Robert R. Marriam, Consultant
Remedium Group, Inc.
A Subsidiary of W. R. Grace & Co.

6401 Poplar Ave., Suite 301
Memphis, TN 38119

Tel: (901) 820-2023
Fax: (901) 820-2061

Remedium

September 26, 2007

ADMINISTRATIVE
RECORD

SDMS Document ID
1061598

Ms. Bonita Lavelle
US EPA Region 8
EPR - SR
1595 Wynkoop Street
Denver, CO 80202-1129

Dear Bonnie,

Requested information regarding Energy Laboratories has been extracted from the Internet and enclosed. Energy Laboratories has several locations but, for the Libby non-asbestos samples analyses, it is planned that most of the work will be carried out in their Billings, Montana lab (see attached information sheet for principal names and locations). A Qualifications Manual (company-wide), Quality Assurance Plans (for both the Helena and Billings labs), and State and NELAC Certifications are enclosed.

Contact with the President of Energy Laboratories (Mr. Bill Brown) revealed that none of these labs is or has been investigated by the Inspector General. The source of this rumor is unknown, but according to Mr. Brown, it does not relate to his company/laboratories.

Please advise if additional information is required.

Robert R. Marriam

Cc: Catherine LeCours, Montana DEQ

dwp
Enclosures

Billings, Montar
Corporate Head
1120 South 27th St
PO Box 30916
Billings, MT 59107-
Email Billings

Toll Free: 800.735.4489
Voice: 406.252.6325
Fax: 406.252.6069

Billings	Title	E-mail
Bottle Orders		Email Bottle Orders
General		Email Billings
Bradley, Lisa	Inorganics Supervisor	Email Lisa
Brown, William	President	Email William
Burris, Bret	Human Resources	Email Bret
Dangerfield, Tracy	Controller	Email Tracy
Endy, Shari	NELAC Coordinator	Email Shari
Pippin, Wynn	Senior Project Manager	Email Wynn
Renier, Kathi	Office Manager	Email Kathi
Standish, John	Vice President	Email John
Summers, Scott	Business Development	Email Scott
Valkenburg, Andy	Quality Assurance Officer	Email Andy

© 2005 Energy Laboratories Inc.

QUALIFICATIONS MANUAL

Revision 6
February 2006

Energy Laboratories, Inc.

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

Table of Contents

Comprehensive Analytical Services ii

List of Acronyms iii

Preface iv

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

2. Services and Equipment ..... 2 – 1

3. Summary of Experience ..... 3 – 1

4. Personnel ..... 4 – 1

5. Quality Assurance / Quality Control ..... 5 – 1

Comprehensive Analytical Services

Aquatic Toxicity Services
- Acute Toxicity
- Chronic Toxicity
- Toxicity Reduction Evaluation

Organic Chemistry Services
- Drinking Water Analysis
- Volatiles
- Petroleum, UST, LUST Related Analysis
- Semi-Volatiles
- Herbicides and Pesticides
- Other Organics

Radiochemical Analyses Services
- Matrix Specific Digestions
- Radiochemical Analyses
- Bioassay
- Radiological Field Services
- Radiological Equipment Calibration and Repair
- Agricultural Soils
- Acid-Base Accounting
- Non-Metals
- Metals
- Cyanides
- Geotechnical Soils Analyses
- ICAP Scan
- Organic Contaminants
- Petroleum Contaminated Soils
- Radiochemical

Reporting Options
- Electronic deliverables
- NELAC reporting
- A2LA reporting
- Level IV reports

Wastes Services
- Resource Conservation and Recovery Act (RCRA) Characteristics – Ignitability, Corrosivity, Reactivity, and Toxicity
- Waste Oil Analysis
- Hydrocarbons and Hydrocarbons Contaminated Materials
- ICAP Scan
- Other Analyses of Waste

Water Services
- Metals
- Non-Metals
- Radiochemistry
- Bacterial
- Other Services
  - ✓ Domestic Water Analysis
  - ✓ Bacteriological
  - ✓ Livestock Suitability
  - ✓ Drinking Water Radiochemical Analysis
  - ✓ Landfill Groundwater Analyses
  - ✓ Priority Pollutants
  - ✓ ICAP Scan
  - ✓ Safe Drinking Water Act – Phase II & V

Other Services
- Crude Oil and Petroleum Products
- Oilfield Water Analysis
- Natural Gas & Liquefied Petroleum Gas (LPG) Analysis
- Feeds
- Special Services

List of Acronyms

AA	Atomic Absorption Spectrophotometer
AIHA	American Industrial Hygienists Association
APHA	American Public Health Association
ASTM	American Society for Testing and Materials
BTU	British Thermal Unit
CIH	Certified Industrial Hygienist
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
IR	Infrared Spectrophotometer
LIMS	Laboratory Information Management System
LPG	Liquefied Petroleum Gas
LUST	Leaking Underground Storage Tank
MS	Mass Spectrometers
NIOSH	National Institute of Occupational Safety and Health
NORM	Naturally Occurring Radioactive Materials
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PID	Photo-Ionization Detector
PM	Particulate Matter
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

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 we:

- 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.

We are proud of our capabilities, our committed staff, and our record of satisfied clients.

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 *Analytical Services* guide.

1.Energy Laboratories, Inc. – An Introduction

Independent, Locally Owned

Energy Laboratories, Inc. (ELI) provides independent, confidential, quality-controlled services in chemical and environmental analysis. ELI operates seven branch laboratories, easily accessible to clients in the western, mid-west and southern United States. We also serve clientele throughout the United States and foreign countries. ELI's Corporate headquarters is located in Billings, Montana. ELI employees, using company-owned facilities and equipment do all services provided. Below each laboratory is referenced with contact information. Energy Laboratories Inc. maintains an internet site at www.energylab.com for access to further information about the company and its branch locations.

BILLINGS, MONTANA
1120 South 27th Street (59101)
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

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
Lab Director: Roger A. Garling
E-mail: 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
Lab Director: L. J. Hansen
E-mail: rapid_city@energylab.com

GILLETTE, WYOMING
1105 West First Street
Gillette, WY 82716

Voice: (307) 686-7175
Fax: (307) 682-4625
Toll Free: (866) 686-7175
Lab Director: Terry L. Friedlan
E-mail: gillette@energylab.com

HELENA, MONTANA
2704 Billings Avenue
PO Box 5688
Helena, Montana 59604-5688
Voice: (406) 442-0711
Fax: (406) 442-0712
Toll Free: (877) 472-0711
Lab Director: Roger Pasch
E-mail: helena@energylab.com

COLLEGE STATION, TEXAS
415 Graham Road
College Station, TX 77845

Voice: (979) 690-2218
Fax: (979) 690-2045
Toll Free: (888) 690-2218
Lab Director: Gary Pudge
Web Site: cseli@energylab.com

IDAHO FALLS, IDAHO
940 East Lincoln Road
Idaho Falls, ID 83401
Toll Free: (866) 522-4498
Voice: (208) 522-4498
Fax: (208) 522-1049
Web Site: idaho_falls@energylab.com

History

Founded in 1952, ELI has been providing 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) 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 ***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 ***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 ***COLLEGE STATION*** laboratory analyzes water, waste, and soil for inorganic, volatile organic, and bacterial contaminants.

The ***IDAHO FALLS*** laboratory analyzes water for inorganic and bacterial contaminants. They also serve the potato industry.

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

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 our industry, we reinvest substantial revenues 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, mining, municipal water suppliers, wastewaters, industrial processes, superfund sites (groundwater), 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. We characterize 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-based 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, we analyze filters from Particulate Matter-10 (PM-10) and other high-volume samplers that collect particulates and heavy metals form 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. We are also up-to-date on the characteristics, environmental fate, and health effects of chemicals.

Services (continued)

Other Services

Additional services offered by ELI are radiation safety consulting, worker right-to-know, safety training for uranium mine operators and their contractors, gamma surveys, calibrations of field radiation detection instruments, and calibration of natural gas well flow meters.

ELI also provides management and laboratory support for mill and mine decommissioning projects, and consultations in the areas of radioactive waste transportation and process equipment decontamination. As part of licensing requirements for uranium mining and reclamation, we analyze 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, we own the most sophisticated instruments on the market. Where possible, we use automated instruments and accessories for timely and efficient analysis.

Data Management

The labs in Billings, Casper, Helena, Gillette, Rapid City, College Station and Idaho Falls are connected to ELI's Laboratory Information Management System (LIMS). Each of the labs has a Windows 2000/2003 Server running Microsoft SQL Server (database). We use 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,
- Auto analyzers
- Flow-injection analyzers (FIA)
- Ion chromatographs, 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

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. We frequently handle 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. We are 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, we have prepared fertilizer recommendations based on field conditions, landowner goals, and soil chemistry.*

Waste Analysis

ELI tests solid and liquid waste samples form 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 landfarms 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 released from pipelines, storage tanks, rail cars, and tanker trucks.*

- *One project involving a private development, 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, we have 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, we have 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.*

➢ *ELI performs field radiological surveys of air, groundwater, surface water, and vegetation to establish baseline conditions at proposed uranium mine sites.*

➢ *ELI manages uranium mine decommissioning projects from start to finish, winning site release and license termination for our clients.*

- *ELI managed the complete decommissioning process from a uranium research and development site, demonstrating the client's ability to operate a commercial in-situ mine safely. Decommissioning included equipment decontamination and disposition, surface radium cleanup and disposal, surface reclamation and re-vegetation, and groundwater restoration.*

➢ *In anticipation of federal regulations regarding Naturally Occurring Radioactive Materials (NORM), ELI test scales and sludges from oil and gas operations to detect and measure radiochemical contamination.*

➢ *ELI's Radiation Safety Officer (RSO) provides radiation consulting to ensure mining, ore processing, and decommissioning activities adequately protect human health, the environment, and meet regulatory requirements.*

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.*

Experience (continued)

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, we have tested crude oil to determine its chemical and physical properties, and natural gas to determine its composition and British Thermal Unit (BTU) value. We have 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, we sampled drums of an unknown powder found in an abandoned reservation warehouse. The unlabeled drums had been in storage for at least 20 years. We identified the powder as an arsenic-based pesticide, and helped arrange for proper disposal.*

  - *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, we 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, we provided laboratory support for 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

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 180 employees, including 140 analysts (this count includes specialized laboratory supervisors).

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-Billlings

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 operation 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.

Roger A. Garling, Casper

Mr. Garling opened the Casper Branch of ELI in 1984 (after designing and setting up the facility), and has since served as Branch Manager. He is a shareholder in the company.

Previously, Mr. Garling worked in plant and laboratory operations for companies involved in in-situ uranium mining. He designed an in-situ research facility in central Wyoming, and managed the physical plant and process chemistry during operation. He later managed groundwater restoration and surface reclamation at the site. At a commercial in-situ plant in northern Wyoming, he worked as a laboratory technician, senior chemist, and laboratory manager in charge of staffing, radiochemistry, quality control, and air and water analysis.

Branch Managers (continued)

Relevant to his work at ELI, Mr. Garling has completed OSHA's 40-hour hazardous materials handling course, and attended annual updates. Also, he has completed extensive training in radiation safety.

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 lab in 1979, Inter-Mountain Laboratories, in Sheridan, Wyoming. There he coordinated development of environmental laboratories in four locations for air, water, and soil analysis. Roger 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. Roger became manager of the Helena location in the summer of 2005. Roger has over 31 years of experience in the analytical field.

LeRoy J. Hansen, Rapid City

Mr. Hansen has worked in the Rapid City branch of ELI since 1998, and has since served as manager. Mr. Hansen graduated from Montana State University with a Bachelors Degree in Civil Engineering and Bio-Resource Option in 1993. He is a registered EIT in the State of Montana. Mr. Hansen has an extensive background in trace metals analyses by Inductively Coupled Argon Plasma and Graphite Furnace Atomic Absorption spectrometers. He has worked at Energy Laboratories Inc., as well as a previous employer to assist in development of different types of Laboratory Information Management Systems (LIMS).

Mr. Hansen is an active member of various South Dakota environmental and water associations.

Branch Managers (continued)

Gary Pudge, College Station

Mr. Pudge opened the College Station Branch of ELI in 2002, and serves as manager. He received his Bachelor of Arts 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.

Kay Finley, Idaho Falls

Kay is the newest addition to Energy Laboratories, Inc. She has been working for ELI since the January 2005. She was previously the owner of an analytical lab in Idaho Falls. Prior to that she worked on baseline data in pristine environments (a United Nations project) at the INL. Kay has a B.S. degree in Experimental Psychology from the University of Idaho and has taken graduate coarse work in chemistry through the University of Idaho in Idaho Falls.

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 Bachelor of Arts degree in Biology with minor in chemistry from Carroll College, Helena, MT in 1979. In 1986, he received a Doctorate 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.

Dr. Lisa A. Bradley, Ph.D., Supervisor of Inorganics Analysis. Dr. Bradley received her Bachelors Degree in Chemistry from Montana State University in 1990. In 1996, she received a Doctorate in Analytical Chemistry from Indiana University – Bloomington.

Dr. Bradley has over 10 years of experience in environmental laboratories. Her specialty in the analysis of trace metals in environmental samples using inductively coupled plasma mass spectrometry (ICP-MS). Currently, Dr. Bradley supervises the Metals 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 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 E. Yocum, Quality Assurance Officer. Mr. Yocum received his BA degree in geology from Cornell College, MT Vernon, IA, in 1990. He joined ELI in 2000 after ten years working various industries with environmental regulations and their monitoring

projects. He has been project manager involved with monitoring system design and implementation, regulatory compliance monitoring, and validation of monitoring data. In his current position he manages the laboratory Quality Systems Program. He also works as client project manager, data validator, and in LIMS development. He maintains expertise in Occupational Safety and Health Administration (OSHA), U.S. Environmental Protection Agency (USEPA), and Wyoming Department of Environmental Quality (WDEQ) environmental regulations.

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. In 1990, Mr. Blaida completed a five-day seminar on alpha spectrometer analysis of water, soil, and waste. In 1992, he completed a two-day seminar on changes in NRC regulations relevant to radiation safety. 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. 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 Supervisor. In 2001 Mr. Horton transferred to the Casper, WY branch and was named Organics Supervisor and Senior Projects 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.

Steven M. Dobos, Inorganic 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 current work includes consulting with clients on environmental laws and requirements. 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.

Sheryl A. Garling, Operations Manager and Radiation and Occupational Safety Officer. Ms. Garling received her B.S. in Civil Engineering from Clarkson College of Technology in Potsdam, New York in 1977. She joined ELI as a consultant in 1984, following eight years in the mining and oil industries. Her previous work included assignments in design, equipment procurement, radiation safety, and decommissioning for an in-situ uranium mine, and the design and construction of oil and gasoline pipelines.

Currently, Ms. Garling conducts radiation safety training for uranium mine operators and their contractors, develops environmental and radiation compliance programs, and conducts OSHA health and safety audits. She is knowledgeable about health, safety, and exposure regulations of the NRC, the U.S. Department of Transportation, OSHA, the EPA, and Wyoming state agencies. She has completed OSHA's 40-hours hazardous material handling course, and attends annual updates. She is currently certified by the NRC as a Radiation Safety Officer for mine sites.

Gillette Branch

Terry L. Friedlan, Laboratory Supervisor. See earlier biography under Branch Managers. Mr. Freidlan also serves as Quality Assurance Supervisor in Gillette.

Helena Branch

Jonathan D. Hager, Assistant Laboratory Manager/Quality Assurance Officer. Mr. Hager has been with Helena Lab since 2000. Jonathan received his degree from Carroll College, Montana, earning a B.A in Biology. He has a wide range of experience from soils, water, microbiology, and organics. Mr. Hager also serves as the Laboratory Supervisor and as the Quality Assurance Officer.

Rapid City Branch

Linda Larson, Laboratory Coordinator/Quality Assurance Officer. 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.

Laboratory Supervisors (continued)

College Station Branch

Julie C. Rhubottom, Assistant Laboratory Manager. Ms. Rhubottom has been involved in the start-up of the College Station facility since it's inception in 2002. She received her B.S. degree in Chemistry from the University of Houston in 1994. Ms. Rhubottom has a broad range of experience in trace metals and inorganic analysis of soils, water and waste. She also serves as the Quality Assurance Officer and Safety Officer of the College Station branch.

Ms. Rhubottom was formerly employed by Fina Chemicals in Deer Park, TX in the polymer research laboratories prior to entering the environmental lab field.

Idaho Falls Branch

Kay Finley, Laboratory Supervisor. See earlier biography under Branch Managers.

Energy Laboratories, Inc. Personnel Summary			
Employee	***Title***	***Academic Background***	***Relevant Experience Since***
Billings, Montana – Corporate Office			
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
Anderson, Samuel	Sample Receiving	B.S. Biology/Paralegal Studies	2005
Bailey, Dr. Tim	Senior Chemist	Ph.D., Analytical Chemistry	1989
Ballou, Betty L.	Administrative Assistant	H.S. General Studies	1982
Berg, Eric L	Chemist	B.S. Environmental Studies/Biology	2005
Berglund, Darrell D.	Chemist	B.S., Biology/Chemistry	1996
Burris, R.B.	Human Resource Coordinator	H.S., General Studies	1977
Bradley, Dr. Lisa	Inorganics Supervisor	Ph.D., Analytical Chemistry	1996
Campbell, Patricia	Industrial Hygienist	B.S., Microbiology	1997
Chirrick, Darcy	Office	H.S., General Studies	1988
Christoferson, Laura	Chemist	B.S. Biology	2002
Clifford, Julie	Laboratory Analyst	B.S. Chemistry	2005
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
Dangerfield, Tracy	CPA, Comptroller	B.S., Business Administration	1989
Delcamp, Quincee E.	Laboratory Analyst	A.S., Drafting	1995
Diede, Crissa	Laboratory Analyst	B.S. Biology, Chemistry Minor	2002
Dilts, Dr. Stephen	Senior Chemist	Ph.D., Analytical Chemistry	1994
Endy, Shari M.	Quality Assurance/Project Manager	B.S., Petroleum Engineering	1988
Fassett, Brian	IT Manager	H.S., General Studies	1985
Finch, Ron A.	Chemist	B.S. Chemistry	1990
Fosjord, Debbie L.	Log-in/Office	H.S., General Studies	1987
Frank, Eric L.	Extractions Analyst	H.S., General Studies	2001
Frazer, Paul	Chemist	B.S., Biology/Chemistry	1991
Gancze, Lisa	Receptionist	H.S. General Studies	2005
Glover, Coleman	Laboratory Technician	H.S. General Studies	2005
Gwin, David A.	I.T. Manager	B.S./B.A., Business Administration, Computer Science	1988
Heltborg, Peter	Technical Support Specialist	B.S., Information Systems	1988
Hill, Erik	Laboratory Analyst	H.S., General Studies	2002
Hill, Jeff	Chemist	B.S., Chemistry	1994
Hunt, Ron	Chemist	B.S., Biology	1979
Kuntz, Judy	Laboratory Analyst	H.S., General Studies	2002
Lord, Jessica M.	Chemist	B.S., Chemistry	2001
Lorfing, Nancy	Supervisor of Aquatic Toxicology	B.S., Biology/Chemistry	1970
Lortz, Judy	Secretary	H.S., General Studies	1996
Mallett, Sonya	Laboratory Analyst	Associate of Science	1982
McCartney, Gina	Sample Receiving	B.S., Horticulture/Business	2005
McClenning, Nathan	Sample Receiving	B.S., Biology	1998
McDonald, Krystal	Sample Receiving	A.S., Medical Secretary	1996

Employee	*Title*	*Academic Background*	*Relevant Experience Since*
Billings, Montana – Corporate Office (continued)			
McDonough, Brian	Chemist	B.S., Chemistry	1993
McGrew, Sean	Chemist	M.S., Chemistry	1995
Nees, Randa	Receiving Supervisor	H.S., General Studies	1990
Pearson, Karen	Laboratory Analyst	H.S., General Studies	2000
Pickard, Josie	Extraction Chemist	B.S., Bioloy, Chemistry	2003
Pippin, Wynn	Project Manager/Marketing	B.S., Chem, Microbiol, Agronomy	1977
Rath, Rebecca	Chemist	B.S. Biology	2005
Reid, Robert J.	Chemist	M.S., Geology and Chemistry	1972
Renier, Kathi	Office Manager	B.S., Education	1991
Rohrer, Cindy A.	Chemist	B.S., Chemistry	2000
Ruby, Denise	Office	H.S., General Studies	1979
Rupp, Tim	Chemist	B.S., Mathematics	1989
Salle, Robert	Laboratory Analyst	B.A., History	1973
Saunders, Mark	Laboratory Analyst; Hazardous Waste Supervisor	H.S., General Studies	1992
Stricker, Theresa	Sample Shipping and Receiving Technician	H.S., General Studies	1987
Sulser, Stephanie	Extraction Chemist	B.S. Biology/ Chemistry	2004
Summers, Scott	Marketing	B.S. Water Resource Technology	1988
Valkenburg, Dr. Cornelius	Corporate Quality Assurance Supervisor	Ph.D., Analytical Chemistry	1986
Valkenburg, Linda D.	Chemist	B.S., Micro Biology	1985
Waddington, Mark D.	Senior Chemist	Ph.D., Chemistry	1983
Warren, Gary	Chemist	B.S., Biology	1990
Watson, William	Chemist	B.S., Geology	1977
Weis, Ladonna	Chemist	B.S. Biology/Chemistry	2001
Williams, Bruce	Laboratory Analyst	A.S., Business Administration	1976
Wilson, Loretta	Sample Shipping	H.S., General Studies	1977
Wilson, Scott	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

Energy Laboratories, Inc. Personnel Summary			
Employee	*Title*	*Academic Background*	*Relevant Experience Since*
Casper, Wyoming Branch			
Garling, Roger	Casper Branch Manager	H.S., General Studies	1978
Blaida, David	Radiochemistry Department Supervisor	B.S., Geography	1978
Boatman, Sherri L.	Laboratory Analyst	A.S., Pre Medicine	2001
Daren Bulow	QA/QC Assistant	B.S. Biology	1991
Carlston, Steve	Organic Department Supervisor	B.A., Chemistry, Minor in Physics	1983
Carpenter Jason	Lab Technician	H.S., General Studies	2005

Employee	*Title*	*Academic Background*	*Relevant Experience Since*
Casper, Wyoming Branch (continued)			
Dobos, Steve	Inorganic Department Supervisor	B.S., Geology	1988
Edwards, Tabitha A.	Data Entry/ Reporting	H.S., General Studies	2000
Edwards, Mike	Maintenance	H.S., General Studies	2002
Fairservis, Dee	Chemist	B.S., Microbiology	1985
Forsting, Catherine A.	Project Mgr./Marketing	B.S., Biology Zoology	1996
Garling, Sheryl	Operations Manager – Radiation Safety Officer	B.S., Civil Engineering	1982
Hanson, JD	Shipping/Receiving	H.S., General Studies	2002
Harrison, James W.	Electrical Calibration	H.S., General Studies	1999
Hazelton, Barbara	Laboratory Analyst	H.S., General Studies	2002
Hollen, Tim	Lab Technician	B.S. Education	2003
Hoppens, Paul C.	Laboratory Analyst	H.S., General Studies	1994
Horton, Randy M.	Organics Supervisor	B.S., Chemistry	1991
Jacobs, Pegi	Lab Technician	H.S., General Studies	1984
Jones, William	IT	H.S., General Studies	2002
Juarez, Donny	Laboratory Analyst	H.S., General Studies	1998
Krupski, Kathy	Office Manager	H.S., General Studies	1988
Steve, Landon	Lab Technician	B.S. Biology	2005
LaPlant, Sheri	Lab Technician	H.S., General Studies	2001
Larson, Judith A.	Laboratory Analyst	H.S., General Studies	1999
Lewis, John	Chemist	B.S., Physics	1998
Lofton, Robin	Log In	A.S. Education	2004
Miller, Lou	Chemist	B.S., Microbiology	1985
Ogden, Randy	Chemist	B.S., Molecular Biology	1992
Parke, Tessa	Data Entry/ Reporting	A.S. Business	2004
Patterson, Chuck	Chemist	B.S., Biology	1992
Quis, Dorian	Shipping/Receiving	A.A. Travel	2004
Rapisand, Raymond	Sales	B.A. Business	1996
Ritchie, James L.	Laboratory Analyst	B.S., Marine Biology	1997
Scheetz, Tammie	Lab Technician	H.S., General Studies	2001
Schlitz, Ted	Chemist	B.S., Petroleum Engineering	1991
Schroeder, Kerri L.	Data Entry/ Reporting	H.S., General Studies	2001
Scott, Cathy J.	Soils Lab	B.S., Math/Natural Science	2001
Scott-Ramerez Jennifer	Data Entry/ Reporting	A.S. Medical Transcription	2000
Siedschlag Mary	Accounts Payable	H.S., General Studies	2005
Sloyer, Log In	I.T.	A.S., Industrial Electronics	2001
Smith, Barry	Chemist	Ph.D. Analytical Chemistry	1995
Spicer, Linda A.	Log In	H.S., General Studies	1999
Stanley, Ralph	Chemist	B.A., Biology; B.S., Education	1995
Tripp, Christa	Secretary	H.S., General Studies	2000
Wagner, Corrine	Log In	H.S., General Studies	2003
Wait, Jacqui	Data Entry/ Reporting	H.S., General Studies	2005
Wen, Yongkang	Chemist	M.S., Analytical Chemistry	1986
Yocum, James	QA Officer	B.A., Geology	1990

Energy Laboratories, Inc. Personnel Summary			
Employee	***Title***	***Academic Background***	***Relevant Experience Since***
Gillette, Wyoming Branch			
Friedlan, Terry L.	Branch Manager	Associate of Science and Engineering	1983
Archer, Debra A.	Lab Technician	H.S., General Studies	2003
Bucholz, Michelle R.	Chemist	B.S., Chemistry	1997
Constable, Tracey L.	Project Manager	Cosmetology	2004
Degnan, Alyson T.	Sample Receiving/Login Manager	H.S., General Studies	
Ingram, Mary M.	Chemist	B.S., Education (Math & Science)	1979
Nordwick, Thor O.	Chemist	B.S., Metallurgical Engineering	1999
Poelstra, David N.	Senior Project Manager	H.S., General Studies	1980
Rush, Nancy L.	Office Manager	H.S., General Studies	1999
Wilson, Christopher L.	Project Manager	B.S., Botany	1997

Energy Laboratories, Inc. Personnel Summary			
Employee	***Title***	***Academic Background***	***Relevant Experience Since***
Rapid City, South Dakota Branch			
Hansen, LeRoy J.	Branch Manager	B.S., Civil Engineering, Bio-Resource Emphasis	1990
Froiland, Steven J.	Log In	H.S., General Studies	2002
Hartman, Jennifer	Chemist	B.S., Chemistry	2004
Hill, Cody S.	Laboratory Technician	H.S., General Studies	2002
Hudson, Amber	Chemist	B.S., Biology	2005
Larson, Linda K.	Project Manager/ Laboratory Coordinator	B.S., Chemistry	1980
Nesbit, Sterling	Chemist	B.S., Chemistry/Biochemistry	1998
Schwab, James	Laboratory Technician	H.S., General Studies	2003

Energy Laboratories, Inc. Personnel Summary			
Employee	***Title***	***Academic Background***	***Relevant Experience Since***
Helena, Montana Branch			
Roger Pasch	Branch Manager	B.A., Natural Resources	1975
Hager, Jonathan D.	Assistant Laboratory Manager	B.A., Biology	2000
Johnson, Wanda	Sample receiving/reporting	H.S., General Studies	2002
Blackburn, Amanda	Chemist	B.A., Chemistry	2004
Dull, Stephanie	Chemist	B.A., Biology	2005
McMillan, Justin	Chemist, Safety Officer	B.A., Biology	2000
Randell, Serena	Chemist	B.A., Chemistry	2005
Trueman, Jeremy	Laboratory Technician	H.S., General Studies	2004

Energy Laboratories, Inc. Personnel Summary			
Employee	***Title***	***Academic Background***	***Relevant Experience Since***
College Station, Texas Branch			
Pudge, Gary	Branch Manager	B.A., Architectural Design	1986
Rhubottom, Julie	Assistant Laboratory Manager	B.S., Chemistry	1994
Badgett, Elizabeth	Chemist	B.S., Animal Biology/ Chemistry	1998
Birkhead, Jared	Soil Processing	H.S., General Studies	2005
Birkhead, Jeff	Laboratory Technician	H.S., General Studies	2003
Bryson, Chris	Laboratory Analyst	B.S., Biology Minor Chemistry	2003
Crowe, David	Project Manager/ Marketing	B.S., Physics/Mathematics M.B.A., Finance	1985
Kozak, Aaron	Laboratory Analyst	B.S. Biomedical Science	2006
Mercer, Vicki	Sample Custodian	B.A. English, Minor Business	2006
Porter, Carolyn	Laboratory Analyst	H.S., General Studies	1998
Porter, Roy	Soil Processing	High School Student	2005
Quintana, Jacob	Chemist	B.S., Biochemistry	2000
Stoner, Sherri	Laboratory Technician	A.A.S., Phlebotomy	2005
Whiteaker, Amber	Laboratory Analyst	B.S., Agronomy	2004

Energy Laboratories, Inc. Personnel Summary			
Employee	***Title***	***Academic Background***	***Relevant Experience Since***
Idaho Falls, Idaho Branch			
Finley, Kay	Branch Manager	B.S., Experimental Psychology	1974
Cook, Larry	Chemistry Supervisor	M.S., Waste Management and Environmental Science	1982
Radtke, Michelle	Microbiology Supervisor	M.S., Microbiology	1994
Reid, Mindi	Office Manager	B.S., Recreation Administration	2001
Smith, Christy	Laboratory Technician	B.S., Biology/ Chemistry Minor	2003
Tibbetts, Eric	Business Development	M.S., Education	2000
Tibbetts, Patty	Quality Assurance Officer	A.S. Biology	1996
Wright, Jennifer	Log-In/Accounting Clerk	B.A., Kinesiology	2002

5. Quality Assurance/Quality Control

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, we operate 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. We follow validated methods, and routinely verify our 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.

We advise clients on proper sampling, providing sample containers, labels, preservatives, chain-of-custody forms, and written instructions. Upon sample receipt, we check to see 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. We immediately investigate and correct out-of-control results.

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 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, we undergo 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

We hold all certifications relevant to the services we offer.

Round-Robin Participation

We participate 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.

State of Florida
Department of Health, Bureau of Laboratories

This is to certify that

E87668
ENERGY LABORATORIES, INC. - MT
1120 SOUTH 27TH STREET
BILLINGS, MT 59107-0916

has compiled with Florida Administrative Code 64E-1,
for the examination of Environmental samples in the following categories

DRINKING WATER - GROUP I UNREGULATED CONTAMINANTS, DRINKING WATER - GROUP II UNREGULATED CONTAMINANTS, DRINKING WATER - GROUP III UNREGULATED CONTAMINANTS, DRINKING WATER - OTHER REGULATED CONTAMINANTS, DRINKING WATER - PRIMARY INORGANIC CONTAMINANTS, DRINKING WATER - SECONDARY INORGANIC CONTAMINANTS, DRINKING WATER - SYNTHETIC ORGANIC CONTAMINANTS, NON-POTABLE WATER - EXTRACTABLE ORGANICS, NON-POTABLE WATER - GENERAL CHEMISTRY, NON-POTABLE WATER - METALS, NON-POTABLE WATER - PESTICIDES-HERBICIDES-PCB'S, NON-POTABLE WATER - TOXICITY, NON-POTABLE WATER - VOLATILE ORGANICS, SOLID AND CHEMICAL MATERIALS - EXTRACTABLE ORGANICS, SOLID AND CHEMICAL MATERIALS - GENERAL CHEMISTRY, SOLID AND CHEMICAL MATERIALS - METALS, SOLID AND CHEMICAL MATERIALS - PESTICIDES-HERBICIDES-PCB'S, SOLID AND CHEMICAL MATERIALS - VOLATILE ORGANICS

Continued certification is contingent upon successful on-going compliance with the NELAC Standards and FAC Rule 64E-1 regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and are on file at the Bureau of Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

EFFECTIVE July 01, 2007 THROUGH June 30, 2008

Max Salfinger, M.D.
Chief, Bureau of Laboratories
Florida Department of Health
DH Form 1697, 7/04
NON-TRANSFERABLE E87668-06-7/1/2007
Supersedes all previously issued certificates

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
1,1,1,2-Tetrachloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,1,1-Trichloroethane	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
1,1,2,2-Tetrachloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,1,2-Trichloroethane	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
1,1-Dichloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,1-Dichloroethylene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
1,1-Dichloropropene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,2,3-Trichlorobenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,2,3-Trichloropropane	EPA 504.1	Group II Unregulated Contaminants	NELAP	1/5/2004
1,2,3-Trichloropropane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,2,4-Trichlorobenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,2,4-Trimethylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,2-Dibromo-3-chloropropane (DBCP)	EPA 504.1	Synthetic Organic Contaminants	NELAP	1/5/2004
1,2-Dibromo-3-chloropropane (DBCP)	EPA 524.2	Synthetic Organic Contaminants	NELAP	1/5/2004
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 504.1	Synthetic Organic Contaminants	NELAP	1/5/2004
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 524.2	Synthetic Organic Contaminants	NELAP	1/5/2004
1,2-Dichlorobenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
1,2-Dichloroethane	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
1,2-Dichloropropane	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
1,3,5-Trimethylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,3-Dichlorobenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,3-Dichloropropane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
1,4-Dichlorobenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ 171)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ 201)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
2,2',3',4,6-Pentachlorobiphenyl (525.2 typo for 2,2',3,4',6'-Pentachlorobiphenyl)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
2,2',4,4',5,6'-Hexachlorobiphenyl (BZ 154)	EPA 525.2	Group I Unregulated Contaminants	NELAP	6/12/2007
2,2',4,4'-Tetrachlorobiphenyl (BZ 47)	EPA 525.2	Group I Unregulated Contaminants	NELAP	6/12/2007
2,2-Dichloropropane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
2,3-Dichlorobiphenyl (BZ 5)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
2,4',5-Trichlorobiphenyl (BZ 31)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
2,4-D	EPA 515.1	Synthetic Organic Contaminants	NELAP	1/5/2004
2,4-DB	EPA 515.1	Group I Unregulated Contaminants	NELAP	6/12/2007
2-Butanone (Methyl ethyl ketone, MEK)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
2-Chlorobiphenyl (BZ 1)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
2-Chlorotoluene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
2-Hexanone	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
4-Chlorotoluene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
4-Isopropyltoluene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
4-Methyl-2-pentanone (MIBK)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Acenaphthylene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Acetochlor	EPA 525.2	Group I Unregulated Contaminants	NELAP	6/12/2007
Acetone	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Acrylonitrile	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Alachlor	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Alachlor	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Aldrin	EPA 505	Group I Unregulated Contaminants	NELAP	1/5/2004
Aldrin	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/5/2004
alpha-Chlordane	EPA 505	Group II Unregulated Contaminants	NELAP	6/12/2007
alpha-Chlordane	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
Anthracene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Antimony	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Arsenic	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Arsenic	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Atrazine	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Atrazine	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Barium	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Barium	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Benzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Benzo(a)anthracene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Benzo(a)pyrene	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Benzo(b)fluoranthene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Benzo(g,h,i)perylene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Benzo(k)fluoranthene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Beryllium	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Beryllium	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Bromide	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/24/2005
Bromoacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Bromobenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Bromochloroacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Bromochloromethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Bromodichloromethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Bromoform	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Butachlor	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Butyl benzyl phthalate	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Cadmium	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Cadmium	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Calcium	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Carbon disulfide	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Carbon tetrachloride	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Chlordane (tech.)	EPA 505	Synthetic Organic Contaminants	NELAP	1/24/2005
Chlordane (tech.)	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Chloride	EPA 300.0	Secondary Inorganic Contaminants	NELAP	6/13/2001
Chloroacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Chlorobenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Chloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Chloroform	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Chromium	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Chromium	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Chrysene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
cis-1,2-Dichloroethylene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
cis-1,3-Dichloropropene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
cis-Nonachlor	EPA 505	Group II Unregulated Contaminants	NELAP	6/12/2007
Copper	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Copper	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Dalapon	EPA 515.1	Synthetic Organic Contaminants	NELAP	1/5/2004
DCPA mono-acid	EPA 515.1	Group I Unregulated Contaminants	NELAP	1/24/2005
Decachlorobiphenyl (BZ 209)	EPA 508A	Synthetic Organic Contaminants	NELAP	1/5/2004
Di(2-ethylhexyl)adipate	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Diazinon	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
Dibenz(a,h) anthracene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Dibromoacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Dibromochloromethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Dibromomethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Dicamba	EPA 515.1	Group I Unregulated Contaminants	NELAP	1/5/2004
Dichloroacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Dichlorodifluoromethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Dichloromethane (DCM, Methylene chloride)	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Dichloroprop (Dichlorprop)	EPA 515.1	Group I Unregulated Contaminants	NELAP	6/12/2007
Dieldrin	EPA 505	Group I Unregulated Contaminants	NELAP	1/5/2004
Dieldrin	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Diethyl phthalate	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Dimethyl phthalate	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Di-n-butyl phthalate	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 515.1	Synthetic Organic Contaminants	NELAP	1/5/2004
Endothall	EPA 548.1	Synthetic Organic Contaminants	NELAP	1/5/2004
Endrin	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Endrin	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Ethylbenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Fluorene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Fluoride	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/5/2004
Fluoride	OTHER TECHNICON 380-75WE	Secondary Inorganic Contaminants	NELAP	6/13/2001
Fluoride	SM 4500 F-C	Primary Inorganic Contaminants	NELAP	2/7/2005
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
gamma-Chlordane	EPA 505	Group II Unregulated Contaminants	NELAP	6/12/2007
gamma-Chlordane	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
Heptachlor	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Heptachlor	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Heptachlor epoxide	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Heptachlor epoxide	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Hexachlorobenzene	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Hexachlorobenzene	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Hexachlorobutadiene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Hexachlorocyclopentadiene	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Hexachlorocyclopentadiene	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Indeno(1,2,3-cd)pyrene	EPA 525.2	Group III Unregulated Contaminants	NELAP	6/12/2007
Isopropylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Lead	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Magnesium	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Manganese	EPA 200.7	Secondary Inorganic Contaminants	NELAP	6/13/2001
Manganese	EPA 200.8	Secondary Inorganic Contaminants	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Mercury	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Mercury	EPA 245.1	Primary Inorganic Contaminants	NELAP	6/13/2001
Methacrylonitrile	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Methoxychlor	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Methoxychlor	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Methyl bromide (Bromomethane)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Methyl chloride (Chloromethane)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Methyl methacrylate	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Methyl tert-butyl ether (MTBE)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Metolachlor	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Metribuzin	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Naphthalene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
n-Butylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Nickel	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Nickel	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Nitrate as N	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/5/2004
Nitrate as N	EPA 353.2	Primary Inorganic Contaminants	NELAP	6/13/2001
Nitrite as N	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/5/2004
Nitrite as N	EPA 353.2	Primary Inorganic Contaminants	NELAP	6/13/2001
Nitrobenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Norflurazon	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
n-Propylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Orthophosphate as P	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/5/2004
PCBs	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
PCBs	EPA 525.2	Synthetic Organic Contaminants	NELAP	6/12/2007
Pentachloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Pentachlorophenol	EPA 515.1	Synthetic Organic Contaminants	NELAP	1/5/2004
Pentachlorophenol	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/24/2005
pH	EPA 150.1	Secondary Inorganic Contaminants	NELAP	6/13/2001
pH	SM 4500-H+-B	Primary Inorganic Contaminants,Secondary Inorganic Contaminants	NELAP	6/12/2007
Phenanthrene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005
Picloram	EPA 515.1	Synthetic Organic Contaminants	NELAP	1/5/2004
Propachlor (Ramrod)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Propionitrile (Ethyl cyanide)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Pyrene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/24/2005

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Residue-filterable (TDS)	SM 2540 C	Secondary Inorganic Contaminants	NELAP	6/13/2001
sec-Butylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Selenium	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Silica as SiO2	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Silver	EPA 200.7	Secondary Inorganic Contaminants	NELAP	6/13/2001
Silver	EPA 200.8	Secondary Inorganic Contaminants	NELAP	6/13/2001
Silvex (2,4,5-TP)	EPA 515.1	Synthetic Organic Contaminants	NELAP	1/5/2004
Simazine	EPA 505	Synthetic Organic Contaminants	NELAP	1/5/2004
Simazine	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Sodium	EPA 200.7	Primary Inorganic Contaminants	NELAP	6/13/2001
Styrene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Sulfate	EPA 300.0	Primary Inorganic Contaminants	NELAP	6/13/2001
Terbufos	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
tert-Butylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Tetrachloroethylene (Perchloroethylene)	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Thallium	EPA 200.8	Primary Inorganic Contaminants	NELAP	6/13/2001
Toluene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Total cyanide	EPA 335.4	Primary Inorganic Contaminants	NELAP	6/13/2001
Total haloacetic acids	EPA 552.2	Synthetic Organic Contaminants	NELAP	1/5/2004
Total nitrate-nitrite	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/5/2004
Total nitrate-nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	6/13/2001
Total trihalomethanes	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Toxaphene (Chlorinated camphene)	EPA 505	Synthetic Organic Contaminants	NELAP	1/24/2005
trans-1,2-Dichloroethylene	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
trans-1,3-Dichloropropylene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
trans-1,4-Dichloro-2-butene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
trans-Nonachlor	EPA 505	Group II Unregulated Contaminants	NELAP	6/12/2007
trans-Nonachlor	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
Trichloroacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	1/5/2004
Trichloroethene (Trichloroethylene)	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Trichlorofluoromethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/5/2004
Trifluralin (Treflan)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
Turbidity	EPA 180.1	Secondary Inorganic Contaminants	NELAP	6/13/2001
Vernolate	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/24/2005
Vinyl chloride	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004
Xylene (total)	EPA 524.2	Other Regulated Contaminants	NELAP	1/5/2004

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
1,1,1,2-Tetrachloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1,1-Trichloroethane	EPA 624	Volatile Organics	NELAP	6/13/2001
1,1,1-Trichloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1,2,2-Tetrachloroethane	EPA 624	Volatile Organics	NELAP	6/13/2001
1,1,2,2-Tetrachloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1,2-Trichloroethane	EPA 624	Volatile Organics	NELAP	6/13/2001
1,1,2-Trichloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1-Dichloroethane	EPA 624	Volatile Organics	NELAP	6/13/2001
1,1-Dichloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1-Dichloroethylene	EPA 624	Volatile Organics	NELAP	6/13/2001
1,1-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1-Dichloropropene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2,3-Trichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2,3-Trichloropropane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2,4,5-Tetrachlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,2,4-Trichlorobenzene	EPA 625	Extractable Organics	NELAP	6/13/2001
1,2,4-Trichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2,4-Trichlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,2,4-Trimethylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dichlorobenzene	EPA 624	Volatile Organics	NELAP	6/13/2001
1,2-Dichlorobenzene	EPA 625	Extractable Organics	NELAP	6/13/2001
1,2-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,2-Dichloroethane	EPA 624	Volatile Organics	NELAP	6/13/2001
1,2-Dichloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dichloropropane	EPA 624	Volatile Organics	NELAP	6/13/2001
1,2-Dichloropropane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Diphenylhydrazine	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,3,5-Trimethylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,3-Dichlorobenzene	EPA 624	Volatile Organics	NELAP	6/13/2001
1,3-Dichlorobenzene	EPA 625	Extractable Organics	NELAP	6/13/2001
1,3-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,3-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
1,3-Dichloropropane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,3-Dinitrobenzene (1,3-DNB)	EPA 8270	Extractable Organics	NELAP	1/5/2004
1,4-Dichlorobenzene	EPA 624	Volatile Organics	NELAP	6/13/2001
1,4-Dichlorobenzene	EPA 625	Extractable Organics	NELAP	6/13/2001
1,4-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,4-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,4-Naphthoquinone	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,4-Phenylenediamine	EPA 8270	Extractable Organics	NELAP	1/5/2004
1-Methylnaphthalene (added to method at FDEP request)	EPA 8270	Extractable Organics	NELAP	6/12/2007
1-Naphthylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,2-Dichloropropane	EPA 8260	Volatile Organics	NELAP	7/1/2003
2,3,4,6-Tetrachlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,3-Dichloroaniline	EPA 625	Extractable Organics	NELAP	1/24/2005
2,4,5-T	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
2,4,5-T	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
2,4,5-Trichlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4,6-Trichlorophenol	EPA 625	Extractable Organics	NELAP	6/13/2001
2,4,6-Trichlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4-D	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
2,4-D	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
2,4-DB	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
2,4-DB	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
2,4-Dichlorophenol	EPA 625	Extractable Organics	NELAP	6/13/2001
2,4-Dichlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4-Dimethylphenol	EPA 625	Extractable Organics	NELAP	6/13/2001
2,4-Dimethylphenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4-Dinitrophenol	EPA 625	Extractable Organics	NELAP	6/13/2001
2,4-Dinitrophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4-Dinitrotoluene (2,4-DNT)	EPA 625	Extractable Organics	NELAP	6/13/2001
2,4-Dinitrotoluene (2,4-DNT)	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,6-Dichlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,6-Dinitrotoluene (2,6-DNT)	EPA 625	Extractable Organics	NELAP	6/13/2001
2,6-Dinitrotoluene (2,6-DNT)	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Acetylaminofluorene	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Butanone (Methyl ethyl ketone, MEK)	ENMT 50-227/GC-MS	Volatile Organics	NELAP	6/12/2007
2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260	Volatile Organics	NELAP	7/1/2003

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
2-Chloroethyl vinyl ether	EPA 624	Volatile Organics	NELAP	6/13/2001
2-Chloroethyl vinyl ether	EPA 8260	Volatile Organics	NELAP	7/1/2003
2-Chloronaphthalene	EPA 625	Extractable Organics	NELAP	6/13/2001
2-Chloronaphthalene	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Chlorophenol	EPA 625	Extractable Organics	NELAP	6/13/2001
2-Chlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Chlorotoluene	EPA 8260	Volatile Organics	NELAP	7/1/2003
2-Hexanone	EPA 8260	Volatile Organics	NELAP	7/1/2003
2-Methyl-4,6-dinitrophenol	EPA 625	Extractable Organics	NELAP	6/13/2001
2-Methyl-4,6-dinitrophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Methylnaphthalene	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Methylphenol (o-Cresol)	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Nitroaniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Nitrophenol	EPA 625	Extractable Organics	NELAP	6/13/2001
2-Nitrophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Nitropropane	ENMT 50-006/GC-MS	Volatile Organics	NELAP	6/12/2007
2-Picoline (2-Methylpyridine)	EPA 8270	Extractable Organics	NELAP	7/1/2003
3,3'-Dichlorobenzidine	EPA 625	Extractable Organics	NELAP	6/13/2001
3,3'-Dichlorobenzidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
3,3'-Dimethylbenzidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
3,5-Dichlorobenzoic acid	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
3-Methylcholanthrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
3-Nitroaniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
4,4'-DDD	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
4,4'-DDD	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
4,4'-DDE	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
4,4'-DDE	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
4,4'-DDT	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
4,4'-DDT	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
4-Aminobiphenyl	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Bromophenyl phenyl ether	EPA 625	Extractable Organics	NELAP	6/13/2001
4-Bromophenyl phenyl ether	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Chloro-2-methylphenol	ENMT 50-009/GC-MS	Extractable Organics	NELAP	6/12/2007
4-Chloro-3-methylphenol	EPA 625	Extractable Organics	NELAP	6/13/2001
4-Chloro-3-methylphenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Chloroaniline	EPA 8270	Extractable Organics	NELAP	6/12/2007

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
4-Chlorophenyl phenylether	EPA 625	Extractable Organics	NELAP	6/13/2001
4-Chlorophenyl phenylether	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Dimethyl aminoazobenzene	EPA 8270	Extractable Organics	NELAP	2/7/2005
4-Methyl-2-pentanone (MIBK)	EPA 8260	Volatile Organics	NELAP	7/1/2003
4-Methylphenol (p-Cresol)	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Nitroaniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Nitrophenol	EPA 625	Extractable Organics	NELAP	6/13/2001
4-Nitrophenol	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
4-Nitrophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
5-Nitro-o-toluidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
6-Methylchrysene	ENMT 50-009/GC-MS	Extractable Organics	NELAP	5/12/2007
7,12-Dimethylbenz(a) anthracene	EPA 8270	Extractable Organics	NELAP	7/1/2003
a-a-Dimethylphenethylamine	EPA 8270	Extractable Organics	NELAP	1/5/2004
Acenaphthene	EPA 625	Extractable Organics	NELAP	6/13/2001
Acenaphthene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Acenaphthylene	EPA 625	Extractable Organics	NELAP	6/13/2001
Acenaphthylene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Acetone	ENMT 50-227/GC-MS	Volatile Organics	NELAP	6/12/2007
Acetone	EPA 8260	Volatile Organics	NELAP	7/1/2003
Acetonitrile	EPA 8260	Volatile Organics	NELAP	7/1/2003
Acetophenone	EPA 8270	Extractable Organics	NELAP	7/1/2003
Acidity, as CaCO3	SM 2310 B (4A)	General Chemistry	NELAP	1/5/2004
Acifluorfen	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Acrolein (Propenal)	EPA 624	Volatile Organics	NELAP	6/13/2001
Acrolein (Propenal)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Acrylonitrile	EPA 624	Volatile Organics	NELAP	6/13/2001
Acrylonitrile	EPA 8260	Volatile Organics	NELAP	7/1/2003
Aldrin	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aldrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Alkalinity as CaCO3	SM 2320 B	General Chemistry	NELAP	6/13/2001
Allyl chloride (3-Chloropropene)	EPA 8260	Volatile Organics	NELAP	7/1/2003
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
alpha-Chlordane	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/5/2004
alpha-Terpineol	EPA 625	Extractable Organics	NELAP	1/24/2005
Aluminum	EPA 200.7	Metals	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 200.8	Metals	NELAP	6/13/2001
Aluminum	EPA 6010	Metals	NELAP	7/1/2003
Aluminum	EPA 6020	Metals	NELAP	7/1/2003
Ammonia as N	EPA 350.1	General Chemistry	NELAP	6/13/2001
Aniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
Anthracene	EPA 625	Extractable Organics	NELAP	6/13/2001
Anthracene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Antimony	EPA 200.7	Metals	NELAP	6/13/2001
Antimony	EPA 200.8	Metals	NELAP	6/13/2001
Antimony	EPA 6010	Metals	NELAP	7/1/2003
Antimony	EPA 6020	Metals	NELAP	7/1/2003
Aramite	EPA 8270	Extractable Organics	NELAP	7/1/2003
Aroclor-1016 (PCB-1016)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1016 (PCB-1016)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1221 (PCB-1221)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1221 (PCB-1221)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1232 (PCB-1232)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1232 (PCB-1232)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1242 (PCB-1242)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1242 (PCB-1242)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1248 (PCB-1248)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1248 (PCB-1248)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1254 (PCB-1254)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1254 (PCB-1254)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1260 (PCB-1260)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1260 (PCB-1260)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Arsenic	EPA 200.7	Metals	NELAP	6/13/2001
Arsenic	EPA 200.8	Metals	NELAP	6/13/2001
Arsenic	EPA 6010	Metals	NELAP	7/1/2003
Arsenic	EPA 6020	Metals	NELAP	7/1/2003
Barium	EPA 200.7	Metals	NELAP	6/13/2001
Barium	EPA 200.8	Metals	NELAP	6/13/2001
Barium	EPA 6010	Metals	NELAP	7/1/2003
Barium	EPA 6020	Metals	NELAP	7/1/2003
Bentazon	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Benzene	EPA 624	Volatile Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Benzene	EPA 8021	Volatile Organics	NELAP	7/1/2003
Benzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Benzidine	EPA 625	Extractable Organics	NELAP	6/13/2001
Benzidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(a)anthracene	EPA 625	Extractable Organics	NELAP	6/13/2001
Benzo(a)anthracene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(a)pyrene	EPA 625	Extractable Organics	NELAP	6/13/2001
Benzo(a)pyrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(b)fluoranthene	EPA 625	Extractable Organics	NELAP	6/13/2001
Benzo(b)fluoranthene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(g,h,i)perylene	EPA 625	Extractable Organics	NELAP	6/13/2001
Benzo(g,h,i)perylene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(k)fluoranthene	EPA 625	Extractable Organics	NELAP	6/13/2001
Benzo(k)fluoranthene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzoic acid	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzyl alcohol	EPA 8270	Extractable Organics	NELAP	7/1/2003
Beryllium	EPA 200.7	Metals	NELAP	6/13/2001
Beryllium	EPA 200.8	Metals	NELAP	6/13/2001
Beryllium	EPA 6010	Metals	NELAP	7/1/2003
Beryllium	EPA 6020	Metals	NELAP	7/1/2003
beta-BHC (beta-Hexachlorocyclohexane)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Biochemical oxygen demand	EPA 405.1	General Chemistry	NELAP	6/13/2001
Biochemical oxygen demand	SM 5210 B	General Chemistry	NELAP	2/7/2005
bis(2-Chloroethoxy)methane	EPA 625	Extractable Organics	NELAP	6/13/2001
bis(2-Chloroethoxy)methane	EPA 8270	Extractable Organics	NELAP	7/1/2003
bis(2-Chloroethyl) ether	EPA 625	Extractable Organics	NELAP	6/13/2001
bis(2-Chloroethyl) ether	EPA 8270	Extractable Organics	NELAP	7/1/2003
bis(2-Chloroisopropyl) ether (2,2'-Oxybis(1-chloropropane))	EPA 625	Extractable Organics	NELAP	6/13/2001
bis(2-Chloroisopropyl) ether (2,2'-Oxybis(1-chloropropane))	EPA 8270	Extractable Organics	NELAP	7/1/2003
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 625	Extractable Organics	NELAP	6/13/2001
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 8270	Extractable Organics	NELAP	7/1/2003
Boron	EPA 200.7	Metals	NELAP	6/13/2001
Boron	EPA 6010	Metals	NELAP	7/1/2003
Bromide	EPA 300.0	General Chemistry	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Bromobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Bromochloromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Bromodichloromethane	EPA 624	Volatile Organics	NELAP	6/13/2001
Bromodichloromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Bromoform	EPA 624	Volatile Organics	NELAP	6/13/2001
Bromoform	EPA 8260	Volatile Organics	NELAP	7/1/2003
Butyl benzyl phthalate	EPA 625	Extractable Organics	NELAP	6/13/2001
Butyl benzyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Cadmium	EPA 200.7	Metals	NELAP	6/13/2001
Cadmium	EPA 200.8	Metals	NELAP	6/13/2001
Cadmium	EPA 6010	Metals	NELAP	7/1/2003
Cadmium	EPA 6020	Metals	NELAP	7/1/2003
Calcium	ENMT 50-213/ICP-MS	Metals	NELAP	6/12/2007
Calcium	EPA 200.7	Metals	NELAP	6/13/2001
Calcium	EPA 6010	Metals	NELAP	7/1/2003
Carbazole	EPA 8270	Extractable Organics	NELAP	7/1/2003
Carbon disulfide	EPA 8260	Volatile Organics	NELAP	7/1/2003
Carbon tetrachloride	EPA 624	Volatile Organics	NELAP	6/13/2001
Carbon tetrachloride	EPA 8260	Volatile Organics	NELAP	7/1/2003
Carbonaceous BOD (CBOD)	SM 5210 B	General Chemistry	NELAP	2/7/2005
Ceriodaphnia dubia	EPA 821-R-02-012 (FW acute)(2002.0)	Toxicity	NELAP	6/12/2007
Ceriodaphnia dubia	EPA 821-R-02-013 (FW chronic)(1002.0)	Toxicity	NELAP	6/12/2007
Ceriodaphnia dubia	EPA/600/4-90/ 027F SEC. 9	Toxicity	NELAP	6/13/2001
Ceriodaphnia dubia	EPA/600/4-91/ 002 (1002.0)	Toxicity	NELAP	6/13/2001
Chemical oxygen demand	EPA 410.4	General Chemistry	NELAP	6/13/2001
Chloramben	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Chlordane (tech.)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Chlordane (tech.)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Chloride	EPA 300.0	General Chemistry	NELAP	6/13/2001
Chlorobenzene	EPA 624	Volatile Organics	NELAP	6/13/2001
Chlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Chlorobenzilate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Chloroethane	EPA 624	Volatile Organics	NELAP	6/13/2001
Chloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Chloroform	EPA 624	Volatile Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Chloroform	EPA 8260	Volatile Organics	NELAP	7/1/2003
Chloroprene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Chromium	EPA 200.7	Metals	NELAP	6/13/2001
Chromium	EPA 200.8	Metals	NELAP	6/13/2001
Chromium	EPA 6010	Metals	NELAP	7/1/2003
Chromium	EPA 6020	Metals	NELAP	7/1/2003
Chromium VI	SM 3500-Cr D (18th/19th Ed.)/COLOR	General Chemistry	NELAP	6/13/2001
Chrysene	EPA 625	Extractable Organics	NELAP	6/13/2001
Chrysene	EPA 8270	Extractable Organics	NELAP	7/1/2003
cis-1,2-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	7/1/2003
cis-1,3-Dichloropropene	EPA 624	Volatile Organics	NELAP	6/13/2001
cis-1,3-Dichloropropene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Cobalt	EPA 200.7	Metals	NELAP	6/13/2001
Cobalt	EPA 200.8	Metals	NELAP	6/13/2001
Cobalt	EPA 6010	Metals	NELAP	7/1/2003
Cobalt	EPA 6020	Metals	NELAP	7/1/2003
Conductivity	SM 2510 B	General Chemistry	NELAP	6/13/2001
Copper	EPA 200.7	Metals	NELAP	6/13/2001
Copper	EPA 200.8	Metals	NELAP	6/13/2001
Copper	EPA 6010	Metals	NELAP	7/1/2003
Copper	EPA 6020	Metals	NELAP	7/1/2003
Cyclohexanone	ENMT 50-006/GC-MS	Volatile Organics	NELAP	6/12/2007
Dacthal (DCPA)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dalapon	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dalapon	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Daphnia magna	EPA 821-R-02-012 (FW acute)(2021.0)	Toxicity	NELAP	6/12/2007
Daphnia magna	EPA/600/4-90/ 027F SEC. 9	Toxicity	NELAP	2/7/2005
delta-BHC	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
delta-BHC	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Diallate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dibenz(a, h) acridine	ENMT 50-009/GC-MS	Extractable Organics	NELAP	6/12/2007
Dibenz(a,h) anthracene	EPA 625	Extractable Organics	NELAP	6/13/2001
Dibenz(a,h) anthracene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dibenzofuran	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dibromochloromethane	EPA 624	Volatile Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Dibromochloromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Dibromomethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Dicamba	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dicamba	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dichlorodifluoromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Dichloroprop (Dichlorprop)	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dichloroprop (Dichlorprop)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dieldrin	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dieldrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Diesel range organics (DRO)	EPA 8015	Extractable Organics	NELAP	2/7/2005
Diesel range organics (DRO)	MA-EPH	Extractable Organics	NELAP	7/1/2003
Diesel range organics (DRO)	MT-DRO	Extractable Organics	NELAP	1/5/2004
Diethyl ether	EPA 8260	Volatile Organics	NELAP	7/1/2003
Diethyl phthalate	EPA 625	Extractable Organics	NELAP	6/13/2001
Diethyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dimethoate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dimethyl phthalate	EPA 625	Extractable Organics	NELAP	6/13/2001
Dimethyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Di-n-butyl phthalate	EPA 625	Extractable Organics	NELAP	6/13/2001
Di-n-butyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Di-n-octyl phthalate	EPA 625	Extractable Organics	NELAP	6/13/2001
Di-n-octyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Diphenylamine	EPA 8270	Extractable Organics	NELAP	6/12/2007
Disulfoton	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endosulfan I	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endosulfan I	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endosulfan II	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endosulfan II	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endosulfan sulfate	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endosulfan sulfate	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endrin	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endrin aldehyde	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endrin aldehyde	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Endrin ketone	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/5/2004
Ethyl acetate	EPA 8260	Volatile Organics	NELAP	7/1/2003
Ethyl methacrylate	EPA 8260	Volatile Organics	NELAP	7/1/2003
Ethyl methanesulfonate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Ethylbenzene	EPA 624	Volatile Organics	NELAP	6/13/2001
Ethylbenzene	EPA 8021	Volatile Organics	NELAP	7/1/2003
Ethylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Famphur	EPA 8270	Extractable Organics	NELAP	7/1/2003
Fluoranthene	EPA 625	Extractable Organics	NELAP	6/13/2001
Fluoranthene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Fluorene	EPA 625	Extractable Organics	NELAP	6/13/2001
Fluorene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Fluoride	EPA 300.0	General Chemistry	NELAP	1/5/2004
Fluoride	OTHER TECHNICON 380-75WE	General Chemistry	NELAP	6/13/2001
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
gamma-Chlordane	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/5/2004
Gasoline range organics (GRO)	EPA 8015	Extractable Organics	NELAP	2/7/2005
Gasoline range organics (GRO)	MA-VPH	Extractable Organics	NELAP	7/1/2003
Gasoline range organics (GRO)	MT-GRO	Extractable Organics	NELAP	1/5/2004
Hardness (calc.)	EPA 200.7	Metals	NELAP	6/13/2001
Heptachlor	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Heptachlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Heptachlor epoxide	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Heptachlor epoxide	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Hexachlorobenzene	EPA 625	Extractable Organics	NELAP	6/13/2001
Hexachlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Hexachlorobutadiene	EPA 625	Extractable Organics	NELAP	6/13/2001
Hexachlorobutadiene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Hexachlorobutadiene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Hexachlorocyclopentadiene	EPA 625	Extractable Organics	NELAP	6/13/2001
Hexachlorocyclopentadiene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Hexachloroethane	EPA 625	Extractable Organics	NELAP	6/13/2001
Hexachloroethane	EPA 8270	Extractable Organics	NELAP	7/1/2003
Hexachlorophene	EPA 8270	Extractable Organics	NELAP	1/5/2004

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Hexachloropropene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Ignitability	EPA 1010	General Chemistry	NELAP	7/1/2003
Indeno(1,2,3-cd)pyrene	EPA 625	Extractable Organics	NELAP	6/13/2001
Indeno(1,2,3-cd)pyrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Iodomethane (Methyl iodide)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Iron	ENMT 50-213/ICP-MS	Metals	NELAP	6/12/2007
Iron	EPA 200.7	Metals	NELAP	6/13/2001
Iron	EPA 6010	Metals	NELAP	7/1/2003
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Isodrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Isophorone	EPA 625	Extractable Organics	NELAP	6/13/2001
Isophorone	EPA 8270	Extractable Organics	NELAP	7/1/2003
Isopropylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Isosafrole	EPA 8270	Extractable Organics	NELAP	7/1/2003
Kepone	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Kjeldahl nitrogen - total	EPA 351.2	General Chemistry	NELAP	6/13/2001
Lead	EPA 200.7	Metals	NELAP	6/13/2001
Lead	EPA 200.8	Metals	NELAP	6/13/2001
Lead	EPA 6010	Metals	NELAP	7/1/2003
Lead	EPA 6020	Metals	NELAP	7/1/2003
Lithium	EPA 200.7	Metals	NELAP	1/5/2004
Lithium	EPA 6010	Metals	NELAP	7/1/2003
Magnesium	ENMT 50-213/ICP-MS	Metals	NELAP	6/12/2007
Magnesium	EPA 200.7	Metals	NELAP	6/13/2001
Magnesium	EPA 200.8	Metals	NELAP	6/12/2007
Magnesium	EPA 6010	Metals	NELAP	7/1/2003
Manganese	EPA 200.7	Metals	NELAP	6/13/2001
Manganese	EPA 200.8	Metals	NELAP	6/13/2001
Manganese	EPA 6010	Metals	NELAP	7/1/2003
Manganese	EPA 6020	Metals	NELAP	7/1/2003
MCPA	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
MCPA	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
MCPP	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
MCPP	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Mercury	EPA 200.8	Metals	NELAP	6/13/2001
Mercury	EPA 245.1	Metals	NELAP	6/13/2001

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program. **Issue Date: 7/1/2007** **Expiration Date: 6/30/2008**

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Mercury	EPA 6020	Metals	NELAP	1/5/2004
Mercury	EPA 7470	Metals	NELAP	7/1/2003
Methacrylonitrile	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methapyrilene	EPA 8270	Extractable Organics	NELAP	1/5/2004
Methoxychlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Methyl bromide (Bromomethane)	EPA 624	Volatile Organics	NELAP	6/13/2001
Methyl bromide (Bromomethane)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methyl chloride (Chloromethane)	EPA 624	Volatile Organics	NELAP	6/13/2001
Methyl chloride (Chloromethane)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methyl methacrylate	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methyl methanesulfonate	EPA 8270	Extractable Organics	NELAP	1/5/2004
Methyl parathion (Parathion, methyl)	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Methyl tert-butyl ether (MTBE)	EPA 8021	Volatile Organics	NELAP	7/1/2003
Methyl tert-butyl ether (MTBE)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methylene chloride	EPA 624	Volatile Organics	NELAP	6/13/2001
Methylene chloride	EPA 8260	Volatile Organics	NELAP	7/1/2003
Mirex	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Molybdenum	EPA 200.7	Metals	NELAP	6/13/2001
Molybdenum	EPA 200.8	Metals	NELAP	6/13/2001
Molybdenum	EPA 6010	Metals	NELAP	7/1/2003
Naphthalene	EPA 625	Extractable Organics	NELAP	6/13/2001
Naphthalene	EPA 8021	Volatile Organics	NELAP	1/24/2005
Naphthalene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Naphthalene	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Butyl alcohol	EPA 8260	Volatile Organics	NELAP	7/1/2003
n-Butylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
n-Decane	EPA 625	Extractable Organics	NELAP	1/24/2005
Nickel	EPA 200.7	Metals	NELAP	6/13/2001
Nickel	EPA 200.8	Metals	NELAP	6/13/2001
Nickel	EPA 6010	Metals	NELAP	7/1/2003
Nickel	EPA 6020	Metals	NELAP	7/1/2003
Nitrate as N	EPA 300.0	General Chemistry	NELAP	1/5/2004
Nitrate as N	EPA 353.2	General Chemistry	NELAP	1/5/2004
Nitrite as N	EPA 300.0	General Chemistry	NELAP	1/5/2004
Nitrite as N	EPA 353.2	General Chemistry	NELAP	1/5/2004
Nitrobenzene	EPA 625	Extractable Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Nitrobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Nitroquinoline-1-oxide	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosodiethylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosodimethylamine	EPA 625	Extractable Organics	NELAP	6/13/2001
n-Nitrosodimethylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitroso-di-n-butylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosodi-n-propylamine	EPA 625	Extractable Organics	NELAP	6/13/2001
n-Nitrosodi-n-propylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosodiphenylamine	EPA 625	Extractable Organics	NELAP	6/13/2001
n-Nitrosodiphenylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosomethylethylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosomorpholine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosopiperidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosopyrrolidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Octadecane	EPA 625	Extractable Organics	NELAP	1/24/2005
n-Propylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
o,o,o-Triethyl phosphorothioate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Organic nitrogen	TKN minus AMMONIA	General Chemistry	NELAP	6/13/2001
Orthophosphate as P	EPA 300.0	General Chemistry	NELAP	1/5/2004
Orthophosphate as P	EPA 365.1	General Chemistry	NELAP	6/13/2001
o-Toluidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
Parathion, ethyl	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	2/7/2005
p-Dioxane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Pentachlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Pentachloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Pentachloronitrobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Pentachlorophenol	EPA 625	Extractable Organics	NELAP	6/13/2001
Pentachlorophenol	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Pentachlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
pH	EPA 150.1	General Chemistry	NELAP	6/13/2001
pH	EPA 9040	General Chemistry	NELAP	1/5/2004
pH	SM 4500-H+-B	General Chemistry	NELAP	6/12/2007
Phenacetin	EPA 8270	Extractable Organics	NELAP	7/1/2003
Phenanthrene	EPA 625	Extractable Organics	NELAP	6/13/2001
Phenanthrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Phenol	EPA 625	Extractable Organics	NELAP	6/13/2001

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Phenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
Phorate	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Phosphorus, total	EPA 200.7	Metals	NELAP	1/5/2004
Phosphorus, total	EPA 365.1	General Chemistry	NELAP	6/13/2001
Phosphorus, total	EPA 6010	Metals	NELAP	7/1/2003
Picloram	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Pimephales promelas	EPA 821-R-02-012 (FW acute)(2000.0)	Toxicity	NELAP	6/12/2007
Pimephales promelas	EPA 821-R-02-013 (FW chronic)(1000.0)	Toxicity	NELAP	6/12/2007
Pimephales promelas	EPA/600/4-90/ 027F SEC. 9	Toxicity	NELAP	6/13/2001
Pimephales promelas	EPA/600/4-91/ 002 (1000.0)	Toxicity	NELAP	6/13/2001
p-Isopropyltoluene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Potassium	ENMT 50-213/ICP-MS	Metals	NELAP	6/12/2007
Potassium	EPA 200.7	Metals	NELAP	6/13/2001
Potassium	EPA 6010	Metals	NELAP	7/1/2003
Pronamide (Kerb)	EPA 8270	Extractable Organics	NELAP	7/1/2003
Propionitrile (Ethyl cyanide)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Pyrene	EPA 625	Extractable Organics	NELAP	6/13/2001
Pyrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Pyridine	EPA 8270	Extractable Organics	NELAP	7/1/2003
Quinoline	ENMT 50-009/GC-MS	Extractable Organics	NELAP	6/12/2007
Residue-filterable (TDS)	EPA 160.1	General Chemistry	NELAP	6/13/2001
Residue-filterable (TDS)	SM 2540 C	General Chemistry	NELAP	6/13/2001
Residue-nonfilterable (TSS)	EPA 160.2	General Chemistry	NELAP	6/13/2001
Residue-nonfilterable (TSS)	SM 2540 D	General Chemistry	NELAP	6/12/2007
Residue-total	EPA 160.3	General Chemistry	NELAP	2/7/2005
Residue-total	SM 2540 B	General Chemistry	NELAP	2/7/2005
Safrole	EPA 8270	Extractable Organics	NELAP	7/1/2003
sec-Butylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Selenium	EPA 200.7	Metals	NELAP	6/13/2001
Selenium	EPA 200.8	Metals	NELAP	6/13/2001
Selenium	EPA 6010	Metals	NELAP	7/1/2003
Silicon	EPA 200.7	Metals	NELAP	6/13/2001
Silicon	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 200.7	Metals	NELAP	6/13/2001
Silver	EPA 200.8	Metals	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: ***E87668*** ***EPA Lab Code:*** ***MT00005*** ***(406) 252-6325***

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Silver	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 6020	Metals	NELAP	7/1/2003
Silvex (2,4,5-TP)	EPA 615	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Silvex (2,4,5-TP)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Sodium	ENMT 50-213/ICP-MS	Metals	NELAP	6/12/2007
Sodium	EPA 200.7	Metals	NELAP	6/13/2001
Sodium	EPA 6010	Metals	NELAP	7/1/2003
Strontium	EPA 200.7	Metals	NELAP	1/5/2004
Strontium	EPA 6010	Metals	NELAP	7/1/2003
Styrene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Sulfate	EPA 300.0	General Chemistry	NELAP	6/13/2001
Sulfide	EPA 376.1	General Chemistry	NELAP	6/12/2007
Sulfide	EPA 376.2	General Chemistry	NELAP	6/12/2007
Sulfide	SM 4500-S D/UV-VIS	General Chemistry	NELAP	6/12/2007
Sulfide	SM 4500-S E (18th Ed.)/TITR	General Chemistry	NELAP	6/12/2007
Sulfotepp	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
tert-Butylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Tetrachloroethylene (Perchloroethylene)	EPA 624	Volatile Organics	NELAP	6/13/2001
Tetrachloroethylene (Perchloroethylene)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Thallium	EPA 200.7	Metals	NELAP	6/13/2001
Thallium	EPA 200.8	Metals	NELAP	6/13/2001
Thallium	EPA 6010	Metals	NELAP	7/1/2003
Thallium	EPA 6020	Metals	NELAP	7/1/2003
Thionazin (Zinophos)	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Thiophenol (Benzenethiol)	EPA 8270	Extractable Organics	NELAP	6/12/2007
Tin	EPA 200.7	Metals	NELAP	6/13/2001
Tin	EPA 6010	Metals	NELAP	7/1/2003
Titanium	EPA 200.7	Metals	NELAP	6/13/2001
Toluene	EPA 624	Volatile Organics	NELAP	6/13/2001
Toluene	EPA 8021	Volatile Organics	NELAP	7/1/2003
Toluene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Total cyanide	EPA 335.3	General Chemistry	NELAP	6/13/2001
Total cyanide	EPA 335.4	General Chemistry	NELAP	6/13/2001
Total cyanide	EPA 9012	General Chemistry	NELAP	6/12/2007
Total nitrate-nitrite	EPA 300.0	General Chemistry	NELAP	1/5/2004
Total nitrate-nitrite	EPA 353.2	General Chemistry	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Total Petroleum Hydrocarbons (TPH)	TX1005	Extractable Organics	NELAP	2/7/2005
Total Petroleum Hydrocarbons (TPH)	TX1006	Extractable Organics	NELAP	2/7/2005
Total phenolics	EPA 420.2	General Chemistry	NELAP	6/13/2001
Total residual chlorine	EPA 330.5	General Chemistry	NELAP	6/13/2001
Toxaphene (Chlorinated camphene)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Toxaphene (Chlorinated camphene)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
trans-1,2-Dichloroethylene	EPA 624	Volatile Organics	NELAP	6/13/2001
trans-1,2-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	7/1/2003
trans-1,3-Dichloropropylene	EPA 624	Volatile Organics	NELAP	6/13/2001
trans-1,3-Dichloropropylene	EPA 8260	Volatile Organics	NELAP	7/1/2003
trans-1,4-Dichloro-2-butene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Trichloroethene (Trichloroethylene)	EPA 624	Volatile Organics	NELAP	6/13/2001
Trichloroethene (Trichloroethylene)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Trichlorofluoromethane	EPA 624	Volatile Organics	NELAP	6/13/2001
Trichlorofluoromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Turbidity	EPA 180.1	General Chemistry	NELAP	6/13/2001
Uranium	EPA 200.8	Metals	NELAP	6/13/2001
Uranium	EPA 6020	Metals	NELAP	6/12/2007
Vanadium	EPA 200.7	Metals	NELAP	6/13/2001
Vanadium	EPA 200.8	Metals	NELAP	6/13/2001
Vanadium	EPA 6010	Metals	NELAP	7/1/2003
Vanadium	EPA 6020	Metals	NELAP	1/5/2004
Vinyl acetate	EPA 8260	Volatile Organics	NELAP	7/1/2003
Vinyl chloride	EPA 624	Volatile Organics	NELAP	6/13/2001
Vinyl chloride	EPA 8260	Volatile Organics	NELAP	7/1/2003
Xylene (total)	EPA 8021	Volatile Organics	NELAP	7/1/2003
Xylene (total)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Zinc	EPA 200.7	Metals	NELAP	6/13/2001
Zinc	EPA 200.8	Metals	NELAP	6/13/2001
Zinc	EPA 6010	Metals	NELAP	7/1/2003
Zinc	EPA 6020	Metals	NELAP	7/1/2003

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
1,1,1,2-Tetrachloroethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,1,1-Trichloroethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,1,2,2-Tetrachloroethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,1,2-Trichloroethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,1-Dichloroethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,1-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,1-Dichloropropene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2,3-Trichlorobenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2,3-Trichloropropane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2,4,5-Tetrachlorobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
1,2,4-Trichlorobenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2,4-Trichlorobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
1,2,4-Trimethylbenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
1,2-Dichloroethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2-Dichloropropane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,2-Diphenylhydrazine	EPA 8270	Extractable Organics	NELAP	6/13/2001
1,3,5-Trimethylbenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270	Extractable Organics	NELAP	6/13/2001
1,3-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,3-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
1,3-Dichloropropane	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,3-Dinitrobenzene (1,3-DNB)	EPA 8270	Extractable Organics	NELAP	1/5/2004
1,4-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
1,4-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
1,4-Naphthoquinone	EPA 8270	Extractable Organics	NELAP	6/13/2001
1,4-Phenylenediamine	EPA 8270	Extractable Organics	NELAP	1/5/2004
1-Methylnaphthalene (added to method at FDEP request)	EPA 8270	Extractable Organics	NELAP	6/12/2007
1-Naphthylamine	EPA 8270	Extractable Organics	NELAP	6/13/2001
2,2-Dichloropropane	EPA 8260	Volatile Organics	NELAP	6/13/2001
2,3,4,6-Tetrachlorophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2,4,5-T	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
2,4,5-Trichlorophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
2,4,6-Trichlorophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2,4-D	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
2,4-DB	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
2,4-Dichlorophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2,4-Dimethylphenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2,4-Dinitrophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2,4-Dinitrotoluene (2,4-DNT)	EPA 8270	Extractable Organics	NELAP	6/13/2001
2,6-Dichlorophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2,6-Dinitrotoluene (2,6-DNT)	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Acetylaminofluorene	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260	Volatile Organics	NELAP	6/13/2001
2-Chloroethyl vinyl ether	EPA 8260	Volatile Organics	NELAP	6/13/2001
2-Chloronaphthalene	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Chlorophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Chlorotoluene	EPA 8260	Volatile Organics	NELAP	6/13/2001
2-Hexanone	EPA 8260	Volatile Organics	NELAP	6/13/2001
2-Methyl-4,6-dinitrophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Methylnaphthalene	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Methylphenol (o-Cresol)	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Nitroaniline	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Nitrophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
2-Picoline (2-Methylpyridine)	EPA 8270	Extractable Organics	NELAP	6/13/2001
3,3'-Dichlorobenzidine	EPA 8270	Extractable Organics	NELAP	6/13/2001
3,3'-Dimethylbenzidine	EPA 8270	Extractable Organics	NELAP	6/13/2001
3,5-Dichlorobenzoic acid	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
3-Methylcholanthrene	EPA 8270	Extractable Organics	NELAP	6/13/2001
3-Nitroaniline	EPA 8270	Extractable Organics	NELAP	6/13/2001
4,4'-DDD	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
4,4'-DDE	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
4,4'-DDT	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
4-Aminobiphenyl	EPA 8270	Extractable Organics	NELAP	6/13/2001
4-Bromophenyl phenyl ether	EPA 8270	Extractable Organics	NELAP	6/13/2001
4-Chloro-2-methylphenol	ENMT 50-009/GC-MS	Extractable Organics	NELAP	6/12/2007
4-Chloro-3-methylphenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
4-Chloroaniline	EPA 8270	Extractable Organics	NELAP	6/12/2007
4-Chlorophenyl phenylether	EPA 8270	Extractable Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
4-Dimethyl aminoazobenzene	ENMT 50-009/GC-MS	Extractable Organics	NELAP	6/12/2007
4-Methyl-2-pentanone (MIBK)	EPA 8260	Volatile Organics	NELAP	6/13/2001
4-Methylphenol (p-Cresol)	EPA 8270	Extractable Organics	NELAP	6/13/2001
4-Nitroaniline	EPA 8270	Extractable Organics	NELAP	6/13/2001
4-Nitrophenol	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
4-Nitrophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
5-Nitro-o-toluidine	EPA 8270	Extractable Organics	NELAP	6/13/2001
7,12-Dimethylbenz(a) anthracene	EPA 8270	Extractable Organics	NELAP	6/13/2001
a-a-Dimethylphenethylamine	EPA 8270	Extractable Organics	NELAP	1/5/2004
Acenaphthene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Acenaphthylene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Acetone	EPA 8260	Volatile Organics	NELAP	6/13/2001
Acetonitrile	EPA 8260	Volatile Organics	NELAP	6/13/2001
Acetophenone	EPA 8270	Extractable Organics	NELAP	6/13/2001
Acifluorfen	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Acrolein (Propenal)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Acrylonitrile	EPA 8260	Volatile Organics	NELAP	6/13/2001
Aldrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Allyl chloride (3-Chloropropene)	EPA 8260	Volatile Organics	NELAP	6/13/2001
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
alpha-Chlordane	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/5/2004
Aluminum	EPA 6010	Metals	NELAP	6/13/2001
Aluminum	EPA 6020	Metals	NELAP	6/13/2001
Amenable cyanide	EPA 9012	General Chemistry	NELAP	6/12/2007
Aniline	EPA 8270	Extractable Organics	NELAP	6/13/2001
Anthracene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Antimony	EPA 6010	Metals	NELAP	6/13/2001
Antimony	EPA 6020	Metals	NELAP	6/13/2001
Aramite	EPA 8270	Extractable Organics	NELAP	6/13/2001
Aroclor-1016 (PCB-1016)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1221 (PCB-1221)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1232 (PCB-1232)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1242 (PCB-1242)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1248 (PCB-1248)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1254 (PCB-1254)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Aroclor-1260 (PCB-1260)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Arsenic	EPA 6010	Metals	NELAP	6/13/2001
Arsenic	EPA 6020	Metals	NELAP	6/13/2001
Barium	EPA 6010	Metals	NELAP	6/13/2001
Barium	EPA 6020	Metals	NELAP	6/13/2001
Bentazon	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Benzene	EPA 8021	Volatile Organics	NELAP	6/13/2001
Benzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Benzidine	EPA 8270	Extractable Organics	NELAP	6/13/2001
Benzo(a)anthracene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Benzo(a)pyrene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Benzo(b)fluoranthene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Benzo(g,h,i)perylene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Benzo(k)fluoranthene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Benzoic acid	EPA 8270	Extractable Organics	NELAP	6/13/2001
Benzyl alcohol	EPA 8270	Extractable Organics	NELAP	6/13/2001
Beryllium	EPA 6010	Metals	NELAP	6/13/2001
Beryllium	EPA 6020	Metals	NELAP	6/13/2001
beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
beta-Naphthylamine	EPA 8270	Extractable Organics	NELAP	4/27/2005
bis(2-Chloroethoxy)methane	EPA 8270	Extractable Organics	NELAP	6/13/2001
bis(2-Chloroethyl) ether	EPA 8270	Extractable Organics	NELAP	6/13/2001
bis(2-Chloroisopropyl) ether (2,2'-Oxybis(1-chloropropane))	EPA 8270	Extractable Organics	NELAP	6/13/2001
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 8270	Extractable Organics	NELAP	6/13/2001
Boron	EPA 6010	Metals	NELAP	6/13/2001
Bromobenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Bromochloromethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Bromodichloromethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Bromoform	EPA 8260	Volatile Organics	NELAP	6/13/2001
Butyl benzyl phthalate	EPA 8270	Extractable Organics	NELAP	6/13/2001
Cadmium	EPA 6010	Metals	NELAP	6/13/2001
Cadmium	EPA 6020	Metals	NELAP	6/13/2001
Calcium	EPA 6010	Metals	NELAP	6/13/2001
Carbazole	EPA 8270	Extractable Organics	NELAP	6/13/2001
Carbon disulfide	EPA 8260	Volatile Organics	NELAP	6/13/2001
Carbon tetrachloride	EPA 8260	Volatile Organics	NELAP	6/13/2001
Chloramben	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Chlordane (tech.)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Chlorobenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Chlorobenzilate	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Chloroethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Chloroform	EPA 8260	Volatile Organics	NELAP	6/13/2001
Chloroprene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Chromium	EPA 6010	Metals	NELAP	6/13/2001
Chromium	EPA 6020	Metals	NELAP	6/13/2001
Chrysene	EPA 8270	Extractable Organics	NELAP	6/13/2001
cis-1,2-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	6/13/2001
cis-1,3-Dichloropropene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Cobalt	EPA 6010	Metals	NELAP	6/13/2001
Cobalt	EPA 6020	Metals	NELAP	6/13/2001
Copper	EPA 6010	Metals	NELAP	6/13/2001
Copper	EPA 6020	Metals	NELAP	6/13/2001
Dacthal (DCPA)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dalapon	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
delta-BHC	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Diallate	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dibenz(a,h) anthracene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Dibenzofuran	EPA 8270	Extractable Organics	NELAP	6/13/2001
Dibromochloromethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Dibromomethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Dicamba	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dichlorodifluoromethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Dichloroprop (Dichlorprop)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dieldrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Diesel range organics (DRO)	MA-EPH	Extractable Organics	NELAP	6/13/2001
Diesel range organics (DRO)	MT-DRO	Extractable Organics	NELAP	1/5/2004
Diethyl ether	EPA 8260	Volatile Organics	NELAP	6/13/2001
Diethyl phthalate	EPA 8270	Extractable Organics	NELAP	6/13/2001
Dimethoate	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Dimethyl phthalate	EPA 8270	Extractable Organics	NELAP	6/13/2001
Di-n-butyl phthalate	EPA 8270	Extractable Organics	NELAP	6/13/2001
Di-n-octyl phthalate	EPA 8270	Extractable Organics	NELAP	6/13/2001
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Disulfoton	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endosulfan I	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endosulfan II	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endosulfan sulfate	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endrin aldehyde	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Endrin ketone	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/5/2004
Ethyl acetate	EPA 8260	Volatile Organics	NELAP	6/13/2001
Ethyl methacrylate	EPA 8260	Volatile Organics	NELAP	6/13/2001
Ethyl methanesulfonate	EPA 8270	Extractable Organics	NELAP	6/13/2001
Ethylbenzene	EPA 8021	Volatile Organics	NELAP	6/13/2001
Ethylbenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Famphur	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Fluoranthene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Fluorene	EPA 8270	Extractable Organics	NELAP	6/13/2001
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
gamma-Chlordane	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/5/2004
Gasoline range organics (GRO)	MA-VPH	Extractable Organics	NELAP	6/13/2001
Gasoline range organics (GRO)	MT-GRO	Extractable Organics	NELAP	1/5/2004
Heptachlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Heptachlor epoxide	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Hexachlorobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Hexachlorobutadiene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Hexachlorobutadiene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Hexachlorocyclopentadiene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Hexachloroethane	EPA 8270	Extractable Organics	NELAP	6/13/2001
Hexachlorophene	EPA 8270	Extractable Organics	NELAP	1/5/2004
Hexachloropropene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Ignitability	EPA 1010	General Chemistry	NELAP	6/13/2001
Indeno(1,2,3-cd)pyrene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Iodomethane (Methyl iodide)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Iron	EPA 6010	Metals	NELAP	6/13/2001
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Isodrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Isophorone	EPA 8270	Extractable Organics	NELAP	6/13/2001
Isopropyl ether	EPA 8260	Volatile Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Isopropylbenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Isosafrole	EPA 8270	Extractable Organics	NELAP	6/13/2001
Kepone	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Lead	EPA 6010	Metals	NELAP	6/13/2001
Lead	EPA 6020	Metals	NELAP	6/13/2001
Lithium	EPA 6010	Metals	NELAP	6/13/2001
Magnesium	EPA 6010	Metals	NELAP	6/13/2001
Manganese	EPA 6010	Metals	NELAP	6/13/2001
Manganese	EPA 6020	Metals	NELAP	6/13/2001
MCPA	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
MCPP	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Mercury	EPA 6020	Metals	NELAP	1/5/2004
Mercury	EPA 7471	Metals	NELAP	6/13/2001
Methacrylonitrile	EPA 8260	Volatile Organics	NELAP	6/13/2001
Methapyrilene	EPA 8270	Extractable Organics	NELAP	1/5/2004
Methoxychlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Methyl bromide (Bromomethane)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Methyl chloride (Chloromethane)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Methyl methacrylate	EPA 8260	Volatile Organics	NELAP	6/13/2001
Methyl methanesulfonate	EPA 8270	Extractable Organics	NELAP	1/5/2004
Methyl parathion (Parathion, methyl)	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Methyl tert-butyl ether (MTBE)	EPA 8021	Volatile Organics	NELAP	6/13/2001
Methyl tert-butyl ether (MTBE)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Methylene chloride	EPA 8260	Volatile Organics	NELAP	6/13/2001
Mirex	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Molybdenum	EPA 6010	Metals	NELAP	6/13/2001
Naphthalene	EPA 8021	Volatile Organics	NELAP	1/24/2005
Naphthalene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Naphthalene	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Butyl alcohol	EPA 8260	Volatile Organics	NELAP	6/13/2001
n-Butylbenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Nickel	EPA 6010	Metals	NELAP	6/13/2001
Nickel	EPA 6020	Metals	NELAP	6/13/2001
Nitrobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Nitroquinoline-1-oxide	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Nitrosodiethylamine	EPA 8270	Extractable Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
n-Nitrosodimethylamine	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Nitroso-di-n-butylamine	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Nitrosodi-n-propylamine	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Nitrosodiphenylamine	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Nitrosomethylethylamine	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Nitrosomorpholine	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Nitrosopiperidine	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Nitrosopyrrolidine	EPA 8270	Extractable Organics	NELAP	6/13/2001
n-Propylbenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
o,o,o-Triethyl phosphorothioate	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
o-Toluidine	EPA 8270	Extractable Organics	NELAP	6/13/2001
Parathion, ethyl	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	4/27/2005
p-Dioxane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Pentachlorobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Pentachloroethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Pentachloronitrobenzene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Pentachlorophenol	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Pentachlorophenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
pH	EPA 9040	General Chemistry	NELAP	1/5/2004
pH	EPA 9045	General Chemistry	NELAP	6/13/2001
Phenacetin	EPA 8270	Extractable Organics	NELAP	6/13/2001
Phenanthrene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Phenol	EPA 8270	Extractable Organics	NELAP	6/13/2001
Phorate	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Phosphorus, total	EPA 6010	Metals	NELAP	6/13/2001
Picloram	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
p-Isopropyltoluene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Potassium	EPA 6010	Metals	NELAP	6/13/2001
Pronamide (Kerb)	EPA 8270	Extractable Organics	NELAP	6/13/2001
Propionitrile (Ethyl cyanide)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Pyrene	EPA 8270	Extractable Organics	NELAP	6/13/2001
Pyridine	EPA 8270	Extractable Organics	NELAP	6/13/2001
Reactive cyanide	EPA 7.3.3.2	General Chemistry	NELAP	6/13/2001
Reactive sulfide	EPA 7.3.4.2	General Chemistry	NELAP	6/13/2001
Safrole	EPA 8270	Extractable Organics	NELAP	6/13/2001
sec-Butylbenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001

Laboratory Scope of Accreditation

Attachment to Certificate #: E87668-06, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

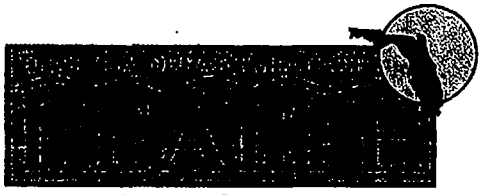
State Laboratory ID: E87668 **EPA Lab Code: MT00005** **(406) 252-6325**

E87668
Energy Laboratories, Inc. - MT
1120 South 27th Street
Billings, MT 59107-0916

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Selenium	EPA 6010	Metals	NELAP	6/13/2001
Silicon	EPA 6010	Metals	NELAP	6/13/2001
Silver	EPA 6010	Metals	NELAP	6/13/2001
Silver	EPA 6020	Metals	NELAP	6/13/2001
Silvex (2,4,5-TP)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Sodium	EPA 6010	Metals	NELAP	6/13/2001
Strontium	EPA 6010	Metals	NELAP	6/13/2001
Styrene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Sulfotepp	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Synthetic Precipitation Leaching Procedure	EPA 1312	General Chemistry	NELAP	6/13/2001
tert-Butylbenzene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Tetrachloroethylene (Perchloroethylene)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Thallium	EPA 6010	Metals	NELAP	6/13/2001
Thallium	EPA 6020	Metals	NELAP	6/13/2001
Thionazin (Zinophos)	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Thiophenol (Benzenethiol)	EPA 8270	Extractable Organics	NELAP	4/27/2005
Tin	EPA 6010	Metals	NELAP	6/13/2001
Toluene	EPA 8021	Volatile Organics	NELAP	6/13/2001
Toluene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Total cyanide	EPA 9012	General Chemistry	NELAP	6/12/2007
Toxaphene (Chlorinated camphene)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	6/13/2001
Toxicity Characteristic Leaching Procedure	EPA 1311	General Chemistry	NELAP	6/13/2001
trans-1,2-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	6/13/2001
trans-1,3-Dichloropropylene	EPA 8260	Volatile Organics	NELAP	6/13/2001
trans-1,4-Dichloro-2-butene	EPA 8260	Volatile Organics	NELAP	6/13/2001
Trichloroethene (Trichloroethylene)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Trichlorofluoromethane	EPA 8260	Volatile Organics	NELAP	6/13/2001
Uranium	EPA 6020	Metals	NELAP	6/12/2007
Vanadium	EPA 6010	Metals	NELAP	6/13/2001
Vanadium	EPA 6020	Metals	NELAP	1/5/2004
Vinyl acetate	EPA 8260	Volatile Organics	NELAP	6/13/2001
Vinyl chloride	EPA 8260	Volatile Organics	NELAP	6/13/2001
Xylene (total)	EPA 8021	Volatile Organics	NELAP	6/13/2001
Xylene (total)	EPA 8260	Volatile Organics	NELAP	6/13/2001
Zinc	EPA 6010	Metals	NELAP	6/13/2001
Zinc	EPA 6020	Metals	NELAP	6/13/2001

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program. **Issue Date: 7/1/2007** **Expiration Date: 6/30/2008**



State of Florida
Department of Health, Bureau of Laboratories

This is to certify that

E87669
ENERGY LABORATORIES, INC. #2
405 S. 24TH STREET
BILLINGS, MT 59101

has complied with Florida Administrative Code 64E-1,
for the examination of Environmental samples in the following categories

NON-POTABLE WATER - GENERAL CHEMISTRY

Continued certification is contingent upon successful on-going compliance with the NELAC Standards and FAC Rule 64E-1 regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and are on file at the Bureau of Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

EFFECTIVE July 01, 2007 THROUGH June 30, 2008

Max Salfinger, M.D.
Chief, Bureau of Laboratories
Florida Department of Health
DH Form 1697, 7/04
NON-TRANSFERABLE E87669-03-7/1/2007
Supersedes all previously issued certificates

Charlie Crist
Governor

Ana M. Viamonte Ros, M.D., M.P.H.
Secretary of Health

Laboratory Scope of Accreditation

Attachment to Certificate #: E87669-03, expiration date June 30, 2008. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E87669 **EPA Lab Code:** MT00947 (406) 252-6325

E87669
Energy Laboratories, Inc. #2
405 S. 24th Street
Billings, MT 59101

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Oil & Grease	EPA 413.1	General Chemistry	NELAP	11/20/2003
Oil & Grease	EPA 413.2	General Chemistry	NELAP	1/25/2005
Total Petroleum Hydrocarbons (TPH)	EPA 418.1	General Chemistry	NELAP	6/15/2001

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program. **Issue Date: 7/1/2007** **Expiration Date: 6/30/2008**

ENERGY LABORATORIES-Helena, MT

QUALITY ASSURANCE PROGRAM

Revision 01.07

Energy Laboratories, Inc.
3161 E. Lyndale Ave. (59601)
PO Box 5688
Helena, Montana 59604

Toll Free: (877) 472-0711
Local: (406) 442-0711
Fax: (406) 442-0712
E-Mail: helena@energylab.com

Laboratory Director: Date:
Roger Pasch

Quality Assurance Officer
Jonathan D. Hager Date:

TABLE OF CONTENTS

QUALITY ASSURANCE PROGRAM - SIGNATURE PAGE I

TABLE OF CONTENTS II

INTRODUCTION 1

CHAPTER 1 – QUALITY CONTROL PROGRAM 3
Objective 3
Purpose 3
Demonstration of Laboratory Capability 3
Demonstration of Analyst's Ability to Generate Data 4
of Acceptable Accuracy and Precision 4
Analysis of Quality Control Samples 4
Maintenance of Performance Records 5
Method Quality Control Specifications 5

CHAPTER 2 – QUALITY ASSESSMENT PROGRAM 6
Purpose 6
Performance Evaluation (PE) Samples 6
Quality Control Check Samples 7
Quality Control Audits 7

CHAPTER 3 – LABORATORY FACILITIES 8

CHAPTER 4 – PERSONNEL REQUIREMENTS AND LABORATORY ORGANIZATION 9
Personnel Requirements 9
Laboratory Director 9
Quality Assurance Officer 9
Laboratory Supervisor 9
Analysts 9
Laboratory Organization 9

CHAPTER 5 – SAMPLING PROCEDURES 10

CHAPTER 6 – SAMPLE HANDLING 12
Sample Receipt 12
Chain-of-Custody 12
Sample Tracking 13
Sample Disposal 13
Subcontracting Policy 13

CHAPTER 7 – INSTRUMENT OPERATION AND CALIBRATION 14

CHAPTER 8 - RECORDS AND REPORTING 16
Laboratory Notebooks 16
Records 16
Data Reduction 17
Validation 17
Reporting 18

CHAPTER 9 - GENERAL LABORATORY PRACTICES 19
Chemicals and Reagents 19
Reagent Interference 19
Glassware Preparation 19
Laboratory Pure Water 20
Employee Training 20
Standard Operating Procedures 21
Client Confidentiality 21

CHAPTER 10 - QUALITY CONTROL MONITORING 22
Routine Monitoring 22
Instruments/Methods 22

CHAPTER 11 – CORRECTIVE ACTION 24
Procedure for Dealing with Complaints 24
Penalty for Improper, Unethical or Illegal Actions 25

CHAPTER 12 - MAJOR EQUIPMENT AND METHODS 26

CHAPTER 13 - PREVENTIVE MAINTENANCE 27

CHAPTER 14 - REFERENCES 28

CHAPTER 15 - GLOSSARY OF TERMS 29

APPENDIX A
Laboratory Certifications
Montana State Drinking Water Certificate
Recent EPA WS and WP Study Results

APPENDIX B
Quality Systems Controlled Documents

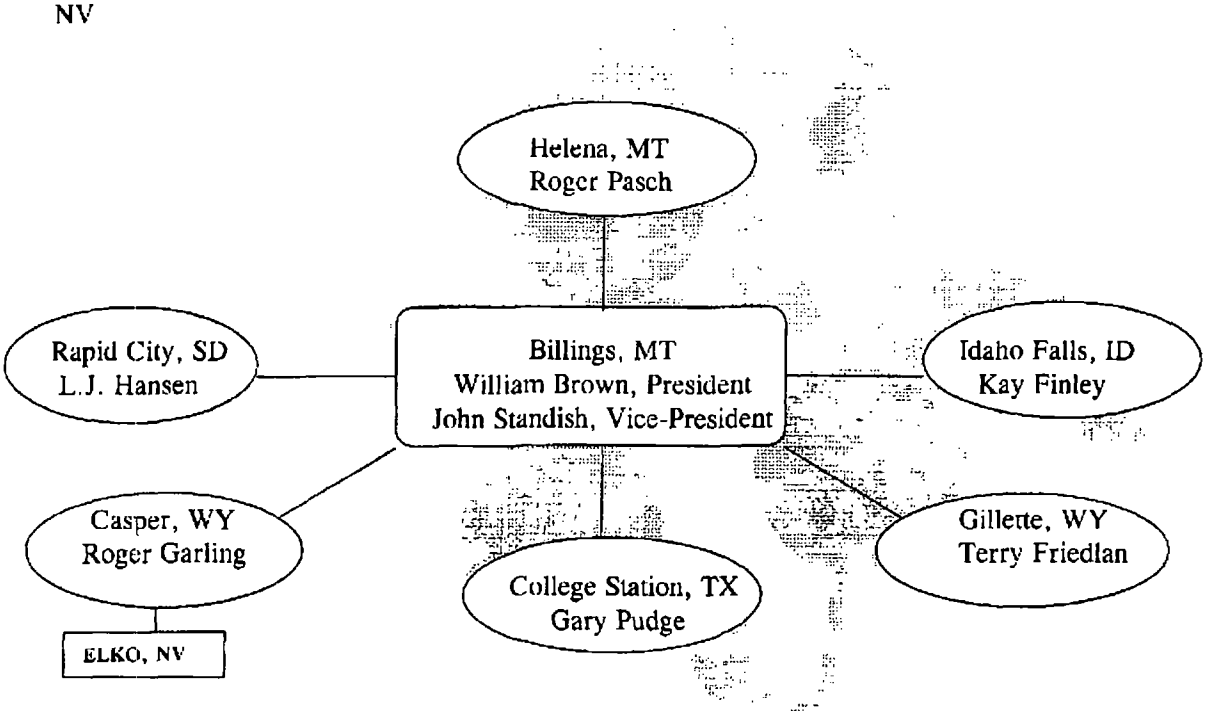
APPENDIX C
Quality Assurance / Quality Control Specifications

APPENDIX D
Organizational Charts
Corporate Organizational Chart

APPENDIX E
Curricula Vitae of Key Laboratory Personnel

INTRODUCTION

Energy Laboratories, Inc. provides chemical, industrial hygiene, and environmental analytical services to private industry, agricultural industry, engineering consultants, government agencies, and private individuals. Analytical services include, analysis of waters and soils for inorganic and organic constituents, aquatic toxicity testing, hazardous waste analysis, radiochemistry, industrial hygiene, microbiology, soils and water physical parameters, and petroleum analysis. Founded in 1952, Energy Laboratories currently incorporates 7 separate testing laboratories, and one satellite location. The main headquarters are located in Billings, MT, with branch laboratories located in Casper, WY, Gillette, WY, Rapid City, SD, Helena, MT, College Station, TX, Idaho Falls, ID, and a satellite lab in Elko, NV



The Quality Control Program establishes acceptable performance criteria for all routine analytical procedures being performed by laboratory personnel. The Quality Control Assessment program provides a formal system for evaluating the quality of data being generated and reported. The ELI Chemical Hygiene Plan insures the safety of all laboratory personnel and monitors the safety of all laboratory operations. These, in addition to the experience and expertise of our analysts, provide a comprehensive Quality Assurance Program. Energy Laboratories, Inc., in Helena, Montana, is certified under the Safe Drinking Water Act by Region VIII EPA. We have reciprocity for Wyoming, and the States of Montana, Idaho, Colorado, North Dakota, and South Dakota. ELI-Helena also holds accreditation for Clean Water Act, Safe Drinking Water. Details on certification parameters for all laboratories are given in our Qualifications Manual.

