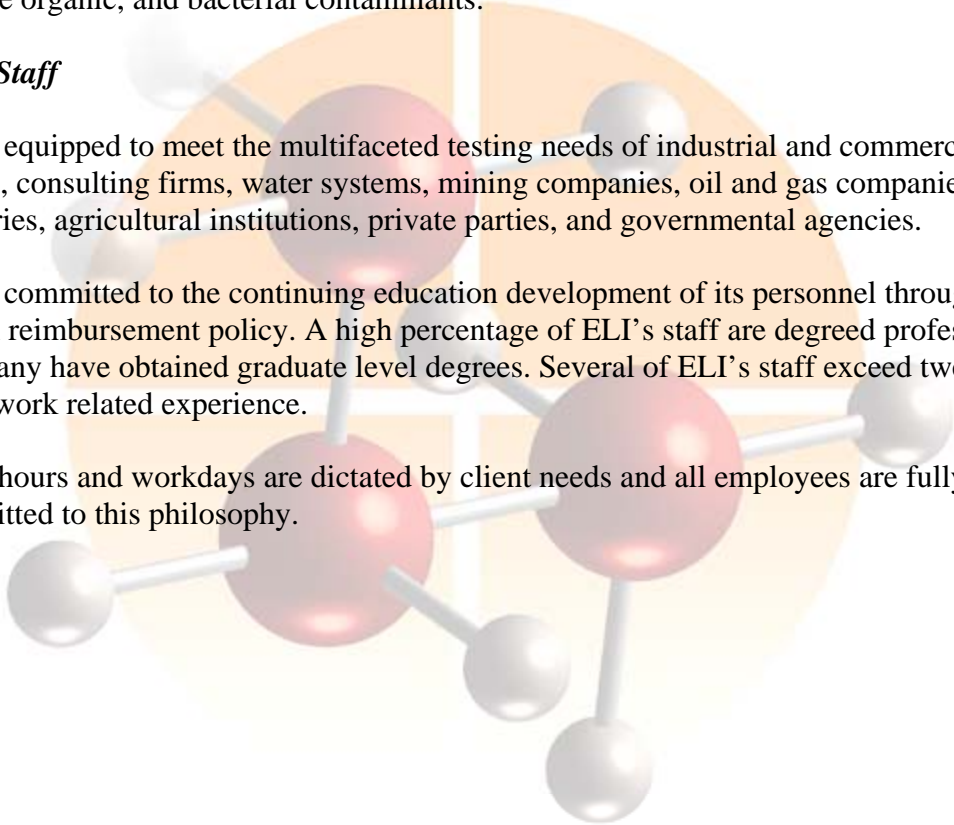
The **COLLEGE STATION** laboratory analyzes water, waste, and soil for inorganic, volatile organic, and bacterial contaminants.

### ***Professional Staff***

ELI is equipped to meet the multifaceted testing needs of industrial and commercial clients, consulting firms, water systems, mining companies, oil and gas companies and refineries, agricultural institutions, private parties, and governmental agencies.

ELI is committed to the continuing education development of its personnel through its tuition reimbursement policy. A high percentage of ELI's staff are degreed professionals and many have obtained graduate level degrees. Several of ELI's staff exceed twenty years work related experience.

Work hours and workdays are dictated by client needs and all employees are fully committed to this philosophy.



## ***2. Services and Equipment***

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### ***Services***

Energy Laboratories, Inc. (ELI) offers broad-based, independent services to meet business and community needs in our service area including:

- Water Analysis
- Soil Analysis
- Air Analysis
- Other Services
- Waste Analysis
- Support Services
- Petroleum Product Analysis

ELI tests a wide range of samples of environmental concern including drinking water, landfill solids, crude oil, industrial wastewater, and air. To maintain a leading place in industry, substantial revenues are reinvested in equipment and facilities.

ELI's primary service is confidential environmental analysis to define contamination, document site cleanups, characterize unknown materials, and determine compliance with environmental regulations. ELI analyzes routine, rush, and emergency samples as needed.

All ELI samples remain the property of the client. Hazardous samples, samples unsuitable for municipal disposal, and samples placed on hold will be returned to the client upon completion of the analysis or when other disposal arrangements have been made.

### ***Water Analysis***

ELI laboratories have extensive organic and inorganic capabilities to detect and quantify environmental contaminants in water. Contaminants of interest include heavy metals, hydrocarbons, solvents, pesticides, herbicides, major minerals, bacteria, radionuclides, and nutrients. Samples originate from domestic wells, surface waters, groundwater wells, mining, municipal water suppliers, wastewaters, industrial processes, superfund sites and other sources.

Services also include aquatic toxicity testing, analysis of oil field waters, and radiochemical analysis (detection of primarily naturally occurring radionuclides, including uranium, radium, thorium, and lead).

### ***Waste Analysis***

To provide service in waste management, ELI laboratories examine both chemical and physical characteristics of solid and liquid wastes, applying the same range of organic, inorganic, radiochemical, and bacteriological tests available for water. ELI characterizes unknown materials, determining whether hazardous waste regulations apply.

## *Services (continued)*

### *Soil Analysis*

ELI's soil laboratories handle soils and rock from mines, waste sites, spills, and agricultural lands, applying the same range of organic, inorganic and radiochemical tests available for water and wastes.

Fertilizer recommendations are prepared for agricultural soils. Topsoil and overburden relative to mine reclamation potentials are examined. Acid-base accounting is measured on mine soils and waste rocks.

### *Air Analysis*

ELI is equipped to examine indoor and ambient air for determinations of air quality and health effects.

Indoor air is analyzed for contamination resulting from industrial activities, building remodeling, and construction work. Contaminants measured include asbestos, radon, formaldehyde, heavy metals, and volatile organic contaminants.

For industrial and mining clients, ELI analyzes filters from Particulate Matter-10 (PM-10) and other high-volume samplers that collect particulates and heavy metals from ambient air. ELI will also calibrate and maintain air samplers on-site and measure radiation in airborne dust, air toxins, and organic air contaminants.

### *Petroleum Product Analysis*

For clients in petroleum exploration and production, ELI analyzes soil samples, formation and discharge waters from the oilfield, crude oil, natural gas, distillate fractions, and finished fuel products such as gasoline and diesel fuel.

### *Support Services*

ELI supports clients with detailed and current information about contaminants, sampling procedures, and environmental tests. ELI maintains a complete library and an extensive computerized database on topics relevant to client activities. ELI remains current on environmental regulations, test requirements, analytical methods, and contaminant sources. ELI is also up-to-date on the characteristics, environmental fate and health effects of chemicals.

## *Services (continued)*

### *Other Services*

Additional services offered by ELI are gamma surveys, calibrations of field radiation detection instruments and calibration of natural gas well flow meters.

As part of uranium mining and reclamation licensing requirements, ELI analyzes bioassay samples to monitor human radiological exposure.

### *Equipment*

ELI maintains appropriate types and quantities of laboratory equipment at all branches. Where great sensitivity and specialty are required, ELI owns the most sophisticated instruments on the market. Where possible, ELI uses automated instruments and accessories for timely and efficient analysis.

### *Data Management*

ELI's laboratories in Billings, Casper, Helena, Gillette, Rapid City, and College Station are connected to ELI's Laboratory Information Management System (LIMS). Each of the laboratories has a Windows 2000/2003 Server running Microsoft SQL Server (database). ELI uses two networks: Windows (98,2000,NT) and HP UNIX.

### *Organic and Inorganic Laboratories*

ELI owns the following instruments for quantifying organic compounds in water, waste, soil, and air:

- Gas chromatograph (GC)
  - Mass spectrometers (MS),
  - Photo-ionization detectors (PIDs)
  - Flame ionization detectors (FIDs),
  - Electron capture detectors (ECDs)
  - Purge and trap concentrators,
  - Auto samplers, and
  - Computerized data storage and retrieval systems.
  
- Infrared spectrophotometers (IR)
  
- High-performance liquid chromatograph (HPLC)

### *Equipment (continued)*

- Sample extraction and preparation laboratories that include overall:
  - Automated solvent extraction system,
  - Liquid-liquid extractors,
  - Gel permeation chromatograph,
  - Solid-phase extractors,
  - Automated sample concentrators,
  - Sonication extractors, and
  - Microwave extraction system.

For quantifying metals, minerals, and nutrients in water, waste, and soil, ELI has:

- Atomic absorption spectrophotometers (AA)
  - Flame, furnace, hydride, and cold-vapor atomizers,
  - Auto samplers, and
  - Computerized data handling systems.
- Inductively coupled argon plasma emission spectrophotometers (ICAP)
  - Auto samplers, and
  - Data handling systems.
- Inductively coupled argon plasma – mass spectrophotometers (ICAP-MS) for measuring very low concentration of metals in liquid samples.
  - Auto samplers, and
  - Data handling systems.