The ELI Quality Assurance Program Manual, the ELI Qualifications Manual, and the ELI Analytical Services Catalog together are used to outline the ELI Quality Assurance/Quality Control Program.

This Quality Assurance Manual is appropriate to all departments of the Energy Laboratories-Helena. The procedures discussed or referenced in this manual describe our day-to-day laboratory practices and adhere to USEPA Safe Drinking Water Act and NELAP requirements and Good Laboratory Practices (GLPs). Information on ELI-Helena accreditations and certifications can be found in Appendix A of this plan. Where possible, ELI uses EPA, ASTM, APHA, NIOSH, OSHA, or published analytical methods and follows the procedures with strict adherence to described protocol and recommended QA/QC parameters. Actual method operating procedures are described in the Standard Operating Procedures Manual, and are available for review at the laboratory. Vital parts of our Quality Assurance Program, quality control and quality assessment, are outlined in Chapters One and Two of this manual.

To generate data that will meet project specific requirements, it is necessary to define the type of decisions that will be made and identify the intended use of the data. Data Quality Objectives (DQOs) are an integrated set of specifications that define data quality requirements and the intended use of the data. Project specific DQOs must be established for both field and lab operations. Through the DQO process, appropriate reporting limits, extraction/digestion methods, clean-up methods, analyses methods, target analytes, method quality control samples, sample security requirements, quality control acceptance ranges, corrective action procedures, and reporting formats and reporting levels can be specified. Professional laboratory project managers are available to assist clients in specifying appropriate laboratory analyses and reporting procedures necessary to meet project requirements. Written Standard Operating Procedures referenced within this manual can be reviewed at our office upon request.

Certain types of analysis requests may not be suitable to standardized analytical methods. These custom requests are handled individually with laboratory management and staff scientists. Project specific methods and reporting packages are available upon request. Attention to documentation of the analytical procedure and use of suitable QC parameters is maintained according to good scientific discipline and Good Laboratory Practice guidelines.

This Quality Manual and related quality documentation meet requirements of the National Environmental Laboratory Accreditation Program (NELAP) and American Association of Laboratory Accreditation (A2LA) standards.

CHAPTER 1 - QUALITY CONTROL PROGRAM

Objective

It is the policy of the management of Energy Laboratories, Inc. to produce laboratory data that is scientifically valid, meets method specifications, satisfies regulatory requirements, and accomplishes the data quality objectives of the client and project. Those method, regulatory, and client requirements are incorporated into our Quality Assurance Program. We will apply appropriate corporate resources to set objectives, provide training opportunities, and monitor the quality performance of our staff. We will also provide facilities and equipment adequate and appropriate to those objectives.

Purpose

The purpose of the Quality Assurance Program is to ensure that the analytical services provided by Energy Laboratories are of the highest quality, and each analytical result produced meets or exceeds a client's requirements and expectations. The quality systems in the program consist of the policies and procedures, and all referenced documents, described in this Quality Assurance Manual. The Quality Control Program also functions to maintain the laboratory's compliance with accreditations through USEPA, State Agencies, and NELAP. All employees are expected to implement and follow the policies contained within the Quality Assurance Program Manual. Internal documents, controlled and associated with the Quality Assurance Program are listed in Appendix B.

The Quality Control program insures that results of analyses are within established accuracy and precision limits required by the referenced method or Standard Operating Procedure (SOP). The Quality Control Program requires that the following points be met for each applicable analytical method:

Demonstration of Laboratory Capability

Performance of any analytical method requires that the proper equipment and instrumentation are available. A list of major equipment is listed in Chapter 12. The procedure for operation of an analytical instrument is described in the equipment manufacturers operating manual, and may also be supplemented with a specific Standard Operating Procedure (SOP) for the instrument and/or the method.

Each SOP covers operation of the instrument including the sequence of operations involved in instrument start-up, calibrating, analyzing, and shutting down. SOPs include recommended preventative maintenance, and/or a list of parameters used to identify other types of maintenance. The SOP also outlines any special safety precautions for operation of the instrument.

SOPs of well detailed EPA, ASTM, NIOSH, APHA, OSHA, or published procedures include, as appropriate, a list of any method specific items or variances, a list of QC parameters and their recommended performance ranges, recommended or example analytical sequences, specific or unique safety information, method references, and a signed signature page. Details and format of method SOPs follow NELAP requirements Detailed SOPs are prepared for those procedures that do not have published methods.

Detailed information as to what information is required in method SOPs can be found in the ELI SOP 10-001-01

Demonstration of Analyst's Ability to Generate Data of Acceptable Accuracy and Precision

ELI demonstrates that laboratory staff is qualified and capable of performing the method. Analysts are assigned duties based on their skills and experience. Training records are maintained for all analysts. Curricula vitae of supervisory and senior analysts are described in Appendix E.

It is the responsibility of the analyst to become thoroughly familiar with the methodology and instrument operation before performing the analysis. It is the responsibility of the person providing training to monitor all laboratory results generated for a reasonable time. The amount of time necessary may vary depending on the method and the experience of the analyst. As a minimum, the analyst's performance is to be monitored until the analyst demonstrates the ability to generate results of acceptable accuracy and precision according to the method.

All analysts are required to demonstrate and maintain a record of proof of competency by routinely analyzing quality control samples appropriate to the analytical procedures they perform. Competency in analyzing these control samples is documented in analysts' training files per NELAP requirements (for more information, see SOP 10-005 on Personnel Training). For those analyses where external performance evaluation samples are not routinely analyzed, competency is documented by including the results of routine analyses of internal method quality control samples and/or a verifying statement of procedural review by a supervisor.

Analysis of Quality Control Samples

Each analytical method is subjected to quality control monitoring. The purpose is to demonstrate that results generated meet acceptable accuracy and precision criteria for the method. Quality control requirements are outlined in the methods and ELI at a minimum follows the guidelines specified in the methods used. Additional QC requirements are also added as appropriate. Statistical method performance is periodically evaluated against method requirements using control charts.

Quality control monitoring to measure accuracy for each method generally requires that five to ten percent of all samples analyzed be fortified (spiked) with a known concentration of target analytes tested by the method. Percent recovery is calculated. This provides a means for monitoring method accuracy and evaluating sample matrix effects. Where appropriate, surrogates are included in the method to monitor method performance on each individual sample. Blank spike samples replace matrix spike samples for certain methods, or when there is insufficient sample for a matrix spike analyses. Historical routine batch QC sample performance can be used to estimate the precision and accuracy of the method.

Quality control monitoring to measure precision for each method requires replicate samples be prepared and analyzed when possible. Actual requirements are outlined in the specific SOP. When replicate samples or matrix spike duplicates are analyzed, relative percent difference is calculated and used to monitor precision of the method. In instances where there are no specific method requirements, it is

the policy of this laboratory to analyze five to ten percent of all samples in duplicate. Duplicate test results must be within the control limits established for each analysis type. Acceptance limits generally follow specifications listed in the method. Matrix spike duplicates replace sample duplicates for most methods.

When not defined in the method and as appropriate, method blanks and instrument blanks are analyzed one in every 20 samples at a minimum. Method blanks are used to verify that contamination from laboratory reagents and glassware is not present. The method blank must be less than the reporting limit, or 10 times less than the amount in the sample, for the analytical parameter being tested.

When not defined in the method, and as appropriate, method spikes (blank spikes) are analyzed one in every 20 samples at a minimum.

Calibration standards are analyzed and calibration curves developed for all applicable methods. For additional information on instrument calibration see Chapter 7 of this QA manual.

The initial calibration is continuously monitored by analyzing a continuing calibration standard every 10 to 20 samples, or within a specified time frequency, and at the end of each new set of samples, depending on the method and instrumentation. Results must be within an established range as described by the method SOP. As appropriate, initial calibrations are verified against a standard from a second source.

Performance evaluation samples and further quality control check samples may be required for various methods. Refer to Chapter Two of this QA manual for further details.

Maintenance of Performance Records

All quality control monitoring is recorded and documented. Quality control data is recorded in laboratory notebooks, electronic summary files, and/or analyses sheets. QC data can also be maintained in quality control forms, graphs, or charts. QC data management and control chart generation, maintenance, and usage are described in ELI SOP 20-004. It is the responsibility of the analyst to see that all results are recorded in a timely manner.

All quality control data is filed and available for inspection and assessment by analysts, supervisors, management, and quality control personnel

Method Quality Control Specifications

Summary of Quality Assurance/Quality Control specifications for a selected subset of procedures offered by ELI are outlined in Appendix C. These tables are recommended for our clients to use in the preparation of Quality Assurance Project Plans (QAPPs). Exact details of method QC can be found in the method SOPs.

CHAPTER 2 – QUALITY ASSESSMENT PROGRAM

Purpose

The function of the Quality Assessment Program is to provide formal evaluation of the quality of data being generated and reported by the laboratory. External and internal quality control measures are used in this assessment. These measures include performance evaluation samples, laboratory quality control check samples, and routine internal and external audits on methodology and documentation procedures.

Performance Evaluation (PE) Samples

PE samples are supplied by an outside entity and contain known amounts of constituents. The laboratory does not have access to known values of the samples. Only the PE provider has knowledge of constituent levels prior to the formal publishing of the test results.

These samples are received on a routine basis, with results sent to the providing entity for evaluation. Acceptable results are those which fall within a defined range as determined by the supplier. These study results are available for review upon request.

Performance Evaluation (PE) Samples for USEPA, NELAP and various State certifications are Water Pollution Study Samples (WP), Water Supply Study samples (WS) and NELAP PE samples provided by either Resource Technology Corporation (RTC) and/or Environmental Resource Associates (ERA), vendors accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Routine participation in NELAP, WS and WP PE sample studies are used to maintain certifications for Drinking Water, NPDES permit monitoring analyses, and projects requiring NELAP certification. These types of external PE samples are received on a semi-annual basis, with results sent to the reference supplier for evaluation. Acceptable results are those which fall within a defined range as determined by the vendor/EPA/NELAP based on multi-laboratory study results. Results are sent by the provider to USEPA and other certifying agencies as requested by ELI-Helena Current study results are included in Appendix A A current copy of the certificate to perform drinking water analyses in the State of Montana certificate is also included in Appendix A. The Montana certification includes a list of parameters for which drinking water certification has been granted. Reciprocal certifications to perform drinking water analysis in Wyoming, North Dakota, South Dakota, and Idaho, are based on the Montana certification. The NELAP list of parameters includes RECRA methods and methods associated with the Clean Water Act (NPDES permits)

Blind Quality Control Check Samples are samples submitted as regular lab samples and are processed through the system in the same manner as any other sample. The analysts do not know the true value when performing the analyses. Method performance reports are returned to the analysts and maintained in method performance files. Clients occasionally submit these types of samples for their QAPPs.

Laboratory Inter-comparison Samples are samples containing known/unknown quantities of analytes that are split and analyzed by more than one laboratory. These samples are routinely analyzed and results are kept on file.

Quality Control Check Samples

Quality Control Check Samples - Are performance evaluation samples used for routine method performance monitoring. As appropriate, analytical procedures include the analysis of a quality control sample with every sample batch analyzed. The materials are obtained from a commercial source when available, or they may be prepared in-house. Acceptable results are within a defined range based on certified ranges, or, against statistically determined control limits. Routinely used methods not subjected to PE sample monitoring are evaluated with Quality Control Check Samples as appropriate.

QC samples are processed through the system in the same manner as any other sample, except the analyst is aware of the source, concentration, and acceptance ranges of target analytes and calculates analyte recoveries to evaluate method performance in real time.

Quality Control Audits

Quality Control Audits are internal and external laboratory analyses inspections designed to monitor adherence to quality control requirements. The audit checks general laboratory operations, overall Quality Systems, adherence to QA program requirements, sample tracking procedures, sample holding times, storage requirements, adherence to procedures during analysis, calculations, completion of required quality control samples within the group surrounding the sample, and proper record-keeping.

Internal quality control audits are conducted periodically by the quality control director of the laboratory (see SOP 30-001 Internal Quality Assurance Audits). ELI conducts internal inspections on a regular basis to monitor adherence to quality control requirements. Results of formal audits are given to management with possible recommendations for corrective action in the event any discrepancies are found. As necessary, a follow-up review is conducted to determine that identified problems have been addressed. Annually, the overall Quality Systems of the laboratory are reviewed and a summary report is prepared. Laboratory management is involved with the annual review of laboratory Quality Systems.

External Quality Control Audits by qualified outside auditors are welcomed by ELI for outside review and comment on the overall QA program. To maintain certifications, accrediting authorities from the State of Montana, USEPA, and NELAP conduct periodic comprehensive external audits. External audits by private clients to meet Quality Assurance Project Plans (QAPPs), as applicable to environmental remediation projects, or for major industries, are also conducted on a continuing periodic basis.

CHAPTER 3 – LABORATORY FACILITIES

Laboratory space includes adequate benchtop and floor space to accommodate periods of peak workloads. Working space includes sufficient benchtop area for processing samples; storage space for reagents, chemicals, glassware, bench and portable equipment items; floor space for stationary equipment; and adequate associated area for cleaning glassware. The laboratory contains at least 150 to 200 square feet per person. Laboratory departments are organized and facilities designed for specific laboratory operations in order to protect the safety of analysts and to minimize potential sources of contamination between and within department areas (for more information see SOP 10-002, Facility Description, Access, and Security).

The laboratory is appropriately ventilated and illuminated, relatively free of dust and drafts, and is not subject to excessive temperature changes. A light intensity of 100-foot candles is present at all working surfaces. Ample cabinets, drawers and shelves are available for storage and protection of glassware. Exhaust hoods are available as needed for use during preparation, extraction, and analysis of samples. Air quality monitoring is conducted routinely to ensure a safe working environment.

To maintain security, a staff member of ELI must escort all personnel taking a tour of the lab. These personnel must also sign a Guest Log book for precautionary reasons.

The laboratory has provisions for the disposal of chemical wastes and microbiological wastes. These provisions are described in Standard Operating Procedures and outlined in the Chemical Hygiene Plan along with other safety and health guidelines.

CHAPTER 4 - PERSONNEL REQUIREMENTS AND LABORATORY ORGANIZATION

Personnel Requirements

Laboratory Director

The Laboratory Director is required to have education equivalent to a Bachelor of Science degree in Chemistry or a related science. Five years of relevant laboratory experience is required.

Quality Assurance Officer

The Quality Assurance Officer is required to have a bachelors degree in Chemistry or a related science. Two years of relevant laboratory experience is required.

Laboratory Supervisor

A Laboratory Supervisor is required to have education equivalent to a Bachelor of Science degree in Chemistry or related science, Two years of relevant laboratory experience is required.

Analysts

Analysts are required to have education equivalent to a Bachelor of Science degree in Chemistry or related science, or a High School diploma and 3 years experience as an analyst in training. A minimum of 6 months of on-the-job training, under direct supervision of qualified analyst in the measurements being considered for certification is also required. After 6 months, and on a continuing basis thereafter, the analyst must demonstrate acceptable skills through the successful participation in the analysis of applicable performance evaluation and quality control samples.

Laboratory experience can be substituted for academic requirements For more information, see SOP 10-004, Roles and Responsibilities.

Laboratory Organization

Corporate organization of the eight ELI laboratories located in Montana (2), Wyoming (2), South Dakota, Texas, Idaho, Nevada. The Billings laboratory is the center for all corporate functions. Each laboratory is managed and operated individually under the supervision of a Laboratory director. Branch laboratory corporate responsibilities are only towards fiscal and general operating policies and goals. Quality Assurance Manuals are prepared individually for each branch and follow the QA/QC program outlined in the ELI-Billings QA manual.

The ELI-Helena Organizational Chart is also included in Appendix D with Curricula vitae of key ELI-Helena laboratory personnel maintained in Appendix E of this manual Within the **Qualifications Manual**, detailed personnel summaries are given for all managers and supervisors of ELI, Inc. A Personnel Summary for all ELI employees listing title, academic background, and years of relevant experience is also maintained in the Qualifications Manual. Job descriptions can be found in the Roles and Responsibilities ELI SOP #10-004

CHAPTER 5 – SAMPLING PROCEDURES

Most of the samples processed in this laboratory are collected by private individuals or companies who are responsible for using proper collection procedures. Members of the staff are acquainted with proper sample collection and handling procedures and will advise those who need help in this area. Instructions and forms for initiating Chain-of-Custody are available from ELI. Laboratory procedures for logging in samples for analyses and maintaining Chain-of-Custody are described in ELI SOP 20-001

When the laboratory has been assigned the responsibility of sample collection, there is strict adherence to correct sampling protocols, initiation of Chain-of-Custody, sampling documentation, complete sample identification, and prompt transfer of sample(s) to the laboratory.

This laboratory will provide proper sample containers and preservatives as specified for the procedure. Certified sample bottles are available upon request. Sample containers, preservatives, coolers for shipping, ice packs for maintaining refrigeration temperature, travel blanks for monitoring contamination during shipping, temperature blanks for accurately monitoring sample receiving temperatures, Chain-of-Custody forms, Chain-of-Custody Seals, and sample bottle labels are provided upon request. Instructions for sampling, sample labeling, sample preservation, and sample packaging/shipping are also provided upon request. Sample container type, sample volume, preservation requirements, and maximum holding times, are detailed for each analyte in the ELI Analytical Services Catalog. For metals analysis, polyethylene plastic with a polypropylene cap liner is preferred. Glass containers with Teflon-lined caps are required for organic analysis. The client is immediately notified (if possible) upon sample receipt if samples are received in unacceptable containers, or if samples have not been properly preserved. Samples not collected properly are rejected for any certifiable analysis and re-sampling is recommended. The laboratory will preserve samples at the time of sample login if samples are unpreserved and preservation is required by the methodology. Aqueous samples for volatile analyses are checked for preservation at the time of analyses. Samples for microbiological analysis are collected in pre-sterilized 120 mL plastic bottles containing sodium thiosulfate.

Sample preservation needs to be performed immediately upon sample collection. For composite samples, each aliquot is preserved at collection When use of an automated sampler makes it impossible to preserve each aliquot, samples are preserved by maintaining at 4° C until compositing and sample splitting is completed.

The laboratory initiates a sample condition report at the time of sample receipt. The sample condition report evaluates Chain-of-Custody procedures, sample preservation status, carrier used for sample shipment, cooler temperature, and provides general comments concerning sample condition. The sample condition report is provided with the sample analyses results data package. For more information, see ELI SOP 20-001, Sample Receipt, Login, and Labeling.

When any sample is shipped by common carrier or sent through the United States Mail, it must comply with the Department of Transportation Hazardous Materials Regulations (49 CFR Part 172). The person offering such material for transportation is responsible for ensuring such compliance. For the preservation requirements as described in the ELI Services Catalog, the Office of Hazardous Materials,

Material Transportation Bureau, Department of Transportation has determined the Federal Hazardous Materials Regulations do not apply to the following:

A) Hydrochloric Acid - (HCl) in water solutions of 0.04% by weight or less (pH of 1.96 or greater).
B) Nitric Acid - (HNO_3) in water solutions of 0.15% by weight or less (pH of 1.62 or greater).
C) Sulfuric Acid (H_2SO_4) in water solutions of 0.35% by weight or less (pH of 1.15 or greater).
D) Sodium Hydroxide - (NaOH) in water solutions of 0.080% by weight or less (pH of 12.30 or less).

It is required that all samples be analyzed within the prescribed holding times. Holding times are the maximum times allowed between sampling and analysis for results to still be considered valid. Samples should be delivered to the laboratory as soon as possible following collection to assure that holding times can be met. Samples are analyzed as soon as possible after sample receipt. When maximum holding times cannot be met, resampling is requested. Samples may be held for longer periods only if the permittee, or monitoring laboratory has data on file to show that the specific types of samples under study are stable for the longer time or if a variance is allowed. Some samples may not be stable for the maximum time period as given in the ELI Analytical Services Catalog. A permittee or monitoring laboratory is obligated to hold the sample for a shorter time if knowledge exists to show this is necessary to maintain sample stability.

CHAPTER 6 - SAMPLE HANDLING

Sample Receipt

All samples arriving at the laboratory are recorded in the sample receipt log and each container is given a unique laboratory sample number.

Samples requiring preservation are checked to determine if the client performed preservation. If requested, ELI staff will preserve or filter samples as appropriate. Samples which degrade quickly, or cannot be opened (such as aqueous samples for volatiles), are not preserved at the time of sample login. If samples are improperly preserved, or the maximum holding times are exceeded upon arrival at the laboratory, the collector is notified and resampling is requested

Chain-of-Custody forms are checked for pertinent information. If necessary information has been omitted, the collector is notified, if possible, and the missing information is requested.

Samples are stored in accordance with method specifications in designated laboratory areas.

During sample login, all sample information such as sample description, client name and address, analyses requested, special requirements, etc. are entered into the computer database of the Laboratory Information Management System (LIMS). Requested analyses parameters and special requirements are communicated to the analysts via their LIMS work lists. Project specific requirements are maintained in the LIMS for any samples received from a special project. This process ensures that individual requirements are maintained.

For more information, see SOP 20-001, Sample Receipt, Login, and Labeling.

Chain-of-Custody

Evidence level internal Chain-of-Custody procedures are available on a project specific basis. For these procedures, internal COC sample custody is maintained down to the individual analyst level When transferring the possession of the samples, the transferee must sign and record the date and time on the Chain-of-Custody record. Every person who takes custody must fill in the appropriate section of the Chain-of-Custody record When received by ELI, sample identification information on the sample containers is compared to the custody report form. The sample is inspected and information regarding the condition of the sample and seal (if used) is recorded on a report form, the method of shipping is also documented on the report form. A copy of the report form is kept with the sample data file and a copy is sent to the client with the analysis report. Internal Chain-of-Custody forms are used to document the progress of the sample through the laboratory. For more information, see SOP 30-005, Chain-of-Custody Samples.

ELI's routine COC policy is maintained at the laboratory level through our laboratory access and security policies. See ELI SOP 10-002, Facility Description, Access, and Security.

Sample Tracking

Samples are tracked through the analytical process by the LIMS When all analyses are completed and approved by supervisory review, the data package is sent to the reporting department for final report generation The completed report is sent to data validation and finally to invoicing at which point the report is mailed to the client. Generation of the invoice automatically changes the status of the samples in the LIMS to "Done" and removes them from the status report printed by the LIMS. Completed reports are reviewed by the Data Validators and sent to clients. See SOP 20-002, Document Production, Control, and Archiving.

Sample Disposal

It is preferred that excess hazardous sample material be returned to the originator (client) for disposal by the originator. When this is not possible or reasonable, ELI will dispose of excess hazardous sample materials with hazardous waste generated in the laboratory. The disposal of all laboratory wastes will be performed in accordance with all local, state, and federal regulations which apply to such activities. For specific information concerning a given waste, consult the appropriate SOP.

Subcontracting Policy

The ELI-Helena laboratory utilizes the expanded branch laboratory capability and expertise to provide comprehensive analytical services. This occurs when the Helena laboratory is requested to perform an analysis they are not capable of doing, during the peak season when we experience sample overload, and when equipment is out of service. Upon completion of the analyses, the branch laboratories report the sample results and their quality assurance package to a Project Officer. The results are reviewed before being reported to our clients.

Other branch laboratories are certified to perform drinking water analyses in their state and in neighboring states. Samples are forwarded to ELI branch laboratories only if the laboratory is certified in the state from which the sample originated. The Helena QA program is consistent with the corporate QA Program and is monitored through internal laboratory audits.

Some analytical methods are routinely analyzed by branch laboratories to support ELI-Helena analytical services. Most subcontracting samples are sent to the laboratories in Billings, MT and Casper, WY, as these labs are NELAC, Safe Drinking Water Act and Waste Water Act certified by the states of Montana and Wyoming.

In the event that ELI is dependent on the service of an outside laboratory for analyses not available through our facility or our branch laboratories, the client will be notified in advance that their samples are being subcontracted to an outside laboratory. The outside laboratory reports the results to ELI and this becomes part of the final report. All final reports indicate where the analyses were performed

CHAPTER 7 – INSTRUMENT OPERATION AND CALIBRATION

Laboratory instruments and equipment are operated and calibrated according to the manufacturer's instructions, and according to the requirements of the method being used. Exact calibration procedures are outlined in the appropriate SOP. For most instruments, a calibration curve composed of three to five standards covering the concentration range of the samples is prepared. Unless otherwise specified in the method, at least one of the standards is at or below the practical quantitation limit (PQL) of the method. Routine PQLs for each method are given in the **ELI Analytical Services Catalog**. Calibration standards are routinely compared against second source calibration standards to verify accuracy The reference standard results must fall within an established range, as described by the SOP, to be accepted. Whenever possible, the laboratory uses calibration standards prepared from certified stock standards. Initial instrument calibration curves are verified and routinely monitored by running a continuing calibration standard every 10 to 20 samples, and at the end of every analytical sequence, depending on the analysis method and instrumentation. High-level samples, which produce an analytical response outside the calibrated range of the instrument, are diluted and reanalyzed such that a response within the calibrated range is obtained.

System cleanliness is verified through the analysis of reagent/instrument blanks prior to analysis, between highly contaminated samples, and at regular intervals during the analysis. Samples are only quantitated within the limits of the response of the standards.

Use of measuring equipment and reagents; glassware, water, chemical reagents, and industrial gases. conform to Good Laboratory Practice guidelines. Good Laboratory Practices (GLPs) are laboratory guidelines which were established by the Food and Drug Administration and published in the Federal Register (21 CFR, part 58) in the mid-1980's. The GLP guidelines were adopted by the Environmental Protection Agency. SOPs are developed in accordance with GLP and NELAC guidelines. Laboratory volumetric glassware conforms to National Institute of Standards and Technology (NIST) Class A standards. All mechanical pipetors are calibrated monthly. Laboratory balances are annually serviced and calibrated by certified technicians. Routine calibration checks of all balances are performed using NIST traceable Class S weights. Laboratory thermometers are annually calibrated against a NIST traceable thermometer, and routinely checked for accuracy. Laboratory drying ovens, incubators, freezers, refrigerators, and water bath temperatures are recorded each working day, or at frequencies as described in the specific SOP. Laboratory pure water is generated by commercial water purification systems and is monitored and documented each working day according to resistivity meter readings. The routine analyses of laboratory blanks is used to verify laboratory water quality and the suitability of sampling containers. Chemical reagents and gases exceed purity requirements for their intended uses. Laboratory stock and working standards are derived from commercially available primary standards whenever possible Standards preparation notebooks document the source, purity, content, concentration, preparation date, and analyst. All calibrations standards are documented in the analytical sequence such that they are uniquely identifiable and traceable to stock standards and their source

Standard Operating Procedures (SOPs) detail the sequence of operations involved in instrument start-up, calibration, analyzing, shutting down, and routine maintenance. Suggestions for corrective action are included with the SOPs and parameters are identified which dictate certain types of maintenance.

Instrument and method detection limits are performed at the method required frequency or whenever there is a significant change in instrumentation. Detection limits are determined according to EPA guidelines found in 40 CFR, part 136, appendix B. Acceptable instrument response/performance criteria are based upon the manufacturer's or the analytical method specifications. SOPs exist for all major pieces of analytical equipment/methods. Instrument maintenance logbooks are used to document instrument maintenance and repairs.

All instrumental run sequences are documented. Laboratory analysts record and document all instrumental runs in Laboratory Instrument Logbooks or computer files. Instrument Logbooks and/or dated computer files record instrument performance data, analytical sequences, instrument maintenance, calibration standards data, and any other additional information pertinent to operation of the instrument.

CHAPTER 8 - RECORDS AND REPORTING

Laboratory Notebooks

Several different types of Laboratory Notebooks are maintained at the ELI Laboratory. These include, but are not limited to, the following:

Method/Parameter Notebooks
Instrument/Equipment Use and Maintenance Notebooks
Standard Preparation Logbooks
Balance Calibration Logbooks
Pipet Calibration Logbooks
General Logbooks

The general purpose of maintaining each of these Laboratory Notebooks is to record the details which may be important in repeating a procedure, interpreting data, or documenting certain operations. Entries in the notebook may include data such as standard and sample weighing, pH measurements, instrument operating parameters, preparation of calibration curves, analytical run sequences, calculations, recording of instrument operating parameters, sample condition, etc. The analyst's notebook is particularly important in documenting analyses which deviate in any way from routine or standard practices. It can also be an important training record. All pertinent data is to be recorded directly in the notebook. Some notebooks or data records are maintained in electronic files. Electronic data records are duplicated using hardcopy and/or alternate electronic backup techniques such as magnetic tape

It is the responsibility of each analyst to maintain a laboratory notebook according to Good Laboratory Practices (GLP) Guidelines Procedures for use and maintenance of laboratory notebooks are detailed in ELI SOP 20-010. All laboratory notebooks are assigned a unique logbook control # and are assigned to an analyst or supervisor. Laboratory Notebooks will remain the responsibility of the ELI staff member to whom they are assigned until, or unless, they are formally transferred to another staff member, until they are completely filled and returned to the ELI Quality Assurance Officer or ELI Laboratory Supervisor for archiving, or until the staff member resigns and returns them as a part of the check-out process. ELI staff members other than the individual to whom the Laboratory Notebook is issued may make entries in the Notebook as long as those entries are consistent with the intended use of the Notebook, and such entries are initialed. Laboratory Notebooks are the responsibility of each ELI staff member using the notebook. Supervisors review and approve all Laboratory Notebook formats.

Records

The laboratory for minimum of ten years keeps records of chemical analyses, including all quality control records. In the event the laboratory transfers ownership or goes out of business, files will either be maintained, or first be offered to the client prior to their disposal. Details are described in ELI SOP 20-002, Document Production, Control, and Archiving.

Data Reduction

Data reduction refers to the process of converting raw data to reportable units. The reporting units used and analytical methods performed are described in the Analytical Services Catalog.

Wherever possible, the instrument is calibrated to read out directly in the units reported. In this case, the value is recorded directly into a laboratory notebook, logbook, bench sheet, or electronic file and presented for review by supervision.

In cases such as titration, gravimetric measurements, or other techniques which require calculation prior to reporting, raw data is recorded in the appropriate laboratory notebook or electronic file, or on the appropriate laboratory form. The calculations specified in the EPA method are used to determine the reported value. That value is also entered into the laboratory notebook or bench sheet, and on the draft of the client report. Most of the calculations are computerized to reduce the chance of arithmetic or transcription errors.

Wherever possible, electronic data results are transmitted throughout the laboratory via the LIMS computer network. This process is intended to minimize manual data transcriptions within the laboratory. Additional advantages include the opportunity for rapid comprehensive data validation by supervisors, and more rapid data reporting.

Validation

Data validation includes the procedures used to ensure that the reported values are consistent with the raw data, calculated values, sample type, sample history, and other analyses parameters requested.

The data recorded on the draft report is validated with several steps. The analyst who submits the report checks all the values reported for omissions and accuracy. Elements of this review also evaluate all instrument and method QC results. Automated data management programs are designed with an interactive step allowing data review by the analyst. Results to be reported are approved by the analyst.

The reported result and associated QC data is reviewed by the supervisor. Supervisors review the suitability of the data according to project and method performance specifications. Analyses results for each requested parameter are evaluated against other requested parameters, project specifications, other samples within the set, historical files associated with the project/client, and any other information provided with the sample. Supervisors initial all validated sample results.

The reports are generated, proofread, and then reviewed by the reporting staff.

The final report is reviewed by the laboratory manager, or his designate, who also examines the validity of the data.

Internal and external laboratory audits review selected sets of data to ensure that the analysis results are correct and accurate, analytical methods are appropriate, documentation and record keeping procedures complete, and that overall objectives of the Quality Assurance Program are adhered to.

All automated programs used to process and report data are verified using hand-calculated results. Whenever a modification is performed to a program re-verification of overall software function is performed.

Reporting

One copy of the report is mailed to the client on the day the report is completed and reviewed. A standardized report format is used unless otherwise specified. Client specified report formats are available upon request. Electronic results via diskette, modem, or FAX are available upon request. All electronic reporting is followed with a hardcopy of final results.

Various levels of data reporting are available. All analyses results, regardless of the level of reporting used, have record keeping procedures which allow a complete "data validation package" to be produced. Note that a comprehensive "data validation package" is most easily generated at the time of sample analyses. Example data packages are available upon request.

Microbiological samples tested for compliance monitoring may require notification to the appropriate state agencies and this is detailed in individual method SOPs.

If requested by the client, additional copies of the report will be sent to a specified address or person

The final copy of a completed report is scanned and maintained as a graphics file. The electronic file of the report meets NELAC reporting requirements. An electronic copy of this file is available upon request.

For more information, see SOP 20-002

CHAPTER 9 - GENERAL LABORATORY PRACTICES

Chemicals and Reagents

When available and appropriate, chemicals used in the laboratory are analytical reagent grade (AR) chemicals purchased from reliable suppliers. Reagents are prepared, standardized, and made fresh as mandated by the method, their stability, and according to Good Laboratory Practices

Stock or working standards are checked regularly for signs of deterioration, (e.g., discolorations, formation of precipitates) and are compared to independently prepared reference materials.

All standards and reagents are dated when received, opened, or prepared, and each are labeled with expiration dates.

Certified primary standards are obtained from commercial sources when available Standards used for calibration are verified against second source standards. Secondary and working standards are accurately prepared in volumetric flasks or other calibrated glassware from primary standards and stored in appropriate containers.

Titrants, standards, and other solutions used for analytical purposes frequently must be standardized upon preparation with certified or traceable standards. Method SOPs specify if standardization is necessary. The date and analyst's initials must be recorded on the container whenever re-standardized and records are maintained in a laboratory notebook.

Individual SOPs may also provide additional details for reagent requirements.

Reagent Interference

To determine the extent of reagent interference, method blanks are analyzed prior to sample analysis whenever appropriate.

If any interference cannot be eliminated, the magnitude of the interference is considered when calculating the concentration of the specific constituent in the sample, but only when permitted within the method being used.

If reagents, materials, or solvents contain substances that interfere with a particular determination, they are replaced.

Individual method SOPs may also provide additional requirements for handling reagent interferences.

Glassware Preparation

All glassware used for inorganic analyses is washed in warm detergent solution and thoroughly rinsed in tap water. Glassware is then rinsed well three times with deionized water. This cleaning procedure is sufficient for many analytical needs, but individual SOPs detail additional procedures when necessary. Glassware washing procedures for inorganic analyses are described in ELI SOP 30-001.

All glassware used for organic analyses is washed in warm synthetic detergent solution and thoroughly rinsed in tap water. The glassware is then rinsed well with deionized water, followed by rinses with acetone to remove any residual organics Prior to use, the glassware is rinsed three times with the organic solvent to be used with the glassware. Glassware washing procedures for cleaning glassware for organic analyses are described in ELI-SOP-30-002.

All glassware used for microbiological analyses is washed in warm detergent solution. The detergent must be proven to contain no bacteriostatic or inhibiting substances. The glassware is rinsed thoroughly with suitable deionized water. Specific details are described in SOPs.

Disposable glassware/plasticware is preferred for many procedures in the laboratory. The cleanliness, and suitability of disposable glassware/plasticware is continuously evaluated for each test with the routine analyses of method blanks.

All volumetric glassware used in precise measurements of volume is class A, or laboratory calibrated.

Laboratory Pure Water

Distilled or deionized water is used in the laboratory for dilution, preparation of reagent solutions and final rinsing of glassware. For organic analyses, organic-free water is prepared and used. Deionized water is prepared to meet ASTM Type II specification for reagent water. Use and maintenance of laboratory reagent water systems are described in ELI SOP 30-005 and 30-007.

Water quality is monitored for acceptability in the procedure in which it is used. Specific details are listed in the appropriate SOPs.

Employee Training

All new ELI employees and contract personnel are given an initial general orientation and tour of the laboratory facilities. Personnel are shown the locations of safety equipment such as safety showers, eye wash fountains, fire extinguishers, and first aid supplies. Personal protective equipment such as lab coats, disposable gloves, and safety glasses (if applicable) are issued at this time.

Safety considerations are a vital part of the training process. All hazards associated with the performance of a procedure or with the operation of an instrument are to be understood by the trainee before training can be considered complete. General lab safety procedures are a part of the new and current employee training. Specific safety procedures are outlined in SOPs and in instrument Operator's Manuals. Training in use of protective clothing, eye protection, ventilation, and general safety are provided to each employee. Each employee is required to read the laboratory Chemical Hygiene Plan.

All new and existing employees must demonstrate capability prior to performing an analytical procedure independently (See Chapter 1) Method performance on Quality Control Samples is used to document employee training and work quality. Employees are required to read and sign the Quality Assurance Manual and all appropriate SOPs. Each employee also receives training on general laboratory policies including ethics and conflict of interest. ELI encourages attendance at courses,

workshops and other forms of continuing education available from on-site seminars, private institutions, local schools, and State and Federal regulatory agencies. Staff and department meetings are held routinely to communicate company policies and procedures. All training on procedures and policies is documented per NELAP guidelines in employee training files. For more information see ELI SOP 10-005, Personnel Training.

Standard Operating Procedures

All routine laboratory operations and procedures are documented in Standard Operating Procedures (SOPs). SOPs are written to provide a reference, which specifically defines requirements for routine procedures, so that consistent, safe, and efficient laboratory operations are possible. For analytical methods, SOPs generally provide information on the details of the analysis, which are not specified in a published analytical method. For routine procedures other than analytical methods, SOPs define the steps required in accomplishing a given task. All SOPs are reviewed periodically to assure that they reflect any changes in laboratory operations. Method SOPs follow NELAP requirements. For more information on generation and distribution of SOPs, see SOP 10-001, Preparation, Numbering, Use, and Revision of Standard Operating Procedures.

Client Confidentiality

Each employee has the responsibility to maintain confidentiality in all matters pertaining to our clients, samples submitted, and Energy Laboratories, Inc. Information obtained during employment with this laboratory regarding the specific business of this laboratory or its clients shall at no time be revealed to any outside sources without permission from the owner of the data.

CHAPTER 10 - QUALITY CONTROL MONITORING

Routine Monitoring

Temperatures of incubators, water baths, refrigerators, and ovens are checked and recorded according to a prescribed schedule.

All pH meters are calibrated against reference standards. Calibrations are noted in laboratory notebooks.

Conductivity of deionized water is continuously monitored.

Reagents are dated and initialed at the time of receipt; reagents are not used after recommended shelf life is exceeded.

Balances are checked daily against NIST traceable weights and are calibrated and serviced by certified technicians annually.

SOPs are reviewed periodically for correctness.

Laboratory Notebooks are reviewed periodically by supervisors for correctness and accuracy

Performance Evaluation Samples are analyzed as required. (See Chapter Two of this QA Manual)

Quality Control Check Samples are analyzed with each analytical batch.

Internal and External audits are performed as specified or requested. (See Chapter Two of this QA Manual for additional discussion)

Additional monitoring requirements may also be specified in individual SOPs.

The Laboratory maintains an active fraud protection program that is implemented through the laboratory ethics policy. Additionally, the potential of fraud is monitored through analyst supervision, management supervision, regular internal audits, PT study participation, and an active quality assurance program.

Instruments/Methods

Calibration is performed as required by the analytical method or SOP (See Chapter 7 of this QA Manual)

Depending on method requirements, the standard curve is verified with a known second source reference sample. The reference sample results must fall within the appropriate target range for the calibration to be accepted.

In most cases, the calibration is checked by running a continuing calibration standard every 10 to 20 samples, depending on the analysis and instrumentation. The verification standard results must fall within an established range as described by the SOP.

All laboratory instruments are subjected to preventive maintenance schedules. Preventive maintenance schedules are specified in instrument maintenance logbooks.

As appropriate, instrument and/or method detection limits are determined annually, or more frequently if changes in instrument performance are noted or per method requirements. Procedures for the determination of instrument detection and method detection limits are described in ELISOP 30-009.

Precision and Accuracy requirements for each method are specified in the SOPs. General guidelines are given below.

Each sample analyses batch will contain QC samples to measure the accuracy of the method. Each QC sample result is monitored to be within QC specifications of the method. Results of blank spiked sample analysis must be within the established control limits. Quality Control Limits are specified in the SOPs and meet recommended QC limits as described in the referenced method.

Each sample analyses batch will contain QC samples to measure the precision of the method. (See chapter One for discussion on duplicate sample analyses.) Criteria for duplicate sample acceptance are found in the SOP, and are generally taken from the referenced method.

Each sample analyses batch will contain QC samples to measure the performance of the method on the sample matrix. These are typically identified as a matrix spike analyses and are often done in duplicate to also measure precision. Typically the sample is fortified with a known amount of target analyte and spike recoveries are calculated. Results outside of method QC guidance are flagged. Quality control limits and appropriate corrective actions steps are specified in the method SOP.

As appropriate, the performance of QC samples results are evaluated with Quality Control Charts. Suitability of existing QC limits is evaluated and possibly adjusted, but not to exceed method specification.

CHAPTER 11 - CORRECTIVE ACTION

When the quality control checks indicate that an analysis is not within the established control limits, corrective action is needed. This section gives general guidelines for corrective action. Corrective actions for each method or instrument are detailed in individual SOPs.

Method QC such as continuing calibrations, instrument blanks, method blanks, duplicate, blank spike, matrix spike, or matrix spike duplicate samples which fail to fall within QC control limits are analyzed again to verify if a problem exists. If this repeat is not within control limits, the particular instrument or procedure is checked according to the specific protocols outlined in the method or according to the instrument manufacturer's guidelines. Once results are within control limits, analysis of all samples that were analyzed while the procedure was out of control are repeated, i.e., all analyses are repeated back to the previous acceptable control sample. If the analyst is unable to achieve acceptable results after following the corrective action guidelines detailed in the SOP, supervision is consulted. If necessary, the appropriate service personnel are contacted if the problem is determined to be due to instrument error, and cannot be resolved. In certain cases, where control limits are exceeded, it is possible that problems cannot be corrected to satisfy QC criteria. This could be due to problems such as matrix interference, instrument problems, lack of sufficient sample, missed holding times, high blank contamination, etc. If all possible solutions available to correct the problem are examined and the sample results are still considered valid, qualifying comments are attached to the sample report describing the non-compliance to QC and probable cause.

In the event that a QC audit or other informational review shows an analysis report to be incorrect, incomplete, or adversely compromised, a written corrected report and explanation is submitted to the client. As appropriate, an explanation submitted to the client should give a detailed review of the problem and document any unapproved deviations from the regulations, standard operating procedures, or project specific scope of work that may have caused it. The explanation to the client shall include but not be limited to the following components:

What actions have been taken regarding the data set(s) affected.
Identification of the cause.
Corrective action taken to prevent future occurrence.

Procedure for Dealing with Complaints

Definition:

Complaint For the purposes of this procedure, a complaint comes from a client or other user of our data. The complaint might cover issues about the quality of our data, turnaround, method used, pricing, or other expectations.

Client The client is the person or company that ordered and paid for the services. This is the person that a sample is logged in or filed under.

Procedure:

The staff person receiving the complaint exercises judgment in deciding the severity and disposition of every complaint. The judgment must be used to decide whom, if anyone is alerted to the complaint and what actions are appropriate. The individual handling the complaint is instructed to follow ELI's

guidelines on how to handle the complaint. This involves listening to the client and getting adequate information so the complaint can be investigated and resolved. The appropriate laboratory staff is notified and a solution to the problem and a timeline for action is given.

After the complaint is investigated or resolved, as necessary, the client is made aware of the results and determination is made as to what further actions are needed. Complaints and investigations may result in the need to submit a revised report or invoice. Complaints that are straightforward and can be resolved using the resources available to the person handling the complaint should be resolved there. These include such things as minor revisions of reports or invoices. If other decisions need to be made, the appropriate person should be contacted.

It may be appropriate to initiate or prepare a non-compliance report. This report should be completed with the intention of informing the affected staff about the problem so that we can all learn from it, change our procedures and improve our service. A procedure to document non-compliance reports is documented in ELI SOP 20-011

Penalty for Improper, Unethical or Illegal Actions

Employees of Energy Laboratories, Inc. are expected to work in an ethical, proper, and legal manner. They are expected to perform laboratory analyses according to the cited method(s) and in conjunction with the SOP and the Quality Assurance Plan. Employees are expected and required to report any violations of this policy

The penalty for improper, unethical, or illegal actions performed by an employee will be determined on a case-by-case basis. It will be set, in part, by the severity of the offense. A first time, minor offense may simply require instruction about the expectations of the company. A subsequent, willful, or more serious incident may require anything from supervisor reprimand to termination of employment. The supervisory staff and the laboratory director will determine the penalty. Consideration of such elements as employee experience, training, and attitude, and the seriousness of the problem will be used to set the penalty.

CHAPTER 12 - MAJOR EQUIPMENT AND METHODS

ENERGY LABORATORIES, INC - HELENA, MONTANA

Equipment	Quantity	Methods
Gas Chromatograph-FID with auto sampler	1	DRO, EPH (Mass. Method), TPH as Diesel
Gas Chromatograph-PID/FID with purge and trap and auto sampler	1	GRO, VPH (Mass. Method), TPH as Gasoline, 602, 8020
Gas Chromatograph-Mass Spectrometer with purge and trap and auto sampler	1	524, 624, 8260
Inductively Coupled Argon Plasma Spectrophotometer	1	200.7, 6010
Microscope, PCM, PLM	1	EPA 600/M4-82-020, RTI 600/R-93/116, NIOSH 7400, NIOSH 7402
Leco Sulfur Analyzer	1	ASA29-3, E3.2.3
Technicon AutoAnalyzer II	1	E350.1, E353.2, ASA38-3, ASA10-3, E365.1
Fisher Distillation Unit 100	1	ASA31-3, E351.2
Incubator	1	A9223
TDS/TSS Oven	1	A2540 C, E160.2
UV-Visual spectrophotometer	1	A10200 H, E410.4

CHAPTER 13 - PREVENTIVE MAINTENANCE

Preventive maintenance is performed on laboratory equipment according to the manufacturer's guidelines and our experience in its operation. An outline of the maintenance on our major equipment follows:

Instrument	Maintenance	Frequency
Balances	Check with Class S weights	Daily
	Independent Service	Annually
Pipettes	Check volume	Monthly/Daily
ICP-Atomic Emission	Check Pump Tubing	Daily
	Check Coolant Levels	Daily
	Lubricate Autosampler	Quarterly
	Air Filter	Quarterly
	Optics Servicing	Annually
Gas Chromatograph	Change Septum	As needed
	Check injection liner	Daily
	Clean detector	As needed
	Change gas cylinders	At 200 psi
	Change column	As needed
Auto Analyzers	Check bath temperature	Daily
	Check for leaks	Daily
	Change tubing	When wear is visible
	Align flow cell	Quarterly
	Lubricate pumps	Annually
	Lubricate sampler	Annually
Mass Spectrometers	Monitor vacuum pressures	Daily
	Monitor background levels	Daily
	Monitor electron multiplier	Daily
	Change pump oil	Annually
Microbiology	Monitor room temperature	Twice daily
	Monitor Incubator Temperature	Twice daily
	Autoclave maintenance	Annually
	Monitor water bath temperature	Twice daily
Reagent Water Systems	Change/check cartridges	Quarterly, or as needed
Compressed Gases	Change gas cylinders	At 50 psi, monitor daily

CHAPTER 14 - REFERENCES

Handbook for Analytical Quality Control in Water and Wastewater Laboratories Environmental Protection Agency.

Standard Methods for the Examination of Water and Wastewater, 18th Edition, APHA, 1992.

Methods for Chemical Analysis of Water and Wastes Environmental Protection Agency, 600/4-79-020.

Methods for the Determination of Metals in Environmental Samples – Supplement I, EPA/600/R-94-111, May 1994

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93-100, August 1993.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, December 1998

Methods for the Determination of Organic Compounds in Drinking Water – Supplement I, EPA/600/4-90/020, July 1990.

Methods for the Determination of Organic Compounds in Drinking Water – Supplement II, EPA/600/R-92/129, August 1992.

Technical Notes on Drinking Water Methods, EPA/600/R-94/173, October 1994.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW846), Environmental Protection Agency, Final Update III, 1997.

ASTM Annual Book of Standards, Part 31 (water). American Society for Testing and Materials.

Manual for the Certification of Laboratories Analyzing Drinking Water, 4th Ed., EPA 815-B-97-001, 1997.

NELAC Chapter 5 Quality System Standard, 2001

Laboratory Services Catalog, Current Revision, Energy Laboratories, Inc

Qualifications Manual, Current Revision, Energy Laboratories, Inc.

CHAPTER 15 - GLOSSARY OF TERMS

Accuracy - The degree of agreement between an observed value and an accepted reference value.

Analytical Sample - Any solution or media introduced into an instrument on which an analysis is performed, excluding instrument calibration, initial calibration verification, initial calibration blank, continuing calibration verification, and continuing calibration blank.

Audit - A systematic evaluation to determine the conformance to quantitative specifications of some operational function or activity.

Batch - Environmental samples which are prepared and/or analyzed together with the same process and personnel, using the same lot(s) of reagents. A preparation batch is composed of one to twenty environmental samples of the same matrix, meeting the criteria above. An analytical batch is composed of prepared environmental samples, extracts, digestates, or concentrates, which are analyzed together as a group and in a similar time frame.

Blind QC Check Samples - Samples whose analyte concentrations are not known to the analyst. That the sample is a QC check sample may or may not be known to the analyst.

Blank - An artificial sample designed to monitor the introduction of artifacts into the process. The blank is taken through the appropriate steps of the process.

Blank Spike - See Standard Matrix Spike.

Calibration - The set of operations which establish, under specified conditions, the relationship between values indicated by the measuring instrument and the corresponding known value of the property being measured.

Calibration Blank - A volume of reagent water fortified with the same matrix as the calibration standards, but without the analytes, internal standards, or surrogate analytes.

Calibration Check Standard - See Check Standard.

Calibration Curve - The mathematical relationship between the known values and the instrument responses for a series of calibration standards.

Calibration Standard - A solution of known concentration used in the calibration of an analytical instrument.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) - The enabling legislation (42 USC 9601 - 9675 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 USC 9601 *et seq.*), to eliminate the health and environmental threats posed by hazardous waste sites.

Check Standard - A material of known composition that is analyzed concurrently with test samples to evaluate a measurement process.

Clean Water Act - Public Law PL 92-500. Found at 40 CFR 100-140 and 400-470. The act regulates the discharge of pollutants into surface waters.

Continuing Calibration Standard - See Check Standard.

Continuing Calibration Verification - See Check Standard.

Control Limits - A range within which specified measurement results must fall to be compliant.

Control Standard - See Check Standard.

Corrective Action - An action taken to eliminate the causes of an existing nonconformity, defect, or other undesirable situation in order to prevent recurrence.

Data Quality Objectives - An integrated set of specifications that define data quality requirements and the intended use of the data.

Duplicate - A second aliquot of a sample that is treated the same as the original sample to determine the precision of the method.

Duplicate Sample - See Duplicate.

Fortified Sample - See Sample Matrix Spike.

Initial Calibration Verification - A sample of known concentration, from a source other than that of the calibration standards, analyzed following calibration to demonstrate validity of the calibration.

Instrument Blank - See Calibration Blank.

Laboratory Intercomparison Sample - A performance evaluation sample analyzed by numerous laboratories. Acceptance criteria are often based statistically on the analysis results.

LIMS - Laboratory Information Management System.

Matrix Spike - See Sample Matrix Spike.

Matrix Spike Duplicate - See Sample Matrix Spike Duplicate.

Method Blank - A clean sample processed simultaneously with, and under the same conditions as, samples containing an analyte of interest through all steps of the analytical procedure.

Method Detection Limit - A measure of the limit of detection for an analytical method determined according to the procedure given in 40 CFR Part 136 Appendix B.

MCL-Maximum Contaminant Level. Regulatory action levels for a contaminant of concern.

NELAC - National Environmental Laboratory Accreditation Conference.

NELAP - National Environmental Laboratory Accreditation Program.

National Pollutant Discharge Elimination System (NPDES) - A discharge permit system authorized under the Clean Water Act.

Performance Evaluation (PE) Sample - A sample with a composition unknown to the analyst, which is provided to test whether the analyst/laboratory can produce analytical results with specified limits.

Precision - The degree to which a set of observations or measurements of the same property conform to themselves.

Preservation - Refrigeration and/or reagents added at the time of sample collection to maintain the chemical and/or biological integrity of the sample.

Quality Assurance Project Plan (QAPP) - A formal document describing the detailed quality control procedures pertaining to a specific project. For environmental clean-up projects this is typically produced by an engineering firm with references to include a laboratories Quality Assurance Program Manual.

Replicate - An additional aliquot of a sample that is treated the same as the original sample to determine the precision of the method.

Reporting Limit (RL) – Also known as the Practical Quantitation Limit (PQL). The lowest level of reportable concentration for the method and the analyte.

Resource Conservation and Recovery Act (RCRA) - The enabling legislation under 42 USC 321 *et seq.* (1976) that gives EPA the authority to control hazardous waste.

Safe Drinking Water Act (SDWA) - The enabling legislation, 42 USC 300f *et seq.* (1974), which requires the USEPA to protect the quality of drinking water in the U.S. by setting maximum allowable contaminant levels, monitoring, and enforcing violations.

Sample - A portion of material to be analyzed.

Sample Matrix Spike - An aliquot of a sample to which known quantities of specific compounds are added, and which is carried through the entire analytical process to determine the effect of the matrix on the methods recovery efficiency.

Sample Matrix Spike Duplicate - A second aliquot of a sample to which known quantities of specific compounds are added, and which is carried through the entire analytical process to determine the effect of the matrix on the methods recovery efficiency and the precision of the method.

Spiked Sample - See Sample Matrix Spike.

Standardization - See Calibration.

Standard Matrix Spike - An aliquot of blank matrix to which known quantities of specific compounds are added, and which is carried through the entire analytical process to determine the method's recovery efficiency.

Standard Operating Procedure - A written document which details the method of an operation, analysis or action whose techniques and procedures are thoroughly prescribed and which is accepted as the method for performing certain routine or repetitive tasks.

Trip Blank - One type of Field Blank. An aliquot of analyte-free water or solvent transported to the field in a sealed container and returned to the laboratory with the sample containers.

APPENDIX A
Laboratory Certifications

Montana State Drinking Water Certificate
Recent EPA WS and WP Study Results

MONTANA DEPARTMENT OF
PUBLIC HEALTH AND HUMAN SERVICES
ENVIRONMENTAL LABORATORY

Recognizes that

Energy Laboratories, Inc. - Helena

of

Helena MT

has completed the requirements for Montana certification and is licensed to analyze Montana's Public Drinking Water Supplies. See attached listing.

Montana Certification Number:	**CERT0079**

	Chemistry	Microbiology
EXPIRATION DATE:	**03/01/2008**	**03/01/2009**

Judy Halm

Judy Halm
Laboratory Certification Officer
DPHHS Environmental Laboratory

Date Issued: 8/22/2006

DEPARTMENT OF
PUBLIC HEALTH AND HUMAN SERVICES
STATE OF MONTANA

ENVIRONMENTAL LABORATORY

CERTIFIED DRINKING WATER PARAMETERS

ENERGY LABORATORY, INC.
3161 East Lyndale
Helena, MT 59604
CERT0079
Chemistry Expiration 3/1/2008
Microbiology Expiration 3/1/2009

MICROBIOLOGY PARAMETERS

PARAMETER	METHOD
Total Coliforms	SM 9223 B
E. coli	SM 9223 B

INORGANIC PARAMETERS

PARAMETER	METHOD
Aluminum	EPA 200.7
Arsenic	EPA 200.7
Barium	EPA 200.7
Beryllium	EPA 200.7
Cadmium	EPA 200.7
Chromium	EPA 200.7
Copper	EPA 200.7
Nickel	EPA 200.7
Fluoride	SM 4500-F-C
Nitrate	EPA 353.2
Nitrite	EPA 353.2
Total Dissolved Solids	SM 2540 C
Turbidity	EPA 180.1
Conductivity	SM 2510 B
Ortho-Phosphate	EPA 365.1
pH	EPA 150.1
Sulfate	EPA 300.0
Alkalinity	SM 2320 B

VOLATILE ORGANIC COMPOUNDS

PARAMETER	METHOD
Bromodicloromethane	EPA 524.2
Bromoform	EPA 524.2
Chlorodibromethane	EPA 524.2
Chloroform	EPA 524.2
Total Trihalomethanes	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethylene	EPA 524.2
1,2 Dichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2-Dichloroethane	EPA 524.2

1,2-Dichloropropane	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
Benzene	EPA 524.2
Carbon Tetrachloride	EPA 524.2
Chlorobenzene	EPA 524.2
cis-1,2-Dichloroethylene	EPA 524.2
Dichloromethane	EPA 524.2
Ethylbenzene	EPA 524.2
Styrene	EPA 524.2
Tetrachloroethylene	EPA 524.2
Toluene	EPA 524.2
trans-1,2-Dichloroethylene	EPA 524.2
Trichloroethylene	EPA 524.2
Vinyl Chloride	EPA 524.2
Xylenes	EPA 524.2
1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1-Dichloropropane	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichlorobenzene	EPA 524.2
1,2,3-Trichloropane	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichlorobenzene	EPA 524.2
Bromobenzene	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Chloroethane	EPA 524.2
Cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Fluorotrichloromethane	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
Naphthalene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
o-Chlorotoluene	EPA 524.2
p-Chlorotoluene	EPA 524.2
p-Isopropyltoluene	EPA 524.2
sec-Butylbenzene	EPA 524.2
tert-Butylbenzene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2

PERFORMANCE EVALUATION

First Choice for Quality | RT

Quarterly Study
WS06-2
WSCHEM

12-Apr-2006 through 26-May-2006

RT13
RTC Lat

MT00
US EPA Lat

Energy Labs
Jon Hager
E 3161 Lyndale Avenue
Helena MT 59601

Thank you for participating in study WS06-2. Additional information about this study may be found online at www.rt-corp.cor you have any questions or comments about this study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200393-0
This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset
WS06-2

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode **MT00945**
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Minerals

Analysis
EPA 353.2
Other
Method Number 100E
Technology Cc

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrite as N [1, 3, 4] 1840 / PEI-011 - Lot 011161	0.96 mg/L	0.785 to 1.03	1.05	26 / 38	ACCEPTABL

Analysis
EPA 365.1
Other
Method Number 100E
Technology Cc

	Result Units	Accept / Warn	Z	Rank	Evaluation
Orthophosphate as P [1, 3, 4] 1870 / PEI-011 - Lot 011161	2.19 mg/L	1.88 to 2.45	0.20	3 / 28	ACCEPTABL

Analysis
SM 18/19/20thED 4500 F-C
Other
Method Number 2001
Technology Cc

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fluoride [1, 3, 4] 1730 / PEI-011 Lot: 011161	1.8 mg/L	1.53 to 2.62	-1.01	23 / 30	ACCEPTABL

Analysis
SM 18th ED 4500 Cl B
Other
Method Number 2001
Technology Cc

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chloride [1, 4] 1575 / PEI-010-12 - Lot 011224/5	98 mg/L	88.6 to 105	0.19	5 / 24	ACCEPTABL

Analysis
EPA 353.2
Colorimetric
Method Number 1006
Technology Code Cl

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrate as N [1, 3, 4] 1810 / PEI-011 - Lot 011161	7.62 mg/L	6.70 to 8.19	0.46	16 / 40	ACCEPTABL
Nitrate+nitrite as N [1, 4] 1820 / PEI-011 - Lot 011161	8.58 mg/L	7.53 to 8.88	1.12	13 / 23	ACCEPTABL

Analysis
SM 18/19/20thED 4500 F-C
Ion Selective Electrode
Method Number 2001
Technology Cc

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fluoride [1, 3, 4] 1730 / PEI-010-12 - Lot 011224/5	3.5 mg/L	3.32 to 4.06	-1.34	11 / 13	ACCEPTABL

Miscellaneous Analytes

Analysis
EPA 150.1
Other
Method Number 1000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
pH [1, 3, 4] 1900 / PEI-010-3 - Lot 011188	7.6 Units	7.40 to 7.90	0.00	1 / 21	ACCEPTABL

Miscellaneous Analytes (continued)

Analysis
EPA 180.1
Other
Method Number 1001
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Turbidity [1, 3, 4] 2065 / PEI-014 - Lot 011162	2.92 NTU	2.63 to 3.83	-1.15	22 / 31	ACCEPTABL

Analysis
SM 18/19/20thED 2320 B
Other
Method Number 200C
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Alkalinity as CaCO3 [1, 3, 4] 1605 / PEI-010-12 - Lot 011224/5	35 mg/L	29.8 to 38.8	0.98	17 / 28	ACCEPTABL

Analysis
SM 18/19/20thED 2340 B
Other
Method Number 200C
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Hardness (calc.) 1760 / PEI-010-12 - Lot 011224/5	138.861 mg/L	120 to 153	0.49	5 / 11	ACCEPTABL

Analysis
SM 18/19/20thED 2510 B
Other
Method Number 200C
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Conductivity [1, 4] 1510 / PEI-010-12 - Lot 011224/5	548 umhos/cm	475 to 581	0.76	18 / 25	ACCEPTABL

Analysis
SM 18/19/20thED 2540 C
Other
Method Number 200C
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-filterable (TDS) [1, 3, 4] 1955 / PEI-010-12 - Lot 011224/5	287 mg/L	154 to 493 210 to 436	-0.64	16 / 28	ACCEPTABL

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry
Method Number 1001
Technology Code ICF

	Result Units	Accept / Warn	Z	Rank	Evaluation
Potassium, K [1, 4] 1125 / PEI-011 - Lot 011161	22.5 mg/L	20.9 to 27.9	-1.10	10 / 16	ACCEPTABL
Sodium, Na [1, 3, 4] 1155 / PEI-010-12 - Lot 011224/5	22.18 mg/L	20.0 to 24.9	-0.22	8 / 27	ACCEPTABL

Analysis
SM 18th ED 4500-SO4 E
Other
Method Number 99994
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Sulfate [1, 3, 4] 2000 / PEI-013 - Lot 011186	166 mg/L	146 to 184	0.12	8 / 18	ACCEPTABL

Analysis
SM 18th ED 4500-SO4 E
OTHER
Method Number 99994
Technology Code O

	Result Units	Accept / Warn	Z	Rank	Evaluation
Sulfate [1, 3, 4] 2000 / PEI-010-12 Lot 011224/5	45 mg/L	39.7 to 51.9	-0.25	8 / 22	ACCEPTABL

Regulated VOCs

Analysis
EPA 502.2
Other
Method Number 1008
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Toluene [1, 3, 4] 5140 / PEO-007-2 - Lot 011118	8.6 µg/L	5.60 to 13.1	-0.96	15 / 20	ACCEPTABL
Xylene, total [1, 3, 4] 5280 / PEO-007-2 - Lot 011118	46 µg/L	38.2 to 67.4	-0.34	5 / 19	ACCEPTABL

Regulated VOCs (continued)

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry

Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Benzene [1, 3, 4] 4375 / PEO-007-2 - Lot 011118	17.1 µg/L	13.2 to 19.8	0.42	9 / 20	ACCEPTABL
Carbon tetrachloride [1, 3, 4] 4455 / PEO-007-1 - Lot 011117	5.4 µg/L	3.25 to 7.59	-0.02	1 / 20	ACCEPTABL
Chlorobenzene [1, 3, 4] 4475 / PEO-007-1 - Lot 011117	5.08 µg/L	2.90 to 6.78	0.61	9 / 20	ACCEPTABL
1,2-Dichlorobenzene [1, 3, 4] 4610 / PEO-007-2 - Lot 011118	16.1 µg/L	12.9 to 19.3	0.00	1 / 19	ACCEPTABL
1,4-Dichlorobenzene [1, 3, 4] 4520 / PEO-007-2 - Lot 011118	18 µg/L	14.8 to 22.2	-0.29	5 / 20	ACCEPTABL
1,2-Dichloroethane [1, 3, 4] 4635 / PEO-007-1 - Lot 011117	7.8 µg/L	4.36 to 10.2	0.79	13 / 20	ACCEPTABL
1,1-Dichloroethylene [1, 3, 4] 4640 / PEO-007-1 - Lot 011117	13.5 µg/L	11.8 to 17.9	-0.83	12 / 20	ACCEPTABL
cis-1,2-Dichloroethylene [1, 3, 4] 4645 / PEO-007-1 - Lot 011117	27 µg/L	22.7 to 34.1	-0.51	10 / 20	ACCEPTABL
1,2-Dichloropropane [1, 3, 4] 4655 / PEO-007-1 - Lot 011117	10 µg/L	5.85 to 13.6	0.32	4 / 19	ACCEPTABL
trans-1,2-Dichloroethylene [1, 3, 4] 4700 / PEO-007-1 - Lot 011117	25.3 µg/L	21.5 to 32.3	-0.52	12 / 20	ACCEPTABL
Ethylbenzene [1, 3, 4] 4765 / PEO-007-2 - Lot 011118	4.0 µg/L	2.33 to 5.49	0.26	5 / 19	ACCEPTABL
Methylene chloride (Dichloromethane) [1, 3, 4] 4975 / PEO-007-1 - Lot 011117	9.2 µg/L	5.83 to 13.1	-0.20	5 / 19	ACCEPTABL
Styrene [1, 3, 4] 5100 / PEO-007-1 - Lot 011117	8.6 µg/L	4.87 to 11.4	0.58	9 / 19	ACCEPTABL
Tetrachloroethylene (Perchloroethylene) [1, 3, 4] 5115 / PEO-007-1 Lot 011117	16.3 µg/L	13.4 to 20.2	-0.29	9 / 20	ACCEPTABL
1,2,4-Trichlorobenzene [1, 3, 4] 5155 / PEO-007-1 - Lot 011117	3.5 µg/L	2.06 to 4.80	0.15	3 / 19	ACCEPTABL
1,1,1-Trichloroethane [1, 3, 4] 5160 / PEO-007-1 - Lot 011117	8.9 µg/L	5.71 to 13.3	-0.71	11 / 20	ACCEPTABL
1,1,2-Trichloroethane [1, 3, 4] 5165 / PEO-007-1 - Lot 011117	18.8 µg/L	13.8 to 20.8	1.05	13 / 19	ACCEPTABL
Trichloroethene (Trichloroethylene) [1, 3, 4] 5170 / PEO-007-1 Lot 011117	12.0 µg/L	10.3 to 15.5	-0.73	9 / 20	ACCEPTABL
Vinyl chloride [1, 3, 4] 5235 / PEO-007-1 Lot 011117	0.87 µg/L	0.894 to 2.09	-3.04	17 / 20	NOT ACCEPTA

Group Analysis Summary
Acceptable 18 / 19
Score 94.7% - (Acceptable)

Trace Metals

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 1001
Technology Code ICF

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aluminum, Al [1, 4] 1000 / PEI-308-1 - Lot 011192	2011 µg/L	1760 to 2270	-0.11	1 / 6	ACCEPTABL
Antimony, Sb [1, 3, 4] 1005 / PEI-308-2 - Lot 011201	<10 µg/L	9.10 to 16.9		7 / 7	NOT ACCEPTA
Arsenic, As [1, 3, 4] 1010 / PEI-308-1 - Lot 011192	54.8 µg/L	31.4 to 58.4	1.47	8 / 9	ACCEPTABL
Barium, Ba [1, 3, 4] 1015 / PEI-308-2 - Lot 011201	688 µg/L	584 to 790	0.02	1 / 4	ACCEPTABL
Beryllium, Be [1, 3, 4] 1020 / PEI-308-1 - Lot 011192	12.0 µg/L	7.65 to 10.4	4.44	5 / 5	NOT ACCEPTA
Boron, B [1, 3, 4] 1025 / PEI-308-2 - Lot 011201	1239 µg/L	1120 to 1420	-0.42	1 / 4	ACCEPTABL

Trace Metals (continued)

(contir

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 1001
Technology Code ICI

	Result Units	Accept / Warn	Z	Rank	Evaluation
Cadmium, Cd [1, 3, 4] 1030 / PEI-308-1 Lot 011192	6.2 µg/L	3.15 to 4.73	5.74	6 / 6	NOT ACCEPTA
Calcium, Ca [1, 4] 1035 / PEI-010-12 - Lot 011224/5	50.7 mg/L	43.8 to 54.7	0.54	15 / 27	ACCEPTABL
Chromium, Cr (total) [1, 3, 4] 1040 / PEI-308-1 - Lot 011192	29.4 µg/L	24.1 to 32.5	0.52	1 / 6	ACCEPTABL
Copper, Cu [1, 3, 4] 1055 / PEI-308-1 Lot 011192	259.9 µg/L	257 to 314	-1.76	5 / 6	ACCEPTABL
Iron, Fe [1, 4] 1070 / PEI-308-1 Lot 011192	210.6 µg/L	221 to 299	-2.51	4 / 4	NOT ACCEPTA
Lead, Pb [1, 3, 4] 1075 / PEI-308-1 Lot 011192	83.9 µg/L	54.1 to 100	0.57	6 / 7	ACCEPTABL
Magnesium, Mg [1, 4] 1085 / PEI-010-12 - Lot 011224/5	2.978 mg/L	2.87 to 3.72	-1.51	17 / 20	ACCEPTABL
Magnesium, Mg [1, 4] 1085 / PEI-308-2 - Lot 011201	2924 µg/L	2780 to 3630	-1.32	2 / 3	ACCEPTABL
Manganese, Mn [1, 3, 4] 1090 / PEI-308-1 Lot 011192	162.2 µg/L	108 to 170	1.48	6 / 6	ACCEPTABL
Molybdenum, Mo [1, 3, 4] 1100 / PEI-308-2 Lot 011201	29 µg/L	25.2 to 34.2	-0.31	3 / 4	ACCEPTABL
Nickel, Ni [1, 3, 4] 1105 / PEI-308-1 - Lot 011192	105.1 µg/L	90.1 to 122	-0.11	3 / 6	ACCEPTABL
Potassium, K [1, 4] 1125 / PEI-010-12 - Lot 011224/5	28.72 mg/L	28.6 to 37.4	-1.93	17 / 17	ACCEPTABL
Selenium, Se [1, 3, 4] 1140 / PEI-308-1 - Lot 011192	102.6 µg/L	72.7 to 109	1.29	5 / 8	ACCEPTABL
Silver, Ag [1, 4] 1150 / PEI-308-2 - Lot 011201	88.7 µg/L	88.6 to 111	-1.66	4 / 4	ACCEPTABL
Thallium, Tl [1, 3, 4] 1165 / PEI-308-2 - Lot 011201	<10 µg/L	2.90 to 5.38		2 / 2	NOT ACCEPTA
Vanadium, V [1, 4] 1185 / PEI-308-2 - Lot 011201	715 µg/L	662 to 809	-0.54	2 / 4	ACCEPTABL
Zinc, Zn [1, 3, 4] 1190 / PEI-308-1 - Lot 011192	749 µg/L	672 to 822	0.05	1 / 6	ACCEPTABL

Trihalomethanes

Analysis
EPA 524.2
Other

Method Number 1008
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Bromodichloromethane [1, 3, 4] 4395 / PEO-002 - Lot 011115	12.1 µg/L	9.84 to 14.8	-0.16	2 / 20	ACCEPTABL
Bromoform [1, 3, 4] 4400 / PEO-002 - Lot 011115	46.5 µg/L	31.6 to 47.4	1.77	16 / 20	ACCEPTABL
Chloroform [1, 3, 4] 4505 / PEO-002 - Lot 011115	22 µg/L	19.3 to 28.4	-0.72	12 / 20	ACCEPTABL
Dibromochloromethane [1, 3, 4] 4575 / PEO-002 - Lot 011115	32 µg/L	20.8 to 38.8 23.8 to 35.6	0.77	12 / 20	ACCEPTABL
Total trihalomethanes [1, 3, 4] 5205 / PEO-002 - Lot 011115	112.6 µg/L	73.5 to 137 84.9 to 126	0.72	14 / 20	ACCEPTABL

Group Analysis Summary

Acceptable 5 / 5
Score 100.0% - **(Acceptable)**

Analysis
EPA 524.2
Gas Chromatography Mass Spectrometry

Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Bromodichloromethane [1, 3, 4] 4395 / PEO-007-3A Lot C111144	<0.5 µg/L	0.0 to 0.0		/ 1	ACCEPTABL

Trihalomethanes (continued)

(contir

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry
Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Bromoform [1, 3, 4] 4400 / PEO-007-3A - Lot 011144	<0.5 µg/L	0.0 to 0.0		/ 2	ACCEPTABL
Chloroform [1, 3, 4] 4505 / PEO-007-3A - Lot 011144	<0.5 µg/L	0.0 to 0.0		/ 1	ACCEPTABL
Dibromochloromethane [1, 3, 4] 4575 / PEO-007-3A - Lot 011144	<0.5 µg/L	0.0 to 0.0		/ 1	ACCEPTABL

Group Analysis Summary
Acceptable 4 / 4
Score 100.0% (Acceptable)

Unregulated VOCs

Analysis
EPA 502.2
Other
Method Number 1008
Technology Cc

	Result Units	Accept / Warn	Z	Rank	Evaluation
Methyl tert-butyl ether (MTBE) [1, 4] 5000 / PEO-007-2 - Lot 011118	8.6 µg/L	4.77 to 11.1	0.97	10 / 14	ACCEPTABL
m+p-Xylene [4] 5240 / PEO-007-2 - Lot 011118	31 µg/L	29.4 to 44.0	-1.68	16 / 17	ACCEPTABL
o-Xylene [4] 5250 / PEO-007-2 Lot 011118	15 µg/L	11.5 to 17.4	0.35	5 / 17	ACCEPTABL

Analysis
EPA 524.2
Other
Method Number 1008
Technology Cc

	Result Units	Accept / Warn	Z	Rank	Evaluation
Naphthalene [1, 4] 5005 / PEO-007-2 Lot 011118	32.7 µg/L	17.5 to 40.9	0.79	10 / 18	ACCEPTABL
1,2,4-Trimethylbenzene [1, 4] 5210 / PEO-007-2 - Lot 011118	5.6 µg/L	3.55 to 8.27	-0.38	8 / 17	ACCEPTABL
1,3,5-Trimethylbenzene [1, 4] 5215 / PEO-007-2 Lot 011118	18 µg/L	15.5 to 33.3	-0.66	8 / 17	ACCEPTABL

Analysis
EPA 524.2
Gas Chromatography Mass Spectrometry
Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Bromobenzene [1, 3, 4] 4385 / PEO-007-3B - Lot C11145	5.13 µg/L	3.93 to 9.17	-1.84	16 / 16	ACCEPTABL
Bromochloromethane [1, 3, 4] 4390 / PEO-007-3B Lot 011145	25 µg/L	25.3 to 37.9	-1.42	14 / 16	NOT ACCEPTA
n-Butylbenzene [1, 3, 4] 4435 / PEO-007-3B - Lot C11145	44 µg/L	35.6 to 53.4	-0.07	2 / 16	ACCEPTABL
sec-Butylbenzene [1, 3, 4] 4440 / PEO-007-3B Lot 011145	5.7 µg/L	3.07 to 7.17	1.03	11 / 16	ACCEPTABL
tert-Butylbenzene [1, 3, 4] 4445 / PEO-007-3B Lot 011145	17.6 µg/L	15.0 to 22.6	-0.59	8 / 16	ACCEPTABL
Chloroethane [1, 3, 4] 4485 / PEO-007-3A - Lot 011144	34 µg/L	22.9 to 53.3	-0.54	4 / 14	ACCEPTABL
2-Chlorotoluene [1, 3, 4] 4535 / PEO-007-3B Lot 011145	20.4 µg/L	18.5 to 27.7	-1.01	12 / 16	ACCEPTABL
4-Chlorotoluene [1, 3, 4] 4540 / PEO-007-3B - Lot 011145	26.1 µg/L	22.6 to 33.8	-0.74	8 / 16	ACCEPTABL
Dibromomethane [1, 3, 4] 4595 / PEO-007-3B Lot 011145	39.4 µg/L	33.4 to 50.0	-0.54	7 / 16	ACCEPTABL
1,3-Dichlorobenzene [1, 3, 4] 4515 / PEO-007-2 Lot 011118	35 µg/L	27.6 to 41.4	0.13	3 / 17	ACCEPTABL
1,3-Dichlorobenzene [1, 3, 4] 4615 / PEO-007-3A Lot 011144	24 µg/L	19.5 to 29.3	-0.18	2 / 16	ACCEPTABL
1,1-Dichloroethane [1, 3, 4] 4630 / PEO-007-3A Lot 011144	17.3 µg/L	14.2 to 21.4	0.26	3 / 17	ACCEPTABL

Unregulated VOCs (continued)

(contir

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry

Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,3-Dichloropropane [1, 3, 4] 4660 / PEO-007-3B - Lot C11145	39 µg/L	31.9 to 47.9	-0.30	8 / 16	ACCEPTABL
2,2-Dichloropropane [1, 3, 4] 4665 / PEO-007-3B Lot C11145	46 µg/L	37.9 to 56.9	-0.22	2 / 16	ACCEPTABL
1,1-Dichloropropene [1, 3, 4] 4670 / PEO-007-3B Lot C11145	<0.5 µg/L	0.0 to 0.0		/ 1	ACCEPTABL
cis-1,3-Dichloropropene [1, 3, 4] 4680 / PEO-007-3A Lot C11144	6.2 µg/L	3.53 to 8.25	0.70	7 / 16	ACCEPTABL
trans-1,3-Dichloropropene [1, 3, 4] 4685 / PEO-007-3A - Lot C11144	44 µg/L	32.1 to 48.1	1.06	13 / 16	ACCEPTABL
Hexachlorobutadiene [1, 3, 4] 4835 / PEO-007-3B Lot C11145	16 µg/L	14.9 to 22.3	-1.14	14 / 16	ACCEPTABL
Isopropylbenzene [1, 3, 4] 4900 / PEO-007-3B - Lot C11145	42.6 µg/L	36.7 to 55.1	-0.65	10 / 16	ACCEPTABL
4-Isopropyltoluene [1, 3, 4] 4901 / PEO-007-3B Lot C11145	35 µg/L	28.5 to 42.7	-0.16	4 / 16	ACCEPTABL
Methyl bromide (Bromomethane) [1, 3, 4] 4950 / PEO-007-3A - Lot C11144	28 µg/L	22.6 to 52.8	-2.32	12 / 15	ACCEPTABL
Methyl chloride (Chloromethane) [1, 3, 4] 4960 / PEO-007-3A - Lot C11144	18 µg/L	12.1 to 28.3	-0.80	5 / 16	ACCEPTABL
n-Propylbenzene [1, 3, 4] 5090 / PEO-007-3B Lot C11145	38 µg/L	34.7 to 52.1	-1.06	12 / 16	ACCEPTABL
1,1,1,2-Tetrachloroethane [1, 3, 4] 5105 / PEO-007-3B Lot C11145	28 µg/L	19.8 to 29.8	1.58	14 / 16	ACCEPTABL
1,1,2,2-Tetrachloroethane [1, 3, 4] 5110 / PEO-007-3A - Lot C11144	13 µg/L	11.2 to 16.8	-1.01	10 / 16	ACCEPTABL
1,2,3-Trichlorobenzene [1, 3, 4] 5150 / PEO-007-3B - Lot C11145	19 µg/L	15.1 to 22.7	0.06	1 / 16	ACCEPTABL
Trichlorofluoromethane [1, 3, 4] 5175 / PEO-007-3A - Lot C11144	22 µg/L	16.1 to 35.1	-0.78	5 / 15	ACCEPTABL
1,2,3-Trichloropropane [1, 3, 4] 5180 / PEO-007-3B Lot C11145	10 µg/L	6.06 to 14.1	-0.08	2 / 15	ACCEPTABL
1,2,4-Trimethylbenzene [1, 3, 4] 5210 / PEO-007-3B Lot C11145	20 µg/L	15.7 to 23.5	0.22	1 / 16	ACCEPTABL
1,3,5-Trimethylbenzene [1, 3, 4] 5215 / PEO-007-3B - Lot C11145	25 µg/L	16.8 to 28.2	0.97	10 / 16	ACCEPTABL

Group Analysis Summary

Acceptable 29 / 30
Score 96.7% - **(Acceptable)**

Sample Information

WS Minerals - Corrosivity/Sodium
PEI-010-12

Study Lot 011
Mfg Lot 011

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Calcium, Ca 1035 Trace Metals	mg/L	49.23	2.73	49.60	2.63	49.06	2.28	49
Magnesium, Mg 1085 Trace Metals	mg/L	3.38	0.21	4.71	6.81	3.17	0.19	3.2
Potassium, K 1125 Trace Metals	mg/L	32.97	2.20	32.56	1.72	32.66	1.84	33
Sodium, Na 1155 Miscellaneous Analytes	mg/L	22.44	1.21	22.60	1.03	22.66	1.06	22.
Alkalinity as CaCO3 1505 Miscellaneous Analytes	mg/L	33.30	1.75	35.64	6.78	34.30	1.72	32.
Chloride 1575 Minerals	mg/L	97.19	4.32	97.57	3.67	97.21	3.46	97
Conductivity 1610 Miscellaneous Analytes	µmhos/cm	528.90	26.40	531.04	22.24	527.88	16.70	52
Fluoride 1730 Minerals	mg/L	3.69	0.14	3.56	0.78	3.69	0.14	3.6
Hardness (calc.) 1760 Miscellaneous Analytes	mg/L	136.00	5.84	136.84	7.50	135.13	5.84	13
Residue-filterable (TDS) 1955 Miscellaneous Analytes	mg/L	323.38	56.57	325.42	40.44	323.38	39.45	32
Sulfate 2000 Miscellaneous Analytes	mg/L	45.77	3.05	45.82	2.95	46.22	2.01	46.

pH - WS
PEI-010-3

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
pH 1800 Miscellaneous Analytes	Units	7.60	0.10	7.58	0.06	7.59	0.05	7.6

Anions - WS
PEI-011

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Potassium, K 1125 Miscellaneous Analytes	mg/L	24.40	1.73	24.41	2.42	24.48	2.80	24.
Fluoride 1730 Minerals	mg/L	2.08	0.27	2.10	0.26	2.08	0.27	2.0
Nitrate as N 1810 Minerals	mg/L	7.45	0.37	7.28	1.23	7.51	0.35	7.4
Nitrate+nitrite as N 1820 Minerals	mg/L	8.20	0.34	8.39	0.41	8.39	0.49	8.3
Nitrite as N 1840 Minerals	mg/L	0.90	0.06	0.90	0.09	0.90	0.08	0.9
Orthophosphate as P 1870 Minerals	mg/L	2.18	0.14	2.14	0.29	2.15	0.14	2.1

TOC - WS
PEI-013

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravin
Sulfate 2000 Miscellaneous Analytes	mg/L	164.83	9.62	162.90	9.11	163.32	4.86	16

Turbidity - WS
PEI-014

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Turbidity 2055 Miscellaneous Analytes	NTU	3.23	0.27	3.19	0.36	3.18	0.31	3.1

Trace Metals (Whole Volume) - WS - Sample 1
PEI-308-1

Study Lot 01
Mfg Lot 01

Trace Metals (Whole Volume) - WS - Sample 1

PEI-308-1

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Aluminum, Al 1000 Trace Metals	µg/L	2,024.89	124.40	2,096.80	185.18	1,978.58	53.65	206
Arsenic, As 1010 Trace Metals	µg/L	44.80	6.74	43.22	6.82	43.05	7.70	44.
Beryllium, Be 1020 Trace Metals	µg/L	9.00	0.68	9.78	1.27	9.21	0.40	9.0
Cadmium, Cd 1030 Trace Metals	µg/L	3.94	0.39	4.43	1.05	4.23	0.79	3.9
Chromium, Cr (total) 1040 Trace Metals	µg/L	28.30	2.12	28.65	1.98	28.60	2.50	28.
Copper, Cu 1055 Trace Metals	µg/L	285.00	14.25	281.32	22.74	278.85	21.45	28
Iron, Fe 1070 Trace Metals	µg/L	259.70	19.59	257.90	32.78	265.75	22.61	26
Lead, Pb 1075 Trace Metals	µg/L	77.30	11.60	79.77	6.03	80.94	3.10	77.
Manganese, Mn 1090 Trace Metals	µg/L	139.04	15.70	139.70	13.73	139.04	15.70	13
Nickel, Ni 1105 Trace Metals	µg/L	108.00	7.95	108.65	7.35	108.49	9.31	10
Selenium, Se 1140 Trace Metals	µg/L	90.90	9.09	93.29	10.25	94.02	11.52	90.
Zinc, Zn 1190 Trace Metals	µg/L	747.00	37.35	765.83	34.35	764.65	45.21	74

Trace Metals (Whole Volume) - WS - Sample 2

PEI-308-2

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Antimony, Sb 1005 Trace Metals	µg/L	13.00	1.95					13
Barium, Ba 1015 Trace Metals	µg/L	687.00	51.53	706.75	14.38	706.99	18.47	68
Boron, B 1025 Trace Metals	µg/L	1,270.31	73.70	1,244.75	59.19	1,231.15	41.73	128
Magnesium, Mg 1085 Trace Metals	µg/L	3,205.34	212.84					316
Molybdenum, Mo 1100 Trace Metals	µg/L	29.70	2.26	28.93	0.84	29.21	0.35	30.
Silver, Ag 1160 Trace Metals	µg/L	98.64	5.99	92.60	3.52	92.53	4.43	99
Thallium, Tl 1165 Trace Metals	µg/L	4.14	0.62					4.1
Vanadium, V 1185 Trace Metals	µg/L	735.00	36.75	727.00	40.41	726.14	50.84	73

Trihalomethanes - WS

PEO-002

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Bromodichloromethane 4395 Trihalomethanes	µg/L	12.30	1.23	13.02	1.28	12.97	1.35	12
Bromoform 4400 Trihalomethanes	µg/L	39.50	3.95	42.40	4.95	42.18	5.63	39.
Chloroform 4505 Trihalomethanes	µg/L	23.70	2.37	24.24	1.80	24.26	1.96	23.
Dibromochloromethane 4575 Trihalomethanes	µg/L	29.70	2.97	31.51	2.75	31.48	3.02	29.
Total trihalomethanes 5205 Trihalomethanes	µg/L	105.00	10.50	111.03	7.71	110.25	7.82	10

Regulated VOC's 1

PEO-007-1

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Carbon tetrachloride 4455 Regulated VOCs	µg/L	5.42	1.08	5.48	0.59	5.46	0.63	5.4

Regulated VOC's 1

PEO-007-1

Study Lot 01
Mfg Lot 01

(continued)

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Chlorobenzene 4476 Regulated VOCs	µg/L	4.84	0.39	4.89	0.36	4.86	0.39	4.8
1,2-Dichloroethane 4635 Regulated VOCs	µg/L	7.27	0.97	10.25	12.38	7.47	0.67	7.2
1,1-Dichloroethylene 4640 Regulated VOCs	µg/L	14.90	1.69	14.29	1.71	14.23	1.69	14.
cis-1,2-Dichloroethylene 4645 Regulated VOCs	µg/L	28.40	2.74	28.64	2.48	28.76	2.74	28.
1,2-Dichloropropane 4655 Regulated VOCs	µg/L	9.75	0.77	9.85	0.67	9.84	0.77	9.7
trans-1,2-Dichloroethylene 4700 Regulated VOCs	µg/L	26.90	3.10	26.73	2.76	26.75	3.10	26
Methylene chloride (Dichloromethane) 4975 Regulated VOCs	µg/L	9.38	0.90	9.40	1.24	9.24	0.90	9.3
Styrene 5100 Regulated VOCs	µg/L	8.11	0.84	8.15	0.78	8.18	0.84	8.1
Tetrachloroethylene (Perchloroethylene) 5115 Regulated VOCs	µg/L	16.80	1.74	15.98	1.88	16.83	1.74	16
1,2,4-Trichlorobenzene 5155 Regulated VOCs	µg/L	3.43	0.48	3.13	0.96	3.31	0.48	3.4
1,1,1-Trichloroethane 5160 Regulated VOCs	µg/L	9.51	0.85	9.57	0.80	9.60	0.85	9.5
1,1,2-Trichloroethane 5165 Regulated VOCs	µg/L	17.30	1.43	17.60	1.31	17.57	1.43	17.
Trichloroethene (Trichloroethylene) 5170 Regulated VOCs	µg/L	12.90	1.23	12.82	1.12	12.87	1.23	12.
Vinyl chloride 5235 Regulated VOCs	µg/L	1.49	0.20	1.03	0.31	1.08	0.20	1.4

Regulated VOC's 2 - WS

PEO-007-2

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Benzene 4375 Regulated VOCs	µg/L	16.50	1.42	16.03	1.38	16.14	1.42	16
1,2-Dichlorobenzene 4810 Regulated VOCs	µg/L	16.10	1.81	16.07	1.48	15.99	1.81	16.
1,3-Dichlorobenzene 4815 Unregulated VOCs	µg/L	34.50	3.85	35.11	3.94	34.75	3.85	34.
1,4-Dichlorobenzene 4820 Regulated VOCs	µg/L	18.50	1.75	18.52	2.32	18.06	1.75	18
Ethylbenzene 4785 Regulated VOCs	µg/L	3.88	0.45	3.99	0.42	4.01	0.45	3.8
Methyl tert-butyl ether (MTBE) 5030 Unregulated VOCs	µg/L	7.95	0.67	7.83	0.90	7.77	0.87	7.9
Naphthalene 5035 Unregulated VOCs	µg/L	29.20	4.40	26.77	4.99	27.31	4.40	29.
Toluene 5140 Regulated VOCs	µg/L	9.33	0.76	9.21	0.73	9.23	0.76	9.3
1,2,4-Trimethylbenzene 5210 Unregulated VOCs	µg/L	5.91	0.81	6.21	0.74	6.16	0.81	5.9
1,3,5-Trimethylbenzene 5215 Unregulated VOCs	µg/L	19.40	2.12	19.44	1.99	19.47	2.12	19
m+p-Xylene 5240 Unregulated VOCs	µg/L	36.70	3.39	33.70	3.07	33.72	3.39	36.
o-Xylene 5250 Unregulated VOCs	µg/L	14.50	1.43	14.78	1.30	14.76	1.43	14.
Xylene, total 5260 Regulated VOCs	µg/L	47.80	5.35	48.31	4.83	48.40	5.35	47.

Unregulated VOC's 1

PEO-007-3A

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Bromodichloromethane 4395 Trihalomethanes	µg/L	0.00	0.00					0.0
Bromoform 4400 Trihalomethanes	µg/L	0.00	0.00					0.0

Unregulated VOC's 1

PEO-007-3A

(continued)

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravim
Chloroethane 4485 Unregulated VOCs	µg/L	38.10	7.62	32.81	6.28	31.34	4.77	38.
Chloroform 4505 Trihalomethanes	µg/L	0.00	0.00					0.0
Dibromochloromethane 4575 Trihalomethanes	µg/L	0.00	0.00					0.0
1,3-Dichlorobenzene 4615 Unregulated VOCs	µg/L	24.40	2.25	25.41	2.94	24.81	2.25	24.
1,1-Dichloroethane 4630 Unregulated VOCs	µg/L	17.80	1.93	17.88	2.88	18.25	1.93	17.
cis-1,3-Dichloropropene 4680 Unregulated VOCs	µg/L	5.89	0.45	6.07	0.44	6.10	0.45	5.8
trans-1,3-Dichloropropene 4685 Unregulated VOCs	µg/L	40.10	3.67	40.24	3.90	40.21	3.67	40.
Methyl bromide (Bromomethane) 4950 Unregulated VOCs	µg/L	37.70	4.19	31.19	5.48	29.89	4.19	37.
Methyl chloride (Chloromethane) 4960 Unregulated VOCs	µg/L	20.20	2.76	18.87	4.00	17.27	2.76	20.
1,1,2,2-Tetrachloroethane 5110 Unregulated VOCs	µg/L	14.00	0.99	13.89	0.97	13.77	0.99	14.
Trichlorofluoromethane 5175 Unregulated VOCs	µg/L	25.10	3.99	22.52	4.38	21.78	3.99	25.

Unregulated VOC's 2

PEO-007-3B

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravim
Bromobenzene 4385 Unregulated VOCs	µg/L	6.55	0.77	6.54	0.69	6.56	0.77	6.5
Bromochloromethane 4390 Unregulated VOCs	µg/L	31.80	4.64	31.48	4.48	31.78	4.64	31.
n-Butylbenzene 4435 Unregulated VOCs	µg/L	44.50	6.83	42.61	7.24	43.23	6.83	44.
sec-Butylbenzene 4440 Unregulated VOCs	µg/L	5.12	0.68	5.43	0.50	5.42	0.56	5.1
tert-Butylbenzene 4445 Unregulated VOCs	µg/L	18.80	2.03	18.51	1.78	18.49	2.03	18.
2-Chlorotoluene 4535 Unregulated VOCs	µg/L	23.10	2.68	22.74	2.15	22.71	2.68	23.
4-Chlorotoluene 4540 Unregulated VOCs	µg/L	28.20	2.85	28.41	2.61	28.38	2.85	28.
Dibromomethane 4595 Unregulated VOCs	µg/L	41.70	4.29	41.49	3.97	41.23	4.29	41
1,3-Dichloropropane 4660 Unregulated VOCs	µg/L	39.90	2.98	41.12	3.16	41.04	2.98	39.
2,2-Dichloropropane 4665 Unregulated VOCs	µg/L	47.40	6.46	44.49	6.01	44.48	6.46	47.
1,1-Dichloropropene 4670 Unregulated VOCs	µg/L	0.00	0.00					0.0
Hexachlorobutadiene 4835 Unregulated VOCs	µg/L	18.60	2.29	19.09	2.18	18.92	2.29	18.
Isopropylbenzene 4900 Unregulated VOCs	µg/L	45.90	6.04	45.55	6.98	46.22	5.04	45.
4-Isopropyltoluene 4901 Unregulated VOCs	µg/L	36.50	3.75	36.14	4.27	36.00	3.75	35.
n-Propylbenzene 5090 Unregulated VOCs	µg/L	43.40	5.07	41.65	6.78	42.93	5.07	43.
1,1,1,2-Tetrachloroethane 5105 Unregulated VOCs	µg/L	24.80	2.03	24.89	2.20	24.62	2.03	24.
1,2,3-Trichlorobenzene 5150 Unregulated VOCs	µg/L	18.90	1.60	18.59	1.96	18.67	1.60	18.
1,2,3-Trichloropropane 5180 Unregulated VOCs	µg/L	10.10	1.19	10.83	1.33	10.67	1.19	10.
1,2,4-Trimethylbenzene 5210 Unregulated VOCs	µg/L	19.60	1.85	20.53	1.72	20.62	1.85	19.
1,3,5-Trimethylbenzene 5215 Unregulated VOCs	µg/L	23.50	1.55	24.05	1.82	23.96	1.55	23.

Program analyte accrediting footnotes

[1] NELAC
[2] EPA
[3] NVLAP
[4] A2LA
[5] NELAC Experimental

PERFORMANCE EVALUATION

First Choice for Quality | RTC

Quarterly Study
WS06-4
WSCHEM

18-Oct-2006 through 1-Dec-2006

RT13
RTC Lab

MT00
US EPA Lab

Energy Labs
Jon Hager
E 3161 Lyndale Avenue
Helena MT 59601

Thank you for participating in study WS06-4. Additional information about this study may be found online at www.rt-corp.con you have any questions or comments about this study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset
WS06-4

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately

Accrediting Labcode MT00945
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Minerals

Analysis
EPA 353.2
Other
Method Number 1006
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrite as N [1, 3, 4] 1840 / PEI-011 - Lot 011695	1.51 mg/L	1.26 to 1.70	0.33	14 / 43	Acceptable

Analysis
EPA 365.1
Other
Method Number 1006
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Orthophosphate as P [1, 3, 4] 1870 / PEI-011 - Lot 011695	4.75 mg/L	4.16 to 5.28	0.12	8 / 34	Acceptable

Analysis
SM 18/19/20thED 4500 F-C
Other
Method Number 2001
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fluoride [1, 3, 4] 1730 / PEI-011 Lot 011695	4.08 mg/L	3.16 to 5.39	-0.35	8 / 30	Acceptable

Analysis
SM 18th ED 4500 Cl B
Other
Method Number 2001
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chloride [1, 4] 1575 / PEI-010-12 - Lot 011701/7	99.97 mg/L	86.6 to 103	1.18	18 / 27	Acceptable

Analysis
EPA 353.2
Colorimetric
Method Number 1006
Technology Code Cl

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrate as N [1, 3, 4] 1810 / PEI-011 - Lot 011695	9.19 mg/L	7.09 to 10.1	0.76	25 / 42	Acceptable
Nitrate+nitrite as N [1, 4] 1820 / PEI-011 - Lot 011695	10.7 mg/L	8.65 to 11.4	1.00	21 / 30	Acceptable

Analysis
SM 18/19/20thED 4500 F-C
Ion Selective Electrode
Method Number 2001
Technology Cod

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fluoride [1, 3, 4] 1730 / PEI-010-12 - Lot 011701/7	1.88 mg/L	1.60 to 2.07	0.00	1 / 25	Acceptable

Miscellaneous Analytes

Analysis
EPA 150.1
Other
Method Number 1000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
pH [1, 3, 4] 1900 / PEI-010-3 - Lot 011670	7.91 Units	7.60 to 8.20	-0.90	15 / 24	Acceptable

Miscellaneous Analytes (continued)

Analysis
EPA 180 1
Other
Method Number 1001
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Turbidity 1, 3, 4 2055 / PEI-014 - Lot 011694	3.38 NTU	3.14 to 4.84	-1.20	20 / 32	Acceptable

Analysis
SM 18/19/20thED 2320 B
Other
Method Number 2000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Alkalinity as CaCO3 1, 3, 4 1605 / PEI-010-12 - Lot 011701/7	39.98 mg/L	35.2 to 43.2	0.31	4 / 27	Acceptable

Analysis
SM 18/19/20thED 2340 B
Other
Method Number 2000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Hardness (calc.) 1760 / PEI-010-12 - Lot 011701/7	144 mg/L	119 to 160	2.15	10 / 11	Acceptable

Analysis
SM 17/18/19/20thED 2510 B
Other
Method Number 2000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Specific conductance, Conductivity (25°C) 1, 4 1610 / PEI-010-12 - Lot 011701/7	510 µmhos/cm	475 to 581	-0.68	19 / 26	Acceptable

Analysis
SM 18/19/20thED 2540 C
Other
Method Number 2000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-filterable (TDS) 1, 3, 4 1955 / PEI-010-12 - Lot 011701/7	302.0 mg/L	195 to 401	0.08	8 / 25	Acceptable

Analysis
EPA 200.7
Atomic Emission Inductvely Coupled Plasma Spectrometry
Method Number 1001
Technology Code ICP

	Result Units	Accept / Warn	Z	Rank	Evaluation
Potassium, K 1, 4 1125 / PEI-011 - Lot 011695	25 mg/L	22.2 to 42.6	-1.46	18 / 20	Acceptable
Sodium, Na 1, 3, 4 1155 / PEI-010-12 - Lot 011701/7	21 mg/L	20.0 to 24.9	-1.19	24 / 31	Acceptable

Analysis
SM 18th ED 4500-SO4 E
Other
Method Number 99994
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Sulfate 1, 3, 4 2000 / PEI-013 - Lot 011663	115.92 mg/L	98.7 to 123	0.94	13 / 18	Acceptable

Analysis
SM 18th ED 4500-SO4 E
OTHER
Method Number 99994
Technology Code O

	Result Units	Accept / Warn	Z	Rank	Evaluation
Sulfate 1, 3, 4 2000 / PEI-010-12 - Lot 011701/7	49.96 mg/L	40.9 to 59.4	0.88	21 / 27	Acceptable

Regulated VOCs

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry
Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Benzene 1, 3, 4 4375 / PEO-007-2 - Lot 011493	3.1 µg/L	2.13 to 4.57	-1.28	13 / 18	Acceptable
Carbon tetrachloride 1, 3, 4 4455 / PEO-007-1 - Lot 011490	8.6 µg/L	5.74 to 13.4	-0.50	10 / 17	Acceptable

Regulated VOCs (continued)

(contir

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry

Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chlorobenzene [1, 3, 4] 4476 / PEO-007-1 Lot 011490	25 µg/L	21.8 to 32.8	-1.12	12 / 17	Acceptable
1,2-Dichlorobenzene [1, 3, 4] 4810 / PEO-007-2 Lot 011493	18 µg/L	14.9 to 22.3	-0.25	4 / 17	Acceptable
1,4-Dichlorobenzene [1, 3, 4] 4620 / PEO-007-2 - Lot 011493	17 µg/L	13.9 to 20.9	-0.18	3 / 18	Acceptable
1,2-Dichloroethane [1, 3, 4] 4635 / PEO-007-1 Lot 011490	9.8 µg/L	5.99 to 14.0	-0.31	6 / 17	Acceptable
1,1-Dichloroethylene [1, 3, 4] 4640 / PEO-007-1 Lot 011490	8.2 µg/L	5.67 to 13.2	-0.98	13 / 17	Acceptable
cis-1,2-Dichloroethylene [1, 3, 4] 4645 / PEO-007-1 Lot 011490	16 µg/L	13.1 to 19.7	-0.27	4 / 17	Acceptable
1,2-Dichloropropane [1, 3, 4] 4655 / PEO-007-1 - Lot 011490	11 µg/L	9.52 to 14.3	-0.88	9 / 18	Acceptable
trans-1,2-Dichloroethylene [1, 3, 4] 4700 / PEO-007-1 Lot 011490	22 µg/L	20.0 to 30.0	-1.38	12 / 17	Acceptable
Ethylbenzene [1, 3, 4] 4765 / PEO-007-2 Lot 011493	11 µg/L	8.88 to 13.3	-0.11	3 / 17	Acceptable
Methylene chloride (Dichloromethane) [1, 3, 4] 4975 / PEO-007-1 Lot 011490	14 µg/L	11.2 to 16.8	0.00	1 / 16	Acceptable
Styrene [1, 3, 4] 5100 / PEO-007-1 Lot 011490	8.7 µg/L	5.38 to 12.5	-0.24	2 / 16	Acceptable
Tetrachloroethylene (Perchloroethylene) [1, 3, 4] 5115 / PEO-007-1 Lot 011490	3.0 µg/L	1.86 to 4.31	-0.34	5 / 17	Acceptable
Toluene [1, 3, 4] 5140 / PEO-007-2 Lot 011493	9.4 µg/L	5.88 to 13.7	-0.34	4 / 18	Acceptable
1,2,4-Trichlorobenzene [1, 3, 4] 5155 / PEO-007-1 Lot 011490	9.3 µg/L	5.84 to 13.6	-0.43	5 / 16	Acceptable
1,1,1-Trichloroethane [1, 3, 4] 5160 / PEO-007-1 Lot 011490	12 µg/L	10.0 to 15.0	-0.44	5 / 16	Acceptable
1,1,2-Trichloroethane [1, 3, 4] 5165 / PEO-007-1 Lot 011490	18 µg/L	15.0 to 22.6	-0.52	5 / 16	Acceptable
Trichloroethene (Trichloroethylene) [1, 3, 4] 5170 / PEO-007-1 Lot 011490	14 µg/L	11.0 to 16.6	-0.13	11 / 17	Acceptable
Vinyl chloride [1, 3, 4] 5235 / PEO-007-1 Lot 011490	21 µg/L	14.4 to 33.6	-0.73	8 / 17	Acceptable
Xylene, total [1, 3, 4] 5260 / PEO-007-2 Lot 011493	26 µg/L	21.0 to 31.4	-0.08	1 / 17	Acceptable

Group Analysis Summary
Acceptable 21 / 21
Score 100.0% - (Acceptable)

Trace Metals

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 1001
Technology Code ICF

	Result Units	Accept / Warn	Z	Rank	Evaluation
Calcium, Ca [1, 4] 1035 / PEI-010-12 - Lot 011701/7	43 mg/L	35.5 to 44.6	1.30	27 / 32	Acceptable
Magnesium, Mg [1, 4] 1085 / PEI-010-12 - Lot 011701/7	9 mg/L	7.94 to 9.67	0.20	2 / 28	Acceptable
Potassium, K [1, 4] 1125 / PEI-010-12 - Lot 011701/7	28 mg/L	29.6 to 40.4	-2.57	25 / 27	Not Acceptat

Trihalomethanes

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry

Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation

Trihalomethanes (continued)

(conti

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry

Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Bromodichloromethane [1, 3, 4] 4395 / PEO-002 Lot 011482	13 µg/L	8.28 to 16.3	-0.29	4 / 15	Acceptable
Bromodichloromethane [1, 3, 4] 4395 / PEO-007-3A - Lot 011496	<0.5 µg/L	0.0 to 0.0		/ 1	Acceptable
Bromoform [1, 3, 4] 4400 / PEO-002 - Lot 011482	12 µg/L	7.08 to 16.5	0.08	2 / 15	Acceptable
Bromoform [1, 3, 4] 4400 / PEO-007-3A - Lot 011496	<0.5 µg/L	0.0 to 0.0		/ 1	Acceptable
Chloroform [1, 3, 4] 4505 / PEO-002 - Lot 011482	47 µg/L	34.7 to 52.1	0.83	8 / 15	Acceptable
Chloroform [1, 3, 4] 4505 / PEO-007-3A - Lot 011496	<0.5 µg/L	0.0 to 0.0		/ 1	Acceptable
Dibromochloromethane [1, 3, 4] 4575 / PEO-002 - Lot 011482	32 µg/L	21.4 to 49.6	-0.51	9 / 15	Acceptable
Dibromochloromethane [1, 3, 4] 4575 / PEO-007-3A - Lot 011496	<0.5 µg/L	0.0 to 0.0		/ 1	Acceptable
Total trihalomethanes [1, 3, 4] 5205 / PEO-002 - Lot 011482	104 µg/L	84.2 to 150	-0.14	1 / 15	Acceptable

Group Analysis Summary
Acceptable 9 / 9
Score 100.0% - (Acceptable)

Unregulated VOCs

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry

Method Number 1008
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Bromobenzene [1, 3, 4] 4385 / PEO-007-3B - Lot 011518	34 µg/L	29.8 to 44.6	-0.80	8 / 15	Acceptable
Bromochloromethane [1, 3, 4] 4390 / PEO-007-3B - Lot 011518	38 µg/L	33.0 to 49.6	-0.39	6 / 15	Acceptable
n-Butylbenzene [1, 3, 4] 4435 / PEO-007-3B - Lot 011518	22 µg/L	16.2 to 24.2	0.88	10 / 15	Acceptable
sec-Butylbenzene [1, 3, 4] 4440 / PEO-007-3B - Lot 011518	8.4 µg/L	4.14 to 9.66	-0.85	8 / 15	Acceptable
tert-Butylbenzene [1, 3, 4] 4445 / PEO-007-3B - Lot 011518	30 µg/L	26.9 to 40.3	-1.22	9 / 15	Acceptable
Chloroethane [1, 3, 4] 4485 / PEO-007-3A - Lot 011496	18 µg/L	12.0 to 26.0	-0.50	6 / 16	Acceptable
2-Chlorotoluene [1, 3, 4] 4535 / PEO-007-3B - Lot 011518	39 µg/L	32.3 to 48.5	-0.29	3 / 15	Acceptable
4-Chlorotoluene [1, 3, 4] 4540 / PEO-007-3B - Lot 011518	22 µg/L	20.6 to 30.8	+2.06	12 / 15	Acceptable
Dibromomethane [1, 3, 4] 4595 / PEO-007-3B - Lot 011518	39 µg/L	37.8 to 56.8	-1.34	12 / 15	Acceptable
1,3-Dichlorobenzene [1, 3, 4] 4615 / PEO-007-2 - Lot 011493	45 µg/L	36.6 to 55.0	-0.19	11 / 17	Acceptable
1,3-Dichlorobenzene [1, 3, 4] 4615 / PEO-007-3A - Lot 011496	17 µg/L	14.2 to 21.2	-0.32	3 / 16	Acceptable
Dichlorodifluoromethane [1, 3, 4] 4625 / PEO-007-3A - Lot 011496	<0.5 µg/L	0.0 to 0.0		/ 1	Acceptable
1,1-Dichloroethane [1, 3, 4] 4630 / PEO-007-3A - Lot 011496	5.7 µg/L	3.24 to 7.56	0.58	9 / 17	Acceptable
1,3-Dichloropropane [1, 3, 4] 4660 / PEO-007-3B - Lot 011518	24 µg/L	18.1 to 27.1	0.45	5 / 15	Acceptable
2,2-Dichloropropane [1, 3, 4] 4665 / PEO-007-3B - Lot 011518	29 µg/L	19.8 to 46.2	-0.72	8 / 15	Acceptable
1,1-Dichloropropene [1, 3, 4] 4670 / PEO-007-3B - Lot 011518	26 µg/L	23.2 to 34.8	-0.92	7 / 15	Acceptable

Unregulated VOCs (continued)

(contir

Analysis
EPA 524.2
Gas Chromatography - Mass Spectrometry

Method Number 100E
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
cis-1,3-Dichloropropene [1, 3, 4] 4680 / PEO-007-3A - Lot 011496	13 µg/L	11.4 to 17.0	-0.85	6 / 16	Acceptable
trans-1,3-Dichloropropene [1, 3, 4] 4685 / PEO-007-3A - Lot 011496	8.5 µg/L	5.44 to 12.7	-0.49	6 / 16	Acceptable
Hexachlorobutadiene [1, 3, 4] 4835 / PEO-007-3B - Lot 011518	29 µg/L	21.4 to 32.2	-0.57	6 / 15	Acceptable
Isopropylbenzene [1, 3, 4] 4900 / PEO-007-3B - Lot 011518	34 µg/L	30.0 to 45.0	-0.61	7 / 15	Acceptable
4-Isopropyltoluene [1, 3, 4] 4901 / PEO-007-3B - Lot 011518	9.2 µg/L	5.44 to 12.7	0.17	3 / 15	Acceptable
Methyl bromide (Bromomethane) [1, 3, 4] 4950 / PEO-007-3A - Lot 011496	36 µg/L	26.8 to 48.4	0.17	5 / 16	Acceptable
Methyl chloride (Chloromethane) [1, 3, 4] 4960 / PEO-007-3A - Lot 011496	33 µg/L	23.5 to 54.7	-1.11	12 / 17	Acceptable
Methyl tert-butyl ether (MTBE) [1, 4] 5000 / PEO-007-2 - Lot 011493	29.7 µg/L	18.6 to 43.4	-0.28	2 / 16	Acceptable
Naphthalene [1, 4] 5005 / PEO-007-2 - Lot 011493	10 µg/L	6.54 to 15.3	-0.50	5 / 17	Acceptable
n-Propylbenzene [1, 3, 4] 5090 / PEO-007-3B - Lot 011518	18 µg/L	14.3 to 21.5	0.05	1 / 15	Acceptable
1,1,1,2-Tetrachloroethane [1, 3, 4] 5105 / PEO-007-3B - Lot 011518	37 µg/L	28.0 to 42.0	0.35	5 / 15	Acceptable
1,1,2,2-Tetrachloroethane [1, 3, 4] 5110 / PEO-007-3A - Lot 011496	32 µg/L	29.0 to 43.4	-1.07	9 / 16	Acceptable
1,2,3-Trichlorobenzene [1, 3, 4] 5150 / PEO-007-3B - Lot 011518	22 µg/L	17.7 to 26.5	-0.03	2 / 15	Acceptable
Trichlorofluoromethane [1, 3, 4] 5175 / PEO-007-3A - Lot 011496	8.1 µg/L	5.20 to 12.1	-0.32	7 / 16	Acceptable
1,2,3-Trichloropropane [1, 3, 4] 5180 / PEO-007-3B - Lot 011518	8.7 µg/L	6.36 to 14.8	-1.86	12 / 15	Acceptable
1,2,4-Trimethylbenzene [1, 4] 5210 / PEO-007-2 - Lot 011493	14 µg/L	8.88 to 20.7	-0.66	8 / 16	Acceptable
1,2,4-Trimethylbenzene [1, 3, 4] 5210 / PEO-007-3B - Lot 011518	34 µg/L	31.8 to 47.8	-1.40	12 / 15	Acceptable
1,3,5-Trimethylbenzene [1, 4] 5215 / PEO-007-2 Lot 011493	9.8 µg/L	8.30 to 19.7	-0.56	5 / 16	Acceptable
1,3,5-Trimethylbenzene [1, 3, 4] 5215 / PEO-007-3B - Lot 011518	18 µg/L	16.4 to 24.6	-1.06	13 / 15	Acceptable
m+p-Xylene [4] 5240 / PEO-007-2 - Lot 011493	16 µg/L	12.9 to 19.3	-0.07	1 / 16	Acceptable
o-Xylene [4] 5250 / PEO-007-2 - Lot 011493	10 µg/L	8.08 to 12.1	-0.13	1 / 16	Acceptable

Group Analysis Summary

Acceptable 37 / 37
Score 100.0% - **(Acceptable)**

End of WSCHEM

Sample Information

WS Minerals - Corrosivity/Sodium
PEI-010-12

Study Lot 011
Mfg Lot 01170

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Calcium, Ca 1035 Trace Metals	mg/L	40.04	2.28	39.72	2.58	39.03	1.60	38
Magnesium, Mg 1085 Trace Metals	mg/L	8.91	0.48	8.99	0.63	8.80	0.31	8.8
Potassium, K 1125 Trace Metals	mg/L	34.99	2.71	35.00	3.48	34.99	2.71	36.
Sodium, Na 1155 Miscellaneous Analytes	mg/L	22.44	1.21	22.34	1.44	22.20	1.38	22.
Alkalinity as CaCO3 1505 Miscellaneous Analytes	mg/L	39.40	1.87	40.27	2.89	40.27	1.51	39.
Chloride 1575 Minerals	mg/L	94.99	4.23	98.13	6.04	95.68	5.21	94.
Specific conductance, Conductivity (25°C) 1610 Miscellaneous Analytes	µmhos/cm	528.09	26.40	528.67	30.31	534.66	11.71	52
Fluoride 1730 Minerals	mg/L	1.88	0.12	1.88	0.14	1.91	0.12	1.8
Hardness (calc.) 1750 Miscellaneous Analytes	mg/L	134.00	4.65	137.32	11.66	133.59	4.65	13
Residue-filterable (TDS) 1955 Miscellaneous Analytes	mg/L	298.00	51.61	297.20	29.31	295.77	15.43	29
Sulfate 2000 Miscellaneous Analytes	mg/L	47.20	3.13	48.17	3.79	47.43	2.54	47.

pH - WS
PEI-010-3

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
pH 1900 Miscellaneous Analytes	Units	8.00	0.10	7.97	0.10	7.95	0.06	8.0

Anions - WS
PEI-011

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Potassium, K 1125 Miscellaneous Analytes	mg/L	32.43	5.09	30.77	7.84	32.43	5.09	32.
Fluoride 1730 Minerals	mg/L	4.28	0.56	4.35	0.62	4.28	0.56	4.3
Nitrate as N 1810 Minerals	mg/L	8.61	0.76	14.36	36.44	8.61	0.76	8.6
Nitrate+nitrite as N 1820 Minerals	mg/L	10.02	0.68	11.16	6.30	10.02	0.68	10.
Nitrite as N 1840 Minerals	mg/L	1.48	0.09	1.42	0.16	1.46	0.09	1.4
Orthophosphate as P 1870 Minerals	mg/L	4.72	0.28	4.69	0.30	4.75	0.23	4.7

TOC - WS
PEI-013

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Sulfate 2000 Miscellaneous Analytes	mg/L	109.80	6.63	112.63	10.28	111.71	6.05	11(

Turbidity - WS
PEI-014

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Turbidity 2055 Miscellaneous Analytes	NTU	3.74	0.90	3.93	1.07	3.98	0.25	3.6

Trihalomethanes - WS
PEO-002

Study Lot 01
Mfg Lot 01

Trihalomethanes - WS

PEO-002

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Bromodichloromethane 4395 Trihalomethanes	µg/L	13.80	2.76	12.81	1.69	13.13	1.24	13.8 ±
Bromoform 4400 Trihalomethanes	µg/L	11.80	2.36	11.69	2.22	11.85	2.33	11.8 ±
Chloroform 4505 Trihalomethanes	µg/L	43.40	4.34	41.95	5.34	41.87	8.09	43.4 ±
Dibromochloromethane 4575 Trihalomethanes	µg/L	35.60	7.12	33.01	4.73	33.04	5.16	35.6 ±
Total trihalomethanes 5205 Trihalomethanes	µg/L	107.00	21.40	99.46	10.55	99.73	11.21	107 ±

Regulated VOC's 1

PEO-007-1

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Carbon tetrachloride 4455 Regulated VOCs	µg/L	9.56	1.91	9.09	1.17	8.78	0.75	9.56 ±
Chlorobenzene 4475 Regulated VOCs	µg/L	27.30	2.06	26.17	1.86	26.28	2.05	27.3 ±
1,2-Dichloroethane 4635 Regulated VOCs	µg/L	9.99	0.61	10.26	1.48	9.80	0.61	9.99 ±
1,1-Dichloroethylene 4640 Regulated VOCs	µg/L	9.45	1.27	9.45	1.04	9.43	1.27	9.45 ±
cis-1,2-Dichloroethylene 4545 Regulated VOCs	µg/L	16.40	1.47	15.29	1.15	16.29	1.47	16.4 ±
1,2-Dichloropropane 4655 Regulated VOCs	µg/L	11.80	1.03	11.45	1.13	11.32	1.03	11.8 ±
trans-1,2-Dichloroethylene 4700 Regulated VOCs	µg/L	25.00	2.17	22.49	2.41	22.82	2.17	25.0 ±
Methylene chloride (Dichloromethane) 4975 Regulated VOCs	µg/L	14.00	1.60	13.47	1.43	13.43	1.60	14.0 ±
Styrene 5100 Regulated VOCs	µg/L	8.96	1.06	8.44	1.16	8.51	1.08	8.96 ±
Tetrachloroethylene (Perchloroethylene) 5115 Regulated VOCs	µg/L	3.08	0.24	2.87	0.22	2.88	0.24	3.08 ±
1,2,4-Trichlorobenzene 5155 Regulated VOCs	µg/L	9.74	1.02	8.69	1.68	9.10	1.02	9.74 ±
1,1,1-Trichloroethane 5160 Regulated VOCs	µg/L	12.50	1.14	12.31	1.25	12.29	1.14	12.5 ±
1,1,2-Trichloroethane 5165 Regulated VOCs	µg/L	18.60	1.55	18.50	1.68	18.41	1.55	18.6 ±
Trichloroethene (Trichloroethylene) 5170 Regulated VOCs	µg/L	13.80	1.52	13.76	1.37	13.75	1.52	13.8 ±
Vinyl chloride 5235 Regulated VOCs	µg/L	24.00	4.80	22.98	5.11	22.29	4.13	24.0 ±

Regulated VOC's 2 - WS

PEO-007-2

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Benzene 4375 Regulated VOCs	µg/L	3.55	0.35	3.34	0.33	3.33	0.35	3.55 ±
1,2-Dichlorobenzene 4610 Regulated VOCs	µg/L	18.60	2.44	18.48	2.24	18.55	2.44	18.6 ±
1,3-Dichlorobenzene 4615 Unregulated VOCs	µg/L	45.80	4.18	44.63	4.94	45.44	4.18	45.8 ±
1,4-Dichlorobenzene 4620 Regulated VOCs	µg/L	17.40	2.28	17.40	1.94	17.39	2.28	17.4 ±
Ethylbenzene 4765 Regulated VOCs	µg/L	11.10	0.89	10.55	0.85	10.48	0.89	11.1 ±
Methyl tert-butyl ether (MTBE) 5000 Unregulated VOCs	µg/L	31.00	4.57	30.60	4.06	30.88	4.57	31.0 ±
Naphthalene 5005 Unregulated VOCs	µg/L	10.90	1.79	9.55	1.91	9.75	1.79	10.9 ±
Toluene 5140 Regulated VOCs	µg/L	9.80	1.17	9.64	1.06	9.58	1.17	9.80 ±
1,2,4-Trimethylbenzene 5210 Unregulated VOCs	µg/L	14.80	1.22	14.14	1.09	14.15	1.22	14.8 ±

Regulated VOC's 2 - WS

PEO-007-2

Study Lot 0
Mfg Lot 0

(continued)	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
1,3,5-Trimethylbenzene 5215 Unregulated VOCs	µg/L	10.50	1.25	10.02	1.10	10.02	1.25	10.5 ±
m+p-Xylene 5240 Unregulated VOCs	µg/L	16.10	1.53	16.13	1.40	16.16	1.53	16.1 ±
o-Xylene 5250 Unregulated VOCs	µg/L	10.10	0.76	9.91	0.88	9.86	0.76	10.1 ±
Xylene, total 5280 Regulated VOCs	µg/L	26.20	2.36	25.88	2.19	25.93	2.36	26.2 ±

Unregulated VOC's 1

PEO-007-3A

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Bromodichloromethane 4395 Trihalomethanes	µg/L	0.00	0.00					0.0
Bromoform 4400 Trihalomethanes	µg/L	0.00	0.00					0.0
Chloroethane 4485 Unregulated VOCs	µg/L	20.00	4.00	20.53	4.70	19.95	4.48	20.0 ±
Chloroform 4505 Trihalomethanes	µg/L	0.00	0.00					0.0
Dibromochloromethane 4575 Trihalomethanes	µg/L	0.00	0.00					0.0
1,3-Dichlorobenzene 4815 Unregulated VOCs	µg/L	17.70	2.20	17.52	1.76	17.45	2.20	17.7 ±
Dichlorodifluoromethane 4625 Unregulated VOCs	µg/L	0.00	0.00					0.0
1,1-Dichloroethane 4630 Unregulated VOCs	µg/L	5.40	0.52	5.58	0.67	5.45	0.52	5.40 ±
cis-1,3-Dichloropropene 4680 Unregulated VOCs	µg/L	14.20	1.40	13.11	1.35	12.99	1.40	14.2 ±
trans-1,3-Dichloropropene 4685 Unregulated VOCs	µg/L	9.07	1.16	8.66	1.06	8.69	1.16	9.07 ±
Methyl bromide (Bromomethane) 4950 Unregulated VOCs	µg/L	34.60	8.02	34.63	8.74	34.54	8.02	34.6 ±
Methyl chloride (Chloromethane) 4960 Unregulated VOCs	µg/L	39.10	5.50	39.71	7.76	37.63	5.50	39.1 ±
1,1,2,2-Tetrachloroethane 5110 Unregulated VOCs	µg/L	36.20	3.91	33.99	5.24	32.90	3.91	36.2 ±
Trichlorofluoromethane 5175 Unregulated VOCs	µg/L	8.66	1.76	8.19	1.54	8.12	1.76	8.66 ±

Unregulated VOC's 2

PEO-007-3B

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Bromobenzene 4385 Unregulated VOCs	µg/L	37.20	4.00	34.82	3.44	34.78	4.00	37.2 ±
Bromochloromethane 4390 Unregulated VOCs	µg/L	41.30	8.43	38.46	12.70	41.29	8.43	41.3 ±
n-Butylbenzene 4435 Unregulated VOCs	µg/L	20.20	2.04	19.38	3.57	20.16	2.04	20.2 ±
sec-Butylbenzene 4440 Unregulated VOCs	µg/L	6.90	0.59	6.71	0.51	6.69	0.59	6.90 ±
tert-Butylbenzene 4445 Unregulated VOCs	µg/L	33.60	2.95	31.76	3.49	31.11	2.95	33.6 ±
2-Chlorotoluene 4535 Unregulated VOCs	µg/L	40.40	4.90	39.48	4.50	39.31	4.90	40.4 ±
4-Chlorotoluene 4540 Unregulated VOCs	µg/L	25.70	1.79	23.93	2.49	23.26	1.79	25.7 ±
Dibromomethane 4595 Unregulated VOCs	µg/L	47.30	6.17	46.24	5.99	46.72	6.17	47.3 ±
1,3-Dichloropropane 4660 Unregulated VOCs	µg/L	22.60	3.09	22.03	2.90	21.83	3.09	22.6 ±
2,2-Dichloropropane 4665 Unregulated VOCs	µg/L	33.00	5.55	29.75	5.07	29.73	5.55	33.0 ±
1,1-Dichloropropene 4670 Unregulated VOCs	µg/L	29.00	3.26	27.18	2.72	27.04	3.26	29.0 ±

Unregulated VOC's 2

PEO-007-3B

(continued)

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Hexachlorobutadiene 4835 Unregulated VOCs	µg/L	26.80	3.83	25.74	3.17	26.85	3.83	26.8 ± (
Isopropylbenzene 4900 Unregulated VOCs	µg/L	37.50	5.73	38.42	4.72	36.19	5.73	37.5 ± (
4-Isopropyltoluene 4901 Unregulated VOCs	µg/L	9.06	0.84	8.70	0.73	8.68	0.84	9.06 ± (
n-Propylbenzene 5090 Unregulated VOCs	µg/L	17.90	1.89	18.74	1.69	18.61	1.89	17.9 ± (
1,1,1,2-Tetrachloroethane 5105 Unregulated VOCs	µg/L	35.00	5.77	34.43	5.32	34.09	5.77	35.0 ± (
1,2,3-Trichlorobenzene 5150 Unregulated VOCs	µg/L	22.10	3.73	21.88	3.67	22.07	3.73	22.1 ± (
1,2,3-Trichloropropane 5180 Unregulated VOCs	µg/L	10.80	1.02	10.38	2.48	9.47	1.02	10.8 ± (
1,2,4-Trimethylbenzene 5210 Unregulated VOCs	µg/L	39.70	4.08	37.02	3.72	36.79	4.08	39.7 ± (
1,3,5-Trimethylbenzene 5215 Unregulated VOCs	µg/L	20.50	2.35	19.69	1.84	19.62	2.35	20.5 ± (

Program analyte accrediting footnotes

1 NELAC
2 EPA
3 NVLAP
4 A2LA
5 NELAC Experimental

PERFORMANCE EVALUATION

First Choice for Quality | RT

Quarterly Study
WSMIC06-2
WSMICRO

12-Apr-2006 through 26-May-2006

RT13
RTC Lat

MT00
US EPA Lat

Energy Labs
Jon Hager
E 3161 Lyndale Avenue
Helena MT 59601

Thank you for participating in study WSMIC06-2. Additional information about this study may be found online at www.rt-corp.com. If you have any questions or comments about this study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset
WS06-2 Micro

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00945
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Microbiology

Analysis
SM 18/19/20th ED 9223B
Other

Method Number 2003
Technology Co

	Result	Units	Accept / Warn	Z	Rank	Evaluation
Total coliforms [1, 3, 4] 2500 / MIC-001-01 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/38	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-02 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/39	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-03 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/38	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-04 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/37	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-05 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/37	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-06 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/37	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-07 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/38	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-08 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/37	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-09 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/37	ACCEPTABL
Total coliforms [1, 3, 4] 2500 / MIC-001-10 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/37	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-01 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/27	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-02 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/28	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-03 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/27	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-04 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/26	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-05 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/27	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-06 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/26	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-07 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/27	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-08 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/27	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-09 - Lot Series O	0		0.0 to 0.0 0.0 to 0.0		/26	ACCEPTABL
Escherichia coli [1, 4] 2525 / MIC-001-10 - Lot Series O	1		1.00 to 1.00 1.00 to 1.00		/27	ACCEPTABL

Series Evaluation

Series
O

Analyte	Method Technology Code	False Positives	False Negatives	Acceptance
Total coliforms 2500	SM 15/19/20th ED 9223B NA	0	0	ACCEPTABLE
Escherichia coli 2525	SM 19/19/20th ED 9223B NA	0	0	ACCEPTABLE

End of Series

End of WSTS - Micro

Sample Information

WS-Microbiological PT - Sample 1
MIC-001-01

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		0.00	0.00					0.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 2
MIC-001-02

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 3
MIC-001-03

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 4
MIC-001-04

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravin
Total coliforms 2500 Microbiology		0.00	0.00					0.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 5
MIC-001-05

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		1.00	0.00					1.0

WS-Microbiological PT - Sample 6
MIC-001-06

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		0.00	0.00					0.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 7
MIC-001-07

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 8
MIC-001-08

Study Lot Ser
Mfg Lot Ser

WS-Microbiological PT - Sample 8

MIC-001-08

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		1.00	0.00					1.0

WS-Microbiological PT - Sample 9

MIC-001-09

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		0.00	0.00					0.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 10

MIC-001-10

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		1.00	0.00					1.0

Program analyte accrediting footnotes

1 NELAC
2 EPA
3 NVLAP
4 A2LA
5 NELAC Experimental

PERFORMANCE EVALUATION

First Choice for Quality | RTC

Off-study
WSMIC06-4
WSMICRO

25-Oct-2006 through 8-Dec-2006

RT13
RTC Lab

MT00
US EPA Lab

Energy Labs
Jon Hager
E 3161 Lyndale Avenue
Helena MT 59601

Thank you for participating in study WSMIC06-4. Additional information about this study may be found online at www.rt-corp.com. If you have any questions or comments about this study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset
WS06-4 Micro

Microbiology

Analysis
SM 18/19/20th ED 9223B
Other

Method Number 2003
Technology Co

	Result	Units	Accept / Warn	Z	Rank	Evaluation
Total coliforms [1, 3, 4] 2500 / MIC-001-01 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 44	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-02 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 43	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-03 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 40	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-04 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 39	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-05 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 43	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-06 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 38	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-07 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 43	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-08 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 43	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-09 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 38	Acceptable
Total coliforms [1, 3, 4] 2500 / MIC-001-10 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 38	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-01 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 30	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-02 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 35	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-03 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 32	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-04 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 31	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-05 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 30	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-06 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 30	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-07 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 31	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-08 - Lot Series-U	1		1.00 to 1.00 1.00 to 1.00		/ 30	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-09 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 31	Acceptable
Escherichia coli [1, 4] 2525 / MIC-001-10 - Lot Series-U	0		0.0 to 0.0 0.0 to 0.0		/ 30	Acceptable

Series Evaluation

Series
U

Analyte	Method Technology Code	False Positives	False Negatives	Acceptance
Total coliforms 2500	SM 18/19/20th ED 9223B NA	0	0	ACCEPTABLE
Escherichia coli 2525	SM 18/19/20th ED 9223B NA	0	0	ACCEPTABLE

End of WS06-4 Micro

Sample Information

WS-Microbiological PT - Sample 1
MIC-001-01

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 2
MIC-001-02

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		1.00	0.00					1.0

WS-Microbiological PT - Sample 3
MIC-001-03

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		0.00	0.00					0.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 4
MIC-001-04

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		0.00	0.00					0.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 5
MIC-001-05

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		1.00	0.00					1.0

WS-Microbiological PT - Sample 6
MIC-001-06

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		0.00	0.00					0.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 7
MIC-001-07

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 8
MIC-001-08

Study Lot Ser
Mfg Lot Ser

WS-Microbiological PT - Sample 8

MIC-001-08

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		1.00	0.00					1.0

WS-Microbiological PT - Sample 9

MIC-001-09

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Total coliforms 2500 Microbiology		1.00	0.00					1.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

WS-Microbiological PT - Sample 10

MIC-001-10

Study Lot Ser
Mfg Lot Ser

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravin
Total coliforms 2500 Microbiology		0.00	0.00					0.0
Escherichia coli 2525 Microbiology		0.00	0.00					0.0

Program analyte accrediting footnotes

[1] NELAC
[2] EPA
[3] NVLAP
[4] A2LA
[5] NELAC Experimental

PERFORMANCE EVALUATION

First Choice for Quality | RT

Quarterly Study
WP06-3B
WPCHEM / DMRQA 26

19-Jul-2006 through 1-Sep-2006

RT13
RTC Lat

MT00
US EPA Lat

Energy Labs
Jon Hager
E 3161 Lyndale Avenue
Helena MT 59601

Thank you for participating in study WP06-3B. Additional information about this study may be found online at www.rt-corp.c
If you have any questions or comments about this study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset
WP06-3B

Include in DMRQA Study
Evaluations from this dataset will be included in DMRQA 26.

Demands

Analysis
SM 18/19/20th ED 5210 B
Other
Method Number 200
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Biochemical oxygen demand (BOD) [1, 3, 4] 1530 / PEI-026 - Lot 011339	78.3 mg/L	38.7 to 109 46.7 to 96.8	0.46	35 / 63	ACCEPTABL

Analysis
EPA 410.4
Other
Method Number 100
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chemical oxygen demand (COD) [1, 3, 4] 1565 / PEI-026 - Lot 011339	108.4 mg/L	68.7 to 137 86.8 to 129	-0.55	31 / 52	ACCEPTABL

Microbiology

Analysis
SM 18/19/20th ED 9222 D
OTHER
Method Number 200
Technology Code C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fecal coliforms [1, 4] 2530 / MIC-003 Lot M25306	633 CFU/100m	114 to 2730		7 / 23	ACCEPTABL

Minerals

Analysis
EPA 160.3
Other
Method Number 100
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue, total (TS) [1, 4] 1950 / PEI-027-12 - Lot 011345/0	691 mg/L	530 to 1100	-1.31	20 / 24	ACCEPTABL
Residue, total (TS) [1, 4] 1950 / PEI-079 Lot 011360	495 mg/L	431 to 849	0.25	10 / 34	ACCEPTABL

Analysis
SM 18/19/20thED 2320 B
Other
Method Number 2000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Alkalinity as CaCO3 [1, 3, 4] 1505 / PEI-027-12 - Lot 011345/0	86.1 mg/L	75.0 to 93.5 78.1 to 90.4	0.60	30 / 47	ACCEPTABL

Analysis
SM 18/19/20thED 2340 B
Other
Method Number 2000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Hardness, total as CaCO3 [1, 3, 4] 1755 / PEI-027-12 Lot 011345/0	357 mg/L	298 to 365 309 to 353	2.36	40 / 49	CHECK

Analysis
SM 17/18/19/20thED 2510 B
Other
Method Number 2000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Specific conductance, Conductivity (25°C) [1, 3, 4] 1610 / PEI-027-12 Lot 011345/0	1127 µmhos/cm	830 to 1270 830 to 1270	-0.72	27 / 47	ACCEPTABL

Analysis
SM 18/19/20thED 2540 C
Other
Method Number 2000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-filterable (TDS) [1, 3, 4] 1955 / PEI-027-12 Lot 011345/0	662 mg/L	565 to 921 641 to 865	-1.62	29 / 34	ACCEPTABL

Minerals (continued)

(conti

Analysis
SM 18/19/20thED 2540 C
Other

Method Number 200(
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-filterable (TDS) 1, 3, 4 1955 / PEI-079 - Lot 011360	432 mg/L	321 to 521 355 to 488	0.32	13 / 37	ACCEPTABL

Analysis
SM 17/18/19/20thED 4500 Cl- B
Other

Method Number 200
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chloride 1, 3, 4 1575 / PEI-027-12 Lot 011345/0	254.9 mg/L	208 to 271 218 to 260	1.50	31 / 50	ACCEPTABL

Analysis
SM 18/19/20thED 4500 F-C
Other

Method Number 2001
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fluoride 1, 3, 4 1730 / PEI-027-12 - Lot 011345/0	0.55 mg/L	0.341 to 0.716 0.403 to 0.655	0.35	18 / 46	ACCEPTABL

Analysis
SM 18/19/20thED 4500 SO4-E
Other

Method Number 2001
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Sulfate 1, 3, 4 2000 / PEI-027-12 - Lot 011345/0	91.5 mg/L	78.8 to 108 83.7 to 103	-0.42	15 / 48	ACCEPTABL

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 1001
Technology Code ICP

	Result Units	Accept / Warn	Z	Rank	Evaluation
Calcium, Ca 1, 3, 4 1035 / PEI-027-12 - Lot 011345/0	112 mg/L	94.1 to 119 98.2 to 115	1.36	32 / 45	ACCEPTABL
Magnesium, Mg 1, 3, 4 1085 / PEI-027-12 - Lot 011345/0	19 mg/L	16.1 to 21.7 17.1 to 20.8	0.07	1 / 45	ACCEPTABL
Potassium, K 1, 3, 4 1125 / PEI-027-12 - Lot 011345/0	26 mg/L	22.8 to 32.9 24.5 to 31.2	-1.09	21 / 42	ACCEPTABL
Sodium, Na 1, 3, 4 1155 / PEI-027-12 - Lot 011345/0	69 mg/L	59.3 to 80.2 62.8 to 76.7	-0.22	6 / 45	ACCEPTABL

Miscellaneous Analytes

Analysis
EPA 150.1
Other

Method Number 1000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
pH 1, 3, 4 1900 / PEI-027-3 - Lot 011475	5.5 Units	5.39 to 5.79	-0.90	12 / 60	ACCEPTABL

Analysis
EPA 160.2
Other

Method Number 1000
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-nonfilterable (TSS) 1, 3, 4 1960 / PEI-079 - Lot 011360	70 mg/L	50.7 to 86.6	0.22	5 / 54	ACCEPTABL

Nutrients

Analysis
EPA 350.1
Other

Method Number 1006
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Ammonia as N 1, 3, 4 1515 / PEI-028-1 Lot 011356	6.07 mg/L	4.46 to 7.85 5.02 to 7.29	-0.15	9 / 64	ACCEPTABL

Nutrients (continued)

Analysis
EPA 353.2
Other

Method Number 100
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrate as N 1, 3, 4 1810 / PEI-028-1 - Lot 011356	15.6 mg/L	12.3 to 19.1 13.4 to 17.9	-0.08	4 / 47	ACCEPTABL
Nitrite as N 1, 4 1840 / PEI-028-3 - Lot 011315	3.02 mg/L	2.46 to 3.34 2.81 to 3.19	0.81	34 / 53	ACCEPTABL

Analysis
EPA 353.2
Other

Method Number 100
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrate+nitrite as N 1, 4 1820 / PEI-028-1 Lot 011356	15.6 mg/L	12.3 to 19.1 12.3 to 19.1	0.00	1 / 37	ACCEPTABL

Analysis
EPA 365.1
Other

Method Number 100
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Orthophosphate as P 1, 3, 4 1870 / PEI-028-1 Lot 011356	1.834 mg/L	1.49 to 2.26 1.62 to 2.12	-0.29	18 / 50	ACCEPTABL
Phosphorus, total 1, 2, 3, 4 1910 / PEI-028-2 Lot 011314	2.159 mg/L	1.80 to 2.50 1.75 to 2.33	0.76	20 / 48	ACCEPTABL

Analysis
SM 18th/20th ED 4500-NH3C
Other

Method Number 200
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Kjeldahl nitrogen, total (TKN) 1, 2, 3, 4 1795 / PEI-028-2 Lot 011314	19.6 mg/L	16.2 to 21.0 12.3 to 19.0	2.38	28 / 31	CHECK

Analysis
EPA 353.3
OTHER

Method Number 100
Technology Code O

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrogen, total 4 1860 / PEI-028-2 - Lot 011314	19.6 mg/L	14.2 to 20.8 12.8 to 19.2	2.25	5 / 5	CHECK

Trace Metals

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 1001
Technology Code ICP

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aluminum, Al 1, 3, 4 1000 / PEI-305-1 - Lot 011350	700 µg/L	801 to 907 852 to 856	-1.06	8 / 12	ACCEPTABL
Antimony, Sb 1, 3, 4 1005 / PEI-305-2 - Lot 011351A	208 µg/L	135 to 251 155 to 231	0.68	4 / 4	ACCEPTABL
Arsenic, As 1, 3, 4 1010 / PEI-305-1 - Lot 011350	450 µg/L	366 to 514 391 to 489	0.41	7 / 17	ACCEPTABL
Barium, Ba 1, 4 1015 / PEI-305-2 - Lot 011351A	605 µg/L	533 to 692 559 to 668	-0.28	3 / 9	ACCEPTABL
Beryllium, Be 1, 3, 4 1020 / PEI-305-1 - Lot 011350	393 µg/L	328 to 437 346 to 418	0.79	10 / 12	ACCEPTABL
Cadmium, Cd 1, 3, 4 1030 / PEI-305-1 - Lot 011350	178 µg/L	151 to 203 160 to 194	0.10	1 / 14	ACCEPTABL
Chromium, Cr (total) 1, 3, 4 1040 / PEI-305-1 - Lot 011350	560 µg/L	493 to 640 517 to 619	-0.27	2 / 13	ACCEPTABL
Copper, Cu 1, 3, 4 1055 / PEI-305-1 - Lot 011350	240 µg/L	240 to 296 250 to 287	-3.16	14 / 14	ACCEPTABL
Iron, Fe 1, 3, 4 1070 / PEI-305-1 - Lot 011350	1147 µg/L	1020 to 1300 1060 to 1250	-0.23	2 / 12	ACCEPTABL
Lead, Pb 1, 3, 4 1075 / PEI-305-1 - Lot 011350	1320 µg/L	1170 to 1480 1220 to 1430	-0.13	1 / 13	ACCEPTABL
Manganese, Mn 1, 3, 4 1090 / PEI-305-1 Lot 011350	780 µg/L	675 to 837 703 to 810	0.89	5 / 12	ACCEPTABL

Trace Metals (continued)

(conti

Analysis
EPA 200 7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 100
Technology Code ICI

	Result Units	Accept / Warn	Z	Rank	Evaluation
Molybdenum, Mo [1, 3, 4] 1100 / PEI-305-2 - Lot 011351/0	84.5 µg/L	77.7 to 117 84.2 to 110	-1.96	6 / 8	ACCEPTABL
Nickel, Ni [1, 3, 4] 1105 / PEI-305-1 Lot 011350	2100 µg/L	1650 to 2460 2060 to 2350	-1.02	4 / 13	ACCEPTABL
Selenium, Se [1, 3, 4] 1140 / PEI-305-1 Lot 011350	334 µg/L	235 to 347 250 to 329	2.29	16 / 17	ACCEPTABL
Silver, Ag [1, 3, 4] 1150 / PEI-305-2 - Lot 011351/0	158 µg/L	143 to 181 151 to 183	-1.13	6 / 8	ACCEPTABL
Thallium, Tl [1, 3, 4] 1165 / PEI-305-2 Lot 011351/0	158 µg/L	142 to 254 161 to 235	-2.16	6 / 8	ACCEPTABL
Tin, Sn [1, 3, 4] 1175 / PEI-305-2 - Lot 011351/0	2475 µg/L	2210 to 3420 2420 to 3220	-1.70	6 / 8	ACCEPTABL
Titanium, Ti [1, 3, 4] 1180 / PEI-305-2 - Lot 011351/0	182.6 µg/L	156 to 205 164 to 197	0.23	4 / 8	ACCEPTABL
Vanadium, V [1, 3, 4] 1185 / PEI-305-1 - Lot 011350	601 µg/L	549 to 701 575 to 678	-0.96	5 / 12	ACCEPTABL
Zinc, Zn [1, 3, 4] 1190 / PEI-305-1 - Lot 011350	1039 µg/L	894 to 1150 944 to 1140	-0.09	2 / 13	ACCEPTABL

Volatiles

Volatiles

Analysis
EPA 601
Other

Method Number 101
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,2-Dibromoethane (EDB, Ethylene dibromide) [4] 4585 / PEO-120-3B - Lot 011500	56 µg/L	31.1 to 82.1 39.6 to 73.6	-0.07	2 / 31	ACCEPTABL
1,1,1,2-Tetrachloroethane [4] 5105 / PEO-120-3B - Lot 011500	20 µg/L	10.2 to 27.0 13.0 to 24.2	0.50	15 / 30	ACCEPTABL

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 101
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Acetone [4] 4315 / PEO-120-3B - Lot 011500	123 µg/L	26.9 to 206	0.23	10 / 32	ACCEPTABL
Acrylonitrile [4] 4340 / PEO-120-3B - Lot 011500	128 µg/L	59.0 to 188	0.21	6 / 28	ACCEPTABL
Benzene [1, 3, 4] 4375 / PEO-120-1 - Lot 011470	9.6 µg/L	6.21 to 14.1 7.52 to 12.8	-0.42	19 / 46	ACCEPTABL
Bromodichloromethane [1, 3, 4] 4395 / PEO-120-2 Lot 011479	54 µg/L	45.7 to 87.2 52.7 to 80.3	-1.81	34 / 40	ACCEPTABL
Bromoform [1, 3, 4] 4400 / PEO-120-2 - Lot 011479	57 µg/L	35.0 to 75.3 41.7 to 68.6	0.28	4 / 40	ACCEPTABL
2-Butanone (Methyl ethyl ketone, MEK) [4] 4410 / PEO-120-3B - Lot 011500	29 µg/L	1.87 to 57.4	-0.07	2 / 32	ACCEPTABL
Carbon disulfide [4] 4450 / PEO-120-3B - Lot 011500	54 µg/L	36.7 to 95.8	-1.24	24 / 33	ACCEPTABL
Carbon tetrachloride [1, 3, 4] 4455 / PEO-120-2 - Lot 011479	36 µg/L	25.9 to 64.3 32.3 to 57.9	-1.42	29 / 40	ACCEPTABL
Chlorobenzene [1, 3, 4] 4475 / PEO-120-2 - Lot 011479	68 µg/L	53.4 to 92.7 60.0 to 86.2	-0.78	18 / 40	ACCEPTABL
Chloroethane [1, 4] 4485 / PEO-120-3A - Lot 011519	78 µg/L	39.1 to 156	-1.32	29 / 37	ACCEPTABL
2-Chloroethyl vinyl ether [4] 4500 / PEO-120-3B - Lot 011500	22 µg/L	9.28 to 46.7	-0.96	19 / 26	ACCEPTABL
Chloroform [1, 3, 4] 4505 / PEO-120-2 - Lot 011479	58 µg/L	48.9 to 90.6 55.8 to 83.7	-1.69	33 / 40	ACCEPTABL
1,2-Dibromo-3-chloropropane (DBCP) [4] 4570 / PEO-120-3B Lot 011500	98 µg/L	42.2 to 111 53.7 to 99.8	1.84	28 / 31	ACCEPTABL
Dibromochloromethane [1, 3, 4] 4575 / PEO-120-2 Lot 011479	33 µg/L	23.2 to 45.3 26.9 to 41.6	-0.34	6 / 40	ACCEPTABL

Volatiles (continued)

Volatiles

(conti

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 1018
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Dibromomethane [4] 4595 / PEO-120-3B - Lot 011500	84 µg/L	69.8 to 131 83.4 to 118	-0.49	21 / 31	ACCEPTABL
1,2-Dichlorobenzene [1, 3, 4] 4610 / PEO-120-1 - Lot 011470	23 µg/L	15.8 to 30.9 18.3 to 28.4	-0.15	4 / 37	ACCEPTABL
1,3-Dichlorobenzene [1, 3, 4] 4615 / PEO-120-1 - Lot 011470	21 µg/L	14.0 to 28.1 16.4 to 25.8	-0.04	17 / 37	ACCEPTABL
1,4-Dichlorobenzene [1, 3, 4] 4620 / PEO-120-1 - Lot 011470	17 µg/L	11.4 to 23.2 13.4 to 21.3	-0.16	6 / 37	ACCEPTABL
Dichlorodifluoromethane [4] 4625 / PEO-120-3B Lot C11500	<1.0 µg/L	0.0 to 0.0 0.0 to 0.0		/ 6	ACCEPTABL
1,1-Dichloroethane [1, 4, 5] 4630 / PEO-120-3A Lot C11519	115 µg/L	90.1 to 178 105 to 164	-1.31	26 / 38	ACCEPTABL
1,2-Dichloroethane [1, 3, 4] 4635 / PEO-120-2 - Lot 011479	62 µg/L	48.3 to 91.3 55.4 to 84.1	-1.08	27 / 40	ACCEPTABL
1,1-Dichloroethylene [1, 4] 4640 / PEO-120-3A - Lot 011519	33 µg/L	22.0 to 61.5 28.6 to 54.9	-1.33	31 / 39	ACCEPTABL
cis-1,2-Dichloroethylene [1, 4, 5] 4645 / PEO-120-3A - Lot 011519	44 µg/L	39.2 to 72.2 44.7 to 66.7	-2.13	32 / 38	ACCEPTABL
1,2-Dichloropropane [1, 4] 4655 / PEO-120-3A - Lot 011519	87 µg/L	61.4 to 123 71.6 to 112	-0.49	18 / 37	ACCEPTABL
cis-1,3-Dichloropropene [1, 4, 5] 4680 / PEO-120-3A Lot 011519	88 µg/L	65.8 to 122	-0.72	17 / 37	ACCEPTABL
trans-1,3-Dichloropropene [1, 4] 4685 / PEO-120-3A - Lot 011519	35 µg/L	19.6 to 42.0 23.3 to 38.3	1.12	24 / 38	ACCEPTABL
trans-1,2-Dichloroethylene [1, 4] 4700 / PEO-120-3A - Lot 011519	68 µg/L	53.6 to 117 64.2 to 107	-1.64	32 / 39	ACCEPTABL
Ethylbenzene [1, 3, 4] 4765 / PEO-120-1 - Lot 011470	21 µg/L	15.1 to 29.1 17.5 to 26.8	-0.48	14 / 46	ACCEPTABL
2-Hexanone [1, 4, 5] 4850 / PEO-120-3A - Lot 011519	160 µg/L	28.2 to 285	0.08	2 / 33	ACCEPTABL
Methyl bromide (Bromomethane) [1, 4] 4950 / PEO-120-3A - Lot 011519	92 µg/L	35.9 to 144	0.10	4 / 37	ACCEPTABL
Methyl chloride (Chloromethane) [1, 4] 4960 / PEO-120-3A - Lot 011519	61 µg/L	22.4 to 86.8	0.30	4 / 37	ACCEPTABL
Methylene chloride (Dichloromethane) [1, 3, 4] 4975 / PEO-120-2 - Lot 011479	28 µg/L	20.8 to 48.6 25.5 to 44.0	-1.45	27 / 40	ACCEPTABL
4-Methyl-2-pentanone (MIBK) [1, 4] 4995 / PEO-120-3A - Lot 011519	204 µg/L	101 to 288 132 to 257	0.31	12 / 36	ACCEPTABL
Methyl tert-butyl ether (MTBE) [1, 4, 5] 5000 / PEO-120-1 - Lot 011470	19 µg/L	12.5 to 29.1	-0.76	17 / 37	ACCEPTABL
Naphthalene [1, 4] 5005 / PEO-120-1 - Lot 011470	15 µg/L	8.78 to 20.4	0.17	4 / 35	ACCEPTABL
Styrene [1, 4] 5100 / PEO-120-3A - Lot 011519	56 µg/L	39.6 to 84.3 47.0 to 76.8	-0.79	20 / 36	ACCEPTABL
1,1,2,2-Tetrachloroethane [1, 4] 5110 / PEO-120-3A - Lot 011519	71 µg/L	41.1 to 104 51.5 to 93.4	-0.14	3 / 38	ACCEPTABL
Tetrachloroethylene (Perchloroethylene) [1, 3, 4] 5115 / PEO-120-2 - Lot 011479	19 µg/L	10.5 to 27.3 13.3 to 24.5	-0.04	3 / 41	ACCEPTABL
Toluene [1, 3, 4] 5140 / PEO-120-1 - Lot 011470	7.0 µg/L	5.07 to 9.85 5.87 to 9.05	-0.58	20 / 46	ACCEPTABL
1,1,1-Trichloroethane [1, 3, 4] 5160 / PEO-120-2 - Lot 011479	16 µg/L	12.2 to 26.2 14.6 to 23.8	-1.38	27 / 39	ACCEPTABL
1,1,2-Trichloroethane [1, 4] 5165 / PEO-120-3A - Lot 011519	122 µg/L	82.9 to 155 94.9 to 143	0.27	12 / 38	ACCEPTABL
Trichloroethene (Trichloroethylene) [1, 3, 4] 5170 / PEO-120-2 - Lot 011479	67 µg/L	51.3 to 105 60.2 to 95.9	-1.24	33 / 41	ACCEPTABL
Trichlorofluoromethane [1, 4] 5175 / PEO-120-3A - Lot 011519	46 µg/L	24.2 to 86.9	-0.86	24 / 35	ACCEPTABL
1,2,3-Trichloropropane [4] 5180 / PEO-120-3B - Lot 011500	24.8 µg/L	16.1 to 42.3 20.4 to 38.0	-1.00	15 / 30	ACCEPTABL

Volatiles (continued)

Volatiles

(conti

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 101
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,2,4-Trimethylbenzene [4] 5210 / PEO-120-1 - Lot 011470	23 µg/L	21.0 to 31.6	-0.85	20 / 33	ACCEPTABL
1,3,5-Trimethylbenzene [4] 5215 / PEO-120-1 - Lot 011470	11 µg/L	7.08 to 15.5 8.65 to 14.9	-0.51	15 / 33	ACCEPTABL
Vinyl acetate [4] 5225 / PEO-120-3B - Lot C11500	2.3 µg/L	0.00 to 4.51	0.44	6 / 13	ACCEPTABL
Vinyl chloride [1, 4] 5235 / PEO-120-3A - Lot C11519	36 µg/L	20.5 to 81.9	-1.31	31 / 38	ACCEPTABL
m+p-Xylene [4] 5240 / PEO-120-1 - Lot 011470	11 µg/L	5.47 to 18.1 7.58 to 16.0	-0.38	20 / 42	ACCEPTABL
o-Xylene [4] 5250 / PEO-120-1 - Lot 011470	9.8 µg/L	8.16 to 12.2	-0.32	12 / 42	ACCEPTABL
Xylene, total [1, 4] 5260 / PEO-120-1 - Lot 011470	21 µg/L	11.4 to 31.6 12.8 to 28.2	-0.14	5 / 44	ACCEPTABL

Group Analysis Summary

Acceptable 51 / 51
Score 100.0% - **(Acceptable)**

End of WP06-3B

Sample Information

Microbiological - Quantitative

MIC-003

Study Lot M
Mfg Lot M0

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravir
Fecal coliforms 2530 Microbiology	CFU/100m	767.48	716.89	664.96	398.30	637.39	441.64	15

Demand

PEI-026

Study Lot 0
Mfg Lot 0

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Biochemical oxygen demand (BOD) 1530 Demands	mg/L	72.78	12.04	75.13	10.93	73.28	9.59	11
Chemical oxygen demand (COD) 1565 Demands	mg/L	112.78	8.01	112.37	11.04	112.51	8.34	11

Minerals

PEI-027-12

Study Lot 011
Mfg Lot 011345/0

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Calcium, Ca 1335 Minerals	mg/L	108.42	4.09	105.46	13.80	104.15	4.84	10
Magnesium, Mg 1385 Minerals	mg/L	18.90	0.92	19.59	3.15	18.79	0.83	18
Potassium, K 1425 Minerals	mg/L	27.83	1.68	27.89	4.87	27.88	2.61	27
Sodium, Na 1455 Minerals	mg/L	69.76	3.47	70.46	8.68	69.90	3.69	69.
Alkalinity as CaCO3 1505 Minerals	mg/L	84.26	3.08	85.70	27.38	83.83	1.88	84
Chloride 1575 Minerals	mg/L	239.17	10.51	243.68	27.74	248.26	9.48	24
Specific conductance, Conductivity (25°C) 1610 Minerals	µmhos/cm	1,150.00	33.80	1,043.64	282.77	1,151.39	35.95	115
Fluoride 1730 Minerals	mg/L	0.53	0.06	0.55	0.08	0.53	0.05	0.5
Hardness, total as CaCO3 1755 Minerals	mg/L	331.00	11.00	336.87	43.06	339.25	11.72	33
Residue, total (TS) 1950 Minerals	mg/L	816.06	95.32	815.32	85.84	816.06	95.32	80
Residue-filterable (TDS) 1955 Minerals	mg/L	752.81	56.01	739.72	134.42	752.81	62.61	80
Sulfate 2000 Minerals	mg/L	93.56	4.93	97.23	6.99	97.46	6.26	94.

pH

PEI-027-3

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
pH 1900 Miscellaneous Analytes	Units	5.59	0.10	5.52	0.24	5.48	0.04	5.5

Simple Nutrients

PEI-028-1

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Ammonia as N 1515 Nutrients	mg/L	6.16	0.57	6.37	0.82	6.45	0.49	6.3
Nitrate as N 1810 Nutrients	mg/L	15.88	1.12	15.51	4.48	15.64	1.18	15.
Nitrate+nitrite as N 1820 Nutrients	mg/L	15.60	0.91	15.83	4.36	15.54	1.29	15.
Orthophosphate as P 1870 Nutrients	mg/L	1.87	0.13	1.86	0.37	1.86	0.13	1.8

Complex Nutrients

PEI-028-2

Study Lot 01
Mfg Lot 01

Complex Nutrients
PEI-028-2

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Kjeldahl nitrogen, total (TKN) 1795 Nutrients	mg/L	15.60	1.68	15.70	4.29	15.81	1.28	16.
Nitrogen, total 1966 Nutrients	mg/L	16.00	1.60	14.13	6.78	14.42	6.71	16
Phosphorus, total 1910 Nutrients	mg/L	2.05	0.14	2.31	0.84	2.09	0.19	2.0

Nitrite
PEI-028-3

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Nitrite as N 1840 Nutrients	mg/L	2.90	0.15	2.73	0.40	2.85	0.18	2.9

Residue (Whole-Volume)
PEI-079

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravin
Residue, total (TS) 1950 Minerals	mg/L	490.04	19.61	482.62	66.94	490.04	19.61	50
Residue-filterable (TDS) 1955 Minerals	mg/L	421.29	33.27	426.51	49.09	421.29	24.34	42
Residue-nonfilterable (TSS) 1960 Miscellaneous Analytes	mg/L	68.69	5.99	67.53	9.95	68.69	5.99	72.

Trace Metals (Whole Volume) Sample 1
PEI-305-1

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Aluminum, Al 1000 Trace Metals	µg/L	754.10	51.06	781.25	61.80	759.00	75.59	756 ±
Arsenic, As 1010 Trace Metals	µg/L	439.97	24.58	441.59	24.01	448.36	19.17	438 ±
Beryllium, Be 1020 Trace Metals	µg/L	382.00	18.00	391.17	21.77	383.20	8.52	388 ±
Cadmium, Cd 1030 Trace Metals	µg/L	177.16	8.63	178.29	10.34	177.50	11.22	178 ± (
Chromium, Cr (total) 1040 Trace Metals	µg/L	566.59	24.57	570.46	32.26	567.71	35.02	568 ±
Copper, Cu 1055 Trace Metals	µg/L	269.00	9.17	268.50	13.28	269.04	14.69	268 ±
Iron, Fe 1070 Trace Metals	µg/L	1,157.59	46.88	1,148.08	65.06	1,132.15	49.96	1150 ±
Lead, Pb 1075 Trace Metals	µg/L	1,326.82	52.67	1,336.92	75.76	1,337.86	80.24	1330 ±
Manganese, Mn 1090 Trace Metals	µg/L	756.31	26.77	758.25	42.36	754.80	46.33	753 ±
Nickel, Ni 1105 Trace Metals	µg/L	2,210.00	74.60	2,191.54	137.71	2,182.64	156.51	2180 ±
Selenium, Se 1140 Trace Metals	µg/L	290.98	18.78	311.18	21.58	307.08	17.17	299 ±
Vanadium, V 1185 Trace Metals	µg/L	625.22	25.36	632.42	45.81	607.36	19.40	627 ±
Zinc, Zn 1190 Trace Metals	µg/L	1,043.62	49.84	1,068.46	57.90	1,070.52	69.07	1040 ±

Trace Metals (Whole Volume) Sample 2
PEI-305-2

Study Lot 011
Mfg Lot 011351/01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Barium, Ba 1015 Trace Metals	µg/L	612.53	26.63	638.00	23.44	637.73	33.47	614 ±
Molybdenum, Mo 1100 Trace Metals	µg/L	97.19	5.48	90.78	7.57	91.09	9.67	97.7 ±
Silver, Ag 1150 Trace Metals	µg/L	167.17	8.11	163.38	4.37	163.30	5.25	167 ± (

Trace Metals (Whole Volume) Sample 2
PEI-305-2
(continued)

Study Lot 011
Mfg Lot 011351/01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Thallium, Tl 1165 Trace Metals	µg/L	197.99	18.52	193.44	14.17	197.68	6.86	200 ±
Tin, Sn 1175 Trace Metals	µg/L	2,817.23	200.86	2,678.13	210.41	2,681.26	249.08	2810 ±
Titanium, Ti 1180 Trace Metals	µg/L	180.75	8.22	177.08	14.14	182.11	3.09	182 ±

Trace Metals (Whole Volume) Sample 2
PEI-305-2

Study Lot 011
Mfg Lot 011

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Antimony, Sb 1005 Trace Metals	µg/L	192.95	19.20	199.50	4.80	199.35	6.28	20

Volatile Organic Compounds 1
PEO-120-1

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Benzene 4375 Volatiles	µg/L	10.15	1.31	9.82	1.38	9.62	0.66	10.1 ±
1,2-Dichlorobenzene 4610 Volatiles	µg/L	23.38	2.52	22.86	3.17	23.11	3.29	23.5 ±
1,3-Dichlorobenzene 4615 Volatiles	µg/L	21.09	2.35	20.78	3.09	21.19	2.70	21.7 ±
1,4-Dichlorobenzene 4620 Volatiles	µg/L	17.31	1.97	17.30	2.37	17.27	2.24	17.5 ±
Ethylbenzene 4765 Volatiles	µg/L	22.13	2.33	22.16	3.36	22.07	3.28	22.4 ±
Methyl tert-butyl ether (MTBE) 5000 Volatiles	µg/L	20.80	2.36	19.23	4.77	20.24	2.36	20.8 ±
Naphthalene 5005 Volatiles	µg/L	14.60	2.42	13.65	2.92	13.26	2.42	14.6 ±
Toluene 5140 Volatiles	µg/L	7.46	0.80	7.34	1.81	7.21	0.85	7.20
1,2,4-Trimethylbenzene 5210 Volatiles	µg/L	26.30	3.87	24.51	4.52	25.09	3.87	26.3 ±
1,3,5-Trimethylbenzene 5215 Volatiles	µg/L	11.80	1.57	11.73	1.68	11.97	1.52	11.8 ±
m+p-Xylene 5240 Volatiles	µg/L	11.80	2.11	11.98	1.85	11.87	1.33	11.2 ±
o-Xylene 5250 Volatiles	µg/L	10.20	1.26	10.37	1.76	10.33	1.26	10.2
Xylene, total 5260 Volatiles	µg/L	21.49	3.37	22.45	3.36	22.37	2.14	21.4 ±

Volatile Organic Compounds 2
PEO-120-2

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Bromodichloromethane 4395 Volatiles	µg/L	66.49	6.91	64.59	10.79	63.89	8.99	64.6 ±
Bromoform 4400 Volatiles	µg/L	55.13	6.72	53.13	8.55	53.16	9.03	54.7 ±
Carbon tetrachloride 4455 Volatiles	µg/L	45.07	6.40	43.39	8.85	44.41	8.46	47.0 ±
Chlorobenzene 4475 Volatiles	µg/L	73.09	6.56	72.98	10.69	71.93	7.89	74.1 ±
Chloroform 4505 Volatiles	µg/L	69.76	6.96	68.71	11.12	68.44	8.39	70.8 ±
Dibromochloromethane 4575 Volatiles	µg/L	34.26	3.69	34.60	7.25	33.76	4.85	34.2 ±
1,2-Dichloroethane 4635 Volatiles	µg/L	69.75	7.17	66.71	9.31	66.96	8.29	69.5 ±
Methylene chloride (Dichloromethane) 4975 Volatiles	µg/L	34.73	4.63	34.03	7.08	33.93	6.53	34.3 ±
Tetrachloroethylene (Perchloroethylene) 5115 Volatiles	µg/L	18.89	2.79	21.29	11.98	19.50	3.23	20.6 ±

Volatile Organic Compounds 2

PEO-120-2
(continued)

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
1,1,1-Trichloroethane 5160 Volatiles	µg/L	18.20	2.32	20.14	10.49	18.61	2.61	19.3 ±
Trichloroethene (Trichloroethylene) 5170 Volatiles	µg/L	78.04	8.93	75.29	11.96	78.07	9.12	80.6 ±

Volatile Organic Compounds 3A

PEO-120-3A

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Chloroethane 4485 Volatiles	µg/L	97.70	14.90	94.24	20.49	90.84	14.90	97.7 ±
1,1-Dichloroethane 4630 Volatiles	µg/L	134.26	14.73	135.41	25.61	142.06	16.61	130 ±
1,1-Dichloroethylene 4640 Volatiles	µg/L	41.76	6.59	43.20	20.42	38.31	5.68	42.3 ±
cis-1,2-Dichloroethylene 4645 Volatiles	µg/L	55.69	5.50	53.60	12.18	53.93	7.77	64.3 ±
1,2-Dichloropropane 4655 Volatiles	µg/L	92.03	10.20	90.78	12.47	93.70	7.95	93.3 ±
cis-1,3-Dichloropropene 4680 Volatiles	µg/L	94.00	8.33	83.15	18.53	88.96	8.33	94.0 ±
trans-1,3-Dichloropropene 4685 Volatiles	µg/L	30.81	3.74	31.93	7.10	31.51	5.19	31.5 ±
trans-1,2-Dichloroethylene 4700 Volatiles	µg/L	85.34	10.58	78.61	15.71	81.23	11.98	85.8 ±
2-Hexanone 4850 Volatiles	µg/L	156.56	42.80	159.21	40.93	156.56	42.80	139 ±
Methyl bromide (Bromomethane) 4950 Volatiles	µg/L	89.80	21.82	98.45	26.03	93.95	21.82	89.8 ±
Methyl chloride (Chloromethane) 4960 Volatiles	µg/L	58.10	16.46	71.75	22.50	67.87	16.46	56.1 ±
4-Methyl-2-pentanone (MIBK) 4995 Volatiles	µg/L	194.37	31.14	182.32	43.49	195.51	23.02	197 ±
Styrene 5100 Volatiles	µg/L	61.92	7.45	57.48	9.48	59.02	8.28	61.7 ±
1,1,2,2-Tetrachloroethane 5110 Volatiles	µg/L	72.46	10.47	69.23	15.29	67.17	11.85	70.8 ±
1,1,2-Trichloroethane 5155 Volatiles	µg/L	118.80	11.96	120.45	18.09	122.22	15.62	120 ±
Trichlorofluoromethane 5175 Volatiles	µg/L	60.50	16.90	56.92	17.02	56.71	16.90	60.5 ±
Vinyl chloride 5235 Volatiles	µg/L	51.20	11.83	51.70	14.39	49.59	11.83	51.2 ±

Volatile Organic Compounds 3B

PEO-120-3B

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravin
Acetone 4315 Volatiles	µg/L	116.24	29.77	121.73	37.19	116.24	29.77	126 ±
Acrylonitrile 4340 Volatiles	µg/L	123.58	21.52	119.34	27.91	123.58	21.52	125 ±
2-Butanone (Methyl ethyl ketone, MEK) 4410 Volatiles	µg/L	29.65	9.26	30.46	10.51	29.65	9.26	26.4 ±
Carbon disulfide 4450 Volatiles	µg/L	66.25	9.85	78.88	80.51	66.25	9.85	82.0 ±
2-Chloroethyl vinyl ether 4500 Volatiles	µg/L	27.98	6.23	30.02	14.91	27.98	6.23	31.1 ±
1,2-Dibromo-3-chloropropane (DBCP) 4570 Volatiles	µg/L	76.77	11.52	73.82	16.08	76.77	11.47	82.0 ±
1,2-Dibromoethane (EDB, Ethylene dibromide) 4585 Volatiles	µg/L	56.60	8.49	54.03	11.55	56.16	6.96	56.6 ±
Dibromomethane 4595 Volatiles	µg/L	90.60	13.59	91.81	6.66	91.98	7.18	90.6 ±
Dichlorodifluoromethane 4625 Volatiles	µg/L	0.00	0.00					0.0
1,1,1,2-Tetrachloroethane 5105 Volatiles	µg/L	18.60	2.79	23.44	19.59	18.58	2.31	18.8 ±

Volatile Organic Compounds 3B

PEO-120-3B
(continued)

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravin
1,2,3-Trichloropropane 5160 Volatiles	µg/L	28.20	4.38	29.84	11.66	27.73	6.87	29.2 ±
Vinyl acetate 5225 Volatiles	µg/L	1.92	0.88	4.18	8.68	1.92	0.86	34.1 ±

Program analyte accrediting footnotes

1 NELAC
2 EPA
3 NVLAP
4 A2LA
5 NELAC Experimental

PERFORMANCE EVALUATION

First Choice for Quality | RT

Quarterly Study
WP06-1
WPCHEM

25-Jan-2006 through 10-Mar-2006

RT13
RTC Lat

MT00
US EPA Lat

Energy Labs
Jon Hager
E 3161 Lyndale Avenue
Helena MT 59601

Thank you for participating in study WP06-1 Additional information about this study may be found online at www.rt-corp.cor you have any questions or comments about this study please contact me.

Sincerly

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200383-0
This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset
WP06-1

Analyte Group N/A

Analysis
MA-VPH
Gas Chromatography - Photoionization Detection

Method Number 900(
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
Benzene 4375 / PEO-010MA - Lot 011017	48 µg/L	9.88 to 78.0	0.55		ACCEPTABL
Unadjusted C5-C8 Aliphatic Hydrocarbons 4763 / PEO-010MA - Lot 011017	1495 µg/L	903 to 1790 1050 to 1640	1.00	1 / 1	ACCEPTABL
C5-C8 Aliphatic Hydrocarbons 4764 / PEO-010MA - Lot 011017	1140 µg/L	781 to 1550 909 to 1420	-0.19	1 / 2	ACCEPTABL
Ethylbenzene 4765 / PEO-010MA - Lot 011017	32 µg/L	20.6 to 38.5 23.5 to 35.5	0.83	1 / 1	ACCEPTABL
Methyl tert-butyl ether (MTBE) 5000 / PEO-010MA - Lot 011017	3.5 µg/L	2.23 to 4.09 2.54 to 3.78	1.09	1 / 1	ACCEPTABL
Naphthalene 5005 / PEO-010MA - Lot 011017	9.8 µg/L	6.84 to 12.5 7.79 to 11.6	0.12	1 / 1	ACCEPTABL
Toluene 5140 / PEO-010MA - Lot 011017	148 µg/L	96.6 to 182 111 to 168	0.62	1 / 1	ACCEPTABL
Unadjusted C9-C12 Aliphatic Hydrocarbons 5238 / PEO-010MA - Lot 011017	536 µg/L	335 to 659 389 to 605	0.73	1 / 1	ACCEPTABL
C9-C12 Aliphatic Hydrocarbons 5239 / PEO-010MA - Lot 011017	218 µg/L	136 to 268 158 to 248	0.71	2 / 2	ACCEPTABL
m+p-Xylene 5240 / PEO-010MA - Lot 011017	127 µg/L	80.2 to 154 92.0 to 139	0.96	1 / 1	ACCEPTABL
o-Xylene 5250 / PEO-010MA - Lot 011017	46 µg/L	28.7 to 54.0 32.9 to 49.8	1.10	1 / 1	ACCEPTABL
Xylene, total 5260 / PEO-010MA - Lot 011017	173 µg/L	109 to 205 125 to 189	1.01	1 / 1	ACCEPTABL
C9-C10 Aromatic Hydrocarbons 9407 / PEO-010MA - Lot 011017	273 µg/L	180 to 339 207 to 313	0.50	1 / 2	ACCEPTABL
Total VPH 9409 / PEO-010MA - Lot 011017	1660 µg/L	654 to 2720 996 to 2370	-0.07	1 / 2	ACCEPTABL

Analysis
MA-EPH
Gas Chromatography - Flame Ionization Detection

Method Number 900(
Technology Code G

	Result Units	Accept / Warn	Z	Rank	Evaluation
C11-C22 Aromatic Hydrocarbons 5002 / PEO-011MA - Lot 011018	650 µg/L	155 to 899	0.99	4 / 4	ACCEPTABL
C19-C36 Aliphatic Hydrocarbons 5003 / PEO-011MA - Lot 011018	200 µg/L	0.00 to 377	0.97	3 / 4	ACCEPTABL
C9-C18 Aliphatic Hydrocarbons 5004 / PEO-011MA - Lot 011018	920 µg/L	141 to 1300	1.02	4 / 4	ACCEPTABL
Total EPH 9371 / PEO-011MA - Lot 011018	2300 µg/L	0.00 to 3480	0.96	4 / 4	ACCEPTABL

Demands

Analysis
SM 18th/20th ED 5210 B
Not Applicable

Method Number 2002
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Biochemical oxygen demand (BOD) [1, 3, 4] 1530 / PEI-026 Lot 010965	95.7 mg/L	42.4 to 125 55.8 to 111	0.88	47 / 59	ACCEPTABL

Analysis
EPA 410.4
Not Applicable

Method Number 1007
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chemical oxygen demand (COD) [1, 3, 4] 1565 / PEI-026 Lot 010965	123 mg/L	102 to 154 110 to 146	0.57	21 / 47	ACCEPTABL

Microbiology

Analysis
SM 18/19/20th ED 9222 D
OTHER
Method Number 2003
Technology Code O

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fecal coliforms [1, 4] 2530 / MIC-003 - Lot 010969	36 CFU/100m	0.180 to 6920			ACCEPTABL

Minerals

Analysis
SM 18/19/20thED 2320 B
Not Applicable
Method Number 200(
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Alkalinity as CaCO3 [1, 3, 4] 1505 / PEI-027-12 - Lot 010966/0	120 mg/L	107 to 131 111 to 125	-0.37	4 / 43	ACCEPTABL

Analysis
SM 18/19/20thED 2340 B
Not Applicable
Method Numbe 200(
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Hardness, total as CaCO3 [1, 3, 4] 1755 / PEI-027-12 - Lot 010966/0	178 mg/L	157 to 205	-0.26	8 / 42	ACCEPTABL

Analysis
SM 18/19/20thED 2510 B
Not Applicable
Method Number 200(
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Conductivity [1, 3, 4] 1610 / PEI-027-12 - Lot 010966/0	822.6 µmhos/cm	787 to 945 813 to 919	-1.65	39 / 46	ACCEPTABL

Analysis
SM 18/19/20thED 2540 C
Not Applicable
Method Number 200(
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-filterable (TDS) [1, 3, 4] 1955 / PEI-027-12 - Lot 010966/0	444 mg/L	349 to 564 385 to 528	0.35	10 / 36	ACCEPTABL
Residue-filterable (TDS) [1, 3, 4] 1955 / PEI-079 Lot 011032	424 mg/L	311 to 505 343 to 473	0.49	22 / 40	ACCEPTABL

Analysis
SM 18/19/20thED 4500 Cl- B
Not Applicable
Method Number 2001
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chloride [1, 3, 4] 1575 / PEI-027-12 - Lot 010966/0	170.4 mg/L	148 to 184 155 to 186	-0.02	1 / 50	ACCEPTABL

Analysis
SM 18/19/20thED 4500 F-C
Not Applicable
Method Numbe 2001
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fluoride [1, 3, 4] 1730 / PEI-027-12 - Lot 010966/0	1.13 mg/L	0.936 to 1.48 1.03 to 1.39	-0.68	19 / 42	ACCEPTABL

Analysis
SM 18/19/20thED 4500 SO4-E
Not Applicable
Method Number 2001
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Sulfate [1, 3, 4] 2000 / PEI-027-12 - Lot 010966/0	49.2 mg/L	38.9 to 55.2 41.8 to 52.5	0.79	25 / 44	ACCEPTABL

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry
Method Number 1001
Technology Code ICF

	Result Units	Accept / Warn	Z	Rank	Evaluation
Calcium, Ca [1, 3, 4] 1035 / PEI-027-12 - Lot 010966/0	30 mg/L	26.2 to 33.6 27.5 to 32.5	0.00	1 / 49	ACCEPTABL
Magnesium, Mg [1, 3, 4] 1085 / PEI-027-12 - Lot 010966/0	25 mg/L	22.1 to 29.8 23.4 to 28.4	-0.69	28 / 49	ACCEPTABL

Minerals (continued)

(conti

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 100
Technology Code ICI

	Result Units	Accept / Warn	Z	Rank	Evaluation
Potassium, K [1, 3, 4] 1125 / PEI-027-12 Lot 010966/0	29 mg/L	26.6 to 38.2 28.5 to 36.3	-1.74	43 / 44	ACCEPTABL
Sodium, Na [3, 4] 1155 / PEI-027-12 Lot 010966/0	81.7 mg/L	75.2 to 102 79.8 to 97.1	-1.52	38 / 41	ACCEPTABL

Misc. Analytes

Analysis
EPA 150.1
Not Applicable

Method Number 100
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
pH [1, 3, 4] 1900 / PEI-027-3 - Lot 010658	8.28 Units	7.56 to 9.24 7.84 to 8.96	-0.43	49 / 68	ACCEPTABL

Analysis
EPA 160.2
Not Applicable

Method Number 100
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-nonfilterable (TSS) [1, 3, 4] 1960 / PEI-079 - Lot 011032	72 mg/L	42.3 to 103	-0.06	1 / 48	ACCEPTABL

Nutrients

Analysis
EPA 350.1
Not Applicable

Method Number 100
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Ammonia as N [1, 3, 4] 1515 / PEI-028-1 Lot 010967	8.2 mg/L	6.09 to 10.5 6.83 to 9.79	-0.15	16 / 52	ACCEPTABL

Analysis
EPA 351.2
Not Applicable

Method Number 100
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Kjeldahl nitrogen, total (TKN) [1, 3, 4] 1795 / PEI-028-2 - Lot 011004	26.32 mg/L	18.4 to 35.8 21.3 to 32.9	-0.27	10 / 32	ACCEPTABL

Analysis
EPA 353.2
Not Applicable

Method Number 100
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrate as N [1, 3, 4] 1810 / PEI-028-1 - Lot 010967	19.6 mg/L	14.7 to 22.8 16.1 to 21.4	0.63	28 / 47	ACCEPTABL
Nitrite as N [1, 4] 1840 / PEI-028-3 - Lot 011005	2.29 mg/L	1.89 to 2.60 2.01 to 2.49	0.34	11 / 48	ACCEPTABL

Analysis
EPA 353.2
Not Applicable

Method Number 100
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrate+nitrite as N [1, 4] 1820 / PEI-028-1 - Lot 010967	19.6 mg/L	18.4 to 22.0 18.5 to 20.9	0.84	20 / 29	ACCEPTABL

Analysis
EPA 365.1
Not Applicable

Method Number 100
Technology Co

	Result Units	Accept / Warn	Z	Rank	Evaluation
Orthophosphate as P [1, 3, 4] 1870 / PEI-028-* - Lot 010967	3.11 mg/L	2.54 to 3.71 2.74 to 3.61	-0.07	5 / 42	ACCEPTABL
Phosphorus, total [1, 3, 4] 1910 / PEI-028-2 - Lot 011004	7.33 mg/L	6.10 to 8.74 6.54 to 8.30	-0.21	11 / 52	ACCEPTABL

Volatiles

Volatiles

Analysis
EPA 8260B
Not Applicable

Method Number 101
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
Acetone [4] 4315 / PEO-120-3B Lot 010860	73 µg/L	0.00 to 146	0.00	1 / 30	ACCEPTABL
Acrolein (Propenal) [4] 4325 / PEO-120-3B - Lot 010860	<20 µg/L	0.00 to 50.8			ACCEPTABL
Acrylonitrile [4] 4340 / PEO-120-3B Lot 010860	76 µg/L	31.1 to 121	-0.01	2 / 25	ACCEPTABL
Benzene [1, 3, 4] 4375 / PEO-120-1 - Lot 010853	14 µg/L	9.12 to 18.9 10.8 to 17.3	-0.02	1 / 46	ACCEPTABL
Bromodichloromethane [1, 3, 4] 4395 / PEO-120-2 - Lot 010855	98 µg/L	79.8 to 151 91.7 to 139	-1.47	42 / 42	ACCEPTABL
Bromoform [1, 3, 4] 4400 / PEO-120-2 - Lot 010855	66 µg/L	42.2 to 90.3 50.2 to 82.3	-0.03	1 / 42	ACCEPTABL
2-Butanone (Methyl ethyl ketone, MEK) [4] 4410 / PEO-120-3B Lot 010860	28 µg/L	1.60 to 75.7	-0.86	25 / 30	ACCEPTABL
Carbon disulfide [4] 4450 / PEO-120-3B - Lot 010860	86 µg/L	63.6 to 148	-1.15	25 / 29	ACCEPTABL
Carbon tetrachloride [1, 3, 4] 4455 / PEO-120-2 - Lot 010855	17 µg/L	11.2 to 27.2 13.9 to 24.5	-0.82	25 / 44	ACCEPTABL
Chlorobenzene [1, 3, 4] 4475 / PEO-120-2 - Lot 010855	89 µg/L	68.6 to 119 77.0 to 110	-0.57	24 / 44	ACCEPTABL
Chloroethane [1, 4] 4485 / PEO-120-3A - Lot 010857	68 µg/L	30.0 to 130	-0.75	15 / 33	ACCEPTABL
2-Chloroethyl vinyl ether [4] 4500 / PEO-120-3B - Lot 010860	30 µg/L	5.17 to 50.5	0.29	9 / 25	ACCEPTABL
Chloroform [1, 3, 4] 4505 / PEO-120-2 - Lot 010855	21 µg/L	17.1 to 33.0 19.8 to 30.4	-1.53	43 / 44	ACCEPTABL
1,2-Dibromo-3-chloropropane (DBCP) [4] 4570 / PEO-120-3B - Lot 010860	16 µg/L	5.10 to 25.8	0.17	8 / 32	ACCEPTABL
Dibromochloromethane [1, 3, 4] 4575 / PEO-120-2 - Lot 010855	47 µg/L	37.2 to 72.3 43.1 to 66.5	-1.33	35 / 42	ACCEPTABL
Dibromomethane [4] 4595 / PEO-120-3B - Lot 010860	79 µg/L	70.8 to 106	-1.01	25 / 34	ACCEPTABL
1,2-Dichlorobenzene [1, 3, 4] 4610 / PEO-120-1 - Lot 010853	15 µg/L	11.5 to 23.1 13.5 to 21.2	-1.20	30 / 41	ACCEPTABL
1,3-Dichlorobenzene [1, 3, 4] 4615 / PEO-120-1 - Lot 010853	19 µg/L	13.6 to 27.4 15.9 to 25.1	-0.66	22 / 41	ACCEPTABL
1,4-Dichlorobenzene [1, 3, 4] 4620 / PEO-120-1 - Lot 010853	18 µg/L	13.9 to 27.7 16.2 to 25.4	-1.20	33 / 41	ACCEPTABL
Dichlorodifluoromethane [4] 4625 / PEO-120-3B - Lot 010860	<1.0 µg/L	0 to 0			ACCEPTABL
1,1-Dichloroethane [1, 4, 5] 4630 / PEO-120-3A - Lot 010857	75 µg/L	61.7 to 123 71.9 to 112	-1.69	35 / 40	ACCEPTABL
1,2-Dichloroethane [1, 3, 4] 4635 / PEO-120-2 - Lot 010855	33 µg/L	26.8 to 51.3 30.9 to 47.2	-1.47	40 / 44	ACCEPTABL
1,1-Dichloroethylene [1, 4] 4640 / PEO-120-3A - Lot 010857	36 µg/L	18.2 to 50.8 23.7 to 45.4	0.27	10 / 40	ACCEPTABL
cis-1,2-Dichloroethylene [1, 4, 5] 4645 / PEO-120-3A - Lot 010857	77 µg/L	69.3 to 125 76.6 to 116	-2.17	33 / 39	CHECK
1,2-Dichloropropane [1, 4] 4655 / PEO-120-3A - Lot 010857	39 µg/L	31.2 to 63.5 35.6 to 58.1	-1.55	36 / 41	ACCEPTABL
cis-1,3-Dichloropropene [1, 4, 5] 4680 / PEO-120-3A - Lot 010857	40 µg/L	33.7 to 62.5	-1.01	29 / 38	ACCEPTABL
trans-1,3-Dichloropropylene [1, 4] 4685 / PEO-120-3A - Lot 010857	17 µg/L	9.23 to 20.6 11.1 to 18.7	1.10	25 / 36	ACCEPTABL
trans-1,2-Dichloroethylene [1, 4] 4700 / PEO-120-3A - Lot 010857	116 µg/L	81.6 to 173 96.9 to 158	-0.75	14 / 40	ACCEPTABL
Ethylbenzene [1, 3, 4] 4765 / PEO-120-1 Lot 010853	18 µg/L	12.4 to 24.1 14.3 to 22.1	-0.12	3 / 45	ACCEPTABL

Volatiles (continued)

Volatiles

(conti

Analysis
EPA 8260B
Not Applicable

Method Number 101
Technology C

	Result Units	Accept / Warn	Z	Rank	Evaluation
2-Hexanone [1, 4, 5] 4860 / PEO-120-3A - Lot 010857	103 µg/L	61.5 to 176 80.5 to 167	-0.82	11 / 31	ACCEPTABL
Methyl bromide (Bromomethane) [1, 4] 4950 / PEO-120-3A - Lot 010857	48 µg/L	29.3 to 117	-1.89	28 / 35	ACCEPTABL
Methyl chloride (Chloromethane) [1, 4] 4960 / PEO-120-3A - Lot 010857	52 µg/L	35.7 to 143	-2.34	28 / 35	ACCEPTABL
Methylene chloride (Dichloromethane) [1, 3, 4] 4975 / PEO-120-2 - Lot 010855	47 µg/L	32.4 to 74.1 39.3 to 67.2	-0.90	26 / 44	ACCEPTABL
4-Methyl-2-pentanone (MIBK) [1, 4] 4996 / PEO-120-3A Lot 010857	62 µg/L	25.7 to 90.0 36.4 to 79.3	0.39	15 / 32	ACCEPTABL
Methyl tert-butyl ether (MTBE) [1, 4, 5] 5000 / PEO-120-1 - Lot 010853	21 µg/L	15.7 to 35.7	-1.34	37 / 39	ACCEPTABL
Naphthalene [1, 4] 5005 / PEO-120-1 - Lot 010853	20 µg/L	13.0 to 30.2	-0.35	11 / 41	ACCEPTABL
Styrene [1, 4] 5100 / PEO-120-3A - Lot 010857	51 µg/L	38.2 to 81.2 45.4 to 74.1	-1.22	31 / 37	ACCEPTABL
1,1,2,2-Tetrachloroethane [1, 4] 5110 / PEO-120-3A - Lot 010857	85 µg/L	58.7 to 145 73.1 to 130	-1.17	30 / 39	ACCEPTABL
Tetrachloroethylene (Perchloroethylene) [1, 3, 4] 5115 / PEO-120-2 - Lot 010855	69 µg/L	46.5 to 107 56.7 to 97.1	-0.78	29 / 43	ACCEPTABL
Toluene [1, 3, 4] 5140 / PEO-120-1 - Lot 010853	17 µg/L	12.5 to 23.1 14.2 to 21.3	-0.44	22 / 45	ACCEPTABL
1,1,1-Trichloroethane [1, 3, 4] 5160 / PEO-120-2 - Lot 010855	65 µg/L	48.9 to 109 57.9 to 94.1	-1.22	35 / 42	ACCEPTABL
1,1,2-Trichloroethane [1, 4] 5165 / PEO-120-3A - Lot 010857	119 µg/L	100 to 187 115 to 172	-1.69	38 / 39	ACCEPTABL
Trichloroethene (Trichloroethylene) [1, 3, 4] 5170 / PEO-120-2 - Lot 010855	43 µg/L	29.4 to 60.8 34.8 to 55.5	-0.40	16 / 43	ACCEPTABL
Trichlorofluoromethane [1, 4] 5175 / PEO-120-3A - Lot 010857	82 µg/L	38.7 to 155	-1.24	19 / 32	ACCEPTABL
1,2,3-Trichloropropane [4] 5180 / PEO-120-3B - Lot 010860	74 µg/L	45.1 to 114	0.57	23 / 35	ACCEPTABL
1,2,4-Trimethylbenzene [4] 5210 / PEO-120-1 - Lot 010853	9.2 µg/L	5.82 to 13.8	-0.47	17 / 35	ACCEPTABL
1,3,5-Trimethylbenzene [4] 5215 / PEO-120-1 - Lot 010853	15 µg/L	12.2 to 18.4	-0.10	3 / 35	ACCEPTABL
Vinyl acetate [4] 5225 / PEO-120-3B - Lot 010860	4.0 µg/L	0.00 to 12.5	-0.81	9 / 14	ACCEPTABL
Vinyl chloride [1, 4] 5235 / PEO-120-3A - Lot 010857	27 µg/L	11.9 to 47.7	-0.37	12 / 33	ACCEPTABL
m+p-Xylene [4] 5240 / PEO-120-1 - Lot 010853	21 µg/L	18.3 to 27.5	-0.59	21 / 42	ACCEPTABL
o-Xylene [4] 5250 / PEO-120-1 - Lot 010853	17 µg/L	14.2 to 21.4	-0.40	17 / 42	ACCEPTABL
Xylene, total [1, 4] 5260 / PEO-120-1 - Lot 010853	37 µg/L	22.6 to 57.1 28.3 to 51.3	-0.49	22 / 45	ACCEPTABL

Group Analysis Summary

Acceptable 52 / 52
Score 100.0% - **(Acceptable)**

End of WPCHEM-1

Sample Information

WP - Microbiological
MIC-003

Study Lot 0
Mfg Lot 0

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Fecal coliforms 2530 Microbiology	CFU/100m	1,240.82	14,952.40	385.83	599.64	111.93	153.23	55

Demand
PEI-026

Study Lot 0
Mfg Lot 0

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Biochemical oxygen demand (BOD) 1530 Demands	mg/L	83.51	13.79	83.47	21.77	81.49	11.23	132 ±
Chemical oxygen demand (COD) 1565 Demands	mg/L	128.00	8.76	133.21	36.32	129.05	10.20	134 ±

Minerals
PEI-027-12

Study Lot 010
Mfg Lot 010966/0

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Calcium, Ca 1035 Minerals	mg/L	30.00	1.25	28.11	4.99	29.38	1.56	29
Magnesium, Mg 1085 Minerals	mg/L	25.67	1.26	25.56	1.82	25.46	0.73	25
Potassium, K 1125 Minerals	mg/L	32.38	1.94	32.56	2.29	32.47	2.21	32
Sodium, Na 1155 Minerals	mg/L	88.38	4.38	86.66	7.83	87.17	5.73	88
Alkalinity as CaCO3 1505 Minerals	mg/L	119.00	3.87	120.86	10.82	123.18	7.52	12
Chloride 1575 Minerals	mg/L	170.57	7.65	168.19	10.85	168.29	5.67	17
Conductivity 1610 Minerals	µmhos/cm	866.07	26.33	861.36	52.97	866.07	31.84	86
Fluoride 1730 Minerals	mg/L	1.21	0.09	1.18	0.26	1.16	0.10	1.2
Hardness, total as CaCO3 1755 Minerals	mg/L	180.00	7.78	174.87	13.84	178.75	7.78	18
Residue-filterable (TDS) 1955 Minerals	mg/L	458.50	35.88	444.44	59.51	458.50	36.82	45
Sulfate 2000 Minerals	mg/L	47.05	2.71	47.54	6.05	46.61	3.26	47.

pH
PEI-027-3

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev	Gravin
pH 1900 Misc. Analytes	Units	8.40	0.28	8.38	0.13	8.40	0.12	8.4

Simple Nutrients
PEI-028-1

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Ammonia as N 1515 Nutrients	mg/L	8.31	0.74	8.86	1.62	8.48	0.60	8.6
Nitrate as N 1810 Nutrients	mg/L	18.76	1.34	18.20	1.53	18.42	1.38	18.
Nitrate+nitrite as N 1820 Nutrients	mg/L	18.88	1.09	18.58	2.02	18.50	1.18	18.
Orthophosphate as P 1970 Nutrients	mg/L	3.12	0.19	3.11	0.29	3.11	0.21	3.1

Complex Nutrients
PEI-028-2

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin

Complex Nutrients
PEI-028-2
(continued)

Study Lot 0
Mfg Lot 0

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Kjeldahl nitrogen, total (TKN) 1795 Nutrients	mg/L	27.10	2.91	24.61	6.43	26.53	1.99	27
Phosphorus, total 1910 Nutrients	mg/L	7.42	0.44	7.16	1.89	7.51	0.58	7.:

Nitrite
PEI-028-3

Study Lot 0
Mfg Lot 0

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Nitrite as N 1840 Nutrients	mg/L	2.25	0.12	2.21	0.30	2.24	0.13	2.2

Residue (Whole-Volume)
PEI-079

Study Lot 0
Mfg Lot 0

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Residue-filterable (TDS) 1955 Minerals	mg/L	408.18	32.37	410.50	25.97	408.18	24.36	41
Residue-nonfilterable (TSS) 1960 Misc. Analytes	mg/L	72.59	10.08	71.28	10.94	72.59	10.08	75

VPH in Water - MA Method
PEO-010MA

Study Lot 0
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravir
Benzene 4375	µg/L	41.90	11.00					48
Unadjusted C5-C8 Aliphatic Hydrocarbons 4763	µg/L	1,348.80	148.00					141
C5-C8 Aliphatic Hydrocarbons 4764	µg/L	1,164.80	128.00					12
Ethylbenzene 4765	µg/L	29.50	3.01					30.
Methyl tert-butyl ether (MTBE) 5000	µg/L	3.16	0.31					3.1
Naphthalene 5005	µg/L	9.69	0.95					9.5
Toluene 5140	µg/L	139.16	14.20					14
Unadjusted C9-C12 Aliphatic Hydrocarbons 5238	µg/L	496.80	54.00					54
C9-C12 Aliphatic Hydrocarbons 5239	µg/L	202.40	22.00					22
m+p-Xylene 5240	µg/L	115.64	11.80					11
o-Xylene 5250	µg/L	41.36	4.22					42.
Xylene, total 5260	µg/L	156.80	16.00					16
C9-C10 Aromatic Hydrocarbons 9407	µg/L	259.79	26.50					26
Total VPH 9409	µg/L	1,885.60	344.00					17

EPH in Water - MA Method
PEO-011MA

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
C11-C22 Aromatic Hydrocarbons 5002	µg/L	527.27	124.04	528.75	100.36	527.27	124.04	40
C19-C36 Aliphatic Hydrocarbons 5003	µg/L	115.00	87.39	115.00	75.06	115.00	87.39	14
C9-C18 Aliphatic Hydrocarbons 5004	µg/L	722.62	193.76	725.00	158.64	722.62	193.76	85
Total EPH 9371	µg/L	1,741.34	580.71	1,742.50	495.07	1,741.34	580.71	20

Volatile Organic Compounds 1

PEO-120-1

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Benzene 4375 Volatiles	µg/L	14.03	1.84	13.84	1.93	13.71	1.10	14.
1,2-Dichlorobenzene 4610 Volatiles	µg/L	17.31	1.82	17.04	3.86	16.49	2.53	17.
1,3-Dichlorobenzene 4515 Volatiles	µg/L	20.51	2.29	20.17	3.76	20.07	2.39	21.
1,4-Dichlorobenzene 4620 Volatiles	µg/L	20.76	2.30	20.14	3.80	20.00	2.28	21.
Ethylbenzene 4765 Volatiles	µg/L	18.23	1.96	17.89	2.47	18.24	2.12	18
Methyl tert-butyl ether (MTBE) 5000 Volatiles	µg/L	26.20	3.87	24.98	3.81	25.36	3.87	26
Naphthalene 5005 Volatiles	µg/L	21.60	4.60	19.55	4.67	18.20	4.60	21.
Toluene 5140 Volatiles	µg/L	17.79	1.77	17.34	2.35	17.60	1.93	17
1,2,4-Trimethylbenzene 5210 Volatiles	µg/L	9.87	1.41	9.10	1.41	9.24	1.41	9.8
1,3,5-Trimethylbenzene 5215 Volatiles	µg/L	15.30	3.04	13.41	2.91	13.62	3.04	15
m+p-Xylene 5240 Volatiles	µg/L	22.90	3.24	21.98	3.26	22.25	3.24	22.
o-Xylene 5250 Volatiles	µg/L	17.80	2.02	17.37	2.29	17.64	2.02	17
Xylene, total 5260 Volatiles	µg/L	39.82	5.75	39.70	5.35	40.19	4.95	40

Volatile Organic Compounds 2

PEO-120-2

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Bromodichloromethane 4395 Volatiles	µg/L	115.58	11.92	109.97	8.73	110.11	9.20	11
Bromoform 4400 Volatiles	µg/L	66.27	8.01	61.78	9.33	62.33	9.82	65.
Carbon tetrachloride 4435 Volatiles	µg/L	19.20	2.67	18.35	2.51	18.32	2.62	19
Chlorobenzene 4475 Volatiles	µg/L	93.73	8.37	90.75	10.47	92.40	7.57	95
Chloroform 4505 Volatiles	µg/L	25.06	2.65	24.29	2.06	24.24	2.11	24.
Dibromochloromethane 4575 Volatiles	µg/L	54.77	5.85	53.41	7.17	53.57	7.66	54.
1,2-Dichloroethane 4635 Volatiles	µg/L	39.03	4.09	37.82	3.92	37.61	3.76	38
Methylene chloride (Dichloromethane) 4975 Volatiles	µg/L	53.25	6.95	50.03	10.10	51.44	7.90	53
Tetrachloroethylene (Perchloroethylene) 5115 Volatiles	µg/L	79.89	10.12	78.59	10.21	78.72	11.01	82.
1,1,1-Trichloroethane 5160 Volatiles	µg/L	76.00	9.03	75.27	10.28	76.17	9.69	78.
Trichloroethene (Trichloroethylene) 5170 Volatiles	µg/L	45.07	5.23	44.20	6.19	44.43	4.23	46.

Volatile Organic Compounds 3A

PEO-120-3A

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Chloroethane 4485 Volatiles	µg/L	75.00	15.90	65.52	14.05	65.17	15.90	75.
1,1-Dichloroethane 4630 Volatiles	µg/L	92.18	10.15	87.91	15.62	90.16	14.58	89
1,1-Dichloroethylene 4640 Volatiles	µg/L	34.54	5.43	37.00	15.83	34.81	8.08	34.
cis-1,2-Dichloroethylene 4645 Volatiles	µg/L	97.20	9.30	93.03	16.80	94.89	15.98	94.

Volatile Organic Compounds 3A

PEO-120-3A
(continued)

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
1,2-Dichloropropane 4655 Volatiles	µg/L	47.34	5.38	45.32	6.73	45.82	6.39	47.
cis-1,3-Dichloropropene 4680 Volatiles	µg/L	48.10	7.98	44.36	11.03	45.47	7.98	48.
trans-1,3-Dichloropropylene 4685 Volatiles	µg/L	14.91	1.90	15.01	2.90	14.76	2.39	15.
trans-1,2-Dichloroethylene 4700 Volatiles	µg/L	127.42	15.26	130.07	22.32	131.23	23.52	12
2-Hexanone 4860 Volatiles	µg/L	118.61	19.04	141.23	64.20	127.60	39.32	12
Methyl bromide (Bromomethane) 4950 Volatiles	µg/L	73.20	13.34	51.22	13.33	52.05	13.34	73.
Methyl chloride (Chloromethane) 4960 Volatiles	µg/L	89.20	15.88	59.92	17.69	61.48	15.88	89
4-Methyl-2-pentanone (MIBK) 4995 Volatiles	µg/L	57.87	10.72	50.07	12.04	50.43	14.12	59
Styrene 5100 Volatiles	µg/L	59.72	7.17	53.83	9.33	56.03	7.33	59
1,1,2,2-Tetrachloroethane 5110 Volatiles	µg/L	101.78	14.35	98.63	27.11	97.09	18.16	99.
1,1,2-Trichloroethane 5165 Volatiles	µg/L	143.35	14.41	137.86	18.20	141.04	15.64	14
Trichlorofluoromethane 5175 Volatiles	µg/L	96.70	11.89	88.00	23.30	87.36	11.89	96.
Vinyl chloride 5235 Volatiles	µg/L	29.80	7.65	28.12	7.10	28.21	7.65	29.

Volatile Organic Compounds 3B

PEO-120-3B

Study Lot 01
Mfg Lot 01

	Units	Proficiency Value	Proficiency Std. Dev	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravin
Acetone 4315 Volatiles	µg/L	72.92	24.45	72.00	25.30	72.92	24.45	78.
Acrolein (Propenal) 4325 Volatiles	µg/L	42.30	15.50	11.45	13.22	11.45	15.50	42
Acrylonitrile 4340 Volatiles	µg/L	76.20	15.05	78.24	17.45	76.20	15.05	79.
2-Butanone (Methyl ethyl ketone, MEK) 4410 Volatiles	µg/L	38.63	12.34	39.49	13.84	38.63	12.34	35
Carbon disulfide 4450 Volatiles	µg/L	106.00	17.33	108.43	25.80	106.07	17.33	10
2-Chloroethyl vinyl ether 4500 Volatiles	µg/L	27.83	7.55	29.97	13.02	27.83	7.55	28
1,2-Dibromo-3-chloropropane (DBCP) 4570 Volatiles	µg/L	15.42	3.44	15.87	3.46	15.42	3.44	16.
Dibromomethane 4595 Volatiles	µg/L	88.50	9.40	87.17	15.71	88.32	9.40	88.
Dichlorodifluoromethane 4625 Volatiles	µg/L	0.00	0.00					0.0
1,2,3-Trichloropropane 5180 Volatiles	µg/L	64.65	16.53	64.89	13.88	64.65	16.53	65.
Vinyl acetate 5225 Volatiles	µg/L	5.79	2.22	8.06	5.14	5.79	2.22	26.

Program analyte accrediting footnotes

1 NELAC
2 EPA
3 NVLAP
4 A2LA
5 NELAC Experimental

APPENDIX B
Quality Systems Controlled Documents

Quality Assurance Program Manual

Qualifications Manual

Energy Laboratories Analytical Services Catalog

Policies and Procedures Package
- Benefits
- 401-K
- Employee Leave Time, Work Week
- Computer Software Policy
- Work Ethic Policy
- Drug and Alcohol
- Non-Discrimination and Harassment in the Workplace Policy
- Confidentiality Agreement

SOPs
- Organization and Personnel (10-Series)
  - SOP of SOPs'
  - Access and Security
  - Roles and Responsibilities
  - Personnel Training
  - Policies and Procedures
- General Facility Operations (20-Series)
  - Login/Chain of Custody
  - Document Production/Archives
  - Lab Waste Management
  - Internal QA Audits
  - External QA Audits
  - Shipping
  - Property Procurement
  - Lab Notebooks
  - Non-Conformance
  - Sample Storage
  - Purchasing of Laboratory Reagents and Supplies
- General Laboratory Procedures (30-Series)
- Equipment Use and Maintenance (40-Series)
- Analytical Methods (50-Series)

Laboratory Notebooks

APPENDIX C

Quality Assurance / Quality Control Specifications

Appendix A - Table 1 - QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) SPECIFICATIONS - ENERGY LABORATORIES, Inc.