For quantifying other inorganics, ELI has:

- Automated titrators,
- Ultraviolet/visible (UV/VIS) spectrophotometers,
- Discrete Analyzers (DA),
- Segmented Flow Analyzers (SFA),
- Flow-injection analyzers (FIA)
- Ion chromatographs (IC), and
- Sulfur analyzers

## ***Equipment (continued)***

### ***Radiochemistry Laboratory***

ELI's radiochemistry laboratory is equipped with:

- Low-background alpha-beta proportional counters,
- Single-channel and multi-channel gamma spectrometers,
- Liquid scintillation spectrometer,
- Fluorometers,
- Field alpha-beta-gamma scalers for gamma surveys, and
- Alpha spectrometers with 8 cells per spectrometer.

### ***Aquatic Toxicity Laboratories***

Instruments and facilities for aquatic toxicity testing include:

- Complete spawning and hatching facilities for fathead minnows,

*NOTE: Free from the stresses of shipping and handling, minnows produced in our laboratory are high quality, healthy, and strong. These minnows yield reliable and consistent results.*

- Temperature and humidity controlled environment,
- Environmental chambers for tests and cultures,
- Microscopes, and
- Computerized statistical reporting and data management system.

### ***Air Quality Laboratories***

Instruments and facilities for industrial hygiene and air analyses include:

- Phase-contrast, polarized-light, and stereo microscopes,
- Microbalance, and high-volume, top-loading filter balance (internally calibrated),
- Sonic baths and desiccation chambers,
- Temperature- and humidity-controlled environment (monitored by hygrothermograph) for pre- and post-conditioning of air filters, and
- Personnel sampling equipment, including pumps, absorbers, impingers, and filter cassettes.

### ***Petroleum Product Laboratories***

Instruments for analyzing crude oil and natural gas include:

- GCs specifically designed for analysis of natural gas and liquefied petroleum gas,
- GCs for simulated, high-temperature distillations of oil,
- Hydrometers,
- Kinematic and saybolt viscometers with baths,

### *Equipment (continued)*

- Distillation equipment,
- Sulfur determinators, and
- Vapor-pressure, flashpoint, and pour-point/cloud point equipment

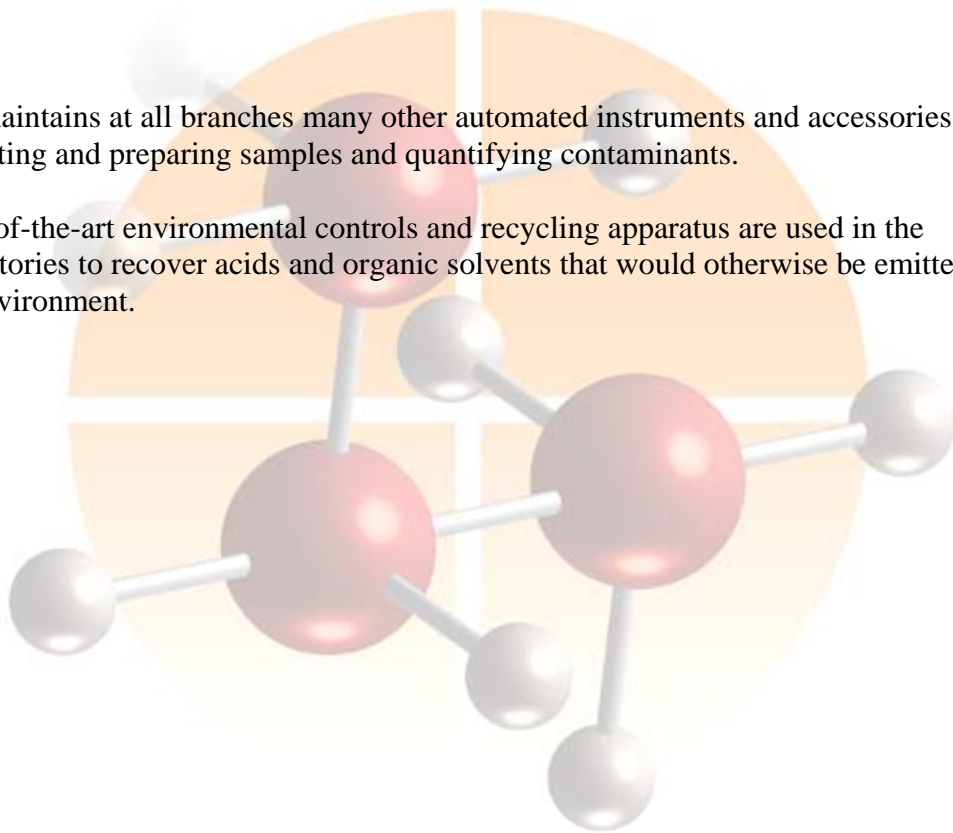
Equipment for petroleum engineering and testing includes:

- Downhole-pressure measuring and recording instruments,
- Wireline equipment,
- Echo meters, and
- Orifice well-testers.

### *Other*

ELI maintains at all branches many other automated instruments and accessories for extracting and preparing samples and quantifying contaminants.

State-of-the-art environmental controls and recycling apparatus are used in the laboratories to recover acids and organic solvents that would otherwise be emitted into the environment.



### 3. Summary of Experience

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#### *Experience*

Energy Laboratories, Inc. (ELI) provides analytical and related services to public and private clients. Our scope of testing includes ongoing analysis as part of a process or project, single-sample, and one-time projects. ELI frequently handles rush and emergency work.

Types of assignments and specific projects completed by the company are summarized here as an overview of ELI experience. The summary is not all-inclusive, however. If questions arise concerning our experience in a particular area of service or type of analysis, call the manager of the ELI branch office in your area. Relevant references are available.

#### *Water Analysis*

ELI has analyzed water from a wide range of public and private sources to document baseline water quality and to determine suitability for drinking or discharge.

- *Using chemical and biological (aquatic toxicity) methods, ELI has analyzed samples of wastewater at intermediate points and at discharge from the industrial process, for the purpose of measuring the effectiveness of water pollution controls.*
- *ELI conducts EPA-mandated tests of water (for private sources, cities, and towns) to verify compliance with drinking water regulations. ELI is EPA and state-certified for analysis of all regulated chemicals and radionuclides in drinking water.*
  - *At the site of a petroleum pipeline leak threatening a public water supply, ELI tested groundwater and soil over several days and nights. Results from our tests were used to define the extent of contamination and to measure the effectiveness of cleanup. Emergency remediation successfully minimized the health risks to water users.*
- *ELI conducts on-going surface water and groundwater monitoring programs near mine and major facility sites to establish water quality baselines and to determine the water quality impacts of development.*
  - *For a proposed mining venture in pristine, remote area, ELI preformed baseline water analyses to determine the concentrations of minerals, nutrients, radionuclides, and trace metals in surface water and groundwater. Due to the sensitive project location, ELI ran tests to detect contaminants at very low concentrations (in the parts-per-billion and parts-per trillion ranges).*

## ***Experience (continued)***

### ***Soil Analysis***

ELI tests pre-mine soils, overburden, re-graded spoils, tailings, waste rock, and topsoil associated with mining and mine reclamation. Tests are conducted to predict the potential environmental challenges of mining, and to help with mine planning, permitting, and reclamation. For example:

- *ELI has tested hundreds of rock samples for post-doctorate research into acid mine drainage. ELI has analyzed materials from existing and proposed mine sites to determine the acid-forming and acid-neutralizing potential of native and disturbed materials.*
- *ELI analyzes overburden, spoils, and topsoil for open-pit coal mines, testing for mineral, metals, and nutrients as a measure of rock and soil quality.*
- *To help with site characterization and to document cleanup, ELI tests soil for contamination associated with the spill or release of fuels, solvents, and other hazardous chemicals.*
- *ELI tests agricultural soils to help farmers select and apply fertilizer. In association with an experienced, degreed agronomist, ELI has prepared fertilizer recommendations based on field conditions, landowner goals, and soil chemistry.*

### ***Waste Analysis***

ELI tests solid and liquid waste samples from industrial and manufacturing facilities, underground storage tank (UST) spill or leak sites, mines and sumps to determine, if present, the type and extent of contamination. Contaminants include polychlorinated biphenyls (PCBs), heavy metals, pesticides, herbicides, fuels, solvents, and corrosive, reactive, ignitable, or toxic materials.

- *ELI analyzes wastes from oil refineries, drilling operations, power plants, pipelines, fuel storage tanks, dry cleaners, service stations, and car washes. Wastes are characterized for treatment, recycling, or suitable disposal.*
- *ELI provides on-site and off-site laboratory services for Superfund-style cleanups at abandoned industrial and mine sites.*
  - *At one industrial site, ELI provided and staffed a 24-hour, 7 day/week field laboratory for soil testing. Contaminated soils were treated on-site to immobilize toxic heavy metals. ELI field operations continued for three work seasons.*
- *ELI performs laboratory analyses to determine the extent and nature of hydrocarbon contamination in groundwater and soils resulting from leaks, spills, and improper disposal.*

## ***Experience (continued)***

- *For a community with a long history of industrial activity, ELI analyzed waste solvents, waste fuels, and contaminated soil, water, and air for volatile organics, semi-volatile organics, and heavy metals. Samples were analyzed over three years to identify the solvents and fuels involved and to delineate the contaminated area. ELI test results were used to assess health risks to the community and to design a remediation plan.*
- *ELI tests waste, soil, and water associated with landfills from petroleum waste disposal. Samples are analyzed quarterly and semi-annually to detect metals, solvents, and fuels.*
- *ELI provides 24-hour emergency analytical services associated with the safety, cleanup, and public health impacts of spills and releases from pipelines, storage tanks, rail cars, and tanker trucks.*
- *One project involved a private development where several USTs ruptured, releasing thousands of gallons of diesel and gasoline. ELI tested samples of fuel, soil, and groundwater on an emergency basis to help contain and clean up a fuel spill. Action taken on the basis of ELI's test results prevented substantial environmental damage at the site.*

## ***Radiochemistry Analysis***

ELI's radiochemistry laboratory analyzes water, air, soil, vegetation, sludge, animal tissue, urine, and mixed waste samples to identify and quantify naturally occurring radioactive isotopes. Most tests have targeted radiation decay products in the Uranium and Thorium series, and byproduct analytes such as Strontium-90. Samples have originated from drinking water supplies, uranium recovery operations (active and inactive), oil production operations, and mine waste remediation sites. For example:

- *ELI tests private and public drinking water supplies to determine compliance with the EPA regulations for radionuclide concentrations.*
- *ELI monitors seepage from uranium mill tailing sites on an ongoing basis, consistent with the NRC and remediation requirements.*
- *At uranium milling sites in New Mexico, Texas, Colorado, Washington, and Wyoming, ELI has monitored air, groundwater, surface water, soil, and tailings to detect radiological contamination. Some programs have included periodic biomass analysis of area vegetation, fish, and mammal tissue, and bioassay testing of human urine (in support of site radiation safety).*
- *ELI tests soil and groundwater at mine and mill reclamation sites to find and quantify Radium contamination and to verify cleanup.*

## ***Experience (continued)***

- *At one mill site, tailings impounded some 30 years ago migrated off the site, contaminating a nearby drainage. ELI sampled soil and groundwater in the area for the mill owner, in support of cleanup negotiations with the NRC. For this and similar projects, ELI has developed laboratory equipment and methods for rapid and inexpensive soil analysis to assess both contamination and cleanup. Our test results are routinely accepted by the NRC and state agencies.*
- *In anticipation of federal regulations regarding Naturally Occurring Radioactive Materials (NORM), ELI tests scales and sludges from oil and gas operations to detect and measure radiochemical contamination.*

## ***Ambient Air Analysis***

ELI helps clients meet the sampling requirements of their ambient air quality permits. For example:

- *ELI analyzes exposed air filters to measure trace metal and respirable suspended particulate concentrations.*
- *Monthly, ELI weighs about 700 filters for various clients, calculating particulate concentrations by computer (based on filter weight, calibration information, and meteorological data.) Some filters are also analyzed for trace metal content by means of acid sonication and atomic absorption and emission spectroscopy.*

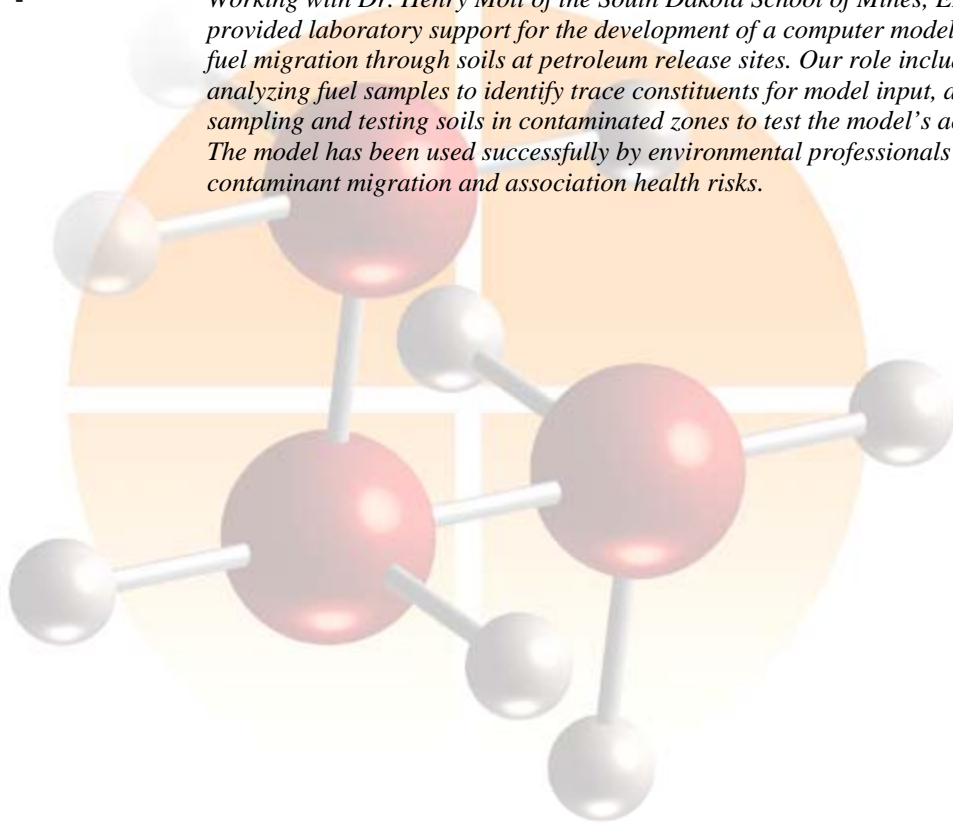
## ***Special Projects***

ELI has performed a variety of special projects for clients, drawing on the expertise of our employees and the sophisticated capabilities of our laboratory equipment. For example:

- *For clients in the petroleum exploration and production, ELI has tested crude oil to determine its chemical and physical properties, and natural gas to determine its composition and British Thermal Unit (BTU) value. ELI has analyzed formation water encountered during drilling, measuring mineral concentrations to determine the water's geologic source. Our field crews have tested oil and gas wells to determine subsurface pressures and fluid levels, have sampled fluid and gases produced in such wells, and have calibrated well meters.*
- *ELI has sampled and characterized unknown hazardous wastes.*
- *For a Montana Indian tribe, ELI sampled drums of an unknown powder found in an abandoned reservation warehouse. The unlabeled drums had been in storage for at least 20 years. ELI identified the powder as an arsenic-based pesticide and helped arrange for proper disposal.*

## *Experience (continued)*

- *On another project, ELI collected soil samples from contaminated country roads. A hazardous liquid waste appeared to have been drained intentionally onto the roads from a truck-mounted tank – source unknown. ELI determined the composition of the hazardous liquid and followed the contaminant track to the responsible facility.*
- *ELI has developed special field and laboratory tests to meet client needs.*
  - *For one industrial client, ELI developed a rapid field method for estimating heavy metal concentrations in soil. The method was used successfully for several seasons to screen soils before laboratory analysis. The client acted upon field results, eliminating the wait for laboratory data.*
  - *Working with Dr. Henry Mott of the South Dakota School of Mines, ELI provided laboratory support for the development of a computer model to predict fuel migration through soils at petroleum release sites. Our role included analyzing fuel samples to identify trace constituents for model input, and sampling and testing soils in contaminated zones to test the model's accuracy. The model has been used successfully by environmental professionals to predict contaminant migration and association health risks.*



## 4. Personnel

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### *Overview*

Energy Laboratories, Inc. (ELI) is staffed by technical experts on four levels: (1) corporate managers, (2) branch managers, (3) specialized laboratory supervisors, and (4) chemists. Brief resumes are presented here for personnel at the first three levels. A complete list of company employees (by branch location) is presented at the end of this section. The list summarizes the qualifications of each individual by title, academic background, and years of relevant experience.

At this time, ELI employs 230 employees. Staffing levels are maintained to meet client requirements for quality and turnaround. Our employees achieve excellence through a blend of technical ability, personal commitment, self-motivation, and company support.

### *Corporate Managers*

ELI's corporate managers are responsible for business planning, marketing, laboratory expansion, and financial decision making for all company locations. They are the principal owners of the company, and long-time employees. They are technical experts and hold key technical assignments.