PARAMETER	METHOD REF.	HOLDING TIME**	INITIAL CALIBRATION	CONTINUING CALIBRATION	EXTERNAL CHECK SAMPLE	METHOD BLANK	SURROGATE Recovery	MATRIX SPK Frequency Recovery	DUPLICATE or Matrix Spk Dup	CALIBRATION STANDARDS VERIFICATION	OTHER
BTEX	8021/602 MDHES	14 Days	5 Point 20% RSD 20% RSD of MnRF	Every 12 Hours 85-115% of Initial	Every 48 Hrs 70-130	Every 12 Hrs <PQL	Trifluorotoluene 80-120% Rec.	10% of Smpls 70-130% Rec.	MSD <20% RPD	48 Hrs Check Smpl	PER METHOD SOP Instrument Blk as needed
GRO	MDHES	14 Days	5 Point 25% RSD OF RF 25% RSD of MnRF	Every 12 Hours 75-125% of Initial	Every 12 Hrs 50-150%	Every 12 Hrs <PQL	Trifluorotoluene 50-150% Rec.	10% of Smpls 60-120% Rec.	MSD <20% RPD	48 Hrs Check Smpl	PER METHOD SOP Instrument Blk as needed
DRO	MDHES	Water Extr 7 Days Soil Extr 14 Days Analyze 40 Days	5 Point 25% RSD of MnRF 25% RSD of MnRF	Every 12 Hours 75-125% of Initial	Daily/Batch 60-120%	Every 12 Hrs <PQL	O-terphenyl 50-150% Rec.	10% of Smpls 60-120% Rec.	MSD & BLKSPK <20% RPD	Each Lot of Stds	PER METHOD SOP Instrument Blk as needed
TPH as Diesel	8015 mod	Water Extr 7 Days Soil Extr 14 Days Analyze 40 Days	5 Point 25% RSD of MnRF 25% RSD of MnRF	Every 12 Hours 85-115% of Initial	Daily/Batch 60-140%	Every 12 Hrs <PQL	O-terphenyl 50-150% Rec.	10% of Smpls 60-120% Rec.	MSD & BLKSPK <20% RPD	Each Lot of Stds	PER METHOD SOP Instrument Blk as needed
TPH by Infrared Spectroscopy	418.1	28 Days	4 Point Linear Regression r>.995	Daily 90-110%	Daily/batch 90-110%	10% of Smpls <PQL	NA NA	10% of Smpls 90-110%	MSD <20% RPD	Each Lot of Stds	Calibrate IR wavelength
Purgeable Organics	8260 624*	14 Days	5 Point* <30%RSD Min. RRF 0.25	Every 12 Hrs +/- 25% for CCC +/- 30%*	5% of Smpls QC Limits	10% of Smpls <PQL	3 Surrogates Statistical	10% of Smpls	MSD Statistical Limits	Each Lot of Stds	Tuning every 12 Hrs I.S. areas 50-150% of I.C. Analyte ID RRT +/- 06 Major Ions +/- 20% CLP Guidelines
Regulated and Unregulated Volatile Organic Compounds	524.2	14 Days	5 Point* <30%RSD or Linear Regression Min. RRF 0.25	Every 8 Hrs +/- 30%*	5% of Smpls QC Limits	10% of Smpls <PQL	3 Surrogates 80-120%	N/A	N/A	Each Lot of Stds	Tuning every 8 Hrs I.S. areas 50-150% of I.C. Analyte ID RT +/- 30 sec Major Ions +/- 20% CLP Guidelines
Ignitability	1010	NS	Six Months	NA	5% of Smpls	NA	NA	NA	5% of Smpls	Check Smpl	AS PER METHOD SOP
Corrosivity, pH	9040/9045	Immediately	2 Point bracket sample pH	Every 10thSample +/- 0 1 pH units	per Sequence +/- 0.1 pH units	NA	NA	NA	5% of Smpls	Each lot of Stds	AS PER METHOD SOP
Cyanide Reactivity	9012/9013	14 Days	3 Point Linear Regression r>.995	Every 10 Smpls 85-115% of Initial	NA	5% of Smpls <PQL	NA	NA NA	10% of Smpls 3xLLD or 10%RPD	Check Smpl Instrument	AS PER METHOD SOP
Sulfide Reactivity	9030/9031	7 Days	3 Point Linear Regression r>.995	Every 10 Smpls 85-115% of Initial	NA	5% of Smpls <PQL	NA	NA	10% of Smpls 3xLLD or 10%RPD	Check Smpl Instrument	AS PER METHOD SOP
Specific Gravity	NS	NS	NA	NA	NA	NA	NA	NA	10% of Smpls	NA	
Paint Filter Test	9095	NS	NA	NA	NA	NA	NA	NA	10% of Smpls	NA	
Total Halogens	D808	NS	NA	NA	NA	Batch <0.03 %	NA	NA	10% of Smpls per method	NA	ASTM method

Appendix A - Table 1 - QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) SPECIFICATIONS - ENERGY LABORATORIES, Inc.

PARAMETER	METHOD REF.	HOLDING TIME**	INITIAL CALIBRATION	CONTINUING CALIBRATION	EXTERNAL CHECK SAMPLE	METHOD BLANK	SURROGATE Recovery	MATRIX SPK Frequency Recovery	DUPLICATE or Matrix Spk Dup	CALIBRATION STANDARDS VERIFICATION	OTHER
Acid Digestion	3050		NA	NA	Daily/Batch	Daily/Batch	NA	10% of Smpls	5% of Smpls	NA	AS PER METHOD SOP
Metals, except mercury	ICP/ICPMS	6 Months	2 Point Blank and Std	Every 10 Samples 90-110% of Value	5% of Smpls 90-110% 95-105% for 1st CCV	Daily/Batch <2.2*MDL or 1/10 sample	NA	10% of Smpls 70-130% (200.7) 75-125% (6010)	5% of Smpls 3xLLD or 10%RPD	Check Smpl	AS PER METHOD SOP Instrument Blk as needed Intensity of I.C. Std area Interference Check Std
Mercury	AA	28 days	same as other metals								
TCLP	1311		NA	NA	NA	10% of Smpls	NA	EVERY MATRIX	NA	NA	NA
mercury		28 days to extract									
other metals		180 days to extract									
organics		14 days to extract									
Biochemical Oxygen Demand	405.1	48 hours	Daily, saturated air	NA	Daily 85-115%	Daily <0.2 mg/l	NA	NA	3 replicates/sample		
Chemical Oxygen Demand	410.1	28 days	3 point Linear Regression r>0.995	Every 10 Smpls 85-115% of Initial	10% of Smpls QC Range	Daily/Batch <PQL	NA	10% of Smpls 85-115% Rec	5% of Smpls 3xLLD or 10%RPD	Check Smpl	AS PER METHOD SOP Instrument Blk as needed
Total Suspended Solids	160.2	7 days	Daily balance calibration	NA	NA	5% of Smpls	NA	NA	5% of Smpls 3xLLD or 10%RPD	NA	
Total Kjeldahl Nitrogen	351.3	28 days	5 pt Linear Regression r>0.995	NA	Daily 90-110%	Daily	NA	10% of Smpls 85-115% Rec.	5% of Smpls 3xLLD or 10%RPD	NA	
Nitrate+Nitrite as N	353.2	28 days	5 point Linear Regression r>0.995	Every 10 Smpls 90-110% of Initial	10% of Smpls 90-110%	10% of Smpls <MDL	NA	10% of Smpls 90-110% Rec.	5% of Smpls 3xLLD or 10%RPD	Check Smpl	AS PER METHOD SOP Instrument Blk as needed
Total Phosphorus as P	365.1	28 days	5 point Linear Regression r>0.995	Every 10 Smpls 90-110% of Initial	10% of Smpls 90-110%	10% of Smpls <MDL	NA	10% of Smpls 90-110% Rec.	5% of Smpls 3xLLD or 10%RPD	Check Smpl	AS PER METHOD SOP Instrument Blk as needed

*QA/QC criteria similar to method shown.

**Holding Times do not reflect actual sample turnaround times.

NS=Not Specified, NA=Not Applicable, Smpl=Sample, IC=Initial Calibration, CC=Continuing Calibration, I.S.=Internal Std. Std=Standard, Blk=Blank, MSD=Matrix Spike Duplicate, MDL=Method Detection Limit,Extr=Extract, RF=Response Factor,MnRF=Mean Response Factor,RRF=Relative Response Factor,RSD=Relative Standard Deviation,RRT=Relative Retention Time,LLD=Lower Limit of Detection. CLP=Contract Laboratory Program SOW 1988

Method Detection Limits are determined annually for chromatographic systems. QA/QC charts as needed. Chain-of-Custody records maintained, sample condition reports for every sample.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * ell@energylab.com

METHOD QA/QC PARAMETERS
ELEMENTAL ANALYSES BY ICP by EPA Method 200 7/6010B
For Water, Waste, and Soil Analyses

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
Sample Preparation	Soils: 3050 Digestion Waters: Turbidity <1 Analyze direct, >1 digest using 200.2 Total metals are all digested	Meet method QC criteria for the matrix.	1) Reanalyze sample	Reporting: Audit review, "Digestion batch ID for each sample and Date extracted available in Dates Report".
Instrument Initial Calibration (IC)	Daily, or when needed 1 point calibration and blank	None	None	Calibration of instrument. Calibration validity Tested by ICV and ICB. Reporting: In data QC report
Initial Calibration Verification (ICV)/Instrument Performance Check (IPC)	Immediately follows calibration. Use second source standard.	6010B: R% =90-110 200.7: %R=95-105 immediately after IC,	1) Recalibrate and rerun 2) Prepare fresh standards or/ ICV.	Evaluates accuracy/bias in calibration standards. Reporting: In data QC report
Initial Calibration Blank (ICB)	Immediately follows ICV	<2.2xMDL, or <10% of reporting limit, whichever is greatest	1) Repour Blanks, recalibrate and rerun. 2) Prepare fresh blank	Evaluates reagent contamination and instrument carryover and background.. Reporting: In data QC report. Blanks values reported down to criteria used.
Low Level Calibration Verification (CRI)	Reporting limit standard analyzed at beginning and end of run.	R%= 50-150	1) None	Verifies instrument ability to quantitate analytes at the reporting limit. Reporting: In data QC report
Interference Check Sample "A" (ICSA)	Run daily	R%=80-120 for interferents +/- 2* reporting limit for analytes	1) Evaluate sample data. Results near reporting limit suspect if failing ICSA. 2) Rerun sample as indicated.	Reporting: In data QC report
Interference Check Sample "AB" (ICSAB)	Run daily	R%=80-120 for interferents	1) Evaluate sample data. Results near reporting limit suspect if failing ICSB. 2) Rerun sample as indicated.	Reporting: In data QC report
Continuing Calibration Verification (CCV)	Run every 10 samples and at end of run.	R% =90-110 as continuing calibration check 200.7: %R=95-105 immediately after IC, 90-110 following CCV's	1) Recalibrate and rerun all samples since last valid CCV 2) Check for sample matrix problems.	Evaluates instrument calibration drift. Reporting: Prior CCV in data QC report, ending CCV = audit review.
Continuing Calibration Blank (CCB)	Run with every CCV and after high level samples as needed.	<2.2xMDL, or <10% of reporting limit, whichever is greatest.	1) Check for high concentration sample 2) Reanalyze CCB. 3) Reanalyze affected samples	Measures analyte carryover in instrument and also evaluates possible contamination in reagents and glassware. Reporting: In data QC report, Blanks values reported down to criteria used.
Instrument Matrix Spike Sample (MS)	6010: Minimum 1/20 samples 200.7: Minimum 1/10 samples and for each batch. Not performed on digested samples See MS	6010B %R =75-125 200.7 %R-70-130	1) Rerun spike 2) Evaluate LCS performance.	Evaluates effect of matrix on method performance. Results not evaluated when sample analyte concentration greater than 4X spike level. Reporting: In data QC report.
Instrument Duplicate Sample or Matrix Spike duplicate.	Minimum 1/20 Samples in instrument sequence. Not performed on digested samples	Either 3* PQL or <10%RPD, whichever is greatest. %R= See MS	1) Rerun duplicate/spike 2) Evaluate LCS	Measures method precision. MSD may be used instead of duplicate. Reporting: In data QC report.
Method Blank Also see ICB and	Digested Samples, Minimum 1/20 samples or for each batch	< 10% of sample concentration.	1) Re-digest samples from batch which fail acceptance criteria.	Evaluates possible contamination in reagents and glassware. Reporting:

METHOD QA/QC PARAMETERS
ELEMENTAL ANALYSES BY ICP by EPA Method 200.7/6010B
For Water, Waste, and Soil Analyses

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
CCB for direct analyses	whichever is more frequent Direct analyses: Daily and each sequence	<2.2xMDL, or <10% of reporting limit, whichever is greatest.		Reporting: In data QC report, Blank values reported down to criteria used.
Laboratory Control Sample = LFB for direct instrument analyses (undigested).	Digested Samples, Minimum 1/20 samples or for each batch whichever is more frequent Direct analyses: Daily and each sequence.	6010B: %R= 75-125 200.7 %R=85-115 Soils: Within established acceptance ranges for certified material.	1) Repeat LCS analyses 2) Prepare new standards 3) Recalibrate 4) Re-extract and re-analyze samples associated with LFB. 5) Flag data or re-digest batch	Evaluates method precision and accuracy. Reporting: In data QC report
Matrix Spike (MS) (Laboratory Fortified Sample Matrix (LFM)) Pre-digestion for digested samples.	6010. 1/20 samples or 1/Digestion Batch whichever is more frequent. 200.7: 1/20 samples or per batch whichever is more frequent.	6010B: %R= 75-125 200.7: %R=70-130	1) See LCS 2) Flag data or re-digest batch 3) Repeat analyses Note MS recovery performance in soils varies considerably with matrix.	Evaluates digestion extraction efficiency and sample matrix effects on analyses. Reporting: In data QC report.
Matrix Spike Duplicate (MSD) or digestion duplicate Pre-digestion for digested samples	1/20 samples or 1/Digestion Batch whichever is more frequent	Either +/- 3*LLD or 10% RPD %R=See MS	1) See LCS 2) Flag data or re-digest batch 3) Repeat analyses.	Measures method precision. MSD may be used instead of duplicate. Reporting: In data QC report.
Serial Dilution Sample	when new matrix is encountered	%R=90-110 for analytes >50*PQL	1) Rerun samples 2) Run samples on dilution	Used for screening analyses and for evaluating new matrices.
Inter-element correction Factor Studies	Annually, or whenever instrument changes might affect inter-element corrections.	Comparison to historical data	1) Repeat 2) Correct problem	Correction factors to account for spectral overlap between differing elements.
Upper Linear Range Studies	Annually, or whenever instrument changes might affect sensitivity.	Comparison to historical data	1) Repeat 2) Correct problem 3) Adjust upper calibration limit	Used to determine the upper linear calibration range for the instrument.
MDL/IDL Studies	Annually or whenever instrument changes, which might affect sensitivity.	<2.2 X reporting limit and comparisons to prior studies.	1) Repeat 2) Correct problem 3) Adjust reporting limit to >MDL	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher MDL. Reporting: Audit review
External PE Samples	Semi-annually, WS and WP study samples and internal double blind samples.	Within EPA specified interlaboratory control limits	1) Repeat 2) Correct problem	External review of analytical method accuracy. Historically, excellent performance. Reporting: Current study results available on www. energylab.com website.
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. or as needed	Data statistically within control limits.	1) Correct method problem 2) Adjust control limits	For statistical process control. Reporting: Audit review

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
ELEMENTAL ANALYSES BY ICP-MS by EPA Method 200.8/6020
for Water, Waste, and Soil Analyses

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
Sample Preparation	Soils: 3050 Digestion Waters: Turbidity <1 Analyze direct >1 digest using 200.2 Total metals are all digested	Meet method QC criteria for the matrix.	1) Reanalyze sample	Reporting: Audit review, "Digestion batch ID for each sample and Date extracted available in Dates Report"
Instrument Tuning	Daily – before calibration, analyze tuning solution; conduct mass calibration, and mass resolution check. Per method requirements	Per individual method requirements:	1) Rerun tuning solutions 2) Adjust instrument parameters and retune 3) Correct Problems	Set instrument parameters for accurate qualitative elemental identification. Tuning solution varies according to matrix and targeted analytes. *Reporting: Audit review*
Instrument Initial Calibration (C)	Daily, or when needed. 2 point calibration and blank	None	None	Calibration of instrument. Calibration validity Tested by ICV and ICB. Reporting: In data QC report
(ICV) Initial Calibration Verification	Immediately follows calibration. Use second source standard.	R% =90-110	1) Recalibrate and rerun 2) Prepare fresh standards or/ ICV.	Evaluates accuracy/bias in calibration standards. Reporting: In data QC report
Initial Calibration Blank (ICB)	Immediately follows ICV	<2.2xMDL, or <10% of reporting limit, whichever is greatest.	1) Repour Blanks, recalibrate and rerun. 2) Prepare fresh blank	Evaluates reagent contamination and instrument carryover and background.. Reporting: In data QC report. Blanks values reported down to criteria used.
Low Level Calibration Verification (CRI)	Reporting limit standard analyzed at beginning and end of run.	R%= 50-150	1) None	Verifies instrument ability to quantitate analytes at the reporting limit. Reporting. In data QC report
Interference Check Sample "A" (ICSA)	Run daily per 6020B requirements	R%=80-120 for interferents +/- 2* reporting limit for analytes	1) Evaluate sample data. Results near reporting limit suspect if failing ICSA. 2) Rerun sample as indicated.	Reporting: In data QC report
Interference Check Sample "AB" (ICSAB)	Run daily for 6020B per 6020B requirements	R%=80-120 for interferents	1) Evaluate sample data. Results near reporting limit suspect if failing ICSB. 2) Rerun sample as indicated.	Reporting: In data QC report
Continuing Calibration Verification (CCV)	Run every 10 samples and at end of run	R%= 90-110	1) Recalibrate and rerun all samples since last valid CCV 2) Check for sample matrix problems.	Evaluates instrument calibration drift Reporting: Prior CCV in data QC report, ending CCV = audit review.
Continuing Calibration Blank (CCB)	Run with every CCV and after high level samples as needed.	<2.2xMDL, or <10% of reporting limit, whichever is greatest.	1) Check for high concentration sample 2) Reanalyze CCB. 3) Reanalyze affected samples	Measures analyte carryover in instrument and also evaluates possible contamination in reagents and glassware. Reporting: In data QC report, Blanks values reported down to criteria used.
Instrument Matrix Spike Sample (MS)	6020 Minimum 1/20 samples 200.8: Minimum 1/10 samples and for each batch. Not performed on digested samples	6020B: %R =75-125 200.8 %R-70-130	1) Rerun spike 2) Evaluate LCS performance.	Evaluates affect of matrix on method performance. Results not evaluated when sample analyte concentration greater than 4X spike level. Reporting: In data QC report.
Instrument Duplicate Sample or Matrix Spike duplicate.	Minimum 1/20 Samples in instrument sequence. Not performed on digested samples	Either 3* PQL or <10%RPD, whichever is greatest. %R= See MS	1) Rerun duplicate/spike 2) Evaluate LCS	Measures method precision. MSD may be used instead of duplicate. Reporting: In data QC report.
Method Blank or	Digested Samples: Minimum 1/20	< 10% of sample	1) Re-digest samples from batch	Evaluates possible contamination in

METHOD QA/QC PARAMETERS
ELEMENTAL ANALYSES BY ICP-MS by EPA Method 200.8/6020
for Water, Waste, and Soil Analyses

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
LRB) (Digested samples only) Also See ICB and CCB for direct analyses	samples or for each batch whichever is more frequent. Direct analyses: Daily and each sequence.	concentration, <2.2xMDL, or <10% of reporting limit, whichever is greatest.	which fail acceptance criteria.	reagents and glassware. Reporting: Reporting: In data QC report, Blank values reported down to criteria used.
Laboratory Control Sample = LFB for direct instrument analyses (undigested).	Digested Samples: Minimum 1/20 samples or for each batch whichever is more frequent. Direct analyses: Daily and each sequence.	6020B: %R= 75-125 200.8 %R=85-115 Soils: Within established acceptance ranges for certified material.	1) Repeat LCS analyses 2) Prepare new standards 3) Recalibrate 4) Re-extract and re-analyze samples associated with LFB. 5) Flag data or re-digest batch	Evaluates method precision and accuracy. Reporting: In data QC report
Matrix Spike (MS) (Laboratory Fortified Sample Matrix (LFM)) Pre-digestion for digested samples.	6010: 1/20 samples or 1/Digestion Batch whichever is more frequent. 200.8: 1/10 samples or per batch whichever is more frequent.	6020B: %R= 75-125 200.8: %R=70-130	1) See LCS 2) Flag data or re-digest batch 3) Repeat analyses Note MS recovery performance in soils varies considerably with matrix.	Evaluates digestion extraction efficiency and sample matrix effects on analyses. Reporting: In data QC report.
Matrix Spike or Digestion duplicate sample	1/20 samples or 1/Digestion Batch whichever is more frequent	Either +/- 3*LLD or 10% RPD %R=See MS	1) See LCS 2) Flag data or re-digest batch 3) Repeat analyses.	Measures method precision. MSD may be used instead of duplicate. Reporting: In data QC report.
Internal Standards	Monitor in all standards, samples, and QC samples.	6010B: 30-140% of IC for all standards, blanks, and samples. 200.7: 60-125% of IC for all analyses.	1) Reanalyze sample 2) Dilute sample and reanalyze. 3) Evaluate associated QC samples in sequence. 4) Reanalyze sequence	Internal standards compensate for instrument drift and sample matrix affects. Internal standards used depend on parameters and sample matrix. Reporting: Audit review
MDL/IDL Studies	IDL's Quarterly, MDL's semiannually, or both whenever instrument changes which might affect sensitivity.	<2.2 X reporting limit and comparisons to prior studies.	1) Repeat 2) Correct problem 3) Adjust reporting limit to >MDL	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher MDL. Reporting: Audit review
Upper Linear Range Studies	Annually, or whenever there are instrument changes, which might affect sensitivity.	Comparison to historical data	1) Repeat 2) Correct problem 3) Adjust upper calibration/quantitation limit	Used to determine the upper linear calibration range for the instrument. Reporting: Audit review
External PE Samples	Semi-annually, WS and WP study samples and internal double blind samples.	Within EPA specified interlaboratory control limits	1) Repeat 2) Correct problem	External review of analytical method accuracy. Historically, excellent performance. Reporting: Current study results available on www. energylab.com website.
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. or as needed	Data statistically within control limits.	1) Correct method problem 2) Adjust control limits	For statistical process control. Reporting: Audit review

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
VOLATILE ORGANICS BY PURGE AND TRAP GC/MS
EPA Method SW-846 8260B for SOIL & WATER

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
Sample Preparation	Methods: Soils: Extracted by 5C30B then analyzed by Purge & Trap Waters: 5030B Purge & Trap Surrogates added to all samples	Meet method QC criteria for the matrix	1) Reanalyze sample	Waters are introduced into the GC/MS using Purge & Trap. Soils are extracted into methanol and the methanol extract is added to water and analyzed by Purge and Trap/GC/MS
Initial Calibration	5 point initial calibration. Range: 2,5,10, 15, 20 ug/L	If %RSD<15 use avg RF, alternatively use calibration curve (See Note #1).	1. Correct problem 2. Prepare new standards 3. Recalibrate	Calibration of instrument and check of response linearity. Reporting: Audit review
Tuning	BFB initially and every 12 hours thereafter	Meet method tuning criteria. (Table 2 SOP ELI 50-006)	1 Adjust instrument 2. Recheck tune 3. Until successful	Evaluate mass sensitivity, mass resolution, isotope ratio, and baseline threshold. Reporting: Audit review
(ICV) Initial Calibration Verification	See LFB using second source standard.			Evaluates accuracy/bias in calibration standards.
Continuing Calibration (CC)	Mid-level standard analyzed every 12 hours to update internal standard response factors (RF)	RF +/- 20% of IC for CCCs, 30% for all others. Internal Std areas R% = 50-150 of IC, See Note #2	1. Correct problem -Reanalyze CC. 2. Re run instrument tune 3. Re-calibrate and re-analyze all samples since last valid calibration check.	Verifies instrument calibration and stability throughout analyses. Reporting: In data validating report package
Method Blank	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent.	<½ PQL	1. Repeat analyses once 2. Correct problem 3. Re-extract and re-analyze all samples associated with method blank.	Measures and evaluates possible contamination in reagents and glassware used in method. Reporting: Routine data reporting package.
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent.	CLP SOW 3/90 %R = 60-140 %RPD = See example QA Matrix Spike reports	1. Repeat analyses 2. Re-extract and reanalyze MS, (if sufficient sample). 3. Evaluate LFB performance.	Evaluates affect of matrix on method performance. Reporting: Routine data reporting package.
Lab Fortified Blank (LFB) or Lab Control Sample (LCS)	Minimum 1/20 samples/matrix and each batch of samples, whichever is more frequent. Use second source standards to check calibration	%R = 60-140 Includes the 65 compounds on ELI Short List.	1. Repeat analyses 2. Prepare new standards 3. Recalibrate 4. Re-extract and re-analyze all samples associated LFB.	Evaluates method precision and accuracy. Method specifies 70-130 Reporting: Routine data reporting package.
Internal Standards (Samples and QC)	Monitor total areas in each analyses Bromochloromethane-d2 Fluorobenzene Chlorobenzene-d5 1,2-Dichlorobenzene-d5	Samples: Area% 50-150% of IC RT = +/- 30 sec of IC.	1. Repeat analyses 2. Correct Problem 3. Re-prepare samples 4. Analyze different sample 5. Re-analyze set of samples.	Measures instrument stability and sensitivity. Reporting: Audit review
Surrogates	Present in all extracted samples (including QC) 1,2-Dichloroethane-d4 Toluene-d8 p-Bromofluorobenzene	%R = 80-120	1. Repeat analyses 2. Recalibrate with fresh fortification standard. 3. Re-extract samples	Evaluates method performance on each individual sample analyzed. Reporting: Routine data reporting package.
Mass Spectra	Review all target analytes in standards, and also target compounds found in samples.	Spectra must be consistent with library database	1)Verify calibration spectra and retention times 2) Repeat analyses	Used to qualitatively identify target compound hits in samples. Reporting: Audit review

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
VOLATILE ORGANICS BY PURGE AND TRAP GC/MS
EPA Method SW-846 8260B for SOIL & WATER

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
MDL Studies	MDL - Annually for water and soils and initially for each new instrument setup or analyst.	MDL< PQL	1. Repeat once 2. Correct problem	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher MDL. Reporting: Audit review
External PE Samples	Semi-annually, WP study samples.	Within specified interlaboratory control limits	1. Repeat 2. Correct problem	External review of analytical method accuracy. Reporting: Audit review
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. or as needed	Data statistically within control limits.	1. Correct method problem 2. Adjust control limits 3. Replace analyst	For statistical process control. Reporting: Audit review

Note 1: CCC = Continuing Calibration Check Compounds. Calibration curve (first or higher order), all analytes %RSD<30 then R2 >0.99, RF for System Performance Check Compounds (SPCCs) >0.3000 for Chlorobenzene and 1,1,2,2-Tetrachloroethane;>0.1 for Chloromethane and 1,1-dichloroethane, and Bromoform.
Note 2: RF acceptance criteria for SPCCs same as for initial calibration.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-

Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

TABLE 2.
BFB MASS - INTENSITY SPECIFICATIONS (4-BROMOFLUOROBENZENE)*

Mass	Intensity Required (relative abundance)
50	15 to 40% of mass 95
75	30 to 60% of mass 95
95	base peak, 100% relative abundance
96	5 to 9% of mass 95
173	less than 2% of mass 174
174	greater than 50% of mass 95
175	5 to 9% of mass 174
176	greater than 95% but less than 101% of mass 174
177	5 to 9% of mass 176

* Alternate tuning criteria may be used (e.g., CLP, Method 524.2, or manufacturers' instructions), provided that method performance is not adversely affected.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC Parameters Volatile Petroleum Hydrocarbons (VPH) per Massachusetts Method January 1998 Revision				
QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS
Sample Preparation	Soils: Methanol Preserved vials required. 10 grams Soil/10mL of methanol VPH Surrogates added to all samples before extraction. Waters: VOA Vials, preserve to a PH<2.	Meet all method QC criteria for the matrix.	1) Reanalyze sample	VPH surrogates added to all sample before extraction.
Instrument Calibration (IC)	5 Point calibration to precede analyses. Use average response factors. Certain compounds are selected for FID calibration and other compounds are used for PID calibration.	25% RSD of Mean Response Factors. Includes individual compound response factors and range response factors.	1. Repeat calibration 2. Correct problem 3. Recalibrate	Used to calibrate instrument response. Consists of a 13 component standard containing both al phatic and aromatic hydrocarbons
Initial Calibration Verification (ICV)	Follows valid initial calibration (See Blank Spike)		1. Repeat once 2. Recalibrate 3. Prepare fresh standards	Second source standard to evaluate calibration standard biases.
Continuing Calibration Check (CCC)	Every 12 Hours and at the end of every analytical sequence	75-125% of Initial Calibration for the CCC preceding sample analyses.	1. Repeat once 2. Correct problem 3. Recalibrate 4. Reanalyze all samples since ast valid calibration check.	Analyses of Mid-level calibration standard to measure drift in instrument sensitivity/method performance.
Method Blank	Minimum 1/20 Samples	½ of PQL for target analytes	1. Repeat once 2. Correct problem 3. Re-analyze all samples since last valid method blank.	Method blank evaluates glassware reagents, and methodology to be free of contamination. Soil method blanks use clean sand.
Matrix Spike and Matrix Spike duplicate (MS/MSD)	Minimum 1/20 samples	(Recommended) 70-130% Recovery 20% RPD between duplicates.	1. Evaluate matrix, possibly repeat using higher spiking level. 2. Correct problem 3. Verify sample homogeneity for soils	Evaluates affect of matrix on method performance. Soils are spiked at time of extraction.
Laboratory Fortified Blank (Blank Spike)	Minimum 1/20 samples Soils are prepared using a blank sand matrix	R% = 70 - 130	1 Repeat once 2. Correct problem 3. Re-analyze all samples since last valid laboratory fortified blank.	Evaluates overall performance of method on a characterized matrix.
Surrogates	TFT spiked into all samples analyzed	Recovery 70-130%	1. Evaluate sample matrix and surrogate spike level. 2. Repeat once 3. Evaluate LFB performance	Evaluates method performance on each individual sample matrix.
Analyte Confirmation in Samples	Confirm target VPH analytes by GC/MS analyses	Upon client request.	None	Analyte identifications in samples are not routinely confirmed. GC/MS confirmation done only per client request.

METHOD QA/QC Parameters Volatile Petroleum Hydrocarbons (VPH) per Massachusetts Method January 1998 Revision				
MDL Studies	MDL Annually for soils and water and initially for each new instrument setup or analyst.	MDL<0.3X of PQL	1. Repeat once 2. Correct problem 3. Until successful	Method Detection Limit (MDL) studies are used to verify the ability to measure analyte measurements at the minimum reporting level
Proof of Competency	Statistical review of method QC data for each analyst.	Data statistically within control limits.	1. Correct method problem 2. Replace analyst	Review of each analyst QC data show them to be skilled competent analysts.
External PE Samples	None	Within interlaboratory control limits	1. Repeat 2. Correct problem	External PE samples are not utilized. Laboratory analyzes internal QC samples as per method.
Control Charting	Annually or as needed	Data statistically within control limits.	1. Correct method problem 2. Adjust control limits 3. Replace analyst	Surrogate, MS, LCBS %recovery, and RPD are done biannually. MS/MSD data not plotted.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
Extractable Petroleum Hydrocarbons (EPH) per Massachusetts Method
January 1998 Revision

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS
Sample Preparation	Methods: Soils: 3550 (30 grams to 1mL) Waters. 3510 or 3520 (1 Liter to 1 mL) 1mL of EPH extraction surrogates added to all samples prior to extraction. 1 ml of EPH separation surrogates added to extract just prior to separation.	Meet all method QC criteria for the matrix.	1) Re-analyze sample	Samples are extracted using Methylene chloride solvent and then the extract is concentrated. Following separation of extract into an aliphatic and aromatic fraction each fraction is independently analyzed by GC/FID. Sample amount and final extract volume may be adjusted based on analyte levels and/or sample matrix.
Fractionation Check	Per each Lot # of Separation Cartridges Used	Effective separation of target analytes into appropriate fraction. R%=40-140 except the more volatile target analytes with >20% recovery.	1 Repeat once 2. Correct problem (adjust elution volumes) 3. Prepare new standards 4. Recalibrate	Uses aliphatic and aromatic hydrocarbon standards in hexane. The more volatile aromatic and aliphatic compounds may have lower recoveries than method specified limits.
Initial Calibration (IC)	5 point initial calibration each for aliphatics and aromatics, external standardization option of method chosen. Aliphatic Standard Solution Aromatic Standard Solution Range: 5,50,200,500,and 1000 ug/mL. To precede sample analyses.	25% RSD MnRF 25%RSD each component.	1. Repeat once 2. Correct problem 3. Prepare new standards 4 Recalibrate	Used to Calibrate instrument evaluates chromatographic separation effectiveness, and instrument response linearity.
Chromatography	1) Each IC or CCC- Resolution is verified 2) Retention Time Windows –Use RRT and analyst discretion for instrument stability.	Chromatographic resolution: Monitored against historical performance levels. 50% separation of phenanthrene and anthracene.	1. Repeat once 2. Adjust column conditions 3. Perform instrument maintenance 4. Replace GC column	Verifies that gas chromatographic system is operating properly. Resolution criteria for two selected PAH pairs are not met as per method specifications.
Initial Calibration Verification (ICV)	Follows the IC, using second source calibration standards. DRO standard used to verify aliphatic IC standard and a separate PAH standard is used for aromatics	+/- 25% of MnRF +/- 25% RF each component	1. Repeat once 2 Prepare fresh standards and reanalyze. 3. Recalibrate and re-analyze all affected samples.	Evaluates accuracy of calibration standards.
Continuing Calibration Check (CCC)	Mid-level standard analyzed every 12 hours and at the end of every analytical sequence	+/- 25% of MnRF +/- 25% RF each component	1. Repeat once 2. Correct problem 3. Re-calibrate and re-analyze all samples since last valid calibration check.	Verifies instrument calibration and stability throughout analyses. No QC criteria for the CC following sample analyses.
Method Blank	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent.	<½ PQL	1. Repeat analyses once 2. Correct problem 3. Re-extract and re-analyze all samples associated with method blank.	Measures and evaluates possible contamination in reagents and glassware used in method.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

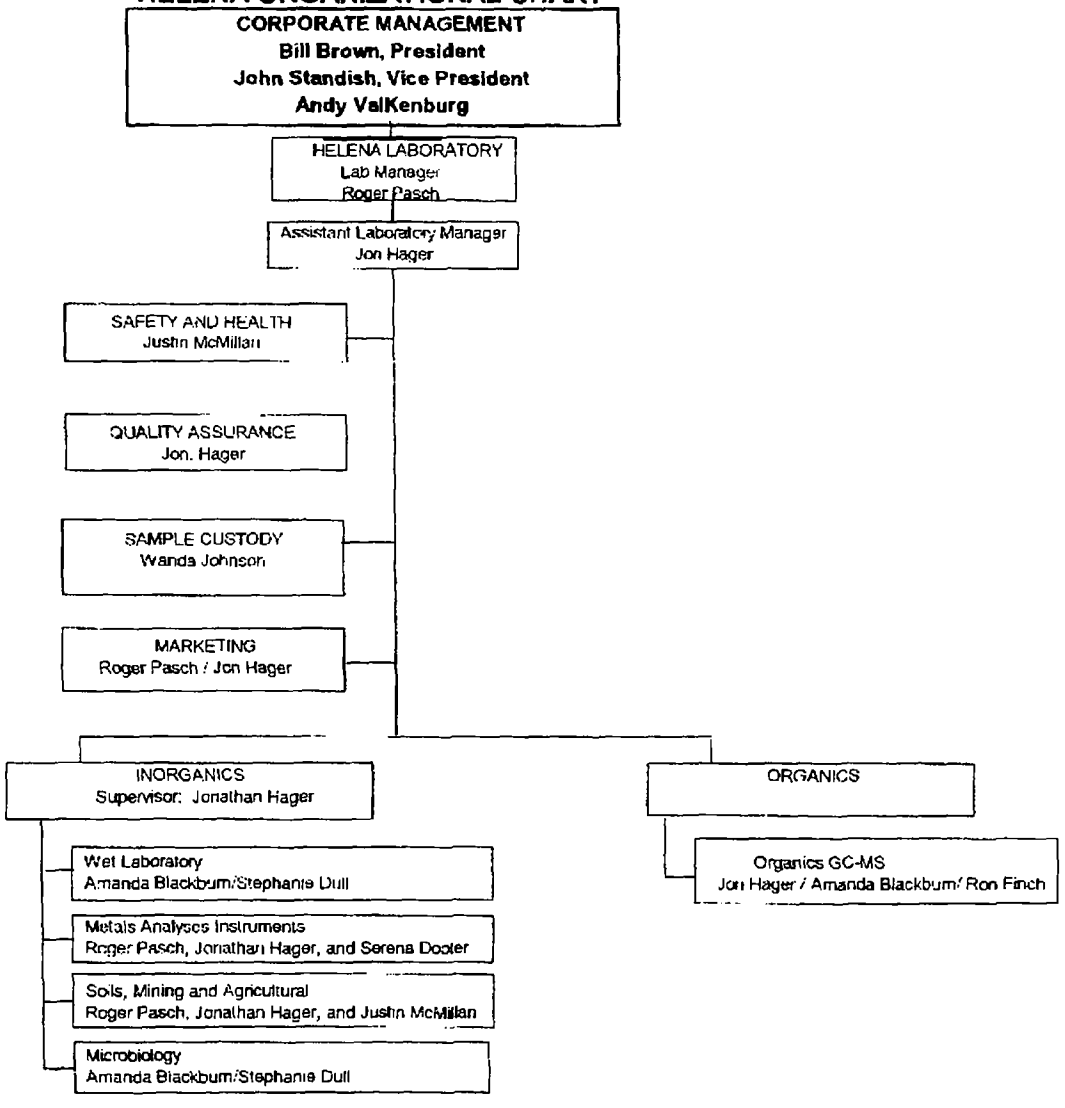
QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS
Instrument Blank	Each 12 hour sequence or as indicated, such as after a heavily contaminated extract. A method blank analyses can be substituted for an instrument blank.	<½ PQL	1. Repeat analyses once 2. Perform instrument maintenance 3. Re-analyze all associated samples in sequence where contamination level may affect result.	Measures and evaluates possible contamination in gas chromatographic analysis system.
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent. Fortified with 5 or more representative aliphatic and 5 or more aromatic compounds. Uses a second source standard.	%R = 40-140 except for the more volatile aromatic and aliphatic compounds which may have lower recovery. %RPD = 50% (advisory)	1. Repeat GC analyses 2. Re-extract and reanalyze MS/MSD, (if sufficient sample) or select another sample to MS. 3. Evaluate LFB performance.	Evaluates affect of individual matrix on method performance and method precision. Poor MS/MSD QC performance does not necessarily reject extraction batch group. Control limits are advisory due to sample matrix effects.
Blank Spike (BLKSPK)	Minimum 1/20 samples/matrix and each batch of samples, whichever is more frequent. Same spiking solution as for MS/MSD	%R = 40-140	1. Repeat analyses 2. Prepare new standards 3. Recalibrate 4. Re-extract and re-analyze all samples associated with LFB.	Evaluates method accuracy. Used for ongoing proof of competency.
Extraction Surrogates	Added to all samples prior to extraction (including QC) Ortho-Terphenyl (PAH fraction) and 1-Chloro-octadecane (Aliphatic fraction).	%R = 40-140 Control limits are advisory due to possible sample matrix effects.	1. Repeat analyses 2. Evaluate for matrix effects 3. Re-extract samples if method batch performance is suspected.	Evaluates extraction and separation method performance on each individual sample analyzed. Water samples containing sediment may have reduced analyte and surrogate extraction efficiency. Extraction performance alone can be evaluated from an EPH screening result.
Separation Surrogates	Surrogates added to sample extract prior to fractionation. 2-Bromonapthalene and 2-Fluorobiphenyl.	%R = 40-140 in Aromatic fraction. Control limits are advisory due to possible sample matrix effects.	1. Repeat analyses 2. Evaluate for matrix effects 3. Re-extract samples if method batch performance is suspected.	Evaluates the effectiveness of the aliphatic/aromatic separation step. Proportional Level of presence of either surrogate in the aliphatic fraction suggests incomplete separation of the more volatile PAH's from the aliphatic fraction
EPH Screening	Analyses of extract prior to the separation step of the EPH method.	%R = 40-140 for extraction surrogates. Full EPH recommended if TEH result >0.1mg/L for waters or 50ug/g for soils.	1. Repeat analyses 2. Evaluate for matrix effects 3. Re-extract samples if method batch performance is suspected.	Evaluates method extraction performance on each individual sample analyzed. Target analyte levels in result are used to determine if full EPH analyses is necessary.
PAH Target Analyte Confirmations	Analyses performed by 8270 on Aromatic fraction if PAH target analytes are present above MTDEQ limits.	Meets 8270 analyses criteria	1. Repeat analyses to meet all 8270 method QC criteria	Confirms and accurately quantitates PAH levels in aromatic extract. 8270 method isconsidered less sensitive to false positives than the EPH method..
MDL Studies	MDL – Annually for water and soils and initially for each new instrument setup or analyst.	MDL< PQL	1. Repeat once 2. Correct problem	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher MDL.
External PE Samples	None	Within specified interlaboratory control limits	1. Repeat 2. Correct problem	External review of analytical method accuracy. See BLKSPK.
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. or as needed	Data statistically within control limits.	1. Correct method problem 2. Adjust control limits 3. Replace analyst or extractionist	For statistical process control and demonstration of capability for analysts.

APPENDIX D

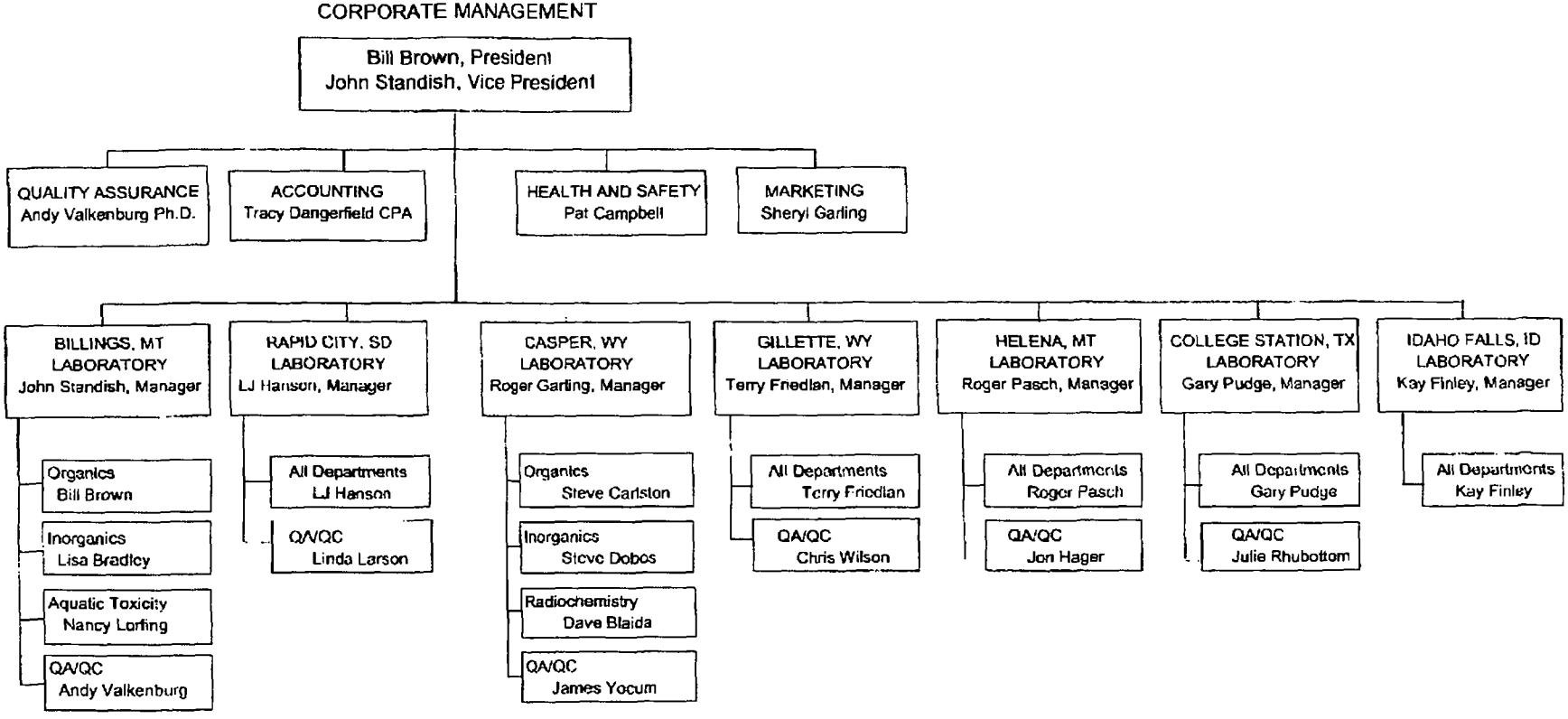
Organizational Charts

ELI-Helena Organization Chart

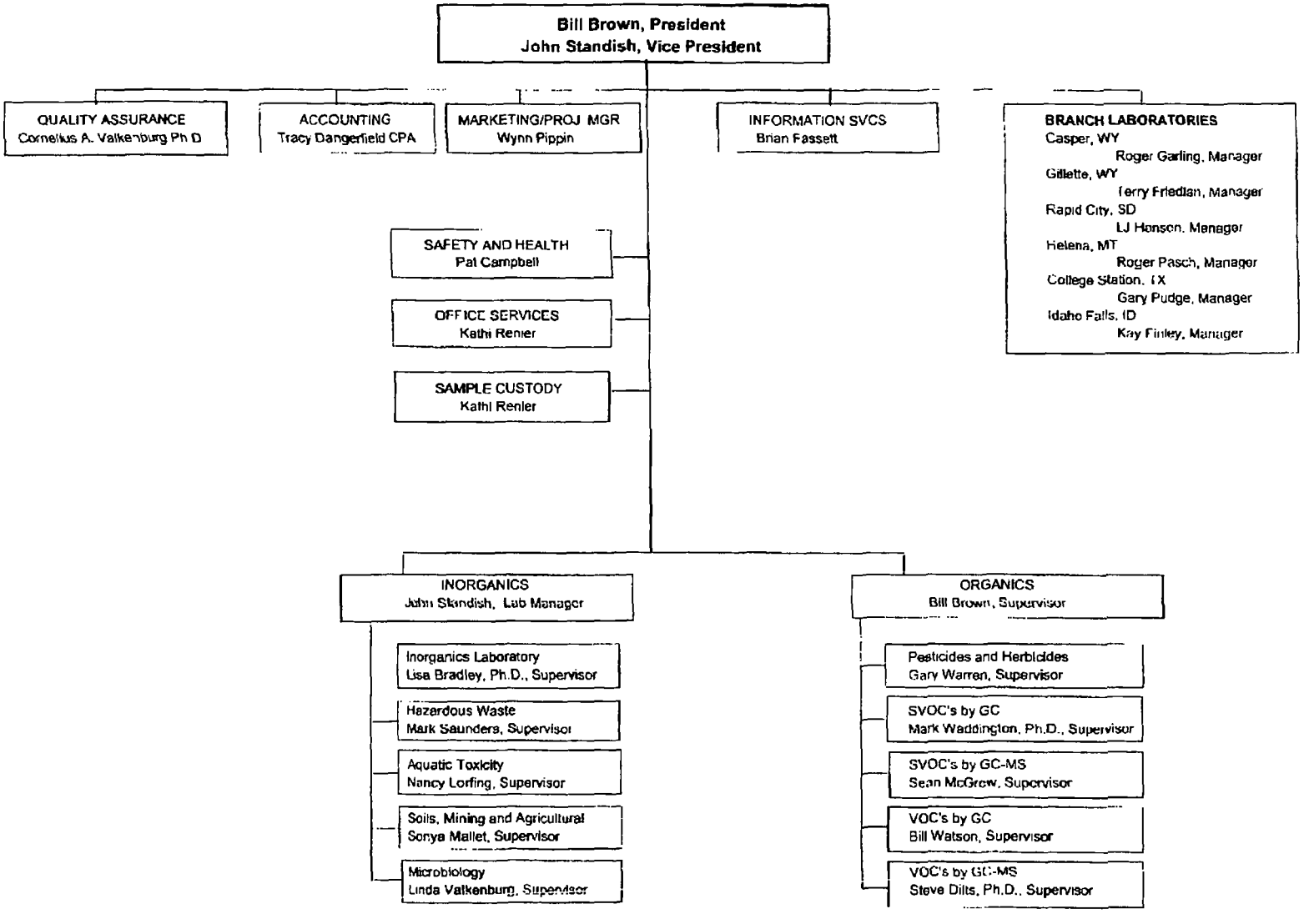
ENERGY LABORATORIES, INC.
HELENA ORGANIZATIONAL CHART



ENERGY LABORATORIES, INC.
CORPORATE ORGANIZATIONAL CHART



ENERGY LABORATORIES, INC.
BILLINGS ORGANIZATIONAL CHART



APPENDIX E

Curricula Vitae of Key Laboratory Personnel

WILLIAM T. BROWN

President
Director of Organic Analysis Department

Experienced in laboratory methods development, on-site sampling and analysis, and analytical chemistry.

Education & Academic Training

Bachelor of Science in Fish and Wildlife, Montana State University, Bozeman, MT, Management, 1977

Organic Chemistry and Analytical Instruments, Eastern Montana College, Billings, Montana. 1980

Operation and maintenance of Dionex Ion Chromatograph, Dionex Corporation, 1977.

Modern Techniques in Gas Chromatography, American Chemical Society Short Course, 1988.

Gas Chromatography Mass Spectrometry, American Chemical Society Short Course, 1989.

Finnigan Mat Company Gas Chromatograph Mass Spectrometry Training Course, 1989.

Analysis of Water & Waste Samples by U.S. EPA Methods, American Chemical Society Short Course, 1990.

Professional Experience

1986 to present, President, Chemist - Energy Laboratories, Inc., Billings, Montana. In charge of the development of the trace organics analytical department. Develops test methods, selects equipment, and trains technical staff in the analysis of trace organic compounds in samples of environmental and commercial interest.

1981 1987, Manager - Energy Laboratories, Inc., Branch Laboratory, Gillette, Wyoming. Responsible for routine analysis and quality control of water, natural gas, and petroleum products. Involved in field on site sampling and testing, meter calibrations, and supervision of branch laboratory staff.

1979 - 1981, Laboratory Technician - Energy Laboratories, Inc., Billings, Montana. Responsible for the natural gas and petroleum products department of the lab including field natural gas testing. Also involved with various work in water and soil analysis including formal training in ion chromatography.

1977 - 1979, Fisheries Biologist - Water and Forests Department of the Government of Niger, Africa. While in the Peace Corps, responsible for developing fisheries management programs in a specific region including monitoring water quality by on-site testing

JOHN M. STANDISH

Lab Director/Chief Chemist

Experienced in the examination of many types of environmentally related samples including water, soil, coal, and air pollutants

Education and Academic Training

Bachelor of Science in Biology, College of Great Falls, Great Falls, MT, 1973

Managing the Chemical Analysis Laboratory, 32 hr seminar, 1979

Financial Management of the Closely Held Business, 8 hr seminar, 1985

Hiring and Firing, 8 hr seminar, 1986

MS-DOS Operating Systems, 16 hr class, 1986

Dale Carnegie Training, 14 week training 1986

Taking Control of Your Workday, 8 hr seminar, 1989

Pittsburgh Conference of Analytical Chemistry, 5 day conference, 1989 & 1992.

Unix Operating Systems, 24 hr class, 1991

New Sample Preparation Methods for Chemical Analysis, American Chemical Society Short Course, 1992.

Professional Experience

1981 - Present, Chief Chemist - Energy Laboratories, Inc., Billings, Montana. Coordinates laboratory analysis with client contracts. Responsible for direction, training, and supervision of the analytical laboratory staff. Involved in new procedural and equipment development, quality assurance program, client relations, and report preparation.

1974 - 1981, Director of Chemical and Environmental Laboratory - Northern Testing Laboratories, Inc., Billings, Montana. Responsible for personnel training and supervision, laboratory schedules, client relations and analytical methodology development. Chief areas of analysis were soils, water, coal, air pollution, and meteorological monitoring.

Professional Organizations

American Society of Testing and Materials
Montana Mining Association
Montana Geological Society
Northwestern Mining Association

CORNELIUS A. VALKENBURG Ph.D.

Senior Analytical Chemist/Quality Assurance Officer

Education

Ph.D., Analytical Chemistry, Montana State University, Bozeman, Montana, 1987
Bachelor of Arts, Biology with minor in Chemistry, Carroll College, Helena, Montana, 1979
Technical Writing, University of Nevada, Las Vegas, Nevada, 1988
Emergency Medical Training, Hillsboro Medical Hospital, 1981
Mass Spectrometry, Oregon Graduate Center, 1981
Dale Carnegie Management Training, Billings, Montana, 1996
Dale Carnegie Graduate Assistant Training, Billings, Montana 1997

Professional Experience

1992- Present, Analytical Chemist/Quality Assurance Officer. Energy Laboratories, Inc., Billings, Montana. Corporate Quality Assurance Officer responsible for the Quality Assurance monitoring of laboratory operations. Performs method development, prepares and updates standard operating procedures, performs technical training, and involved with special projects. Manages laboratory solvent recycling program.

1989 - 1992, Senior Organic Analytical Chemist. ICF Kaiser Engineers, Las Vegas, Nevada. Provide supervisory and technical support in the design, preparation, analysis, and multi-laboratory certification of analytical method performance evaluation materials used to evaluate current and proposed EPA organic analytical procedures. Also review proposed EPA methods contracts for technical accuracy. Secondary duties as Laboratory Safety Officer.

1987 1989, Senior Scientist Lockheed Engineering and Sciences Company, Environmental Programs (Organic Chemistry Section), Las Vegas, Nevada. Responsible for research and development projects as applied to improved methods for the analysis of EPA priority pollutants. Areas of study include: liquid-liquid extractions, solid-phase extraction, soil leachability modeling (TCLP), chemical derivatives for gas and liquid chromatography, production of performance evaluation materials, gas chromatographic methods, supercritical fluid chromatography and extraction, and laboratory automation.

1981 - 1987, Ph.D. Candidate, Graduate Research Assistant - Montana State University, Department of Chemistry, Bozeman, Montana. Research in gas chromatographic detector design, modification, and characterization by computer modeling. Teaching of undergraduate laboratories in the areas of inorganic, organic, and analytical chemistry

1981 - 1981. Research and Development Chemist - Falls Chemicals, Great Falls, Montana. Methods development for the analysis of raw materials and formulated products used or produced by Falls Chemicals. Performed optimization studies for plant chemical processes.

1980 - 1981, Research Technician - Oregon Graduate Center, Beaverton, Oregon. Synthesis and purification of polyamine dueterated analogues for their use as internal standards in mass spectrometry.

1978 - 1979, Field Technician and Student Researcher - State of Montana Water Quality Bureau and Carroll College, Helena, Montana. Evaluate the effects of subsurface drainage on saline seep areas.

Summer 1978, Lab Technician - American Chemet Corporation, East Helena, Montana. Quality control for the manufacture of CuO and CuO_2, and the trace analysis of Pb. Methods used were wet chemistry, electrochemistry, and atomic absorption.

Professional Organizations

American Chemical Society
Environmental Employees Association

JONATHAN D. HAGER

Assistant Laboratory Manager/Quality Assurance Officer

Adept at inorganic analysis of water and soil matrices. Supervisor of the inorgaincs department, and responsible for implementing proper QA program.

Academic Training

Bachelor of Arts in Biology, Chemistry Minor, Carroll College, Helena, MT, May 2003

Professional Experience

May, 2001-Present, Assistant Laboratory Manager/Quality Assurance Officer-Energy Laboratories, Inc., Helena, Montana.

Skilled in all inorganic analyses, including analysis of Nitrate+Nitrite, Ammonia, Phosphorus, COD, Fluoride, pH, Conductivity, Chloride, Alkalinity, TSS, and TDS.

Analyst of metals performed by ICP in both soils and waters.

Soil analyst performing many different analyses such as CEC, pH, Conductivity, SAR, ESP, PSA, and many more. Supervisor of the soil department, directing the flow of samples and analysis through the lab.

Project Manager for the soil department. Talk with clients regarding sampling and setting up projects that will be performed by Energy Labs. Also deal with any questions the soil clients have about reports and data.

Involved in training and supervising of employees in the inorganic department and the soil department.

Quality Assurance Officer for the Helena Branch. Responsible for assuring quality of all data and QA generated in the Helena branch lab, as well as generating and keeping training records of all individuals employed at the Helena branch.

Organizations

American Chemical Society.

AMANDA B. BLACKBURN

Chemist

Experienced in the examination of many types of environmentally related samples including water, soil, and air pollutants.

Academic Experience

Bachelor of Arts in Chemistry, Carroll College, Helena, MT, May 2004

Professional Experience

May 2004-Present, Chemist, Energy Laboratories, Inc., Helena, MT

GC Analyst—Primary Volatile Petroleum Hydrocarbons analyst—analysis of VPH in water, soil, and air by GC PID/FID

Inorganic Analyst—Analyze for parameters such as pH, conductivity, chlorides, alkalinity, nitrates, etc.

Microbiology Analyst-Analyze for total coliform and E. Coli in water samples. Responsible for conducting monthly QC monitoring parameters.

Sample Receipt/Login and Reporting—Coordinate client relations from bottle preparation and sample receipt through reporting and invoicing, and data review of technical reports issued to clients.

WANDA J JOHNSON

Office Manager

Adept at client relations, sample receipt and login, and data processing, including reporting of clients' data.

Education and Academic Training
HS Graduate, General Studies—Business Courses

Professional Experience
2002 - Present, Office Manager, Energy Laboratories, Inc., Helena, MT
Sample Receipt/Login—Responsible for receiving samples delivered to the lab. Takes temperature and pH of all samples, signs for the samples, and assures that the chain of custody is properly completed. Enters all samples into the Energy Labs laboratory information management system and assures that the samples are received by the proper department or lab for analysis.
Reporting—Generates and mails client reports and invoices. Prepares, proofs, and mails public water system CCR reports each spring.
Client Relations—Creates new client accounts and updates Helena database with any changes to existing accounts from any of the branch labs.
Electronic Data Delivery—Creates and e-mails CSV, Excel, PDF, or EDD files for clients who request those formats.
Helena Accounting—Collects up-front client payment when applicable, and ensures delivery of all payments and invoices to the Energy Labs SBT accounting system at our corporate office.

1993-1999, Heritage Home Health, Helena, MT
Responsible for payroll and accounts receivable for 5 branch offices. Managed employee and contact personnel files to federal and state guidelines requirements Reviewed medical records for appropriate coding to meet medicare/Medicaid and insurance requirements.

1990-1993, Intependent Home Health, Helena, MT
Responsible for payroll and accounts receivable for 5 branch offices. Managed employee and contact personnel files to federal and state guidelines requirements Reviewed medical records for appropriate coding to meet medicare/Medicaid and insurance requirements.

ROGER N. PASCH

Laboratory Manager/Soil Scientist

Experienced in the examination of many types of environmentally related samples including water, coal, and air pollutants, and specializing in soil analysis.

Education and Academic Training

Bachelor of Arts, Department of Natural Resources - Minor in Biology, University of Wisconsin, Stevens Point, 1973

Varian ICP/MS Course, 4 day seminar, 1999

TJA-ICP Training Course, 4 day seminar, 1992

Dale Carnegie Training, 14 week training, 1987

Professional Experience

2002 - Present, Chemist/Soil Scientist - Energy Laboratories, Inc., Helena, Montana. Set up laboratory in College Station, Texas for soil, water, and waste analysis. Responsible for laboratory layout, client contact, and equipment setup.

1979-2002, President – Inter-Mountain Laboratories, Sheridan, Wyoming. Coordinated development of environmental laboratories in four locations for air, water, and soil analysis. Chief areas of expertise in trace metal analysis and soil, overburden, and topsoil analysis. Worked with state and federal agencies, and private mining companies on method development for soil and overburden analysis.

STEPHANIE L. DULL

Chemist

Proficient at running many inorganic analyses and assuring timely turnaround of samples.

Education

Bachelor of Arts in Biology, Carroll College, Helena, MT, May 2003

Master of Science of Forensic Science - Advanced Investigation, University of New Haven, West Haven, CT, August 2004

Experience

March 2005 - Present, Chemist, Energy Laboratories, Inc., Helena, MT

Skilled in many inorganic analyses including alkalinity, chlorides, conductivity, pH, sulfate, TDS, and TSS, but mainly responsible for running nutrients – nitrates, ammonia, and phosphorus.

JUSTIN McMILLAN

Chemist/Safety Officer

Skilled in the analysis of water and soil samples. Head of the micro department.

Academic Training

Bachelor of Arts in Biology, Minot State University, Minot, ND, 1995

1991-1992, Carroll College, Helena, MT

1998, HAZWOPER 40 hour training

Professional Experience

March 1998-October 1999, Superior Special Services, Fond du Lac, WI.
Operated water treatment facilities on two separate job sites, one of which was an EPA superfund site.

December 1999-May, 2003, Sample Receiving/Chemist, Energy Laboratories, Inc., Billings, Montana.
Logged in samples and assisted with shipping of coolers to clients. Trained as a chemist in the inorganic water department.

May 2003-Present, Chemist/Safety Officer, Energy Laboratories, Inc., Helena, Montana
Head of the Microbiology department Responsible for establishing methods for BOD/CBOD, TKN, and fecal bacteria analyses, and carrying out these analyses. Also skilled at running sulfide, pH, conductivity, chloride, alkalinity, sulfate, TDS, TSS, nitrates, ammonia, phosphorus, fluoride, cyanides, and numerous types of soil analysis. As safety officer I assure a safe laboratory environment and train new employees to follow safety guidelines.

RECORD OF ACKNOWLEDGMENT
ENERGY LABORATORIES, INC. - HELENA, MT

QUALITY ASSURANCE MANUAL - REVISION H03.01

My signature below constitutes my acknowledment that I have read and understand this Quality Assurance Manual.

Date	Signature	Date	Signature

MONTANA DEPARTMENT OF
PUBLIC HEALTH AND HUMAN SERVICES
ENVIRONMENTAL LABORATORY

Recognizes that

Energy Laboratories, Inc. - Helena

of

Helena MT

has completed the requirements for Montana certification and is licensed to analyze Montana's Public Drinking Water Supplies. See attached listing.

Montana Certification Number:	**CERT0079**

	Chemistry	Microbiology
EXPIRATION DATE:	**03/01/2008**	**03/01/2009**

Judy Halm
Laboratory Certification Officer
DPHHS Environmental Laboratory

Date Issued: 8/22/2006

DEPARTMENT OF
PUBLIC HEALTH AND HUMAN SERVICES
STATE OF MONTANA

ENVIRONMENTAL LABORATORY

CERTIFIED DRINKING WATER PARAMETERS

ENERGY LABORATORY, INC.
3161 East Lyndale
Helena, MT 59604
CERT0079
Chemistry Expiration 3/1/2008
Microbiology Expiration 3/1/2009

MICROBIOLOGY PARAMETERS

PARAMETER	METHOD
Total Coliforms	SM 9223 B
E. coli	SM 9223 B

INORGANIC PARAMETERS

PARAMETER	METHOD
Aluminum	EPA 200.7
Arsenic	EPA 200.7
Barium	EPA 200.7
Beryllium	EPA 200.7
Cadmium	EPA 200.7
Chromium	EPA 200.7
Copper	EPA 200.7
Nickel	EPA 200.7
Fluoride	SM 4500-F-C
Nitrate	EPA 353.2
Nitrite	EPA 353.2
Total Dissolved Solids	SM 2540 C
Turbidity	EPA 180.1
Conductivity	SM 2510 B
Ortho-Phosphate	EPA 365.1
pH	EPA 150.1
Sulfate	EPA 300.0
Alkalinity	SM 2320 B

VOLATILE ORGANIC COMPOUNDS

PARAMETER	METHOD
Bromodicloromethane	EPA 524.2
Bromoform	EPA 524.2
Chlorodibromethane	EPA 524.2
Chloroform	EPA 524.2
Total Trihalomethanes	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethylene	EPA 524.2
1,2 Dichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2-Dichloroethane	EPA 524.2

1,2-Dichloropropane	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
Benzene	EPA 524.2
Carbon Tetrachloride	EPA 524.2
Chlorobenzene	EPA 524.2
cis-1,2-Dichloroethylene	EPA 524.2
Dichloromethane	EPA 524.2
Ethylbenzene	EPA 524.2
Styrene	EPA 524.2
Tetrachloroethylene	EPA 524.2
Toluene	EPA 524.2
trans-1,2-Dichloroethylene	EPA 524.2
Trichloroethylene	EPA 524.2
Vinyl Chloride	EPA 524.2
Xylenes	EPA 524.2
1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1-Dichloropropane	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichlorobenzene	EPA 524.2
1,2,3-Trichloropane	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichlorobenzene	EPA 524.2
Bromobenzene	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Chloroethane	EPA 524.2
Cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Fluorotrichloromethane	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
Naphthalene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
o-Chlorotoluene	EPA 524.2
p-Chlorotoluene	EPA 524.2
p-Isopropyltoluene	EPA 524.2
sec-Butylbenzene	EPA 524.2
tert-Butylbenzene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2

ENERGY LABORATORIES-BILLINGS, MT

QUALITY ASSURANCE PROGRAM
FOR ALL FACILITIES LOCATED IN BILLINGS, MONTANA

Revision 2005.10

Energy Laboratories, Inc.
1120 South 27th Street
PO Box 30916
Billings, Montana 59107

Toll Free: (800) 735-4489
Local: (406) 252-6325
Fax: (406) 252-6069
E-Mail: eli@energylab.com

President: William T. Brown	Date:
Vice President/Laboratory Director: John M. Standish	Date:
Corporate Quality Assurance Officer: Cornelius A. Valkenburg Ph.D.	Date:

ENERGY LABORATORIES-BILLINGS, MT

QUALITY ASSURANCE PROGRAM
FOR ALL FACILITIES LOCATED IN BILLINGS, MONTANA

Revision 2005.10

Energy Laboratories, Inc.
1120 South 27th Street
PO Box 30916
Billings, Montana 59107

Toll Free: (800) 735-4489
Local: (406) 252-6325
Fax: (406) 252-6069
E-Mail: eli@energylab.com

William T Brown — 12/16/05
President: William T. Brown — Date:

John M Standish — 12/16/05
Vice President/Laboratory Director: John M. Standish — Date:

Cornelius A. Valkenburg — 12-16-05
Corporate Quality Assurance Officer: Cornelius A. Valkenburg Ph.D. — Date:

TABLE OF CONTENTS

QUALITY ASSURANCE PROGRAM - SIGNATURE PAGE I

TABLE OF CONTENTS II

INTRODUCTION 1

CHAPTER 1 – QUALITY CONTROL PROGRAM 3
Objective 3
Purpose 3
Demonstration of Laboratory Capability 3
Demonstration of Analyst's Ability to Generate Data 4
__of Acceptable Accuracy and Precision 4
Analysis of Quality Control Samples 4
Maintenance of Performance Records 5
Method Quality Control Specifications 5

CHAPTER 2 – QUALITY ASSESSMENT PROGRAM 6
Purpose 6
Performance Evaluation (PE) Samples 6
Quality Control Check Samples 7
Quality Control Audits 7

CHAPTER 3 – LABORATORY FACILITIES 8

CHAPTER 4 – PERSONNEL REQUIREMENTS AND LABORATORY ORGANIZATION 9
Personnel Requirements 9
Laboratory Director 9
Quality Assurance Officer 9
Laboratory Supervisor 9
Analysts 9
Laboratory Organization 9

CHAPTER 5 – SAMPLING PROCEDURES 10

CHAPTER 6 – SAMPLE HANDLING 12
Sample Receipt 12
Chain-of-Custody 12
Sample Tracking 12
Sample Disposal 13
Subcontracting Policy 13

CHAPTER 7 – INSTRUMENT OPERATION AND CALIBRATION 14

CHAPTER 8 - RECORDS AND REPORTING 16
Laboratory Notebooks 16
Records 16
Data Reduction 17
Validation 17
Reporting 18

CHAPTER 9 - GENERAL LABORATORY PRACTICES 19
Chemicals and Reagents 19
Reagent Interference 19
Glassware Preparation 19
Laboratory Pure Water 20
Employee Training 20
Standard Operating Procedures 21
Client Confidentiality 21

CHAPTER 10 - QUALITY CONTROL MONITORING 22
Routine Monitoring 22
Instruments/Methods 22

CHAPTER 11 – CORRECTIVE ACTION 24
Procedure for Dealing with Complaints 24
Penalty for Improper, Unethical or Illegal Actions 25

CHAPTER 12 - MAJOR EQUIPMENT AND METHODS 26

CHAPTER 13 - PREVENTIVE MAINTENANCE 27

CHAPTER 14 - REFERENCES 28

CHAPTER 15 - GLOSSARY OF TERMS 29

APPENDIX A
Laboratory Certifications
Montana State Drinking Water Certificate
NELAC Accreditation Certificate
NELAC Accredited Analyte List
Radon Testing Certificate
Recent EPA WS and WP Study Results
Recent NELAC Study Results

APPENDIX B
Quality Systems Controlled Documents

APPENDIX C
Quality Assurance / Quality Control Specifications

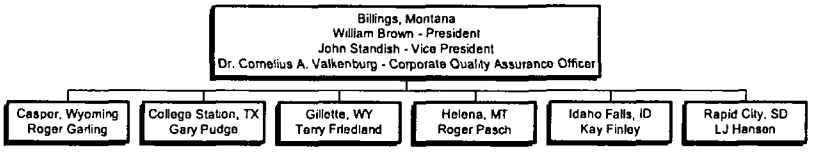
APPENDIX D
Organizational Charts
Corporate Organizational Chart
ELI-Billings Organization Chart

APPENDIX E
Curricula Vitae of Key Laboratory Personnel

INTRODUCTION

Energy Laboratories, Inc. provides chemical, industrial hygiene, and environmental analytical services to private industry, agricultural industry, engineering consultants, government agencies, and private individuals. Analytical services include: analysis of waters and soils for inorganic and organic constituents, aquatic toxicity testing, hazardous waste analysis, radiochemistry, industrial hygiene, microbiology, soils and water physical parameters, and petroleum analysis. Founded in 1952, Energy Laboratories currently incorporates six separate testing laboratories. The main headquarters are located in Billings, MT, with branch laboratories located in Casper, WY, Gillette, WY, College Station, TX, Rapid City, SD, Idaho Falls, Id, and Helena, MT.

Figure 1
Laboratory Organization



The Quality Control Program establishes acceptable performance criteria for all routine analytical procedures being performed by laboratory personnel. The Quality Control Assessment program provides a formal system for evaluating the quality of data being generated and reported. The ELI Chemical Hygiene Plan insures the safety of all laboratory personnel and monitors the safety of all laboratory operations. These, in addition to the experience and expertise of our analysts, provide a comprehensive Quality Assurance Program. Energy Laboratories, Inc., in Billings, Montana, is certified under the Safe Drinking Water Act by Region VIII EPA for Wyoming, and the States of Montana, Idaho, Colorado, Nevada, North Dakota, and South Dakota. ELI-Billings also holds accreditation for Clean Water Act, Safe Drinking Water Act and RCRA parameters through the National Environmental Laboratory Accreditation Council (NELAC), which is supported by the EPA. This certification is maintained through the state of Florida and is carried in the states of Nevada, Colorado, and North Dakota. To perform Radon testing, ELI is certified under the National Radon Proficiency Program administered by the National Environmental Health Association. Branch Laboratories of ELI are certified in their own state and in neighboring states. Details on certification parameters for all laboratories are given in our Qualifications Manual and maintained on our website: http://energylab.com/

The ELI Quality Assurance Program Manual, the ELI Qualifications Manual, and the ELI Analytical Services Catalog together are used to outline the ELI Quality Assurance/Quality Control Program. This Quality Assurance Manual is appropriate to all departments of the Energy Laboratories-Billings. The procedures discussed or referenced in this manual describe our day-to-day laboratory practices and adhere to USEPA Safe Drinking Water Act and NELAC requirements and Good Laboratory Practices (GLPs). Information on ELI-Billings accreditations and certifications can be found in Appendix A of this plan. Where possible, ELI uses EPA, AOAC, ASTM, APHA, NIOSH, OSHA, or published analytical methods and follows the procedures with strict adherence to described protocol and recommended QA/QC parameters. Actual method operating procedures are described in the Standard Operating Procedures Manual, and are available for review at the laboratory. Vital parts of our Quality Assurance Program, quality control and quality assessment, are outlined in Chapters One and Two of this manual.

To generate data that will meet project specific requirements, it is necessary to define the type of decisions that will be made and identify the intended use of the data. Data Quality Objectives (DQOs) are an integrated set of specifications that define data quality requirements and the intended use of the data. Project specific DQOs must be established for both field and lab operations. Through the DQO process, appropriate reporting limits, extraction/digestion methods, clean-up methods, analyses methods, target analytes, method quality control samples, sample security requirements, quality control acceptance ranges, corrective action procedures, and reporting formats and reporting levels can be specified. Professional laboratory project managers are available to assist clients in specifying appropriate laboratory analyses and reporting procedures necessary to meet project requirements. Written Standard Operating Procedures referenced within this manual can be reviewed at our office upon request.

Certain types of analysis requests may not be suitable to standardized analytical methods. These custom requests are handled individually with laboratory management and staff scientists. Project specific methods and reporting packages are available upon request. Attention to documentation of the analytical procedure and use of suitable QC parameters is maintained according to good scientific discipline and Good Laboratory Practice guidelines.

This Quality Manual and related quality documentation meet requirements of the National Environmental Laboratory Accreditation Council (NELAC) and American Association of Laboratory Accreditation (A2LA) standards. These guidelines follow ISO 9000 and ISO 17025 guidelines.

CHAPTER 1 – QUALITY CONTROL PROGRAM

Objective

It is the policy of the management of Energy Laboratories, Inc. to produce laboratory data that is scientifically valid, meets method specifications, satisfies regulatory requirements, and accomplishes the data quality objectives of the client and project. Those method, regulatory, and client requirements are incorporated into our Quality Assurance Program. We will apply appropriate corporate resources to set objectives, provide training opportunities, and monitor the quality performance of our staff. We will also provide facilities and equipment adequate and appropriate to those objectives.

Purpose

The purpose of the Quality Assurance Program is to ensure that the analytical services provided by Energy Laboratories are of the highest quality, and each analytical result produced meets or exceeds a client's requirements and expectations. The quality systems in the program consist of the policies and procedures, and all referenced documents, described in this Quality Assurance Manual. The Quality Control Program also functions to maintain the laboratory's compliance with accreditations through USEPA, State Agencies, and NELAC. All employees are expected to implement and follow the policies contained within the Quality Assurance Program Manual. Internal documents, controlled and associated with the Quality Assurance Program are listed in Appendix B.

The Quality Control program insures that results of analyses are within established accuracy and precision limits required by the referenced method or Standard Operating Procedure (SOP). The Quality Control Program requires that the following points be met for each applicable analytical method:

Demonstration of Laboratory Capability

Performance of any analytical method requires that the proper equipment and instrumentation are available. A list of major equipment is listed in Chapter 12. The procedure for operation of an analytical instrument is described in the equipment manufacturers operating manual, and may also be supplemented with a specific Standard Operating Procedure (SOP) for the instrument and/or the method.

Each SOP covers operation of the instrument including the sequence of operations involved in instrument start-up, calibrating, analyzing, and shutting down. SOPs include recommended preventative maintenance, and/or a list of parameters used to identify other types of maintenance. The SOP also outlines any special safety precautions for operation of the instrument.

SOPs of well detailed EPA, ASTM, NIOSH, APHA, OSHA, or published procedures include, as appropriate, a list of any method specific items or variances, a list of QC parameters and their recommended performance ranges, recommended or example analytical sequences, specific or unique safety information, method references, and a signed signature page. Details and format of method SOPs follow NELAC requirements. Detailed SOPs are prepared for those procedures that do not have published methods.

Detailed information as to what information is required in method SOPs can be found in the ELI SOP 10-001-01.

Demonstration of Analyst's Ability to Generate Data of Acceptable Accuracy and Precision

ELI demonstrates that laboratory staff are qualified and capable of performing the method. Analysts are assigned duties based on their skills and experience. Training records are maintained for all analysts. Curricula vitae of supervisory and senior analysts are described in Appendix E.

It is the responsibility of the analyst to become thoroughly familiar with the methodology and instrument operation before performing the analysis. It is the responsibility of the person providing training to monitor all laboratory results generated for a reasonable time. The amount of time necessary may vary depending on the method and the experience of the analyst. As a minimum, the analyst's performance is to be monitored until the analyst demonstrates the ability to generate results of acceptable accuracy and precision according to the method.

All analysts are required to demonstrate and maintain a record of proof of competency by routinely analyzing quality control samples appropriate to the analytical procedures they perform. Competency in analyzing these control samples is documented in analysts' training files per NELAC requirements (for more information, see ELI SOP 10-005 on Personnel Training). For those analyses where external performance evaluation samples are not routinely analyzed, competency is documented by including the results of routine analyses of internal method quality control samples and/or a verifying statement of procedural review by a supervisor.

Analysis of Quality Control Samples

Each analytical method is subjected to quality control monitoring. The purpose is to demonstrate that results generated meet acceptable accuracy and precision criteria for the method. Quality control requirements are outlined in the methods and ELI at a minimum follows the guidelines specified in the methods used. Additional QC requirements are also added as appropriate. Statistical method performance is periodically evaluated against method requirements using control charts.

Quality control monitoring to measure accuracy for each method generally requires that five to ten percent of all samples analyzed be fortified (spiked) with a known concentration of target analytes tested by the method. Percent recovery is calculated. This provides a means for monitoring method accuracy and evaluating sample matrix effects. Where appropriate, surrogates are included in the method to monitor method performance on each individual sample. Blank spike samples replace matrix spike samples for certain methods, or when there is insufficient sample for a matrix spike analyses. Historical routine batch QC sample performance can be used to estimate the precision and accuracy of the method.

Quality control monitoring to measure precision for each method requires replicate samples be prepared and analyzed when possible. Actual requirements are outlined in the specific SOP. When replicate samples or matrix spike duplicates are analyzed, relative percent difference is calculated and used to monitor precision of the method. In instances where there are no specific method requirements, it is the policy of this laboratory to analyze five to ten percent of all samples in duplicate. Duplicate test results must be within the control limits established for each analysis type. Acceptance limits generally follow specifications listed in the method. Matrix spike duplicates replace sample duplicates for most methods.

When not defined in the method and as appropriate, method blanks and instrument blanks are analyzed one in every 20 samples at a minimum. Method blanks are used to verify that contamination from laboratory reagents

and glassware is not present. The method blank must be less than the reporting limit, or 10 times less than the amount in the sample, for the analytical parameter being tested.

When not defined in the method, and as appropriate, method spikes (blank spikes) are analyzed one in every 20 samples at a minimum.

Calibration standards are analyzed and calibration curves developed for all applicable methods. For additional information on instrument calibration see Chapter 7 of this QA manual.

The initial calibration is continuously monitored by analyzing a continuing calibration standard every 10 to 20 samples, or within a specified time frequency, and at the end of each new set of samples, depending on the method and instrumentation. Results must be within an established range as described by the method SOP. As appropriate, initial calibrations are verified against a standard from a second source.

Performance evaluation samples and further quality control check samples may be required for various methods. Refer to Chapter Two of this QA manual for further details.

Maintenance of Performance Records

All quality control monitoring is recorded and documented. Quality control data is recorded in laboratory notebooks, electronic summary files, and/or analyses sheets. QC data can also be maintained in quality control forms, graphs, or charts. QC data management and control chart generation, maintenance, and usage are described in ELI SOP 20-004. It is the responsibility of the analyst to see that all results are recorded in a timely manner.

All quality control data is filed and available for inspection and assessment by analysts, supervisors, management, and quality control personnel.

Method Quality Control Specifications

Summary of Quality Assurance/Quality Control specifications for a selected subset of procedures offered by ELI are outlined in Appendix C. These tables are recommended for our clients to use in the preparation of Quality Assurance Project Plans (QAPPs). Exact details of method QC can be found in the applicable method SOPs.

CHAPTER 2 – QUALITY ASSESSMENT PROGRAM

Purpose

The function of the Quality Assessment Program is to provide formal evaluation of the quality of data being generated and reported by the laboratory. External and internal quality control measures are used in this assessment. These measures include performance evaluation samples, laboratory quality control check samples, and routine internal and external audits on methodology and documentation procedures.

Performance Evaluation (PE) Samples

PE samples are supplied by an outside entity and contain known amounts of constituents. The laboratory does not have access to known values of the samples. Only the PE provider has knowledge of constituent levels prior to the formal publishing of the test results.

These samples are received on a routine basis, with results sent to the providing entity for evaluation. Acceptable results are those which fall within a defined range as determined by the supplier. These study results are available for review upon request.

Performance Evaluation (PE) Samples for USEPA, NELAC and various State certifications are Water Pollution Study Samples (WP), Water Supply Study samples (WS) and NELAC SOIL PE samples provided by either Resource Technology Corporation (RTC) and/or Environmental Resource Associates (ERA), vendors accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). Routine participation in NELAC, WS and WP PE sample studies is used to maintain certifications for Drinking Water, NPDES permit monitoring analyses, and projects requiring NELAC certification. These types of external PE samples are received on a semi-annual basis, with results sent to the reference supplier for evaluation. The samples are analyzed the same as any routine sample in the laboratory. Acceptable results are those which fall within a defined range as determined by the vendor/EPA/NELAC based on multi-laboratory study results. Results are sent by the provider to USEPA and other certifying agencies as requested by ELI-Billings. Note that our performance is substantially above the national average. Current study results are included in Appendix A. A current copy of the certificate to perform drinking water analyses in the State of Montana and the NELAC certificate is also included in Appendix A. The Montana certification includes a list of parameters for which drinking water certification has been granted. Reciprocal certifications to perform drinking water analysis in Wyoming, North Dakota, South Dakota, and Idaho, are based on the Montana certification. The NELAC certificate and list of parameters includes RECRA methods and methods associated with the Clean Water Act (NPDES permits).

Performance evaluation samples for Radon Proficiency testing certification are from the National Environmental Health Association (NEHA), an EPA approved commercial Radon testing certification association. Our own radon sampling canisters are submitted to NEHA for known levels of radon exposure. Acceptable results are those which fall within a defined ranged based on multi-laboratory study results.

Blind Quality Control Check Samples are samples submitted as regular lab samples and are processed through the system in the same manner as any other sample. The analysts do not know the true value when performing the analyses. Method performance reports are returned to the analysts and maintained in method performance files. Clients occasionally submit these types of samples for their QAPP.

Laboratory Inter-comparison Samples are samples containing known/unknown quantities of analytes that are split and analyzed by more than one laboratory. These samples are routinely analyzed and results are kept on file.

Quality Control Check Samples

Quality Control Check Samples - Are performance evaluation samples used for routine method performance monitoring. As appropriate, analytical procedures include the analysis of a quality control sample with every sample batch analyzed. The materials are obtained from a commercial source when available, or they may be prepared in-house. Acceptable results are within a defined range based on certified ranges, or, against statistically determined control limits. Routinely used methods not subjected to PE sample monitoring are evaluated with Quality Control Check Samples as appropriate.

QC samples are processed through the system in the same manner as any other sample, except the analyst is aware of the source, concentration, and acceptance ranges of target analytes and calculates analyte recoveries to evaluate method performance in real time.

Quality Control Audits

Quality Control Audits are internal and external laboratory analyses inspections designed to monitor adherence to quality control requirements. The audit checks general laboratory operations, overall Quality Systems, adherence to QA program requirements, sample tracking procedures, sample holding times, storage requirements, adherence to procedures during analysis, calculations, completion of required quality control samples within the group surrounding the sample, and proper record-keeping.

Internal quality control audits are conducted periodically by the quality control director of the laboratory (see ELI SOP 30-001 Internal Quality Assurance Audits). ELI conducts internal inspections on a regular basis to monitor adherence to quality control requirements. Results of formal audits are given to management with possible recommendations for corrective action in the event any discrepancies are found. As necessary, a follow-up review is conducted to determine that identified problems have been addressed. Annually, the overall Quality Systems of the laboratory are reviewed and a summary report is prepared. Laboratory management is involved with the annual review of laboratory Quality Systems.

External Quality Control Audits by qualified outside auditors are welcomed by ELI for outside review and comment on the overall QA program. To maintain certifications, accrediting authorities from the State of Montana, USEPA, and NELAC conduct periodic comprehensive external audits. External audits by private clients to meet Quality Assurance Project Plans (QAPPs), as applicable to environmental remediation projects, or for major industries, are also conducted on a continuing periodic basis.

CHAPTER 3 – LABORATORY FACILITIES

The facility for Energy Laboratories, Inc. – Billings, MT consists of 6 buildings, 5 of the buildings on the same city block with the main building address of 1120 South 27th Street, Billings, MT, 59107. The fifth building located at 405 South 24th Street, is used as overflow laboratory space and as warehouse storage. The phone number is (406) 252-6325, the fax number is 406-252-6069, the toll free number is 800-735-4489, and the email address is eli@energylab.com

Laboratory space includes adequate benchtop and floor space to accommodate periods of peak workloads. Working space includes sufficient benchtop area for processing samples; storage space for reagents, chemicals, glassware, bench and portable equipment items; floor space for stationary equipment; and adequate associated area for cleaning glassware. The laboratory contains at least 15 linear feet of usable bench space per analyst, and at least 150 to 200 square feet per person. Laboratory departments are organized and facilities designed for specific laboratory operations in order to protect the safety of analysts and to minimize potential sources of contamination between and within department areas (for more information see ELI SOP 10-002, Facility Description, Access, and Security).

The laboratory is appropriately ventilated and illuminated, relatively free of dust and drafts, and is not subject to excessive temperature changes. As required, laboratory areas are temperature and humidity controlled. A light intensity of 100-foot candles is present at all working surfaces. Ample cabinets, drawers and shelves are available for storage and protection of glassware. Exhaust and particulate filtering hoods are available as needed for use during preparation, extraction, and analysis of samples. Air quality monitoring is conducted routinely to ensure a safe working environment.

To maintain security, all non-ELI laboratory personnel and visitors must sign an ELI guest book and be escorted by a staff member of ELI when present in laboratory working areas. A secure sample log in area restricts the access of unauthorized personnel to other parts of the laboratory.

The laboratory has provisions for the disposal of chemical wastes and microbiological wastes. These provisions are described in Standard Operating Procedures and outlined in the Chemical Hygiene Plan along with other safety and health guidelines.

CHAPTER 4 – PERSONNEL REQUIREMENTS AND LABORATORY ORGANIZATION

Personnel Requirements

Laboratory Director

The Laboratory Director is required to have education equivalent to a Bachelor of Science degree in Chemistry or a related science. Five years of relevant laboratory experience is required.

Quality Assurance Officer

The Quality Assurance Officer is required to have a bachelors degree in Chemistry or a related science. Five years of relevant laboratory experience is required.

Laboratory Supervisor

A Laboratory Supervisor is required to have education equivalent to a Bachelor of Science degree in Chemistry or related science. Two years of relevant laboratory experience is required.

Analysts

Analysts are required to have education equivalent to a Bachelor of Science degree in Chemistry or related science, or a High School diploma and 3 years experience as an analyst in training. A minimum of 6 months of on-the-job training, under direct supervision of qualified analyst in the measurements being considered for certification is also required. After 6 months, and on a continuing basis thereafter, the analyst must demonstrate acceptable skills through the successful participation in the analysis of applicable performance evaluation and quality control samples.

Laboratory experience can be substituted for academic requirements. For more information, see ELI SOP 10-004, Roles and Responsibilities.

Laboratory Organization

Corporate organization of the seven ELI laboratories located in Montana (2), Wyoming (2), Texas, Idaho, and South Dakota is shown in the Corporate Organizational Chart given in Appendix D. The Billings laboratory is the center for all corporate functions. Each laboratory is managed and operated individually under the supervision of a Laboratory director. Branch laboratory corporate responsibilities are only towards fiscal and general operating policies and goals. Quality Assurance Manuals are prepared individually for each branch and follow the QA/QC program outlined in the ELI-Billings QA manual.

The ELI-Billings Organizational Chart is also included in Appendix D with Curricula vitae of key ELI-Billings laboratory personnel maintained in Appendix E of this manual. Within the **Qualifications Manual**, detailed personnel summaries are given for all managers and supervisors of ELI, Inc. A Personnel Summary for all ELI employees listing title, academic background, and years of relevant experience is also maintained in the Qualifications Manual. Job descriptions can be found in the Roles and Responsibilities ELI SOP 10-004.

CHAPTER 5 – SAMPLING PROCEDURES

Most of the samples processed in this laboratory are collected by private individuals or companies who are responsible for using proper collection procedures. Members of the staff are acquainted with proper sample collection and handling procedures and will advise those who need help in this area. Instructions and forms for initiating Chain-of-Custody are available from ELI. Laboratory procedures for logging in samples for analyses and maintaining Chain-of-Custody are described in ELI SOP 20-001.

When the laboratory has been assigned the responsibility of sample collection, there is strict adherence to correct sampling protocols, initiation of Chain-of-Custody, sampling documentation, complete sample identification, and prompt transfer of sample(s) to the laboratory.

This laboratory will provide proper sample containers and preservatives as specified for the procedure. Certified sample bottles are available upon request. Sample containers, preservatives, coolers for shipping, ice packs for maintaining refrigeration temperature, travel blanks for monitoring contamination during shipping, temperature blanks for accurately monitoring sample receiving temperatures, Chain-of-Custody forms, Chain-of-Custody Seals, and sample bottle labels are provided upon request. Instructions for sampling, sample labeling, sample preservation, and sample packaging/shipping are also provided upon request. Sample container type, sample volume, preservation requirements, and maximum holding times, are detailed for each analyte in the ELI Analytical Services Catalog. See ELI website, http://energylab.com/ for current Analytical Services catalog. For metals analysis, polyethylene plastic with a polypropylene cap liner is preferred. Glass containers with Teflon-lined caps are required for most organic analysis. The client is immediately notified (if possible) upon sample receipt if samples are received in unacceptable containers, if samples have not been properly preserved, sample labeling or chain-of-custody procedures are incomplete, or if sample cannot be analyzed within method recommended holding time. Samples not collected or documented properly can be rejected for any regulatory-based analyses and re-sampling is recommended. If resampling is not possible, or the client cannot be contacted, the sample is analyzed, and the sample data is clearly qualified in the data package. The laboratory will preserve samples at the time of sample login if samples are unpreserved and preservation is required by the methodology. Aqueous samples for volatile analyses are checked for preservation at the time of analyses. Samples for microbiological analysis are collected in pre-sterilized 120 mL plastic bottles containing sodium thiosulfate.

Sample preservation needs to be performed immediately upon sample collection according to methodology. For composite samples, each aliquot must also be preserved at collection. When use of an automated sampler makes it impossible to preserve each aliquot, samples are preserved by maintaining at 4° C until compositing and sample splitting is completed.

The laboratory initiates a sample condition report at the time of sample receipt. The sample condition report evaluates Chain-of-Custody procedures, sample preservation status, carrier used for sample shipment, cooler temperature, and provides general comments concerning sample condition. The sample condition report is provided with the sample analyses results data package. For more information, see ELI SOP 20-001, Sample Receipt, Login, and Labeling.

When any sample is shipped by common carrier or sent through the United States Mail, it must comply with the Department of Transportation Hazardous Materials Regulations (49 CFR Part 172). The person offering such material for transportation is responsible for ensuring such compliance. For the preservation requirements as described in the ELI Services Catalog, the Office of Hazardous Materials, Material Transportation Bureau, Department of Transportation has determined the Federal Hazardous Materials Regulations do not apply to the following:

A) Hydrochloric Acid - (HCl) in water solutions of 0.04% by weight or less (pH of 1.96 or greater).
B) Nitric Acid - (HNO_3) in water solutions of 0.15% by weight or less (pH of 1.62 or greater).
C) Sulfuric Acid - (H_2SO_4) in water solutions of 0.35% by weight or less (pH of 1.15 or greater).
D) Sodium Hydroxide - (NaOH) in water solutions of 0.080% by weight or less (pH of 12.30 or less).

It is required that all samples be analyzed within the prescribed holding times. Holding times are the maximum times allowed between sampling and analysis for results to still be considered valid. Samples should be delivered to the laboratory as soon as possible following collection to assure that holding times can be met. Samples are analyzed as soon as possible after sample receipt. When maximum holding times cannot be met, resampling is requested. Samples may be held for longer periods only if the permittee, or monitoring laboratory has data on file to show that the specific types of samples under study are stable for the longer time or if a variance is allowed. Some samples may not be stable for the maximum time period as given in the ELI Analytical Services Catalog. A permittee or monitoring laboratory is obligated to hold the sample for a shorter time if knowledge exists to show this is necessary to maintain sample stability.

CHAPTER 6 – SAMPLE HANDLING

Sample Receipt

All samples arriving at the laboratory are recorded in the sample receipt log and each container is given a unique laboratory sample number.

Samples requiring preservation are checked to determine if the client performed preservation. If requested, ELI staff will preserve or filter samples as appropriate. Samples which degrade quickly, or cannot be opened (such as aqueous samples for volatiles), are not preserved at the time of sample login. If samples are improperly preserved, or the maximum holding times are exceeded upon arrival at the laboratory, the collector is notified and resampling is requested.

Chain-of-Custody forms are checked for pertinent information. If necessary information has been omitted, the collector is notified, if possible, and the missing information is requested.

Samples are stored in accordance with method specifications in designated laboratory areas.

During sample login, all sample information such as sample description, client name and address, analyses requested, special requirements, etc. are entered into the computer database of the Laboratory Information Management System (LIMS). Requested analyses parameters and special requirements are communicated to the analysts via their LIMS work lists. Project specific requirements are maintained in the LIMS for any samples received from a special project. This process ensures that individual requirements are maintained.

For more information, see ELI SOP 20-001, Sample Receipt, Login, and Labeling.

Chain-of-Custody

Evidence level internal Chain-of-Custody procedures are available on a project specific basis. For these procedures, internal COC sample custody is maintained down to the individual analyst level. When transferring the possession of the samples, the transferee must sign and record the date and time on the Chain-of-Custody record. Every person who takes custody must fill in the appropriate section of the Chain-of-Custody record. When received by ELI, sample identification information on the sample containers is compared to the custody report form. The sample is inspected and information regarding the condition of the sample and seal (if used) is recorded on a report form, the method of shipping is also documented on the report form. A copy of the report form is kept with the sample data file and a copy is sent to the client with the analysis report. Internal Chain-of-Custody forms are used to document the progress of the sample through the laboratory. For more information, see ELI SOP 30-005, Chain-of-Custody Samples.

ELI's routine COC policy is maintained at the laboratory level through our laboratory access and security policies. See ELI SOP 10-002, Facility Description, Access, and Security.

Sample Tracking

Samples are tracked through the analytical process by the LIMS. When all analyses are completed and approved by supervisory review, the data package is sent to the reporting department for final report generation. The completed report is sent to data validation and finally to invoicing at which point the report is mailed to the client. Generation of the invoice automatically changes the status of the samples in the LIMS to "Done" and removes them from the status report printed by the LIMS. Completed reports are reviewed by the Data Validators and sent to clients. See ELI SOP 20-002, Document Production, Control, and Archiving.

Sample Disposal

It is preferred that excess hazardous sample material be returned to the originator (client) for disposal by the originator. When this is not possible or reasonable, ELI will dispose of excess hazardous sample materials with hazardous waste generated in the laboratory. The disposal of all laboratory wastes will be performed in accordance with all local, state, and federal regulations, which apply to such activities. For specific information concerning a given waste, consult the appropriate SOP.

Subcontracting Policy

The ELI Billings laboratory utilizes the expanded branch laboratory capability and expertise to provide comprehensive analytical services. This occurs when the Billings laboratory is requested to perform an analysis they are not capable of doing, during the peak season when we experience sample overload, and when equipment is out of service. Upon completion of the analyses, the branch laboratories report the sample results and their quality assurance package to a Project Officer. The results are reviewed before being reported to our clients.

Other branch laboratories are certified to perform drinking water analyses in their state and in neighboring states. Samples are forwarded to our branch laboratories only if the laboratory is certified in the state from which the sample originated. The branch laboratories QA Program is consistent with the Billings QA Program and is monitored through internal laboratory audits. The following methods are routinely analyzed by branch laboratories to support ELI-Billings analytical services:

Total Organic Halogens (TOX) by SW-846 9020
Low level EDB and DBCP by EPA 504
Organohalide Pesticides and PCBs by EPA 505
Carbamates by EPA 531.1
Glyphosate by EPA 547
Diquat by EPA 549.1
Low level Total Organic Carbon (TOC)
Oil & Grease by SW-846 1664
All Radiochemistry except Radon

In the event that ELI is dependent on the service of an outside laboratory for analyses not available through our facility or our branch laboratories, the client will be notified in advance that their samples are being subcontracted to an outside laboratory. The outside laboratory reports the results to ELI and this becomes part of the final report. All final reports indicate where the analyses were performed.

CHAPTER 7 – INSTRUMENT OPERATION AND CALIBRATION

Laboratory instruments and equipment are operated and calibrated according to the manufacturer's instructions, and according to the requirements of the method being used. Exact calibration procedures are outlined in the appropriate SOP. For most instruments, a calibration curve composed of three to five standards covering the concentration range of the samples is prepared. Unless otherwise specified in the method, at least one of the standards is at or below the practical quantitation limit (PQL) of the method. Routine PQLs for each method are given in the **ELI Analytical Services Catalog**. Calibration standards are routinely compared against second source calibration standards to verify accuracy. The reference standard results must fall within an established range, as described by the SOP, to be accepted. Whenever possible, the laboratory uses calibration standards prepared from certified stock standards. Initial instrument calibration curves are verified and routinely monitored by running a continuing calibration standard every 10 to 20 samples, and at the end of every analytical sequence, depending on the analysis method and instrumentation. High-level samples, which produce an analytical response outside the calibrated range of the instrument, are diluted and reanalyzed such that a response within the calibrated range is obtained.

System cleanliness is verified through the analysis of reagent/instrument blanks prior to analysis, between highly contaminated samples, and at regular intervals during the analysis. Samples are only quantitated within the limits of the response of the standards.

Use of measuring equipment and reagents; glassware, water, chemical reagents, and industrial gases, conform to Good Laboratory Practice guidelines. Good Laboratory Practices (GLPs) are laboratory guidelines which were established by the Food and Drug Administration and published in the Federal Register (21 CFR, part 58) in the mid-1980's. The GLP guidelines were adopted by the Environmental Protection Agency. SOPs are developed in accordance with GLP and NELAC guidelines. Laboratory volumetric glassware conforms to National Institute of Standards and Technology (NIST) Class A standards. All mechanical pipetors are calibrated monthly. Laboratory balances are annually serviced and calibrated by certified technicians. Routine calibration checks of all balances are performed using NIST traceable Class S weights. Laboratory thermometers are annually calibrated against a NIST traceable thermometer, and routinely checked for accuracy. Laboratory drying ovens, incubators, freezers, refrigerators, and water bath temperatures are recorded each working day, or at frequencies as described in the specific SOP. Laboratory pure water is generated by commercial water purification systems and is monitored and documented each working day according to resistivity meter readings. The routine analyses of laboratory blanks is used to verify laboratory water quality and the suitability of sampling containers. Chemical reagents and gases exceed purity requirements for their intended uses. Laboratory stock and working standards are derived from commercially available primary standards whenever possible. Standards preparation notebooks document the source, purity, content, concentration, preparation date, and analyst. All calibrations standards are documented in the analytical sequence such that they are uniquely identifiable and traceable to stock standards and their source.

Standard Operating Procedures (SOPs) detail the sequence of operations involved in instrument start-up, calibration, analyzing, shutting down, and routine maintenance. Suggestions for corrective action are included with the SOPs and parameters are identified which dictate certain types of maintenance. Instrument and method detection limits are performed at the method required frequency or whenever there is a significant change in instrumentation. Detection limits are determined according to EPA guidelines found in 40 CFR, part 136, Appendix B. Acceptable instrument response/performance criteria are based upon the manufacturer's or the analytical method specifications. SOPs exist for all major pieces of analytical equipment/methods. Instrument maintenance logbooks are used to document instrument maintenance and repairs.

All instrumental run sequences are documented. Laboratory analysts record and document all instrumental runs in Laboratory Instrument Logbooks or computer files. Instrument Logbooks and/or dated computer files record instrument performance data, analytical sequences, instrument maintenance, calibration standards data, and any other additional information pertinent to operation of the instrument.