#### *William T. Brown, President*

A principal owner of ELI, Mr. Brown has served as President since 1989. As President, he works with corporate personnel, branch managers, and technical staff to determine direction and focus for the company. As a working manager and chief organic chemist, he is involved in day-to-day operations and decision-making. He oversees staff training, procedures development, and equipment acquisition related to organic analysis at all locations, and he is available to clients and laboratory personnel for project assistance and troubleshooting. His earlier work at ELI included natural gas and petroleum products testing, water and soil analysis, and management of the Gillette branch office. He started the company's Trace Organics Laboratory in Billings.

Before joining ELI in 1979, Mr. Brown worked as a fisheries biologist on a Peace Corps assignment in Africa. He received a B.S. degree in Fish and Wildlife Management from Montana State University in 1977, and completed additional course work in organic chemistry and analytical instruments at Eastern Montana College. He has obtained extensive, specialized training in gas chromatography and sample preparation.

## ***Corporate Managers (continued)***

### ***John M. Standish, Vice-President/Laboratory Director-Billings***

A principal owner of ELI, Mr. Standish has served as Vice-President of the company since 1989. As Vice-President, he works with technical and branch managers and other corporate personnel to determine direction and focus for the company. As a working manager and chief inorganic chemist for the company, he is involved in day-to-day operations and decision-making in the laboratories. He oversees staff training, procedures development, and equipment acquisition related to inorganic analysis at all locations, and he is available to clients and laboratory personnel for project assistance and troubleshooting.

Before joining ELI in 1981, Mr. Standish worked as an analyst and laboratory supervisor for Northern Testing Laboratories, Inc., a chemical and environmental laboratory. He has performed and directed tests of water, soil, air, and coal, and has designed and operated meteorological monitoring systems.

Mr. Standish received his B.S. degree in Biology, with a Chemistry minor, from the College of Great Falls, Montana, in 1973. He has completed additional training in analytical methods, laboratory operation, and personnel management.

## ***Branch Managers***

ELI branch managers are in charge of technical, financial, and personnel management for their locations. They are the primary client contact for branch work, and are responsible for technical review of tests completed by the laboratory supervisors. They report directly to the Corporate Managers. All the branch managers have both technical and management responsibilities.

### ***David N. Poelstra, Casper***

David Poelstra has been with Energy Laboratories Inc. since 2002. He is currently the Branch Manager for Energy Laboratories in Casper, Wyoming. Mr. Poelstra has more than twenty-eight years of experience in laboratory management and operations. He is experienced in the analyses of environmentally related samples including water, soil, organics and air pollutants.

Mr. Poelstra is an active member of the Northwest Mining Association, the Society of Mining, Metallurgy and Exploration, and Texas Mining & Reclamation.

### ***Branch Managers (continued)***

#### *Terry L. Friedlan, Gillette*

Mr. Friedlan joined ELI in 1983, and was named Manager of the Gillette Branch in 1988. He received his Associate of Science degree from Northwest College in Powell, Wyoming, in 1982, and completed an additional year of laboratory and computer work in engineering training at the University of Wyoming, Laramie. Mr. Friedlan has more than thirteen years of experience in sampling and testing of water, soil, natural gas, and petroleum products.

#### *Roger N. Pasch, Helena*

Mr. Pasch started his own laboratory in 1979, Inter-Mountain Laboratories, in Sheridan, Wyoming. There he coordinated development of environmental laboratories in four locations for air, water, and soil analysis. He is very experienced in the areas of trace metal analysis and with soil, overburden, and topsoil analysis. He also worked with State and federal agencies along with private mining companies on method development for soil and overburden analysis.

Mr. Pasch joined Energy Laboratories, Inc. in 2002. He is responsible for setting up and establishing the soils department in the Helena Laboratory. He became Branch Manager of the Helena location in the summer of 2005. He has over 31 years of experience in the analytical field.

#### *Linda Larson, Rapid City*

Ms. Larson has worked in the Rapid City branch of ELI since 1998, and is the Rapid City Branch Manager. Ms. Larson received her B.S. degree in Chemistry from South Dakota School of Mines and Technology in Rapid City, South Dakota in 1980. She joined ELI in 1990 and helped setup and promote the Rapid City Branch. Since 2001, Ms. Larson has been involved with Project Management as well as inorganic analysis. She participates in all areas of the lab business including data review, technical support, price quotes and quality control.

#### *Gary L. Pudge, College Station*

Mr. Pudge opened the College Station Branch of ELI in 2002, and serves as Branch Manager. He received his B.A degree in Architectural Design from Phoenix Institute of Technology/ASU in 1986.

Mr. Pudge was formerly employed with an environmental testing laboratory where he managed their Texas operations. He brings many years of experience in inorganic soil and water analysis, organics and trace metals, particularly specializing in serving the

lignite mining industry in the South-Central United States and hazardous waste characteristics for RCRA related projects.

### ***Laboratory Supervisors & Quality Assurance Officers***

ELI's laboratory supervisors are responsible for the day-to-day operation of the laboratories: scheduling tests, assigning work, and completing the technical review of laboratory data. They report directly to the Branch Managers.

Quality Assurance Officers are responsible for quality systems development, implementation, and management. QA officers manage the laboratories certification programs to meet government regulatory requirements. The QA program is done in cooperation with all levels of management and staff, and QA officers report directly to their Branch Managers

#### **Billings Branch**

***William T. Brown, Supervisor of Trace Organic Analysis.*** See earlier biography under Corporate Managers.

***Cornelius A. Valkenburg, Ph.D., Corporate Quality Assurance Officer.*** Dr. Valkenburg received his B.A. degree in Biology with minor in chemistry from Carroll College, Helena, MT in 1979. In 1986, he received a Ph D. in Analytical Chemistry from Montana State University-Bozeman.

Prior to joining ELI in 1992, Dr. Valkenburg worked with Lockheed Corporation and ICF Kaiser Engineers as a research scientist evaluating and developing analytical procedures for the EPA Superfund program. In his current position he manages the Quality Assurance Program for the Billings laboratory and works closely with branch laboratory QA officers on their individual QA programs. He is also involved in special project management, methods development, LIMS development, and the laboratory solvent recycling program.

***Cindy Rohrer, Supervisor of Inorganics Analysis.*** Ms. Rohrer received her B.S. Degree in Chemistry from Rocky Mountain College in 2000. Ms. Rohrer joined ELI in 2000. Her specialty is in the analysis of trace metals in environmental samples using inductively coupled plasma mass spectrometry (ICP-MS). Currently, Mrs. Rohrer supervises the Inorganics Analysis group of the Billings laboratory.

***Nancy Lorfing, Supervisor of Aquatic Toxicology.*** Ms. Lorfing received her B.S. degree in Biology, with a Chemistry minor, from Eastern Montana College in 1970. She joined ELI in 1992. In her current position, she supervises the analysis of municipal and industrial wastewaters to determine toxicity to living organisms (fathead minnows and ceriodaphnia). She has completed extensive training from the EPA and from private

### ***Laboratory Supervisors (continued)***

consultants in the Rocky Mountain region for sample collection, testing, and maintenance of laboratory cultures.

Before joining ELI, Ms. Lorfing worked as a technician for an orthopedic surgeons group, and as a biologist for the Montana Fish and Game Department.

### **Casper Branch**

***James C. Judge, Quality Assurance Officer.*** Mr. Judge is the Casper Branch Quality Assurance Officer and supervises the Quality Systems, including data review, technical support and quality control, as well as other QA/QC responsibilities. Mr. Judge received his M.S degree in Quality Assurance from California State University in 1998. He joined ELI in 2009, after serving nine years as the Quality Assurance Officer/ Directorate Organizational Information Systems Security Officer, Environmental Protection Department (EPD) Assurance Office and Quality Assurance Manager for \$60M Decontamination and Waste Treatment Facility at Lawrence Livermore National Laboratory in Livermore, California. He managed Deficiency Tracking system for EPD and led and performed management and compliance assessment across the Division within EPD. He also led and performed numerous vendor audits.

From 1993 through 1996, Mr. Judge was the Operations Manager of the Hazardous Waste Management Division at the Lawrence Livermore National Laboratory. Managed large technical organization including several TSD facilities. Ensured that waste operations were in compliance with Federal, State and local safety and environmental regulations.

***Steven Carlston, Technical Director.*** Mr. Carlston is the Technical Director of the Casper branch. He is responsible for method development and support; technical data review for specialized reporting; orders and evaluates PT studies; and provides technical assistance and review of CAR and PARs. Mr. Carlston received his B.A degree in Chemistry from the University of Colorado in 1980. He joined ELI in 1988, after serving ten years as Quality Control Coordinator and Chemist for the Navy Drug Screening Laboratory in Oakland, California. He prepared QA/QC blind samples; tracked and reported results of RIA and GC/MS analyses; trained personnel; and suggested and implemented changes to laboratory Standard Operating Procedures. As a chemist, he performed extraction, derivitization, and GC/MS analysis of drugs of abuse. Mr. Carlston was also responsible for the technical maintenance of nine GC/MS instruments.

From 1988 through 2005, Mr. Carlston was the Organics Department Supervisor and was also responsible for the Gas Chromatography and Hazardous Waste Departments. Mr. Carlston also was the backup analyst for crude oil, radiochemistry, and soils analysis during peak activity periods.

### ***Laboratory Supervisors (continued)***

From 2005 to 2008, Mr. Carlston was the IT Department supervisor and responsible for the maintenance of the Energy laboratories, Inc. laboratory information management system (LIMS) data and QA/QC systems.

***David P. Blaida, Radiochemistry Supervisor.*** Mr. Blaida received his B.S. degree in Geography from the University of Wyoming in 1977. He joined ELI in 1987, after ten years with a uranium mining and exploration company based north of Douglas, Wyoming. In the latter position, he performed daily uranium assays for mill processing, tested process water samples, and was involved in radiation safety consulting. He regularly advises clients on sampling and testing protocols under current EPA and NRC regulations.

***Randy Horton, Organics Supervisor.*** Mr. Horton received his B. S. degree in Chemistry, specializing in organic chemistry, from the South Dakota School of Mines and Technology in 1991. He has completed additional training in Mass Spectrometer maintenance and operation, wastewater methodologies, and the Stage I Disinfection/Disinfection By-Products Rule.

Mr. Horton joined the Organics Department at the Billings, MT branch in 1991. He transferred to the Rapid City, SD branch in 1995 and was named Organics Department Supervisor. In 2001, Mr. Horton transferred to the Casper, WY branch and was named Organics Department Supervisor and Senior Project Manager in 2002. He has extensive experience in GC and GC/MS analyses quantifying organic contaminants in drinking water, industrial wastewater, remediation monitoring wells, soils, air, vapors, and waste.

***Randy L. Ogden, Microbiology Supervisor.*** Mr. Ogden received his B.S in Molecular Biology from the University of Wyoming in 1987. Mr. Ogden joined ELI at the Casper, WY branch in 1998. He is the Microbiology Department Supervisor and is responsible for bacterial analysis of public and private drinking water sources, pools and spas – fecal coliform analysis of surface water and sewage samples. He also is experienced in EPA 504 and EPA 505 drinking water methods for Organohalide pesticides and polychlorinated biphenyl products using electron capture detector and gas chromatography. He also has experience in chromatography/Mass spectrometry analyses of various matrices for a variety of organic compounds.

***Robert Waldrop, Metals Supervisor.*** Mr. Waldrop is the supervisor of the Metals Department at the ELI Casper, WY branch and is responsible for scheduling, setup, process, and measurement of the trace metal department. Mr. Waldrop has extensive experience in analysis of water, soil, air, and waste samples for Mercury, Selenium, and Arsenic using CVAA and HPLC under EPA approved methods. He also is experienced in analysis samples for trace metals by ICP and ICP-MS using EPA approved methods.

***Laboratory Supervisors (continued)***

***Judy A. Larson, Wet Chemistry Supervisor.*** Ms. Larson joined ELI at the Casper branch in 1999. She supervises the Inorganics Department and maintains QA data. She has extensive experience in trace metals analysis utilizing Inductively Coupled Argon Plasma and Inductively Coupled Argon Plasma Mass Spectroscopy. She also has experience in analysis of Nitrate+Nitrite and Ammonia by EPA 353.2 and SM4500NH<sub>3</sub> G.

***Donny C. Juarez, Soil Supervisor.*** Mr. Juarez joined the ELI Casper, WY branch in 1995. He is the supervisor of the Soils Department. He has over 12 years experience in analyses involving DRO, Fingerprint, C-scan, Flashpoint, Viscosity, API Gravity, Specific Gravity, Hemple Distillation, Engler Distillation, Bottom Sediment and Water, Hazardous Waste Disposal, and EPA methods 418, 413, 1664.

***Steven M. Dobos, Client Services Supervisor.*** Mr. Dobos received his B.A. in Geology from the University of Montana in 1980. He joined ELI in 1986, following work at two environmental and oil field laboratories in Casper. In these previous positions, he performed stack tests of air emissions, analyzed soil samples, characterized crude oil samples, and tested oil samples for organic chlorides using GC technology.

Mr. Dobos began at ELI as an on-site research chemist for an in-situ uranium mine. He returned to the laboratory in 1987, and was named Inorganics Department Supervisor in 1988. In addition to technical and supervisory responsibilities, his work included consulting with clients on environmental laws and requirements. Mr. Dobos primary responsibilities include project management and administrative over-site for special projects and operations. Additional responsibilities include inorganic chemistry and trace metal technical support and hazardous waste consultation. Mr. Dobos has completed OSHA's 40-hour hazardous materials handling course with annual updates, and regularly participates in pertinent seminars and courses offered by professional organizations and educational institutions.

**Gillette Branch**

***Bucholz, Michelle R., Client Services Supervisor / Quality Assurance Officer.*** Ms. Bucholz received her B.S. in Chemistry from Montana State University, Billings in 1999. She worked as a laboratory technician in a hospital laboratory for six years prior to joining ELI. Ms. Bucholz joined the Inorganics Department at the Rapid City branch in early 2005. She transferred to the Gillette branch later that same year as an analyst, eventually working as a Project Manager. In 2006, Ms. Bucholz began taking responsibility for quality assurance on a limited basis. She was named Quality Assurance Officer of the Gillette branch in 2008. Ms. Bucholz is currently responsible for the supervision of Client Services in addition to Quality Systems management.

## *Laboratory Supervisors (continued)*

### **Helena Branch**

***Jonathan D. Hager, Assistant Laboratory Manager/Quality Assurance Officer.*** Mr. Hager has been with ELI's Helena branch lab since 2001. He received his degree in 2003 from Carroll College, Montana, earning a B.A in Biology with a Chemistry Minor. Mr. Hager joined ELI while attending college and has worked in all the departments of the Helena laboratory. He worked for three years in the Inorganics Department, and then moved into the Soils Department. In 2003, Mr. Hager became the branch Quality Assurance Officer. He became involved with the Organics Department in 2005 and also became Assistant Lab Manager in 2005. Currently, Mr. Hager is a Project Manager at the Helena facility, dealing with clients on a daily basis.

### **Rapid City Branch**

***Linda Larson, Laboratory Coordinator/Quality Assurance Officer.*** Ms. Larson: See earlier biography under Branch Managers. Ms. Larson also serves as Quality Assurance Supervisor in Rapid City. She participates in all areas of laboratory business including data review, technical support, price quotes and quality control.

### **College Station Branch**

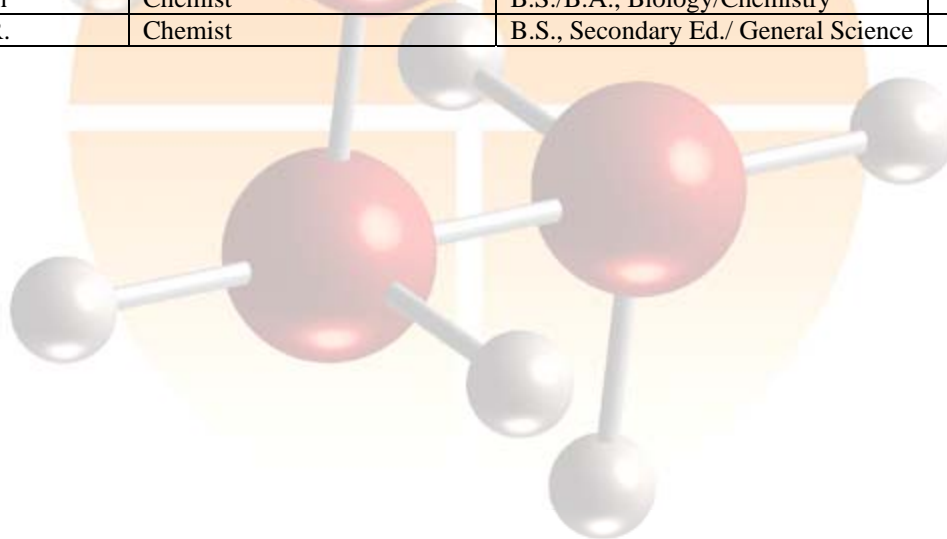
***Julie C. Rhubottom, Quality Manager / Laboratory Operations Supervisor.*** Ms. Rhubottom received her B.S. degree in Chemistry from the University of Houston in 1994. She helped open the College Station branch in 2002. She currently serves as Quality Manager and has been instrumental in the development and implementation of a NELAC based Quality System. In addition to her duties as Quality Manager, Ms. Rhubottom serves as the Laboratory Operations Supervisor, which involves the comprehensive oversight of laboratory analysis. She has a broad range of experience in trace metals and inorganic analysis of soils, water and waste.