CHAPTER 8 - RECORDS AND REPORTING

Laboratory Notebooks

Several different types of Laboratory Notebooks are maintained at the ELI Laboratory. These include, but are not limited to, the following:

Method/Parameter Notebooks
Project Notebooks
Instrument/Equipment Use and Maintenance Notebooks
Standard Preparation Logbooks
Sample Receipt Logbooks
Safety Logbook
Balance Calibration Logbooks
Pipet Calibration Logbooks
General Logbooks

The general purpose of maintaining each of these Laboratory Notebooks is to record the details which may be important in repeating a procedure, interpreting data, or documenting certain operations. Entries in the notebook may include data such as standard and sample weights, pH measurements, instrument operating parameters, preparation of calibration curves, analytical run sequences, calculations, recording of instrument operating parameters, sample condition, etc. The analyst's notebook is particularly important in documenting analyses which deviate in any way from routine or standard practices. It can also be an important training record. All pertinent data is to be recorded directly in the notebook. Some notebooks or data records are maintained in electronic files. Electronic data records are duplicated using hardcopy and/or alternate electronic backup techniques such as magnetic tape.

It is the responsibility of each analyst to maintain a laboratory notebook according to Good Laboratory Practices (GLP) Guidelines. Procedures for use and maintenance of laboratory notebooks are detailed in ELI SOP 20-010. All laboratory notebooks are assigned a unique logbook control # and are assigned to an analyst or supervisor. Laboratory Notebooks will remain the responsibility of the ELI staff member to whom they are assigned until, or unless, they are formally transferred to another staff member, until they are completely filled and returned to the ELI Quality Assurance Officer or ELI Laboratory Supervisor for archiving, or until the staff member resigns and returns them as a part of the check-out process. ELI staff members other than the individual to whom the Laboratory Notebook is issued may make entries in the Notebook as long as those entries are consistent with the intended use of the Notebook, and such entries are initialed. Laboratory Notebooks are the responsibility of each ELI staff member using the notebook. Supervisors review and approve all Laboratory Notebook formats.

Records

The laboratory for minimum of ten years keeps records of chemical analyses (beginning October 18, 2000), including all quality control records. In the event the laboratory transfers ownership or goes out of business, files will either be maintained, or first be offered to the client prior to their disposal. Details are described in ELI SOP 20-002, Document Production, Control, and Archiving.

Data Reduction

Data reduction refers to the process of converting raw data to reportable units. The reporting units used and analytical methods performed are described in the Analytical Services Catalog.

Wherever possible, the instrument is calibrated to read out directly in the units reported. In this case, the value is recorded directly into a laboratory notebook, logbook, bench sheet, or electronic file and presented for review by supervision.

In cases such as titration, gravimetric measurements, or other techniques that require calculation prior to reporting, raw data is recorded in the appropriate laboratory notebook or electronic file, or on the appropriate laboratory form. The calculations specified in the EPA method are used to determine the reported value. That value is also entered into the laboratory notebook or bench sheet, and on the draft of the client report. Most of the calculations are computerized to reduce the chance of arithmetic or transcription errors.

Wherever possible, electronic data results are transmitted throughout the laboratory via the LIMS computer network. This process is intended to minimize manual data transcriptions within the laboratory. Additional advantages include the opportunity for rapid comprehensive data validation by supervisors, and more rapid data reporting.

Validation

Data validation includes the procedures used to ensure that the reported values are consistent with the raw data, calculated values, sample type, sample history, and other analyses parameters requested.

The data recorded on the draft report is validated with several steps. The analyst who submits the report checks all the values reported for omissions and accuracy. Elements of this review also evaluate all instrument and method QC results. Automated data management programs are designed with an interactive step allowing data review by the analyst. Results to be reported are approved by the analyst.

The reported result and associated QC data is reviewed by the supervisor. Supervisors review the suitability of the data according to project and method performance specifications. Analyses results for each requested parameter are evaluated against other requested parameters, project specifications, other samples within the set, historical files associated with the project/client, and any other information provided with the sample. Supervisors initial all validated sample results.

The reports are generated, proofread, and then reviewed by the reporting staff.

The laboratory manager, or his/her designate, who also examines the validity of the data, reviews the final report.

Internal and external laboratory audits review selected sets of data to ensure that the analysis results are correct and accurate, analytical methods are appropriate, documentation and record keeping procedures complete, and that overall objectives of the Quality Assurance Program are adhered to.

All automated programs used to process and report data are verified using hand-calculated results. Whenever a modification is performed to a program re-verification of overall software function is performed.

Reporting

One copy of the report is mailed to the client on the day the report is completed and reviewed. A standardized report format is used unless otherwise specified. Individual states may have their own required reporting format. Client specified report formats are available upon request. Electronic results via diskette, email, website FTP, or FAX are available upon request. All electronic reporting is followed with a hardcopy of final results.

Various levels of data reporting are available. All analyses results, regardless of the level of reporting used, have record keeping procedures which allow a complete "data validation package" to be produced. Note that a comprehensive "data validation package" is most easily generated at the time of sample analyses. Example data packages are available upon request.

Safe Drinking Water Act (SDWA) compliance monitoring samples for microbiological and chemistry samples that exceed the SDWA maximum contaminant level (MCL) may require notification to the appropriate state agencies. This process is detailed in laboratory reporting ELI SOP 20-002. Generally, notification to the client, and to the state, of any SDWA MCL exceedence must be made immediately on the same day of analyses, or by noon the next business day.

If requested by the client, additional copies of the report will be sent to a specified address or person.

The final copy of a completed report is scanned and maintained as a graphics file. The electronic file of the report meets NELAC reporting requirements. An electronic copy of this file is available upon request.

For more information, see ELI SOP 20-002.

CHAPTER 9 - GENERAL LABORATORY PRACTICES

Chemicals and Reagents

When available and appropriate, chemicals used in the laboratory are analytical reagent grade (AR) chemicals purchased from reliable suppliers. Reagents are prepared, standardized, and made fresh as mandated by the method, their stability, and according to Good Laboratory Practices.

Stock or working standards are checked regularly for signs of deterioration, (e.g., discolorations, formation of precipitates) and are compared to independently prepared reference materials.

All standards and reagents are dated when received, opened, or prepared, and each are labeled with expiration dates.

Certified primary standards are obtained from commercial sources when available. Standards used for calibration are verified against second source standards whenever possible. Secondary and working standards are accurately prepared in volumetric flasks or other calibrated glassware from primary standards and stored in appropriate containers.

Titrants, standards, and other solutions used for analytical purposes frequently must be standardized upon preparation with certified or traceable standards. Method SOPs specify if standardization is necessary. The date and analyst's initials must be recorded on the container whenever re-standardized and records are maintained in a laboratory notebook.

Individual SOPs may also provide additional details for reagent requirements.

Reagent Interference

To determine the extent of reagent interference, method blanks are analyzed prior to sample analysis whenever appropriate.

If any interference cannot be eliminated, the magnitude of the interference is considered when calculating the concentration of the specific constituent in the sample, but only when permitted within the method being used.

If reagents, materials, or solvents contain substances that interfere with a particular determination, they are replaced.

Individual method SOPs may also provide additional requirements for handling reagent interferences.

Glassware Preparation

All glassware used for inorganic analyses is washed in warm detergent solution and thoroughly rinsed in tap water. Glassware is then rinsed well three times with deionized water. This cleaning procedure is sufficient for many analytical needs, but individual SOPs detail additional procedures when necessary. Glassware washing procedures for inorganic analyses are described in ELI SOP 30-001.

All glassware used for organic analyses is washed in warm synthetic detergent solution and thoroughly rinsed in tap water. The glassware is then rinsed well with deionized water, followed by rinses with acetone to remove any residual organics. Prior to use, the glassware is rinsed three times with the organic solvent to be used with the glassware. Glassware washing procedures for cleaning glassware for organic analyses are described in ELI-SOP-30-002.

All glassware used for microbiological analyses is washed in warm detergent solution. The detergent must be proven to contain no bacteriostatic or inhibiting substances. The glassware is rinsed thoroughly with suitable deionized water. Disposable pre-cleaned sterilized glassware is used wherever possible. Specific details are described in SOPs.

Disposable glassware/plasticware is preferred for many procedures in the laboratory. The cleanliness, and suitability of disposable glassware/plasticware is continuously evaluated for each test with the routine analyses of method blanks.

All volumetric glassware used in precise measurements of volume is class A, or laboratory calibrated.

Laboratory Pure Water

Distilled or deionized water is used in the laboratory for dilution, preparation of reagent solutions and final rinsing of glassware. For organic analyses, organic-free water is prepared and used. Deionized water is prepared to meet ASTM Type II specification for reagent water. Use and maintenance of laboratory reagent water systems are described in ELI SOP 30-005 and 30-007.

Water quality is monitored for acceptability in the procedure in which it is used. Specific details are listed in the appropriate SOPs.

Employee Training

All new ELI employees and contract personnel are given an initial general orientation and tour of the laboratory facilities. Personnel are shown the locations of safety equipment such as safety showers, eye wash fountains, fire extinguishers, and first aid supplies. Personal protective equipment such as lab coats, disposable gloves, and safety glasses (if applicable) are issued at this time.

Safety considerations are a vital part of the training process. All hazards associated with the performance of a procedure or with the operation of an instrument are to be understood by the trainee before training can be considered complete. General lab safety procedures are a part of the new and current employee training. Specific safety procedures are outlined in SOPs and in instrument Operator's Manuals. Training in use of protective clothing, eye protection, ventilation, and general safety are provided to each employee. Each employee is required to read the laboratory Chemical Hygiene Plan.

All new and existing employees must demonstrate capability prior to performing an analytical procedure independently (see Chapter 1). Method performance on Quality Control Samples is used to document employee training and work quality. Employees are required to read and sign the Quality Assurance Manual and all appropriate SOPs. Each employee also receives training on general laboratory policies including ethics and conflict of interest. ELI encourages attendance at courses, workshops and other forms of continuing education available from on-site seminars, private institutions, local schools, and State and Federal regulatory agencies. Staff and department meetings are held routinely to communicate company policies and procedures. All training

on procedures and policies is documented per NELAC guidelines in employee training files. For more information see ELI SOP 10-005, Personnel Training.

Standard Operating Procedures

All routine laboratory operations and procedures are documented in Standard Operating Procedures (SOPs). SOPs are written to provide a reference that specifically defines requirements for routine procedures, so that consistent, safe, and efficient laboratory operations are possible. For analytical methods, SOPs generally provide information on the details of the analysis that is not specified in a published analytical method. For routine procedures other than analytical methods, SOPs define the steps required in accomplishing a given task. All SOPs are reviewed periodically to assure that they reflect any changes in laboratory operations. Method SOPs follow NELAC requirements. For more information on generation and distribution of SOPs, see ELI SOP 10-001, Preparation, Numbering, Use, and Revision of Standard Operating Procedures.

Client Confidentiality

Each employee has the responsibility to maintain confidentiality in all matters pertaining to our clients, samples submitted, and Energy Laboratories, Inc. Information obtained during employment with this laboratory regarding the specific business of this laboratory or its clients shall at no time be revealed to any outside sources without permission from the owner of the data.

CHAPTER 10 - QUALITY CONTROL MONITORING

Routine Monitoring

Temperatures of incubators, water baths, refrigerators, and ovens are checked and recorded according to a prescribed schedule.

All pH meters are calibrated against reference standards. Calibrations are noted in laboratory notebooks.

Conductivity of deionized water is continuously monitored.

Reagents are dated and initialed at the time of receipt; reagents are not used after recommended shelf life is exceeded.

Balances are checked daily against NIST traceable weights and are calibrated and serviced by certified technicians annually.

SOPs are reviewed periodically for correctness.

Laboratory Notebooks are reviewed periodically by supervisors for correctness and accuracy.

Performance Evaluation Samples are analyzed as required. (see Chapter Two of this QA Manual)

Quality Control Check Samples are analyzed with each analytical batch.

Internal and External audits are performed as specified or requested. (see Chapter Two of this QA Manual for additional discussion)

Additional monitoring requirements may also be specified in individual SOPs.

The Laboratory maintains an active fraud protection program that is implemented through the laboratory ethics policy. Additionally, the potential of fraud is monitored through analyst supervision, management supervision, regular internal audits, PT study participation, and an active quality assurance program.

Instruments/Methods

Calibration is performed as required by the analytical method or SOP. (see Chapter 7 of this QA Manual)

Depending on method requirements, the standard curve is verified with a known second source reference sample. The reference sample results must fall within the appropriate target range for the calibration to be accepted.

In most cases, the calibration is checked by running a continuing calibration standard every 10 to 20 samples, depending on the analysis and instrumentation. The verification standard results must fall within an established range as described by the SOP.

All laboratory instruments are subjected to preventive maintenance schedules. Preventive maintenance schedules are specified in instrument maintenance logbooks.

As appropriate, instrument and/or method detection limits are determined annually, or more frequently if changes in instrument performance are noted or per method requirements. Procedures for the determination of instrument detection and method detection limits are described in ELI SOP 30-009.

Precision and Accuracy requirements for each method are specified in the SOPs. General guidelines are given below.

Each sample analyses batch will contain QC samples to measure the accuracy of the method. Each QC sample result is monitored to be within QC specifications of the method. Results of blank spiked sample analysis must be within the established control limits. Quality Control Limits are specified in the SOPs and meet recommended QC limits as described in the referenced method.

Each sample analyses batch will contain QC samples to measure the precision of the method. (see chapter One for discussion on duplicate sample analyses.) Criteria for duplicate sample acceptance are found in the SOP, and are generally taken from the referenced method.

Each sample analyses batch will contain QC samples to measure the performance of the method on the sample matrix. These are typically identified as a matrix spike analyses and are often done in duplicate to also measure precision. Typically the sample is fortified with a known amount of target analyte and spike recoveries are calculated. Results outside of method QC guidance are flagged. Quality control limits and appropriate corrective actions steps are specified in the method SOP.

Several methods are considered to be concurrent methods in that they are either nearly identical or are identical to a method with a different citation. Even if two methodologies are identical in procedure, slight differences in the QC requirements might be the only difference between the two methodologies. These types of methods may also be considered "concurrent" if the procedures are identical and the more stringent of the two method criteria are used. During data reduction and reporting, the referenced method specifications and criteria will always take priority. The following methodology sets are considered concurrent methodologies: Methods 245.1, 7470A and SM3112B. Methods 200.7 and 6010B. Methods 200.8 and 6020. Methods 415.1 and SM5310B. Methods 415.2 and SM5310C. Other essentially procedurally equivalent methods may be combined into a common single analytical procedure as well.

As appropriate, the performance of QC samples results are evaluated with Quality Control Charts. Suitability of existing QC limits is evaluated and possibly adjusted, but not to exceed method specification.

CHAPTER 11 – CORRECTIVE ACTION

When the quality control checks indicate that an analysis is not within the established control limits, corrective action is needed. This section gives general guidelines for corrective action. Corrective actions for each method or instrument are detailed in individual SOPs.

Method QC such as continuing calibrations, instrument blanks, method blanks, duplicate, blank spike, matrix spike, or matrix spike duplicate samples which fail to fall within QC control limits are analyzed again to verify if a problem exists. If this repeat is not within control limits, the particular instrument or procedure is checked according to the specific protocols outlined in the method or according to the instrument manufacturer's guidelines. Once results are within control limits, analysis of all samples that were analyzed while the procedure was out of control are repeated, i.e., all analyses are repeated back to the previous acceptable control sample. If the analyst is unable to achieve acceptable results after following the corrective action guidelines detailed in the SOP, supervision is consulted. If necessary, the appropriate service personnel are contacted if the problem is determined to be due to instrument error, and cannot be resolved. In certain cases, where control limits are exceeded, it is possible that problems cannot be corrected to satisfy QC criteria. This could be due to problems such as matrix interference, instrument problems, lack of sufficient sample, missed holding times, high blank contamination, etc. If all possible solutions available to correct the problem are examined and the sample results are still considered valid, qualifying comments are attached to the sample report describing the non-compliance to QC and probable cause.

In the event that a QC audit or other informational review shows an analysis report to be incorrect, incomplete, or adversely compromised, a written corrected report and explanation is submitted to the client. As appropriate, an explanation submitted to the client should give a detailed review of the problem and document any unapproved deviations from the regulations, standard operating procedures, or project specific scope of work that may have caused it. The explanation to the client shall include but not be limited to the following components:

What actions have been taken regarding the affected data set(s).
Identification of the cause.
Corrective action taken to prevent future occurrence.

Procedure for Dealing with Complaints

Definition:

Complaint — For the purposes of this procedure, a complaint comes from a client or other user of our data. The complaint might cover issues about the quality of our data, turnaround, method used, pricing, or other expectations.

Client — The client is the person or company that ordered and paid for the services. This is the person that a sample is logged in or filed under.

Procedure:

The staff person receiving the complaint exercises judgment in deciding the severity and disposition of every complaint. The judgment must be used to decide whom, if anyone is alerted to the complaint and what actions are appropriate. The individual handling the complaint is instructed to follow ELI's guidelines on how to handle the complaint. This involves listening to the client and getting adequate information so the complaint can be investigated and resolved. The appropriate laboratory staff is notified and a solution to the problem and a timeline for action is given.

After the complaint is investigated or resolved, as necessary, the client is made aware of the results and determination is made as to what further actions are needed. Complaints and investigations may result in the need to submit a revised report or invoice. Complaints that are straightforward and can be resolved using the resources available to the person handling the complaint should be resolved there. These include such things as minor revisions of reports or invoices. If other decisions need to be made, the appropriate person should be contacted.

It may be appropriate to initiate or prepare a non-compliance report. This report should be completed with the intention of informing the affected staff about the problem so that we can all learn from it, change our procedures and improve our service. A procedure to document non-compliance reports is documented in ELI SOP 20-011.

Penalty for Improper, Unethical or Illegal Actions

Employees of Energy Laboratories, Inc. are expected to work in an ethical, proper, and legal manner. They are expected to perform laboratory analyses according to the cited method(s) and in conjunction with the SOP and the Quality Assurance Plan. Employees are expected and required to report any violations of this policy.

The penalty for improper, unethical, or illegal actions performed by an employee will be determined on a case-by-case basis. It will be set, in part, by the severity of the offense. A first time, minor offense may simply require instruction about the expectations of the company. A subsequent, willful, or more serious incident may require anything from supervisor reprimand to termination of employment. The supervisory staff and the laboratory director will determine the penalty. Consideration of such elements as employee experience, training, and attitude, and the seriousness of the problem will be used to set the penalty.

CHAPTER 12 - MAJOR EQUIPMENT AND METHODS

ENERGY LABORATORIES, INC – BILLINGS, MONTANA

Equipment	Quantity	Methods
Gas Chromatograph-FID with auto sampler	3	DRO, EPH (Mass. Method), TPH as Diesel
Gas Chromatograph-PID/FID with purge and trap and auto sampler	4	GRO, VPH (Mass. Method), TPH as Gasoline, 602, 8020
Gas Chromatograph-Dual ECD with auto sampler	2	504, 505, 508, 515, 608, 8081, 615, 8151
Gas Chromatograph-Mass Spectrometer with auto sampler	5	525, 507 mod., 625, 8270
Gas Chromatograph-Mass Spectrometer with purge and trap and auto sampler	4	524, 624, 8260
GPC cleanup apparatus	1	3640
Atomic Absorption Spectrophotometer with cold vapor apparatus	1	7470, 7471, 245.2
Inductively Coupled Argon Plasma Emission Spectrophotometer	2	200.7, 6010
Inductively Coupled Argon Plasma Spectrophotometer-Mass Spectrometer	2	200.8, 6020
Ion Chromatograph	2	300.0
Microscope, PCM, PLM	1	EPA 600/M4-82-020, RTI 600/R-93/116, NIOSH 7400, NIOSH 7402
Auto Titrator	2	310.0, SM 2320B
Flow Injection Analyzer	3	350.1, 353.2, 365.1, 420.2, 335.1, 335.3, 335.4, 415.2, ASTM D2036
Fix Wavelength IR Spectrophotometer	1	413.1, 418.1
UV-VIS Spectrophotometer	1	410.4, SM 3500-Cr, 376.2, SM4500, 420.1

CHAPTER 13 - PREVENTIVE MAINTENANCE

Preventive maintenance is performed on laboratory equipment according to the manufacturer's guidelines and our experience in its operation. An outline of the maintenance on our major equipment follows:

Instrument	Maintenance	Frequency
Balances	Check with Class S weights	Daily
	Independent Service	Annually
Pipettes	Check volume	Monthly/Daily
ICP-Atomic Emission	Check Pump Tubing	Daily
	Check Coolant Levels	Daily
	Lubricate Autosampler	Quarterly
	Air Filter	Quarterly
	Optics Servicing	Annually
ICP-Mass Spectrometry	Check Pump Tubing	Daily
	Check Coolant Levels	Daily
	Check Electron Multiplier	Monthly
	Lubricate Autosampler	Quarterly
	Air Filter	Quarterly
	Same as other Mass spectrometers	
Gas Chromatograph	Change Septum	As needed
	Check injection liner	Daily
	Clean detector	As needed
	Change gas cylinders	At 200 psi
	Change column	As needed
Auto Analyzers	Check bath temperature	Daily
	Check for leaks	Daily
	Change tubing	When wear is visible
	Align flow cell	Quarterly
	Lubricate pumps	Annually
	Lubricate sampler	Annually
Mass Spectrometers	Monitor vacuum pressures	Daily
	Monitor background levels	Daily
	Monitor electron multiplier	Daily
	Change pump oil	Annually
Aquatic Toxicology	Room temperature	Daily
	Aquarium temperatures	Daily
	Aquarium pH	Daily
	Aquarium water levels	Daily
	Aquarium water parameters	Daily
	Aquarium filters	Annually, or as specified
	Dechlorination filter	Quarterly
	Pump maintenance	Annually
Microbiology	Monitor room temperature	Twice daily
	Monitor Incubator Temperature	Twice daily
	Autoclave maintenance	Annually
	Monitor water bath temperature	Twice daily
Reagent Water Systems	Change/check cartridges	Quarterly, or as needed
Compressed Gases	Change gas cylinders	At 50 psi, monitor daily
Liquid Chromatograph	Flush system	Daily
	Change filters	As needed
	Change lamps	As needed
	Replace seals	As needed

CHAPTER 14 - REFERENCES

Handbook for Analytical Quality Control in Water and Wastewater Laboratories Environmental Protection Agency.

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA, 1998.

Methods for Chemical Analysis of Water and Wastes Environmental Protection Agency, 600/4-79-020.

Methods for the Determination of Metals in Environmental Samples – Supplement I, EPA/600/R-94-111, May 1994

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93-100, August 1993.

Methods for the Determination of Organic Compounds in Drinking Water, EPA/600/4-88/039, December 1998.

Methods for the Determination of Organic Compounds in Drinking Water – Supplement I, EPA/600/4-90/020, July 1990.

Methods for the Determination of Organic Compounds in Drinking Water – Supplement II, EPA/600/R-92/129, August 1992.

Technical Notes on Drinking Water Methods, EPA/600/R-94/173, October 1994.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW846), Environmental Protection Agency, Final Update III and IIIB, 1997 and 2005.

ASTM Annual Book of Standards, Part 31 (water). American Society for Testing and Materials.

Manual for the Certification of Laboratories Analyzing Drinking Water, 5th Ed., EPA 815-R-05-004, 2005.

NELAC Chapter 5: Quality System Standard, 2003 or most current version approved by Florida NELAC Accreditation program.

Laboratory Services Catalog, Current Revision, Energy Laboratories, Inc.

Qualifications Manual, Current Revision, Energy Laboratories, Inc.

CHAPTER 15 - GLOSSARY OF TERMS

Accuracy - The degree of agreement between an observed value and an accepted reference value.

Analytical Sample - Any solution or media introduced into an instrument on which an analysis is performed, excluding instrument calibration, initial calibration verification, initial calibration blank, continuing calibration verification, and continuing calibration blank.

Audit - A systematic evaluation to determine the conformance to quantitative specifications of some operational function or activity.

Batch - Environmental samples that are prepared and/or analyzed together with the same process and personnel, using the same lot(s) of reagents. A preparation batch is composed of one to twenty environmental samples of the same matrix, meeting the criteria above. An analytical batch is composed of prepared environmental samples, extracts, digestates, or concentrates, which are analyzed together as a group and in a similar time frame.

Blind QC Check Samples - Samples whose analyte concentrations are not known to the analyst. That the sample is a QC check sample may or may not be known to the analyst.

Blank - An artificial sample designed to monitor the introduction of artifacts into the process. The blank is taken through the appropriate steps of the process.

Blank Spike - See Standard Matrix Spike.

Calibration - The set of operations which establish, under specified conditions, the relationship between values indicated by the measuring instrument and the corresponding known value of the property being measured.

Calibration Blank - A volume of reagent water fortified with the same matrix as the calibration standards, but without the analytes, internal standards, or surrogate analytes.

Calibration Check Standard - See Check Standard.

Calibration Curve - The mathematical relationship between the known values and the instrument responses for a series of calibration standards.

Calibration Standard - A solution of known concentration used in the calibration of an analytical instrument.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) - The enabling legislation (42 USC 9601 - 9675 *et seq.*, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 USC 9601 *et seq.*), to eliminate the health and environmental threats posed by hazardous waste sites.

Check Standard - A material of known composition that is analyzed concurrently with test samples to evaluate a measurement process.

Clean Water Act - Public Law PL 92-500. Found at 40 CFR 100-140 and 400-470. The act regulates the discharge of pollutants into surface waters.

Continuing Calibration Standard - See Check Standard.

Continuing Calibration Verification - See Check Standard.

Control Limits - A range within which specified measurement results must fall to be compliant.

Control Standard - See Check Standard.

Corrective Action - An action taken to eliminate the causes of an existing nonconformity, defect, or other undesirable situation in order to prevent recurrence.

Data Quality Objectives - An integrated set of specifications that define data quality requirements and the intended use of the data.

Duplicate - A second aliquot of a sample that is treated the same as the original sample to determine the precision of the method.

Duplicate Sample - See Duplicate.

Fortified Sample - See Sample Matrix Spike.

Initial Calibration Verification - A sample of known concentration, from a source other than that of the calibration standards, analyzed following calibration to demonstrate validity of the calibration.

Instrument Blank - See Calibration Blank.

Laboratory Intercomparison Sample - A performance evaluation sample analyzed by numerous laboratories. Acceptance criteria are often based statistically on the analysis results.

LIMS - Laboratory Information Management System.

Matrix Spike/Matrix Spike Duplicate - See Sample Matrix Spike or Sample Matrix Spike Duplicate.

Method Blank - A clean sample processed simultaneously with, and under the same conditions as, samples containing an analyte of interest through all steps of the analytical procedure.

Method Detection Limit - A measure of the limit of detection for an analytical method determined according to the procedure given in 40 CFR Part 136 Appendix B.

MCL-Maximum Contaminant Level. Regulatory action levels for a contaminant of concern.

NELAC - National Environmental Laboratory Accreditation Council.

NELAP - National Environmental Laboratory Accreditation Program.

National Pollutant Discharge Elimination System (NPDES) - A discharge permit system authorized under the Clean Water Act.

Performance Evaluation (PE) Sample - A sample with a composition unknown to the analyst, which is provided to test whether the analyst/laboratory can produce analytical results with specified limits.

Precision - The degree to which a set of observations or measurements of the same property conform to themselves.

Preservation - Refrigeration and/or reagents added at the time of sample collection to maintain the chemical and/or biological integrity of the sample.

Quality Assurance Project Plan (QAPP) - A formal document describing the detailed quality control procedures pertaining to a specific project. For environmental clean-up projects this is typically produced by an engineering firm with references to include a laboratories Quality Assurance Program Manual.

Replicate - An additional aliquot of a sample that is treated the same as the original sample to determine the precision of the method.

Reporting Limit (RL) – Also known as the Practical Quantitation Limit (PQL). The lowest level of reportable concentration for the method and the analyte.

Resource Conservation and Recovery Act (RCRA) - The enabling legislation under 42 USC 321 *et seq.* (1976) that gives EPA the authority to control hazardous waste.

Safe Drinking Water Act (SDWA) - The enabling legislation, 42 USC 300f *et seq.* (1974), which requires the USEPA to protect the quality of drinking water in the U.S. by setting maximum allowable contaminant levels, monitoring, and enforcing violations.

Sample - A portion of material to be analyzed.

Sample Matrix Spike - An aliquot of a sample to which known quantities of specific compounds are added, and which is carried through the entire analytical process to determine the effect of the matrix on the methods recovery efficiency.

Sample Matrix Spike Duplicate - A second aliquot of a sample to which known quantities of specific compounds are added, and which is carried through the entire analytical process to determine the effect of the matrix on the methods recovery efficiency and the precision of the method.

Spiked Sample - See Sample Matrix Spike.

Standardization - See Calibration.

Standard Matrix Spike - An aliquot of blank matrix to which known quantities of specific compounds are added, and which is carried through the entire analytical process to determine the method's recovery efficiency.

Standard Operating Procedure - A written document which details the method of an operation, analysis or action whose techniques and procedures are thoroughly prescribed and which is accepted as the method for performing certain routine or repetitive tasks.

Trip Blank - One type of Field Blank. An aliquot of analyte-free water or solvent transported to the field in a sealed container and returned to the laboratory with the sample containers.

APPENDIX A
Laboratory Certifications

Montana State Drinking Water Certificate
NELAC Accreditation Certificate
NELAC Accredited Analyte List
Radon Testing Certificate

Additional Certifications on EnergyLab.com Website (not included)

North Dakota State Certification
South Dakota State Certification
Wyoming State Certification (EPA Region VIII)
Idaho State Certification
Colorado State Certification
Nevada State Certification

Performance Evaluation Sample Studies

Recent EPA WS and WP Study Results
Recent NELAC Soil Study Results

PERFORMANCE EVALUATION

First Choice for Quality | RTC

Off-study
OS06-2-6
WSCHEM

30-Mar-2006 through 30-Apr-2006

RT1061
RTC Labcode

MT00005
US EPA Labcode

Energy Labs
Andy Valkenburg
PO Box 30916
Billings MT 59107

Thank you for participating in study OS06-2-6. Additional information about this study may be found online at www.rt-corp.com. If you have any questions or comments about this study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset

Dataset 1

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

PCBs in Water

Analysis
EPA 525.2
Other

Method Number 10089608
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aroclor-1016 (PCB-1016) [1, 4] 8880 / PEO-003 - Lot 010825	<0.080 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1221 (PCB-1221) [1, 4] 8885 / PEO-003 - Lot 010825	2.0 µg/L	0.00 to 4.43 0.00 to 3.54	0.26	4 / 10	**ACCEPTABLE**
Aroclor-1232 (PCB-1232) [1, 4] 8890 / PEO-003 - Lot 010825	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1242 (PCB-1242) [1, 4] 8895 / PEO-003 - Lot 010825	<0.30 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1248 (PCB-1248) [1, 4] 8900 / PEO-003 - Lot 010825	<0.10 µg/L	0.0 to 0.0			**ACCEPTABLE**
Aroclor-1254 (PCB-1254) [1, 4] 8905 / PEO-003 - Lot 010825	<0.10 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1260 (PCB-1260) [1, 4] 8910 / PEO-003 - Lot 010825	<0.20 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**

End of Dataset 1

Sample Information

PCB's - WS

PEO-003

Study Lot 010825
Mfg Lot 010825

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1016 (PCB-1016) 8880 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1221 (PCB-1221) 8885 PCBs in Water	µg/L	1.77	0.89	1.72	0.23	1.56	0.10	1.77
Aroclor-1232 (PCB-1232) 8890 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1242 (PCB-1242) 8895 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1248 (PCB-1248) 8900 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1254 (PCB-1254) 8905 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1260 (PCB-1260) 8910 PCBs in Water	µg/L	0.00	0.00					0.00

Program analyte accrediting footnotes

[1] NELAC
[2] EPA
[3] NVLAP
[4] A2LA
[5] NELAC Experimental

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

NVLAP Labcode: 200393-0 ACCREDITED Certificate # 2122.01

EPA Lab MT00005 **RT Labcode RT1061**

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

Thank you for participating in study WS05-4. Your report has been sent to the following agencies. If an agency is missing or not correct, please contact RTC immediately.

(105) **CDPHE / Lab Service Division**
Ken Johnson
8100 Lowry Boulevard
Denver, CO 80230 6928

(118) **Nevada Division of Env Protection**
Donald Lafara
901 S. Stewart Street
Ste. 4001
Carson City, NV 89701 5249

(119) **North Dakota Department of Health**
Errol Erickson
Chemistry Division
2635 E. Main Ave., P.O. Box 937
Bismarck, ND 58502 0937

(215) **Utah Bureau of Laboratory Improvement**
Lorna Ward
46 N. Medical Drive
Salt Lake City, UT 84113 1105

(217) **EPA Region VIII**
Jim Gindelberger
MailStop 8 TMS-Q
999 18th Street - Suite 500
Denver, CO 80207 2466

(229) **Florida Dept. of Health, Bureau of Laboratories**
Stephen Arms
1217 Pearl Street
Jacksonville, FL 32202

(235) **Montana Dept. of Public Health & Human Services**
Judy Halm
Environmental Laboratory Services
PO Box 4369
Helena, MT 59604 4369

(346) **Idaho Bureau of Laboratories**
Dan Rousselle
2220 Old Penitentiary Road
Boise, ID 83712

(356) **South Dakota Drinking Water Program**
Kelli Buscher
523 E Capital
Pierre, SD 57501

(364) **State of South Dakota**
Mike Smith
Joe Foss Building, Chemistry
532 East Capitol Street
Pierre, SD 57501 3181

Additional information about the study can be found on our website at www.rt-corp.com. Enter our secure "eReport" site to find study statistics and online evaluations. Coming soon a study discussion summary will be posted. This report will discuss and significant study incidents.

If you have any questions or comments about the study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report
WSCHEM **WS05-4**
Commenced 12-Oct-2005 | Concluded 2-Dec-2005

RT Labcode RT1061

NVLAP® Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

MIC-001-01
WS - Microbiological PT (Sample 1)

Lot: Series I
Program: WSCHEM

MIC-001-01

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	1		SM 18/19thED 9221 B *20035807*	1 / 1 - 1	Acceptable	
2500 Total coliforms	1		SM 18th ED 9223B *20037609*	1 / 1 - 1	Acceptable	
2525 Escherichia coli	1		SM 18th ED 9223B *20037609*	1 / 1 - 1	Acceptable	

MIC-001-01

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			1		1.00	0.000	1 - 1	25 / 100.0%
2525 Escherichia coli			1		1.00	0.000	1 - 1	25 / 100.0%

MIC-001-02
WS - Microbiological PT (Sample 2)

Lot: Series I
Program: WSCHEM

MIC-001-02

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	0		SM 18/19thED 9221 B *20035807*	0 / 0 - 0	Acceptable	
2500 Total coliforms	0		SM 18th ED 9223B *20037609*	0 / 0 - 0	Acceptable	
2525 Escherichia coli	0		SM 18th ED 9223B *20037609*	0 / 0 - 0	Acceptable	

MIC-001-02

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			0				0 - 0	25 / 100.0%
2525 Escherichia coli			0				0 - 0	25 / 100.0%

MIC-001-03
WS - Microbiological PT (Sample 3)

Lot: Series I
Program: WSCHEM

MIC-001-03

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	1		SM 18/19thED 9221 B *20035807*	1 / 1 - 1	Acceptable	
2500 Total coliforms	1		SM 18th ED 9223B *20037609*	1 / 1 - 1	Acceptable	
2525 Escherichia coli	0		SM 18th ED 9223B *20037609*	0 / 0 - 0	Acceptable	

MIC-001-03

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			1		1.00	0.000	1 - 1	25 100.0%
2525 Escherichia coli			0				0 - 0	25 100.0%

MIC-001-04
WS - Microbiological PT (Sample 4)
Lot: Series I
Program: WSCHEM

MIC-001-04

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	0	SM 18/19thED 9221 B *20035807*	0 0 - 0	Acceptable	
2500 Total coliforms	0	SM 18th ED 9223B *20037609*	0 0 - 0	Acceptable	
2525 Escherichia coli	0	SM 18th ED 9223B *20037609*	0 0 - 0	Acceptable	

MIC-001-04

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			0				0 - 0	25 100.0%
2525 Escherichia coli			0				0 - 0	25 100.0%

MIC-001-05
WS - Microbiological PT (Sample 5)
Lot: Series I
Program: WSCHEM

MIC-001-05

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	1	SM 18/19thED 9221 B *20035807*	1 1 - 1	Acceptable	
2500 Total coliforms	1	SM 18th ED 9223B *20037609*	1 1 - 1	Acceptable	
2525 Escherichia coli	0	SM 18th ED 9223B *20037609*	0 0 - 0	Acceptable	

MIC-001-05

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			1		1.00	0.000	1 - 1	25 100.0%
2525 Escherichia coli			0				0 - 0	25 100.0%

MIC-001-06
WS - Microbiological PT (Sample 6)
Lot: Series I
Program: WSCHEM

MIC-001-06

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	0	SM 18/19thED 9221 B *20035807*	0 0 - 0	Acceptable	
2500 Total coliforms	0	SM 18th ED 9223B *20037609*	0 0 - 0	Acceptable	
2525 Escherichia coli	0	SM 18th ED 9223B *20037609*	0 0 - 0	Acceptable	

MIC-001-06

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			0				0 - 0	25 100.0%

MIC-001-06

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			0				0 - 0	25 100.0%
2525 Escherichia coli			0				0 - 0	25 100.0%

MIC-001-07

WS - Microbiological PT (Sample 7)

Lot: Series I
Program: WSCHEM

MIC-001-07

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	1		SM 18/19thED 9221 B *20035807*	1 1 - 1	Acceptable	
2500 Total coliforms	1		SM 18th ED 9223B *20037609*	1 1 - 1	Acceptable	
2525 Escherichia coli	1		SM 18th ED 9223B *20037609*	1 1 - 1	Acceptable	

MIC-001-07

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			1		1.00	0.000	1 - 1	25 95.8%
2525 Escherichia coli			1		1.00	0.000	1 - 1	25 88.9%

MIC-001-08

WS - Microbiological PT (Sample 8)

Lot: Series I
Program: WSCHEM

MIC-001-08

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	0		SM 18/19thED 9221 B *20035807*	0 0 - 0	Acceptable	
2500 Total coliforms	0		SM 18th ED 9223B *20037609*	0 0 - 0	Acceptable	
2525 Escherichia coli	0		SM 18th ED 9223B *20037609*	0 0 - 0	Acceptable	

MIC-001-08

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			0				0 - 0	25 100.0%
2525 Escherichia coli			0				0 - 0	25 100.0%

MIC-001-09

WS - Microbiological PT (Sample 9)

Lot: Series I
Program: WSCHEM

MIC-001-09

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2500 Total coliforms	1		SM 18/19thED 9221 B *20035807*	1 1 - 1	Acceptable	
2500 Total coliforms	1		SM 18th ED 9223B *20037609*	1 1 - 1	Acceptable	
2525 Escherichia coli	1		SM 18th ED 9223B *20037609*	1 1 - 1	Acceptable	

MIC-001-09

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms			1		1.00	0.000	1 - 1	25 100.0%

MIC-001-09

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
2500 Total coliforms			1		1.00	0.000	1 - 1	25 100.0%
2525 Escherichia coli			1		1.00	0.000	1 - 1	25 100.0%

MIC-001-10
WS - Microbiological PT (Sample 10)

Lot: Series I
Program: WSCHEM

MIC-001-10

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
2500 Total coliforms	1	SM 18/19thED 9221 B *20035807*	1 1 - 1	Acceptable	
2500 Total coliforms	1	SM 18th ED 9223B *20037609*	1 1 - 1	Acceptable	
2525 Escherichia coli	0	SM 18th ED 9223B *20037609*	0 0 - 0	Acceptable	

MIC-001-10

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
2500 Total coliforms			1		1.00	0.000	1 - 1	25 100.0%
2525 Escherichia coli			0				0 - 0	25 100.0%

MIC-002
WS-Standard Plate Count

Program: WSCHEM

MIC-002

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
2555 Heterotrophic plate count*	26 CFU/mL	SM 18/19thED 9215 B *20035205*	25.7 - 43.4	Acceptable	-2.55

MIC-002

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
2555 Heterotrophic plate count*	CFU/mL	36.6		4.16	36.6	4.16	25.7 - 43.4	22 91.7%

PEI-010-12
Corrosivity/Sodium

Lot: 010003/010
Program: WSCHEM

PEI-010-12

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
1625 Corrosivity (pH)*	9.15 units	EPA 150.1 *10008205*	9.02 8.62 - 9.42	Acceptable	0.650
1035 Calcium, Ca*	58.9 mg/L	EPA 200.7 *10013408*	59.3 52.8 - 65.8	Acceptable	-0.124
1155 Sodium, Na	19.1 mg/L	EPA 200.7 *10013408*	19.4 17.1 - 21.5	Acceptable	-0.189
1575 Chloride*	110 mg/L	EPA 300.0 *10053006*	107 97.7 - 116	Acceptable	0.638
1505 Alkalinity as CaCO₃	46.9 mg/L	SM 18/19thED 2320 B *20003003*	44.3 40.6 - 48.4	Acceptable	1.22
1550 Calcium hardness as CaCO3	147 mg/L	SM 18/19thED 2340 B *20003401*	148 132 - 164	Acceptable	-0.124
1610 Conductivity*	440 µmhos/cm	SM 18/19thED 2510 B 20003809	438 394 - 482	Acceptable	0.131
1955 Residue-filterable (TDS)	356 mg/L	SM 18/19thED 2540 C *20004404*	330 202 - 418	Acceptable	0.852
1615 Corrosivity*	1.1 SI units	SM 18th ED 2330 B *20003207*	0.835 0.435 - 1.24	Acceptable	1.33

Study Summary

PEI-010-12

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1035 Calcium, Ca*	mg/L	59.3	59.3	3.23	60.6	2.16	52.8 - 65.8	25 88.0%
1155 Sodium, Na	mg/L	19.3	19.4	1.06	19.3	1.71	17.1 - 21.5	23 82.6%
1505 Alkalinity as CaCO3	mg/L	44.5	44.3	1.96	43.7	1.69	40.6 - 48.4	22 90.9%
1550 Calcium hardness as CaCO3	mg/L	148	148	8.05	150	4.73	132 - 164	24 91.7%
1575 Chloride*	mg/L	107	107	4.70	108	6.45	97.7 - 116	24 83.3%
1610 Conductivity*	µmhos/cm	438	438	15.3	438	15.3	394 - 482	21 95.2%
1615 Corrosivity*	SI units	0.835	0.835	0.200	0.835	0.252	0.435 - [illegible].24	21 100.0%
1625 Corrosivity (pH)*	units	9.02	9.02	0.200	9.02	0.233	8.62 - 9.42	21 100.0%
1955 Residue-filterable (TDS)	mg/L	310	330	54.0	310	30.9	202 - 418	23 100.0%

PEI-010-3
Lot: 010011
Program: WSCHEM

pH (20 mL)

Evaluation

PEI-010-3

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1900 pH	9.87	UNITS	EPA 150.1 *10008205*	9.86 9.66 - 10.1	Acceptable	0.1000

Study Summary

PEI-010-3

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1900 pH	UNITS	9.86	9.86	0.100	9.86	0.0836	9.66 - 10.1	30 92.3%

PEI-011
Lot: 010015
Program: WSCHEM

Anions

Evaluation

PEI-011

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1125 Potassium, K*	17.5	mg/L	EPA 200.7 *10013408*	17.3 14.9 - 20.3	Acceptable	-0.0746
1730 Fluoride	6.62	mg/L	EPA 300.0 *10053006*	6.10 4.83 - 7.35	Acceptable	0.844
1810 Nitrate as N	4.13	mg/L	EPA 300.0 *10053006*	4.28 3.85 - 4.71	Acceptable	-0.530
1840 Nitrite as N	1.65	mg/L	EPA 300.0 *10053006*	1.80 1.53 - 2.07	Acceptable	-1.08
1870 Orthophosphate as P	1.30	mg/L	EPA 300.0 *10053006*	1.35 1.16 - 1.56	Acceptable	-0.604
1810 Nitrate as N	4.49	mg/L	EPA 353.2 *10067206*	4.28 3.85 - 4.71	Acceptable	0.742
1825 Total nitrate-nitrite as N*	6.31	mg/L	EPA 353.2 *10067206*	6.07 5.44 - 6.48	Acceptable	1.34
1840 Nitrite as N	1.81	mg/L	EPA 353.2 *10067206*	1.80 1.53 - 2.07	Acceptable	0.0719
1870 Orthophosphate as P	1.49	mg/L	EPA 365.1 *10069600*	1.35 1.16 - 1.56	Acceptable	1.31
1730 Fluoride	6.06	mg/L	SM 18/19thED 4500 F-C *20012800*	6.10 4.83 - 7.35	Acceptable	-0.0478

Study Summary

PEI-011

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate

PEI-011

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1125 Potassium, K*	mg/L	17.6	17.3	1.34	17.6	1.39	14.9 - 20.3	26 92.3%
1730 Fluoride	mg/L	6.09	6.10	0.628	6.09	0.628	4.83 - 7.35	31 93.6%
1810 Nitrate as N	mg/L	4.28	4.28	0.283	4.29	0.283	3.85 - 4.71	41 85.0%
1825 Total nitrate-nitrite as N*	mg/L	5.96	6.07	0.261	6.07	0.409	5.44 - 6.48	28 85.0%
1840 Nitrite as N	mg/L	1.80	1.80	0.139	1.81	0.139	1.53 - 2.07	41 92.7%
1870 Orthophosphate as P	mg/L	1.36	1.35	0.0993	1.35	0.102	1.16 - 1.56	33 87.9%

PEI-012

Residual Free Chlorine (RFC)

Lot: 010019
Program: WSCHEM

PEI-012

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1945 Residual free chlorine	0.98	mg/L	EPA 330.5 *10059402*	0.980 0.779 - 1.18	Acceptable	0.000

PEI-012

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1945 Residual free chlorine	mg/L	0.980	0.980	0.101	0.976	0.0526	0.779 - 1.18	28 92.9%

PEI-013

TOC

Lot: 010023
Program: WSCHEM

PEI-013

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2000 Sulfate	107	mg/L	EPA 300.0 *10053006*	94.9 83.3 - 107	Acceptable	2.15

PEI-013

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2000 Sulfate	mg/L	94.7	94.9	5.71	94.9	4.37	83.3 - 107	29 96.6%

PEI-014

Turbidity

Lot: 010752
Program: WSCHEM

PEI-014

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2055 Turbidity	0.78	NTU	EPA 180.1 *10011402*	0.790 0.628 - 1.13	Acceptable	-0.792

PEI-014

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2055 Turbidity	NTU	0.879	0.790	0.125	0.859	0.136	0.628 - 1.13	30 86.7%

PEI-015

Total Cyanide

Lot: 010031
Program: WSCHEM

PEI-015

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1635 Cyanide	0.298	mg/L	EPA 335.4 *10061208*	0.306 0.230 - 0.383	Acceptable	-0.333

Study Summary

PEI-015

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1635 Cyanide	mg/L	0.306	0.306	0.0240	0.286	0.0240	0.230 - 0.383	21 / 85.0%

PEI-308-1

Trace Metals 1 - Whole Volume

Lot: 010035
Program: WSCHEM

Evaluation

PEI-308-1

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **E200.7**				Overall method evaluation **Acceptable**	
1000 Aluminum, Al*	1060 µg/L	E200.7 *0*	990 / 848 - 1110	**Acceptable**	1.29
1010 Arsenic, As	134 µg/L	E200.7 *0*	143 / 100 - 186	**Acceptable**	-0.421
1020 Beryllium, Be	3.28 µg/L	E200.7 *0*	2.82 / 2.40 - 3.24	**Not acceptable**	2.17
1030 Cadmium, Cd	19.7 µg/L	E200.7 *0*	19.0 / 15.2 - 22.8	**Acceptable**	0.368
1040 Chromium, Cr (total)	117 µg/L	E200.7 *0*	110 / 93.5 - 127	**Acceptable**	0.848
1055 Copper, Cu	646 µg/L	E200.7 *0*	656 / 590 - 722	**Acceptable**	-0.305
1070 Iron, Fe*	1750 µg/L	E200.7 *0*	1780 / 1600 - 1940	**Acceptable**	-0.236
1075 Lead, Pb	13.0 µg/L	E200.7 *0*	16.8 / 11.8 - 21.8	**Acceptable**	-1.51
1090 Manganese, Mn	879 µg/L	E200.7 *0*	857 / 772 - 920	**Acceptable**	0.892
1105 Nickel, Ni	177 µg/L	E200.7 *0*	177 / 150 - 204	**Acceptable**	0.000
1140 Selenium, Se	85.8 µg/L	E200.7 *0*	92.1 / 73.7 - 111	**Acceptable**	-0.684
1190 Zinc, Zn	873 µg/L	E200.7 *0*	808 / 727 - 889	**Acceptable**	1.61
▲ Summary for Method **E200.7**		Analytes Evaluated **12**	Acceptable **11**	Acceptance Percentage **91.7%**	
▼ Summary for Method **E200.8**				Overall method evaluation **Acceptable**	
1000 Aluminum, Al*	946 µg/L	E200.8 *0*	990 / 848 - 1110	**Acceptable**	-0.481
1010 Arsenic, As	146 µg/L	E200.8 *0*	143 / 100 - 186	**Acceptable**	0.140
1020 Beryllium, Be	3.05 µg/L	E200.8 *0*	2.82 / 2.40 - 3.24	**Acceptable**	1.08
1030 Cadmium, Cd	18.9 µg/L	E200.8 *0*	19.0 / 15.2 - 22.8	**Acceptable**	-0.0526
1040 Chromium, Cr (total)	103 µg/L	E200.8 *0*	110 / 93.5 - 127	**Acceptable**	-0.848
1055 Copper, Cu	611 µg/L	E200.8 *0*	656 / 590 - 722	**Acceptable**	-1.37
1070 Iron, Fe*	1880 µg/L	E200.8 *0*	1780 / 1600 - 1940	**Acceptable**	1.30
1075 Lead, Pb	16.1 µg/L	E200.8 *0*	16.8 / 11.8 - 21.8	**Acceptable**	-0.278
1090 Manganese, Mn	870 µg/L	E200.8 *0*	857 / 772 - 920	**Acceptable**	0.649
1095 Mercury, Hg	8.22 µg/L	E200.8 *0*	9.78 / 6.85 - 12.7	**Acceptable**	-1.06
1105 Nickel, Ni	166 µg/L	E200.8 *0*	177 / 150 - 204	**Acceptable**	-0.827
1140 Selenium, Se	104 µg/L	E200.8 *0*	92.1 / 73.7 - 111	**Acceptable**	1.29
1190 Zinc, Zn	848 µg/L	E200.8 *0*	808 / 727 - 889	**Acceptable**	0.990
▲ Summary for Method **E200.8**		Analytes Evaluated **13**	Acceptable **13**	Acceptance Percentage **100.0%**	
1095 Mercury, Hg	8.65 µg/L	E245.1 *0*	9.78 / 6.85 - 12.7	**Acceptable**	-0.769

Study Summary

PEI-308-1

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
1000 Aluminum, Al*	µg/L	977	990	64.5	1010	74.6	848 - 1110	26 100.0%
1010 Arsenic, As	µg/L	143	143	21.4	141	14.1	100 - 186	29 100.0%
1020 Beryllium, Be	µg/L	2.82	2.82	0.212	3.02	0.277	2.40 - 3.24	26 85.0%
1030 Cadmium, Cd	µg/L	19.0	19.0	1.90	18.9	0.695	15.2 - 22.8	27 100.0%
1040 Chromium, Cr (total)	µg/L	110	110	8.25	113	8.16	93.5 - 127	26 100.0%
1055 Copper, Cu	µg/L	656	656	32.8	642	29.4	590 - 722	26 100.0%
1070 Iron, Fe*	µg/L	1770	1780	84.9	1800	61.9	1600 - 1940	26 100.0%
1075 Lead, Pb	µg/L	16.8	16.8	2.52	16.3	0.541	11.8 - 21.8	26 85.0%
1090 Manganese, Mn	µg/L	846	857	37.0	880	22.6	772 - 920	26 100.0%
1095 Mercury, Hg	µg/L	9.78	9.78	1.47	8.41	0.392	6.85 - 12.7	25 100.0%
1105 Nickel, Ni	µg/L	177	177	13.3	180	8.90	150 - 204	26 100.0%
1140 Selenium, Se	µg/L	92.1	92.1	9.21	97.2	7.81	73.7 - 111	29 100.0%
1190 Zinc, Zn	µg/L	808	808	40.4	847	23.1	727 - 889	26 83.3%

PEI-308-2

Trace Metals 2 - Whole Volume

Lot: 010039
Program: WSCHEM

Evaluation

PEI-308-2

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
1005 Antimony, Sb	26.7 µg/L	E200.7 *0*	34.9 24.4 - 45.4	Acceptable	-1.56
1015 Barium, Ba	2190 µg/L	E200.7 *0*	2180 1850 - 2510	Acceptable	0.481
1025 Boron, B	925 µg/L	E200.7 *0*	930 822 - 1030	Acceptable	-0.0380
1085 Magnesium, Mg*	1300 mg/L	E200.7 *0*	1310 1050 - 1590	Acceptable	-0.149
1100 Molybdenum, Mo	58.9 µg/L	E200.7 *0*	54.7 47.0 - 61.1	Acceptable	1.36
1150 Silver, Ag*	76.2 µg/L	E200.7 *0*	70.0 60.7 - 78.7	Acceptable	1.44
1185 Vanadium, V*	3460 µg/L	E200.7 *0*	3210 2890 - 3530	Acceptable	1.56
1005 Antimony, Sb	33.4 µg/L	E200.8 *0*	34.9 24.4 - 45.4	Acceptable	-0.286
1015 Barium, Ba	2200 µg/L	E200.8 *0*	2180 1850 - 2510	Acceptable	0.962
1025 Boron, B	949 µg/L	E200.8 *0*	930 822 - 1030	Acceptable	0.418
1100 Molybdenum, Mo	49.6 µg/L	E200.8 *0*	54.7 47.0 - 61.1	Acceptable	-1.27
1150 Silver, Ag*	65.7 µg/L	E200.8 *0*	70.0 60.7 - 78.7	Acceptable	-0.889
1165 Thallium, Tl	9.30 µg/L	E200.8 *0*	9.76 6.83 - 12.7	Acceptable	-0.315
1185 Vanadium, V*	3050 µg/L	E200.8 *0*	3210 2890 - 3530	Acceptable	-1.00

PEI-308-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
1005 Antimony, Sb	µg/L	34.9	34.9	5.24	33.2	5.26	24.4 - 45.4	24 85.0%
1015 Barium, Ba	µg/L	2180	2180	20.8	2200	20.8	1850 - 2510	26 100.0%
1025 Boron, B	µg/L	927	930	52.6	940	15.8	822 - 1030	25 85.0%
1085 Magnesium, Mg*	mg/L	1320	1310	134	1280	29.9	1050 - 1590	26 100.0%
1100 Molybdenum, Mo	µg/L	54.1	54.7	3.54	54.6	5.02	47.0 - 61.1	26 100.0%
1150 Silver, Ag*	µg/L	69.7	70.0	4.50	69.2	5.96	60.7 - 78.7	26 100.0%
1165 Thallium, Tl	µg/L	9.76	9.76	1.46	9.71	0.539	6.83 - 12.7	24 85.0%
1185 Vanadium, V*	µg/L	3210	3210	160	3240	220	2890 - 3530	26 100.0%

PEO-002

Trihalomethanes

Lot: 010728
Program: WSCHEM

PEO-002

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
4395 Bromodichloromethane	33.9 µg/L	EPA 524.2 *10088605*	36.5 28.9 - 42.7	Acceptable	-0.549
4400 Bromoform	26.0 µg/L	EPA 524.2 *10088605*	27.7 20.3 - 32.3	Acceptable	-0.0993
4505 Chloroform	22.7 µg/L	EPA 524.2 *10088605*	24.2 19.1 - 28.5	Acceptable	-0.464
4575 Dibromochloromethane	21.3 µg/L	EPA 524.2 *10088605*	23.1 19.8 - 25.4	Acceptable	-0.935
5205 Total trihalomethanes	104 µg/L	EPA 524.2 *10088605*	112 87.0 - 129	Acceptable	-0.381

PEO-002

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
4395 Bromodichloromethane	µg/L	35.8	36.5	3.46	35.8	3.46	28.9 - 42.7	24 92.9%
4400 Bromoform	µg/L	26.3	27.7	3.02	26.3	3.02	20.3 - 32.3	24 92.9%
4505 Chloroform	µg/L	23.8	24.2	2.37	23.8	2.37	19.1 - 28.5	24 92.9%
4575 Dibromochloromethane	µg/L	22.6	23.1	1.39	22.6	1.39	19.8 - 25.4	24 85.7%
5205 Total trihalomethanes	µg/L	108	112	10.5	108	10.5	87.0 - 129	24 85.7%

PEO-003
PCBs

Lot: 010714
Program: WSCHEM

PEO-003

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
8885 Aroclor-1221 (PCB-1221)*	<5.0 µg/L	E525.2 *0*	0 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	<0.50 µg/L	E525.2 *0*	0 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<0.10 µg/L	E525.2 *0*	0 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	<0.10 µg/L	E525.2 *0*	0 0 - 0	Acceptable	
8910 Aroclor-1260 (PCB-1260)	<0.20 µg/L	E525.2 *0*	0 0 - 0	Acceptable	
8912 Aroclor 1016/1242*	0.58 µg/L	E525.2 *0*	0.56 0.458 - 0.770	Acceptable	-0.436
8885 Aroclor-1221 (PCB-1221)*	<2.0 µg/L	EPA 505 *10083202*	0 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	<0.50 µg/L	EPA 505 *10083202*	0 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<0.10 µg/L	EPA 505 *10083202*	0 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	<0.10 µg/L	EPA 505 *10083202*	0 0 - 0	Acceptable	
8910 Aroclor-1260 (PCB-1260)	<0.20 µg/L	EPA 505 *10083202*	0 0 - 0	Acceptable	
8912 Aroclor 1016/1242*	0.48 µg/L	EPA 508 *10085004*	0.56 0.458 - 0.770	Acceptable	-1.72
9105 Decachlorobiphenyl	0.86 µg/L	EPA 508A *10085606*	1.07 0.187 - 2.14	Acceptable	

PEO-003

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
8885 Aroclor-1221 (PCB-1221)*	µg/L		0				0 - 0	17 100.0%
8890 Aroclor-1232 (PCB-1232)	µg/L		0				0 - 0	17 100.0%
8900 Aroclor-1248 (PCB-1248)	µg/L		0				0 - 0	17 100.0%
8905 Aroclor-1254 (PCB-1254)	µg/L		0				0 - 0	17 100.0%
8910 Aroclor-1260 (PCB-1260)	µg/L		0				0 - 0	17 100.0%
8912 Aroclor 1016/1242*	µg/L	0.614	0.56	0.0779	0.614	0.0779	0.458 - 0.770	
9105 Decachlorobiphenyl	µg/L	1.07	1.07	0.535	1.07	0.535	0.187 - 2.14	

PEO-005-1

Organochlorine Pesticides (Sample 1)

Lot: 010720
Program: WSCHEM

PEO-005-1

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
7025 Aldrin	2.0	µg/L	EPA 505 *10083202*	1.87 0.795 - 2.35	**Acceptable**	1.11
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	2.7	µg/L	EPA 505 *10083202*	2.59 1.42 - 3.76	**Acceptable**	
7470 Dieldrin	1.5	µg/L	EPA 505 *10083202*	1.46 0.911 - 1.93	**Acceptable**	0.314
7540 Endrin	3.0	µg/L	EPA 505 *10083202*	3.26 2.28 - 4.24	**Acceptable**	
7685 Heptachlor	1.3	µg/L	EPA 505 *10083202*	1.43 0.787 - 2.07	**Acceptable**	
7025 Aldrin	1.9	µg/L	EPA 525.2 *10089608*	1.87 0.795 - 2.35	**Acceptable**	0.848
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	3.2	µg/L	EPA 525.2 *10089608*	2.59 1.42 - 3.76	**Acceptable**	
7470 Dieldrin	1.5	µg/L	EPA 525.2 *10089608*	1.46 0.911 - 1.93	**Acceptable**	0.314
7540 Endrin	3.7	µg/L	EPA 525.2 *10089608*	3.26 2.28 - 4.24	**Acceptable**	
7685 Heptachlor	1.6	µg/L	EPA 525.2 *10089608*	1.43 0.787 - 2.07	**Acceptable**	

PEO-005-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
7025 Aldrin	µg/L	1.57	1.87	0.389	1.96	0.0781	0.795 - 2.35	
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	µg/L	2.59	2.59	NaN	2.58	0.583	1.42 - 3.76	
7470 Dieldrin	µg/L	1.42	1.46	0.255	1.46	0.0636	0.911 - 1.93	
7540 Endrin	µg/L	3.26	3.26	NaN	3.10	0.447	2.28 - 4.24	
7685 Heptachlor	µg/L	1.43	1.43	NaN	1.37	0.207	0.787 - 2.07	

PEO-005-2
Organochlorine Pesticides (Sample 2)

Lot: 010721
Program: WSCHEM

PEO-005-2

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
6275 Hexachlorobenzene	1.1	µg/L	EPA 505 *10083202*	1.24 0.563 - 1.61	Acceptable	0.0382
6285 Hexachlorocyclopentadiene	16	µg/L	EPA 505 *10083202*	15.5 2.89 - 21.9	Acceptable	0.758
7690 Heptachlor epoxide	2.6	µg/L	EPA 505 *10083202*	2.02 1.11 - 2.93	Acceptable	
7810 Methoxychlor	47	µg/L	EPA 505 *10083202*	45.8 25.2 - 66.4	Acceptable	
8295 Trifluralin (Treflan)	3.6	µg/L	EPA 505 *10083202*	4.17 2.22 - 5.23	Acceptable	-0.173
6275 Hexachlorobenzene	1.4	µg/L	EPA 525.2 *10089608*	1.24 0.563 - 1.61	Acceptable	1.18
6285 Hexachlorocyclopentadiene	19	µg/L	EPA 525.2 *10089608*	15.5 2.89 - 21.9	Acceptable	1.39
7690 Heptachlor epoxide	2.8	µg/L	EPA 525.2 *10089608*	2.02 1.11 - 2.93	Acceptable	
7810 Methoxychlor	59	µg/L	EPA 525.2 *10089608*	45.8 25.2 - 66.4	Acceptable	
8045 Propachlor (Ramrod)	2.0	µg/L	EPA 525.2 *10089608*	1.52 0.821 - 2.10	Acceptable	1.69
8295 Trifluralin (Treflan)	4.9	µg/L	EPA 525.2 *10089608*	4.17 2.22 - 5.23	Acceptable	1.56

PEO-005-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
6275 Hexachlorobenzene	µg/L	1.09	1.24	0.262	1.16	0.174	0.563 - 1.61	
6285 Hexachlorocyclopentadiene	µg/L	12.4	15.5	4.75	15.9	2.67	2.89 - 21.9	
7690 Heptachlor epoxide	µg/L	2.02	2.02	NaN	2.65	0.357	1.11 - 2.93	
7810 Methoxychlor	µg/L	45.8	45.8	NaN	44.9	16.0	25.2 - 66.4	
8045 Propachlor (Ramrod)	µg/L	1.46	1.52	0.320	1.46	0.320	0.821 - 2.10	
8295 Trifluralin (Treflan)	µg/L	3.73	4.17	0.750	3.95	0.652	2.22 - 5.23	

PEO-005-3
Organonitrogen Pesticides

Lot: 010722
Program: WSCHEM

PEO-005-3

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
7005 Alachlor	19	µg/L	EPA 505 *10083202*	18.5 10.2 - 26.8	Acceptable	0.321
7065 Atrazine	35	µg/L	EPA 505 *10083202*	28.6 15.7 - 41.5	Acceptable	
8125 Simazine	27	µg/L	EPA 505 *10083202*	29.8 6.61 - 41.8	Acceptable	0.318
7005 Alachlor	20	µg/L	EPA 525.2 *10089608*	18.5 10.2 - 26.8	Acceptable	0.962
7065 Atrazine	32	µg/L	EPA 525.2 *10089608*	28.6 15.7 - 41.5	Acceptable	
8125 Simazine	28	µg/L	EPA 525.2 *10089608*	29.8 6.61 - 41.8	Acceptable	0.431

PEO-005-3

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate

PEO-005-3

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
7005 Alachlor	µg/L	18.5	18.5	1.56	19.1	1.56	10.2 - 26.8	
7065 Atrazine	µg/L	28.6	28.6	NaN	28.8	8.86	15.7 - 41.5	
8125 Simazine	µg/L	24.2	29.8	8.81	27.2	0.919	6.61 - 41.8	

PEO-005-4

Herbicides

Lot: 010723
Program: WSCHEM

PEO-005-4

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 515.1**				Overall method evaluation **Acceptable**	
6500 4-Nitrophenol*	19 µg/L	EPA 515.1 *10087000*	33.3 1.95 - 41.7	**Acceptable**	-0.0450
6605 Pentachlorophenol	2.2 µg/L	EPA 515.1 *10087000*	2.14 1.07 - 3.21	**Acceptable**	
8505 Acifluorfen	25 µg/L	EPA 515.1 *10087000*	31.9 11.8 - 45.0	**Acceptable**	-0.409
8530 Bentazon*	126 µg/L	EPA 515.1 *10087000*	123 50.3 - 172	**Acceptable**	0.493
8540 Chloramben*	1.2 µg/L	EPA 515.1 *10087000*	77.1 0.600 - 116	**Acceptable**	-1.97
8545 2,4-D	76 µg/L	EPA 515.1 *10087000*	59.4 29.7 - 89.1	**Acceptable**	0.641
8550 Dacthal (DCPA)*	3.0 µg/L	EPA 515.1 *10087000*	33.2 3.32 - 55.8	**Not acceptable**	-1.59
8555 Dalapon	41 µg/L	EPA 515.1 *10087000*	103 10.3 - 141	**Acceptable**	-0.625
8560 2,4-DB*	24 µg/L	EPA 515.1 *10087000*	19.3 7.98 - 27.6	**Acceptable**	1.26
8595 Dicamba	32 µg/L	EPA 515.1 *10087000*	39.9 10.8 - 55.7	**Acceptable**	-0.116
8600 3,5-Dichlorobenzoic acid*	72 µg/L	EPA 515.1 *10087000*	97.9 49.0 - 147	**Acceptable**	
8605 Dichloroprop*	71 µg/L	EPA 515.1 *10087000*	97.4 57.2 - 117	**Acceptable**	-1.07
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	16 µg/L	EPA 515.1 *10087000*	20.5 3.60 - 28.6	**Acceptable**	-0.0160
8645 Picloram	29 µg/L	EPA 515.1 *10087000*	44.4 10.3 - 62.5	**Acceptable**	-0.569
8650 Silvex (2,4,5-TP)	43 µg/L	EPA 515.1 *10087000*	59.0 29.5 - 88.5	**Acceptable**	
8655 2,4,5-T*	18 µg/L	EPA 515.1 *10087000*	22.0 8.66 - 30.1	**Acceptable**	-0.261
▲ Summary for Method **EPA 515.1**		Analytes Evaluated **16**	Acceptable **15**	Acceptance Percentage **93.8%**	
6605 Pentachlorophenol	3.2 µg/L	EPA 525.2 *10089608*	2.14 1.07 - 3.21	**Acceptable**	

PEO-005-4

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
6500 4-Nitrophenol*	µg/L	19.5	33.3	11.1	19.5	11.1	1.95 - 41.7	
6605 Pentachlorophenol	µg/L	2.14	2.14	NaN	2.36	0.669	1.07 - 3.21	
8505 Acifluorfen	µg/L	28.4	31.9	8.31	22.1	5.40	11.8 - 45.0	
8530 Bentazon*	µg/L	111	123	30.4	82.7	46.4	50.3 - 172	
8540 Chloramben*	µg/L	43.0	77.1	21.2	77.1	19.4	0.600 - 116	

PEO-005-4

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
8545 2,4-D	µg/L	59.4	59.4	25.9	59.4	25.9	29.7 - 89.1	
8550 Dacthal (DCPA)*	µg/L	26.4	33.2	14.7	20.9	17.0	3.32 - 55.8	
8555 Dalapon	µg/L	64.7	103	37.9	53.1	34.8	10.3 - 141	
8560 2,4-DB*	µg/L	17.8	19.3	4.92	15.8	8.52	7.98 - 27.6	
8595 Dicamba	µg/L	33.3	39.9	11.2	29.6	8.82	10.8 - 55.7	
8600 3,5-Dichlorobenzoic acid*	µg/L	97.9	97.9	NaN	97.9	24.5	49.0 - 147	
8605 Dichloroprop*	µg/L	87.1	97.4	15.0	72.9	2.58	57.2 - 117	
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	µg/L	16.1	20.5	6.25	16.4	6.30	3.60 - 28.6	
8645 Picloram	µg/L	36.4	44.4	13.0	28.2	1.07	10.3 - 62.5	
8650 Silvex (2,4,5-TP)	µg/L	59.0	59.0	NaN	40.6	8.85	29.5 - 88.5	
8655 2,4,5-T*	µg/L	19.4	22.0	5.37	18.6	5.19	8.66 - 30.1	

PEO-005-5

Chlordane (Total)

Lot: 010715
Program: WSCHEM

PEO-005-5

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
7250 Chlordane (total)	10 µg/L	EPA 505 *10083202*	9.84 5.41 - 14.3	Acceptable	
7250 Chlordane (total)	11 µg/L	EPA 525.2 *10089608*	9.84 5.41 - 14.3	Acceptable	

PEO-005-5

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
7250 Chlordane (total)	µg/L	9.84	9.84	NaN	9.39	2.36	5.41 - 14.3	

PEO-005-6

Toxaphene (Total)

Lot: 010716
Program: WSCHEM

PEO-005-6

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
8250 Toxaphene (Chlorinated camphene)	5.9 µg/L	EPA 505 *10083202*	6.60 3.63 - 9.57	Acceptable	
8250 Toxaphene (Chlorinated camphene)	7.7 µg/L	EPA 525.2 *10089608*	6.60 3.63 - 9.57	Acceptable	

PEO-005-6

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
8250 Toxaphene (Chlorinated camphene)	µg/L	6.60	6.60	NaN	5.62	2.56	3.63 - 9.57	

PEO-006-1
Adipate/Phthalate

Lot: 010717
Program: WSCHEM

PEO-006-1

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
5580 Benzo(a)pyrene	2.3 µg/L	EPA 525.2 *10089608*	2.10 0.770 - 2.77	**Acceptable**	1.06
6062 bis(2-ethylhexyl)adipate	56 µg/L	EPA 525.2 *10089608*	40.0 16.6 - 57.6	**Acceptable**	1.83
6065 bis(2-ethylhexyl)phthalate	36 µg/L	EPA 525.2 *10089608*	16.6 6.65 - 25.6	**Not acceptable**	4.19

PEO-006-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
5580 Benzo(a)pyrene	µg/L	1.77	2.10	0.500	1.93	0.715	0.770 - 2.77	
6062 bis(2-ethylhexyl)adipate	µg/L	37.1	40.0	10.3	34.6	21.3	16.6 - 57.6	
6065 bis(2-ethylhexyl)phthalate	µg/L	16.1	16.6	4.75	21.0	12.9	6.65 - 25.6	

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 525.2**					Overall method evaluation **Acceptable**	
5005 Naphthalene*	54	µg/L	EPA 525.2 *10089608*	47.6 28.6 - 66.6	**Acceptable**	
5500 Acenaphthene*	6.2	µg/L	EPA 525.2 *10089608*	6.80 3.40 - 10.2	**Acceptable**	
5505 Acenaphthylene*	9.2	µg/L	EPA 525.2 *10089608*	8.04 4.02 - 12.1	**Acceptable**	
5555 Anthracene*	4.8	µg/L	EPA 525.2 *10089608*	4.94 2.47 - 7.41	**Acceptable**	
5575 Benzo(a)anthracene*	7.1	µg/L	EPA 525.2 *10089608*	4.90 2.45 - 7.35	**Acceptable**	
5585 Benzo(b)fluoranthene*	6.2	µg/L	EPA 525.2 *10089608*	5.87 2.94 - 8.81	**Acceptable**	
5590 Benzo(g,h,i)perylene*	2.8	µg/L	EPA 525.2 *10089608*	2.77 1.39 - 4.16	**Acceptable**	
5600 Benzo(k)fluoranthene*	7.5	µg/L	EPA 525.2 *10089608*	6.52 3.26 - 9.78	**Acceptable**	
5670 Butyl benzyl phthalate*	30	µg/L	EPA 525.2 *10089608*	27.0 10.8 - 43.2	**Acceptable**	
5855 Chrysene*	5.4	µg/L	EPA 525.2 *10089608*	5.20 2.60 - 7.80	**Acceptable**	
5895 Dibenz(a,h) anthracene*	9.8	µg/L	EPA 525.2 *10089608*	8.66 4.33 - 13.0	**Acceptable**	
5925 Di-n-butyl phthalate*	64	µg/L	EPA 525.2 *10089608*	39.4 15.8 - 63.0	**Not acceptable**	
6070 Diethyl phthalate*	61	µg/L	EPA 525.2 *10089608*	34.8 13.9 - 55.7	**Not acceptable**	
6135 Dimethyl phthalate*	23	µg/L	EPA 525.2 *10089608*	20.5 8.20 - 32.8	**Acceptable**	
6265 Fluoranthene*	2.7	µg/L	EPA 525.2 *10089608*	2.11 1.06 - 3.17	**Acceptable**	
6270 Fluorene*	11	µg/L	EPA 525.2 *10089608*	9.10 4.55 - 13.7	**Acceptable**	
6315 Indeno(1,2,3-cd) pyrene*	1.8	µg/L	EPA 525.2 *10089608*	1.51 0.755 - 2.27	**Acceptable**	
6385 2-Methylnaphthalene*	17	µg/L	EPA 525.2 *10089608*	15.2 7.60 - 22.8	**Acceptable**	
6615 Phenanthrene*	3.6	µg/L	EPA 525.2 *10089608*	2.95 1.48 - 4.43	**Acceptable**	
6665 Pyrene*	1.4	µg/L	EPA 525.2 *10089608*	1.13 0.715 - 2.15	**Acceptable**	-0.0836
▲ Summary for Method **EPA 525.2**			Analytes Evaluated **20**	Acceptable **18**	Acceptance Percentage **90.0%**	

Study Summary

PEO-006-2

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
5005 Naphthalene*	µg/L	47.6	47.6	NaN	47.6	9.50	28.6 - 66.6	
5500 Acenaphthene*	µg/L	6.80	6.80	NaN	6.80	1.70	3.40 - 10.2	
5505 Acenaphthylene*	µg/L	8.04	8.04	NaN	8.04	2.02	4.02 - 12.1	
5555 Anthracene*	µg/L	4.94	4.94	NaN	4.94	1.24	2.47 - 7.41	
5575 Benzo(a)anthracene*	µg/L	4.90	4.90	NaN	4.90	1.22	2.45 - 7.35	
5585 Benzo(b)fluoranthene*	µg/L	5.87	5.87	NaN	5.87	1.47	2.94 - 8.81	
5590 Benzo(g,h,i)perylene*	µg/L	2.77	2.77	NaN	2.77	0.692	1.39 - 4.16	

Study Summary

PEO-006-2

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
5600 Benzo(k)fluoranthene*	µg/L	6.52	6.52	NaN	6.52	1.63	3.26 - 9.78	
5670 Butyl benzyl phthalate*	µg/L	27.0	27.0	NaN	27.0	6.75	10.8 - 43.2	
5855 Chrysene*	µg/L	5.20	5.20	NaN	5.20	1.30	2.60 - 7.80	
5895 Dibenz(a,h) anthracene*	µg/L	8.66	8.66	NaN	8.66	2.16	4.33 - 13.0	
5925 Di-n-butyl phthalate*	µg/L	39.4	39.4	NaN	39.4	9.85	15.8 - 63.0	
6070 Diethyl phthalate*	µg/L	34.8	34.8	NaN	34.8	8.70	13.9 - 55.7	
6135 Dimethyl phthalate*	µg/L	20.5	20.5	NaN	20.5	5.12	8.20 - 32.8	
6265 Fluoranthene*	µg/L	2.11	2.11	NaN	2.11	0.528	1.06 - 3.17	
6270 Fluorene*	µg/L	9.10	9.10	NaN	9.10	2.28	4.55 - 13.7	
6315 Indeno(1,2,3-cd) pyrene*	µg/L	1.51	1.51	NaN	1.51	0.378	0.755 - 2.27	
6385 2-Methylnaphthalene*	µg/L	15.2	15.2	NaN	15.2	3.80	7.60 - 22.8	
6615 Phenanthrene*	µg/L	2.95	2.95	NaN	2.95	0.738	1.48 - 4.43	
6665 Pyrene*	µg/L	1.43	1.13	0.359	1.43	0.359	0.715 - 2.15	

PEO-007-1
Regulated VOCs (Sample 1)

Lot: 010742
Program: WSCHEM

PEO-007-1

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 524.2**				Overall method evaluation **Acceptable**	
4455 Carbon tetrachloride	11.6 µg/L	EPA 524.2 *10088605*	12.0 9.60 - 14.4	**Acceptable**	
4475 Chlorobenzene	45.0 µg/L	EPA 524.2 *10088605*	46.1 36.9 - 55.3	**Acceptable**	
4635 1,2-Dichloroethane	2.28 µg/L	EPA 524.2 *10088605*	2.35 1.41 - 3.29	**Acceptable**	
4640 1,1-Dichloroethylene	9.68 µg/L	EPA 524.2 *10088605*	12.3 9.84 - 14.8	**Not acceptable**	
4645 cis-1,2-Dichloroethylene	5.55 µg/L	EPA 524.2 *10088605*	6.58 3.95 - 9.21	**Acceptable**	
4655 1,2-Dichloropropane	15.4 µg/L	EPA 524.2 *10088605*	17.7 14.2 - 21.2	**Acceptable**	
4700 trans-1,2-Dichloroethylene	38.9 µg/L	EPA 524.2 *10088605*	45.5 36.4 - 54.6	**Acceptable**	
4975 Methylene chloride (Dichloromethane)	16.5 µg/L	EPA 524.2 *10088605*	18.3 14.6 - 22.0	**Acceptable**	
5100 Styrene	10.1 µg/L	EPA 524.2 *10088605*	10.8 8.64 - 13.0	**Acceptable**	
5115 Tetrachloroethylene (Perchloroethylene)	4.39 µg/L	EPA 524.2 *10088605*	5.66 3.40 - 7.92	**Acceptable**	
5155 1,2,4-Trichlorobenzene	7.56 µg/L	EPA 524.2 *10088605*	8.49 5.09 - 11.9	**Acceptable**	
5160 1,1,1-Trichloroethane	4.73 µg/L	EPA 524.2 *10088605*	5.60 3.36 - 7.84	**Acceptable**	
5165 1,1,2-Trichloroethane	8.49 µg/L	EPA 524.2 *10088605*	8.91 5.35 - 12.5	**Acceptable**	
5170 Trichloroethene (Trichloroethylene)	15.8 µg/L	EPA 524.2 *10088605*	20.0 16.0 - 24.0	**Not acceptable**	
5235 Vinyl chloride	43.0 µg/L	EPA 524.2 *10088605*	47.3 28.4 - 66.2	**Acceptable**	-0.582
▲ Summary for Method **EPA 524.2**		Analytes Evaluated **15**	Acceptable **13**	Acceptance Percentage **86.7%**	

PEO-007-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
4455 Carbon tetrachloride	µg/L	12.0	12.0	1.20	11.4	1.63	9.60 - 14.4	17 88.2%
4475 Chlorobenzene	µg/L	46.1	46.1	4.60	44.7	3.51	36.9 - 55.3	16 93.8%
4635 1,2-Dichloroethane	µg/L	2.35	2.35	0.470	2.34	0.226	1.41 - 3.29	15 87.5%
4640 1,1-Dichloroethylene	µg/L	12.3	12.3	1.24	11.9	1.90	9.84 - 14.8	16 81.3%
4645 cis-1,2-Dichloroethylene	µg/L	6.58	6.58	1.32	6.30	0.460	3.95 - 9.21	16 100.0%
4655 1,2-Dichloropropane	µg/L	17.7	17.7	1.75	17.2	1.24	14.2 - 21.2	15 93.3%
4700 trans-1,2-Dichloroethylene	µg/L	45.5	45.5	4.55	40.3	3.44	36.4 - 54.6	16 87.5%
4975 Methylene chloride (Dichloromethane)	µg/L	18.3	18.3	1.85	17.5	1.05	14.6 - 22.0	16 87.5%
5100 Styrene	µg/L	10.8	10.8	1.09	10.4	0.967	8.64 - 13.0	14 100.0%
5115 Tetrachloroethylene (Perchloroethylene)	µg/L	5.66	5.66	1.13	5.46	0.434	3.40 - 7.92	16 93.8%
5155 1,2,4-Trichlorobenzene	µg/L	8.49	8.49	1.70	7.45	1.03	5.09 - 11.9	14 92.9%

Study Summary

PEO-007-1

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
5160 1,1,1-Trichloroethane	µg/L	5.60	5.60	1.12	5.43	0.564	3.36 - 7.84	16 100.0%
5165 1,1,2-Trichloroethane	µg/L	8.91	8.91	1.79	8.72	0.693	5.35 - 12.5	15 93.3%
5170 Trichloroethene (Trichloroethylene)	µg/L	20.0	20.0	2.00	18.8	2.12	16.0 - 24.0	17 94.1%
5235 Vinyl chloride	µg/L	47.3	47.3	7.39	46.1	7.39	28.4 - 66.2	16 93.8%

PEO-007-2

Regulated VOCs (Sample 2)

Lot: 010743
Program: WSCHEM

PEO-007-2

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 524.2**				Overall method evaluation **Acceptable**	
4375 Benzene	9.26 µg/L	EPA 524.2 *10088605*	10.3 8.24 - 12.4	**Acceptable**	
4610 1,2-Dichlorobenzene	13.7 µg/L	EPA 524.2 *10088605*	13.0 10.4 - 15.6	**Acceptable**	
4615 1,3-Dichlorobenzene	33.8 µg/L	EPA 524.2 *10088605*	33.4 26.7 - 40.1	**Acceptable**	
4620 1,4-Dichlorobenzene	9.79 µg/L	EPA 524.2 *10088605*	8.59 5.15 - 12.0	**Acceptable**	
4765 Ethylbenzene	5.80 µg/L	EPA 524.2 *10088605*	6.42 3.85 - 8.99	**Acceptable**	
5000 Methyl tert-butyl ether (MTBE)*	21.1 µg/L	EPA 524.2 *10088605*	25.7 15.4 - 36.0	**Acceptable**	
5005 Naphthalene*	35.0 µg/L	EPA 524.2 *10088605*	32.2 19.3 - 45.1	**Acceptable**	0.719
5140 Toluene	12.9 µg/L	EPA 524.2 *10088605*	14.7 11.8 - 17.6	**Acceptable**	
5210 1,2,4-Trimethylbenzene*	15.8 µg/L	EPA 524.2 *10088605*	16.0 12.8 - 19.2	**Acceptable**	
5215 1,3,5-Trimethylbenzene*	14.0 µg/L	EPA 524.2 *10088605*	13.5 8.10 - 18.9	**Acceptable**	
5240 m+p-Xylene*	30.2 µg/L	EPA 524.2 *10088605*	31.2 25.0 - 37.4	**Acceptable**	
5250 o-Xylene*	9.85 µg/L	EPA 524.2 *10088605*	10.3 8.24 - 12.4	**Acceptable**	
5260 Xylene, total	40.0 µg/L	EPA 524.2 *10088605*	41.5 33.2 - 49.8	**Acceptable**	
▲ Summary for Method **EPA 524.2**		Analytes Evaluated **13**	Acceptable **13**	Acceptance Percentage **100.0%**	

Study Summary

PEO-007-2

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
4375 Benzene	µg/L	10.3	10.3	1.04	10.1	0.704	8.24 - 12.4	16 100.0%
4610 1,2-Dichlorobenzene	µg/L	13.0	13.0	1.30	12.6	1.08	10.4 - 15.6	15 86.7%
4615 1,3-Dichlorobenzene	µg/L	33.4	33.4	3.35	33.0	2.75	26.7 - 40.1	15 93.3%
4620 1,4-Dichlorobenzene	µg/L	8.59	8.59	1.71	8.52	1.12	5.15 - 12.0	16 93.8%
4765 Ethylbenzene	µg/L	6.42	6.42	1.28	6.00	0.548	3.85 - 8.99	15 100.0%
5000 Methyl tert-butyl ether (MTBE)*	µg/L	25.7	25.7	NaN	24.3	2.97	15.4 - 36.0	14 100.0%
5005 Naphthalene*	µg/L	30.9	32.2	5.70	30.9	6.52	19.3 - 45.1	15 100.0%
5140 Toluene	µg/L	14.7	14.7	1.45	14.2	1.13	11.8 - 17.6	16 100.0%

PEO-007-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
5210 1,2,4-Trimethylbenzene*	µg/L	16.0	16.0	1.60	15.2	1.84	12.8 - 19.2	14 85.7%
5215 1,3,5-Trimethylbenzene*	µg/L	13.5	13.5	2.70	13.0	1.54	8.10 - 18.9	14 100.0%
5240 m+p-Xylene*	µg/L	31.2	31.2	3.10	30.6	3.43	25.0 - 37.4	14 100.0%
5250 o-Xylene*	µg/L	10.3	10.3	1.04	10.3	0.561	8.24 - 12.4	14 85.7%
5260 Xylene, total	µg/L	41.5	41.5	4.15	40.3	4.62	33.2 - 49.8	15 100.0%

PEO-007-3A

Unregulated VOCs (Sample 1)

Lot: 010744
Program: WSCHEM

PEO-007-3A

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 524.2**				Overall method evaluation **Acceptable**	
4395 Bromodichloromethane	<0.50 µg/L	EPA 524.2 *10088605*	0 0 - 0	**Acceptable**	
4400 Bromoform	<0.50 µg/L	EPA 524.2 *10088605*	0 0 - 0	**Acceptable**	
4485 Chloroethane	4.74 µg/L	EPA 524.2 *10088605*	6.10 3.66 - 8.54	**Acceptable**	
4505 Chloroform	<0.50 µg/L	EPA 524.2 *10088605*	0 0 - 0	**Acceptable**	
4575 Dibromochloromethane	<0.50 µg/L	EPA 524.2 *10088605*	0 0 - 0	**Acceptable**	
4615 1,3-Dichlorobenzene	20.2 µg/L	EPA 524.2 *10088605*	21.2 17.0 - 25.4	**Acceptable**	
4625 Dichlorodifluoromethane	<0.50 µg/L	EPA 524.2 *10088605*	0 0 - 0	**Acceptable**	
4630 1,1-Dichloroethane	29.6 µg/L	EPA 524.2 *10088605*	34.6 27.7 - 41.5	**Acceptable**	
4680 cis-1,3-Dichloropropene	36.3 µg/L	EPA 524.2 *10088605*	41.3 33.0 - 49.6	**Acceptable**	
4685 trans-1,3-Dichloropropylene	31.2 µg/L	EPA 524.2 *10088605*	28.8 23.0 - 34.6	**Acceptable**	
4950 Methyl bromide (Bromomethane)	20.9 µg/L	EPA 524.2 *10088605*	29.2 17.5 - 40.9	**Acceptable**	
4960 Methyl chloride (Chloromethane)	22.3 µg/L	EPA 524.2 *10088605*	29.8 17.9 - 41.7	**Acceptable**	
5000 Methyl tert-butyl ether (MTBE)	13.1 µg/L	EPA 524.2 *10088605*	14.4 8.64 - 20.2	**Acceptable**	
5110 1,1,2,2-Tetrachloroethane	19.9 µg/L	EPA 524.2 *10088605*	21.0 16.8 - 25.3	**Acceptable**	
5175 Trichlorofluoromethane	20.6 µg/L	EPA 524.2 *10088605*	28.1 16.9 - 39.3	**Acceptable**	
▲ Summary for Method **EPA 524.2**		Analytes Evaluated **15**	Acceptable **15**	Acceptance Percentage **100.0%**	

PEO-007-3A

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
4395 Bromodichloromethane	µg/L		0				0 - 0	16 100.0%
4400 Bromoform	µg/L		0				0 - 0	16 100.0%
4485 Chloroethane	µg/L	6.10	6.10	NaN	5.36	0.348	3.66 - 8.54	13 86.7%
4505 Chloroform	µg/L		0				0 - 0	16 100.0%
4575 Dibromochloromethane	µg/L		0				0 - 0	16 100.0%

Study Summary

PEO-007-3A

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
4615 1,3-Dichlorobenzene	µg/L	21.2	21.2	2.10	20.7	1.99	17.0 - 25.4	15 100.0%
4625 Dichlorodifluoromethane	µg/L		0				0 - 0	16 100.0%
4630 1,1-Dichloroethane	µg/L	34.6	34.6	3.45	31.4	3.07	27.7 - 41.5	16 93.8%
4680 cis-1,3-Dichloropropene	µg/L	41.3	41.3	NaN	35.3	3.13	33.0 - 49.6	15 86.7%
4685 trans-1,3-Dichloropropylene	µg/L	28.8	28.8	NaN	29.8	2.69	23.0 - 34.6	15 100.0%
4950 Methyl bromide (Bromomethane)	µg/L	29.2	29.2	NaN	20.6	3.60	17.5 - 40.9	15 86.7%
4960 Methyl chloride (Chloromethane)	µg/L	29.8	29.8	NaN	22.3	5.00	17.9 - 41.7	16 81.3%
5000 Methyl tert-butyl ether (MTBE)	µg/L	14.4	14.4	NaN	13.4	0.911	8.64 - 20.2	14 100.0%
5110 1,1,2,2-Tetrachloroethane	µg/L	21.0	21.0	NaN	21.0	2.47	16.8 - 25.3	15 86.7%
5175 Trichlorofluoromethane	µg/L	28.1	28.1	NaN	24.6	3.49	16.9 - 39.3	15 100.0%

PEO-007-3B
Unregulated VOCs (Sample 2)

Lot: 010745
Program: WSCHEM

PEO-007-3B

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 524.2**				Overall method evaluation **Acceptable**	
4385 Bromobenzene	12.2 µg/L	EPA 524.2 *10088605*	12.0 7.20 - 16.8	**Acceptable**	
4390 Bromochloromethane	15.3 µg/L	EPA 524.2 *10088605*	18.2 14.6 - 21.8	**Acceptable**	-1.67
4435 n-Butylbenzene	6.70 µg/L	EPA 524.2 *10088605*	6.92 4.15 - 9.69	**Acceptable**	
4440 sec-Butylbenzene	33.8 µg/L	EPA 524.2 *10088605*	31.8 25.4 - 38.2	**Acceptable**	
4445 tert-Butylbenzene	26.5 µg/L	EPA 524.2 *10088605*	24.7 19.8 - 29.6	**Acceptable**	
4535 2-Chlorotoluene	42.9 µg/L	EPA 524.2 *10088605*	42.4 33.9 - 51.0	**Acceptable**	
4540 4-Chlorotoluene	7.63 µg/L	EPA 524.2 *10088605*	8.00 4.80 - 11.2	**Acceptable**	0.891
4595 Dibromomethane	14.3 µg/L	EPA 524.2 *10088605*	16.0 12.7 - 19.2	**Acceptable**	
4660 1,3-Dichloropropane	47.4 µg/L	EPA 524.2 *10088605*	48.2 38.6 - 57.8	**Acceptable**	
4665 2,2-Dichloropropane	42.1 µg/L	EPA 524.2 *10088605*	43.9 26.3 - 61.5	**Acceptable**	
4670 1,1-Dichloropropene	<0.50 µg/L	EPA 524.2 *10088605*	0 0 - 0	**Acceptable**	
4835 Hexachlorobutadiene	44.0 µg/L	EPA 524.2 *10088605*	49.1 39.3 - 58.9	**Acceptable**	
4900 Isopropylbenzene	41.9 µg/L	EPA 524.2 *10088605*	35.9 28.7 - 43.1	**Acceptable**	
4910 4-Isopropyltoluene	22.9 µg/L	EPA 524.2 *10088605*	23.3 18.6 - 28.1	**Acceptable**	
5090 n-Propylbenzene	6.86 µg/L	EPA 524.2 *10088605*	6.94 4.16 - 9.72	**Acceptable**	
5105 1,1,1,2-Tetrachloroethane	46.8 µg/L	EPA 524.2 *10088605*	46.1 36.9 - 55.3	**Acceptable**	
5150 1,2,3-Trichlorobenzene	20.5 µg/L	EPA 524.2 *10088605*	23.1 14.7 - 28.7	**Acceptable**	-0.342
5180 1,2,3-Trichloropropane	37.2 µg/L	EPA 524.2 *10088605*	40.2 11.3 - 55.7	**Acceptable**	-0.271
5210 1,2,4-Trimethylbenzene	32.7 µg/L	EPA 524.2 *10088605*	35.6 28.5 - 42.7	**Acceptable**	
5215 1,3,5-Trimethylbenzene	17.3 µg/L	EPA 524.2 *10088605*	17.3 13.8 - 20.9	**Acceptable**	
▲ Summary for Method **EPA 524.2**		Analytes Evaluated **20**	Acceptable **20**	Acceptance Percentage **100.0%**	

PEO-007-3B

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
4385 Bromobenzene	µg/L	12.0	12.0	NaN	11.9	1.39	7.20 - 16.8	14 100.0%
4390 Bromochloromethane	µg/L	18.3	18.2	1.80	18.3	2.11	14.6 - 21.8	14 92.9%
4435 n-Butylbenzene	µg/L	6.92	6.92	NaN	7.11	0.810	4.15 - 9.69	14 85.7%
4440 sec-Butylbenzene	µg/L	31.8	31.8	NaN	33.5	4.10	25.4 - 38.2	14 85.7%
4445 tert-Butylbenzene	µg/L	24.7	24.7	NaN	25.8	3.28	19.8 - 29.6	14 85.7%
4535 2-Chlorotoluene	µg/L	42.4	42.4	NaN	41.2	5.46	33.9 - 51.0	14 85.7%
4540 4-Chlorotoluene	µg/L	6.49	8.00	1.28	6.49	1.28	4.80 - 11.2	14 92.9%

PEO-007-3B

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
4595 Dibromomethane	µg/L	16.0	16.0	NaN	15.7	1.95	12.7 - 19.2	14 92.9%
4660 1,3-Dichloropropane	µg/L	48.2	48.2	NaN	48.7	5.45	38.6 - 57.8	14 92.9%
4665 2,2-Dichloropropane	µg/L	43.9	43.9	NaN	42.0	5.52	26.3 - 61.5	14 100.0%
4670 1,1-Dichloropropene	µg/L		0				0 - 0	14 100.0%
4835 Hexachlorobutadiene	µg/L	49.1	49.1	NaN	45.7	7.19	39.3 - 58.9	14 85.7%
4900 Isopropylbenzene	µg/L	35.9	35.9	NaN	37.8	3.62	28.7 - 43.1	14 92.9%
4910 4-Isopropyltoluene	µg/L	23.3	23.3	NaN	24.1	3.50	18.6 - 28.1	14 85.7%
5090 n-Propylbenzene	µg/L	6.94	6.94	NaN	7.31	0.514	4.16 - 9.72	14 92.9%
5105 1,1,1,2-Tetrachloroethane	µg/L	46.1	46.1	NaN	46.3	5.71	36.9 - 55.3	14 92.9%
5150 1,2,3-Trichlorobenzene	µg/L	21.7	23.1	3.51	21.7	3.51	14.7 - 28.7	14 85.7%
5180 1,2,3-Trichloropropane	µg/L	39.3	40.2	7.76	39.3	7.76	11.3 - 55.7	14 92.9%
5210 1,2,4-Trimethylbenzene	µg/L	35.6	35.6	NaN	35.5	5.31	28.5 - 42.7	14 85.7%
5215 1,3,5-Trimethylbenzene	µg/L	17.3	17.3	NaN	17.3	2.28	13.8 - 20.9	14 92.9%

PEO-007-4
EDB/DBCP

Lot: 010746
Program: WSCHEM

PEO-007-4

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
4570 1,2-Dibromo-3-chloropropane (DBCP)	1.2 µg/L	EPA 504.1 *10082607*	1.13 0.678 - 1.58	Acceptable	
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)	1.8 µg/L	EPA 504.1 *10082607*	1.82 1.09 - 2.55	Acceptable	
5180 1,2,3-Trichloropropane	7.8 µg/L	EPA 504.1 *10082607*	8.61 5.17 - 12.1	Acceptable	

PEO-007-4

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
4570 1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.13	1.13	NaN	1.27	0.200	0.678 - 1.58	10 100.0%
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)	µg/L	1.82	1.82	NaN	1.86	0.200	1.09 - 2.55	10 100.0%
5180 1,2,3-Trichloropropane	µg/L	8.61	8.61	NaN	9.21	1.11	5.17 - 12.1	

PEO-097
Diquat/Endothall/Glyphosate/Paraquat

Lot: 010456
Program: WSCHEM

PEO-097

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
7525 Endothall	192 µg/L	EPA 548.1 *10092601*	299 102 - 424	Acceptable	-0.881

PEO-097

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate

PEO-097

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
7525 Endothall	µg/L	263	299	80.6	263	80.6	102 - 424	

PEO-098

Organic Disinfection By-Products

Lot: 010739
Program: WSCHEM

PEO-098

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
9312 Bromoacetic acid	24 µg/L	EPA 552.2 *10095600*	23.2 11.6 - 34.8	Acceptable	
9315 Bromochloroacetic acid	29 µg/L	EPA 552.2 *10095600*	30.1 15.1 - 45.2	Acceptable	
9336 Chloroacetic acid	17 µg/L	EPA 552.2 *10095600*	21.0 10.5 - 31.5	Acceptable	
9357 Dibromoacetic acid	32 µg/L	EPA 552.2 *10095600*	31.1 15.6 - 46.7	Acceptable	
9360 Dichloroacetic acid	26 µg/L	EPA 552.2 *10095600*	28.8 14.4 - 43.2	Acceptable	
9414 Total haloacetic acids	112 µg/L	EPA 552.2 *0*	144 72.0 - 216	Acceptable	-1.68
9642 Trichloroacetic acid	13 µg/L	EPA 552.2 *10095600*	10.1 6.80 - 20.4	Acceptable	-0.255

PEO-098

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
9312 Bromoacetic acid	µg/L	23.2	23.2	NaN	28.1	6.24	11.6 - 34.8	
9315 Bromochloroacetic acid	µg/L	30.1	30.1	NaN	31.4	4.71	15.1 - 45.2	
9336 Chloroacetic acid	µg/L	21.0	21.0	NaN	20.1	7.38	10.5 - 31.5	
9357 Dibromoacetic acid	µg/L	31.1	31.1	NaN	28.8	14.1	15.6 - 46.7	
9360 Dichloroacetic acid	µg/L	28.8	28.8	NaN	28.4	5.74	14.4 - 43.2	
9414 Total haloacetic acids	µg/L	144	144	19.0	131	19.0	72.0 - 216	
9642 Trichloroacetic acid	µg/L	13.6	10.1	2.35	13.0	2.59	6.80 - 20.4	

The evaluation, certified value, and acceptance criteria are based on EPA Criteria Document NCRL-cs-0045 (December 30, 1998), NELAC Fields of Testing NPW/Drinking Water (June 1, 2005 and RCRA 2002-02), and ISO Guide 43. The assigned value is the prepared value where applicable.

Authorized for release by _____ **Date** 1/12/2006

Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, A2LA, or any other federal agency. RTC is accredited by NVLAP and A2LA to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0 and A2LA certificate 2122.01.

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

NVLAP Labcode: 200393-0 ACCREDITED Certificate # 2122.01

EPA Lab MT00005 **RT Labcode RT1061**

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

Thank you for participating in study OS05-04-213. Your report has been sent to the following agencies. If an agency is missing or not correct, please contact RTC immediately.

(105) **CDPHE / Lab Service Division**
Ken Johnson
8100 Lowry Boulevard
Denver, CO 80230 6928

(118) **Nevada Division of Env Protection**
Donald Lafara
901 S. Stewart Street
Ste. 4001
Carson City, NV 89701 5249

(119) **North Dakota Department of Health**
Errol Erickson
Chemistry Division
2635 E. Main Ave., P.O. Box 937
Bismarck, ND 58502 0937

(217) **EPA Region VIII**
Jim Gindelberger
MailStop 8 TMS-Q
999 18th Street - Suite 500
Denver, CO 80207 2466

(229) **Florida Dept. of Health, Bureau of Laboratories**
Stephen Arms
1217 Pearl Street
Jacksonville, FL 32202

(235) **Montana Dept. of Public Health & Human Services**
Judy Halm
Environmental Laboratory Services
PO Box 4369
Helena, MT 59604 4369

(346) **Idaho Bureau of Laboratories**
Dan Rousselle
2220 Old Penitentiary Road
Boise, ID 83712

(364) **State of South Dakota**
Mike Smith
Joe Foss Building, Chemistry
532 East Capitol Street
Pierre, SD 57501 3181

Additional information about the study can be found on our website at www.rt-corp.com. Enter our secure "eReport" site to find study statistics and online evaluations. Coming soon a study discussion summary will be posted. This report will discuss and significant study incidents.