## ***Energy Laboratories, Inc. Personnel Summary***

	<i>Title</i>	<i>Academic Background</i>	<i>Relevant Experience Since</i>
<b><i>Billings, Montana – Corporate Office</i></b>			
Brown, William	President; Supervisor of Trace Organic Analysis	B.S., Fish and Wildlife Management	1977
Standish, John	Vice President; Laboratory Director	B.S., Biology / Chemistry	1973
Bailey, Dr. Tim	Senior Chemist/Software Programmer	Ph.D., Analytical Chemistry	1989
Ballou, Betty L.	Administrative Assistant	H.S., General Studies	1982
Barnes, Amber	Laboratory Technician	B.A., Performing Arts	2005
Blank, Patricia	Lab Technician	H.S., General Studies	2007
Blatnick, Jeff	Chemist	B.S., Chemistry	2005
Bomboy, Joseph	Chemist	B.S., Chemistry	2007
Bourn, Emily	Chemist	B.S., Land Rehabilitation	2008
Bradley, Dr. Lisa	Head of Corporate Technical Operation	Ph.D., Analytical Chemistry	1996
Buehler, Kristine L.	Administrative Assistant	H.S., General Studies	2009
Burris, R.B.	Human Resource Coordinator	H.S., General Studies	1977
Cadreau, Leslie	Lab Technician	H.S., General Studies	2008
Campbell, Patricia	Industrial Hygienist/Safety Officer	B.S., Microbiology	1997
Capron, John	Maintenance	H.S., General Studies	2008
Carver, Genoa	Chemist	B.S., Soc/Psychology	2008
Chirrick, Darcy	Administrative Assistant	H.S., General Studies	1988
Conard, Harvey	Chemist	B.S., Chemistry	1983
Conard, Mary E.	Chemist	B.S., Micro Biology/Chemistry	1983
Condon, Brad A.	Purchasing Agent	A.S., Business Management	1982
Conter, Keri	Chemist	B.S., Biology	2002
Cooper, Todd	Chemist	B.S., Chemical Engineering	2008
Cresswell, Margaret	Lab Technician	B.A., Environmental Studies	2008
Dangerfield, Tracy	CPA, Comptroller	B.S., Business Administration	1989
Daniel, Martha	Chemist	B.S., Microbiology	2007
Dilts, Dr. Stephen	Senior Chemist	Ph.D., Analytical Chemistry	1994
Earley, Anna	Chemist	B.A., Chemistry	2008
Endy, Shari M.	Project Manager	B.S., Petroleum Engineering	1988
Erickson, Jenny L.	QA/QC Project Manager	B.A., Environmental Science	2003
Fassett, Brian	IT Manager	H.S., General Studies	1985
Fassett, Cindy	Administrative Assistant	H.S., General Studies	2002
Fosjord, Debbie L.	QA/QC Coordinator	H.S., General Studies	1987
Frazer, Paul	Chemist	B.S., Biology/Chemistry	1991
Gallogly, Peter	Shipping/Receiving Clerk	H.S., General Studies	2009
Gancze, Lisa	Sample Receiving	H.S., General Studies	2005
Geda, Ady	Chemist	M.S., Geophysics	2008
Godfrey, Ann	Chemist	B.S., Biotechnology	2008
Hanson, Heidi	Lab Technician	H.S., General Studies	2008
Hardtke, John	Technical Support Specialist	H.S., General Studies	2008
Hayes, Robert (Joe)	Technical Support Specialist	B.S., Computer Science	2008
Heltborg, Peter	Network Administrator	B.S., Information Systems	1988
Helzer, Jacqui	Lab Technician	H.S., General Studies	2009

<i>Employee</i>	<i>Title</i>	<i>Academic Background</i>	<i>Relevant Experience Since</i>
<b>Billings, Montana – Corporate Office (continued)</b>			
Hendrickson, Katie	Chemist	B.A., Biology	2006
Hill, Jeff	Chemist	B.S., Chemistry/Physics	1994
Hofer, Nathan	Lab Technician	H.S., General Studies	2008
Hoffmann, Jasmine	Chemist	B.S., Biology	2006
Hunt, Ron	Chemist	B.S., Biology	1979
James, Joanna	Chemist	B.S., Microbiology	2008
Jennings, Sarra	Lab Technician	H.S., General Studies	2007
Jones, Quincee E.	Laboratory Analyst	A.S., Drafting	1995
Kaercher, Katherine	Lab Technician	H.S., General Studies	2008
Kinney, Robert	Software Programmer	B.S., Computer Science	2008
Klocker, April	Chemist	B.S., Environmental Science	2007
Kono, Dustin	Chemist	B.S., Biology/Chemistry	2009
Lippard, Jill	Lab Technician	B.A., Biology	2008
Lorfin, Nancy	Supervisor of Aquatic Toxicology	B.S., Biology/Chemistry	1970
Lortz, Judy	Administrative Assistant	H.S., General Studies	1996
Madden, Laura	Chemist	B.S., Biology	2004
Mallett, Sonya	Laboratory Analyst	Associate of Science	1982
Marienberg, Andrew	Junior Software Programmer	B.A., History	2008
McCartney, Gina	Sample Receiving/Chemist	B.S., Horticulture/Business	2005
McDonald, Krystal	Sample Receiving/Lab Tech.	A.S., Medical Secretary	1996
McDonough, Brian	Chemist	B.S., Chemistry	1993
McFarland, Sara	Chemist	B.S., Environmental Biology	2007
McGrew, Sean	Chemist	M.S., Chemistry	1995
Miller, Darwin	Sample Receiving/Lab Technician	B.S., Mechanical Engineering Tech.	2008
Morgan, Michelle	Chemist	B.S., Clinical Laboratory Science	2008
Murray, Scott	Chemist	M.D., Oby/Gn	2007
Nees, Randa	Receiving Supervisor/Lab Technician	H.S., General Studies	1990
Newman, Julie	Administrative Assistant	H.S., General Studies	2007
Nunberg, Toni	Office Manager	H.S., General Studies	2008
Olsen, Todd	Chemist	B.S./B.A., Chemistry/Math	2008
Pearson, Karen	Laboratory Analyst	H.S., General Studies	2000
Pickard, Josie	Extraction Chemist	B.S., Biology, Chemistry	2003
Pippin, Megan	Lab Technician	H.S., General Studies	2008
Pippin, Wynn	Senior Project Manager/Marketing	B.S., Chem, Microbiology, Agronomy	1977
Reed, Chris	Chemist	B.S., Biology	2008
Reid, Robert J.	Chemist	M.S., Geology and Chemistry	1972
Renier, Kathi	Administrative Asst.	B.S., Education	1991
Rohrer, Cindy A.	Inorganics Supervisor/Chemist	B.S., Chemistry	2000
Ruby, Denise	Office	H.S., General Studies	1979
Rusch, Sandra	Sample Receiving/Lab Tech.	H.S., General Studies	2007
Ruud, Randi	Chemist	B.S., Animal Science	2008
Salle, Robert	Chemist	B.A., History	1973
Saunders, Mark	Laboratory Analyst; Hazardous Waste Supervisor	H.S., General Studies	1992
Scammon, Kristy	Administrative Assistant	H.S., General Studies	2008

<i>Employee</i>	<i>Title</i>	<i>Academic Background</i>	<i>Relevant Experience Since</i>
<b>Billings, Montana – Corporate Office (continued)</b>			
Schiltz, Kelsey	Lab Technician	H.S., General Studies	2009
Schreibeis, Alicia	Chemist	B.S., Biology	2008
Smith, Jennifer	Administrative Assistant	H.S., General Studies	2007
Spencer, Michelle	Client Services	B.S., History	2009
Stafford, Ruby	Lab Technician	B.S., Math/Teaching	2008
Standish, Lindsay	Operations Strategist	B.S., Engineering	2008
Stricker, Theresa	Sample Shipping and Receiving Technician	H.S., General Studies	1987
Talbot, Adrien G.	Software Programmer	B.S., Electrical Engineering	2008
Thompson, Jacquelyn R.	Chemist	B.S., Biology	2009
Turnbull, William E.	Outside Sales/Marketing	A.S., Industrial Technology	2007
Valkenburg, Cornelius A.	QA/QC Officer	Ph.D., Analytical Chemistry	1986
Valkenburg, Linda D.	Chemist	B.S., Microbiology	1985
Waddington, Mark D.	Senior Chemist	PhD., Chemistry	1983
Warren, Gary W.	Senior Chemist	B.S., Biology	1990
Watson, William R.	Chemist	B.S., Geology	1977
Weis, Ladonna	Chemist	B.S., Biology	2001
Williams, Bruce D.	Senior Chemist	A.S., Business Administration	1976
Wilson, Scott K.	Laboratory Analyst	H.S., General Studies	1980
Wintrode, Jason J.	Chemist	B.S., Chemistry	1992
Wise, Leigh Ann	Chemist	B.S./B.A., Biology/Chemistry	2000
Zormeir, Janet R.	Chemist	B.S., Secondary Ed./ General Science	2009



<b>Energy Laboratories, Inc. Personnel Summary</b>			
<b>Employee</b>	<b>Title</b>	<b>Academic Background</b>	<b>Relevant Experience Since</b>
<b>Casper, Wyoming Branch</b>			
Poelstra, David	Casper Branch Manager	H.S., General Studies	1981
Ackerman, Halley	Log In	H.S., General Studies	2009
Anderson, Jillian	Analyst	B.S., Biology	2008
Bacot, Linda	Prep	H.S., General Studies	2006
Barker, Mary	Administrative Support	H.S., General Studies	1982
Benton, Stephanie	Administrative Support Supervisor	H.S., General Studies	1989
Blaida, David	Radiochemistry Department Supervisor	B.S., Geography	1978
Carlston, Steve	Technical Director	B.A., Chemistry, Minor in Physics	1983
Cobb, Mary	QA/Marketing Assistant	A.A., Art	2000
Cooper, Daniel	Electrical Calibration	B.S., Engineering Science	1989
Cordes, Justin	Shipping/Receiving	H.S., General Studies	2009
Cowling, Steve	Analyst	Ph.D., Chemistry	1988
Dobos, Steve	Client Services Supervisor	B.S., Geology	1988
Downing, Diane	Log In	H.S., General Studies	2006
Edwards, Tabitha A.	Log In Supervisor	H.S., General Studies	2000
Edwards, Mike	Maintenance Supervisor	H.S., General Studies	2002
Elder, Krista	Shipping/Receiving	H.S., General Studies	2008
Entrekin, Amber	Analyst	B.S., Biology	2007
Failor, Megan	Analyst	B.S., Biology	2008
Fairservis, Dee	Analyst	B.S., Microbiology	1985
Fox, Darrell	Human Resources/Safety	H.S., General Studies	1989
Fringer, Malynda	Prep	H.S., General Studies	2006
Haines, Donald	Analyst	B.S., Chemistry	2002
Hamre, Kathryn	Reporting	A.A., Business Administration	2007
Harrison, James W.	Electrical Calibration	H.S., General Studies	1999
Hazelton, Barbara	Analyst	H.S., General Studies	2002
Hoag, Jason	Analyst	B.S., Zoology, Physiology	2008
Hoppens, Paul C.	Analyst	H.S., General Studies	1994
Horton, Randy M.	Organics Supervisor	B.S., Chemistry	1991
Humiston, Kimberly	Log In	H.S., General Studies	2007
Jacobs, Pegi	Analyst	H.S., General Studies	1984
Juarez, Donny	Soils Supervisor	H.S., General Studies	1998
Judge, Jim	QA/QC Officer	M.S. Quality Assurance	1993
Krupski, Kathy	Accounting	H.S., General Studies	1988
LaPlant, Sheri	Analyst	H.S., General Studies	2001
Larsen, Andrew	Log In	H.S., General Studies	2009
Larson, Judith A.	Inorganics Supervisor	H.S., General Studies	1979
Larson, Leonard	Analyst	H.S., General Studies	2000
Lynch, Barbara	Reporting	H.S., General Studies	2009
McCann, Carol	Administrative Assistant	H.S., General Studies	2001
McPike, Edith	Log In	H.S., General Studies	2004
McVay, Dennis	Analyst	General Studies	2007
Nickerson, Traci	Reporting	H.S., General Studies	1998
Ogden, Randy	Microbiology Supervisor	B.S., Molecular Biology	1992
Parke, Tessa	Project Manager	A.S. Business	2004

<i>Employee</i>	<i>Title</i>	<i>Academic Background</i>	<i>Relevant Experience Since</i>
<b><i>Casper, Wyoming Branch (continued)</i></b>			
Parks, Michael	I.T.	H.S., General Studies	2008
Patterson, Chuck	Analyst	B.S., Biology	1992
Paulson, Ryne	Analyst	B.S., Biology	2009
Ponce, Erin	Analyst	H.S., General Studies	2009
Powell, Jesse	Analyst	H.S., General Studies	2009
Quis, Dorian	Shipping/Receiving	A.A., Travel	2004
Raatz, Daniel	Maintenance	H.S., General Studies	2007
Ritchie, James L.	Analyst	B.S., Marine Biology	1997
Rose, Carol	Analyst	H.S., General Studies	2006
Scheetz, Tammie	Analyst	H.S., General Studies	2001
Schlitz, Ted	Analyst	B.S., Petroleum Engineering	1991
Schofield, Guy	Analyst	M.S., Biochemistry	2008
Schroeder, Kerri L.	Project Manager	H.S., General Studies	2001
Siedenburg, Charles	I.T.	A.S., Electrical Engineering	1981
Sloyer, Bruce	I.T. Supervisor	A.S., Industrial Electronics	2001
Stanley, Ralph	Analyst	B.A., Biology; B.S., Education	1995
Stanley, Susan	Prep	A.A., Art	2006
Stowers, Tracy	Reporting	B.A., Accounting	2002
Wagner, Corrine	Log In	H.S., General Studies	2003
Waldrop, Robert	Metals Supervisor	H.S., General Studies	2007
Waldrop, Stephanie	Supervisor-Technical Reporting	B.S., Chemical Engineering	1998
Wen, Young	Analyst	M.S., Analytical Chemistry	1986
Whitehead, Allen	Organizational Development	M.B.A., Human Resources Management	2008

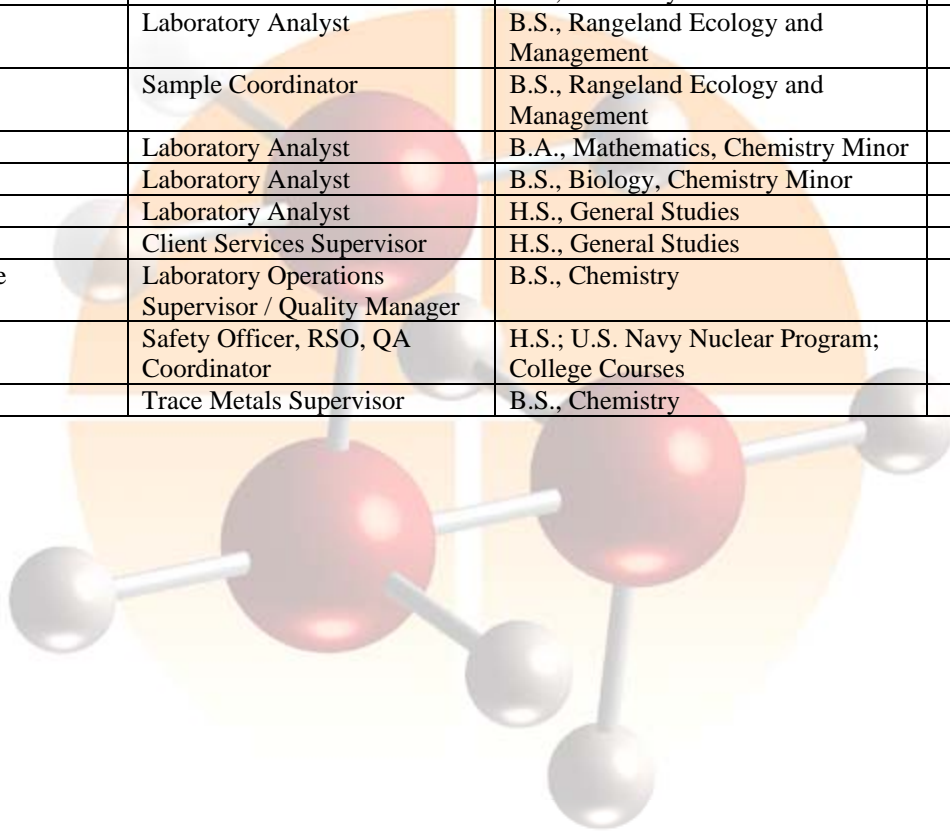
<b><i>Energy Laboratories, Inc. Personnel Summary</i></b>			
<i>Employee</i>	<i>Title</i>	<i>Academic Background</i>	<i>Relevant Experience Since</i>
<b><i>Gillette, Wyoming Branch</i></b>			
Friedlan, Terry L.	Branch Manager	Associate of Science and Engineering	1983
Bath, Stephanie	Login Supervisor/Safety Officer	H.S., General Studies	2006
Bucholz, Michelle R.	Client Services Supervisor/QA Supervisor	B.S., Chemistry	1997
Burk, Carol	Technical Proofer	H.S., General Studies	2006
Constable, Tracey L.	Project Manager	Cosmetology	2004
Degnan, Alyson T.	Project Manager/Purchasing Agent	H.S., General Studies	2004
Ingram, Mary M.	Analyst	B.S., Education (Math & Science)	1979
Kaufmann, Daniel	Analyst/Maintenance	H.S., General Studies	1989
Rush, Nancy L.	Office Manager	H.S., General Studies	1999
Ruff, Kasey	Login Tech	H.S., General Studies	2008
Voegelé, Misty	Analyst/Login Tech	H.S., General Studies	2006
Weisz, Julie	QA Coordinator	B.S., Molecular Biology; B.S. Zoology & Physiology	2000