If you have any questions or comments about the study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report
WSCHEM OS05-04-213

Commenced 23-Dec-2005 | Concluded 3-Feb-2006

RT Labcode RT1061

NVLAP® Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

A2LA ACCREDITED Certificate # 2122.01

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

PEO-003
PCBs

Lot: 010510
Program: WSCHEM

PEO-003

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
8880 Aroclor-1016 (PCB-1016)	<0.080	µg/L	EPA 525.2 *0*	0 0 - 0	Acceptable	
8885 Aroclor-1221 (PCB-1221)*	<5.0	µg/L	EPA 525.2 *0*	*0* 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	<0.5	µg/L	EPA 525.2 *0*	0 0 - 0	Acceptable	
8895 Aroclor-1242 (PCB-1242)	<0.3	µg/L	EPA 525.2 *0*	0 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<0.1	µg/L	EPA 525.2 *0*	0 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	<0.1	µg/L	EPA 525.2 *0*	0 0 - 0	Acceptable	
8910 Aroclor-1260 (PCB-1260)	0.603	µg/L	EPA 525.2 *0*	0.92 0 - 1.84	Acceptable	

PEO-003

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
8880 Aroclor-1016 (PCB-1016)	µg/L		0				0 - 0	
8885 Aroclor-1221 (PCB-1221)*	µg/L		0				0 - 0	
8890 Aroclor-1232 (PCB-1232)	µg/L		0				0 - 0	
8895 Aroclor-1242 (PCB-1242)	µg/L		0				0 - 0	
8900 Aroclor-1248 (PCB-1248)	µg/L		0				0 - 0	
8905 Aroclor-1254 (PCB-1254)	µg/L		0				0 - 0	
8910 Aroclor-1260 (PCB-1260)	µg/L	0.920	0.92				0 - 1.84	

The evaluation, certified value, and acceptance criteria are based on EPA Criteria Document NCRL-cs-0045 (December 30, 1998), NELAC Fields of Testing NPW/Drinking Water (June 1, 2005 and RCRA 2002-02), and ISO Guide 43. The assigned value is the prepared value where applicable.

Authorized for release by _____ **Date** 2/6/2006

Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, A2LA, or any other federal agency. RTC is accredited by NVLAP and A2LA to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0 and A2LA certificate 2122.01.

Blank
Page

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report

WSCHEM **WS05-2**

Commenced 13-Apr-2005 | Concluded 27-May-2005

RT Labcode RT1061

NVLAP® Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

MIC-001-01

WS - Microbiological PT (Sample 1)

Program: WSCHEM

MIC-001-01

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	0		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-01

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			0			0 - 0	

MIC-001-02

WS - Microbiological PT (Sample 2)

Program: WSCHEM

MIC-001-02

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	1		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-02

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			1			1 - 1	

MIC-001-03

WS - Microbiological PT (Sample 3)

Program: WSCHEM

MIC-001-03

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	1		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-03

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			1			1 - 1	

MIC-001-04

WS - Microbiological PT (Sample 4)

Program: WSCHEM

MIC-001-04

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	0		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-04

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			0			0 - 0	

MIC-001-05

WS - Microbiological PT (Sample 5)

Program: WSCHEM

MIC-001-05

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	0		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-05

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			0			0 - 0	

MIC-001-06

WS - Microbiological PT (Sample 6)

Program: WSCHEM

MIC-001-06

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	0		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-06

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			0			0 - 0	

MIC-001-07

WS - Microbiological PT (Sample 7)

Program: WSCHEM

MIC-001-07

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	1		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-07

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			1			1 - 1	

MIC-001-08

WS - Microbiological PT (Sample 8)

Program: WSCHEM

MIC-001-08

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	0		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-08

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			0			0 - 0	

MIC-001-09

WS - Microbiological PT (Sample 9)

Program: WSCHEM

MIC-001-09

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	0		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-09

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			0			0 - 0	

MIC-001-10

WS - Microbiological PT (Sample 10)

Program: WSCHEM

MIC-001-10

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2530 Fecal coliforms	0		SM 18/19thED 9221 E	20036208	**Acceptable**	

MIC-001-10

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2530 Fecal coliforms			0			0 - 0	

MIC-002
WS-Standard Plate Count

Program: WSCHEM

MIC-002

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2555 Heterotrophic plate count*	73	CFU/mL	SM 18th ED 9215 C	20035409	**Acceptable**	3.30

MIC-002

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2555 Heterotrophic plate count*	CFU/mL	51.9		51.9	6.40	24.6 - 92.5	

PEI-010-12
Corrosivity/Sodium

Program: WSCHEM

PEI-010-12

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1035 Calcium*	76.6	mg/L	EPA 200.7	10013408	**Acceptable**	0.198
1155 Sodium	15.8	mg/L	EPA 200.7	10013408	**Acceptable**	-0.112
1575 Chloride*	143	mg/L	EPA 300.0	10053006	**Acceptable**	0.503
1505 Alkalinity as CaCO₃	41.8	mg/L	SM 18/19thED 2320 B	20003003	**Not acceptable**	3.77
1610 Conductivity*	527	µmhos/cm	SM 18/19thED 2510 B	20003809	**Acceptable**	-0.595
1955 Residue-filterable (TDS)	459	mg/L	SM 18/19thED 2540 C	20004404	**Acceptable**	0.857

PEI-010-12

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1035 Calcium*	mg/L	75.8	76.0	76.1	5.54	67.7 - 84.0	
1155 Sodium	mg/L	15.9	16.0	15.9	1.06	14.0 - 17.7	
1505 Alkalinity as CaCO3	mg/L	36.0	36.0	35.9	1.54	32.0 - 39.6	
1575 Chloride*	mg/L	140	140	138	7.70	128 - 152	
1610 Conductivity*	µmhos/cm	537	537	537	16.8	483 - 591	
1955 Residue-filterable (TDS)	mg/L	398	398	398	76.5	256 - 540	

PEI-010-3
pH (20 mL)

Program: WSCHEM

PEI-010-3

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1900 pH	5.29	UNITS	EPA 150.1	10008205	**Acceptable**	0.917

PEI-010-3

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1900 pH	UNITS	5.25	5.28	5.25	0.0436	5.08 - 5.48	

PEI-011
Anions

Program: WSCHEM

PEI-011

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1730 Fluoride	3.52	mg/L	380-75WE	60000808	**Acceptable**	0.329
1125 Potassium*	26	mg/L	EPA 200.7	10013408	**Acceptable**	-0.0552
1730 Fluoride	3.47	mg/L	EPA 300.0	10053006	**Acceptable**	0.0939
1810 Nitrate as N	7.62	mg/L	EPA 300.0	10053006	**Acceptable**	-1.19
1840 Nitrite as N	0.915	mg/L	EPA 300.0	10053006	**Acceptable**	-1.25
1870 Orthophosphate as P	1.09	mg/L	EPA 300.0	10053006	**Not acceptable**	3.97
1810 Nitrate as N	8.12	mg/L	EPA 353.2	10067206	**Acceptable**	0.000
1825 Total nitrate-nitrite*	9.14	mg/L	EPA 353.2	10067206	**Acceptable**	0.523
1840 Nitrite as N	1.01	mg/L	EPA 353.2	10067206	**Acceptable**	0.291
1870 Orthophosphate as P	0.856	mg/L	EPA 365.1	10069600	**Acceptable**	0.629
1730 Fluoride	3.52	mg/L	SM 18/19thED 4500 F-C	20012800	**Acceptable**	0.329

PEI-011

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1125 Potassium*	mg/L	26.1	26.0	25.6	1.73	22.0 - 29.7	
1730 Fluoride	mg/L	3.45	3.85	3.46	0.213	3.11 - 3.90	
1810 Nitrate as N	mg/L	8.12	8.12	8.15	0.415	7.31 - 8.93	
1825 Total nitrate-nitrite*	mg/L	8.95	9.11	9.07	0.408	8.22 - 10.0	
1840 Nitrite as N	mg/L	0.992	0.992	0.997	0.0618	0.843 - 1.14	
1870 Orthophosphate as P	mg/L	0.812	0.804	0.785	0.0404	0.672 - 0.952	

PEI-012

Residual Free Chlorine (RFC)

Program: WSCHEM

PEI-012

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1945 Residual free chlorine	0.88	mg/L	EPA 330.5	10059402	**Acceptable**	-0.117

PEI-012

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1945 Residual free chlorine	mg/L	0.891	0.891	0.891	0.0704	0.704 - 1.08	

PEI-013

Sulfate/TOC

Program: WSCHEM

PEI-013

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2000 Sulfate	202	mg/L	EPA 300.0	10053006	**Acceptable**	0.354

PEI-013

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2000 Sulfate	mg/L	198	198	198	13.6	173 - 220	

PEI-014

Turbidity

Program: WSCHEM

PEI-014

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
2055 Turbidity	2.31	NTU	EPA 180.1	10011402	**Acceptable**	0.686

PEI-014

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
2055 Turbidity	NTU	2.17	2.06	2.16	0.183	1.75 - 2.58	

PEI-015

Total Cyanide

Program: WSCHEM

PEI-015

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1635 Cyanide	0.32	mg/L	EPA 335.4	10061208	**Acceptable**	0.116

PEI-015

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1635 Cyanide	mg/L	0.315	0.320	0.300	0.0409	0.230 - 0.400	

PEI-017-1

Inorganic Disinfection By-Products (Sample 1)

Program: WSCHEM

PEI-017-1

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1540 Bromide	307	µg/L	EPA 300.0	10053006	**Acceptable**	-0.0278

PEI-017-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1540 Bromide	µg/L	308	307	271	22.0	236 - 380	

PEI-308-1

Trace Metals 1 - Whole Volume

Program: WSCHEM

PEI-308-1

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
▼ Summary for Method **EPA 200.7**					Overall method evaluation **Acceptable**	
1000 Aluminum*	3440	µg/L	EPA 200.7	0	**Acceptable**	-0.0485
1020 Beryllium	9.4	µg/L	EPA 200.7	0	**Acceptable**	0.466
1030 Cadmium	51.2	µg/L	EPA 200.7	0	**Acceptable**	0.782
1040 Chromium	132	µg/L	EPA 200.7	0	**Acceptable**	0.000
1055 Copper	16	µg/L	EPA 200.7	0	**Acceptable**	-0.488
1070 Iron*	1090	µg/L	EPA 200.7	0	**Acceptable**	0.181
1075 Lead	55	µg/L	EPA 200.7	0	**Acceptable**	-0.478
1090 Manganese	679	µg/L	EPA 200.7	0	**Acceptable**	0.653
1105 Nickel	242	µg/L	EPA 200.7	0	**Acceptable**	-0.523
1190 Zinc	2470	µg/L	EPA 200.7	0	**Acceptable**	0.287
▲ Summary for Method **EPA 200.7**			Analytes Evaluated **10**	Acceptable **10**	Acceptance Percentage **100.0%**	
▼ Summary for Method **EPA 200.8**					Overall method evaluation **Acceptable**	
1000 Aluminum*	3380	µg/L	EPA 200.8	0	**Acceptable**	-0.340
1010 Arsenic	72.6	µg/L	EPA 200.8	0	**Acceptable**	1.21
1020 Beryllium	9.15	µg/L	EPA 200.8	0	**Acceptable**	0.0345
1030 Cadmium	49.4	µg/L	EPA 200.8	0	**Acceptable**	0.0412
1040 Chromium	130	µg/L	EPA 200.8	0	**Acceptable**	-0.264
1055 Copper	15.3	µg/L	EPA 200.8	0	**Acceptable**	-1.34
1070 Iron*	1160	µg/L	EPA 200.8	0	**Acceptable**	1.45
1075 Lead	54.9	µg/L	EPA 200.8	0	**Acceptable**	-0.512
1090 Manganese	668	µg/L	EPA 200.8	0	**Acceptable**	0.275
1095 Mercury	2.21	µg/L	EPA 200.8	0	**Acceptable**	-0.221
1140 Selenium	25.8	µg/L	EPA 200.8	0	**Acceptable**	0.210
1190 Zinc	2490	µg/L	EPA 200.8	0	**Acceptable**	0.862
▲ Summary for Method **EPA 200.8**			Analytes Evaluated **12**	Acceptable **12**	Acceptance Percentage **100.0%**	
1095 Mercury	1.97	µg/L	EPA 245.1	0	**Acceptable**	-0.377

PEI-308-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1000 Aluminum*	µg/L	3450	3520	3440	82.2	3040 - 3870	
1010 Arsenic	µg/L	67.3	67.3	69.5	6.82	47.1 - 87.5	
1020 Beryllium	µg/L	9.13	9.13	9.25	0.674	7.76 - 10.5	
1030 Cadmium	µg/L	49.3	49.3	50.4	4.06	39.4 - 59.2	
1040 Chromium	µg/L	132	132	132	4.42	112 - 152	
1055 Copper	µg/L	16.4	16.4	15.2	0.972	10.8 - 22.0	
1070 Iron*	µg/L	1080	1090	1120	88.4	971 - 1190	
1075 Lead	µg/L	56.4	56.4	55.8	3.01	39.5 - 73.3	
1090 Manganese	µg/L	660	668	681	51.8	602 - 718	
1095 Mercury	µg/L	2.55	2.55	2.03	0.230	1.79 - 3.32	
1105 Nickel	µg/L	250	250	247	12.0	213 - 288	
1140 Selenium	µg/L	25.0	25.0	25.1	1.43	20.0 - 30.0	
1190 Zinc	µg/L	2460	2460	2460	38.6	2210 - 2710	

PEI-308-2
Trace Metals 2 - Whole Volume

Program: WSCHEM

PEI-308-2

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1015 Barium	890	µg/L	EPA 200.7	0	**Acceptable**	0.762
1025 Boron	593	µg/L	EPA 200.7	0	**Acceptable**	0.888
1085 Magnesium*	2.900	mg/L	EPA 200.7	0	**Acceptable**	-0.588
1100 Molybdenum	119	µg/L	EPA 200.7	0	**Acceptable**	0.291
1150 Silver*	162	µg/L	EPA 200.7	0	**Acceptable**	0.669
1185 Vanadium*	2200	µg/L	EPA 200.7	0	**Not acceptable**	1.30
1005 Antimony	21.2	µg/L	EPA 200.8	0	**Acceptable**	-0.0891
1015 Barium	826	µg/L	EPA 200.8	0	**Acceptable**	0.120
1025 Boron	622	µg/L	EPA 200.8	0	**Acceptable**	1.84
1100 Molybdenum	116	µg/L	EPA 200.8	0	**Acceptable**	-0.145
1150 Silver*	160	µg/L	EPA 200.8	0	**Acceptable**	0.446
1165 Thallium	9.18	µg/L	EPA 200.8	0	**Acceptable**	0.690
1185 Vanadium*	1900	µg/L	EPA 200.8	0	**Acceptable**	-0.0926

PEI-308-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1005 Antimony	µg/L	22.1	22.1	24.8	4.78	15.5 - 28.7	
1015 Barium	µg/L	814	814	835	72.6	690 - 939	
1025 Boron	µg/L	566	562	622	154	504 - 626	
1085 Magnesium*	mg/L	3.02	2.98	2.93	0.146	2.62 - 3.43	
1100 Molybdenum	µg/L	117	119	116	3.44	104 - 131	
1150 Silver*	µg/L	156	157	162	2.00	138 - 174	
1165 Thallium	µg/L	8.60	8.60	8.76	1.03	6.02 - 11.2	
1185 Vanadium*	µg/L	1920	1920	1950	204	1730 - 2110	

PEO-002
Trihalomethanes

Program: WSCHEM

PEO-002

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
4395 Bromodichloromethane	16.9	µg/L	EPA 524.2	10088605	**Acceptable**	0.287
4400 Bromoform	48.2	µg/L	EPA 524.2	10088605	**Acceptable**	0.649
4505 Chloroform	34.8	µg/L	EPA 524.2	10088605	**Acceptable**	0.458
4575 Dibromochloromethane	39.3	µg/L	EPA 524.2	10088605	**Acceptable**	-0.131
5205 Total trihalomethanes	139	µg/L	EPA 524.2	10088605	**Acceptable**	0.320

PEO-002

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4395 Bromodichloromethane	µg/L	16.4	16.0	16.4	1.70	12.9 - 19.9	
4400 Bromoform	µg/L	45.1	46.1	45.3	4.56	23.0 - 69.2	
4505 Chloroform	µg/L	33.6	34.1	33.6	2.58	17.0 - 51.2	
4575 Dibromochloromethane	µg/L	39.9	41.1	39.8	4.25	20.5 - 61.7	
5205 Total trihalomethanes	µg/L	135	137	135	12.0	68.5 - 206	

PEO-003
PCBs
Program: WSCHEM

PEO-003
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
8885 Aroclor-1221 (PCB-1221)	<0.50	µg/L	EPA 505	10083202	**Acceptable**	
9105 Decachlorobiphenyl	0.57	µg/L	EPA 505	10083202	**Acceptable**	
8880 Aroclor-1016 (PCB-1016)	<0.50	µg/L	EPA 508	10085004	**Acceptable**	
8890 Aroclor-1232 (PCB-1232)	0.772	µg/L	EPA 508	10085004	**Acceptable**	0.764
8895 Aroclor-1242 (PCB-1242)	<0.50	µg/L	EPA 508	10085004	**Acceptable**	
8900 Aroclor-1248 (PCB-1248)	<0.50	µg/L	EPA 508	10085004	**Acceptable**	
8905 Aroclor-1254 (PCB-1254)	<0.50	µg/L	EPA 508	10085004	**Acceptable**	
8910 Aroclor-1260 (PCB-1260)	<0.50	µg/L	EPA 508	10085004	**Acceptable**	

PEO-003
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
8880 Aroclor-1016 (PCB-1016)	µg/L		0			0 - 0	
8885 Aroclor-1221 (PCB-1221)	µg/L		0			0 - 0	
8890 Aroclor-1232 (PCB-1232)	µg/L	0.700	0.70	0.671	0.0957	0.000 - 1.40	
8895 Aroclor-1242 (PCB-1242)	µg/L		0			0 - 0	
8900 Aroclor-1248 (PCB-1248)	µg/L		0			0 - 0	
8905 Aroclor-1254 (PCB-1254)	µg/L	0.000	0			0.000 - 0.000	
8910 Aroclor-1260 (PCB-1260)	µg/L	0.000	0			0.000 - 0.000	
9105 Decachlorobiphenyl	µg/L	1.52	1.52			0.000 - 3.04	

PEO-005-1
Organochlorine Pesticides (Sample 1)
Program: WSCHEM

PEO-005-1
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
7025 Aldrin	0.672	µg/L	EPA 505	10083202	**Acceptable**	1.35
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	1.70	µg/L	EPA 505	10083202	**Acceptable**	-0.0590
7470 Dieldrin	2.49	µg/L	EPA 505	10083202	**Acceptable**	-0.242
7540 Endrin	0.836	µg/L	EPA 505	10083202	**Acceptable**	0.119
7685 Heptachlor	0.583	µg/L	EPA 505	10083202	**Acceptable**	-0.242
7025 Aldrin	0.560	µg/L	EPA 525.2	10089608	**Acceptable**	0.477
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	1.61	µg/L	EPA 525.2	10089608	**Acceptable**	-0.324
7470 Dieldrin	3.01	µg/L	EPA 525.2	10089608	**Acceptable**	0.901
7540 Endrin	1.12	µg/L	EPA 525.2	10089608	**Not acceptable**	2.22
7685 Heptachlor	0.620	µg/L	EPA 525.2	10089608	**Acceptable**	0.000

PEO-005-1
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
7025 Aldrin	µg/L	0.499	0.600	0.581	0.147	0.243 - 0.756	
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	µg/L	1.72	1.72	1.54	0.341	0.946 - 2.49	
7470 Dieldrin	µg/L	2.60	2.71	2.35	0.299	1.69 - 3.51	
7540 Endrin	µg/L	0.820	0.82	0.754	0.133	0.574 - 1.07	
7685 Heptachlor	µg/L	0.620	0.62	0.575	0.153	0.341 - 0.899	

PEO-005-2
Organochlorine Pesticides (Sample 2)

Program: WSCHEM

PEO-005-2

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
6275 Hexachlorobenzene	3.24	µg/L	EPA 505	10083202	**Acceptable**	1.18
6285 Hexachlorocyclopentadiene	19.2	µg/L	EPA 505	10083202	**Acceptable**	0.544
7690 Heptachlor epoxide	4.15	µg/L	EPA 505	10083202	**Acceptable**	0.484
7810 Methoxychlor	77.7	µg/L	EPA 505	10083202	**Acceptable**	-0.0986
8295 Trifluralin (Treflan)	2.36	µg/L	EPA 505	10083202	**Acceptable**	-0.476
6275 Hexachlorobenzene	2.81	µg/L	EPA 525.2	10089608	**Acceptable**	0.433
6285 Hexachlorocyclopentadiene	23.1	µg/L	EPA 525.2	10089608	**Acceptable**	1.19
7690 Heptachlor epoxide	4.98	µg/L	EPA 525.2	10089608	**Acceptable**	1.38
7810 Methoxychlor	99.6	µg/L	EPA 525.2	10089608	**Acceptable**	1.44
8045 Propachlor (Ramrod)	2.91	µg/L	EPA 525.2	10089608	**Acceptable**	0.000
8295 Trifluralin (Treflan)	3.01	µg/L	EPA 525.2	10089608	**Acceptable**	0.670

PEO-005-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
6275 Hexachlorobenzene	µg/L	2.56	2.85	2.67	0.741	1.41 - 3.72	
6285 Hexachlorocyclopentadiene	µg/L	15.9	19.9	16.8	7.99	3.75 - 28.0	
7690 Heptachlor epoxide	µg/L	3.70	3.70	3.86	0.806	2.04 - 5.37	
7810 Methoxychlor	µg/L	79.1	79.1	74.3	16.1	43.5 - 115	
8045 Propachlor (Ramrod)	µg/L	2.91	2.96	2.59	0.274	1.74 - 4.07	
8295 Trifluralin (Treflan)	µg/L	2.63	2.96	2.55	0.788	1.50 - 3.77	

PEO-005-3
Organonitrogen Pesticides

Program: WSCHEM

PEO-005-3

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
7005 Alachlor	18.3	µg/L	EPA 505	10083202	**Acceptable**	0.680
7065 Atrazine	33.2	µg/L	EPA 505	10083202	**Acceptable**	1.50
8125 Simazine	25.0	µg/L	EPA 505	10083202	**Acceptable**	0.462
7005 Alachlor	17.6	µg/L	EPA 525.2	10089608	**Acceptable**	0.400
7065 Atrazine	30.1	µg/L	EPA 525.2	10089608	**Acceptable**	0.737
7160 Butachlor	77.4	µg/L	EPA 525.2	10089608	**Acceptable**	0.545
7845 Metribuzin	38.6	µg/L	EPA 525.2	10089608	**Acceptable**	0.254
8125 Simazine	24.2	µg/L	EPA 525.2	10089608	**Acceptable**	0.359

PEO-005-3

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
7005 Alachlor	µg/L	16.6	16.6	16.6	3.37	9.13 - 24.1	
7065 Atrazine	µg/L	27.1	27.1	27.9	4.84	14.9 - 39.3	
7160 Butachlor	µg/L	69.6	78.2	77.4	0.349	40.9 - 98.2	
7845 Metribuzin	µg/L	35.3	43.8	36.1	6.25	9.32 - 61.3	
8125 Simazine	µg/L	21.4	26.2	24.0	5.09	5.83 - 37.0	

PEO-005-4
Herbicides
Program: WSCHEM

PEO-005-4
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
▼ Summary for Method **EPA 515.1**					Overall method evaluation **Acceptable**	
6500 4-Nitrophenol*	<0.50	µg/L	EPA 515.1	10087000	**Acceptable**	
6605 Pentachlorophenol	36.0	µg/L	EPA 515.1	10087000	**Acceptable**	-0.0185
8505 Acifluorfen	39.8	µg/L	EPA 515.1	10087000	**Acceptable**	0.607
8530 Bentazon*	<2.50	µg/L	EPA 515.1	10087000	**Acceptable**	
8540 Chloramben*	<0.50	µg/L	EPA 515.1	10087000	**Acceptable**	
8545 2,4-D	31.1	µg/L	EPA 515.1	10087000	**Acceptable**	-0.0463
8550 Dacthal (DCPA)*	<0.50	µg/L	EPA 515.1	10087000	**Acceptable**	
8555 Dalapon	38.2	µg/L	EPA 515.1	10087000	**Acceptable**	-0.317
8560 2,4-DB*	<2.50	µg/L	EPA 515.1	10087000	**Acceptable**	
8595 Dicamba	47.7	µg/L	EPA 515.1	10087000	**Acceptable**	0.679
8600 3,5-Dichlorobenzoic acid*	<0.50	µg/L	EPA 515.1	10087000	**Acceptable**	
8605 Dichloroprop*	<1.00	µg/L	EPA 515.1	10087000	**Acceptable**	
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	18.2	µg/L	EPA 515.1	10087000	**Acceptable**	0.182
8645 Picloram	31.2	µg/L	EPA 515.1	10087000	**Acceptable**	0.409
8650 Silvex (2,4,5-TP)	13.9	µg/L	EPA 515.1	10087000	**Acceptable**	
8655 2,4,5-T*	47.4	µg/L	EPA 515.1	10087000	**Acceptable**	0.685
▲ Summary for Method **EPA 515.1**	Analytes Evaluated **16**		Acceptable **16**		Acceptance Percentage **100.0%**	
6605 Pentachlorophenol	4.13	µg/L	EPA 525.2	10089608	**Not acceptable**	-2.97

PEO-005-4
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
6500 4-Nitrophenol*	µg/L		0			0 - 0	
6605 Pentachlorophenol	µg/L	36.2	36.2	33.1	11.6	18.1 - 54.3	
8505 Acifluorfen	µg/L	34.4	38.6	36.1	9.53	16.6 - 52.2	
8530 Bentazon*	µg/L		0			0 - 0	
8540 Chloramben*	µg/L		0			0 - 0	
8545 2,4-D	µg/L	31.5	31.5	24.9	8.59	15.8 - 47.3	
8550 Dacthal (DCPA)*	µg/L		0			0 - 0	
8555 Dalapon	µg/L	47.1	74.6	34.2	17.7	0.000 - 103	
8560 2,4-DB*	µg/L		0			0 - 0	
8595 Dicamba	µg/L	38.8	46.7	47.7	1.78	12.5 - 65.0	
8600 3,5-Dichlorobenzoic acid*	µg/L		0			0 - 0	
8605 Dichloroprop*	µg/L		0			0 - 0	
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	µg/L	17.0	21.6	20.9	2.79	3.88 - 30.2	
8645 Picloram	µg/L	27.2	33.1	29.8	4.61	7.61 - 46.7	
8650 Silvex (2,4,5-TP)	µg/L	12.7	12.7	11.5	1.60	6.35 - 19.1	
8655 2,4,5-T*	µg/L	40.0	46.8	37.5	12.4	18.4 - 61.6	

PEO-005-5
Chlordane (Total)
Program: WSCHEM

PEO-005-5
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
7250 Chlordane, total	16.0	µg/L	EPA 505	10083202	**Acceptable**	-0.780
7250 Chlordane, total	20.1	µg/L	EPA 525.2	10089608	**Acceptable**	1.22

PEO-005-5
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
7250 Chlordane, total	µg/L	17.6	17.6	16.4	2.49	9.68 - 25.5	

PEO-005-6
Toxaphene (Total)

Program: WSCHEM

PEO-005-6
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
8250 Toxaphene (Chlorinated camphene)	7.62	µg/L	EPA 505	10083202	**Acceptable**	0.594
8250 Toxaphene (Chlorinated camphene)	11.3	µg/L	EPA 525.2	10089608	**Not acceptable**	3.47

PEO-005-6
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
8250 Toxaphene (Chlorinated camphene)	µg/L	6.86	6.86	6.83	1.67	3.77 - 9.95	

PEO-006-1
Adipate/Phthalate

Program: WSCHEM

PEO-006-1
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
5580 Benzo(a)pyrene	1.18	µg/L	EPA 525.2	10089608	**Acceptable**	1.22
6062 bis(2-ethylhexyl)adipate	41.2	µg/L	EPA 525.2	10089608	**Not acceptable**	3.29
6065 bis(2-ethylhexyl)phthalate	15.1	µg/L	EPA 525.2	10089608	**Acceptable**	1.40

PEO-006-1
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
5580 Benzo(a)pyrene	µg/L	0.908	1.05	0.959	0.233	0.462 - 1.35	
6062 bis(2-ethylhexyl)adipate	µg/L	20.9	22.8	20.2	5.98	8.56 - 33.2	
6065 bis(2-ethylhexyl)phthalate	µg/L	10.6	11.1	11.6	2.19	4.15 - 17.0	

PEO-006-2
PNAs

Program: WSCHEM

PEO-006-2
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
▼ Summary for Method **EPA 525.2**					Overall method evaluation **Acceptable**	
5005 Naphthalene*	30.9	µg/L	EPA 525.2	10089608	**Acceptable**	0.774
5500 Acenaphthene*	27.0	µg/L	EPA 525.2	10089608	**Acceptable**	0.249
5505 Acenaphthylene*	<0.1	µg/L	EPA 525.2	10089608	**Acceptable**	
5555 Anthracene*	8.81	µg/L	EPA 525.2	10089608	**Acceptable**	-0.172
5575 Benzo(a)anthracene*	<0.1	µg/L	EPA 525.2	10089608	**Acceptable**	
5585 Benzo(b)fluoranthene*	9.97	µg/L	EPA 525.2	10089608	**Acceptable**	1.05
5590 Benzo(g,h,i)perylene*	9.21	µg/L	EPA 525.2	10089608	**Acceptable**	0.0526
5600 Benzo(k)fluoranthene*	<0.1	µg/L	EPA 525.2	10089608	**Acceptable**	
5670 Butyl benzyl phthalate*	<0.5	µg/L	EPA 525.2	10089608	**Acceptable**	
5855 Chrysene*	<0.1	µg/L	EPA 525.2	10089608	**Acceptable**	
5895 Dibenz(a,h) anthracene*	6.15	µg/L	EPA 525.2	10089608	**Acceptable**	1.15
5925 Di-n-butyl phthalate*	16.8	µg/L	EPA 525.2	10089608	**Acceptable**	0.735
6070 Diethyl phthalate*	18.6	µg/L	EPA 525.2	10089608	**Acceptable**	-0.335
6135 Dimethyl phthalate*	31.3	µg/L	EPA 525.2	10089608	**Acceptable**	0.000
6265 Fluoranthene*	<0.05	µg/L	EPA 525.2	10089608	**Acceptable**	
6270 Fluorene*	<0.01	µg/L	EPA 525.2	10089608	**Acceptable**	
6315 Indeno(1,2,3-cd) pyrene*	<0.01	µg/L	EPA 525.2	10089608	**Acceptable**	
6385 2-Methylnaphthalene*	46.8	µg/L	EPA 525.2	10089608	**Acceptable**	
6615 Phenanthrene*	9.47	µg/L	EPA 525.2	10089608	**Acceptable**	
6665 Pyrene*	<0.01	µg/L	EPA 525.2	10089608	**Acceptable**	
▲ Summary for Method **EPA 525.2**	Analytes Evaluated **20**		Acceptable **20**		Acceptance Percentage **100.0%**	

PEO-006-2
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
5005 Naphthalene*	µg/L	28.5	28.5	23.7	6.42	17.1 - 39.9	
5500 Acenaphthene*	µg/L	25.8	25.8	22.6	5.20	12.9 - 38.7	

PEO-006-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
5505 Acenaphthylene*	µg/L	0.000	0			0.000 - 0.000	
5555 Anthracene*	µg/L	8.98	8.98	7.82	0.950	4.49 - 13.5	
5575 Benzo(a)anthracene*	µg/L	0.000	0			0.000 - 0.000	
5585 Benzo(b)fluoranthene*	µg/L	8.41	8.41	7.45	1.86	4.21 - 12.6	
5590 Benzo(g,h,i)perylene*	µg/L	9.09	9.09	7.81	2.44	4.50 - 13.6	
5600 Benzo(k)fluoranthene*	µg/L	0.000	0			0.000 - 0.000	
5670 Butyl benzyl phthalate*	µg/L	0.000	0			0.000 - 0.000	
5855 Chrysene*	µg/L	0.000	0			0.000 - 0.000	
5895 Dibenz(a,h) anthracene*	µg/L	5.52	5.52	4.77	0.740	2.76 - 8.28	
5925 Di-n-butyl phthalate*	µg/L	14.0	14.0	14.1	3.76	5.60 - 22.4	
6070 Diethyl phthalate*	µg/L	20.0	20.0	19.7	2.93	8.00 - 32.0	
6135 Dimethyl phthalate*	µg/L	31.3	31.3	30.1	7.06	12.5 - 50.1	
6265 Fluoranthene*	µg/L	0.000	0			0.000 - 0.000	
6270 Fluorene*	µg/L	0.000	0			0.000 - 0.000	
6315 Indeno(1,2,3-cd) pyrene*	µg/L	0.000	0			0.000 - 0.000	
6385 2-Methylnaphthalene*	µg/L	43.8	43.8	42.7	23.7	21.9 - 65.7	
6615 Phenanthrene*	µg/L	8.93	8.93	8.92	0.533	4.47 - 13.4	
6665 Pyrene*	µg/L	0.000	0			0.000 - 0.000	

PEO-007-1

Regulated VOCs (Sample 1)

Program: WSCHEM

PEO-007-1

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
▼ Summary for Method **EPA 524.2**					Overall method evaluation **Acceptable**	
4455 Carbon tetrachloride	12.4	µg/L	EPA 524.2	10088605	**Acceptable**	0.144
4475 Chlorobenzene	3.71	µg/L	EPA 524.2	10088605	**Acceptable**	-0.965
4635 1,2-Dichloroethane	19.8	µg/L	EPA 524.2	10088605	**Acceptable**	1.55
4640 1,1-Dichloroethylene	3.19	µg/L	EPA 524.2	10088605	**Acceptable**	-0.984
4645 cis-1,2-Dichloroethylene	24.6	µg/L	EPA 524.2	10088605	**Acceptable**	-0.0599
4655 1,2-Dichloropropane	4.62	µg/L	EPA 524.2	10088605	**Acceptable**	-1.09
4700 trans-1,2-Dichloroethylene	3.92	µg/L	EPA 524.2	10088605	**Acceptable**	0.507
4975 Methylene chloride (Dichloromethane)	6.10	µg/L	EPA 524.2	10088605	**Acceptable**	-0.344
5100 Styrene	6.75	µg/L	EPA 524.2	10088605	**Acceptable**	-0.0524
5115 Tetrachloroethylene (Perchloroethylene)	11.7	µg/L	EPA 524.2	10088605	**Acceptable**	-0.266
5155 1,2,4-Trichlorobenzene	14.1	µg/L	EPA 524.2	10088605	**Acceptable**	0.0676
5160 1,1,1-Trichloroethane	12.4	µg/L	EPA 524.2	10088605	**Acceptable**	-0.0763
5165 1,1,2-Trichloroethane	19.5	µg/L	EPA 524.2	10088605	**Acceptable**	0.443
5170 Trichloroethene (Trichloroethylene)	9.01	µg/L	EPA 524.2	10088605	**Acceptable**	-1.10
5235 Vinyl chloride	19.6	µg/L	EPA 524.2	10088605	**Acceptable**	-0.519
▲ Summary for Method **EPA 524.2**	Analytes Evaluated **15**		Acceptable **15**		Acceptance Percentage **100.0%**	

PEO-007-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4455 Carbon tetrachloride	µg/L	12.2	12.6	12.3	1.40	10.1 - 15.1	
4475 Chlorobenzene	µg/L	3.96	4.05	3.98	0.329	2.43 - 5.67	
4635 1,2-Dichloroethane	µg/L	17.6	17.6	17.7	1.46	14.1 - 21.1	
4640 1,1-Dichloroethylene	µg/L	3.82	3.73	3.82	0.647	2.24 - 5.22	
4645 cis-1,2-Dichloroethylene	µg/L	24.8	25.1	24.9	3.05	20.1 - 30.1	
4655 1,2-Dichloropropane	µg/L	5.23	5.20	5.20	0.552	3.12 - 7.28	
4700 trans-1,2-Dichloroethylene	µg/L	3.73	3.34	3.76	0.386	2.00 - 4.68	
4975 Methylene chloride (Dichloromethane)	µg/L	6.52	6.75	6.47	1.10	4.05 - 9.45	
5100 Styrene	µg/L	6.79	7.22	6.79	0.754	4.33 - 10.1	
5115 Tetrachloroethylene (Perchloroethylene)	µg/L	12.2	13.2	12.3	1.91	10.4 - 16.0	
5155 1,2,4-Trichlorobenzene	µg/L	14.0	14.9	14.0	1.40	10.4 - 19.4	
5160 1,1,1-Trichloroethane	µg/L	12.5	12.6	12.6	1.30	10.1 - 15.1	
5165 1,1,2-Trichloroethane	µg/L	18.6	18.9	18.7	1.82	15.1 - 22.7	

PEO-007-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
5170 Trichloroethene (Trichloroethylene)	µg/L	9.97	10.4	9.95	0.883	8.32 - 12.5	
5235 Vinyl chloride	µg/L	22.0	22.0	22.0	4.49	13.2 - 30.8	

PEO-007-2

Regulated VOCs (Sample 2)

Program: WSCHEM

PEO-007-2

Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
▼ Summary for Method **EPA 524.2**				Overall method evaluation **Acceptable**	
4375 Benzene	11.9 µg/L	EPA 524.2	10088605	**Acceptable**	-0.546
4610 1,2-Dichlorobenzene	7.16 µg/L	EPA 524.2	10088605	**Acceptable**	0.253
4615 1,3-Dichlorobenzene	32.4 µg/L	EPA 524.2	10088605	**Acceptable**	0.339
4620 1,4-Dichlorobenzene	8.14 µg/L	EPA 524.2	10088605	**Acceptable**	-0.378
4765 Ethylbenzene	4.66 µg/L	EPA 524.2	10088605	**Acceptable**	-1.23
5000 Methyl tert-butyl ether (MTBE)	30.8 µg/L	EPA 524.2	10088605	**Acceptable**	0.955
5005 Naphthalene*	22.2 µg/L	EPA 524.2	10088605	**Acceptable**	0.634
5140 Toluene	12.0 µg/L	EPA 524.2	10088605	**Acceptable**	-1.18
5210 1,2,4-Trimethylbenzene*	15.9 µg/L	EPA 524.2	10088605	**Acceptable**	-0.934
5215 1,3,5-Trimethylbenzene*	13.1 µg/L	EPA 524.2	10088605	**Acceptable**	-1.07
5240 m+p-Xylene*	14.2 µg/L	EPA 524.2	10088605	**Acceptable**	-0.951
5250 o-Xylene*	6.74 µg/L	EPA 524.2	10088605	**Acceptable**	-0.342
5260 Xylene, total	21.0 µg/L	EPA 524.2	10088605	**Acceptable**	-0.531
▲ Summary for Method **EPA 524.2**	Analytes Evaluated **13**		Acceptable **13**	Acceptance Percentage **100.0%**	

PEO-007-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4375 Benzene	µg/L	12.4	12.8	12.4	0.840	10.2 - 15.4	
4610 1,2-Dichlorobenzene	µg/L	7.02	7.10	7.03	0.530	4.26 - 9.94	
4615 1,3-Dichlorobenzene	µg/L	31.4	31.6	31.5	2.85	25.3 - 37.9	
4620 1,4-Dichlorobenzene	µg/L	8.50	8.52	8.48	0.904	5.11 - 11.9	
4765 Ethylbenzene	µg/L	5.24	5.38	5.21	0.504	3.23 - 7.53	
5000 Methyl tert-butyl ether (MTBE)	µg/L	27.6	27.6	27.1	3.46	16.6 - 38.6	
5005 Naphthalene*	µg/L	20.0	20.2	20.1	3.45	12.1 - 28.3	
5140 Toluene	µg/L	13.0	13.6	12.9	0.910	10.9 - 16.3	
5210 1,2,4-Trimethylbenzene*	µg/L	17.6	17.2	17.5	1.81	13.8 - 20.8	
5215 1,3,5-Trimethylbenzene*	µg/L	14.9	15.0	14.8	1.73	11.9 - 18.1	
5240 m+p-Xylene*	µg/L	14.8	15.4	14.8	0.661	12.3 - 18.5	
5250 o-Xylene*	µg/L	6.94	7.17	6.93	0.563	4.30 - 10.0	
5260 Xylene, total	µg/L	21.6	22.6	21.4	0.984	18.1 - 27.1	

PEO-007-3A

Unregulated VOCs (Sample 1)

Program: WSCHEM

PEO-007-3A

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
▼ Summary for Method **EPA 524.2**					Overall method evaluation **Acceptable**	
4395 Bromodichloromethane	<0.50	µg/L	EPA 524.2	10088605	**Acceptable**	
4400 Bromoform	<0.50	µg/L	EPA 524.2	10088605	**Acceptable**	
4485 Chloroethane	9.53	µg/L	EPA 524.2	10088605	**Acceptable**	
4505 Chloroform	<0.50	µg/L	EPA 524.2	10088605	**Acceptable**	
4575 Dibromochloromethane	<0.50	µg/L	EPA 524.2	10088605	**Acceptable**	
4615 1,3-Dichlorobenzene	32.5	µg/L	EPA 524.2	10088605	**Acceptable**	
4625 Dichlorodifluoromethane	1.82	µg/L	EPA 524.2	10088605	**Acceptable**	-0.940
4630 1,1-Dichloroethane	36.0	µg/L	EPA 524.2	10088605	**Acceptable**	-2.65
4680 cis-1,3-Dichloropropene	8.35	µg/L	EPA 524.2	10088605	**Acceptable**	0.669
4685 trans-1,3-Dichloropropylene	15.5	µg/L	EPA 524.2	10088605	**Acceptable**	0.909
4950 Methyl bromide (Bromomethane)	14.4	µg/L	EPA 524.2	10088605	**Acceptable**	-0.149
4960 Methyl chloride (Chloromethane)	15.4	µg/L	EPA 524.2	10088605	**Acceptable**	-0.915
5000 Methyl tert-butyl ether (MTBE)	31.0	µg/L	EPA 524.2	10088605	**Acceptable**	0.327
5110 1,1,2,2-Tetrachloroethane	45.6	µg/L	EPA 524.2	10088605	**Acceptable**	0.204
5175 Trichlorofluoromethane	7.62	µg/L	EPA 524.2	10088605	**Acceptable**	
▲ Summary for Method **EPA 524.2**	Analytes Evaluated **15**		Acceptable **15**		Acceptance Percentage **100.0%**	

PEO-007-3A

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4395 Bromodichloromethane	µg/L	0.000	0			0.000 - 0.000	
4400 Bromoform	µg/L	0.000	0			0.000 - 0.000	
4485 Chloroethane	µg/L	12.0	12.0	11.6	2.61	7.20 - 16.8	
4505 Chloroform	µg/L	0.000	0			0.000 - 0.000	
4575 Dibromochloromethane	µg/L	0.000	0			0.000 - 0.000	
4615 1,3-Dichlorobenzene	µg/L	NaN	35.1	34.8	3.65	28.1 - 42.1	
4625 Dichlorodifluoromethane	µg/L	2.40	2.40	2.30	0.545	1.44 - 3.36	
4630 1,1-Dichloroethane	µg/L	47.2	48.6	46.9	4.63	36.0 - 58.0	
4680 cis-1,3-Dichloropropene	µg/L	7.78	9.43	7.83	0.961	5.66 - 13.2	
4685 trans-1,3-Dichloropropylene	µg/L	13.5	14.5	13.7	2.33	8.70 - 20.3	
4950 Methyl bromide (Bromomethane)	µg/L	15.1		14.9	4.52	7.55 - 22.7	
4960 Methyl chloride (Chloromethane)	µg/L	18.1	17.7	18.0	2.92	10.6 - 25.4	
5000 Methyl tert-butyl ether (MTBE)	µg/L	29.8	29.8	29.2	3.52	17.9 - 41.7	
5110 1,1,2,2-Tetrachloroethane	µg/L	44.4	47.0	44.5	5.68	35.5 - 56.4	
5175 Trichlorofluoromethane	µg/L	9.54	9.54	9.11	1.51	5.72 - 13.4	

PEO-007-3B

Unregulated VOCs (Sample 2)

Program: WSCHEM

PEO-007-3B

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
▼ Summary for Method **EPA 524.2**					Overall method evaluation **Acceptable**	
4385 Bromobenzene	16.6	µg/L	EPA 524.2	10088605	**Acceptable**	-1.22
4390 Bromochloromethane	34.4	µg/L	EPA 524.2	10088605	**Acceptable**	-0.372
4435 n-Butylbenzene	33.6	µg/L	EPA 524.2	10088605	**Acceptable**	-0.620
4440 sec-Butylbenzene	20.4	µg/L	EPA 524.2	10088605	**Acceptable**	-0.941
4445 tert-Butylbenzene	12.2	µg/L	EPA 524.2	10088605	**Acceptable**	
4535 2-Chlorotoluene	9.50	µg/L	EPA 524.2	10088605	**Acceptable**	-1.55
4540 4-Chlorotoluene	44.1	µg/L	EPA 524.2	10088605	**Acceptable**	-1.69
4595 Dibromomethane	12.4	µg/L	EPA 524.2	10088605	**Acceptable**	0.526
4660 1,3-Dichloropropane	28.4	µg/L	EPA 524.2	10088605	**Acceptable**	0.221
4665 2,2-Dichloropropane	29.5	µg/L	EPA 524.2	10088605	**Acceptable**	1.06
4670 1,1-Dichloropropene	<0.50	µg/L	EPA 524.2	10088605	**Acceptable**	
4835 Hexachlorobutadiene	14.3	µg/L	EPA 524.2	10088605	**Acceptable**	-0.126
4900 Isopropylbenzene	43.0	µg/L	EPA 524.2	10088605	**Acceptable**	-0.709
4910 4-Isopropyltoluene	20.7	µg/L	EPA 524.2	10088605	**Acceptable**	-0.412
5090 n-Propylbenzene	31.7	µg/L	EPA 524.2	10088605	**Acceptable**	-1.29
5105 1,1,1,2-Tetrachloroethane	24.7	µg/L	EPA 524.2	10088605	**Acceptable**	0.231
5150 1,2,3-Trichlorobenzene	37.5	µg/L	EPA 524.2	10088605	**Acceptable**	0.538
5180 1,2,3-Trichloropropane	16.7	µg/L	EPA 524.2	10088605	**Acceptable**	0.758
5210 1,2,4-Trimethylbenzene	41.7	µg/L	EPA 524.2	10088605	**Acceptable**	-1.26
5215 1,3,5-Trimethylbenzene	38.1	µg/L	EPA 524.2	10088605	**Acceptable**	-1.33
▲ Summary for Method **EPA 524.2**	Analytes Evaluated **20**		Acceptable **20**		Acceptance Percentage **100.0%**	

PEO-007-3B

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4385 Bromobenzene	µg/L	18.7	18.5	18.5	1.96	14.8 - 22.2	
4390 Bromochloromethane	µg/L	35.6	38.2	35.6	3.22	30.6 - 45.8	
4435 n-Butylbenzene	µg/L	36.7	37.8	36.5	4.87	30.2 - 45.4	
4440 sec-Butylbenzene	µg/L	23.9	23.9	23.7	3.61	19.1 - 28.7	
4445 tert-Butylbenzene	µg/L	NaN	15.1	15.4	2.87	12.1 - 18.1	
4535 2-Chlorotoluene	µg/L	11.7	11.6	11.5	1.44	6.96 - 16.2	
4540 4-Chlorotoluene	µg/L	51.5	49.9	51.1	4.84	39.9 - 59.9	
4595 Dibromomethane	µg/L	11.8	12.4	11.8	1.15	7.44 - 17.4	
4660 1,3-Dichloropropane	µg/L	27.8	29.2	27.8	2.66	22.2 - 33.4	
4665 2,2-Dichloropropane	µg/L	24.5	27.6	25.1	4.86	13.8 - 41.4	
4670 1,1-Dichloropropene	µg/L		0			0 - 0	
4835 Hexachlorobutadiene	µg/L	14.6	15.7	14.7	2.16	12.6 - 18.8	
4900 Isopropylbenzene	µg/L	47.0	47.4	46.8	4.99	37.9 - 56.9	
4910 4-Isopropyltoluene	µg/L	22.6	24.4	22.7	4.54	13.4 - 31.8	
5090 n-Propylbenzene	µg/L	36.2	37.4	36.3	3.40	29.9 - 44.9	
5105 1,1,1,2-Tetrachloroethane	µg/L	24.0	24.0	24.3	3.04	19.2 - 28.8	
5150 1,2,3-Trichlorobenzene	µg/L	35.3	35.4	35.7	3.52	28.3 - 42.5	
5180 1,2,3-Trichloropropane	µg/L	15.1	15.8	15.4	1.77	12.5 - 19.0	
5210 1,2,4-Trimethylbenzene	µg/L	47.3	48.4	46.7	4.80	37.8 - 56.8	
5215 1,3,5-Trimethylbenzene	µg/L	43.7	45.3	43.5	4.30	36.2 - 54.4	

PEO-007-4

EDB/DBCP

Program: WSCHEM

PEO-007-4

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
4570 1,2-Dibromo-3-chloropropane (DBCP)	1.49	µg/L	EPA 504.1	10082607	**Acceptable**	-1.01
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)	1.34	µg/L	EPA 504.1	10082607	**Acceptable**	-0.146
5180 1,2,3-Trichloropropane	21.5	µg/L	EPA 504.1	10082607	**Acceptable**	-5.48

PEO-007-4

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4570 1,2-Dibromo-3-chloropropane (DBCP)	µg/L	1.78	1.78	1.70	0.286	1.07 - 2.49	
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)	µg/L	1.37	1.37	1.36	0.181	0.822 - 1.92	
5180 1,2,3-Trichloropropane	µg/L	29.5	29.5	26.4	1.62	17.7 - 41.3	

PEO-097

Diquat/Endothall/Glyphosate/Paraquat

Program: WSCHEM

PEO-097

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	z
7525 Endothall	414	µg/L	EPA 548.1	10092601	**Acceptable**	0.0234

PEO-097

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
7525 Endothall	µg/L	411	473			155 - 667	

PEO-098

Organic Disinfection By-Products

Program: WSCHEM

PEO-098

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	z
9312 Bromoacetic acid	39	µg/L	EPA 552.2	10095600	**Acceptable**	-0.957
9312 Bromoacetic acid	32	µg/L	EPA 552.2	10095600	**Acceptable**	-1.69
9315 Bromochloroacetic acid	14	µg/L	EPA 552.2	10095600	**Acceptable**	-0.368
9357 Dibromoacetic acid	37	µg/L	EPA 552.2	10095600	**Acceptable**	-0.761
9360 Dichloroacetic acid	36	µg/L	EPA 552.2	10095600	**Acceptable**	-1.18
9642 Trichloroacetic acid	42	µg/L	EPA 552.2	10095600	**Acceptable**	2.31

PEO-098

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
9312 Bromoacetic acid	µg/L	48.2	48.2	49.8	7.27	24.1 - 72.3	
9315 Bromochloroacetic acid	µg/L	14.7	14.7	14.7	1.49	7.35 - 22.1	
9357 Dibromoacetic acid	µg/L	45.3	45.3	45.5	6.89	22.7 - 68.0	
9360 Dichloroacetic acid	µg/L	44.1	44.1	42.7	1.40	22.1 - 66.2	
9642 Trichloroacetic acid	µg/L	30.4	30.4	33.4	4.81	15.2 - 45.6	

Authorized for release by _____ **Date** 7/5/2005

Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, or any other federal agency. RTC is accredited by NVLAP to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0.

Blank
Page

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report

WSCHEM **OS05-03-78**

Commenced 9-Sep-2005 | Concluded 4-Oct-2005

RT Labcode RT1061

NVLAP® **Labcode: 200393-0**

This report may contain data that are not covered by the NVLAP accreditation.

A2LA **ACCREDITED** Certificate # 2122.01

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

PEI-232
Uranium

Lot: 010141
Program: WSCHEM

PEI-232

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
3035 Uranium*	6.02	µg/L	EPA 200.8 *10014401*	5.95 4.76 - 7.14	Acceptable	0.00926

PEI-232

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
3035 Uranium*	µg/L	5.95	5.95	7.56			4.76 - 7.14	

The evaluation, certified value, and acceptance criteria are based on EPA Criteria Document NCRL-cs-0045 (December 30, 1998), NELAC Fields of Testing NPW/Drinking Water (June 1, 2005 and RCRA 2002-02), and ISO Guide 43. The assigned value is the prepared value where applicable.

Authorized for release by _____ **Date** 10/4/2005

Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, A2LA, or any other federal agency. RTC is accredited by NVLAP and A2LA to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0 and A2LA certificate 2122.01.

Blank
Page

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report
WSCHEM OS05-02-110

Commenced 2-Jun-2005 | Concluded 17-Jun-2005

RT Labcode RT1061

NVLAP® Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

PEI-232
Uranium

Lot: 002113
Program: WSCHEM

PEI-232

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
3035 Uranium*	11.7	µg/L	EPA 200.8	10014401	**Acceptable**	

PEI-232

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
3035 Uranium*	µg/L	11.0	11.0			8.80 - 13.2	

Authorized for release by _____ **Date** 6/17/2005
Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, or any other federal agency. RTC is accredited by NVLAP to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0.

Blank
Page

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report
WSCHEM OS05-02-159

Commenced 27-Jun-2005 | Concluded 4-Aug-2005

RT Labcode RT1061

NVLAP® Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

PEI-016-2
Trace Metals 2

Lot: 010036
Program: WSCHEM

PEI-016-2

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1185 Vanadium*	958	µg/L	EPA 200.7	10013408	**Acceptable**	0.484

PEI-016-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1185 Vanadium*	µg/L	940	940			846 - 1030	

Authorized for release by _____ **Date** 8/4/2005
Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, or any other federal agency. RTC is accredited by NVLAP to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0.

Blank
Page

PERFORMANCE EVALUATION

First Choice for Quality | RTC

Quarterly Study
WP06-1
WPCHEM

25-Jan-2006 through 10-Mar-2006

RT1061
RTC Labcode

MT00005
US EPA Labcode

Energy Labs
Andy Valkenburg
PO Box 30916
Billings MT 59107

Thank you for participating in study WP06-1. Additional information about this study may be found online at www.rt-corp.com. If you have any questions or comments about this study please contact me.

Sincerely,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset

Dataset 1

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau

168 Jeff May
1520 East 6th Avenue
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

118 Donald Lafara
901 S. Stewart Street
Ste. 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

364 Mike Smith
Joe Foss Building - Chemistry
523 E. Capital
Pierre SD 57501-3181
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII

217 Jim Gindelberger
MailStop 8 TMS-Q
999 18th Steet, Suite 500
Denver CO 80207-2466
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 West 25th Street
Cheyenne WY 82002
UNITED STATES

Acids

Acid Compouds - WPCHEM

Analysis
EPA 625
Not Applicable

Method Number 10107401
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Phenol [1, 4] 6625 / PEO-022 - Lot 010845	42 µg/L	0.00 to 147 4.10 to 119	-0.67	9 / 27	**ACCEPTABLE**
2,4,5-Trichlorophenol [1, 4] 6835 / PEO-022 - Lot 010845	122 µg/L	55.4 to 202 79.9 to 178	-0.28	4 / 25	**ACCEPTABLE**
2,4,6-Trichlorophenol [1, 4] 68400 / PEO-022 - Lot 010845	128 µg/L	55.0 to 213 81.4 to 187	-0.23	2 / 25	**ACCEPTABLE**

Analysis
EPA 8270C
Not Applicable

Method Number 10185805
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Benzoic acid [4] 5610 / PEO-022 - Lot 010845	<10 µg/L	0.00 to 164			**ACCEPTABLE**
4-Chloro-3-methylphenol [4] 5700 / PEO-022 - Lot 010845	148 µg/L	73.3 to 238 101 to 210	-0.27	11 / 27	**ACCEPTABLE**
2-Chlorophenol [1, 4] 5800 / PEO-022 - Lot 010845	127 µg/L	52.6 to 235 83.0 to 205	-0.56	16 / 29	**ACCEPTABLE**
2,4-Dichlorophenol [1, 4] 6000 / PEO-022 - Lot 010845	50 µg/L	21.6 to 88.9 32.8 to 77.7	-0.47	14 / 27	**ACCEPTABLE**
2,4-Dimethy phenol [1, 4] 6130 / PEO-022 - Lot 010845	60 µg/L	15.6 to 104 30.3 to 89.3	0.01	1 / 29	**ACCEPTABLE**
2,4-Dinitrophenol [1, 4] 6175 / PEO-022 - Lot 010845	93 µg/L	0.00 to 205 33.9 to 171	-0.27	3 / 26	**ACCEPTABLE**
2-Methyl-4,6-dinitrophenol [1, 4] 6360 / PEO-022 - Lot 010845	70 µg/L	28.1 to 128 44.8 to 111	-0.49	12 / 28	**ACCEPTABLE**
2-Methylphenol (o-Cresol) [1, 4] 6400 / PEO-022 - Lot 010845	50 µg/L	14.2 to 93.5 27.4 to 80.3	-0.29	4 / 28	**ACCEPTABLE**
3+4-Methylphenol (m+p-Cresol) [1, 4] 6412 / PEO-022 - Lot 010845	110 µg/L	8.21 to 212 42.1 to 178	0.00	1 / 24	**ACCEPTABLE**
2-Nitrophenol [1, 4] 6490 / PEO-022 - Lot 010845	61 µg/L	23.3 to 115 38.6 to 99.6	-0.53	17 / 31	**ACCEPTABLE**
4-Nitrophenol [1, 4] 6500 / PEO-022 - Lot 010845	31 µg/L	0.00 to 140 0.971 to 112	-0.92	17 / 26	**ACCEPTABLE**
Pentachlorophenol [1, 4] 6605 / PEO-022 - Lot 010845	120 µg/L	37.3 to 191 62.9 to 165	0.23	4 / 25	**ACCEPTABLE**

Group Analysis Summary

Acceptable 12 / 12
Score 100.0% - **(Acceptable)**

Base/Neutrals

Base/Neutrals

Analysis
EPA 625
Not Applicable

Method Number 10107401
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,2-Dichlorobenzene [1, 4] 4610 / PEO-121-2A - Lot 010884	33 µg/L	6.02 to 72.4 17.1 to 61.4	-0.56	17 / 29	**ACCEPTABLE**
1,3-Dichlorobenzene [1, 4] 4615 / PEO-121-2A - Lot 010884	67 µg/L	15.7 to 151 38.2 to 128	-0.72	20 / 29	**ACCEPTABLE**

Base/Neutrals (continued)

Base/Neutrals

(continued)

Analysis
EPA 625
Not Applicable

Method Number 10107401
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,4-Dichlorobenzene [1, 4] 4620 / PEO-121-2A - Lot 010884	30 µg/L	4.02 to 68.3 14.7 to 57.6	-0.57	17 / 29	**ACCEPTABLE**
Hexachlorobutadiene [1, 4] 4835 / PEO-121-2A - Lot 010884	96 µg/L	20.8 to 193 49.5 to 164	-0.38	11 / 27	**ACCEPTABLE**
Hexachloroethane [1, 4] 4840 / PEO-121-2A - Lot 010884	61 µg/L	13.7 to 152 36.8 to 129	-0.95	18 / 27	**ACCEPTABLE**
Naphthalene [1, 4] 5005 / PEO-121-1 - Lot 010879	29 µg/L	12.3 to 48.3 18.3 to 42.3	-0.21	7 / 33	**ACCEPTABLE**
Nitrobenzene [1, 4] 5015 / PEO-121-2A - Lot 010884	37 µg/L	16.1 to 61.9 23.7 to 54.3	-0.26	9 / 29	**ACCEPTABLE**
Pyridine [4] 5095 / PEO-121-2B - Lot 010819	<20 µg/L	1.12 to 61.0			**ACCEPTABLE**
1,2,4-Trichlorobenzene [1, 4] 5155 / PEO-121-2A - Lot 010884	56 µg/L	20.3 to 112 35.7 to 97.1	-0.68	15 / 29	**ACCEPTABLE**
Acenaphthene [1, 4] 5500 / PEO-121-1 - Lot 010879	178 µg/L	75.8 to 230 102 to 205	0.97	14 / 32	**ACCEPTABLE**
Acenaphthylene [1, 4] 5505 / PEO-121-1 - Lot 010879	147 µg/L	78.2 to 233 104 to 207	-0.34	16 / 31	**ACCEPTABLE**
Aniline [4] 5545 / PEO-121-2B - Lot 010819	132 µg/L	0.00 to 272	0.43	12 / 24	**ACCEPTABLE**
Anthracene [1, 4] 5555 / PEO-121-1 - Lot 010879	35 µg/L	16.7 to 49.6 22.2 to 44.1	0.34	8 / 33	**ACCEPTABLE**
Benzo(a)anthracene [1, 4] 5575 / PEO-121-1 - Lot 010879	76 µg/L	40.0 to 112 51.9 to 99.6	0.02	3 / 33	**ACCEPTABLE**
Benzo(a)pyrene [1, 4] 5580 / PEO-121-1 - Lot 010879	57 µg/L	18.7 to 80.0 28.9 to 69.8	0.74	14 / 33	**ACCEPTABLE**
Benzo(b)fluoranthene [1, 4] 5585 / PEO-121-1 - Lot 010879	27 µg/L	10.9 to 45.1 16.6 to 39.4	-0.17	6 / 31	**ACCEPTABLE**
Benzo(g,h,i)perylene [1, 4] 5590 / PEO-121-1 - Lot 010879	23 µg/L	6.11 to 40.3 11.8 to 34.6	-0.04	1 / 32	**ACCEPTABLE**
Benzidine [1, 4] 5595 / PEO-121-2A - Lot 010884	137 µg/L	0.00 to 783 0.00 to 624	-1.08	13 / 19	**ACCEPTABLE**
Benzo(k)fluoranthene [1, 4] 5600 / PEO-121-1 - Lot 010879	49 µg/L	12.3 to 77.0 23.1 to 66.3	0.40	9 / 33	**ACCEPTABLE**
Benzyl alcohol [4] 5630 / PEO-121-2B - Lot 010819	43 µg/L	1.94 to 102	-0.54	16 / 25	**ACCEPTABLE**
4-Bromophenyl phenyl ether [1, 4] 5660 / PEO-121-2A - Lot 010884	161 µg/L	60.9 to 255 93.2 to 222	0.10	3 / 27	**ACCEPTABLE**
Butyl benzyl phthalate [1, 4] 5670 / PEO-121-2A - Lot 010884	138 µg/L	28.7 to 201 57.4 to 172	0.81	7 / 27	**ACCEPTABLE**
Carbazole [4] 5680 / PEO-121-2B - Lot 010819	112 µg/L	0.00 to 244	0.08	3 / 23	**ACCEPTABLE**
4-Chloroaniline [4] 5745 / PEO-121-2B - Lot 010819	95 µg/L	70.0 to 210	-1.69	11 / 27	**ACCEPTABLE**
bis(2-Chloroethoxy)methane [1, 4] 5760 / PEO-121-2A - Lot 010884	102 µg/L	51.0 to 153 68.0 to 136	0.01	1 / 27	**ACCEPTABLE**
bis(2-Chloroethyl) ether [1, 4] 5765 / PEO-121-2A - Lot 010884	77 µg/L	40.0 to 182 63.8 to 159	-1.44	23 / 27	**ACCEPTABLE**
bis(2-Chloroisopropyl) ether [1, 4] 5780 / PEO-121-2A - Lot 010884	55 µg/L	19.7 to 94.2 32.1 to 81.8	-0.16	2 / 27	**ACCEPTABLE**
2-Chloronaphthalene [1, 4] 5795 / PEO-121-2A - Lot 010884	270 µg/L	56.3 to 219 83.4 to 192	4.90	27 / 25	**NOT ACCEPTABLE**
4-Chlorophenyl phenylether [1, 4] 5825 / PEO-121-2A - Lot 010884	30 µg/L	12.3 to 41.4 17.1 to 36.5	0.65	13 / 27	**ACCEPTABLE**
Chrysene [1, 4] 5855 / PEO-121-1 - Lot 010879	14 µg/L	6.96 to 22.5 9.55 to 19.9	-0.28	8 / 31	**ACCEPTABLE**
Dibenz(a,h) anthracene [1, 4] 5895 / PEO-121-1 - Lot 010879	27 µg/L	9.47 to 51.8 16.5 to 44.8	-0.52	15 / 31	**ACCEPTABLE**

Base/Neutrals (continued)

Base/Neutrals

(continued)

Analysis
EPA 625
Not Applicable

Method Number 10107401
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Dibenzofuran [1, 4] 5905 / PEO-121-2A - Lot 010884	67 µg/L	35.0 to 124 49.9 to 109	-0.85	13 / 22	**ACCEPTABLE**
Di-n-butyl phthalate [1, 4] 5925 / PEO-121-2A - Lot 010884	125 µg/L	45.5 to 181 68.1 to 158	0.52	6 / 25	**ACCEPTABLE**
3,3'-Dichlorobenzidine [1, 4] 5945 / PEO-121-2A - Lot 010884	147 µg/L	36.9 to 229 68.9 to 197	0.44	5 / 23	**ACCEPTABLE**
Diethyl phthalate [1, 4] 6070 / PEO-121-2A - Lot 010884	120 µg/L	21.8 to 162 45.1 to 138	1.21	13 / 23	**ACCEPTABLE**
Dimethyl phthalate [1, 4] 6135 / PEO-121-2A - Lot 010884	109 µg/L	0.00 to 157 16.7 to 129	1.29	14 / 22	**ACCEPTABLE**
2,4-Dinitrotoluene (2,4-DNT) [1, 4] 6185 / PEO-121-2A - Lot 010884	147 µg/L	65.9 to 210 90.0 to 186	0.37	10 / 25	**ACCEPTABLE**
2,6-Dinitrotoluene (2,6-DNT) [1, 4] 6190 / PEO-121-2A - Lot 010884	133 µg/L	68.1 to 202 90.5 to 180	-0.10	1 / 25	**ACCEPTABLE**
Di-n-octyl phthalate [1, 4] 6200 / PEO-121-2A - Lot 010884	162 µg/L	33.8 to 272 73.5 to 232	0.23	6 / 21	**ACCEPTABLE**
bis(2-Ethylhexyl) phthalate (DEHP) [1, 4] 6255 / PEO-121-2A - Lot 010884	154 µg/L	50.2 to 232 80.4 to 201	0.43	13 / 21	**ACCEPTABLE**
Fluoranthene [1, 4] 6265 / PEO-121-1 - Lot 010879	68 µg/L	34.0 to 92.8 43.8 to 83.0	0.47	10 / 33	**ACCEPTABLE**
Fluorene [1, 4] 6270 / PEO-121-1 - Lot 010879	73 µg/L	36.1 to 102 47.1 to 91.2	0.35	8 / 33	**ACCEPTABLE**
Hexachlorobenzene [1, 4] 6275 / PEO-121-2A - Lot 010884	41 µg/L	25.4 to 74.8 33.7 to 66.6	-1.11	15 / 23	**ACCEPTABLE**
Hexachlorocyclopentadiene [1, 4] 6285 / PEO-121-2A - Lot 010884	80 µg/L	0.00 to 177 15.7 to 144	0.00	1 / 21	**ACCEPTABLE**
Indeno(1,2,3-cd) pyrene [1, 4] 6315 / PEO-121-1 - Lot 010879	38 µg/L	9.26 to 60.5 17.8 to 51.9	0.37	11 / 31	**ACCEPTABLE**
Isophorone [1, 4] 6320 / PEO-121-2A - Lot 010884	81 µg/L	39.0 to 128 53.8 to 113	-0.17	4 / 23	**ACCEPTABLE**
1-Methylnaphthalene [4] 6380 / PEO-121-2B - Lot 010819	40 µg/L	28.3 to 84.9	-1.58	13 / 17	**ACCEPTABLE**
2-Methylnaphthalene [1, 4] 6385 / PEO-121-2A - Lot 010884	58 µg/L	15.1 to 96.0 28.6 to 82.6	0.18	6 / 22	**ACCEPTABLE**
2-Nitroaniline [4] 6460 / PEO-121-2B - Lot 010819	51 µg/L	29.0 to 86.9	-0.73	7 / 24	**ACCEPTABLE**
3-Nitroaniline [4] 6465 / PEO-121-2B - Lot 010819	<10 µg/L	0 to 0			**ACCEPTABLE**
4-Nitroaniline [4] 6470 / PEO-121-2B - Lot 010819	135 µg/L	0.00 to 248	0.38	8 / 24	**ACCEPTABLE**
n-Nitrosodimethylamine [1, 4] 6530 / PEO-121-2A - Lot 010884	30 µg/L	0.00 to 107 9.37 to 87.6	-0.95	14 / 18	**ACCEPTABLE**
n-Nitrosodiphenylamine [1, 4] 6535 / PEO-121-2A - Lot 010884	59 µg/L	14.7 to 88.7 27.0 to 76.4	0.59	9 / 20	**ACCEPTABLE**
n-Nitrosodi-n-propylamine [1, 4] 6545 / PEO-121-2A - Lot 010884	67 µg/L	24.5 to 111 38.8 to 96.3	-0.04	3 / 23	**ACCEPTABLE**
Phenanthrene [1, 4] 6615 / PEO-121-1 - Lot 010879	77 µg/L	40.5 to 105 51.4 to 94.6	0.37	4 / 29	**ACCEPTABLE**
Pyrene [1, 4] 6665 / PEO-121-1 - Lot 010879	107 µg/L	41.6 to 169 62.8 to 148	0.09	3 / 29	**ACCEPTABLE**

Group Analysis Summary
Acceptable 58 / 56
Score 103.6% - **(Acceptable)**

Demands

Demands (continued)

Analysis
SM 18th/20th ED 5210 B
Not Applicable
Method Number 20027401
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Biochemical oxygen demand (BOD) [1, 3, 4] 1530 / PEI-026 - Lot 010965	88.6 mg/L	42.1 to 125 55.9 to 111	0.37	26 / 59	**ACCEPTABLE**
Carbonaceous BOD (CBOD) [1, 3, 4] 1555 / PEI-026 - Lot 010965	85.5 mg/L	32.0 to 111 45.1 to 97.6	1.08	27 / 38	**ACCEPTABLE**

Analysis
EPA 410.4
Not Applicable
Method Number 10077006
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chemical oxygen demand (COD) [1, 3, 4] 1565 / PEI-026 - Lot 010965	134 mg/L	102 to 154 110 to 146	0.68	23 / 47	**ACCEPTABLE**

Herbicides

Herbicides

Analysis
EPA 615
Not Applicable
Method Number 10105609
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Pentachlorophenol [4] 6605 / PEO-094 - Lot 010862	3.0 µg/L	1.34 to 4.02	0.48	2 / 10	**ACCEPTABLE**
Acifluorfen [4] 8505 / PEO-094 - Lot 010862	7.8 µg/L	0.00 to 26.2 0.00 to 20.0	0.03	1 / 6	**ACCEPTABLE**
Bentazon [4] 8530 / PEO-094 - Lot 010862	2.2 µg/L	0.00 to 55.1	-1.33	7 / 6	**ACCEPTABLE**
2,4-D [1, 4] 8545 / PEO-094 - Lot 010862	4.8 µg/L	0.00 to 12.2 1.55 to 10.1	-0.47	8 / 17	**ACCEPTABLE**
2,4-DB [4] 8560 / PEO-094 - Lot 010862	5.4 µg/L	4.26 to 12.8	-1.08	14 / 16	**ACCEPTABLE**
Dicamba [1, 4] 8595 / PEO-094 - Lot 010862	5.2 µg/L	0.510 to 9.17 1.95 to 7.73	0.25	4 / 17	**ACCEPTABLE**
3,5-Dichlorobenzoic acid [4] 8600 / PEO-094 - Lot 010862	8.0 µg/L	4.30 to 12.9	-0.16	1 / 5	**ACCEPTABLE**
Dichloroprop [4] 8605 / PEO-094 - Lot 010862	4.4 µg/L	2.69 to 8.07	-0.71	12 / 16	**ACCEPTABLE**
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) [4] 8620 / PEO-094 - Lot 010862	2.1 µg/L	1.38 to 4.13	-0.62	8 / 17	**ACCEPTABLE**
Picloram [4] 8645 / PEO-094 - Lot 010862	4.2 µg/L	2.57 to 7.70	-0.49	5 / 9	**ACCEPTABLE**
Silvex (2,4,5-TP) [1, 4] 8650 / PEO-094 - Lot 010862	2.3 µg/L	0.148 to 3.85 0.765 to 3.23	0.49	3 / 17	**ACCEPTABLE**
2,4,5-T [1, 4] 8655 / PEO-094 - Lot 010862	4.6 µg/L	0.378 to 7.69 1.60 to 6.47	0.46	5 / 17	**ACCEPTABLE**

Group Analysis Summary
Acceptable 12 / 12
Score 100.0% - **(Acceptable)**

Microbiology

Analysis
SM 18/19/20thED 9221 E
Not Applicable
Method Number 20036208
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fecal coliforms [1, 4] 2530 / MIC-003 - Lot 010969	240 CFU/100m	0.180 to 8920			**ACCEPTABLE**

Analysis
SM 18th ED 9221 C
Not Applicable
Method Number 20036606
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation

Microbiology (continued)

(continued)

Analysis
SM 18th ED 9221 C
Not Applicable
Method Number 20036606
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Total Coliform, MPN [1, 4] 2501 / MIC-003 - Lot 010969	140 MPN/100	125 to 1640			**ACCEPTABLE**

Analysis
SM 18/19/20thED 9222 B
Not Applicable
Method Number 20036800
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Total coliforms [1, 4] 2500 / MIC-003 - Lot 010969	174 CFU/100m	99.9 to 1450			**ACCEPTABLE**

Analysis
1603
Not Applicable
Method Number 99999965
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Escherichia coli [4] 2525 / MIC-003 - Lot 010969	120 CFU/100m	1.7 to 910			**ACCEPTABLE**

Minerals

Analysis
EPA 160.3
Not Applicable
Method Number 10009800
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue, total (TS) [1, 4] 1950 / PEI-079 - Lot 011032	470 mg/L	436 to 525 451 to 510	-0.73	12 / 35	**ACCEPTABLE**

Analysis
EPA 376.2
Not Applicable
Method Number 10074405
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Sulfide [1, 4] 2005 / PEI-257 - Lot 010979	1.54 mg/L	0.218 to 3.33 0.737 to 2.81	-0.45	10 / 17	**ACCEPTABLE**

Analysis
SM 18/19/20thED 2320 B
Not Applicable
Method Number 20003003
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Alkalinity as CaCO3 [3] 1505 / PEI-304 - Lot 010966/0	91.5 mg/L	82.8 to 102 86.1 to 99.2	-0.36	1 / 1	**ACCEPTABLE**

Analysis
SM 18/19/20thED 2340 B
Not Applicable
Method Number 20003401
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Hardness, total as CaCO3 [1, 3, 4] 1755 / PEI-027-12 - Lot 010966/0	140 mg/L	157 to 206	-5.14	42 / 42	**NOT ACCEPTABLE**

Analysis
SM 18/19/20thED 2510 B
Not Applicable
Method Number 20003809
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Conductivity [1, 3, 4] 1610 / PEI-027-12 - Lot 010966/0	799 µmhos/cm	787 to 945 813 to 919	-2.55	44 / 46	**CHECK**

Analysis
SM 18/19/20thED 2540 C
Not Applicable
Method Number 20004404
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-filterable (TDS) [1, 3, 4] 1955 / PEI-079 - Lot 011032	394 mg/L	311 to 505 343 to 473	-0.44	19 / 40	**ACCEPTABLE**

Analysis
EPA 300.0
Ion Chromatography Electroconductivity
Method Number 10053006
Technology Code IC-COND

	Result Units	Accept / Warn	Z	Rank	Evaluation

Minerals (continued)

(continued)

Analysis
EPA 300.0
Ion Chromatography Electroconductivity
Method Number 10053006
Technology Code IC-COND

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chloride [1, 3, 4] 1575 / PEI-027-12 - Lot 010966/0	165 mg/L	148 to 194 155 to 186	-0.73	32 / 50	**ACCEPTABLE**
Fluoride [1, 3, 4] 1730 / PEI-027-12 - Lot 010966/0	1.10 mg/L	0.936 to 1.48 1.03 to 1.39	-1.21	31 / 42	**ACCEPTABLE**
Sulfate [1, 3, 4] 2000 / PEI-027-12 - Lot 010966/0	44.7 mg/L	38.9 to 55.2 41.6 to 52.5	-0.87	26 / 44	**ACCEPTABLE**

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry
Method Number 10013408
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Rank	Evaluation
Calcium, Ca [1, 3, 4] 1035 / PEI-027-12 - Lot 010966/0	16.0 mg/L	26.2 to 33.8 27.5 to 32.5	-11.20	50 / 49	**NOT ACCEPTABLE**
Magnesium, Mg [1, 3, 4] 1085 / PEI-027-12 - Lot 010966/0	24.4 mg/L	22.1 to 29.6 23.4 to 28.4	-1.17	39 / 49	**ACCEPTABLE**
Potassium, K [1, 3, 4] 1125 / PEI-027-12 - Lot 010966/0	33.1 mg/L	26.6 to 38.2 28.5 to 36.3	0.37	15 / 44	**ACCEPTABLE**
Sodium, Na [1, 3, 4] 1155 / PEI-027-12 - Lot 010966/0	89.5 mg/L	75.2 to 102 79.6 to 97.1	0.26	6 / 41	**ACCEPTABLE**

Misc. Analytes

Analysis
EPA 330.5
Not Applicable
Method Number 10059402
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Total residual chlorine [1, 3, 4] 1940 / PEI-033 - Lot 011007	0.50 mg/L	0.366 to 0.637 0.411 to 0.592	-0.04	1 / 52	**ACCEPTABLE**

Analysis
EPA 150.1
Not Applicable
Method Number 10008205
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
pH [1, 3, 4] 1900 / PEI-027-3 - Lot 010658	8.32 Units	7.56 to 9.24 7.84 to 8.96	-0.29	37 / 68	**ACCEPTABLE**

Analysis
EPA 160.2
Not Applicable
Method Number 10009402
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residue-nonfilterable (TSS) [1, 3, 4] 1960 / PEI-079 - Lot 011032	78.0 mg/L	42.3 to 103	0.54	25 / 48	**ACCEPTABLE**

Analysis
EPA 335.1
Not Applicable
Method Number 10059800
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Amenable cyanide [4] 1510 / PEI-251 - Lot 011002	0.323 mg/L	0.166 to 0.484 0.219 to 0.431	-0.04	1 / 4	**ACCEPTABLE**

Analysis
EPA 335.4
Not Applicable
Method Number 10061208
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Total cyanide [1, 3, 4] 1645 / PEI-031 - Lot 011006	0.65 mg/L	0.372 to 0.850 0.452 to 0.770	0.49	18 / 38	**ACCEPTABLE**

Analysis
EPA 420.2
Not Applicable
Method Number 10079604
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Total phenolics [1, 3, 4] 1905 / PEI-032 - Lot 010670	1.01 mg/L	0.840 to 2.20 1.07 to 1.98	-2.25	30 / 30	**CHECK**

Nutrients

Analysis
EPA 350.1
Not Applicable
Method Number 10063204
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Ammonia as N [1, 3, 4] 1515 / PEI-028-1 - Lot 010967	8.39 mg/L	6.09 to 10.5 6.83 to 9.79	0.11	12 / 52	**ACCEPTABLE**

Analysis
EPA 351.2
Not Applicable
Method Number 10065006
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Kjeldahl nitrogen, total (TKN) [1, 3, 4] 1795 / PEI-028-2 - Lot 011004	34.6 mg/L	18.4 to 35.8 21.3 to 32.9	2.58	35 / 32	**CHECK**

Analysis
EPA 365.1
Not Applicable
Method Number 10069600
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Phosphorus, total [1, 3, 4] 1910 / PEI-028-2 - Lot 011004	7.85 mg/L	6.10 to 8.74 6.54 to 8.30	0.97	30 / 52	**ACCEPTABLE**

Analysis
EPA 300.0
Ion Chromatography Electroconductivity
Method Number 10053006
Technology Code IC-COND

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrate as N [1, 3, 4] 1810 / PEI-028-1 - Lot 010967	18.1 mg/L	14.7 to 22.8 16.1 to 21.4	-0.49	21 / 47	**ACCEPTABLE**
Nitrate+nitrite as N [1, 4] 1820 / PEI-028-1 - Lot 010967	18.1 mg/L	15.4 to 22.0 16.5 to 20.9	-0.53	11 / 29	**ACCEPTABLE**
Nitrite as N [1, 4] 1840 / PEI-028-3 - Lot 011005	2.15 mg/L	1.89 to 2.60 2.01 to 2.49	-0.84	28 / 48	**ACCEPTABLE**
Orthophosphate as P [1, 3, 4] 1870 / PEI-028-1 - Lot 010967	3.39 mg/L	2.54 to 3.71 2.74 to 3.51	1.37	35 / 42	**ACCEPTABLE**

PCBs in Oil

Analysis
EPA 8082
Not Applicable
Method Number 10179007
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / PEO-072-1 - Lot 010867	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / PEO-072-2 - Lot 010868	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1221 (PCB-1221) [4] 8885 / PEO-072-1 - Lot 010867	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1221 (PCB-1221) [4] 8885 / PEO-072-2 - Lot 010868	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1232 (PCB-1232) [4] 8890 / PEO-072-1 - Lot 010867	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1232 (PCB-1232) [4] 8890 / PEO-072-2 - Lot 010868	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / PEO-072-1 - Lot 010867	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / PEO-072-2 - Lot 010868	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1248 (PCB-1248) [4] 8900 / PEO-072-1 - Lot 010867	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**
Aroclor-1248 (PCB-1248) [4] 8900 / PEO-072-2 - Lot 010868	<2.0 mg/Kg	0.00 to 0.00			**ACCEPTABLE**
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / PEO-072-1 - Lot 010867	39 mg/Kg	3.71 to 72.9	0.06	3 / 21	**ACCEPTABLE**
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / PEO-072-2 - Lot 010868	<2.0 mg/Kg	0 to 0			**ACCEPTABLE**

PCBs in Oil (continued)

(continued)

Analysis
EPA 8082
Not Applicable

Method Number 10179007
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / PEO-072-1 - Lot 010867	<2.0 mg/Kg	0 to 0			ACCEPTABLE
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / PEO-072-2 - Lot 010868	22 mg/Kg	0.00 to 37.7	0.57	12 / 21	ACCEPTABLE

PCBs in Water

Analysis
EPA 608
Not Applicable

Method Number 10103603
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / PEO-020-1 - Lot 010832	<0.50 µg/L	0 to 0 0 to 0			ACCEPTABLE
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1221 (PCB-1221) [1, 4] 8885 / PEO-020-1 - Lot 010832	11 µg/L	2.06 to 16.4 4.44 to 14.0	0.75	14 / 25	ACCEPTABLE
Aroclor-1221 (PCB-1221) [1, 4] 8885 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1232 (PCB-1232) [1, 3, 4] 8890 / PEO-020-1 - Lot 010832	<0.50 µg/L	0 to 0 0 to 0			ACCEPTABLE
Aroclor-1232 (PCB-1232) [1, 3, 4] 8890 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / PEO-020-1 - Lot 010832	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / PEO-020-2 - Lot 010833	5.4 µg/L	2.09 to 9.76 3.36 to 8.48	-0.41	1 / 18	ACCEPTABLE
Aroclor-1248 (PCB-1248) [1, 3, 4] 8900 / PEO-020-1 - Lot 010832	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1248 (PCB-1248) [1, 3, 4] 8900 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / PEO-020-1 - Lot 010832	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / PEO-020-1 - Lot 010832	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE

Pesticides

Pesticides

Analysis
EPA 608
Not Applicable

Method Number 10103603
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aldrin [1, 3, 4] 7025 / PEO-122-1 - Lot 010837	1.0 µg/L	0.265 to 1.21 0.422 to 1.05	1.69	7 / 23	ACCEPTABLE
delta-BHC [1, 4] 7105 / PEO-122-2 - Lot 010875	2.3 µg/L	0.898 to 3.93 1.40 to 3.43	-0.23	4 / 23	ACCEPTABLE
alpha-BHC (alpha-Hexachlorocyclohexane) [1, 4] 7110 / PEO-122-2 - Lot 010875	2.3 µg/L	1.04 to 4.14 1.55 to 3.62	-0.56	15 / 23	ACCEPTABLE
beta-BHC (beta-Hexachlorocyclohexane) [1, 4] 7115 / PEO-122-2 - Lot 010875	3.2 µg/L	1.48 to 5.12 2.09 to 4.52	-0.17	2 / 23	ACCEPTABLE
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane) [1, 4] 7120 / PEO-122-2 - Lot 010875	5.6 µg/L	2.72 to 9.22 3.81 to 8.14	-0.34	2 / 23	ACCEPTABLE
alpha-Chlordane [1, 4] 7240 / PEO-122-2 - Lot 010875	1.3 µg/L	0.711 to 2.33 0.980 to 2.06	-0.81	11 / 16	ACCEPTABLE

Pesticides (continued)

Pesticides

(continued)

Analysis
EPA 608
Not Applicable

Method Number 10103603
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
gamma-Chlordane [1, 4] 7245 / PEO-122-2 - Lot 010875	1.9 µg/L	1.04 to 3.40 1.43 to 3.00	-0.81	12 / 17	**ACCEPTABLE**
Chlordane (total) [1, 3, 4] 7250 / PEO-024-2 - Lot 010801	15 µg/L	6.79 to 26.1 10.0 to 22.9	-0.45	6 / 22	**ACCEPTABLE**
4,4'-DDD [1, 3, 4] 7355 / PEO-122-[illegible] - Lot 010837	6.1 µg/L	2.46 to 9.51 3.63 to 8.33	0.10	2 / 23	**ACCEPTABLE**
4,4'-DDE [1, 3, 4] 7360 / PEO-122-[illegible] - Lot 010837	4.5 µg/L	2.33 to 6.88 3.09 to 6.12	-0.14	2 / 23	**ACCEPTABLE**
4,4'-DDT [1, 3, 4] 7365 / PEO-122-1 - Lot 010837	1.3 µg/L	0.605 to 2.42 0.908 to 2.12	-0.71	18 / 24	**ACCEPTABLE**
Dieldrin [1, 3, 4] 7470 / PEO-122-1 - Lot 010837	7.3 µg/L	4.40 to 12.2 5.70 to 10.9	-0.77	16 / 23	**ACCEPTABLE**
Endosulfan I [1, 4] 7510 / PEO-122-2 - Lot 010875	14 µg/L	4.78 to 22.6 7.75 to 19.6	0.10	3 / 23	**ACCEPTABLE**
Endosulfan II [1, 4] 7515 / PEO-122-2 - Lot 010875	6.3 µg/L	2.28 to 9.33 3.46 to 8.16	0.42	7 / 23	**ACCEPTABLE**
Endosulfan sulfate [1, 4] 7520 / PEO-122-2 - Lot 010875	10 µg/L	4.62 to 17.8 6.82 to 15.6	-0.55	9 / 23	**ACCEPTABLE**
Endrin aldehyde [1, 4] 7530 / PEO-122-2 - Lot 010875	7.9 µg/L	2.55 to 13.4 4.36 to 11.6	-0.04	1 / 23	**ACCEPTABLE**
Endrin ketone [1, 4, 5] 7535 / PEO-122-2 - Lot 010875	7.4 µg/L	4.68 to 12.3	-0.48	11 / 21	**ACCEPTABLE**
Endrin [1, 4] 7540 / PEO-122-2 - Lot 010875	2.5 µg/L	1.25 to 4.88 1.86 to 4.28	-0.94	17 / 23	**ACCEPTABLE**
Heptachlor [1, 3, 4] 7685 / PEO-122-[illegible] - Lot 010837	4.0 µg/L	1.74 to 7.37 2.68 to 6.43	-0.59	10 / 23	**ACCEPTABLE**
Heptachlor epoxide [1, 3, 4] 7690 / PEO-122-[illegible] - Lot 010837	3.6 µg/L	1.60 to 4.67 2.11 to 4.16	0.91	8 / 23	**ACCEPTABLE**
Methoxychlor [1, 4] 7810 / PEO-122-2 - Lot 010875	3.7 µg/L	1.16 to 7.60 2.24 to 6.53	-0.64	17 / 23	**ACCEPTABLE**
Toxaphene (Chlorinated camphene) [1, 4] 8250 / PEO-093 - Lot 010814	51 µg/L	0.00 to 146 17.3 to 120	-0.69	14 / 22	**ACCEPTABLE**

Group Analysis Summary
Acceptable 36 / 22
Score 163.6% - **(Acceptable)**

Petroleum Hydrocarbons

Analysis
EPA 8015B
Not Applicable

Method Number 10173601
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Diesel range organics (DRO) [1, 4, 5] 9369 / PEO-011 - Lot 011018	2100 µg/L	623 to 3410 1090 to 2950	0.18	3 / 13	**ACCEPTABLE**

Analysis
MA-VPH
Gas Chromatography - Photoionization Detection

Method Number 90000012
Technology Code GC-PID

	Result Units	Accept / Warn	Z	Rank	Evaluation
Benzene [4] 4375 / PEO-010 - Lot 011017	42 µg/L	8.88 to 75.0	0.01	1 / 15	**ACCEPTABLE**
C5-C8 Aliphatic Hydrocarbons [4] 4764 / PEO-010MA - Lot 011017	1290 µg/L	781 to 1550 909 to 1420	0.98	2 / 2	**ACCEPTABLE**
Ethylbenzene [4] 4765 / PEO-010 - Lot 011017	27 µg/L	3.40 to 45.8	0.34	6 / 15	**ACCEPTABLE**
Toluene [4] 5140 / PEO-010 - Lot 011017	131 µg/L	21.9 to 241	-0.01	1 / 15	**ACCEPTABLE**
C9-C12 Aliphatic Hydrocarbons [4] 5239 / PEO-010MA - Lot 011017	188 µg/L	136 to 268 158 to 246	-0.65	1 / 2	**ACCEPTABLE**

Petroleum Hydrocarbons (continued)

(continued)

Analysis
MA-VPH
Gas Chromatography - Photoionization Detection
Method Number 90000012
Technology Code GC-PID

	Result Units	Accept / Warn	Z	Rank	Evaluation
m+p-Xylene [4] 5240 / PEO-010 - Lot 011017	111 µg/L	55.3 to 161	0.15	2 / 13	ACCEPTABLE
o-Xylene [4] 5250 / PEO-010 - Lot 011017	42 µg/L	12.6 to 67.2	0.23	6 / 13	ACCEPTABLE
Xylene, total [4] 5260 / PEO-010 - Lot 011017	153 µg/L	10.1 to 262	0.40	6 / 15	ACCEPTABLE
C9-C10 Aromatic Hydrocarbons [4] 9407 / PEO-010MA - Lot 011017	246 µg/L	180 to 339 207 to 313	-0.52	2 / 2	ACCEPTABLE
Total VPH [4] 9409 / PEO-010MA - Lot 011017	1620 µg/L	654 to 2720 998 to 2370	-0.19	2 / 2	ACCEPTABLE

Analysis
MA-EPH
Gas Chromatography - Flame Ionization Detection
Method Number 90000013
Technology Code GC-FID

	Result Units	Accept / Warn	Z	Rank	Evaluation
C11-C22 Aromatic Hydrocarbons [4] 5002 / PEO-011MA - Lot 011018	430 µg/L	155 to 899	-0.78	3 / 4	ACCEPTABLE
C19-C36 Aliphatic Hydrocarbons [4] 5003 / PEO-011MA - Lot 011018	<30 µg/L	0.00 to 377			ACCEPTABLE
C9-C18 Aliphatic Hydrocarbons [4] 5004 / PEO-011MA - Lot 011018	560 µg/L	141 to 1300	-0.84	3 / 4	ACCEPTABLE
Total EPH [4] 9371 / PEO-011MA - Lot 011018	1200 µg/L	0.00 to 3480	-0.93	3 / 4	ACCEPTABLE

Analysis
TX1005
Not Applicable
Method Number 90000010
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
C6 Aliphatics [4] 1 / PEO-115TX-H - Lot 001361	0.85 mg/L	0.594 to 1.19 0.693 to 1.09	-0.41	1 / 1	ACCEPTABLE
C6 Aliphatics [4] 1 / PEO-115TX-L - Lot 001360	<0.40 mg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
C6 to C8 Aliphatics 2 / PEO-115TX-H - Lot 001361	7.7 mg/L	5.00 to 10.0 5.83 to 9.16	0.24	1 / 1	ACCEPTABLE
C6 to C8 Aliphatics [4] 2 / PEO-115TX-L - Lot 001360	0.56 mg/L	0.426 to 0.852 0.497 to 0.781	-1.11	1 / 1	ACCEPTABLE
C9 to C10 Aliphatics [4] 3 / PEO-115TX-H - Lot 001361	3.4 mg/L	3.07 to 6.13 3.58 to 5.62	-2.35	1 / 1	ACCEPTABLE
C9 to C10 Aliphatics [4] 3 / PEO-115TX-L - Lot 001360	0.2 mg/L	0.174 to 0.348 0.203 to 0.319	-2.10	1 / 1	ACCEPTABLE
C11 to C12 Aliphatics [4] 4 / PEO-115TX-H - Lot 001361	6.0 mg/L	4.37 to 8.75 5.10 to 8.02	-0.77	1 / 1	ACCEPTABLE
C11 to C12 Aliphatics [4] 4 / PEO-115TX-L - Lot 001360	0.54 mg/L	0.378 to 0.756 0.441 to 0.693	-0.43	1 / 1	ACCEPTABLE
C12 to C16 Aliphatics [4] 5 / PEO-115TX-H - Lot 001361	12 mg/L	7.62 to 15.2 8.89 to 14.0	0.45	1 / 1	ACCEPTABLE
C12 to C16 Aliphatics [4] 5 / PEO-115TX-L - Lot 001360	1.1 mg/L	0.720 to 1.44 0.840 to 1.32	0.17	1 / 1	ACCEPTABLE
C17 to C21 Aliphatics [4] 6 / PEO-115TX-H - Lot 001361	7.4 mg/L	4.87 to 9.73 5.68 to 8.92	0.12	1 / 1	ACCEPTABLE
C17 to C21 Aliphatics [4] 6 / PEO-115TX-L - Lot 001360	0.43 mg/L	0.270 to 0.540 0.315 to 0.495	0.56	1 / 1	ACCEPTABLE
C22 to C35 Aliphatics [4] 7 / PEO-115TX-H - Lot 001361	0.79 mg/L	0.594 to 1.19 0.693 to 1.09	-1.02	1 / 1	ACCEPTABLE
C22 to C35 Aliphatics [4] 7 / PEO-115TX-L - Lot 001360	<0.40 mg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
C8 Aromatics (Toluene Only) [4] 8 / PEO-115TX-H - Lot 001361	2.76 mg/L	1.59 to 3.00 1.83 to 2.76	1.99	1 / 1	ACCEPTABLE
C8 Aromatics (Toluene Only) [4] 8 / PEO-115TX-L - Lot 001360	0.40 mg/L	0.245 to 0.461 0.281 to 0.425	1.31	1 / 1	ACCEPTABLE

Petroleum Hydrocarbons (continued)

(continued)

Analysis
TX1005
Not Applicable
Method Number 90000010
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
C9 to C10 Aromatics [4] 9 / PEO-115TX-H - Lot 001361	7.42 mg/L	4.44 to 8.88 5.18 to 8.14	1.03	1 / 1	ACCEPTABLE
C9 to C10 Aromatics [4] 9 / PEO-115TX-L - Lot 001360	0.656 mg/L	0.432 to 0.864 0.504 to 0.792	0.11	1 / 1	ACCEPTABLE
C11 to C12 Aromatics [4] 10 / PEO-115TX-H - Lot 001361	5.07 mg/L	3.15 to 6.30 3.67 to 5.78	0.66	1 / 1	ACCEPTABLE
C11 to C12 Aromatics [4] 10 / PEO-115TX-L - Lot 001360	0.726 mg/L	0.500 to 1.00 0.583 to 0.916	-0.28	1 / 1	ACCEPTABLE
C12 to C16 Aromatics [4] 11 / PEO-115TX-H - Lot 001361	8.09 mg/L	5.44 to 10.9 6.35 to 9.98	-0.08	1 / 1	ACCEPTABLE
C12 to C16 Aromatics [4] 11 / PEO-115TX-L - Lot 001360	1.02 mg/L	0.707 to 1.33 0.811 to 1.23	0.01	1 / 1	ACCEPTABLE
C17 to C21 Aromatics [4] 12 / PEO-115TX-H - Lot 001361	4.74 mg/L	3.07 to 6.14 3.58 to 5.63	0.26	1 / 1	ACCEPTABLE
C17 to C21 Aromatics [4] 12 / PEO-115TX-L - Lot 001360	0.27 mg/L	0.192 to 0.384 0.224 to 0.352	-0.56	1 / 1	ACCEPTABLE
C22 to C35 Aromatics [4] 13 / PEO-115TX-H - Lot 001361	0.567 mg/L	0.450 to 0.900 0.525 to 0.825	-1.44	1 / 1	ACCEPTABLE
C22 to C35 Aromatics [4] 13 / PEO-115TX-L - Lot 001360	<0.40 mg/L	0.0 to 0.0 0.0 to 0.0			ACCEPTABLE
Diesel range organics (DRO) [4] 9369 / PEO-115TX-H - Lot 001361	38 mg/L	28.8 to 57.6 33.6 to 52.8	-1.08	2 / 2	ACCEPTABLE
Diesel range organics (DRO) [4] 9369 / PEO-115TX-L - Lot 001360	2.9 mg/L	1.95 to 4.29 2.34 to 3.90	-0.56	1 / 2	ACCEPTABLE
Gasoline range organics (GRO), C6-C12 [4] 9408 / PEO-115TX-H - Lot 001361	39 mg/L	28.9 to 57.7 33.7 to 52.9	-0.89	1 / 2	ACCEPTABLE
Gasoline range organics (GRO), C6-C12 [4] 9408 / PEO-115TX-L - Lot 001360	3.8 mg/L	2.55 to 5.10 2.97 to 4.67	-0.06	1 / 2	ACCEPTABLE

Analysis
EPA 8015M
Gas Chromatography - Photoionization Detection
Method Number 99999964
Technology Code GC-PID

	Result Units	Accept / Warn	Z	Rank	Evaluation
Gasoline range organics (GRO), C6-C12 [1, 4, 5] 9408 / PEO-010 - Lot 011017	1130 µg/L	672 to 3050 1070 to 2650	-1.84	11 / 16	ACCEPTABLE

Trace Metals

Analysis
SM 18th ED 3500-Cr D
Not Applicable
Method Number 20009001
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chromium VI, Cr(VI) [1, 4] 1045 / PEI-034-3 - Lot 010971	376 µg/L	321 to 467 345 to 443	-0.73	7 / 22	ACCEPTABLE

Analysis
EPA 200.8
Mass Spectrometry - Inductively Coupled Plasma
Method Number 10014401
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aluminum, Al [1, 3, 4] 1000 / PEI-305-1 - Lot 010988	2200 µg/L	2010 to 2840 2150 to 2700	-1.63	7 / 7	ACCEPTABLE
Antimony, Sb [1, 3, 4] 1005 / PEI-305-2 - Lot 010987/0	380 µg/L	306 to 531 343 to 493	-1.02	7 / 11	ACCEPTABLE
Arsenic, As [1, 3, 4] 1010 / PEI-305-1 - Lot 010988	328 µg/L	276 to 390 295 to 371	-0.26	5 / 12	ACCEPTABLE
Barium, Ba [1, 4] 1015 / PEI-305-2 - Lot 010987/0	1170 µg/L	1030 to 1340 1080 to 1290	-0.34	1 / 7	ACCEPTABLE
Beryllium, Be [1, 3, 4] 1020 / PEI-305-1 - Lot 010988	76.6 µg/L	73.4 to 99.2 77.7 to 94.9	-2.25	8 / 7	CHECK

Trace Metals (continued)

(continued)