<b>Energy Laboratories, Inc. Personnel Summary</b>			
<b>Employee</b>	<b>Title</b>	<b>Academic Background</b>	<b>Relevant Experience Since</b>
<b>Helena, Montana Branch</b>			
Pasch, Roger	Chemist	B.A., Natural Resources	1979
Hager, Jonathan D.	Chemist, QA Officer	B.A., Biology	2000
Blackburn, Amanda	Chemist	B.A., Chemistry	2004
Drieling, J. Mark	Lab Tech	US Navy, Aviation Electrician School	2008
Dull, Stephanie	Chemist	M.A., Forensic Science	2005
Dull, Stephen	Lab Tech	Army Maintenance Courses	2008
Hornby, Shane	Lab Tech	High School Diploma	NA
Jemmings, Wallace	Chemist	B.S., Biological Sciences	2006
Johnson, Gavin	Lab Tech	High School	2007
Johnson, Wanda	Sample receiving/reporting	University Business Courses	2002
Mariska, Hope	Chemist	B.S., Chemistry	2008
Palmer, Elaine	Lab Tech	University Business Courses	2005
Pestor, Skyler	Chemist	B.A., Chemistry	2008
Tubbs, Roxanne	Sample Receiving	Associate Degree in Secretarial Science	2006
Ulrich, Elizabeth	Chemist/ Safety Officer	B.A., Chemistry	1999
Wiegand, Katherine	Chemist	B.A., Environmental Science	2007

<b>Energy Laboratories, Inc. Personnel Summary</b>			
<b>Employee</b>	<b>Title</b>	<b>Academic Background</b>	<b>Relevant Experience Since</b>
<b>Rapid City, South Dakota Branch</b>			
Larson, Linda K.	Branch Manager/Quality Assurance Officer	B.S., Chemistry	1980
Brennan, Michael	Wet Lab Analyst	B.S Environmental/Physical Science	2006
Bultsma, Theresa	Chemist/Microbiologist	B.S. Chemistry	1998
Froiland, Steven J.	Log In	H.S., General Studies	2002
Hartman, Jennifer	Chemist/Wet Lab Supervisor	B.S., Chemistry	2004
Hill, Cody S.	Laboratory Technician	H.S., General Studies	2002
Slentz, Della	Login Assistant	H.S. General Studies	2006
Slentz, Kurt	IT	College Courses	1980

## ***Energy Laboratories, Inc. Personnel Summary***

<b><i>Employee</i></b>	<b><i>Title</i></b>	<b><i>Academic Background</i></b>	<b><i>Relevant Experience Since</i></b>
<b><i>College Station, Texas Branch</i></b>			
Pudge, Gary	Branch Manager	B.A., Architectural Design	1986
Belzung, Rosanne	Lab Technician	B.S., Rangeland Ecology and Management	2008
Cook, Jared	Technical Reporting	H.S.; Some College	2008
Cooper, Brent	Laboratory Analyst	B.S., Biology	2006
Crooks, Melissa	Soil Lab Supervisor	B.S., Animal Science	
Garcia, Melissa	Laboratory Analyst	B.S., Biomedical Science	2007
Hartwell, Jay	Chemist	B.S., Chemistry	2002
Lenz, Chase	Laboratory Analyst	B.S., Rangeland Ecology and Management	2007
Mims, Sarah	Sample Coordinator	B.S., Rangeland Ecology and Management	2008
Myatt, Amanda	Laboratory Analyst	B.A., Mathematics, Chemistry Minor	2007
Patel, Karishma	Laboratory Analyst	B.S., Biology, Chemistry Minor	2007
Porter, Carolyn	Laboratory Analyst	H.S., General Studies	1998
Reed, Twanda	Client Services Supervisor	H.S., General Studies	1989
Rhubottom, Julie	Laboratory Operations Supervisor / Quality Manager	B.S., Chemistry	1994
Rodgers, Paul	Safety Officer, RSO, QA Coordinator	H.S.; U.S. Navy Nuclear Program; College Courses	2000
Suchar, Stephen	Trace Metals Supervisor	B.S., Chemistry	2000



## ***5. Quality Assurance/Quality Control***

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### ***Quality Philosophy***

The Quality Assurance/Quality Control (QA/QC) program at Energy Laboratories, Inc. (ELI) is founded upon the belief that each employee has a role in obtaining high-quality, defensible data. Accordingly, ELI operates under strict quality guidelines, following all available internal and external controls.

All QC data relevant to specific samples are available in our laboratories for client review. Details of our quality assurance program are described in our ***Quality Assurance Manual***.

### ***Internal Controls***

Internally, ELI carefully controls the work environment, and maintains a competent and qualified staff. ELI follows validated methods, and routinely verifies the precision and accuracy with control samples. QC procedures covering every aspect of our work are documented in writing for the review and use of all employees.

### ***Laboratory Design***

To provide a clean and productive work environment, ELI laboratories are appropriately lighted, ventilated, and designed. Bench top work areas, supply storage areas, and refrigerated storage areas are maintained and expanded as needed to accommodate current personnel, equipment, and sample volume. Test and storage areas for samples designated for volatile organic analysis are physically isolated in a separate building or area to prevent cross-contamination by other samples and laboratory chemicals.

### ***Staffing***

All activities relevant to internal control at ELI are monitored by a Corporate QA Officer and Branch QA Supervisors. The Corporate QA Officer specifies QA procedures, submits blind samples for internal analysis, audits laboratory procedures, addresses problems, and reports audit results and quality trends to top management. The Branch QA Supervisors oversee internal controls in their locations. Senior chemists review all QC and test data generated.

All laboratory analysts meet minimum requirements for education and experience, and are trained on-the-job in test procedures, documentation, and QC measures. Skill levels are tested and documented for each analyst.

## ***Internal Controls (continued)***

### ***Sample Management***

For sample integrity, the laboratories control and keep a detailed record of custody, conditions, and testing over the life of each sample. For security, only authorized personnel are allowed to enter sample storage and test areas.

Clients are advised on proper sampling, providing sample containers, labels, preservatives, chain-of-custody forms, and written instructions. Upon sample receipt, it is verified that samples are intact, labeled, current, and properly preserved. All information relevant to each sample – including date of receipt, tests to be performed, analysts assigned, and test status – is tracked by computer.

### ***Control Samples***

To ensure reliable results, we systematically check test results, analyst accuracy, and the performance of equipment by running duplicate, blank, surrogate, spike, and reference samples. All QA sample results are compared with acceptance criteria at the time of analysis, and are plotted or otherwise tracked to identify trends. Out of control results are investigated immediately and corrected.

### ***Standard Operating Procedures***

Each ELI branch maintains detailed and specific Standard Operating Procedures (SOPs) and a QA manual.

The SOPs cover every phase of laboratory operation – including preparation of sample containers, sample storage, chain-of-custody documentation, sample analysis, reporting, and sample disposal. They are based upon laboratory practices and procedures issued by the EPA, the American Society for Testing and Materials (ASTM), the American Public Health Association (APHA), NIOSH, and OSHA, or provided by state agencies or the client. Where SOPs are not available, our chemists develop methods appropriate for the samples and contaminants involved.

The branch QA manuals contain general instructions for sampling procedures, sample handling, instrument calibration, reporting, analytical procedures, QC monitoring, preventive maintenance, and corrective action. Provisions of the manuals are based upon practices and procedures recommended under NELAC, the EPA's Good Laboratory Practices and Safe Drinking Water programs.

All analysts and technicians are required to read and follow all documented procedures.

## ***Internal Controls (continued)***

### ***External Controls***

As a further assurance of data accuracy and precision, the company pursues external controls where available. Routinely, ELI undergoes agency and peer review as part of certification, round-robin, and blind-sample programs.

### ***Accreditations***

ELI is accredited and certified as a QC Laboratory by various agencies and professional organizations. Certifications are based on some combination of:

- review of our QA program,
- testing of prepared samples, and
- laboratory inspection

Certifications relevant to the services ELI offers are maintained at [www.energylab.com](http://www.energylab.com).

### ***Round-Robin Participation***

ELI participates in many round-robin programs available to us through professional organizations, agencies, and clients. Typical program sponsors include the EPA, NIOSH, the American Industrial Hygienists Association (AIHA), the Food and Drug Administration (FDA), and groups of private laboratories. Round-robins compare test results from multiple laboratories provided with identical samples.