Analysis
EPA 200.8
Mass Spectrometry - Inductively Coupled Plasma

Method Number 10014401
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Cadmium, Cd [1, 3, 4] 1030 / PEI-305-1 - Lot 010988	453 µg/L	386 to 515 408 to 493	0.12	1 / 8	**ACCEPTABLE**
Chromium, Cr (total) [1, 3, 4] 1040 / PEI-305-1 - Lot 010988	719 µg/L	644 to 835 676 to 804	-0.65	9 / 7	**ACCEPTABLE**
Cobalt, Co [1, 3, 4] 1050 / PEI-305-1 - Lot 010988	84.2 µg/L	74.8 to 98.3 78.7 to 94.4	-0.60	4 / 7	**ACCEPTABLE**
Copper, Cu [1, 3, 4] 1055 / PEI-305-1 - Lot 010988	388 µg/L	371 to 451 384 to 438	-1.73	10 / 7	**ACCEPTABLE**
Iron, Fe [1, 3, 4] 1070 / PEI-305-1 - Lot 010988	1660 µg/L	1500 to 1900 1560 to 1840	-0.60	3 / 5	**ACCEPTABLE**
Lead, Pb [1, 3, 4] 1075 / PEI-305-1 - Lot 010988	711 µg/L	636 to 816 666 to 786	-0.51	5 / 8	**ACCEPTABLE**
Manganese, Mn [1, 3, 4] 1090 / PEI-305-1 - Lot 010988	996 µg/L	925 to 1140 962 to 1110	-1.07	5 / 7	**ACCEPTABLE**
Mercury, Hg [1, 3, 4] 1095 / PEI-305-1 - Lot 010988	13.2 µg/L	8.37 to 18.4 10.0 to 16.7	-0.11	1 / 5	**ACCEPTABLE**
Molybdenum, Mo [1, 3, 4] 1100 / PEI-305-2 - Lot 010987/0	578 µg/L	494 to 662 522 to 634	0.00	1 / 6	**ACCEPTABLE**
Nickel, Ni [1, 3, 4] 1105 / PEI-305-1 - Lot 010988	290 µg/L	265 to 337 277 to 325	-0.92	6 / 7	**ACCEPTABLE**
Selenium, Se [1, 3, 4] 1140 / PEI-305-1 - Lot 010988	410 µg/L	305 to 449 329 to 425	1.38	5 / 11	**ACCEPTABLE**
Silver, Ag [1, 3, 4] 1150 / PEI-305-2 - Lot 010987/0	501 µg/L	425 to 567 449 to 543	0.21	4 / 7	**ACCEPTABLE**
Strontium, Sr [1, 3, 4] 1160 / PEI-305-2 - Lot 010987/0	192 µg/L	168 to 220 177 to 212	-0.26	2 / 7	**ACCEPTABLE**
Thallium, Tl [1, 3, 4] 1165 / PEI-305-2 - Lot 010987/0	304 µg/L	239 to 383 263 to 359	-0.30	5 / 7	**ACCEPTABLE**
Tin, Sn [1, 3, 4] 1175 / PEI-305-2 - Lot 010987/0	1350 µg/L	1110 to 1690 1200 to 1600	-0.51	3 / 5	**ACCEPTABLE**
Titanium, Ti [1, 3, 4] 1180 / PEI-305-2 - Lot 010987/0	242 µg/L	215 to 281 226 to 270	-0.56	8 / 7	**ACCEPTABLE**
Vanadium, V [1, 3, 4] 1185 / PEI-305-1 - Lot 010988	818 µg/L	726 to 927 760 to 893	-0.26	3 / 7	**ACCEPTABLE**
Zinc, Zn [1, 3, 4] 1190 / PEI-305-1 - Lot 010988	1010 µg/L	851 to 1140 899 to 1090	0.35	4 / 7	**ACCEPTABLE**

Volatiles

Volatiles

Analysis
EPA 624
Gas Chromatography - Mass Spectrometry

Method Number 10107207
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Acetone [4] 4315 / PEO-120-33 - Lot 010860	78.8 µg/L	0.00 to 146	0.24	8 / 30	**ACCEPTABLE**
Acetonitrile [4] 4320 / PEO-120-33 - Lot 010860	66.4 µg/L	47.6 to 89.3	-0.29	1 / 9	**ACCEPTABLE**
Acrolein (Propenal) [4] 4325 / PEO-120-3B - Lot 010860	<10.0 µg/L	0.00 to 50.8			**ACCEPTABLE**
Acrylonitrile [4] 4340 / PEO-120-3B - Lot 010860	66.4 µg/L	31.1 to 121	-0.65	10 / 25	**ACCEPTABLE**
Benzene [1, 3, 4] 4375 / PEO-120-1 - Lot 010853	12.1 µg/L	9.12 to 18.9 10.8 to 17.3	-1.18	35 / 46	**ACCEPTABLE**
Bromodichloromethane [1, 3, 4] 4395 / PEO-120-2 - Lot 010855	102 µg/L	79.8 to 151 91.7 to 139	-1.14	33 / 42	**ACCEPTABLE**
Bromoform [1, 3, 4] 4400 / PEO-120-2 - Lot 010855	65.5 µg/L	42.2 to 90.3 50.2 to 82.3	-0.10	4 / 42	**ACCEPTABLE**

Volatiles (continued)

Volatiles

(continued)

Analysis
EPA 624
Gas Chromatography - Mass Spectrometry

Method Number 10107207
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
2-Butanone (Methyl ethyl ketone, MEK) [4] 4410 / PEO-120-3B - Lot 010860	43.0 µg/L	1.60 to 75.7	0.35	14 / 30	ACCEPTABLE
Carbon disulfide [4] 4450 / PEO-120-3B - Lot 010860	82.4 µg/L	63.6 to 148	-1.36	26 / 29	ACCEPTABLE
Carbon tetrachloride [1, 3, 4] 4455 / PEO-120-2 - Lot 010855	16.1 µg/L	11.2 to 27.2 13.9 to 24.5	-1.16	34 / 44	ACCEPTABLE
Chlorobenzene [1, 3, 4] 4475 / PEO-120-2 - Lot 010855	99.0 µg/L	68.6 to 119 77.0 to 110	0.63	25 / 44	ACCEPTABLE
Chloroethane [1, 4] 4485 / PEO-120-3A - Lot 010857	50.0 µg/L	30.0 to 120	-1.57	31 / 33	ACCEPTABLE
2-Chloroethyl vinyl ether [4] 4500 / PEO-120-3B - Lot 010860	28.6 µg/L	5.17 to 50.5	0.10	4 / 25	ACCEPTABLE
Chloroform [1, 3, 4] 4505 / PEO-120-2 - Lot 010855	19.9 µg/L	17.1 to 33.0 19.8 to 30.4	-1.95	46 / 44	ACCEPTABLE
1,2-Dibromo-3-chloropropane (DBCP) [4] 4570 / PEO-120-3B - Lot 010860	14.4 µg/L	5.10 to 25.8	-0.30	11 / 32	ACCEPTABLE
Dibromochloromethane [1, 3, 4] 4575 / PEO-120-2 - Lot 010855	53.5 µg/L	37.2 to 72.3 43.1 to 66.5	-0.22	5 / 42	ACCEPTABLE
Dibromomethane [4] 4595 / PEO-120-3B - Lot 010860	86.2 µg/L	70.8 to 106	-0.24	6 / 34	ACCEPTABLE
1,2-Dichlorobenzene [1, 3, 4] 4610 / PEO-120-1 - Lot 010853	15.6 µg/L	11.5 to 23.1 13.5 to 21.2	-0.89	23 / 41	ACCEPTABLE
1,3-Dichlorobenzene [1, 3, 4] 4615 / PEO-120-1 - Lot 010853	19.1 µg/L	13.6 to 27.4 15.9 to 25.1	-0.61	21 / 41	ACCEPTABLE
1,4-Dichlorobenzene [1, 3, 4] 4620 / PEO-120-1 - Lot 010853	18.9 µg/L	13.9 to 27.7 16.2 to 25.4	-0.81	26 / 41	ACCEPTABLE
Dichlorodifluoromethane [4] 4625 / PEO-120-3B - Lot 010860	<5.0 µg/L	0 to 0			ACCEPTABLE
1,1-Dichloroethane [1, 4, 5] 4630 / PEO-120-3A - Lot 010857	79.9 µg/L	61.7 to 123 71.9 to 112	-1.21	27 / 40	ACCEPTABLE
1,2-Dichloroethane [1, 3, 4] 4635 / PEO-120-2 - Lot 010855	36.2 µg/L	26.8 to 51.3 30.9 to 47.2	-0.69	25 / 44	ACCEPTABLE
1,1-Dichloroethylene [1, 4] 4640 / PEO-120-3A - Lot 010857	29.3 µg/L	18.2 to 50.8 23.7 to 45.4	-0.96	24 / 40	ACCEPTABLE
cis-1,2-Dichloroethylene [1, 4, 5] 4645 / PEO-120-3A - Lot 010857	84.2 µg/L	69.3 to 125 78.6 to 116	-1.40	28 / 39	ACCEPTABLE
1,2-Dichloropropane [1, 4] 4655 / PEO-120-3A - Lot 010857	44.4 µg/L	31.2 to 63.5 36.6 to 58.1	-0.55	16 / 41	ACCEPTABLE
cis-1,3-Dichloropropene [1, 4, 5] 4680 / PEO-120-3A - Lot 010857	43.4 µg/L	33.7 to 62.5	-0.59	21 / 38	ACCEPTABLE
trans-1,3-Dichloropropylene [1, 4] 4685 / PEO-120-3A - Lot 010857	15.8 µg/L	9.23 to 20.6 11.1 to 18.7	0.47	15 / 36	ACCEPTABLE
trans-1,2-Dichloroethylene [1, 4] 4700 / PEO-120-3A - Lot 010857	93.4 µg/L	81.6 to 173 96.9 to 158	-2.23	38 / 40	CHECK
Ethylbenzene [1, 3, 4] 4765 / PEO-120-1 - Lot 010853	16.5 µg/L	12.4 to 24.1 14.3 to 22.1	-0.88	23 / 45	ACCEPTABLE
2-Hexanone [1, 4, 5] 4860 / PEO-120-3A - Lot 010857	141 µg/L	61.5 to 176 80.5 to 157	1.18	18 / 31	ACCEPTABLE
Methyl bromide (Bromomethane) [1, 4] 4950 / PEO-120-3A - Lot 010857	49.4 µg/L	29.3 to 117	-1.78	19 / 35	ACCEPTABLE
Methyl chloride (Chloromethane) [1, 4] 4960 / PEO-120-3A - Lot 010857	52.3 µg/L	35.7 to 143	-2.32	27 / 35	ACCEPTABLE
Methylene chloride (Dichloromethane) [1, 3, 4] 4975 / PEO-120-2 - Lot 010855	49.0 µg/L	32.4 to 74.1 39.3 to 67.2	-0.61	18 / 44	ACCEPTABLE
4-Methyl-2-pentanone (MIBK) [1, 4] 4995 / PEO-120-3A - Lot 010857	58.5 µg/L	25.7 to 90.0 36.4 to 79.3	0.06	3 / 32	ACCEPTABLE
Methyl tert-butyl ether (MTBE) [1, 4, 5] 5000 / PEO-120-1 - Lot 010853	26.6 µg/L	15.7 to 36.7	0.10	4 / 39	ACCEPTABLE

Volatiles (continued)

Volatiles

Analysis
EPA 624
Gas Chromatography - Mass Spectrometry

(continued)
Method Number 10107207
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Naphthalene [1, 4] 5005 / PEO-120-1 - Lot 010853	19.5 µg/L	13.0 to 30.2	-0.46	16 / 41	**ACCEPTABLE**
Styrene [1, 4] 5100 / PEO-120-3A - Lot 010857	53.9 µg/L	38.2 to 81.2 45.4 to 74.1	-0.81	24 / 37	**ACCEPTABLE**
1,1,1,2-Tetrachloroethane [4] 5105 / PEO-120-3B - Lot 010860	94.5 µg/L	48.3 to 140	0.03	3 / 34	**ACCEPTABLE**
1,1,2,2-Tetrachloroethane [1, 4] 5110 / PEO-120-3A - Lot 010857	91.8 µg/L	58.7 to 145 73.1 to 130	-0.70	18 / 39	**ACCEPTABLE**
Tetrachloroethylene (Perchloroethylene) [1, 3, 4] 5115 / PEO-120-2 - Lot 010855	75.9 µg/L	46.5 to 107 56.7 to 97.1	-0.10	4 / 43	**ACCEPTABLE**
Toluene [1, 3, 4] 5140 / PEO-120-1 - Lot 010853	17.0 µg/L	12.5 to 23.1 14.2 to 21.3	-0.44	22 / 45	**ACCEPTABLE**
1,1,1-Trichloroethane [1, 3, 4] 5160 / PEO-120-2 - Lot 010855	68.6 µg/L	48.9 to 103 57.9 to 94.1	-0.82	27 / 42	**ACCEPTABLE**
1,1,2-Trichloroethane [1, 4] 5165 / PEO-120-3A - Lot 010857	138 µg/L	100 to 187 115 to 172	-0.37	14 / 39	**ACCEPTABLE**
Trichloroethene (Trichloroethylene) [1, 3, 4] 5170 / PEO-120-2 - Lot 010855	42.6 µg/L	29.4 to 60.8 34.6 to 55.5	-0.47	23 / 43	**ACCEPTABLE**
Trichlorofluoromethane [1, 4] 5175 / PEO-120-3A - Lot 010857	81.0 µg/L	38.7 to 155	-1.32	20 / 32	**ACCEPTABLE**
1,2,3-Trichloropropane [4] 5180 / PEO-120-3B - Lot 010860	66.1 µg/L	15.1 to 114	0.09	3 / 35	**ACCEPTABLE**
1,2,4-Trimethylbenzene [4] 5210 / PEO-120-1 - Lot 010853	9.52 µg/L	5.92 to 13.8	-0.25	8 / 35	**ACCEPTABLE**
1,3,5-Trimethylbenzene [4] 5215 / PEO-120-1 - Lot 010853	14.5 µg/L	12.2 to 18.4	-0.26	8 / 35	**ACCEPTABLE**
Vinyl chloride [1, 4] 5235 / PEO-120-3A - Lot 010857	26.9 µg/L	11.9 to 47.7	-0.38	13 / 33	**ACCEPTABLE**
m+p-Xylene [4] 5240 / PEO-120-1 - Lot 010853	20.5 µg/L	18.3 to 27.5	-0.74	22 / 42	**ACCEPTABLE**
o-Xylene [4] 5250 / PEO-120-1 - Lot 010853	16.5 µg/L	14.2 to 21.4	-0.64	19 / 42	**ACCEPTABLE**
Xylene, total [1, 4] 5260 / PEO-120-1 - Lot 010853	37.0 µg/L	22.6 to 57.1 28.3 to 51.3	-0.49	22 / 45	**ACCEPTABLE**

Group Analysis Summary

Acceptable 53 / 53
Score 100.0% - **(Acceptable)**

End of Dataset 1

Dataset

Dataset 2

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau

168 Jeff May
1520 East 6th Avenue
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

118 Donald Lafara
901 S. Stewart Street
Ste. 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

364 Mike Smith
Joe Foss Building - Chemistry
523 E. Capital
Pierre SD 57501-3181
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII

217 J.m Gindelberger
MailStop 8 TMS-Q
999 18th Steet, Suite 500
Denver CO 80207-2466
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 West 25th Street
Cheyenne WY 82002
UNITED STATES

Base/Neutrals

Base/Neutrals

Analysis
EPA 8270C
Not Applicable

Method Number 10185805
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,2-Dichlorobenzene [1, 4] 4610 / PEO-121-2A - Lot 010884	33 µg/L	6.02 to 72.4 17.1 to 61.4	-0.56	17 / 29	**ACCEPTABLE**
1,3-Dichlorobenzene [1, 4] 4615 / PEO-121-2A - Lot 010884	67 µg/L	15.7 to 151 38.2 to 128	-0.72	20 / 29	**ACCEPTABLE**
1,4-Dichlorobenzene [1, 4] 4620 / PEO-121-2A - Lot 010884	30 µg/L	4.02 to 68.3 14.7 to 57.6	-0.57	17 / 29	**ACCEPTABLE**
Hexachlorobutadiene [1, 4] 4835 / PEO-121-2A - Lot 010884	96 µg/L	20.8 to 193 49.5 to 164	-0.38	11 / 27	**ACCEPTABLE**
Hexachloroethane [1, 4] 4840 / PEO-121-2A - Lot 010884	61 µg/L	13.7 to 152 36.8 to 129	-0.95	18 / 27	**ACCEPTABLE**
Naphthalene [1, 4] 5005 / PEO-121-[illegible] - Lot 010879	29 µg/L	12.3 to 48.3 18.3 to 42.3	-0.21	7 / 33	**ACCEPTABLE**
Nitrobenzene [1, 4] 5015 / PEO-121-2A - Lot 010884	37 µg/L	16.1 to 61.9 23.7 to 54.3	-0.26	9 / 29	**ACCEPTABLE**
Pyridine [4] 5095 / PEO-121-2B - Lot 010819	<20 µg/L	1.12 to 61.0			**ACCEPTABLE**
1,2,4-Trichlorobenzene [1, 4] 5155 / PEO-121-2A - Lot 010884	56 µg/L	20.3 to 112 35.7 to 97.1	-0.68	15 / 29	**ACCEPTABLE**
Acenaphthene [1, 4] 5500 / PEO-121-1 - Lot 010879	178 µg/L	75.8 to 230 102 to 205	0.97	14 / 32	**ACCEPTABLE**
Acenaphthylene [1, 4] 5505 / PEO-121-1 - Lot 010879	147 µg/L	78.2 to 233 104 to 207	-0.34	16 / 31	**ACCEPTABLE**
Aniline [4] 5545 / PEO-121-2B - Lot 010819	132 µg/L	0.00 to 272	0.43	12 / 24	**ACCEPTABLE**
Anthracene [1, 4] 5555 / PEO-121-1 - Lot 010879	35 µg/L	16.7 to 49.6 22.2 to 44.1	0.34	8 / 33	**ACCEPTABLE**
Benzo(a)anthracene [1, 4] 5575 / PEO-121-1 - Lot 010879	76 µg/L	40.0 to 112 51.9 to 99.6	0.02	3 / 33	**ACCEPTABLE**
Benzo(a)pyrene [1, 4] 5580 / PEO-121-1 - Lot 010879	57 µg/L	18.7 to 80.0 28.9 to 69.8	0.74	14 / 33	**ACCEPTABLE**
Benzo(b)fluoranthene [1, 4] 5585 / PEO-121-1 - Lot 010879	27 µg/L	10.9 to 45.1 16.6 to 39.4	-0.17	6 / 31	**ACCEPTABLE**
Benzo(g,h,i)perylene [1, 4] 5590 / PEO-121-1 - Lot 010879	23 µg/L	6.11 to 40.3 11.8 to 34.6	-0.04	1 / 32	**ACCEPTABLE**
Benzidine [1, 4] 5595 / PEO-121-2A - Lot 010884	137 µg/L	0.00 to 783 0.00 to 624	-1.08	13 / 19	**ACCEPTABLE**
Benzo(k)fluoranthene [1, 4] 5600 / PEO-121-1 - Lot 010879	49 µg/L	12.3 to 77.0 23.1 to 66.3	0.40	9 / 33	**ACCEPTABLE**
Benzyl alcohol [4] 5630 / PEO-121-2B - Lot 010819	43 µg/L	1.94 to 102	-0.54	16 / 25	**ACCEPTABLE**
4-Bromophenyl phenyl ether [1, 4] 5660 / PEO-121-2A - Lot 010884	161 µg/L	60.9 to 255 93.2 to 222	0.10	3 / 27	**ACCEPTABLE**
Butyl benzyl phthalate [1, 4] 5670 / PEO-121-2A - Lot 010884	138 µg/L	28.7 to 201 57.4 to 172	0.81	7 / 27	**ACCEPTABLE**
Carbazole [4] 5680 / PEO-121-2B - Lot 010819	112 µg/L	0.00 to 244	0.08	3 / 23	**ACCEPTABLE**
4-Chloroaniline [4] 5745 / PEO-121-2B - Lot 010819	95 µg/L	70.0 to 210	-1.69	11 / 27	**ACCEPTABLE**
bis(2-Chloroethoxy)methane [1, 4] 5760 / PEO-121-2A - Lot 010884	102 µg/L	51.0 to 153 68.0 to 136	0.01	1 / 27	**ACCEPTABLE**

Base/Neutrals (continued)

Base/Neutrals

(continued)

Analysis
EPA 8270C
Not Applicable

Method Number 10185805
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
bis(2-Chloroethyl) ether [1, 4] 5765 / PEO-121-2A - Lot 010884	77 µg/L	40.0 to 182 63.8 to 159	-1.44	23 / 27	ACCEPTABLE
bis(2-Chloroisopropyl) ether [1, 4] 5780 / PEO-121-2A - Lot 010884	55 µg/L	19.7 to 94.2 32.1 to 81.8	-0.16	2 / 27	ACCEPTABLE
4-Chlorophenyl phenylether [1, 4] 5825 / PEO-121-2A - Lot 010884	30 µg/L	12.3 to 41.4 17.1 to 36.5	0.65	13 / 27	ACCEPTABLE
Chrysene [1, 4] 5855 / PEO-121-1 - Lot 010879	14 µg/L	6.96 to 22.5 9.55 to 19.9	-0.28	8 / 31	ACCEPTABLE
Dibenz(a,h) anthracene [1, 4] 5895 / PEO-121-1 - Lot 010879	27 µg/L	9.47 to 51.8 16.5 to 44.8	-0.52	15 / 31	ACCEPTABLE
Dibenzofuran [1, 4] 5905 / PEO-121-2A - Lot 010884	67 µg/L	35.0 to 124 49.9 to 109	-0.85	13 / 22	ACCEPTABLE
Di-n-butyl phthalate [1, 4] 5925 / PEO-121-2A - Lot 010884	125 µg/L	45.5 to 181 68.1 to 158	0.52	6 / 25	ACCEPTABLE
3,3'-Dichlorobenzidine [1, 4] 5945 / PEO-121-2A - Lot 010884	147 µg/L	36.9 to 229 68.9 to 197	0.44	5 / 23	ACCEPTABLE
Diethyl phthalate [1, 4] 6070 / PEO-121-2A - Lot 010884	120 µg/L	21.8 to 162 45.1 to 138	1.21	13 / 23	ACCEPTABLE
Dimethyl phthalate [1, 4] 6135 / PEO-121-2A - Lot 010884	109 µg/L	0.00 to 157 16.7 to 129	1.29	14 / 22	ACCEPTABLE
2,4-Dinitrotoluene (2,4-DNT) [1, 4] 6185 / PEO-121-2A - Lot 010884	147 µg/L	65.9 to 210 90.0 to 186	0.37	10 / 25	ACCEPTABLE
2,6-Dinitrotoluene (2,6-DNT) [1, 4] 6190 / PEO-121-2A - Lot 010884	133 µg/L	68.1 to 202 90.5 to 180	-0.10	1 / 25	ACCEPTABLE
Di-n-octyl phthalate [1, 4] 6200 / PEO-121-2A - Lot 010884	162 µg/L	33.8 to 272 73.5 to 232	0.23	6 / 21	ACCEPTABLE
bis(2-Ethylhexyl) phthalate (DEHP) [1, 4] 6255 / PEO-121-2A - Lot 010884	154 µg/L	50.2 to 232 80.4 to 201	0.43	13 / 21	ACCEPTABLE
Fluoranthene [1, 4] 6265 / PEO-121-1 - Lot 010879	68 µg/L	34.0 to 92.8 43.8 to 83.0	0.47	10 / 33	ACCEPTABLE
Fluorene [1, 4] 6270 / PEO-121-1 - Lot 010879	73 µg/L	36.1 to 102 47.1 to 91.2	0.35	8 / 33	ACCEPTABLE
Hexachlorobenzene [1, 4] 6275 / PEO-121-2A - Lot 010884	41 µg/L	25.4 to 74.8 33.7 to 66.6	-1.11	15 / 23	ACCEPTABLE
Hexachlorocyclopentadiene [1, 4] 6285 / PEO-121-2A - Lot 010884	80 µg/L	0.00 to 177 15.7 to 144	0.00	1 / 21	ACCEPTABLE
Indeno(1,2,3-cd) pyrene [1, 4] 6315 / PEO-121-1 - Lot 010879	38 µg/L	9.26 to 60.5 17.8 to 51.9	0.37	11 / 31	ACCEPTABLE
Isophorone [1, 4] 6320 / PEO-121-2A - Lot 010884	81 µg/L	39.0 to 128 53.8 to 113	-0.17	4 / 23	ACCEPTABLE
1-Methylnaphthalene [4] 6380 / PEO-121-2B - Lot 010819	40 µg/L	28.3 to 84.9	-1.58	13 / 17	ACCEPTABLE
2-Methylnaphthalene [1, 4] 6385 / PEO-121-2A - Lot 010884	58 µg/L	15.1 to 96.0 28.6 to 82.6	0.18	6 / 22	ACCEPTABLE
2-Nitroaniline [4] 6460 / PEO-121-2B - Lot 010819	51 µg/L	29.0 to 86.9	-0.73	7 / 24	ACCEPTABLE
3-Nitroaniline [4] 6465 / PEO-121-2B - Lot 010819	<10 µg/L	0 to 0			ACCEPTABLE
4-Nitroaniline [4] 6470 / PEO-121-2B - Lot 010819	135 µg/L	0.00 to 248	0.38	8 / 24	ACCEPTABLE
n-Nitrosodimethylamine [1, 4] 6530 / PEO-121-2A - Lot 010884	30 µg/L	0.00 to 107 9.37 to 87.6	-0.95	14 / 18	ACCEPTABLE
n-Nitrosodiphenylamine [1, 4] 6535 / PEO-121-2A - Lot 010884	59 µg/L	14.7 to 88.7 27.0 to 76.4	0.59	9 / 20	ACCEPTABLE
n-Nitrosodi-n-propylamine [1, 4] 6545 / PEO-121-2A - Lot 010884	67 µg/L	24.5 to 111 38.8 to 96.3	-0.04	3 / 23	ACCEPTABLE
Phenanthrene [1, 4] 6615 / PEO-121-1 - Lot 010879	77 µg/L	40.5 to 105 51.4 to 94.6	0.37	4 / 29	ACCEPTABLE

Base/Neutrals (continued)

Base/Neutrals

(continued)

Analysis
EPA 8270C
Not Applicable

Method Number 10185805
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Pyrene [1, 4] 6665 / PEO-121-1 - Lot 010879	107 µg/L	41.6 to 169 62.8 to 148	0.09	3 / 29	**ACCEPTABLE**

Group Analysis Summary
Acceptable 55 / 55
Score 100.0% - **(Acceptable)**

Herbicides

Herbicides

Analysis
EPA 8151A
Not Applicable

Method Number 10183207
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Pentachlorophenol [4] 6605 / PEO-094 - Lot 010862	2.9 µg/L	1.34 to 4.02	0.33	1 / 10	**ACCEPTABLE**
Acifluorfen [4] 8505 / PEO-094 - Lot 010862	8.6 µg/L	0.00 to 26.2 0.00 to 20.0	0.16	3 / 6	**ACCEPTABLE**
Bentazon [4] 8530 / PEO-094 - Lot 010862	2.9 µg/L	0.00 to 55.1	-0.65	4 / 6	**ACCEPTABLE**
2,4-D [1, 4] 8545 / PEO-094 - Lot 010862	5.4 µg/L	0.00 to 12.2 1.55 to 10.1	-0.19	3 / 17	**ACCEPTABLE**
2,4-DB [4] 8560 / PEO-094 - Lot 010862	6.0 µg/L	4.26 to 12.8	-0.87	13 / 16	**ACCEPTABLE**
Dicamba [1, 4] 8595 / PEO-094 - Lot 010862	5.1 µg/L	0.510 to 9.17 1.95 to 7.73	0.18	3 / 17	**ACCEPTABLE**
3,5-Dichlorobenzoic acid [4] 8600 / PEO-094 - Lot 010862	7.8 µg/L	4.30 to 12.9	-0.21	2 / 5	**ACCEPTABLE**
Dichloroprop [4] 8605 / PEO-094 - Lot 010862	4.3 µg/L	2.69 to 8.07	-0.79	13 / 16	**ACCEPTABLE**
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) [4] 8620 / PEO-094 - Lot 010862	2.2 µg/L	1.38 to 4.13	-0.52	7 / 17	**ACCEPTABLE**
Picloram [4] 8645 / PEO-094 - Lot 010862	3.4 µg/L	2.57 to 7.70	-0.91	6 / 9	**ACCEPTABLE**
Silvex (2,4,5-TP) [1, 4] 8650 / PEO-094 - Lot 010862	2.2 µg/L	0.148 to 3.85 0.765 to 3.23	0.32	2 / 17	**ACCEPTABLE**
2,4,5-T [1, 4] 8655 / PEO-094 - Lot 010862	4.4 µg/L	0.378 to 7.69 1.60 to 6.47	0.30	2 / 17	**ACCEPTABLE**

Group Analysis Summary
Acceptable 12 / 12
Score 100.0% - **(Acceptable)**

Minerals

Analysis
EPA 376.1
Not Applicable

Method Number 10074007
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Sulfide [1, 4] 2005 / PEI-257 - Lot 010979	1.60 mg/L	0.218 to 3.33 0.737 to 2.81	-0.34	4 / 17	**ACCEPTABLE**

Analysis
EPA 6010B
Not Applicable

Method Number 10155609
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Calcium, Ca [1, 3, 4] 1035 / PEI-027-12 - Lot 010966/0	16.0 mg/L	26.2 to 33.8 27.5 to 32.5	-11.20	50 / 49	**NOT ACCEPTABLE**
Magnesium, Mg [1, 3, 4] 1085 / PEI-027-12 - Lot 010966/0	24.4 mg/L	22.1 to 29.6 23.4 to 28.4	-1.17	39 / 49	**ACCEPTABLE**

Minerals (continued)

(continued)

Analysis
EPA 6010B
Not Applicable
Method Number 10155609
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Potassium, K [1, 3, 4] 1125 / PEI-027-12 - Lot 010966/0	33.1 mg/L	26.6 to 38.2 28.5 to 36.3	0.37	15 / 44	**ACCEPTABLE**
Sodium, Na [1, 3, 4] 1155 / PEI-027-12 - Lot 010966/0	89.5 mg/L	75.2 to 102 79.6 to 97.1	0.26	6 / 41	**ACCEPTABLE**

Analysis
SM 18/19/20thED 4500 F-C
Not Applicable
Method Number 20012800
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Fluoride [1, 3, 4] 1730 / PEI-027-12 - Lot 010966/0	1.16 mg/L	0.936 to 1.48 1.03 to 1.39	-0.55	14 / 42	**ACCEPTABLE**

Nutrients

Analysis
EPA 353.2
Not Applicable
Method Number 10067206
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Nitrate as N [1, 3, 4] 1810 / PEI-028-1 - Lot 010967	19.3 mg/L	14.7 to 22.8 16.1 to 21.4	0.40	18 / 47	**ACCEPTABLE**
Nitrate+nitrite as N [1, 4] 1820 / PEI-028-1 - Lot 010967	19.3 mg/L	15.4 to 22.0 16.5 to 20.9	0.57	12 / 29	**ACCEPTABLE**
Nitrite as N [1, 4] 1840 / PEI-028-3 - Lot 011005	2.30 mg/L	1.89 to 2.60 2.01 to 2.49	0.43	13 / 48	**ACCEPTABLE**

Analysis
EPA 365.1
Not Applicable
Method Number 10069600
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Orthophosphate as P [1, 3, 4] 1870 / PEI-028-1 - Lot 010967	3.22 mg/L	2.54 to 3.71 2.74 to 3.51	0.50	19 / 42	**ACCEPTABLE**

PCBs in Water

Analysis
EPA 8082
Not Applicable
Method Number 10179007
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / PEO-020-1 - Lot 010832	<0.50 µg/L	0 to 0 0 to 0			**ACCEPTABLE**
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1221 (PCB-1221) [1, 4] 8885 / PEO-020-1 - Lot 010832	11 µg/L	2.06 to 16.4 4.44 to 14.0	0.75	14 / 25	**ACCEPTABLE**
Aroclor-1221 (PCB-1221) [1, 4] 8885 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1232 (PCB-1232) [1, 3, 4] 8890 / PEO-020-1 - Lot 010832	<0.50 µg/L	0 to 0 0 to 0			**ACCEPTABLE**
Aroclor-1232 (PCB-1232) [1, 3, 4] 8890 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / PEO-020-1 - Lot 010832	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / PEO-020-2 - Lot 010833	5.4 µg/L	2.09 to 9.76 3.36 to 8.48	-0.41	1 / 18	**ACCEPTABLE**
Aroclor-1248 (PCB-1248) [1, 3, 4] 8900 / PEO-020-1 - Lot 010832	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1248 (PCB-1248) [1, 3, 4] 8900 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / PEO-020-1 - Lot 010832	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**

PCBs in Water (continued)

(continued)

Analysis
EPA 8082
Not Applicable

Method Number 10179007
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / PEO-020-1 - Lot 010832	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / PEO-020-2 - Lot 010833	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0			**ACCEPTABLE**

Pesticides

Pesticides

Analysis
EPA 8081A
Not Applicable

Method Number 10178606
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aldrin [1, 3, 4] 7025 / PEO-122-1 - Lot 010837	1.0 µg/L	0.265 to 1.21 0.422 to 1.05	1.69	7 / 23	**ACCEPTABLE**
delta-BHC [1, 4] 7105 / PEO-122-2 - Lot 010875	2.3 µg/L	0.898 to 3.93 1.40 to 3.43	-0.23	4 / 23	**ACCEPTABLE**
alpha-BHC (alpha-Hexachlorocyclohexane) [1, 4] 7110 / PEO-122-2 - Lot 010875	2.3 µg/L	1.04 to 4.14 1.55 to 3.62	-0.56	15 / 23	**ACCEPTABLE**
beta-BHC (beta-Hexachlorocyclohexane) [1, 4] 7115 / PEO-122-2 - Lot 010875	3.2 µg/L	1.48 to 5.12 2.09 to 4.52	-0.17	2 / 23	**ACCEPTABLE**
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane) [1, 4] 7120 / PEO-122-2 - Lot 010875	5.6 µg/L	2.72 to 9.22 3.81 to 8.14	-0.34	2 / 23	**ACCEPTABLE**
alpha-Chlordane [1, 4] 7240 / PEO-122-2 - Lot 010875	1.3 µg/L	0.711 to 2.33 0.980 to 2.06	-0.81	11 / 16	**ACCEPTABLE**
gamma-Chlordane [1, 4] 7245 / PEO-122-2 - Lot 010875	1.9 µg/L	1.04 to 3.40 1.43 to 3.00	-0.81	12 / 17	**ACCEPTABLE**
Chlordane (total) [1, 3, 4] 7250 / PEO-024-2 - Lot 010801	15 µg/L	6.79 to 26.1 10.0 to 22.9	-0.45	6 / 22	**ACCEPTABLE**
4,4'-DDD [1, 3, 4] 7355 / PEO-122-1 - Lot 010837	6.1 µg/L	2.46 to 9.51 3.63 to 8.33	0.10	2 / 23	**ACCEPTABLE**
4,4'-DDE [1, 3, 4] 7360 / PEO-122-1 - Lot 010837	4.5 µg/L	2.33 to 6.88 3.09 to 6.12	-0.14	2 / 23	**ACCEPTABLE**
4,4'-DDT [1, 3, 4] 7365 / PEO-122-1 - Lot 010837	1.3 µg/L	0.605 to 2.42 0.908 to 2.12	-0.71	18 / 24	**ACCEPTABLE**
Dieldrin [1, 3, 4] 7470 / PEO-122-1 - Lot 010837	7.3 µg/L	4.40 to 12.2 5.70 to 10.9	-0.77	16 / 23	**ACCEPTABLE**
Endosulfan I [1, 4] 7510 / PEO-122-2 - Lot 010875	14 µg/L	4.78 to 22.6 7.75 to 19.6	0.10	3 / 23	**ACCEPTABLE**
Endosulfan II [1, 4] 7515 / PEO-122-2 - Lot 010875	6.3 µg/L	2.28 to 9.33 3.46 to 8.16	0.42	7 / 23	**ACCEPTABLE**
Endosulfan sulfate [1, 4] 7520 / PEO-122-2 - Lot 010875	10 µg/L	4.62 to 17.8 6.82 to 15.6	-0.55	9 / 23	**ACCEPTABLE**
Endrin aldehyde [1, 4] 7530 / PEO-122-2 - Lot 010875	7.9 µg/L	2.55 to 13.4 4.36 to 11.6	-0.04	1 / 23	**ACCEPTABLE**
Endrin ketone [1, 4, 5] 7535 / PEO-122-2 - Lot 010875	7.4 µg/L	4.68 to 12.3	-0.48	11 / 21	**ACCEPTABLE**
Endrin [1, 4] 7540 / PEO-122-2 - Lot 010875	2.5 µg/L	1.25 to 4.88 1.86 to 4.28	-0.94	17 / 23	**ACCEPTABLE**
Heptachlor [1, 3, 4] 7685 / PEO-122-1 - Lot 010837	4.0 µg/L	1.74 to 7.37 2.68 to 6.43	-0.59	10 / 23	**ACCEPTABLE**
Heptachlor epoxide [1, 3, 4] 7690 / PEO-122-1 - Lot 010837	3.6 µg/L	1.60 to 4.67 2.11 to 4.16	0.91	8 / 23	**ACCEPTABLE**
Methoxychlor [1, 4] 7810 / PEO-122-2 - Lot 010875	3.7 µg/L	1.16 to 7.60 2.24 to 6.53	-0.64	17 / 23	**ACCEPTABLE**
Toxaphene (Chlorinated camphene) [1, 4] 8250 / PEO-093 - Lot 010814	51 µg/L	0.00 to 146 17.3 to 120	-0.69	14 / 22	**ACCEPTABLE**

Pesticides (continued)

Pesticides

Group Analysis Summary
Acceptable 22 / 22
Score 100.0% - **(Acceptable)**

Petroleum Hydrocarbons

Analysis
EPA 8015B
Not Applicable

Method Number 10173601
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Gasoline range organics (GRO), C6-C12 [1, 4, 5] 9408 / PEO-010 - Lot 011017	1590 µg/L	672 to 3050 1070 to 2650	-0.68	3 / 16	**ACCEPTABLE**

Analysis
EPA 8015M
Gas Chromatography - Flame Ionization Detection

Method Number 99999964
Technology Code GC-FID

	Result Units	Accept / Warn	Z	Rank	Evaluation
Diesel range organics (DRO) [1, 4, 5] 9369 / PEO-011 - Lot 011018	2200 µg/L	623 to 3410 1090 to 2950	0.39	6 / 13	**ACCEPTABLE**

Trace Metals

Analysis
EPA 245.1
Not Applicable

Method Number 10036201
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Mercury, Hg [1, 3, 4] 1095 / PEI-305-1 - Lot 010988	13.6 µg/L	8.37 to 18.4 10.0 to 16.7	0.13	2 / 5	**ACCEPTABLE**

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10013408
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aluminum, Al [1, 3, 4] 1000 / PEI-305-1 - Lot 010988	2400 µg/L	2010 to 2840 2150 to 2700	-0.18	3 / 7	**ACCEPTABLE**
Antimony, Sb [1, 3, 4] 1005 / PEI-305-2 - Lot 010987/0	406 µg/L	306 to 531 343 to 493	-0.33	3 / 11	**ACCEPTABLE**
Arsenic, As [1, 3, 4] 1010 / PEI-305-1 - Lot 010988	336 µg/L	276 to 390 295 to 371	0.16	1 / 12	**ACCEPTABLE**
Barium, Ba [1, 4] 1015 / PEI-305-2 - Lot 010987/0	1240 µg/L	1030 to 1340 1080 to 1290	1.01	6 / 7	**ACCEPTABLE**
Beryllium, Be [1, 3, 4] 1020 / PEI-305-1 - Lot 010988	92.2 µg/L	73.4 to 99.2 77.7 to 94.9	1.37	4 / 7	**ACCEPTABLE**
Cadmium, Cd [1, 3, 4] 1030 / PEI-305-1 - Lot 010988	476 µg/L	386 to 515 408 to 493	1.19	6 / 8	**ACCEPTABLE**
Chromium, Cr (total) [1, 3, 4] 1040 / PEI-305-1 - Lot 010988	724 µg/L	644 to 835 676 to 804	-0.50	6 / 7	**ACCEPTABLE**
Cobalt, Co [1, 3, 4] 1050 / PEI-305-1 - Lot 010988	89.1 µg/L	74.8 to 98.3 78.7 to 94.4	0.65	6 / 7	**ACCEPTABLE**
Copper, Cu [1, 3, 4] 1055 / PEI-305-1 - Lot 010988	414 µg/L	371 to 451 384 to 438	0.21	1 / 7	**ACCEPTABLE**
Iron, Fe [1, 3, 4] 1070 / PEI-305-1 - Lot 010988	1740 µg/L	1500 to 1900 1560 to 1840	0.58	1 / 5	**ACCEPTABLE**
Lead, Pb [1, 3, 4] 1075 / PEI-305-1 - Lot 010988	799 µg/L	636 to 816 666 to 786	2.42	9 / 8	**CHECK**
Manganese, Mn [1, 3, 4] 1090 / PEI-305-1 - Lot 010988	1070 µg/L	925 to 1140 962 to 1110	0.96	2 / 7	**ACCEPTABLE**
Molybdenum, Mo [1, 3, 4] 1100 / PEI-305-2 - Lot 010987/0	561 µg/L	494 to 662 522 to 634	-0.61	5 / 6	**ACCEPTABLE**
Nickel, Ni [1, 3, 4] 1105 / PEI-305-1 - Lot 010988	306 µg/L	265 to 337 277 to 325	0.41	2 / 7	**ACCEPTABLE**
Selenium, Se [1, 3, 4] 1140 / PEI-305-1 - Lot 010988	420 µg/L	305 to 449 329 to 425	1.79	10 / 11	**ACCEPTABLE**

Trace Metals (continued)

(continued)

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10013408
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Rank	Evaluation
Silver, Ag [1, 3, 4] 1150 / PEI-305-2 - Lot 010987/0	479 µg/L	425 to 567 449 to 543	-0.72	8 / 7	**ACCEPTABLE**
Strontium, Sr [1, 3, 4] 1160 / PEI-305-2 - Lot 010987/0	211 µg/L	168 to 220 177 to 212	1.92	10 / 7	**ACCEPTABLE**
Thallium, Tl [1, 3, 4] 1165 / PEI-305-2 - Lot 010987/0	305 µg/L	239 to 383 263 to 359	-0.26	3 / 7	**ACCEPTABLE**
Tin, Sn [1, 3, 4] 1175 / PEI-305-2 - Lot 010987/0	1350 µg/L	1110 to 1690 1200 to 1600	-0.51	3 / 5	**ACCEPTABLE**
Titanium, Ti [1, 3, 4] 1180 / PEI-305-2 - Lot 010987/0	249 µg/L	215 to 281 226 to 270	0.07	1 / 7	**ACCEPTABLE**
Vanadium, V [1, 3, 4] 1185 / PEI-305-1 - Lot 010988	849 µg/L	726 to 927 760 to 893	0.67	7 / 7	**ACCEPTABLE**
Zinc, Zn [1, 3, 4] 1190 / PEI-305-1 - Lot 010988	1020 µg/L	851 to 1140 899 to 1090	0.56	8 / 7	**ACCEPTABLE**

Volatiles

Volatiles

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Acetonitrile [4] 4320 / PEO-120-3B - Lot 010860	62.4 µg/L	47.6 to 89.3	-0.87	8 / 9	**ACCEPTABLE**
Acrolein (Propenal) [4] 4325 / PEO-120-3B - Lot 010860	<20 µg/L	0.00 to 50.8			**ACCEPTABLE**
Acrylonitrile [4] 4340 / PEO-120-3B - Lot 010860	77.0 µg/L	31.1 to 121	0.05	3 / 25	**ACCEPTABLE**
Benzene [1, 3, 4] 4375 / PEO-120-1 - Lot 010853	10.6 µg/L	9.12 to 18.9 10.8 to 17.3	-2.09	44 / 46	**CHECK**
Bromodichloromethane [1, 3, 4] 4395 / PEO-120-2 - Lot 010855	91.2 µg/L	79.8 to 151 91.7 to 139	-2.04	43 / 42	**CHECK**
Bromoform [1, 3, 4] 4400 / PEO-120-2 - Lot 010855	64.6 µg/L	42.2 to 90.3 50.2 to 82.3	-0.21	10 / 42	**ACCEPTABLE**
2-Butanone (Methyl ethyl ketone, MEK) [4] 4410 / PEO-120-3B - Lot 010860	39.6 µg/L	1.60 to 75.7	0.08	1 / 30	**ACCEPTABLE**
Carbon disulfide [4] 4450 / PEO-120-3B - Lot 010860	78.2 µg/L	63.6 to 148	-1.60	27 / 29	**ACCEPTABLE**
Carbon tetrachloride [1, 3, 4] 4455 / PEO-120-2 - Lot 010855	13.9 µg/L	11.2 to 27.2 13.9 to 24.5	-1.99	45 / 44	**ACCEPTABLE**
Chlorobenzene [1, 3, 4] 4475 / PEO-120-2 - Lot 010855	73.4 µg/L	68.6 to 119 77.0 to 110	-2.43	45 / 44	**CHECK**
Chloroethane [1, 4] 4485 / PEO-120-3A - Lot 010857	48.2 µg/L	30.0 to 120	-1.69	32 / 33	**ACCEPTABLE**
2-Chloroethyl vinyl ether [4] 4500 / PEO-120-3B - Lot 010860	27.2 µg/L	5.17 to 50.5	-0.08	3 / 25	**ACCEPTABLE**
Chloroform [1, 3, 4] 4505 / PEO-120-2 - Lot 010855	19.6 µg/L	17.1 to 33.0 19.8 to 30.4	-2.06	47 / 44	**CHECK**
1,2-Dibromo-3-chloropropane (DBCP) [4] 4570 / PEO-120-3B - Lot 010860	15.0 µg/L	5.10 to 25.8	-0.12	5 / 32	**ACCEPTABLE**
Dibromochloromethane [1, 3, 4] 4575 / PEO-120-2 - Lot 010855	48.4 µg/L	37.2 to 72.3 43.1 to 66.5	-1.09	31 / 42	**ACCEPTABLE**
Dibromomethane [4] 4595 / PEO-120-3B - Lot 010860	75.6 µg/L	70.8 to 106	-1.37	33 / 34	**ACCEPTABLE**
1,2-Dichlorobenzene [1, 3, 4] 4610 / PEO-120-1 - Lot 010853	14.2 µg/L	11.5 to 23.1 13.5 to 21.2	-1.61	34 / 41	**ACCEPTABLE**
1,3-Dichlorobenzene [1, 3, 4] 4615 / PEO-120-1 - Lot 010853	16.7 µg/L	13.6 to 27.4 15.9 to 25.1	-1.66	38 / 41	**ACCEPTABLE**

Volatiles (continued)

Volatiles

(continued)

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,4-Dichlorobenzene [1, 3, 4] 4620 / PEO-120-1 - Lot 010853	16.8 µg/L	13.9 to 27.7 16.2 to 25.4	-1.72	40 / 41	ACCEPTABLE
Dichlorodifluoromethane [4] 4625 / PEO-120-3B - Lot 010860	<1.00 µg/L	0 to 0			ACCEPTABLE
Dichlorofluoromethane [4] 4626 / PEO-120-3B - Lot 010860	<1.00 µg/L	0.0 to 0.0			ACCEPTABLE
1,1-Dichloroethane [1, 4, 5] 4630 / PEO-120-3A - Lot 010857	71.8 µg/L	61.7 to 123 71.9 to 112	-2.01	37 / 40	CHECK
1,2-Dichloroethane [1, 3, 4] 4635 / PEO-120-2 - Lot 010855	32.6 µg/L	26.8 to 51.3 30.9 to 47.2	-1.57	42 / 44	ACCEPTABLE
1,1-Dichloroethylene [1, 4] 4640 / PEO-120-3A - Lot 010857	24.2 µg/L	18.2 to 50.8 23.7 to 45.4	-1.90	35 / 40	ACCEPTABLE
cis-1,2-Dichloroethylene [1, 4, 5] 4645 / PEO-120-3A - Lot 010857	76.2 µg/L	69.3 to 125 78.6 to 116	-2.26	34 / 39	CHECK
1,2-Dichloropropane [1, 4] 4655 / PEO-120-3A - Lot 010857	37.6 µg/L	31.2 to 63.5 36.6 to 58.1	-1.81	38 / 41	ACCEPTABLE
cis-1,3-Dichloropropene [1, 4, 5] 4680 / PEO-120-3A - Lot 010857	40.2 µg/L	33.7 to 62.5	-0.99	28 / 38	ACCEPTABLE
trans-1,3-Dichloropropylene [1, 4] 4685 / PEO-120-3A - Lot 010857	14.3 µg/L	9.23 to 20.6 11.1 to 18.7	-0.32	10 / 36	ACCEPTABLE
trans-1,2-Dichloroethylene [1, 4] 4700 / PEO-120-3A - Lot 010857	97.6 µg/L	81.6 to 173 96.9 to 158	-1.95	32 / 40	ACCEPTABLE
Ethylbenzene [1, 3, 4] 4765 / PEO-120-1 - Lot 010853	16.1 µg/L	12.4 to 24.1 14.3 to 22.1	-1.09	34 / 45	ACCEPTABLE
2-Hexanone [1, 4, 5] 4860 / PEO-120-3A - Lot 010857	147.2 µg/L	61.5 to 176 80.5 to 157	1.50	19 / 31	ACCEPTABLE
Methyl bromide (Bromomethane) [1, 4] 4950 / PEO-120-3A - Lot 010857	38.2 µg/L	29.3 to 117	-2.62	34 / 35	ACCEPTABLE
Methyl chloride (Chloromethane) [1, 4] 4960 / PEO-120-3A - Lot 010857	35.6 µg/L	35.7 to 143	-3.38	36 / 35	NOT ACCEPTABLE
Methylene chloride (Dichloromethane) [1, 3, 4] 4975 / PEO-120-2 - Lot 010855	41.2 µg/L	32.4 to 74.1 39.3 to 67.2	-1.73	40 / 44	ACCEPTABLE
4-Methyl-2-pentanone (MIBK) [1, 4] 4995 / PEO-120-3A - Lot 010857	57.6 µg/L	25.7 to 90.0 36.4 to 79.3	-0.02	2 / 32	ACCEPTABLE
Methyl tert-butyl ether (MTBE) [1, 4, 5] 5000 / PEO-120-[illegible] - Lot 010853	24.0 µg/L	15.7 to 36.7	-0.57	18 / 39	ACCEPTABLE
Naphthalene [1, 4] 5005 / PEO-120-[illegible] - Lot 010853	19.7 µg/L	13.0 to 30.2	-0.41	13 / 41	ACCEPTABLE
Styrene [1, 4] 5100 / PEO-120-3A - Lot 010857	48.6 µg/L	38.2 to 81.2 45.4 to 74.1	-1.55	35 / 37	ACCEPTABLE
1,1,1,2-Tetrachloroethane [4] 5105 / PEO-120-3B - Lot 010860	80.8 µg/L	48.3 to 140	-0.87	25 / 34	ACCEPTABLE
1,1,2,2-Tetrachloroethane [1, 4] 5110 / PEO-120-3A - Lot 010857	86.0 µg/L	58.7 to 145 73.1 to 130	-1.10	29 / 39	ACCEPTABLE
Tetrachloroethylene (Perchloroethylene) [1, 3, 4] 5115 / PEO-120-2 - Lot 010855	36.8 µg/L	46.5 to 107 56.7 to 97.1	-3.96	46 / 43	NOT ACCEPTABLE
Toluene [1, 3, 4] 5140 / PEO-120-[illegible] - Lot 010853	14.8 µg/L	12.5 to 23.1 14.2 to 21.3	-1.69	41 / 45	ACCEPTABLE
1,1,1-Trichloroethane [1, 3, 4] 5160 / PEO-120-2 - Lot 010855	62.2 µg/L	48.9 to 103 57.9 to 94.1	-1.53	39 / 42	ACCEPTABLE
1,1,2-Trichloroethane [1, 4] 5165 / PEO-120-3A - Lot 010857	126 µg/L	100 to 187 115 to 172	-1.20	30 / 39	ACCEPTABLE
Trichloroethene (Trichloroethylene) [1, 3, 4] 5170 / PEO-120-2 - Lot 010855	36.8 µg/L	29.4 to 60.8 34.6 to 55.5	-1.58	39 / 43	ACCEPTABLE
Trichlorofluoromethane [1, 4] 5175 / PEO-120-3A - Lot 010857	63.4 µg/L	38.7 to 155	-2.80	30 / 32	ACCEPTABLE
1,2,3-Trichloropropane [4] 5180 / PEO-120-3B - Lot 010860	57.2 µg/L	15.1 to 114	-0.45	20 / 35	ACCEPTABLE

Volatiles (continued)

Volatiles

(continued)

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,2,4-Trimethylbenzene [4] 5210 / PEO-120-1 - Lot 010853	7.92 µg/L	5.92 to 13.8	-1.38	31 / 35	**ACCEPTABLE**
1,3,5-Trimethylbenzene [4] 5215 / PEO-120-1 - Lot 010853	12.2 µg/L	12.2 to 18.4	-1.02	28 / 35	**ACCEPTABLE**
Vinyl acetate [4] 5225 / PEO-120-3B - Lot 010860	4.48 µg/L	0.00 to 12.5	-0.59	8 / 14	**ACCEPTABLE**
Vinyl chloride [1, 4] 5235 / PEO-120-3A - Lot 010857	17.5 µg/L	11.9 to 47.7	-1.61	33 / 33	**ACCEPTABLE**
m+p-Xylene [4] 5240 / PEO-120-1 - Lot 010853	19.6 µg/L	18.3 to 27.5	-1.02	30 / 42	**ACCEPTABLE**
o-Xylene [4] 5250 / PEO-120-1 - Lot 010853	14.0 µg/L	14.2 to 21.4	-1.88	43 / 42	**NOT ACCEPTABLE**
Xylene, total [1, 4] 5260 / PEO-120-1 - Lot 010853	33.6 µg/L	22.6 to 57.1 28.3 to 51.3	-1.08	41 / 45	**ACCEPTABLE**

Group Analysis Summary

Acceptable 51 / 54
Score 94.4% - **(Acceptable)**

End of Dataset 2

Dataset

Dataset 3

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau

168 Jeff May
1520 East 6th Avenue
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

118 Donald Lafara
901 S. Stewart Street
Ste. 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

364 Mike Smith
Joe Foss Building - Chemistry
523 E. Capital
Pierre SD 57501-3181
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII

217 Jim Gindelberger
MailStop 8 TMS-Q
999 18th Steet, Suite 500
Denver CO 80207-2466
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 West 25th Street
Cheyenne WY 82002
UNITED STATES

Trace Metals

Analysis
EPA 6010B
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10155609
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aluminum, Al [1, 3, 4] 1000 / PEI-305-1 - Lot 010988	2400 µg/L	2010 to 2840 2150 to 2700	-0.18	3 / 7	**ACCEPTABLE**
Antimony, Sb [1, 3, 4] 1005 / PEI-305-2 - Lot 010987/0	406 µg/L	306 to 531 343 to 493	-0.33	3 / 11	**ACCEPTABLE**
Arsenic, As [1, 3, 4] 1010 / PEI-305-1 - Lot 010988	336 µg/L	276 to 390 295 to 371	0.16	1 / 12	**ACCEPTABLE**
Barium, Ba [1, 4] 1015 / PEI-305-2 - Lot 010987/0	1240 µg/L	1030 to 1340 1080 to 1290	1.01	6 / 7	**ACCEPTABLE**
Beryllium, Be [1, 3, 4] 1020 / PEI-305-1 - Lot 010988	92.2 µg/L	73.4 to 99.2 77.7 to 94.9	1.37	4 / 7	**ACCEPTABLE**
Cadmium, Cd [1, 3, 4] 1030 / PEI-305-1 - Lot 010988	476 µg/L	386 to 515 408 to 493	1.19	6 / 8	**ACCEPTABLE**
Chromium, Cr (total) [1, 3, 4] 1040 / PEI-305-1 - Lot 010988	724 µg/L	644 to 835 676 to 804	-0.50	6 / 7	**ACCEPTABLE**
Cobalt, Co [1, 3, 4] 1050 / PEI-305-1 - Lot 010988	89.1 µg/L	74.8 to 98.3 78.7 to 94.4	0.65	6 / 7	**ACCEPTABLE**
Copper, Cu [1, 3, 4] 1055 / PEI-305-1 - Lot 010988	414 µg/L	371 to 451 384 to 438	0.21	1 / 7	**ACCEPTABLE**
Iron, Fe [1, 3, 4] 1070 / PEI-305-1 - Lot 010988	1740 µg/L	1500 to 1900 1560 to 1840	0.58	1 / 5	**ACCEPTABLE**
Lead, Pb [1, 3, 4] 1075 / PEI-305-1 - Lot 010988	799 µg/L	636 to 816 666 to 786	2.42	9 / 8	**CHECK**
Manganese, Mn [1, 3, 4] 1090 / PEI-305-1 - Lot 010988	1070 µg/L	925 to 1140 962 to 1110	0.96	2 / 7	**ACCEPTABLE**
Molybdenum, Mo [1, 3, 4] 1100 / PEI-305-2 - Lot 010987/0	561 µg/L	494 to 662 522 to 634	-0.61	5 / 6	**ACCEPTABLE**
Nickel, Ni [1, 3, 4] 1105 / PEI-305-1 - Lot 010988	306 µg/L	265 to 337 277 to 325	0.41	2 / 7	**ACCEPTABLE**
Selenium, Se [1, 3, 4] 1140 / PEI-305-1 - Lot 010988	420 µg/L	305 to 449 329 to 425	1.79	10 / 11	**ACCEPTABLE**
Silver, Ag [1, 3, 4] 1150 / PEI-305-2 - Lot 010987/0	479 µg/L	425 to 567 449 to 543	-0.72	8 / 7	**ACCEPTABLE**
Strontium, Sr [1, 3, 4] 1160 / PEI-305-2 - Lot 010987/0	211 µg/L	168 to 220 177 to 212	1.92	10 / 7	**ACCEPTABLE**
Thallium, Tl [1, 3, 4] 1165 / PEI-305-2 - Lot 010987/0	305 µg/L	239 to 383 263 to 359	-0.26	3 / 7	**ACCEPTABLE**
Tin, Sn [1, 3, 4] 1175 / PEI-305-2 - Lot 010987/0	1350 µg/L	1110 to 1690 1200 to 1600	-0.51	3 / 5	**ACCEPTABLE**
Titanium, Ti [1, 3, 4] 1180 / PEI-305-2 - Lot 010987/0	249 µg/L	215 to 281 226 to 270	0.07	1 / 7	**ACCEPTABLE**
Vanadium, V [1, 3, 4] 1185 / PEI-305-1 - Lot 010988	849 µg/L	726 to 927 760 to 893	0.67	7 / 7	**ACCEPTABLE**
Zinc, Zn [1, 3, 4] 1190 / PEI-305-1 - Lot 010988	1020 µg/L	851 to 1140 899 to 1090	0.56	8 / 7	**ACCEPTABLE**

End of Dataset 3

Dataset

Dataset 4

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau

168 Jeff May
1520 East 6th Avenue
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

118 Donald Lafara
901 S. Stewart Street
Ste. 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

364 Mike Smith
Joe Foss Building - Chemistry
523 E. Capital
Pierre SD 57501-3181
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII

217 Jim Gindelberger
MailStop 8 TMS-Q
999 18th Steet, Suite 500
Denver CO 80207-2466
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 West 25th Street
Cheyenne WY 82002
UNITED STATES

Trace Metals

Analysis
EPA 6020
Not Applicable

Method Number 10156000
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aluminum, Al [1, 3, 4] 1000 / PEI-305-1 - Lot 010988	2200 µg/L	2010 to 2840 2150 to 2700	-1.63	7 / 7	**ACCEPTABLE**
Antimony, Sb [1, 3, 4] 1005 / PEI-305-2 - Lot 010987/0	380 µg/L	306 to 531 343 to 493	-1.02	7 / 11	**ACCEPTABLE**
Arsenic, As [1, 3, 4] 1010 / PEI-305-1 - Lot 010988	328 µg/L	276 to 390 295 to 371	-0.26	5 / 12	**ACCEPTABLE**
Barium, Ba [1, 4] 1015 / PEI-305-2 - Lot 010987/0	1170 µg/L	1030 to 1340 1080 to 1290	-0.34	1 / 7	**ACCEPTABLE**
Beryllium, Be [1, 3, 4] 1020 / PEI-305-1 - Lot 010988	76.6 µg/L	73.4 to 99.2 77.7 to 94.9	-2.25	8 / 7	**CHECK**
Cadmium, Cd [1, 3, 4] 1030 / PEI-305-1 - Lot 010988	453 µg/L	386 to 515 408 to 493	0.12	1 / 8	**ACCEPTABLE**
Chromium, Cr (total) [1, 3, 4] 1040 / PEI-305-1 - Lot 010988	719 µg/L	644 to 835 676 to 804	-0.65	9 / 7	**ACCEPTABLE**
Cobalt, Co [1, 3, 4] 1050 / PEI-305-1 - Lot 010988	84.2 µg/L	74.8 to 98.3 78.7 to 94.4	-0.60	4 / 7	**ACCEPTABLE**
Copper, Cu [1, 3, 4] 1055 / PEI-305-1 - Lot 010988	388 µg/L	371 to 451 384 to 438	-1.73	10 / 7	**ACCEPTABLE**
Iron, Fe [1, 3, 4] 1070 / PEI-305-1 - Lot 010988	1660 µg/L	1500 to 1900 1560 to 1840	-0.60	3 / 5	**ACCEPTABLE**
Lead, Pb [1, 3, 4] 1075 / PEI-305-1 - Lot 010988	711 µg/L	636 to 816 666 to 786	-0.51	5 / 8	**ACCEPTABLE**
Manganese, Mn [1, 3, 4] 1090 / PEI-305-1 - Lot 010988	996 µg/L	925 to 1140 962 to 1110	-1.07	5 / 7	**ACCEPTABLE**
Molybdenum, Mo [1, 3, 4] 1100 / PEI-305-2 - Lot 010987/0	578 µg/L	494 to 662 522 to 634	0.00	1 / 6	**ACCEPTABLE**
Nickel, Ni [1, 3, 4] 1105 / PEI-305-1 - Lot 010988	290 µg/L	265 to 337 277 to 325	-0.92	6 / 7	**ACCEPTABLE**
Selenium, Se [1, 3, 4] 1140 / PEI-305-1 - Lot 010988	410 µg/L	305 to 449 329 to 425	1.38	5 / 11	**ACCEPTABLE**
Silver, Ag [1, 3, 4] 1150 / PEI-305-2 - Lot 010987/0	501 µg/L	425 to 567 449 to 543	0.21	4 / 7	**ACCEPTABLE**
Strontium, Sr [1, 3, 4] 1160 / PEI-305-2 - Lot 010987/0	192 µg/L	168 to 220 177 to 212	-0.26	2 / 7	**ACCEPTABLE**
Thallium, Tl [1, 3, 4] 1165 / PEI-305-2 - Lot 010987/0	304 µg/L	239 to 383 263 to 359	-0.30	5 / 7	**ACCEPTABLE**
Tin, Sn [1, 3, 4] 1175 / PEI-305-2 - Lot 010987/0	1350 µg/L	1110 to 1690 1200 to 1600	-0.51	3 / 5	**ACCEPTABLE**
Titanium, Ti [1, 3, 4] 1180 / PEI-305-2 - Lot 010987/0	242 µg/L	215 to 281 226 to 270	-0.56	8 / 7	**ACCEPTABLE**
Vanadium, V [1, 3, 4] 1185 / PEI-305-1 - Lot 010988	818 µg/L	726 to 927 760 to 893	-0.26	3 / 7	**ACCEPTABLE**
Zinc, Zn [1, 3, 4] 1190 / PEI-305-1 - Lot 010988	1010 µg/L	851 to 1140 899 to 1090	0.35	4 / 7	**ACCEPTABLE**

End of Dataset 4

Sample Information

WP - Microbiological

MIC-003

Study Lot 010969
Mfg Lot 010969

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total coliforms 2500 Microbiology	CFU/100m	477.40	356.90	431.71	227.28	425.30	255.55	580
Total Coliform, MPN 2501 Microbiology	MPN/100	453.19	0.90	523.92	300.53	486.23	296.92	580
Escherichia coli 2525 Microbiology	CFU/100m	540.00	221.00					480
Fecal coliforms 2530 Microbiology	CFU/100m	1,240.82	14,952.40	365.83	599.64	111.93	153.23	550

Demand

PEI-026

Study Lot 010965
Mfg Lot 010965

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Biochemical oxygen demand (BOD) 1530 Demands	mg/L	83.51	13.79	83.47	21.77	81.49	11.23	132 ± 0.694
Carbonaceous BOD (CBOD) 1555 Demands	mg/L	71.34	13.12	75.99	20.54	73.29	14.49	131 ± 0.694
Chemical oxygen demand (COD) 1565 Demands	mg/L	128.00	8.76	133.21	36.32	129.05	10.20	134 ± 0.71

Minerals

PEI-027-12

Study Lot 010966/0
Mfg Lot 010966/010968

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Calcium, Ca 1035 Minerals	mg/L	30.00	1.25	28.11	4.99	29.38	1.56	29.6
Magnesium, Mg 1085 Minerals	mg/L	25.87	1.26	25.56	1.82	25.46	0.73	25.8
Potassium, K 1125 Minerals	mg/L	32.38	1.94	32.56	2.29	32.47	2.21	32.1
Sodium, Na 1155 Minerals	mg/L	88.36	4.38	86.66	7.63	87.17	5.73	88.6
Chloride 1575 Minerals	mg/L	170.57	7.65	168.19	10.85	168.29	5.57	171
Conductivity 1610 Minerals	µmhos/cm	866.07	26.33	861.36	52.97	866.07	31.84	880
Fluoride 1730 Minerals	mg/L	1.21	0.09	1.18	0.26	1.16	0.10	1.21
Hardness, total as CaCO3 1755 Minerals	mg/L	180.00	7.78	174.87	13.84	178.75	7.78	180
Sulfate 2000 Minerals	mg/L	47.05	2.71	47.54	6.05	46.61	3.26	47.7

pH

PEI-027-3

Study Lot 010658
Mfg Lot 010658

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
pH 1900 Misc. Analytes	Units	8.40	0.28	8.38	0.13	8.40	0.12	8.40

Simple Nutrients

PEI-028-1

Study Lot 010967
Mfg Lot 010967

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Ammonia as N 1515 Nutrients	mg/L	8.31	0.74	8.86	1.52	8.48	0.60	8.60
Nitrate as N 1810 Nutrients	mg/L	18.76	1.34	18.20	1.53	18.42	1.38	18.9
Nitrate+nitrite as N 1820 Nutrients	mg/L	18.68	1.09	18.58	2.02	18.50	1.18	18.9
Orthophosphate as P 1870 Nutrients	mg/L	3.12	0.19	3.11	0.29	3.11	0.21	3.11

Complex Nutrients
PEI-028-2

Study Lot 011004
Mfg Lot 011004

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Kjeldahl nitrogen, total (TKN) 1795 Nutrients	mg/L	27.10	2.91	24.61	6.43	26.53	1.99	27.9
Phosphorus, total 1910 Nutrients	mg/L	7.42	0.44	7.18	1.89	7.51	0.58	7.39

Nitrite
PEI-028-3

Study Lot 011005
Mfg Lot 011005

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Nitrite as N 1840 Nutrients	mg/L	2.25	0.12	2.21	0.30	2.24	0.13	2.25

Total Cyanide
PEI-031

Study Lot 011006
Mfg Lot 011006

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total cyanide 1645 Misc. Analytes	mg/L	0.61	0.08	0.68	0.33	0.63	0.06	0.610

Total Phenolics
PEI-032

Study Lot 010670
Mfg Lot 010670

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total phenolics 1905 Misc. Analytes	mg/L	1.52	0.23	1.47	0.29	1.49	0.29	2.30

Total Residual Chlorine
PEI-033

Study Lot 011007
Mfg Lot 011007

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total residual chlorine 1940 Misc. Analytes	mg/L	0.50	0.05	0.53	0.16	0.50	0.05	0.501

Chromium VI
PEI-034-3

Study Lot 010971
Mfg Lot 010971

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chromium VI, Cr(VI) 1045 Trace Metals	µg/L	393.85	24.35	418.11	146.53	397.03	39.48	396

Residue (Whole-Volume)
PEI-079

Study Lot 011032
Mfg Lot 011032

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Residue, total (TS) 1950 Minerals	mg/L	480.73	14.78	469.39	79.63	482.08	27.09	485
Residue-filterable (TDS) 1955 Minerals	mg/L	408.16	32.37	410.50	25.97	408.16	24.36	415
Residue-nonfilterable (TSS) 1960 Misc. Analytes	mg/L	72.59	10.08	71.29	10.94	72.59	10.08	75.2

Cyanide Amenable to Chlorination
PEI-251

Study Lot 011002
Mfg Lot 011002

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Amenable cyanide 1510 Misc. Analytes	mg/L	0.32	0.05	0.30	0.03	0.30	0.04	0.322

Sulfide
PEI-257

Study Lot 010979
Mfg Lot 010979

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric

Sulfide

PEI-257
(continued)

Study Lot 010979
Mfg Lot 010979

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Sulfide 2005 Minerals	mg/L	1.78	0.52	2.65	2.39	1.77	0.53	1.97

Minerals/Hardness (Whole Volume)

PEI-304

Study Lot 010966/0
Mfg Lot 010966/010968

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Alkalinity as CaCO3 1505 Minerals	mg/L	92.66	3.28					93.5

Trace Metals (Whole Volume) Sample 1

PEI-305-1

Study Lot 010988
Mfg Lot 010988

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aluminum, Al 1000 Trace Metals	µg/L	2,424.45	137.45	2,515.71	177.09	2,513.89	238.59	2440
Arsenic, As 1010 Trace Metals	µg/L	333.00	19.00	351.58	18.76	345.92	11.67	332
Beryllium, Be 1020 Trace Metals	µg/L	86.29	4.31	94.36	4.55	94.04	5.12	87.7
Cadmium, Cd 1030 Trace Metals	µg/L	450.51	21.37	479.13	22.38	480.35	25.58	453
Chromium, Cr (total) 1040 Trace Metals	µg/L	739.85	31.84	753.57	36.82	729.44	10.12	739
Cobalt, Co 1050 Trace Metals	µg/L	86.54	3.92	88.73	6.29	85.53	2.82	86.8
Copper, Cu 1055 Trace Metals	µg/L	411.18	13.38	407.43	17.63	397.23	4.00	410
Iron, Fe 1070 Trace Metals	µg/L	1,700.61	67.94	1,750.00	106.54	1,751.02	193.83	1690
Lead, Pb 1075 Trace Metals	µg/L	726.39	29.98	751.88	59.49	751.43	73.27	728
Manganese, Mn 1090 Trace Metals	µg/L	1,034.94	36.50	1,043.14	65.04	1,042.03	106.55	1030
Mercury, Hg 1095 Trace Metals	µg/L	13.39	1.67	11.30	4.20	11.40	6.13	13.6
Nickel, Ni 1105 Trace Metals	µg/L	301.08	12.00	301.29	17.00	297.50	12.94	299
Selenium, Se 1140 Trace Metals	µg/L	376.99	24.01	414.18	16.53	413.91	18.19	387
Vanadium, V 1185 Trace Metals	µg/L	826.59	33.42	862.14	50.24	858.96	57.73	829
Zinc, Zn 1190 Trace Metals	µg/L	993.55	47.52	1,021.14	63.99	1,015.96	65.18	990

Trace Metals (Whole Volume) Sample 2

PEI-305-2

Study Lot 010987/0
Mfg Lot 010987/010970

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Antimony, Sb 1005 Trace Metals	µg/L	418.31	37.51	391.09	64.91	410.32	47.63	440
Barium, Ba 1015 Trace Metals	µg/L	1,187.72	51.57	1,237.29	24.12	1,236.74	38.13	1190
Molybdenum, Mo 1100 Trace Metals	µg/L	578.08	27.99	585.17	36.26	585.67	40.43	581
Silver, Ag 1150 Trace Metals	µg/L	495.96	23.69	509.57	20.64	509.07	27.89	495
Strontium, Sr 1160 Trace Metals	µg/L	194.25	8.73	200.14	8.59	200.14	9.72	194
Thallium, Tl 1165 Trace Metals	µg/L	311.21	24.07	315.43	11.06	314.96	13.22	312
Tin, Sn 1175 Trace Metals	µg/L	1,400.18	97.93	1,358.00	67.23	1,357.13	110.61	1400
Titanium, Ti 1180 Trace Metals	µg/L	248.25	11.08	249.71	9.09	246.94	3.50	250

Gasoline in Water

PEO-010

Study Lot 011017
Mfg Lot 011017

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Benzene 4375 Petroleum Hydrocarbons	µg/L	41.92	11.02	41.81	9.11	41.92	11.02	48.0
Ethylbenzene 4765 Petroleum Hydrocarbons	µg/L	24.61	7.07	24.47	6.26	24.61	7.07	33.0
Toluene 5140 Petroleum Hydrocarbons	µg/L	131.25	36.45	129.09	33.21	131.25	36.45	160
m+p-Xylene 5240 Petroleum Hydrocarbons	µg/L	108.37	17.69	102.59	22.34	108.37	17.69	122
o-Xylene 5250 Petroleum Hydrocarbons	µg/L	39.93	9.10	38.99	8.78	39.93	9.10	46.0
Xylene, total 5260 Petroleum Hydrocarbons	µg/L	136.08	41.99	133.91	35.50	136.08	41.99	168
Gasoline range organics (GRO), C6-C12 9408 Petroleum Hydrocarbons	µg/L	1,858.70	395.44	1,558.50	623.10	1,536.90	681.02	1720

VPH in Water - MA Method

PEO-010MA

Study Lot 011017
Mfg Lot 011017

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
C5-C8 Aliphatic Hydrocarbons 4764 Petroleum Hydrocarbons	µg/L	1,164.80	128.00					1280
C9-C12 Aliphatic Hydrocarbons 5239 Petroleum Hydrocarbons	µg/L	202.40	22.00					220
C9-C10 Aromatic Hydrocarbons 9407 Petroleum Hydrocarbons	µg/L	259.70	26.50					265
Total VPH 9409 Petroleum Hydrocarbons	µg/L	1,685.60	344.00					1720

Diesel in Water

PEO-011

Study Lot 011018
Mfg Lot 011018

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Diesel range organics (DRO) 9369 Petroleum Hydrocarbons	µg/L	2,016.82	464.61	1,645.08	905.78	1,696.78	965.18	2630

EPH in Water - MA Method

PEO-011MA

Study Lot 011018
Mfg Lot 011018

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
C11-C22 Aromatic Hydrocarbons 5002 Petroleum Hydrocarbons	µg/L	527.27	124.04	528.75	100.36	527.27	124.04	400
C19-C36 Aliphatic Hydrocarbons 5003 Petroleum Hydrocarbons	µg/L	115.00	87.39	115.00	75.06	115.00	87.39	140
C9-C18 Aliphatic Hydrocarbons 5004 Petroleum Hydrocarbons	µg/L	722.62	193.76	725.00	158.64	722.62	193.76	850
Total EPH 9371 Petroleum Hydrocarbons	µg/L	1,741.34	580.71	1,742.50	495.07	1,741.34	580.71	2020

PCBs in Water 1

PEO-020-1

Study Lot 010832
Mfg Lot 010832

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1016 (PCB-1016) 8880 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1221 (PCB-1221) 8885 PCBs in Water	µg/L	9.22	2.39	9.63	2.54	9.92	2.40	11.4
Aroclor-1232 (PCB-1232) 8890 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1242 (PCB-1242) 8895 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00
Aroclor-1248 (PCB-1248) 8900 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00
Aroclor-1254 (PCB-1254) 8905 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00
Aroclor-1260 (PCB-1260) 8910 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00

PCBs in Water 2
PEO-020-2

Study Lot 010833
Mfg Lot 010833

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1016 (PCB-1016) 8880 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00
Aroclor-1221 (PCB-1221) 8885 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00
Aroclor-1232 (PCB-1232) 8890 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00
Aroclor-1242 (PCB-1242) 8895 PCBs in Water	µg/L	5.92	1.28	4.99	1.07	4.76	0.75	7.00
Aroclor-1248 (PCB-1248) 8900 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00
Aroclor-1254 (PCB-1254) 8905 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00
Aroclor-1260 (PCB-1260) 8910 PCBs in Water	µg/L	0.00	0.00	0.00	0.00			0.00

Acids
PEO-022

Study Lot 010845
Mfg Lot 010845

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Benzoic acid 5610 Acids	µg/L	54.83	36.42	52.29	33.28	54.83	36.42	111
4-Chloro-3-methylphenol 5700 Acids	µg/L	155.43	27.39	147.19	26.40	147.76	30.74	185
2-Chloropheno 5800 Acids	µg/L	143.96	30.46	146.07	21.28	147.65	22.13	188
2,4-Dichlorophenol 6000 Acids	µg/L	55.28	11.22	58.67	9.84	58.46	10.89	70.1
2,4-Dimethylphenol 6130 Acids	µg/L	59.81	14.73	64.94	10.89	64.60	10.36	78.7
2,4-Dinitrophenol 6175 Acids	µg/L	102.21	34.17	128.09	33.29	129.00	38.18	151
2-Methyl-4,6-dinitrophenol 6360 Acids	µg/L	78.11	16.67	76.31	20.53	79.46	19.39	92.2
2-Methylphenol (o-Cresol) 6400 Acids	µg/L	53.84	13.23	61.83	9.49	62.36	10.61	74.8
3+4-Methylphenol (m+p-Cresol) 6412 Acids	µg/L	109.95	33.91	127.14	28.33	132.41	23.51	165
2-Nitrophenol 6490 Acids	µg/L	69.09	15.25	74.09	10.22	74.23	11.09	89.2
4-Nitrophenol 6500 Acids	µg/L	56.58	27.80	60.58	28.22	59.73	32.38	103
Pentachlorophenol 6605 Acids	µg/L	114.05	25.58	112.74	25.93	114.91	24.03	138
Phenol 6625 Acids	µg/L	61.31	28.60	58.81	26.24	57.35	29.51	109
2,4,5-Trichlorophenol 6835 Acids	µg/L	128.89	24.50	134.11	27.85	136.16	29.34	160
2,4,6-Trichlorophenol 68400 Acids	µg/L	134.10	26.36	147.06	29.43	148.99	33.21	172

Chlordane
PEO-024-2

Study Lot 010801
Mfg Lot 010801

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chlordane (total) 7250 Pesticides	µg/L	16.46	3.22	14.84	4.26	15.88	3.02	18.1

PCB's in Transformer Oil 1
PEO-072-1

Study Lot 010867
Mfg Lot 010867

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1016 (PCB-1016) 8880 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1221 (PCB-1221) 8885 PCBs in Oil	mg/Kg	0.00	0.00					0.00

PCB's in Transformer Oil 1

PEO-072-1

Study Lot 010867
Mfg Lot 010867

(continued)

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1232 (PCB-1232) 8890 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1242 (PCB-1242) 8895 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1248 (PCB-1248) 8900 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1254 (PCB-1254) 8905 PCBs in Oil	mg/Kg	38.31	11.53	37.36	11.58	38.31	11.53	43.7
Aroclor-1260 (PCB-1260) 8910 PCBs in Oil	mg/Kg	0.00	0.00					0.00

PCB's in Transformer Oil 2

PEO-072-2

Study Lot 010868
Mfg Lot 010868

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1016 (PCB-1016) 8880 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1221 (PCB-1221) 8885 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1232 (PCB-1232) 8890 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1242 (PCB-1242) 8895 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1248 (PCB-1248) 8900 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1254 (PCB-1254) 8905 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1260 (PCB-1260) 8910 PCBs in Oil	mg/Kg	18.32	6.46	17.86	6.39	18.32	6.46	20.7

Toxaphene

PEO-093

Study Lot 010814
Mfg Lot 010814

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Toxaphene (Chlorinated camphene) 8250 Pesticides	µg/L	68.81	25.75	68.77	14.85	68.53	16.31	80.8

Herbicides

PEO-094

Study Lot 010862
Mfg Lot 010862

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Pentachlorophenol 6605 Herbicides	µg/L	2.68	0.66	3.87	0.92	4.13	0.66	2.68
Acifluorfen 8505 Herbicides	µg/L	7.62	6.21	8.39	3.42	8.44	3.89	8.46
Bentazon 8530 Herbicides	µg/L	3.57	1.03	3.52	0.89	3.57	1.03	2.85
2,4-D 8545 Herbicides	µg/L	5.81	2.13	5.06	2.30	5.00	2.59	7.58
2,4-DB 8560 Herbicides	µg/L	8.53	2.90	8.34	2.72	8.34	2.90	8.53
Dicamba 8595 Herbicides	µg/L	4.84	1.44	5.71	1.33	5.82	1.42	6.30
3,5-Dichlorobenzoic acid 8600 Herbicides	µg/L	8.60	3.81	8.85	3.14	8.77	3.81	8.60
Dichloroprop 8605 Herbicides	µg/L	5.38	1.38	5.31	1.40	5.39	1.38	5.38
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) 8620 Herbicides	µg/L	2.75	1.05	3.16	2.36	2.60	1.05	2.75
Picloram 8645 Herbicides	µg/L	5.13	1.90	4.00	1.50	3.98	1.90	5.13
Silvex (2,4,5-TP) 8650 Herbicides	µg/L	2.00	0.62	3.24	2.08	2.74	0.69	2.49
2,4,5-T 8655 Herbicides	µg/L	4.04	1.22	5.12	1.60	4.89	0.67	5.16

TX TPH in Water - High

PEO-115TX-H

Study Lot 001361
Mfg Lot 001361

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
C6 Aliphatics 1 Petroleum Hydrocarbons	mg/L	0.89	0.10					0.990
C6 to C8 Aliphatics 2 Petroleum Hydrocarbons	mg/L	7.50	0.83					8.33
C9 to C10 Aliphatics 3 Petroleum Hydrocarbons	mg/L	4.60	0.51					5.11
C11 to C12 Aliphatics 4 Petroleum Hydrocarbons	mg/L	6.56	0.73					7.29
C12 to C16 Aliphatics 5 Petroleum Hydrocarbons	mg/L	11.43	1.27					12.7
C17 to C21 Aliphatics 6 Petroleum Hydrocarbons	mg/L	7.30	0.81					8.11
C22 to C35 Aliphatics 7 Petroleum Hydrocarbons	mg/L	0.89	0.10					0.990
C8 Aromatics (Toluene Only) 8 Petroleum Hydrocarbons	mg/L	2.29	0.23					2.34
C9 to C10 Aromatics 9 Petroleum Hydrocarbons	mg/L	6.66	0.74					7.40
C11 to C12 Aromatics 10 Petroleum Hydrocarbons	mg/L	4.73	0.53					5.25
C12 to C16 Aromatics 11 Petroleum Hydrocarbons	mg/L	8.16	0.91					9.07
C17 to C21 Aromatics 12 Petroleum Hydrocarbons	mg/L	4.61	0.51					5.12
C22 to C35 Aromatics 13 Petroleum Hydrocarbons	mg/L	0.68	0.08					0.750
Diesel range organics (DRO) 9369 Petroleum Hydrocarbons	mg/L	43.20	4.80					48.0
Gasoline range organics (GRO), C6-C12 9408 Petroleum Hydrocarbons	mg/L	43.29	4.81					48.1

TX TPH in Water - Low

PEO-115TX-L

Study Lot 001360
Mfg Lot 001360

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
C6 Aliphatics 1 Petroleum Hydrocarbons	mg/L	0.00	0.00					0.00
C6 to C8 Aliphatics 2 Petroleum Hydrocarbons	mg/L	0.64	0.07					0.710
C9 to C10 Aliphatics 3 Petroleum Hydrocarbons	mg/L	0.26	0.03					0.290
C11 to C12 Aliphatics 4 Petroleum Hydrocarbons	mg/L	0.57	0.06					0.630
C12 to C16 Aliphatics 5 Petroleum Hydrocarbons	mg/L	1.08	0.12					1.20
C17 to C21 Aliphatics 6 Petroleum Hydrocarbons	mg/L	0.41	0.05					0.450
C22 to C35 Aliphatics 7 Petroleum Hydrocarbons	mg/L	0.00	0.00					0.00
C8 Aromatics (Toluene Only) 8 Petroleum Hydrocarbons	mg/L	0.35	0.04					0.360
C9 to C10 Aromatics 9 Petroleum Hydrocarbons	mg/L	0.65	0.07					0.720
C11 to C12 Aromatics 10 Petroleum Hydrocarbons	mg/L	0.75	0.08					0.833
C12 to C16 Aromatics 11 Petroleum Hydrocarbons	mg/L	1.02	0.10					1.04
C17 to C21 Aromatics 12 Petroleum Hydrocarbons	mg/L	0.29	0.03					0.320
C22 to C35 Aromatics 13 Petroleum Hydrocarbons	mg/L	0.00	0.00					0.00
Diesel range organics (DRO) 9369 Petroleum Hydrocarbons	mg/L	3.12	0.39					3.90
Gasoline range organics (GRO), C6-C12 9408 Petroleum Hydrocarbons	mg/L	3.83	0.43					4.25

Volatile Organic Compounds 1

PEO-120-1

Study Lot 010853
Mfg Lot 010853

Volatile Organic Compounds 1

PEO-120-1

Study Lot 010853
Mfg Lot 010853

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Benzene 4375 Volatiles	µg/L	14.03	1.64	13.84	1.93	13.71	1.10	14.0
1,2-Dichlorobenzene 4610 Volatiles	µg/L	17.31	1.92	17.04	3.36	16.49	2.53	17.4
1,3-Dichlorobenzene 4615 Volatiles	µg/L	20.51	2.29	20.17	3.76	20.07	2.39	21.1
1,4-Dichlorobenzene 4620 Volatiles	µg/L	20.76	2.30	20.14	3.80	20.00	2.28	21.1
Ethylbenzene 4765 Volatiles	µg/L	18.23	1.96	17.89	2.47	18.24	2.12	18.4
Methyl tert-butyl ether (MTBE) 5000 Volatiles	µg/L	26.20	3.87	24.98	3.81	25.36	3.87	26.2
Naphthalene 5005 Volatiles	µg/L	21.60	4.60	18.55	4.67	18.20	4.60	21.6
Toluene 5140 Volatiles	µg/L	17.79	1.77	17.34	2.35	17.60	1.93	17.9
1,2,4-Trimethylbenzene 5210 Volatiles	µg/L	9.87	1.41	9.10	1.41	9.24	1.41	9.87
1,3,5-Trimethylbenzene 5215 Volatiles	µg/L	15.30	3.04	13.41	2.91	13.62	3.04	15.3
m+p-Xylene 5240 Volatiles	µg/L	22.90	3.24	21.98	3.26	22.25	3.24	22.9
o-Xylene 5250 Volatiles	µg/L	17.80	2.02	17.37	2.29	17.64	2.02	17.8
Xylene, total 5260 Volatiles	µg/L	39.82	5.75	39.70	5.35	40.19	4.95	40.7

Volatile Organic Compounds 2

PEO-120-2

Study Lot 010855
Mfg Lot 010855

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Bromodichloromethane 4395 Volatiles	µg/L	115.58	11.92	109.97	8.73	110.11	9.20	112
Bromoform 4400 Volatiles	µg/L	66.27	8.01	61.78	9.33	62.33	9.82	65.5
Carbon tetrachloride 4455 Volatiles	µg/L	19.20	2.67	18.35	2.51	18.32	2.62	19.6
Chlorobenzene 4475 Volatiles	µg/L	93.73	8.37	90.75	10.47	92.40	7.57	95.1
Chloroform 4505 Volatiles	µg/L	25.06	2.65	24.29	2.06	24.24	2.11	24.9
Dibromochloromethane 4575 Volatiles	µg/L	54.77	5.85	53.41	7.17	53.57	7.66	54.5
1,2-Dichloroethane 4635 Volatiles	µg/L	39.03	4.09	37.82	3.92	37.61	3.76	38.6
Methylene chloride (Dichloromethane) 4975 Volatiles	µg/L	53.25	6.95	50.03	10.10	51.44	7.90	53.0
Tetrachloroethylene (Perchloroethylene) 5115 Volatiles	µg/L	76.89	10.12	78.59	10.21	78.72	11.01	82.2
1,1,1-Trichloroethane 5160 Volatiles	µg/L	76.00	9.03	75.27	10.28	76.17	9.69	78.6
Trichloroethene (Trichloroethylene) 5170 Volatiles	µg/L	45.07	5.23	44.20	6.19	44.43	4.23	46.3

Volatile Organic Compounds 3A

PEO-120-3A

Study Lot 010857
Mfg Lot 010857

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chloroethane 4485 Volatiles	µg/L	75.00	15.90	65.52	14.05	65.17	15.90	75.0
1,1-Dichloroethane 4630 Volatiles	µg/L	92.18	10.15	87.91	15.62	90.16	14.58	89.4
1,1-Dichloroethylene 4640 Volatiles	µg/L	34.54	5.43	37.00	15.83	34.81	8.08	34.9
cis-1,2-Dichloroethylene 4645 Volatiles	µg/L	97.20	9.30	93.03	16.80	94.89	15.98	94.3
1,2-Dichloropropane 4655 Volatiles	µg/L	47.34	5.38	45.32	6.73	45.82	6.39	47.9

Volatile Organic Compounds 3A

Study Lot 010857
Mfg Lot 010857

PEO-120-3A
(continued)

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
cis-1,3-Dichloropropene 4680 Volatiles	µg/L	48.10	7.98	44.36	11.03	45.47	7.98	48.1
trans-1,3-Dichloropropylene 4685 Volatiles	µg/L	14.91	1.90	15.01	2.90	14.76	2.39	15.9
trans-1,2-Dichloroethylene 4700 Volatiles	µg/L	127.42	15.26	130.07	22.32	131.23	23.52	128
2-Hexanone 4860 Volatiles	µg/L	118.61	19.04	141.23	64.20	127.60	39.32	120
Methyl bromide (Bromomethane) 4950 Volatiles	µg/L	73.20	13.34	51.22	13.33	52.05	13.34	73.2
Methyl chloride (Chloromethane) 4960 Volatiles	µg/L	89.20	15.88	59.92	17.69	61.48	15.88	89.2
4-Methyl-2-pentanone (MIBK) 4995 Volatiles	µg/L	57.87	10.72	50.07	12.04	50.43	14.12	59.2
Styrene 5100 Volatiles	µg/L	59.72	7.17	53.83	9.33	56.03	7.33	59.5
1,1,2,2-Tetrachloroethane 5110 Volatiles	µg/L	101.78	14.35	98.63	27.11	97.09	18.16	99.7
1,1,2-Trichloroethane 5165 Volatiles	µg/L	143.35	14.41	137.96	18.20	141.04	15.64	145
Trichlorofluoromethane 5175 Volatiles	µg/L	96.70	11.89	88.00	23.30	87.36	11.89	96.7
Vinyl chloride 5235 Volatiles	µg/L	29.80	7.65	28.12	7.10	28.21	7.65	29.8

Volatile Organic Compounds 3B

Study Lot 010860
Mfg Lot 010860

PEO-120-3B

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Acetone 4315 Volatiles	µg/L	72.92	24.45	72.00	25.30	72.92	24.45	78.0
Acetonitrile 4320 Volatiles	µg/L	68.42	6.95	68.24	5.34	68.42	6.95	70.1
Acrolein (Propenal) 4325 Volatiles	µg/L	42.30	15.50	11.45	13.22	11.45	15.50	42.3
Acrylonitrile 4340 Volatiles	µg/L	76.20	15.05	78.24	17.45	76.20	15.05	79.8
2-Butanone (Methyl ethyl ketone, MEK) 4410 Volatiles	µg/L	38.63	12.34	39.49	13.84	38.63	12.34	35.9
Carbon disulfide 4450 Volatiles	µg/L	106.00	17.33	108.43	25.80	106.07	17.33	106
2-Chloroethyl vinyl ether 4500 Volatiles	µg/L	27.83	7.55	29.97	13.02	27.83	7.55	28.7
1,2-Dibromo-3-chloropropane (DBCP) 4570 Volatiles	µg/L	15.42	3.44	15.87	3.46	15.42	3.44	16.6
Dibromomethane 4595 Volatiles	µg/L	88.50	9.40	87.17	15.71	88.32	9.40	88.5
Dichlorodifluoromethane 4625 Volatiles	µg/L	0.00	0.00					0.00
Dichlorofluoromethane 4626 Volatiles	µg/L	0.00	0.00	0.00	0.00			0.00
1,1,1,2-Tetrachloroethane 5105 Volatiles	µg/L	94.00	15.23	93.30	16.65	94.00	15.23	93.0
1,2,3-Trichloropropane 5180 Volatiles	µg/L	64.65	16.53	64.89	13.88	64.65	16.53	65.0
Vinyl acetate 5225 Volatiles	µg/L	5.79	2.22	8.06	5.14	5.79	2.22	26.1

Base/Neutrals 1

Study Lot 010879
Mfg Lot 010879

PEO-121-1

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Naphthalene 5005 Base/Neutrals	µg/L	30.28	6.01	32.01	5.27	31.68	5.57	37.8
Acenaphthene 5500 Base/Neutrals	µg/L	153.11	25.78	184.08	31.07	184.53	34.88	196
Acenaphthylene 5505 Base/Neutrals	µg/L	155.69	25.83	171.49	54.11	157.92	14.60	194

Base/Neutrals 1

Study Lot 010879
Mfg Lot 010879

PEO-121-1
(continued)

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Anthracene 5555 Base/Neutrals	µg/L	33.13	5.48	34.20	6.33	34.44	6.93	38.5
Benzo(a)anthracene 5575 Base/Neutrals	µg/L	75.78	11.93	75.09	20.03	74.71	15.41	88.0
Benzo(a)pyrene 5580 Base/Neutrals	µg/L	49.39	10.22	59.85	16.13	57.75	11.23	62.5
Benzo(b)fluoranthene 5585 Base/Neutrals	µg/L	27.99	5.70	29.51	8.36	28.94	8.71	32.4
Benzo(g,h,i)perylene 5590 Base/Neutrals	µg/L	23.21	5.70	23.37	5.39	23.32	4.37	27.1
Benzo(k)fluoranthene 5600 Base/Neutrals	µg/L	44.67	10.79	52.66	14.44	50.52	11.72	51.9
Chrysene 5855 Base/Neutrals	µg/L	14.72	2.59	15.92	10.89	13.54	2.98	14.6
Dibenz(a,h) anthracene 5895 Base/Neutrals	µg/L	30.66	7.06	30.07	6.98	30.75	6.88	35.6
Fluoranthene 6265 Base/Neutrals	µg/L	63.37	9.80	67.86	10.74	68.64	11.05	75.7
Fluorene 6270 Base/Neutrals	µg/L	69.14	11.01	72.26	10.97	72.37	11.97	84.8
Indeno(1,2,3-cd) pyrene 6315 Base/Neutrals	µg/L	34.86	8.53	39.22	11.68	38.98	11.85	44.1
Phenanthrene 6615 Base/Neutrals	µg/L	73.00	10.82	82.02	13.70	82.45	14.69	87.0
Pyrene 6665 Base/Neutrals	µg/L	105.13	21.19	111.94	22.84	112.52	23.85	125

Base/Neutrals 2A

Study Lot 010884
Mfg Lot 010884

PEO-121-2A

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
1,2-Dichlorobenzene 4610 Base/Neutrals	µg/L	39.23	11.07	45.87	11.23	44.63	11.36	58.3
1,3-Dichlorobenzene 4615 Base/Neutrals	µg/L	83.13	22.49	92.05	21.86	91.20	22.49	130
1,4-Dichlorobenzene 4620 Base/Neutrals	µg/L	36.16	10.71	41.01	9.08	40.59	9.36	54.6
Hexachlorobutadiene 4835 Base/Neutrals	µg/L	107.01	28.73	119.56	35.01	119.23	40.20	166
Hexachloroethane 4840 Base/Neutrals	µg/L	82.89	23.06	94.17	24.75	95.14	26.66	130
Nitrobenzene 5015 Base/Neutrals	µg/L	39.01	7.64	40.16	5.85	40.26	6.22	49.3
1,2,4-Trichlorobenzene 5155 Base/Neutrals	µg/L	66.37	15.34	70.58	15.17	69.84	17.40	93.7
Benzidine 5595 Base/Neutrals	µg/L	307.49	158.35	202.07	134.10	188.77	137.23	274
4-Bromophenyl phenyl ether 5660 Base/Neutrals	µg/L	157.86	32.31	170.59	56.33	157.92	34.54	192
Butyl benzyl phthalate 5670 Base/Neutrals	µg/L	114.71	28.68	96.46	44.13	90.54	34.18	142
bis(2-Chloroethoxy)methane 5760 Base/Neutrals	µg/L	101.88	16.95	98.97	13.85	98.90	15.64	129
bis(2-Chloroethyl) ether 5765 Base/Neutrals	µg/L	111.23	23.73	107.36	27.86	108.48	30.34	151
bis(2-Chloroisopropyl) ether 5780 Base/Neutrals	µg/L	56.94	12.42	56.93	14.95	59.58	12.69	75.9
2-Chloronaphthalene 5795 Base/Neutrals	µg/L	137.44	27.04	142.55	36.41	144.33	40.53	182
4-Chlorophenyl phenylether 5825 Base/Neutrals	µg/L	26.84	4.85	28.13	4.99	28.29	5.30	31.4
Dibenzofuran 5905 Base/Neutrals	µg/L	79.61	14.86	75.82	15.05	75.85	17.54	100
Di-n-butyl phthalate 5925 Base/Neutrals	µg/L	113.24	22.58	112.30	55.66	102.41	36.88	141
3,3'-Dichlorobenzidine 5945 Base/Neutrals	µg/L	132.79	31.96	110.60	42.86	109.45	47.10	148
Diethyl phthalate 6070 Base/Neutrals	µg/L	91.77	23.32	84.33	36.73	84.42	40.15	118

Base/Neutrals 2A

PEO-121-2A
(continued)

Study Lot 010884
Mfg Lot 010884

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Dimethyl phthalate 6135 Base/Neutrals	µg/L	72.81	28.08	76.12	38.17	77.24	44.21	108
2,4-Dinitrotoluene (2,4-DNT) 6185 Base/Neutrals	µg/L	138.10	24.07	141.10	30.46	141.13	33.11	173
2,6-Dinitrotoluene (2,6-DNT) 6190 Base/Neutrals	µg/L	135.28	22.39	132.57	24.38	133.09	26.35	162
Di-n-octyl phthalate 6200 Base/Neutrals	µg/L	152.87	39.71	143.45	36.93	154.88	25.83	186
bis(2-Ethylhexyl) phthalate (DEHP) 6255 Base/Neutrals	µg/L	140.86	30.21	130.53	29.30	131.86	31.52	172
Hexachlorobenzene 6275 Base/Neutrals	µg/L	50.13	8.24	57.16	16.52	54.52	15.08	59.6
Hexachlorocyclopentadiene 6285 Base/Neutrals	µg/L	80.12	32.19	100.52	25.00	99.97	27.35	136
Isophorone 6320 Base/Neutrals	µg/L	83.58	14.87	89.14	13.65	89.55	14.53	99.3
2-Methylnaphthalene 6385 Base/Neutrals	µg/L	55.59	13.49	68.12	12.52	68.60	14.02	80.6
n-Nitrosodimethylamine 6530 Base/Neutrals	µg/L	48.50	19.56	45.03	26.32	45.88	28.66	89.7
n-Nitrosodiphenylamine 6535 Base/Neutrals	µg/L	51.70	12.33	52.81	11.89	53.08	13.12	64.1
n-Nitrosodi-n-propylamine 6545 Base/Neutrals	µg/L	67.57	14.36	74.17	11.62	73.38	12.78	85.4

Base/Neutrals 2B

PEO-121-2B

Study Lot 010819
Mfg Lot 010819

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Pyridine 5095 Base/Neutrals	µg/L	31.06	9.98	30.66	8.89	31.06	9.98	50.0
Aniline 5545 Base/Neutrals	µg/L	108.45	54.62	110.99	45.18	108.45	54.62	151
Benzyl alcohol 5630 Base/Neutrals	µg/L	52.01	16.69	51.11	16.48	52.01	16.69	81.5
Carbazole 5680 Base/Neutrals	µg/L	108.58	45.22	208.14	324.88	108.58	45.22	50.0
4-Chloroaniline 5745 Base/Neutrals	µg/L	140.00	26.62	83.47	37.62	84.87	26.62	140
1-Methylnaphthalene 6380 Base/Neutrals	µg/L	56.60	10.52	47.07	9.32	46.54	10.52	56.6
2-Nitroaniline 6460 Base/Neutrals	µg/L	57.90	9.45	50.58	9.80	49.31	9.45	57.9
3-Nitroaniline 6465 Base/Neutrals	µg/L	0.00	0.00					0.00
4-Nitroaniline 6470 Base/Neutrals	µg/L	118.55	43.18	129.83	60.89	118.55	43.18	140

Pesticides 1

PEO-122-1

Study Lot 010837
Mfg Lot 010837

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aldrin 7025 Pesticides	µg/L	0.74	0.16	1.03	0.26	1.06	0.23	0.848
4,4'-DDD 7355 Pesticides	µg/L	5.98	1.17	6.16	1.99	6.73	0.92	6.66
4,4'-DDE 7360 Pesticides	µg/L	4.61	0.76	4.42	1.58	4.87	1.00	5.28
4,4'-DDT 7365 Pesticides	µg/L	1.51	0.30	1.54	0.32	1.61	0.20	1.60
Dieldrin 7470 Pesticides	µg/L	8.30	1.30	7.81	2.53	8.57	1.09	8.97
Heptachlor 7685 Pesticides	µg/L	4.56	0.94	4.52	1.11	4.70	0.97	5.38
Heptachlor epoxide 7690 Pesticides	µg/L	3.13	0.51	3.89	0.91	4.11	0.71	3.30

Pesticides 2

PEO-122-2

Study Lot 010875
Mfg Lot 010875

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
delta-BHC 7105 Pesticides	µg/L	2.42	0.51	2.57	0.72	2.70	0.54	2.80
alpha-BHC (alpha-Hexachlorocyclohexane) 7110 Pesticides	µg/L	2.59	0.52	2.94	1.22	2.70	0.42	2.90
beta-BHC (beta-Hexachlorocyclohexane) 7115 Pesticides	µg/L	3.30	0.61	3.35	0.94	3.44	0.96	3.66
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane) 7120 Pesticides	µg/L	5.97	1.08	5.92	1.87	6.04	1.83	6.68
alpha-Chlordane 7240 Pesticides	µg/L	1.52	0.27	1.47	0.25	1.45	0.29	1.61
gamma-Chlordane 7245 Pesticides	µg/L	2.22	0.39	2.26	0.44	2.22	0.48	2.42
Endosulfan I 7510 Pesticides	µg/L	13.69	2.97	13.60	3.72	14.45	3.06	15.4
Endosulfan II 7515 Pesticides	µg/L	5.81	1.17	6.76	1.70	7.07	0.98	6.88
Endosulfan sulfate 7520 Pesticides	µg/L	11.21	2.20	12.82	7.30	11.09	2.27	12.2
Endrin aldehyde 7530 Pesticides	µg/L	7.98	1.81	8.81	2.28	9.22	2.00	8.85
Endrin ketone 7535 Pesticides	µg/L	8.51	2.30	7.20	2.18	7.36	2.30	8.51
Endrin 7540 Pesticides	µg/L	3.07	0.60	2.72	0.75	2.84	0.44	3.19
Methoxychlor 7810 Pesticides	µg/L	4.38	1.07	4.20	0.98	4.47	0.54	4.69

Program analyte accrediting footnotes

[1] NELAC
[2] EPA
[3] NVLAP
[4] A2LA
[5] NELAC Experimental

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

NVLAP Labcode: 200393-0 ACCREDITED Certificate # 2122.01

EPA Lab MT00005 **RT Labcode RT1061**

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

Thank you for participating in study WP05-3B. Your report has been sent to the following agencies. If an agency is missing or not correct, please contact RTC immediately.

(105) **CDPHE / Lab Service Division**
Ken Johnson
8100 Lowry Boulevard
Denver, CO 80230 6928

(108) **DOHHR - Bureau of Labs**
Wally Baker
2220 Old Penitentiary Rd.
Boise, ID 83712

(118) **Nevada Division of Env Protection**
Donald Lafara
901 S. Stewart Street
Ste. 4001
Carson City, NV 89701 5249

(119) **North Dakota Department of Health**
Errol Erickson
Chemistry Division
2635 E. Main Ave., P.O. Box 937
Bismarck, ND 58502 0937

(168) **Montana Dept. of Environmental Quality**
Jeff May
Water Protection Bureau
P.O. Box 200901
Helena, MT 59620 0901

(206) **Wyoming Dept. of Environmental Quality**
Edward Mock
Water Quality Division
122 West 25th Street
Cheyenne, WY 82002

(217) **EPA Region VIII**
Jim Gindelberger
MailStop 8 TMS-Q
999 18th Street - Suite 500
Denver, CO 80207 2466

(229) **Florida Dept. of Health, Bureau of Laboratories**
Stephen Arms
1217 Pearl Street
Jacksonville, FL 32202

(346) **Idaho Bureau of Laboratories**
Dan Rousselle
2220 Old Penitentiary Road
Boise, ID 83712

(356) **South Dakota Drinking Water Program**
Kelli Buscher
523 E Capital
Pierre, SD 57501

Additional information about the study can be found on our website at www.rt-corp.com. Enter our secure "eReport" site to find study statistics and online evaluations. Coming soon a study discussion summary will be posted. This report will discuss and significant study incidents.

If you have any questions or comments about the study please contact me.

Sincerly,

Christopher Rucinski
Quality Director

RTC
2931 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report

WPCHEM/DMRQA 25 **WP05-3B**

Commenced 20-Jul-2005 | Concluded 2-Sep-2005

RT Labcode RT1061

NVLAP® **Labcode: 200393-0**

This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

MIC-003
WP-Microbiological PT

Lot: 010301
Program:

MIC-003

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2525 Escherichia coli*	69	CFU/100 mL	1603 *0*	62.0 36.0 - 245	Acceptable	0.193
2531 Fecal coliform, MPN*	50	MPN	SM 18/19thED 9221 E *20036208*	130 36 - 400	Acceptable	-1.09
2500 Total coliforms*	96	CFU/100 mL	SM 18/19thED 9222 B *20036800*	62.0 30.9 - 233	Acceptable	2.86
2501 Total Coliform, MPN*	50	MPN	SM 18th ED 9221 C *20036606*	130 36 - 480	Acceptable	-1.17
2530 Fecal coliforms*	68	CFU/100 mL	SM 18th ED 9222 D *20037405*	62.0 36.0 - 245	Acceptable	0.330

MIC-003

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2500 Total coliforms*	CFU/100 mL	64.2	62.0	11.1	64.9	21.6	30.9 - 233	
2501 Total Coliform, MPN*	MPN	127	130	65.6	117	66.6	36 - 480	
2525 Escherichia coli*	CFU/100 mL	62.3	62.0	34.8	62.3	1.42	36.0 - 245	
2530 Fecal coliforms*	CFU/100 mL	60.7	62.0	22.1	61.9	14.4	36.0 - 245	13 100.0%
2531 Fecal coliform, MPN*	MPN	113	130	57.6	100	41.9	36 - 400	10 100.0%

PEI-026
Demand

Lot: 010445
Program:

PEI-026

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1565 Chemical oxygen demand (COD)	34	mg/L	EPA 410.4 *10077006*	35.6 22.0 - 46.7	Acceptable	-0.0969
1530 Biochemical oxygen demand (BOD)	24	mg/L	SM 18th ED 5210 B *20027401*	22.2 10.9 - 33.4	Acceptable	0.479
1555 Carbonaceous BOD (CBOD)	18	mg/L	SM 18th ED 5210 B *20027401*	19.2 8.56 - 29.8	Acceptable	-0.339

PEI-026

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1530 Biochemical oxygen demand (BOD)	mg/L	22.2	22.2	3.76	22.9	3.30	10.9 - 33.4 14.6 - 29.7	60 93.3%
1555 Carbonaceous BOD (CBOD)	mg/L	19.2	19.2	3.54	20.3	3.69	8.56 - 29.8 12.1 - 26.2	41 90.2%
1565 Chemical oxygen demand (COD)	mg/L	34.4	35.6	4.13	37.1	5.86	22.0 - 46.7 26.1 - 42.6	48 95.8%

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
1085 Magnesium	24.3 mg/L	EPA 130.2 *10007008*	25.2 21.6 - 28.9	**Acceptable**	-0.813
1035 Calcium	52.2 mg/L	EPA 200.7 *10013408*	52.4 46.8 - 59.4	**Acceptable**	-0.427
1125 Potassium	10.1 mg/L	EPA 200.7 *10013408*	9.51 7.59 - 11.5	**Acceptable**	0.841
1155 Sodium	60.0 mg/L	EPA 200.7 *10013408*	64.9 55.1 - 74.5	**Acceptable**	-1.49
1575 Chloride	191 mg/L	EPA 300.0 *10053006*	188 162 - 213	**Acceptable**	0.479
1730 Fluoride	2.75 mg/L	EPA 300.0 *10053006*	2.65 2.20 - 3.11	**Acceptable**	0.658
2000 Sulfate	80.8 mg/L	EPA 300.0 *10053006*	80.6 66.7 - 92.2	**Acceptable**	0.305
1035 Calcium	52.2 mg/L	EPA 6010 *10155201*	52.4 46.8 - 59.4	**Acceptable**	-0.427
1085 Magnesium	24.3 mg/L	EPA 6010 *10155201*	25.2 21.6 - 28.9	**Acceptable**	-0.813
1125 Potassium	10.1 mg/L	EPA 6010 *10155201*	9.51 7.59 - 11.5	**Acceptable**	0.841
1155 Sodium	60.0 mg/L	EPA 6010 *10155201*	64.9 55.1 - 74.5	**Acceptable**	-1.49
1505 Alkalinity as CaCO₃	36.8 mg/L	SM 18/19thED 2320 B *20003003*	35.8 30.3 - 42.2	**Acceptable**	0.251
1755 Hardness, total as CaCO₃	230 mg/L	SM 18/19thED 2340 B *20003401*	236 216 - 257	**Acceptable**	-0.861
1610 Conductivity	854 µmhos/cm	SM 18/19thED 2510 B *20003809*	866 787 - 945	**Acceptable**	-0.456
1730 Fluoride	2.70 mg/L	SM 18/19thED 4500 F-C *20012800*	2.65 2.20 - 3.11	**Acceptable**	0.329

Study Summary

PEI-027-12

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
1035 Calcium	mg/L	53.1	52.4	2.11	52.7	2.94	46.8 - 59.4 48.9 - 57.3	49 93.9%
1085 Magnesium	mg/L	25.3	25.2	1.23	25.2	1.48	21.6 - 28.9 22.8 - 27.7	49 95.9%
1125 Potassium	mg/L	9.55	9.51	0.654	9.55	0.546	7.59 - 11.5 8.24 - 10.9	46 91.5%
1155 Sodium	mg/L	64.8	64.9	3.23	63.5	3.57	55.1 - 74.5 58.3 - 71.2	47 93.8%
1505 Alkalinity as CaCO3	mg/L	36.3	35.8	1.99	35.6	2.20	30.3 - 42.2 32.3 - 40.2	48 89.6%
1575 Chloride	mg/L	187	188	8.35	188	8.64	162 - 213 171 - 204	50 90.0%
1610 Conductivity	µmhos/cm	866	866	26.3	865	15.9	787 - 945 813 - 919	52 90.4%
1730 Fluoride	mg/L	2.65	2.65	0.152	2.62	0.196	2.20 - 3.11 2.35 - 2.96	47 89.4%
1755 Hardness, total as CaCO3	mg/L	236	236	6.97	235	10.7	216 - 257 222 - 250	51 86.3%
2000 Sulfate	mg/L	79.5	80.6	4.26	80.2	5.78	66.7 - 92.2 71.0 - 88.0	47 93.6%

PEI-027-3
pH (20 mL)
Lot: 010435
Program:

PEI-027-3

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1900 pH	6.99	UNITS	EPA 150.1 *10008205*	7.00 6.80 - 7.20	Acceptable	0.000

PEI-027-3

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1900 pH	UNITS	6.99	7.00	0.0494	6.99	0.0487	6.80 - 7.20	79 96.2%

PEI-028-1
Simple Nutrients
Lot: 010442
Program:

PEI-028-1

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1810 Nitrate as N	25.1	mg/L	EPA 300.0 *10053006*	25.6 20.0 - 30.9	Acceptable	-0.165
1820 Nitrate+nitrite as N*	25.1	mg/L	EPA 300.0 *10053006*	25.6 20.9 - 29.7	Acceptable	-0.135
1870 Orthophosphate as P	3.75	mg/L	EPA 300.0 *10053006*	2.29 1.85 - 2.75	Not acceptable	9.67
1515 Ammonia as N	5.49	mg/L	EPA 350.1 *10063204*	5.37 3.91 - 6.85	Acceptable	0.224
1810 Nitrate as N	25.8	mg/L	EPA 353.2 *10067206*	25.6 20.0 - 30.9	Acceptable	0.220
1820 Nitrate+nitrite as N*	25.8	mg/L	EPA 353.2 *10067604*	25.6 20.9 - 29.7	Acceptable	0.338
1870 Orthophosphate as P	2.42	mg/L	EPA 365.1 *10069600*	2.29 1.85 - 2.75	Acceptable	0.800

PEI-028-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1515 Ammonia as N	mg/L	5.38	5.37	0.490	5.42	0.575	3.91 - 6.35 4.40 - 6.36	59 94.9%
1810 Nitrate as N	mg/L	25.4	25.6	1.82	25.3	1.55	20.0 - 30.9 21.8 - 29.0	52 86.5%
1820 Nitrate+nitrite as N*	mg/L	25.3	25.6	1.48	25.3	2.39	20.9 - 29.7 22.3 - 28.3	24 87.5%
1870 Orthophosphate as P	mg/L	2.30	2.29	0.150	2.29	0.198	1.85 - 2.75 2.00 - 2.60	50 86.0%

PEI-028-2
Complex Nutrients
Lot: 010443
Program:

PEI-028-2

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1790 Kjeldahl nitrogen (TKN)	21.7	mg/L	EPA 351.2 *10065006*	19.1 12.6 - 24.6	Acceptable	1.55
1910 Phosphorus, total	6.37	mg/L	EPA 365.1 *10069600*	6.13 5.05 - 7.27	Acceptable	0.566

PEI-028-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1790 Kjeldahl nitrogen (TKN)	mg/L	18.6	19.1	2.00	19.3	2.44	12.6 - 24.6 14.6 - 22.6	33 100.0%
1910 Phosphorus, total	mg/L	6.16	6.13	0.371	6.10	0.619	5.05 - 7.27 5.42 - 6.90	46 84.8%

PEI-028-3
Nitrite
Lot: 010444
Program:

PEI-028-3

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1840 Nitrite as N*	1.06 mg/L	EPA 300.0 *10053006*	1.22 0.995 - 1.44	Check	-2.16
1840 Nitrite as N*	1.32 mg/L	EPA 353.2 *10067206*	1.22 0.995 - 1.44	Acceptable	1.35

PEI-028-3

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1840 Nitrite as N*	mg/L	1.22	1.22	0.0741	1.22	0.0954	0.995 - 1.44 1.07 - 1.37	47 83.0%

PEI-031
Total Cyanide
Lot: 010453
Program:

PEI-031

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1645 Total cyanide	0.547 mg/L	EPA 335.4 *10061208*	0.523 0.310 - 0.739	Acceptable	0.307

PEI-031

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1645 Total cyanide	mg/L	0.525	0.523	0.0716	0.512	0.0614	0.310 - 0.739 0.381 - 0.668	41 90.2%

PEI-032
Total Phenolics
Lot: 010451
Program:

PEI-032

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1905 Total phenolics	0.580 mg/L	EPA 420.2 *10079604*	0.860 0.471 - 1.25	Check	-2.15

PEI-032

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1905 Total phenolics	mg/L	0.860	0.860	0.130	0.744	0.149	0.471 - 1.25 0.601 - 1.12	30 96.7%

PEI-033
Total Residual Chlorine
Lot: 010452
Program:

PEI-033

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1940 Total residual chlorine	0.30 mg/L	EPA 330.5 *10059402*	0.296 0.221 - 0.387	Acceptable	-0.144

PEI-033

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1940 Total residual chlorine	mg/L	0.304	0.296	0.0278	0.299	0.0228	0.221 - 0.387 0.248 - 0.360	57 94.7%

PEI-034-3
Chromium VI
Lot: 010434
Program:

PEI-034-3

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1045 Chromium VI*	208 µg/L	SM 18/19thED 3111 B *20006002*	206 168 - 237	Acceptable	0.522

PEI-034-3

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1045 Chromium VI*	µg/L	202	206	11.5	202	17.9	168 - 237 179 - 225	14 92.9%

PEI-079

Residue (whole-volume)

Lot: 010455
Program:

PEI-079

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1960 Residue-nonfilterable (TSS)	83	mg/L	EPA 160.2 *10009402*	90.3 61.1 - 114	Acceptable	-0.530
1950 Residue, total (TS)*	490	mg/L	EPA 160.3 *10009800*	495 411 - 558	Acceptable	0.203
1955 Residue-filterable (TDS)	390	mg/L	SM 18/19thED 2540 C *20004404*	402 302 - 492	Acceptable	-0.222

PEI-079

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1950 Residue, total (TS)*	mg/L	485	495	24.6	488	20.0	411 - 558 435 - 534	34 85.3%
1955 Residue-filterable (TDS)	mg/L	397	402	31.6	393	31.4	302 - 492 334 - 460	39 94.9%
1960 Residue-nonfilterable (TSS)	mg/L	87.7	90.3	8.87	87.7	8.87	61.1 - 114	47 91.5%

PEI-254

Total Recoverable Petroleum Hydrocarbons (TRPH)

Program:

PEI-254

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1935 Total recoverable petroleum hydrocarbons (TRPH)*	42	mg/L	EPA 418.1 *10078805*	58.1 26.4 - 83.9	Acceptable	-1.38

PEI-254

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1935 Total recoverable petroleum hydrocarbons (TRPH)*	mg/L	55.2	58.1	9.59			26.4 - 83.9 36.0 - 74.3	

PEI-257

Sulfide (including total and soluble)

Lot: 010157
Program:

PEI-257

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
2005 Sulfide*	10	mg/L	EPA 376.1 *10074007*	9.3 7.44 - 11.2	Acceptable	0.925
2005 Sulfide*	10.15	mg/L	EPA 376.2 *10074405*	9.3 7.44 - 11.2	Acceptable	1.19

PEI-257

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
2005 Sulfide*	mg/L	9.30	9.3	0.757	9.31	1.06	7.44 - 11.2	21 90.5%

PEI-305-1
Trace Metals 1 (whole-volume)

Lot: 010446
Program:
PEI-305-1

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 200.7**				Overall method evaluation **Acceptable**	
1000 Aluminum	212 µg/L	EPA 200.7 *10013408*	237 166 - 313	**Acceptable**	-1.11
1010 Arsenic	696 µg/L	EPA 200.7 *10013408*	718 604 - 840	**Acceptable**	-0.660
1020 Beryllium	111 µg/L	EPA 200.7 *10013408*	109 91.5 - 123	**Acceptable**	0.756
1030 Cadmium	515 µg/L	EPA 200.7 *10013408*	525 448 - 596	**Acceptable**	-0.283
1040 Chromium	747 µg/L	EPA 200.7 *10013408*	770 671 - 870	**Acceptable**	-0.725
1050 Cobalt	86.4 µg/L	EPA 200.7 *10013408*	89.9 77.5 - 102	**Acceptable**	-0.792
1055 Copper	68.3 µg/L	EPA 200.7 *10013408*	61.8 52.7 - 71.1	**Check**	2.08
1070 Iron	999 µg/L	EPA 200.7 *10013408*	1020 901 - 1160	**Acceptable**	-0.742
1075 Lead	268 µg/L	EPA 200.7 *10013408*	264 226 - 301	**Acceptable**	0.320
1090 Manganese	1300 µg/L	EPA 200.7 *10013408*	1320 1190 - 1470	**Acceptable**	-0.642
1105 Nickel	597 µg/L	EPA 200.7 *10013408*	617 555 - 691	**Acceptable**	-1.15
1140 Selenium	765 µg/L	EPA 200.7 *10013408*	830 659 - 961	**Acceptable**	-0.895
1185 Vanadium	1160 µg/L	EPA 200.7 *10013408*	1250 1100 - 1400	**Acceptable**	-1.79
1190 Zinc	529 µg/L	EPA 200.7 *10013408*	534 458 - 616	**Acceptable**	-0.303
▲ Summary for Method **EPA 200.7**		Analytes Evaluated **14**	Acceptable **14**	Acceptance Percentage **100.0%**	
▼ Summary for Method **EPA 200.8**				Overall method evaluation **Acceptable**	
1000 Aluminum	236 µg/L	EPA 200.8 *10014401*	237 166 - 313	**Acceptable**	-0.123
1010 Arsenic	704 µg/L	EPA 200.8 *10014401*	718 604 - 840	**Acceptable**	-0.457
1020 Beryllium	119 µg/L	EPA 200.8 *10014401*	109 91.5 - 123	**Check**	2.27
1030 Cadmium	534 µg/L	EPA 200.8 *10014401*	525 448 - 596	**Acceptable**	0.486
1040 Chromium	716 µg/L	EPA 200.8 *10014401*	770 671 - 870	**Acceptable**	-1.66
1050 Cobalt	86.4 µg/L	EPA 200.8 *10014401*	89.9 77.5 - 102	**Acceptable**	-0.792
1055 Copper	58.2 µg/L	EPA 200.8 *10014401*	61.8 52.7 - 71.1	**Acceptable**	-1.21
1075 Lead	258 µg/L	EPA 200.8 *10014401*	264 226 - 301	**Acceptable**	-0.480
1090 Manganese	1210 µg/L	EPA 200.8 *10014401*	1320 1190 - 1470	**Check**	-2.57
1095 Mercury	15.9 µg/L	EPA 200.8 *10014401*	18.1 11.1 - 24.4	**Acceptable**	-0.856
1105 Nickel	593 µg/L	EPA 200.8 *10014401*	617 555 - 691	**Acceptable**	-1.33
1140 Selenium	868 µg/L	EPA 200.8 *10014401*	830 659 - 961	**Acceptable**	1.15
1185 Vanadium	1180 µg/L	EPA 200.8 *10014401*	1250 1100 - 1400	**Acceptable**	-1.39
1190 Zinc	569 µg/L	EPA 200.8 *10014401*	534 458 - 616	**Acceptable**	1.21
▲ Summary for Method **EPA 200.8**		Analytes Evaluated **14**	Acceptable **14**	Acceptance Percentage **100.0%**	
1095 Mercury	15.2 µg/L	EPA 245.1 *10036201*	18.1 11.1 - 24.4	**Acceptable**	-1.17
▼ Summary for Method **EPA 6010A**				Overall method evaluation **Acceptable**	

PEI-305-1

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1000 Aluminum	212 µg/L	EPA 6010A *10155405*	237 166 - 313	**Acceptable**	-1.11
1010 Arsenic	696 µg/L	EPA 6010A *10155405*	718 604 - 840	**Acceptable**	-0.660
1020 Beryllium	111 µg/L	EPA 6010A *10155405*	109 91.5 - 123	**Acceptable**	0.756
1030 Cadmium	515 µg/L	EPA 6010A *10155405*	525 448 - 596	**Acceptable**	-0.283
1040 Chromium	747 µg/L	EPA 6010A *10155405*	770 671 - 870	**Acceptable**	-0.725
1050 Cobalt	86.4 µg/L	EPA 6010A *10155405*	89.9 77.5 - 102	**Acceptable**	-0.792
1055 Copper	68.3 µg/L	EPA 6010A *10155405*	61.8 52.7 - 71.1	**Check**	2.08
1070 Iron	999 µg/L	EPA 6010A *10155405*	1020 901 - 1160	**Acceptable**	-0.742
1075 Lead	268 µg/L	EPA 6010A *10155405*	264 226 - 301	**Acceptable**	0.320
1090 Manganese	1300 µg/L	EPA 6010A *10155405*	1320 1190 - 1470	**Acceptable**	-0.642
1105 Nickel	597 µg/L	EPA 6010A *10155405*	617 555 - 691	**Acceptable**	-1.15
1140 Selenium	765 µg/L	EPA 6010A *10155405*	830 659 - 961	**Acceptable**	-0.895
1185 Vanadium	1160 µg/L	EPA 6010A *10155405*	1250 1100 - 1400	**Acceptable**	-1.79
1190 Zinc	529 µg/L	EPA 6010A *10155405*	534 458 - 616	**Acceptable**	-0.303
▲ Summary for Method **EPA 6010A**		Analytes Evaluated **14**	Acceptable **14**	Acceptance Percentage **100.0%**	
▼ Summary for Method **EPA 6020**				Overall method evaluation **Acceptable**	
1000 Aluminum	236 µg/L	EPA 6020 *10156000*	237 166 - 313	**Acceptable**	-0.123
1010 Arsenic	704 µg/L	EPA 6020 *10156000*	718 604 - 840	**Acceptable**	-0.457
1020 Beryllium	119 µg/L	EPA 6020 *10156000*	109 91.5 - 123	**Check**	2.27
1030 Cadmium	534 µg/L	EPA 6020 *10156000*	525 448 - 596	**Acceptable**	0.486
1040 Chromium	716 µg/L	EPA 6020 *10156000*	770 671 - 870	**Acceptable**	-1.66
1050 Cobalt	86.4 µg/L	EPA 6020 *10156000*	89.9 77.5 - 102	**Acceptable**	-0.792
1055 Copper	58.2 µg/L	EPA 6020 *10156000*	61.8 52.7 - 71.1	**Acceptable**	-1.21
1075 Lead	258 µg/L	EPA 6020 *10156000*	264 226 - 301	**Acceptable**	-0.480
1090 Manganese	1210 µg/L	EPA 6020 *10156000*	1320 1190 - 1470	**Check**	-2.57
1105 Nickel	593 µg/L	EPA 6020 *10156000*	617 555 - 691	**Acceptable**	-1.33
1140 Selenium	868 µg/L	EPA 6020 *10156000*	830 659 - 961	**Acceptable**	1.15
1185 Vanadium	1180 µg/L	EPA 6020 *10156000*	1250 1100 - 1400	**Acceptable**	-1.39
1190 Zinc	569 µg/L	EPA 6020 *10156000*	534 458 - 616	**Acceptable**	1.21
▲ Summary for Method **EPA 6020**		Analytes Evaluated **13**	Acceptable **13**	Acceptance Percentage **100.0%**	
1095 Mercury	15.9 µg/L	EPA 7471 *10166004*	18.1 11.1 - 24.4	**Acceptable**	-0.856

Study Summary

PEI-305-1

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1000 Aluminum	µg/L	239	237	24.4	235	38.9	166 - 313 190 - 288	11 100.0%

Study Summary

PEI-305-1

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
1000 Aluminum	µg/L	239	237	24.4	235	38.9	166 - 313 190 - 288	11 100.0%
1010 Arsenic	µg/L	722	718	39.4	715	33.1	604 - 840 643 - 800	14 100.0%
1020 Beryllium	µg/L	107	109	5.29	111	2.13	91.5 - 123 96.8 - 118	11 100.0%
1030 Cadmium	µg/L	522	525	24.7	525	10.9	448 - 596 473 - 571	12 83.3%
1040 Chromium	µg/L	771	770	33.1	742	25.4	671 - 870 705 - 837	11 90.9%
1050 Cobalt	µg/L	89.6	89.9	4.04	89.5	2.95	77.5 - 102 81.6 - 97.7	11 100.0%
1055 Copper	µg/L	61.9	61.8	3.07	61.6	5.25	52.7 - 71.1 55.8 - 68.0	11 100.0%
1070 Iron	µg/L	1030	1020	41.8	1020	48.6	901 - 1160 943 - 1110	
1075 Lead	µg/L	264	264	12.5	265	9.13	226 - 301 239 - 289	12 100.0%
1090 Manganese	µg/L	1330	1320	46.7	1290	58.0	1190 - 1470 1230 - 1420	11 81.8%
1095 Mercury	µg/L	17.8	18.1	2.22	15.0	1.62	11.1 - 24.4 13.4 - 22.2	10 100.0%
1105 Nickel	µg/L	623	617	22.6	600	15.1	555 - 691 578 - 668	11 100.0%
1140 Selenium	µg/L	810	830	50.3	837	49.9	659 - 961 709 - 911	15 100.0%
1185 Vanadium	µg/L	1250	1250	50.2	1220	69.8	1100 - 1400 1150 - 1350	11 100.0%
1190 Zinc	µg/L	537	534	26.4	555	23.9	458 - 616 484 - 590	11 100.0%

PEI-305-2
Trace Metals 2 (whole-volume)

Lot: 010447/010
Program:
PEI-305-2

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
1015 Barium*	464 µg/L	EPA 200.7 *10013408*	422 365 - 483	Check	2.04
1100 Molybdenum	367 µg/L	EPA 200.7 *10013408*	472 345 - 594	Acceptable	-2.48
1150 Silver	456 µg/L	EPA 200.7 *10013408*	456 391 - 522	Acceptable	-0.0459
1160 Strontium	245 µg/L	EPA 200.7 *10013408*	230 200 - 261	Acceptable	1.49
1180 Titanium	68.5 µg/L	EPA 200.7 *10013408*	69.8 58.8 - 79.9	Acceptable	-0.256
1005 Antimony	443 µg/L	EPA 200.8 *10014401*	500 313 - 543	Acceptable	0.392
1015 Barium*	438 µg/L	EPA 200.8 *10014401*	422 365 - 483	Acceptable	0.714
1100 Molybdenum	454 µg/L	EPA 200.8 *10014401*	472 345 - 594	Acceptable	-0.386
1150 Silver	458 µg/L	EPA 200.8 *10014401*	456 391 - 522	Acceptable	0.0459
1160 Strontium	238 µg/L	EPA 200.8 *10014401*	230 200 - 261	Acceptable	0.792
1165 Thallium	575 µg/L	EPA 200.8 *10014401*	579 469 - 693	Acceptable	-0.161
1175 Tin*	1100 µg/L	EPA 200.8 *10014401*	1250 988 - 1510	Acceptable	-1.72
1180 Titanium	66.5 µg/L	EPA 200.8 *10014401*	69.8 58.8 - 79.9	Acceptable	-0.826
1015 Barium*	464 µg/L	EPA 6010A *10155405*	422 365 - 483	Check	2.04
1100 Molybdenum	367 µg/L	EPA 6010A *10155405*	472 345 - 594	Acceptable	-2.48
1150 Silver	456 µg/L	EPA 6010A *10155405*	456 391 - 522	Acceptable	-0.0459
1160 Strontium	245 µg/L	EPA 6010A *10155405*	230 200 - 261	Acceptable	1.49
1180 Titanium	68.5 µg/L	EPA 6010A *10155405*	69.8 58.8 - 79.9	Acceptable	-0.256
1005 Antimony	443 µg/L	EPA 6020 *10156000*	500 313 - 543	Acceptable	0.392
1015 Barium*	438 µg/L	EPA 6020 *10156000*	422 365 - 483	Acceptable	0.714
1100 Molybdenum	454 µg/L	EPA 6020 *10156000*	472 345 - 594	Acceptable	-0.386
1150 Silver	458 µg/L	EPA 6020 *10156000*	456 391 - 522	Acceptable	0.0459
1160 Strontium	238 µg/L	EPA 6020 *10156000*	230 200 - 261	Acceptable	0.792
1165 Thallium	575 µg/L	EPA 6020 *10156000*	579 469 - 693	Acceptable	-0.161
1175 Tin*	1100 µg/L	EPA 6020 *10156000*	1250 988 - 1510	Acceptable	-1.72
1180 Titanium	66.5 µg/L	EPA 6020 *10156000*	69.8 58.8 - 79.9	Acceptable	-0.826

Study Summary

PEI-305-2

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
1005 Antimony	µg/L	428	500	38.3	419	90.1	313 - 543 351 - 504	
1015 Barium*	µg/L	424	422	19.6	437	31.3	365 - 483 385 - 463	
1100 Molybdenum	µg/L	470	472	41.5	456	26.8	345 - 594	

PEI-305-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1100 Molybdenum	µg/L	470	472	41.5	456	26.8	345 - 594	
1150 Silver	µg/L	457	456	21.8	457	9.64	391 - 522 413 - 501	
1160 Strontium	µg/L	230	230	10.1	236	10.9	200 - 261 210 - 251	
1165 Thallium	µg/L	581	579	37.3	576	3.36	469 - 693 507 - 656	
1175 Tin*	µg/L	1250	1250	87.0	1170	110	988 - 1510 1080 - 1420	
1180 Titanium	µg/L	69.4	69.8	3.51	66.5	2.54	58.8 - 79.9 62.3 - 76.4	

PEO-010

Gasoline in Water

Lot: 010549
Program:

PEO-010

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
9408 Gasoline range organics (GRO), C6-C12*	1200	µg/L	EPA 8015B *10173601*	1464 574 - 2600	Acceptable	-1.16
9408 Gasoline range organics (GRO), C6-C12*	794	µg/L	SW8015M as G *0*	1464 574 - 2600	Check	-2.36
9408 Gasoline range organics (GRO), C6-C12*	794	µg/L	SW8015M as G (MT) *0*	1464 574 - 2600	Check	-2.36

PEO-010

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
9408 Gasoline range organics (GRO), C6-C12*	µg/L	1590	1464	337	1340	432	574 - 2600 911 - 2260	12 100.0%

PEO-010MA

Gasoline in Water - VPH by MA Methods

Program: PEO-010MA

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **MA VPH**					Overall method evaluation **Acceptable**	
4375 Benzene	29	µg/L	MA VPH *0*	35.6 12.9 - 58.3	**Acceptable**	-0.871
4764 C5-C8 Aliphatic Hydrocarbons*	711	µg/L	MA VPH *0*	700 314 - 986	**Acceptable**	0.545
4765 Ethylbenzene	19	µg/L	MA VPH *0*	20.5 16.0 - 24.2	**Acceptable**	-0.803
5000 Methyl tert-butyl ether (MTBE)	2.1	µg/L	MA VPH *0*	<2.50 0.00 - 2.50	**Acceptable**	
5005 Naphthalene	5.0	µg/L	MA VPH *0*	3.88 2.33 - 5.43	**Acceptable**	3.94
5140 Toluene	94	µg/L	MA VPH *0*	97.5 67.6 - 122	**Acceptable**	1.93
5239 C9-C12 Aliphatic Hydrocarbons*	247	µg/L	MA VPH *0*	314 0.00 - 481	**Acceptable**	0.361
5240 m+p-Xylene	79	µg/L	MA VPH *0*	86.7 49.3 - 118	**Acceptable**	-0.395
5250 o-Xylene	30	µg/L	MA VPH *0*	33.8 18.6 - 47.9	**Acceptable**	-0.673
5260 Xylene, total	109	µg/L	MA VPH *0*	120 93.6 - 142	**Acceptable**	-1.13
9407 C9-C10 Aromatic Hydrocarbons*	163	µg/L	MA VPH *0*	248 46.2 - 326	**Acceptable**	-0.494
9408 Gasoline range organics (GRO), C6-C12	1070	µg/L	MA VPH *0*	1464 574 - 2600	**Acceptable**	-1.54

▲ Summary for Method **MA VPH** — Analytes Evaluated **12** — Acceptable **12** — Acceptance Percentage **100.0%**

Study Summary

PEO-010MA

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
4375 Benzene	µg/L	35.6	35.6	7.58			12.9 - 58.3	
4764 C5-C8 Aliphatic Hydrocarbons*	µg/L	650	700	112			314 - 986	
4765 Ethylbenzene	µg/L	20.1	20.5	1.37			16.0 - 24.2	
5000 Methyl tert-butyl ether (MTBE)	µg/L		<2.50				0.00 - 2.50	
5005 Naphthalene	µg/L	3.88	3.88	0.284			2.33 - 5.43	
5140 Toluene	µg/L	76.6	97.5	9.00			67.6 - 122	
5239 C9-C12 Aliphatic Hydrocarbons*	µg/L	215	314	88.7			0.00 - 481	
5240 m+p-Xylene	µg/L	83.5	86.7	11.4			49.3 - 118	
5250 o-Xylene	µg/L	33.3	33.8	4.90			18.6 - 47.9	
5260 Xylene, total	µg/L	118	120	8.00			93.6 - 142	
9407 C9-C10 Aromatic Hydrocarbons*	µg/L	186	248	46.6			46.2 - 326	
9408 Gasoline range organics (GRO), C6-C12	µg/L	1590	1464	337			574 - 2600	

PEO-011
Diesel in Water

Lot: 010550
Program:

PEO-011

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
9369 Diesel range organics (DRO), C12-C28*	1400 µg/L	EPA 8015B *10173601*	1964 439 - 2570	Acceptable	-0.282
9369 Diesel range organics (DRO), C12-C28*	1400 µg/L	SW8015M as D *0*	1964 439 - 2570	Acceptable	-0.282
9369 Diesel range organics (DRO), C12-C28*	1400 µg/L	SW8015M as D (MT) *0*	1964 439 - 2570	Acceptable	-0.282

PEO-011

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
9369 Diesel range organics (DRO), C12-C28*	µg/L	1500	1964	355	1360	97.7	439 - 2570 794 - 2210	12 100.0%

PEO-011MA
Diesel in Water - EPH by MA Methods

Program:

PEO-011MA

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **MA VPH**			Overall method evaluation **Acceptable**		
5002 C11-C22 Aromatic Hydrocarbons*	340 µg/L	MA VPH *0*	410 137 - 669	Acceptable	-0.712
5003 C19-C36 Aliphatic Hydrocarbons*	<300 µg/L	MA VPH *0*	125 0.00 - 213	Acceptable	
5004 C9-C18 Aliphatic Hydrocarbons*	410 µg/L	MA VPH *0*	525 115 - 847	Acceptable	-0.582
5005 Naphthalene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
5500 Acenaphthene	<5.0 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
5505 Acenaphthylene	4.7 µg/L	MA VPH *0*	4.93 1.60 - 8.21	Acceptable	-0.162
5555 Anthracene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
5575 Benzo(a)anthracene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
5580 Benzo(a)pyrene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
5590 Benzo(g,h,i)perylene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
5601 Benzo(b+k)fluoranthene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
5855 Chrysene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
5895 Dibenz(a,h) anthracene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
6265 Fluoranthene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
6270 Fluorene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
6315 Indeno(1,2,3-cd) pyrene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
6385 2-Methylnaphthalene	9.60 µg/L	MA VPH *0*	10.8 5.96 - 13.6	Acceptable	-0.134
6615 Phenanthrene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
6665 Pyrene	<5.00 µg/L	MA VPH *0*	0 0 - 0	Acceptable	
9370 TEH*	920 µg/L	MA VPH *0*	1080 378 - 2240	Acceptable	-1.60
▲ Summary for Method **MA VPH**		Analytes Evaluated **20**	Acceptable **20**	Acceptance Percentage **100.0%**	

Study Summary

PEO-011MA

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
5002 C11-C22 Aromatic Hydrocarbons*	µg/L	403	410	88.5			137 - 669	
5003 C19-C36 Aliphatic Hydrocarbons*	µg/L	86.2	125	42.1			0.00 - 213	
5004 C9-C18 Aliphatic Hydrocarbons*	µg/L	481	525	122			115 - 847	
5005 Naphthalene	µg/L		0				0 - 0	
5500 Acenaphthene	µg/L		0				0 - 0	
5505 Acenaphthylene	µg/L	4.88	4.93	1.11			1.60 - 8.21	
5555 Anthracene	µg/L		0				0 - 0	
5575 Benzo(a)anthracene	µg/L		0				0 - 0	
5580 Benzo(a)pyrene	µg/L		0				0 - 0	
5590 Benzo(g,h,i)perylene	µg/L		0				0 - 0	
5601 Benzo(b+k)fluoranthene	µg/L		0				0 - 0	
5855 Chrysene	µg/L		0				0 - 0	
5895 Dibenz(a,h) anthracene	µg/L		0				0 - 0	
6265 Fluoranthene	µg/L		0				0 - 0	
6270 Fluorene	µg/L		0				0 - 0	
6315 Indeno(1,2,3-cd) pyrene	µg/L		0				0 - 0	
6385 2-Methylnaphthalene	µg/L	9.77	10.8	1.27			5.96 - 13.6	
6615 Phenanthrene	µg/L		0				0 - 0	
6665 Pyrene	µg/L		0				0 - 0	
9370 TEH*	µg/L	1310	1080	244			378 - 2240	

PEO-020-1
PCBs in Water (Sample 1)

Lot: 010527
Program:

PEO-020-1

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
8880 Aroclor-1016 (PCB-1016)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8885 Aroclor-1221 (PCB-1221)	<1.00 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	1.60 µg/L	EPA 608 *10103603*	1.47 0.154 - 2.77	Acceptable	1.23
8895 Aroclor-1242 (PCB-1242)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8910 Aroclor-1260 (PCB-1260)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8880 Aroclor-1016 (PCB-1016)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8885 Aroclor-1221 (PCB-1221)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	1.6 µg/L	EPA 8082 *10179007*	1.47 0.154 - 2.77	Acceptable	1.23
8895 Aroclor-1242 (PCB-1242)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8910 Aroclor-1260 (PCB-1260)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	

PEO-020-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
8880 Aroclor-1016 (PCB-1016)	µg/L		0				0 - 0	
8885 Aroclor-1221 (PCB-1221)	µg/L		0				0 - 0	
8890 Aroclor-1232 (PCB-1232)	µg/L	1.31	1.47	0.235	1.52	0.213	0.154 - 2.77	16 76.2%
8895 Aroclor-1242 (PCB-1242)	µg/L		0				0 - 0	
8900 Aroclor-1248 (PCB-1248)	µg/L		0				0 - 0	
8905 Aroclor-1254 (PCB-1254)	µg/L		0				0 - 0	
8910 Aroclor-1260 (PCB-1260)	µg/L		0				0 - 0	

PEO-020-2
PCBs in Water (Sample 2)

Lot: 010528
Program:
PEO-020-2

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
8880 Aroclor-1016 (PCB-1016)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8885 Aroclor-1221 (PCB-1221)	<1.0 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8895 Aroclor-1242 (PCB-1242)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	3.3 µg/L	EPA 608 *10103603*	3.40 1.53 - 4.56	Acceptable	0.495
8910 Aroclor-1260 (PCB-1260)	<0.50 µg/L	EPA 608 *10103603*	0 0 - 0	Acceptable	
8880 Aroclor-1016 (PCB-1016)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8885 Aroclor-1221 (PCB-1221)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8895 Aroclor-1242 (PCB-1242)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	3.3 µg/L	EPA 8082 *10179007*	3.40 1.53 - 4.56	Acceptable	0.495
8910 Aroclor-1260 (PCB-1260)	<0.50 µg/L	EPA 8082 *10179007*	0 0 - 0	Acceptable	

Study Summary

PEO-020-2

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
8880 Aroclor-1016 (PCB-1016)	µg/L		0				0 - 0	
8885 Aroclor-1221 (PCB-1221)	µg/L		0				0 - 0	
8890 Aroclor-1232 (PCB-1232)	µg/L		0				0 - 0	
8895 Aroclor-1242 (PCB-1242)	µg/L		0				0 - 0	
8900 Aroclor-1248 (PCB-1248)	µg/L		0				0 - 0	
8905 Aroclor-1254 (PCB-1254)	µg/L	3.05	3.40	0.505	2.84	0.660	1.53 - 4.56 2.03 - 4.06	23 83.3%
8910 Aroclor-1260 (PCB-1260)	µg/L		0				0 - 0	

PEO-022

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 8270C**				Overall method evaluation **Acceptable**	
5610 Benzoic acid*	32 µg/L	EPA 8270C *10185805*	168 0.000 - 342	**Acceptable**	-0.925
5700 4-Chloro-3-methylphenol*	92 µg/L	EPA 8270C *10185805*	136 53.3 - 175	**Acceptable**	-1.09
5800 2-Chlorophenol*	30 µg/L	EPA 8270C *10185805*	48.6 15.6 - 62.1	**Acceptable**	-1.14
6000 2,4-Dichlorophenol*	77 µg/L	EPA 8270C *10185805*	121 39.2 - 149	**Acceptable**	-0.934
6130 2,4-Dimethylphenol*	97 µg/L	EPA 8270C *10185805*	148 32.8 - 194	**Acceptable**	-0.597
6175 2,4-Dinitrophenol*	45 µg/L	EPA 8270C *10185805*	107 0.000 - 154	**Acceptable**	-1.07
6360 2-Methyl-4,6-dinitrophenol*	34 µg/L	EPA 8270C *10185805*	65.9 18.5 - 95.0	**Acceptable**	-1.77
6400 2-Methylphenol (o-Cresol)*	40 µg/L	EPA 8270C *10185805*	64.2 12.2 - 80.7	**Acceptable**	-0.561
6412 3+4-Methylphenol (m+p-Cresol)*	113 µg/L	EPA 8270C *10185805*	214 10.7 - 273	**Acceptable**	-0.662
6490 2-Nitrophenol*	96 µg/L	EPA 8270C *10185805*	153 34.9 - 201	**Acceptable**	-0.794
6500 4-Nitrophenol*	52 µg/L	EPA 8270C *10185805*	167 0.000 - 224	**Acceptable**	-0.920
6605 Pentachlorophenol*	113 µg/L	EPA 8270C *10185805*	197 55.9 - 272	**Acceptable**	-1.41
6625 Phenol*	72 µg/L	EPA 8270C *10185805*	198 0.000 - 264	**Acceptable**	-0.763
6835 2,4,5-Trichlorophenol*	64 µg/L	EPA 8270C *10185805*	98.9 35.5 - 127	**Acceptable**	-1.14
6840 2,4,6-Trichlorophenol*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
▲ Summary for Method **EPA 8270C**		Analytes Evaluated **15**	Acceptable **15**	Acceptance Percentage **100.0%**	

PEO-022

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
5610 Benzoic acid*	µg/L	105	168	78.9	95.5	74.1	0.000 - 342	17 100.0%
5700 4-Chloro-3-methylphenol*	µg/L	114	136	20.2	111	17.7	53.3 - 175 73.6 - 155	28 100.0%
5800 2-Chlorophenol*	µg/L	38.8	48.6	7.74	37.8	7.89	15.6 - 62.1 23.4 - 54.3	28 100.0%
6000 2,4-Dichlorophenol*	µg/L	94.1	121	18.3	98.8	13.7	39.2 - 149 57.5 - 131	28 96.4%
6130 2,4-Dimethylphenol*	µg/L	113	148	26.8	115	21.1	32.8 - 194 59.6 - 167	28 100.0%
6175 2,4-Dinitrophenol*	µg/L	73.5	107	26.7	75.8	28.9	0.000 - 154 20.1 - 127	25 100.0%
6360 2-Methyl-4,6-dinitrophenol*	µg/L	56.7	65.9	12.8	57.2	22.5	18.5 - 95.0	26 96.3%
6400 2-Methylphenol (o-Cresol)*	µg/L	46.4	64.2	11.4	49.3	9.98	12.2 - 80.7 23.6 - 69.3	25 100.0%
6412 3+4-Methylphenol (m+p-Cresol)*	µg/L	142	214	43.8	151	52.5	10.7 - 273 54.4 - 229	21 100.0%
6490 2-Nitrophenol*	µg/L	118	153	27.7	118	19.6	34.9 - 201 62.5 - 173	28 100.0%
6500 4-Nitrophenol*	µg/L	92.4	167	43.9	78.5	48.4	0.000 - 224 4.61 - 180	26 100.0%
6605 Pentachlorophenol*	µg/L	164	197	36.1	169	46.7	55.9 - 272 92.0 - 236	28 100.0%

Study Summary

PEO-022

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
6625 Phenol*	µg/L	111	198	51.1	92.7	35.2	0.000 - 264 8.64 - 213	28 100.0%
6835 2,4,5-Trichlorophenol*	µg/L	81.5	98.9	15.3	78.2	18.0	35.5 - 127 50.8 - 112	26 100.0%
6840 2,4,6-Trichlorophenol*	µg/L		0				0 - 0	

PEO-024-2

Chlordane (Total)

Lot: 010511
Program:

Evaluation

PEO-024-2

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
7250 Chlordane, total	17 µg/L	EPA 608 *10103603*	17.2 7.50 - 24.5	Acceptable	0.353
7250 Chlordane, total	17 µg/L	EPA 8081A *10178606*	17.2 7.50 - 24.5	Acceptable	0.353

Study Summary

PEO-024-2

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
7250 Chlordane, total	µg/L	16.0	17.2	2.83	14.4	4.79	7.50 - 24.5 10.3 - 21.7	23 100.0%

PEO-072-1

PCBs in Transformer Oil (Sample 1)

Lot: 010547
Program:

Evaluation

PEO-072-1

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
8880 Aroclor-1016 (PCB-1016)	<2.0 mg/Kg	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8885 Aroclor-1221 (PCB-1221)	<2.0 mg/Kg	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	<2.0 mg/Kg	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8895 Aroclor-1242 (PCB-1242)	<2.0 mg/Kg	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<2.0 mg/Kg	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	<2.0 mg/Kg	EPA 8082 *10179007*	0 0 - 0	Acceptable	
8910 Aroclor-1260 (PCB-1260)	35 mg/Kg	EPA 8082 *10179007*	48.4 8.73 - 68.0	Acceptable	-0.344

Study Summary

PEO-072-1

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
8880 Aroclor-1016 (PCB-1016)	mg/Kg		0				0 - 0	
8885 Aroclor-1221 (PCB-1221)	mg/Kg		0				0 - 0	
8890 Aroclor-1232 (PCB-1232)	mg/Kg		0				0 - 0	
8895 Aroclor-1242 (PCB-1242)	mg/Kg		0				0 - 0	
8900 Aroclor-1248 (PCB-1248)	mg/Kg		0				0 - 0	
8905 Aroclor-1254 (PCB-1254)	mg/Kg		0				0 - 0	
8910 Aroclor-1260 (PCB-1260)	mg/Kg	38.4	48.4	9.87	43.7	10.2	8.73 - 68.0 18.6 - 58.1	22 87.5%

PEO-072-2
PCBs in Transformer Oil (Sample 2)
Lot: 010548
Program:

PEO-072-2

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
8880 Aroclor-1016 (PCB-1016)	<2.0 mg/Kg	EPA 8082 *10179007*	0 / 0 - 0	Acceptable	
8885 Aroclor-1221 (PCB-1221)	<2.0 mg/Kg	EPA 8082 *10179007*	0 / 0 - 0	Acceptable	
8890 Aroclor-1232 (PCB-1232)	<2.0 mg/Kg	EPA 8082 *10179007*	0 / 0 - 0	Acceptable	
8895 Aroclor-1242 (PCB-1242)	<2.0 mg/Kg	EPA 8082 *10179007*	0 / 0 - 0	Acceptable	
8900 Aroclor-1248 (PCB-1248)	<2.0 mg/Kg	EPA 8082 *10179007*	0 / 0 - 0	Acceptable	
8905 Aroclor-1254 (PCB-1254)	21 mg/Kg	EPA 8082 *10179007*	27.4 / 9.60 - 39.6	Acceptable	-0.720
8910 Aroclor-1260 (PCB-1260)	<2.0 mg/Kg	EPA 8082 *10179007*	0 / 0 - 0	Acceptable	

PEO-072-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
8880 Aroclor-1016 (PCB-1016)	mg/Kg		0				0 - 0	
8885 Aroclor-1221 (PCB-1221)	mg/Kg		0				0 - 0	
8890 Aroclor-1232 (PCB-1232)	mg/Kg		0				0 - 0	
8895 Aroclor-1242 (PCB-1242)	mg/Kg		0				0 - 0	
8900 Aroclor-1248 (PCB-1248)	mg/Kg		0				0 - 0	
8905 Aroclor-1254 (PCB-1254)	mg/Kg	24.6	27.4	5.00	26.1	5.75	9.60 - 39.6	22 / 91.7%
8910 Aroclor-1260 (PCB-1260)	mg/Kg		0				0 - 0	

PEO-093
Toxaphene
Lot: 010512
Program:

PEO-093

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
8250 Toxaphene (Chlorinated camphene)*	41 µg/L	EPA 608 *10103603*	39.5 / 0.000 - 71.5	Acceptable	0.579
8250 Toxaphene (Chlorinated camphene)*	41 µg/L	EPA 8081A 10178606	39.5 / 0.000 - 71.5	Acceptable	0.579

PEO-093

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
8250 Toxaphene (Chlorinated camphene)*	µg/L	33.7	39.5	12.6	31.9	11.1	0.000 - 71.5 / 8.53 - 58.9	18 / 100.0%

PEO-094

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 615**				Overall method evaluation **Acceptable**	
6605 Pentachlorophenol*	3.3 µg/L	EPA 615 *10105609*	3.58 0.510 - 4.95	**Acceptable**	0.771
8505 Acifluorfen*	3.7 µg/L	EPA 615 *10105609*	3.81 0.000 - 7.81	**Acceptable**	-0.0827
8530 Bentazon*	4.9 µg/L	EPA 615 *10105609*	5.51 0.000 - 12.6	**Acceptable**	0.0310
8545 2,4-D*	7.4 µg/L	EPA 615 *10105609*	7.11 0.000 - 11.5	**Acceptable**	0.965
8560 2,4-DB*	8.0 µg/L	EPA 615 *10105609*	7.62 0.000 - 15.6	**Acceptable**	0.596
8595 Dicamba*	3.4 µg/L	EPA 615 *10105609*	3.34 0.164 - 5.02	**Acceptable**	1.00
8600 3,5-Dichlorobenzoic acid*	5.6 µg/L	EPA 615 *10105609*	5.70 2.85 - 8.55	**Acceptable**	
8605 Dichloroprop*	2.5 µg/L	EPA 615 *10105609*	2.92 0.000 - 6.83	**Acceptable**	-0.184
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)*	4.7 µg/L	EPA 615 *10105609*	8.50 0.000 - 14.8	**Acceptable**	-0.247
8645 Picloram*	4.2 µg/L	EPA 615 *10105609*	4.95 0.000 - 9.07	**Acceptable**	0.0485
8650 Silvex (2,4,5-TP)*	6.2 µg/L	EPA 615 *10105609*	7.00 1.04 - 10.2	**Acceptable**	0.395
8655 2,4,5-T	3.4 µg/L	EPA 615 *10105609*	3.19 0.0468 - 4.94	**Acceptable**	1.12
▲ Summary for Method **EPA 615**		Analytes Evaluated **12**	Acceptable **12**	Acceptance Percentage **100.0%**	
▼ Summary for Method **EPA 8151A**				Overall method evaluation **Acceptable**	
6605 Pentachlorophenol*	2.9 µg/L	EPA 8151A *10183207*	3.58 0.510 - 4.95	**Acceptable**	0.230
8505 Acifluorfen*	3.4 µg/L	EPA 8151A *10183207*	3.81 0.000 - 7.81	**Acceptable**	-0.308
8530 Bentazon*	4.3 µg/L	EPA 8151A *10183207*	5.51 0.000 - 12.6	**Acceptable**	-0.202
8545 2,4-D*	5.9 µg/L	EPA 8151A *10183207*	7.11 0.000 - 11.5	**Acceptable**	0.219
8560 2,4-DB*	7.1 µg/L	EPA 8151A *10183207*	7.62 0.000 - 15.6	**Acceptable**	0.312
8595 Dicamba*	2.9 µg/L	EPA 8151A *10183207*	3.34 0.164 - 5.02	**Acceptable**	0.383
8600 3,5-Dichlorobenzoic acid*	4.9 µg/L	EPA 8151A *10183207*	5.70 2.85 - 8.55	**Acceptable**	
8605 Dichloroprop*	2.2 µg/L	EPA 8151A *10183207*	2.92 0.000 - 6.83	**Acceptable**	-0.404
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)*	4.4 µg/L	EPA 8151A *10183207*	8.50 0.000 - 14.8	**Acceptable**	-0.343
8645 Picloram*	3.5 µg/L	EPA 8151A *10183207*	4.95 0.000 - 9.07	**Acceptable**	-0.376
8650 Silvex (2,4,5-TP)*	5.3 µg/L	EPA 8151A *10183207*	7.00 1.04 - 10.2	**Acceptable**	-0.197
8655 2,4,5-T	2.9 µg/L	EPA 8151A *10183207*	3.19 0.0468 - 4.94	**Acceptable**	0.502
▲ Summary for Method **EPA 8151A**		Analytes Evaluated **12**	Acceptable **12**	Acceptance Percentage **100.0%**	

Study Summary

PEO-094

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
6605 Pentachlorophenol*	µg/L	2.73	3.58	0.739	2.98	1.52	0.510 - 4.95 1.25 - 4.21	
8505 Acifluorfen*	µg/L	3.81	3.81	1.33	3.28	2.43	0.000 - 7.81 1.14 - 6.48	

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	PEO-094 N Pass Rate
8505 Acifluorfen*	µg/L	3.81	3.81	1.33	3.28	2.43	0.000 - 7.81 1.14 - 6.48	
8530 Bentazon*	µg/L	4.82	5.51	2.58	6.00	3.89	0.000 - 12.6 0.000 - 9.98	
8545 2,4-D*	µg/L	5.46	7.11	2.01	6.50	2.74	0.000 - 11.5 1.45 - 9.47	13 84.6%
8560 2,4-DB*	µg/L	6.11	7.62	3.17	6.28	2.72	0.000 - 15.6	14 100.0%
8595 Dicamba*	µg/L	2.59	3.34	0.810	3.26	0.613	0.164 - 5.02 0.974 - 4.21	13 100.0%
8600 3,5-Dichlorobenzoic acid*	µg/L	5.70	5.70	NaN	5.48	1.53	2.85 - 8.55	
8605 Dichloroprop*	µg/L	2.75	2.92	1.36	2.59	1.47	0.000 - 6.83	13 100.0%
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)*	µg/L	5.47	8.50	3.12	5.02	2.65	0.000 - 14.8	14 100.0%
8645 Picloram*	µg/L	4.12	4.95	1.65	3.22	2.06	0.000 - 9.07 0.816 - 7.42	
8650 Silvex (2,4,5-TP)*	µg/L	5.60	7.00	1.52	5.38	1.94	1.04 - 10.2 2.56 - 8.64	14 100.0%
8655 2,4,5-T	µg/L	2.49	3.19	0.816	2.91	1.39	0.0468 - 4.94 0.862 - 4.12	14 100.0%

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	z
▼ Summary for Method **EPA 624**				Overall method evaluation **Acceptable**	
4375 Benzene	8.08 µg/L	EPA 624 *10107207*	9.45 5.73 - 13.3	**Acceptable**	-1.13
4610 1,2-Dichlorobenzene	9.86 µg/L	EPA 624 *10107207*	10.5 6.67 - 14.2	**Acceptable**	-0.432
4615 1,3-Dichlorobenzene	22.9 µg/L	EPA 624 *10107207*	20.2 13.0 - 26.3	**Acceptable**	1.49
4620 1,4-Dichlorobenzene	18.0 µg/L	EPA 624 *10107207*	18.9 12.4 - 25.0	**Acceptable**	-0.333
4765 Ethylbenzene	13.4 µg/L	EPA 624 *10107207*	15.0 9.98 - 19.8	**Acceptable**	-0.915
5000 Methyl tert-butyl ether (MTBE)*	20.4 µg/L	EPA 624 *10107207*	23.0 13.8 - 32.2	**Acceptable**	-0.852
5005 Naphthalene*	9.39 µg/L	EPA 624 *10107207*	11.8 3.52 - 20.1	**Acceptable**	-0.873
5140 Toluene	18.3 µg/L	EPA 624 *10107207*	19.9 14.0 - 25.3	**Acceptable**	-0.745
5210 1,2,4-Trimethylbenzene*	14.5 µg/L	EPA 624 *10107207*	15.0 6.22 - 22.8	**Acceptable**	0.000
5215 1,3,5-Trimethylbenzene*	18.3 µg/L	EPA 624 *10107207*	19.3 11.6 - 27.0	**Acceptable**	-0.326
5240 m+p-Xylene*	30.8 µg/L	EPA 624 *10107207*	33.5 18.4 - 47.6	**Acceptable**	-0.453
5250 o-Xylene*	13.9 µg/L	EPA 624 *10107207*	16.2 8.37 - 24.7	**Acceptable**	-0.952
5260 Xylene, total*	44.7 µg/L	EPA 624 *10107207*	49.7 27.8 - 68.9	**Acceptable**	-0.540
▲ Summary for Method **EPA 624**		Analytes Evaluated **13**	Acceptable **13**	Acceptance Percentage **100.0%**	
4375 Benzene	8.0 µg/L	EPA 8021B *10174808*	9.45 5.73 - 13.3	**Acceptable**	-1.19
4765 Ethylbenzene	14 µg/L	EPA 8021B *10174808*	15.0 9.98 - 19.8	**Acceptable**	-0.549
5140 Toluene	19 µg/L	EPA 8021B *10174808*	19.9 14.0 - 25.3	**Acceptable**	-0.372
5240 m+p-Xylene*	31 µg/L	EPA 8021B *10174808*	33.5 18.4 - 47.6	**Acceptable**	-0.412
5250 o-Xylene*	15 µg/L	EPA 8021B *10174808*	16.2 8.37 - 24.7	**Acceptable**	-0.549
5260 Xylene, total*	46 µg/L	EPA 8021B *10174808*	49.7 27.8 - 68.9	**Acceptable**	-0.350
▼ Summary for Method **EPA 8260B**				Overall method evaluation **Acceptable**	
4375 Benzene	7.25 µg/L	EPA 8260B *10184802*	9.45 5.73 - 13.3	**Acceptable**	-1.79
4610 1,2-Dichlorobenzene	9.02 µg/L	EPA 8260B *10184802*	10.5 6.67 - 14.2	**Acceptable**	-1.10
4615 1,3-Dichlorobenzene	17.5 µg/L	EPA 8260B *10184802*	20.2 13.0 - 26.3	**Acceptable**	-0.950
4620 1,4-Dichlorobenzene	16.1 µg/L	EPA 8260B *10184802*	18.9 12.4 - 25.0	**Acceptable**	-1.24
4765 Ethylbenzene	12.9 µg/L	EPA 8260B *10184802*	15.0 9.98 - 19.8	**Acceptable**	-1.22
5000 Methyl tert-butyl ether (MTBE)*	19.9 µg/L	EPA 8260B *10184802*	23.0 13.8 - 32.2	**Acceptable**	-1.02
5005 Naphthalene*	9.36 µg/L	EPA 8260B *10184802*	11.8 3.52 - 20.1	**Acceptable**	-0.884
5140 Toluene	17.4 µg/L	EPA 8260B *10184802*	19.9 14.0 - 25.3	**Acceptable**	-1.22
5210 1,2,4-Trimethylbenzene*	12.9 µg/L	EPA 8260B *10184802*	15.0 6.22 - 22.8	**Acceptable**	-0.580
5215 1,3,5-Trimethylbenzene*	16.7 µg/L	EPA 8260B *10184802*	19.3 11.6 - 27.0	**Acceptable**	-0.847
5240 m+p-Xylene*	29.0 µg/L	EPA 8260B *10184802*	33.5 18.4 - 47.6	**Acceptable**	-0.823

PEO-120-1

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
5250 o-Xylene*	13.2	µg/L	EPA 8260B *10184802*	16.2 8.37 - 24.7	**Acceptable**	-1.21
5260 Xylene, total*	42.2	µg/L	EPA 8260B *10184802*	49.7 27.8 - 68.9	**Acceptable**	-0.905

▲ Summary for Method **EPA 8260B** Analytes Evaluated **13** Acceptable **13** Acceptance Percentage **100.0%**

PEO-120-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
4375 Benzene	µg/L	9.50	9.45	1.26	8.21	1.03	5.73 - 13.3 6.99 - 12.0	46 93.6%
4610 1,2-Dichlorobenzene	µg/L	10.4	10.5	1.25	10.0	1.24	6.67 - 14.2 7.92 - 12.9	37 92.1%
4615 1,3-Dichlorobenzene	µg/L	19.6	20.2	2.21	19.3	2.33	13.0 - 26.3 15.2 - 24.0	37 92.1%
4620 1,4-Dichlorobenzene	µg/L	18.7	18.9	2.10	17.4	2.23	12.4 - 25.0 14.5 - 22 9	37 100.0%
4765 Ethylbenzene	µg/L	14.9	15.0	1.64	14.3	2.14	9.98 - 19.8 11.6 - 18.2	46 97.9%
5000 Methyl tert-butyl ether (MTBE)*	µg/L	23.0	23.0	3.05	20.6	2.86	13.8 - 32.2	39 100.0%
5005 Naphthalene*	µg/L	11.8	11.8	2.76	9.89	2.48	3.52 - 20.1	36 94.7%
5140 Toluene	µg/L	19.7	19.9	1.88	19.2	2.46	14.0 - 25.3 15.9 - 23.4	46 93.6%
5210 1,2,4-Trimethylbenzene*	µg/L	14.5	15.0	2.76	14.4	2.50	6.22 - 22.8	34 94.1%
5215 1,3,5-Trimethylbenzene*	µg/L	19.3	19.3	3.07	18.6	3.22	11.6 - 27.0	34 88.2%
5240 m+p-Xylene*	µg/L	33.0	33.5	4.86	31.6	4.24	18.4 - 47.6 23.3 - 42.7	38 100.0%
5250 o-Xylene*	µg/L	16.5	16.2	2.73	15.0	1.55	8.37 - 24.7 11.1 - 22.0	38 100.0%
5260 Xylene, total*	µg/L	48.4	49.7	6.85	46.4	6.05	27.8 - 68.9 34.7 - 62.1	44 97.8%

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 624**					Overall method evaluation **Acceptable**	
4395 Bromodichloromethane	35.9	µg/L	EPA 624 *10107207*	41.4 / 29.1 - 55.8	**Acceptable**	-1.48
4400 Bromoform	25.5	µg/L	EPA 624 *10107207*	32.2 / 19.9 - 44.0	**Acceptable**	-1.60
4455 Carbon tetrachloride	58.4	µg/L	EPA 624 *10107207*	79.5 / 43.3 - 108	**Acceptable**	-1.61
4475 Chlorobenzene	26.4	µg/L	EPA 624 *10107207*	31.5 / 22.6 - 39.8	**Acceptable**	-1.68
4505 Chloroform	20.1	µg/L	EPA 624 *10107207*	25.7 / 17.7 - 34.0	**Check**	-2.10
4575 Dibromochloromethane	49.2	µg/L	EPA 624 *10107207*	66.0 / 45.2 - 87.6	**Check**	-2.43
4635 1,2-Dichloroethane	35.0	µg/L	EPA 624 *10107207*	48.1 / 33.4 - 63.6	**Check**	-2.68
4975 Methylene chloride (Dichloromethane)	21.6	µg/L	EPA 624 *10107207*	30.3 / 18.4 - 43.2	**Check**	-2.23
5115 Tetrachloroethylene (Perchloroethylene)	28.6	µg/L	EPA 624 *10107207*	32.7 / 17.6 - 43.0	**Acceptable**	-0.402
5160 1,1,1-Trichloroethane	18.7	µg/L	EPA 624 *10107207*	23.0 / 14.5 - 31.0	**Acceptable**	-1.46
5170 Trichloroethene (Trichloroethylene)	41.2	µg/L	EPA 624 *10107207*	47.9 / 30.4 - 62.8	**Acceptable**	-0.998
▲ Summary for Method **EPA 624**			Analytes Evaluated **11**	Acceptable **11**	Acceptance Percentage **100.0%**	
▼ Summary for Method **EPA 8260B**					Overall method evaluation **Acceptable**	
4395 Bromodichloromethane	37.8	µg/L	EPA 8260B *10184802*	41.4 / 29.1 - 55.8	**Acceptable**	-1.05
4400 Bromoform	28.1	µg/L	EPA 8260B *10184802*	32.2 / 19.9 - 44.0	**Acceptable**	-0.948
4455 Carbon tetrachloride	63.6	µg/L	EPA 8260B *10184802*	79.5 / 43.3 - 108	**Acceptable**	-1.13
4475 Chlorobenzene	27.1	µg/L	EPA 8260B *10184802*	31.5 / 22.6 - 39.8	**Acceptable**	-1.43
4505 Chloroform	21.7	µg/L	EPA 8260B *10184802*	25.7 / 17.7 - 34.0	**Acceptable**	-1.51
4575 Dibromochloromethane	58.0	µg/L	EPA 8260B *10184802*	66.0 / 45.2 - 87.6	**Acceptable**	-1.19
4635 1,2-Dichloroethane	39.4	µg/L	EPA 8260B *10184802*	48.1 / 33.4 - 63.6	**Acceptable**	-1.81
4975 Methylene chloride (Dichloromethane)	25.2	µg/L	EPA 8260B *10184802*	30.3 / 18.4 - 43.2	**Acceptable**	-1.36
5115 Tetrachloroethylene (Perchloroethylene)	27.6	µg/L	EPA 8260B *10184802*	32.7 / 17.6 - 43.0	**Acceptable**	-0.638
5160 1,1,1-Trichloroethane	17.5	µg/L	EPA 8260B *10184802*	23.0 / 14.5 - 31.0	**Acceptable**	-1.90
5170 Trichloroethene (Trichloroethylene)	40.0	µg/L	EPA 8260B *10184802*	47.9 / 30.4 - 62.8	**Acceptable**	-1.22
▲ Summary for Method **EPA 8260B**			Analytes Evaluated **11**	Acceptable **11**	Acceptance Percentage **100.0%**	

Study Summary

PEO-120-2

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
4395 Bromodichloromethane	µg/L	42.5	41.4	4.46	42.6	5.63	29.1 - 55.8 33.5 - 51.4	37 95.0%
4400 Bromoform	µg/L	31.9	32.2	4.01	30.6	6.30	19.9 - 44.0 23.9 - 40.0	37 92.5%
4455 Carbon tetrachloride	µg/L	75.8	79.5	10.8	72.6	13.7	43.3 - 108 54.1 - 97.4	39 95.0%
4475 Chlorobenzene	µg/L	31.2	31.5	2.86	30.4	4.88	22.6 - 39.8 25.5 - 36.9	37 90.0%

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	PEO-120-2 N Pass Rate
4475 Chlorobenzene	µg/L	31.2	31.5	2.86	30.4	4.88	22.6 - 39.8 25.5 - 36.9	37 90.0%
4505 Chloroform	µg/L	25.8	25.7	2.72	24.8	3.64	17.7 - 34.0 20.4 - 31.3	37 95.0%
4575 Dibromochloromethane	µg/L	66.4	66.0	7.08	65.2	11.8	45.2 - 87.6 52.2 - 80.6	37 95.0%
4635 1,2-Dichloroethane	µg/L	48.5	48.1	5.03	46.3	6.92	33.4 - 63.6 38.4 - 58.5	37 90.0%
4975 Methylene chloride (Dichloromethane)	µg/L	30.8	30.3	4.13	30.0	4.97	18.4 - 43.2 22.5 - 39 0	36 94.9%
5115 Tetrachloroethylene (Perchloroethylene)	µg/L	30.3	32.7	4.23	30.3	5.67	17.6 - 43.0 21.8 - 38.7	38 92.7%
5160 1,1,1-Trichloroethane	µg/L	22.7	23.0	2.74	22.1	3.24	14.5 - 31.0 17.3 - 28.2	37 95.0%
5170 Trichloroethene (Trichloroethylene)	µg/L	46.6	47.9	5.41	44.4	7.10	30.4 - 62.8 35.8 - 57.4	38 95.1%

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 624**				Overall method evaluation **Acceptable**	
4315 Acetone*	54.7 µg/L	EPA 624 *10107207*	36.3 0.000 - 111	**Acceptable**	0.413
4325 Acrolein (Propenal)*	<20.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
4340 Acrylonitrile*	<20.0 µg/L	EPA 624 *10107207*	25.0 0.00 - 11.4	**Acceptable**	
4410 2-Butanone (Methyl ethyl ketone, MEK)*	72.6 µg/L	EPA 624 *10107207*	61.0 0.00 - 122	**Acceptable**	0.567
4450 Carbon disulfide*	16.8 µg/L	EPA 624 *10107207*	28.4 9.40 - 32.8	**Acceptable**	-1.10
4485 Chloroethane*	44.5 µg/L	EPA 624 *10107207*	63.2 23.4 - 91.3	**Acceptable**	-1.14
4500 2-Chloroethyl vinyl ether*	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
4570 1,2-Dibromo-3-chloropropane (DBCP)*	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)*	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
4595 Dibromomethane*	29.4 µg/L	EPA 624 *10107207*	32.6 21.3 - 46.3	**Acceptable**	-1.06
4625 Dichlorodifluoromethane*	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
4626 Dichlorofluoromethane	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
4630 1,1-Dichloroethane*	36.1 µg/L	EPA 624 *10107207*	50.5 34.5 - 69.1	**Check**	-2.72
4640 1,1-Dichloroethylene*	62.7 µg/L	EPA 624 *10107207*	97.5 50.0 - 141	**Check**	-2.16
4645 cis-1,2-Dichloroethylene*	46.0 µg/L	EPA 624 *10107207*	68.6 50.0 - 91.1	**Not acceptable**	-3.57
4655 1,2-Dichloropropane*	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
4680 cis-1,3-Dichloropropene*	42.2 µg/L	EPA 624 *10107207*	46.8 32.8 - 60.8	**Acceptable**	-0.552
4685 trans-1,3-Dichloropropylene*	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
4700 trans-1,2-Dichloroethylene*	63.5 µg/L	EPA 624 *10107207*	83.7 52.3 - 115	**Acceptable**	-1.92
4860 2-Hexanone*	81.8 µg/L	EPA 624 *10107207*	72.2 35.9 - 105	**Acceptable**	0.957
4950 Methyl bromide (Bromomethane)*	34.6 µg/L	EPA 624 *10107207*	54.7 14.5 - 96.0	**Acceptable**	-1.52
4960 Methyl chloride (Chloromethane)*	33.8 µg/L	EPA 624 *10107207*	44.4 13.2 - 76.2	**Acceptable**	-1.04
4995 4-Methyl-2-pentanone (MIBK)*	47.4 µg/L	EPA 624 *10107207*	41.0 15.8 - 63.9	**Acceptable**	0.948
5100 Styrene*	40.1 µg/L	EPA 624 *10107207*	44.0 28.6 - 59.8	**Acceptable**	-0.787
5105 1,1,1,2-Tetrachloroethane*	47.5 µg/L	EPA 624 *10107207*	50.9 32.1 - 70.7	**Acceptable**	-0.607
5110 1,1,2,2-Tetrachloroethane*	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
5165 1,1,2-Trichloroethane*	25.0 µg/L	EPA 624 *10107207*	32.4 22.7 - 42.9	**Check**	-2.31
5175 Trichlorofluoromethane*	24.6 µg/L	EPA 624 *10107207*	35.7 14.3 - 57.1	**Acceptable**	
5180 1,2,3-Trichloropropane*	56.5 µg/L	EPA 624 *10107207*	73.4 18.7 - 128	**Acceptable**	-0.923
5225 Vinyl acetate*	<1.0 µg/L	EPA 624 *10107207*	0 0 - 0	**Acceptable**	
5235 Vinyl chloride*	53.9 µg/L	EPA 624 *10107207*	69.9 28.0 - 112	**Acceptable**	-1.25

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▲ Summary for Method **EPA 624**		Analytes Evaluated **31**	Acceptable **30**	Acceptance Percentage **96.8%**	
▼ Summary for Method **EPA 8260B**				Overall method evaluation **Acceptable**	
4315 Acetone*	44.7 µg/L	EPA 8260B *10184802*	36.3 0.000 - 111	**Acceptable**	-0.0459
4320 Acetonitrile*	51.8 µg/L	EPA 8260B *10184802*	54.6 0.000 - 171	**Acceptable**	0.320
4325 Acrolein (Propenal)*	<20 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
4340 Acrylonitrile*	<20 µg/L	EPA 8260B *10184802*	25.0 0.00 - 11.4	**Acceptable**	
4410 2-Butanone (Methyl ethyl ketone, MEK)*	65.4 µg/L	EPA 8260B *10184802*	61.0 0.00 - 122	**Acceptable**	0.209
4450 Carbon disulfide*	16.8 µg/L	EPA 8260B *10184802*	28.4 9.40 - 32.8	**Acceptable**	-1.10
4485 Chloroethane*	51.0 µg/L	EPA 8260B *10184802*	63.2 23.4 - 91.3	**Acceptable**	-0.566
4500 2-Chloroethyl vinyl ether*	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
4570 1,2-Dibromo-3-chloropropane (DBCP)*	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)*	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
4595 Dibromomethane*	30.0 µg/L	EPA 8260B *10184802*	32.6 21.3 - 46.3	**Acceptable**	-0.911
4625 Dichlorodifluoromethane*	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
4626 Dichlorofluoromethane	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
4630 1,1-Dichloroethane*	44.0 µg/L	EPA 8260B *10184802*	50.5 34.5 - 69.1	**Acceptable**	-1.35
4640 1,1-Dichloroethylene*	66.8 µg/L	EPA 8260B *10184802*	97.5 50.0 - 141	**Acceptable**	-1.89
4645 cis-1,2-Dichloroethylene*	58.2 µg/L	EPA 8260B *10184802*	68.6 50.0 - 91.1	**Acceptable**	-1.79
4655 1,2-Dichloropropane*	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
4680 cis-1,3-Dichloropropene*	44.4 µg/L	EPA 8260B *10184802*	46.8 32.8 - 60.8	**Acceptable**	-0.288
4685 trans-1,3-Dichloropropylene*	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
4700 trans-1,2-Dichloroethylene*	68.8 µg/L	EPA 8260B *10184802*	83.7 52.3 - 115	**Acceptable**	-1.41
4860 2-Hexanone*	87.4 µg/L	EPA 8260B *10184802*	72.2 35.9 - 105	**Acceptable**	1.44
4950 Methyl bromide (Bromomethane)*	28.7 µg/L	EPA 8260B *10184802*	54.7 14.5 - 96.0	**Acceptable**	-1.96
4960 Methyl chloride (Chloromethane)*	31.7 µg/L	EPA 8260B *10184802*	44.4 13.2 - 76.2	**Acceptable**	-1.24
4995 4-Methyl-2-pentanone (MIBK)*	42.8 µg/L	EPA 8260B *10184802*	41.0 15.8 - 63.9	**Acceptable**	0.374
5100 Styrene*	38.9 µg/L	EPA 8260B *10184802*	44.0 28.6 - 59.8	**Acceptable**	-1.02
5105 1,1,1,2-Tetrachloroethane*	43.7 µg/L	EPA 8260B *10184802*	50.9 32.1 - 70.7	**Acceptable**	-1.20
5110 1,1,2,2-Tetrachloroethane*	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	
5165 1,1,2-Trichloroethane*	28.8 µg/L	EPA 8260B *10184802*	32.4 22.7 - 42.9	**Acceptable**	-1.18
5175 Trichlorofluoromethane*	28.2 µg/L	EPA 8260B *10184802*	35.7 14.3 - 57.1	**Acceptable**	
5180 1,2,3-Trichloropropane*	66.3 µg/L	EPA 8260B *10184802*	73.4 18.7 - 128	**Acceptable**	-0.385
5225 Vinyl acetate*	<1.0 µg/L	EPA 8260B *10184802*	0 0 - 0	**Acceptable**	

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	PEO-120-3 N Pass Rate
5100 Styrene*	µg/L	44.2	44.0	5.21	41.6	3.18	28.6 - 59.8 33.8 - 54.3	32 97.1%
5105 1,1,1,2-Tetrachloroethane*	µg/L	51.4	50.9	6.43	50.7	6.20	32.1 - 70.7	29 88.2%
5110 1,1,2,2-Tetrachloroethane*	µg/L		0		43.8	5.69	0 - 0	
5165 1,1,2-Trichloroethane*	µg/L	32.8	32.4	3.38	31.8	5.37	22.7 - 42.9 26.0 - 39.6	37 92.1%
5175 Trichlorofluoromethane*	µg/L	35.7	35.7	NaN	32.9	5.94	14.3 - 57.1	33 94.4%
5180 1,2,3-Trichloropropane*	µg/L	73.3	73.4	18.2	72.3	14.7	18.7 - 128	31 88.2%
5225 Vinyl acetate*	µg/L		0				0 - 0	
5235 Vinyl chloride*	µg/L	69.9	69.9	12.8	74.1	14.3	28.0 - 112	38 92.3%

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 625**				Overall method evaluation **Acceptable**	
5005 Naphthalene*	78 µg/L	EPA 625 *10107401*	131 34.1 - 155	**Acceptable**	-0.816
5500 Acenaphthene*	63 µg/L	EPA 625 *10107401*	74.3 29.9 - 89.1	**Acceptable**	0.355
5505 Acenaphthylene*	14 µg/L	EPA 625 *10107401*	18.4 6.40 - 24.4	**Acceptable**	-0.467
5555 Anthracene*	132 µg/L	EPA 625 *10107401*	154 64.5 - 190	**Acceptable**	0.238
5575 Benzo(a)anthracene*	66 µg/L	EPA 625 *10107401*	73.2 33.1 - 93.0	**Acceptable**	0.291
5580 Benzo(a)pyrene*	23 µg/L	EPA 625 *10107401*	26.3 8.25 - 35.9	**Acceptable**	0.195
5585 Benzo(b)fluoranthene*	29 µg/L	EPA 625 *10107401*	35.2 12.0 - 48.8	**Acceptable**	-0.229
5590 Benzo(g,h,i)perylene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5600 Benzo(k)fluoranthene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5855 Chrysene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5895 Dibenz(a,h) anthracene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
6265 Fluoranthene*	119 µg/L	EPA 625 *10107401*	150 65.5 - 178	**Acceptable**	-0.160
6270 Fluorene*	66 µg/L	EPA 625 *10107401*	81.0 34.3 - 97.9	**Acceptable**	-0.00943
6315 Indeno(1,2,3-cd) pyrene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
6615 Phenanthrene*	60 µg/L	EPA 625 *10107401*	63.6 30.3 - 78.4	**Acceptable**	0.697
6665 Pyrene*	116 µg/L	EPA 625 *10107401*	147 49.0 - 197	**Acceptable**	-0.283
▲ Summary for Method **EPA 625**		Analytes Evaluated **16**	Acceptable **16**	Acceptance Percentage **100.0%**	
▼ Summary for Method **EPA 8270C**				Overall method evaluation **Acceptable**	
5005 Naphthalene*	78 µg/L	EPA 8270C *10185805*	131 34.1 - 155	**Acceptable**	-0.816
5500 Acenaphthene*	63 µg/L	EPA 8270C *10185805*	74.3 29.9 - 89.1	**Acceptable**	0.355
5505 Acenaphthylene*	14 µg/L	EPA 8270C *10185805*	18.4 6.40 - 24.4	**Acceptable**	-0.467
5555 Anthracene*	132 µg/L	EPA 8270C *10185805*	154 64.5 - 190	**Acceptable**	0.238
5575 Benzo(a)anthracene*	66 µg/L	EPA 8270C *10185805*	73.2 33.1 - 93.0	**Acceptable**	0.291
5580 Benzo(a)pyrene*	23 µg/L	EPA 8270C *10185805*	26.3 8.25 - 35.9	**Acceptable**	0.195
5585 Benzo(b)fluoranthene*	29 µg/L	EPA 8270C *10185805*	35.2 12.0 - 48.8	**Acceptable**	-0.229
5590 Benzo(g,h,i)perylene*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
5600 Benzo(k)fluoranthene*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
5855 Chrysene*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
5895 Dibenz(a,h) anthracene*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
6265 Fluoranthene*	119 µg/L	EPA 8270C *10185805*	150 65.5 - 178	**Acceptable**	-0.160
6270 Fluorene*	66 µg/L	EPA 8270C *10185805*	81.0 34.3 - 97.9	**Acceptable**	-0.00943
6315 Indeno(1,2,3-cd) pyrene*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	

PEO-121-1

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
6615 Phenanthrene*	60	µg/L	EPA 8270C *10185805*	63.6 30.3 - 78.4	**Acceptable**	0.697
6665 Pyrene*	116	µg/L	EPA 8270C *10185805*	147 49.0 - 197	**Acceptable**	-0.283

▲ Summary for Method **EPA 8270C** Analytes Evaluated **16** Acceptable **16** Acceptance Percentage **100.0%**

PEO-121-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
5005 Naphthalene*	µg/L	94.4	131	20.1	92.4	19.6	34.1 - 155	37 97.3%
5500 Acenaphthene*	µg/L	59.5	74.3	9.86	62.2	10.5	29.9 - 89.1	37 100.0%
5505 Acenaphthylene*	µg/L	15.4	18.4	3.00	15.4	3.38	6.40 - 24.4	36 91.7%
5555 Anthracene*	µg/L	127	154	21.0	120	18.9	64.5 - 190	37 97.3%
5575 Benzo(a)anthracene*	µg/L	63.1	73.2	9.97	63.6	11.0	33.1 - 93.0	37 97.3%
5580 Benzo(a)pyrene*	µg/L	22.1	26.3	4.61	19.8	3.69	8.25 - 35.9	37 97.3%
5585 Benzo(b)fluoranthene*	µg/L	30.4	35.2	6.12	25.8	6.84	12.0 - 48.8	32 93.9%
5590 Benzo(g,h,i)perylene*	µg/L		0				0 - 0	
5600 Benzo(k)fluoranthene*	µg/L		0				0 - 0	
5855 Chrysene*	µg/L		0		69.8	8.12	0 - 0	
5895 Dibenz(a,h) anthracene*	µg/L		0				0 - 0	
6265 Fluoranthene*	µg/L	122	150	18.7	122	20.4	65.5 - 173	37 97.3%
6270 Fluorene*	µg/L	66.1	81.0	10.6	64.8	11.2	34.3 - 97.9	37 97.3%
6315 Indeno(1,2,3-cd) pyrene*	µg/L		0				0 - 0	
6615 Phenanthrene*	µg/L	54.4	63.6	8.03	56.5	9.22	30.3 - 78.4	37 97.3%
6665 Pyrene*	µg/L	123	147	24.7	124	29.6	49.0 - 197	37 100.0%

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 625**			Overall method evaluation **Acceptable**		
4610 1,2-Dichlorobenzene*	105 µg/L	EPA 625 *10107401*	141 18.1 - 166	**Acceptable**	0.522
4615 1,3-Dichlorobenzene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
4620 1,4-Dichlorobenzene*	101 µg/L	EPA 625 *10107401*	141 14.0 - 166	**Acceptable**	0.431
4835 Hexachlorobutadiene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
4840 Hexachloroethane*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5015 Nitrobenzene*	102 µg/L	EPA 625 *10107401*	120 37.3 - 146	**Acceptable**	0.589
5095 Pyridine*	64 µg/L	EPA 625 *10107401*	138 21.2 - 106	**Acceptable**	0.0355
5155 1,2,4-Trichlorobenzene*	75 µg/L	EPA 625 *10107401*	97.2 21.2 - 116	**Acceptable**	0.390
5545 Aniline*	59 µg/L	EPA 625 *10107401*	102 0.000 - 157	**Acceptable**	-0.0658
5595 Benzidine*	<20 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5630 Benzyl alcohol*	<10 µg/L	EPA 625 *10107401*	159 0.000 - 214	**Acceptable**	
5660 4-Bromophenyl phenyl ether*	83 µg/L	EPA 625 *10107401*	91.6 30.1 - 123	**Acceptable**	0.413
5670 Butyl benzyl phthalate*	108 µg/L	EPA 625 *10107401*	116 21.8 - 166	**Acceptable**	0.596
5680 Carbazole*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5745 4-Chloroaniline*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5760 bis(2-Chloroethoxy)methane*	58 µg/L	EPA 625 *10107401*	69.8 27.4 - 83.7	**Acceptable**	0.267
5765 bis(2-Chloroethyl) ether*	102 µg/L	EPA 625 *10107401*	134 35.8 - 162	**Acceptable**	0.137
5780 bis(2-Chloroisopropyl) ether*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5795 2-Chloronaphthalene*	69 µg/L	EPA 625 *10107401*	81.7 12.1 - 151	**Acceptable**	-0.552
5825 4-Chlorophenyl phenylether*	151 µg/L	EPA 625 *10107401*	176 65.5 - 217	**Acceptable**	0.395
5905 Dibenzofuran*	68 µg/L	EPA 625 *10107401*	87.2 30.8 - 109	**Acceptable**	-0.146
5925 Di-n-butyl phthalate*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
5945 3,3'-Dichlorobenzidine*	<20 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
6070 Diethyl phthalate*	104 µg/L	EPA 625 *10107401*	111 20.4 - 153	**Acceptable**	0.792
6135 Dimethyl phthalate*	142 µg/L	EPA 625 *10107401*	158 0.000 - 227	**Acceptable**	0.909
6185 2,4-Dinitrotoluene (2,4-DNT)*	117 µg/L	EPA 625 *10107401*	127 47.7 - 156	**Acceptable**	0.833
6190 2,6-Dinitrotoluene (2,6-DNT)*	125 µg/L	EPA 625 *10107401*	133 55.6 - 166	**Acceptable**	0.757
6200 Di-n-octyl phthalate*	105 µg/L	EPA 625 *10107401*	123 25.2 - 181	**Acceptable**	0.0769
6255 bis(2-Ethylhexyl) phthalate (DEHP)*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
6275 Hexachlorobenzene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
6285 Hexachlorocyclopentadiene*	136 µg/L	EPA 625 *10107401*	205 0.000 - 262	**Acceptable**	0.281

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
6320 Isophorone*	85 µg/L	EPA 625 *10107401*	98.2 38.6 - 127	**Acceptable**	0.156
6380 1-Methylnaphthalene*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
6385 2-Methylnaphthalene*	125 µg/L	EPA 625 *10107401*	147 30.4 - 165	**Acceptable**	1.22
6460 2-Nitroaniline*	119 µg/L	EPA 625 *10107401*	130 44.3 - 158	**Acceptable**	0.952
6465 3-Nitroaniline*	120 µg/L	EPA 625 *10107401*	138 69.6 - 164	**Acceptable**	0.190
6470 4-Nitroaniline*	78 µg/L	EPA 625 *10107401*	88.8 6.80 - 119	**Acceptable**	0.807
6525 n-Nitrosodiethylamine*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
6530 n-Nitrosodimethylamine*	<10 µg/L	EPA 625 *10107401*	0 0 - 0	**Acceptable**	
6545 n-Nitrosodi-n-propylamine*	101 µg/L	EPA 625 *10107401*	120 36.7 - 151	**Acceptable**	0.366
▲ Summary for Method **EPA 625**		Analytes Evaluated **40**	Acceptable **40**	Acceptance Percentage **100.0%**	
▼ Summary for Method **EPA 8270C**				Overall method evaluation **Acceptable**	
4610 1,2-Dichlorobenzene*	105 µg/L	EPA 8270C *10185805*	141 18.1 - 166	**Acceptable**	0.522
4615 1,3-Dichlorobenzene*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
4620 1,4-Dichlorobenzene*	101 µg/L	EPA 8270C *10185805*	141 14.0 - 166	**Acceptable**	0.431
4835 Hexachlorobutadiene*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
4840 Hexachloroethane*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
5015 Nitrobenzene*	102 µg/L	EPA 8270C *10185805*	120 37.3 - 146	**Acceptable**	0.589
5095 Pyridine*	64 µg/L	EPA 8270C *10185805*	138 21.2 - 106	**Acceptable**	0.0355
5155 1,2,4-Trichlorobenzene*	75 µg/L	EPA 8270C *10185805*	97.2 21.2 - 116	**Acceptable**	0.390
5545 Aniline*	59 µg/L	EPA 8270C *10185805*	102 0.000 - 157	**Acceptable**	-0.0658
5595 Benzidine*	<20 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
5630 Benzyl alcohol*	106 µg/L	EPA 8270C *10185805*	159 0.000 - 214	**Acceptable**	0.0811
5660 4-Bromophenyl phenyl ether*	83 µg/L	EPA 8270C *10185805*	91.6 30.1 - 123	**Acceptable**	0.413
5670 Butyl benzyl phthalate*	108 µg/L	EPA 8270C *10185805*	116 21.8 - 166	**Acceptable**	0.596
5680 Carbazole*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
5760 bis(2-Chloroethoxy)methane*	58 µg/L	EPA 8270C *10185805*	69.8 27.4 - 83.7	**Acceptable**	0.267
5765 bis(2-Chloroethyl) ether*	102 µg/L	EPA 8270C *10185805*	134 35.8 - 162	**Acceptable**	0.137
5780 bis(2-Chloroisopropyl) ether*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
5825 4-Chlorophenyl phenylether*	151 µg/L	EPA 8270C *10185805*	176 65.5 - 217	**Acceptable**	0.395
5905 Dibenzofuran*	68 µg/L	EPA 8270C *10185805*	87.2 30.8 - 109	**Acceptable**	-0.146
5925 Di-n-butyl phthalate*	<10 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
5945 3,3'-Dichlorobenzidine*	<20 µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
6070 Diethyl phthalate*	104 µg/L	EPA 8270C *10185805*	111 20.4 - 153	**Acceptable**	0.792
6135 Dimethyl phthalate*	142 µg/L	EPA 8270C *10185805*	158 0.000 - 227	**Acceptable**	0.909

PEO-121-2

Evaluation

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
6185 2,4-Dinitrotoluene (2,4-DNT)*	117	µg/L	EPA 8270C *10185805*	127 47.7 - 156	**Acceptable**	0.833
6190 2,6-Dinitrotoluene (2,6-DNT)*	125	µg/L	EPA 8270C *10185805*	133 55.6 - 166	**Acceptable**	0.757
6200 Di-n-octyl phthalate*	105	µg/L	EPA 8270C *10185805*	123 25.2 - 181	**Acceptable**	0.0769
6255 bis(2-Ethylhexyl) phthalate (DEHP)*	<10	µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
6275 Hexachlorobenzene*	<10	µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
6285 Hexachlorocyclopentadiene*	136	µg/L	EPA 8270C *10185805*	205 0.000 - 262	**Acceptable**	0.281
6320 Isophorone*	85	µg/L	EPA 8270C *10185805*	98.2 38.6 - 127	**Acceptable**	0.156
6380 1-Methylnaphthalene*	<10	µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
6385 2-Methylnaphthalene*	125	µg/L	EPA 8270C *10185805*	147 30.4 - 165	**Acceptable**	1.22
6460 2-Nitroaniline*	119	µg/L	EPA 8270C *10185805*	130 44.3 - 158	**Acceptable**	0.952
6465 3-Nitroaniline*	120	µg/L	EPA 8270C *10185805*	138 69.6 - 164	**Acceptable**	0.190
6470 4-Nitroaniline*	78	µg/L	EPA 8270C *10185805*	88.8 6.80 - 119	**Acceptable**	0.807
6525 n-Nitrosodiethylamine*	<10	µg/L	EPA 8270C *10185805*	0 0 - 0	**Acceptable**	
6535 n-Nitrosodiphenylamine*	32	µg/L	EPA 8270C *10185805*	38.9 8.60 - 55.7	**Acceptable**	-0.0127
6545 n-Nitrosodi-n-propylamine*	101	µg/L	EPA 8270C *10185805*	120 36.7 - 151	**Acceptable**	0.366

▲ Summary for Method **EPA 8270C** — Analytes Evaluated **38** — Acceptable **38** — Acceptance Percentage **100.0%**

PEO-121-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
4610 1,2-Dichlorobenzene*	µg/L	92.1	141	24.7	92.9	20.1	18.1 - 166	31 96.9%
4615 1,3-Dichlorobenzene*	µg/L		0				0 - 0	
4620 1,4-Dichlorobenzene*	µg/L	90.1	141	25.3	90.7	19.0	14.0 - 166	31 96.9%
4835 Hexachlorobutadiene*	µg/L		0				0 - 0	
4840 Hexachloroethane*	µg/L		0				0 - 0	
5015 Nitrobenzene*	µg/L	91.4	120	18.0	90.0	17.3	37.3 - 146	32 100.0%
5095 Pyridine*	µg/L	63.5	138	14.1	65.9	15.4	21.2 - 106	22 73.1%
5155 1,2,4-Trichlorobenzene*	µg/L	68.8	97.2	15.9	67.0	12.6	21.2 - 116	32 96.9%
5545 Aniline*	µg/L	61.1	102	31.9	56.3	25.3	0.000 - 157	25 100.0%
5595 Benzidine*	µg/L		0				0 - 0	
5630 Benzyl alcohol*	µg/L	103	159	37.0	98.6	32.8	0.000 - 214	27 100.0%
5660 4-Bromophenyl phenyl ether*	µg/L	76.6	91.6	15.5	73.4	18.9	30.1 - 123	31 81.3%
5670 Butyl benzyl phthalate*	µg/L	93.7	116	24.0	73.1	40.1	21.8 - 166	32 93.8%

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	PEO-121-2 N / Pass Rate
5670 Butyl benzyl phthalate*	µg/L	93.7	116	24.0	73.1	40.1	21.8 - 166	32 93.8%
5680 Carbazole*	µg/L		0				0 - 0	
5745 4-Chloroaniline*	µg/L		0				0 - 0	
5760 bis(2-Chloroethoxy)methane*	µg/L	55.5	69.8	9.37	53.5	8.17	27.4 - 83.7	31 90.6%
5765 bis(2-Chloroethyl) ether*	µg/L	99.1	134	21.1	86.2	37.3	35.8 - 162	30 93.8%
5780 bis(2-Chloroisopropyl) ether*	µg/L		0				0 - 0	
5795 2-Chloronaphthalene*	µg/L	81.8	81.7	23.2	71.0	34.8	12.1 - 151	31 100.0%
5825 4-Chlorophenyl phenylether*	µg/L	141	176	25.3	130	22.8	65.5 - 217	30 90.6%
5905 Dibenzofuran*	µg/L	69.9	87.2	13.0	62.0	9.58	30.8 - 109	29 96.6%
5925 Di-n-butyl phthalate*	µg/L		0				0 - 0	
5945 3,3'-Dichlorobenzidine*	µg/L		0				0 - 0	
6070 Diethyl phthalate*	µg/L	86.5	111	22.1	70.5	33.9	20.4 - 153	29 84.4%
6135 Dimethyl phthalate*	µg/L	105	158	40.7	82.6	57.9	0.000 - 227	30 100.0%
6185 2,4-Dinitrotoluene (2,4-DNT)*	µg/L	102	127	18.0	103	16.0	47.7 - 156	32 100.0%
6190 2,6-Dinitrotoluene (2,6-DNT)*	µg/L	111	133	18.5	106	18.2	55.6 - 166	32 100.0%
6200 Di-n-octyl phthalate*	µg/L	103	123	26.0	103	35.8	25.2 - 181	32 100.0%
6255 bis(2-Ethylhexyl) phthalate (DEHP)*	µg/L		0				0 - 0	
6275 Hexachlorobenzene*	µg/L		0				0 - 0	
6285 Hexachlorocyclopentadiene*	µg/L	123	205	46.3	138	26.4	0.000 - 262	28 100.0%
6320 Isophorone*	µg/L	82.7	98.2	14.7	79.8	14.9	38.6 - 127	31 96.9%
6380 1-Methylnaphthalene*	µg/L		0				0 - 0	
6385 2-Methylnaphthalene*	µg/L	97.7	147	22.4	112	22.1	30.4 - 165	30 93.6%
6460 2-Nitroaniline*	µg/L	101	130	18.9	104	16.7	44.3 - 158	26 96.3%
6465 3-Nitroaniline*	µg/L	117	138	15.8	113	18.5	69.6 - 164	25 88.9%
6470 4-Nitroaniline*	µg/L	62.9	88.8	18.7	63.2	21.7	6.80 - 119	25 92.6%
6525 n-Nitrosodiethylamine*	µg/L		0				0 - 0	
6530 n-Nitrosodimethylamine*	µg/L		0				0 - 0	
6535 n-Nitrosodiphenylamine*	µg/L	32.1	38.9	7.85	28.8	9.41	8.60 - 55.7	24 76.7%
6545 n-Nitrosodi-n-propylamine*	µg/L	94.0	120	19.1	90.8	18.5	36.7 - 151	31 96.9%

PEO-121-2

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
6545 n-Nitrosodi-n-propylamine*	µg/L	94.0	120	19.1	90.8	18.5	36.7 - 151	31 96.9%

PEO-122-1

Pesticides 1

Lot: 010513
Program:

PEO-122-1

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
7025 Aldrin	6.4 µg/L	EPA 608 *10103603*	8.03 2.26 - 11.1	Acceptable	-0.177
7355 4,4'-DDD	2.9 µg/L	EPA 608 *10103603*	3.18 1.23 - 4.65	Acceptable	-0.0702
7360 4,4'-DDE	5.3 µg/L	EPA 608 *10103603*	5.64 2.49 - 7.33	Acceptable	0.483
7365 4,4'-DDT	2.8 µg/L	EPA 608 *10103603*	3.02 1.13 - 4.39	Acceptable	0.0737
7470 Dieldrin	2.4 µg/L	EPA 608 *10103603*	2.68 1.27 - 3.71	Acceptable	-0.221
7685 Heptachlor	5.2 µg/L	EPA 608 *10103603*	6.98 2.26 - 9.53	Acceptable	-0.570
7690 Heptachlor epoxide	7.9 µg/L	EPA 608 *10103603*	7.31 3.64 - 10.2	Acceptable	0.899
7025 Aldrin	6.4 µg/L	EPA 8081A *10178606*	8.03 2.26 - 11.1	Acceptable	-0.177
7355 4,4'-DDD	2.9 µg/L	EPA 8081A *10178606*	3.18 1.23 - 4.65	Acceptable	-0.0702
7360 4,4'-DDE	5.3 µg/L	EPA 8081A *10178606*	5.64 2.49 - 7.33	Acceptable	0.483
7365 4,4'-DDT	2.8 µg/L	EPA 8081A *10178606*	3.02 1.13 - 4.39	Acceptable	0.0737
7470 Dieldrin	2.4 µg/L	EPA 8081A *10178606*	2.68 1.27 - 3.71	Acceptable	-0.221
7685 Heptachlor	5.2 µg/L	EPA 8081A *10178606*	6.98 2.26 - 9.53	Acceptable	-0.570
7690 Heptachlor epoxide	7.9 µg/L	EPA 8081A *10178606*	7.31 3.64 - 10.2	Acceptable	0.899

PEO-122-1

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	N Pass Rate
7025 Aldrin	µg/L	6.66	8.03	1.47	6.87	1.63	2.26 - 11.1	25 88.5%
7355 4,4'-DDD	µg/L	2.94	3.18	0.570	3.01	0.461	1.23 - 4.65	26 84.6%
7360 4,4'-DDE	µg/L	4.91	5.64	0.807	5.49	0.929	2.49 - 7.33 3.30 - 6.53	26 92.3%
7365 4,4'-DDT	µg/L	2.76	3.02	0.543	2.95	0.738	1.13 - 4.39 1.68 - 3.85	26 92.3%
7470 Dieldrin	µg/L	2.49	2.68	0.407	2.64	0.367	1.27 - 3.71 1.68 - 3.31	26 100.0%
7685 Heptachlor	µg/L	5.89	6.98	1.21	5.59	1.23	2.26 - 9.53 3.47 - 8.32	26 100.0%
7690 Heptachlor epoxide	µg/L	6.92	7.31	1.09	8.04	1.30	3.64 - 10.2 4.74 - 9.11	26 88.5%

Evaluation

Analyte	Result Units	Method	Assigned Value Acceptance Limits	Evaluation	Z
▼ Summary for Method **EPA 608**				Overall method evaluation **Acceptable**	
7105 delta-BHC*	5.3 µg/L	EPA 608 *10103603*	8.31 3.11 - 11.6	**Acceptable**	-1.44
7110 alpha-BHC (alpha-Hexachlorocyclohexane)*	7.4 µg/L	EPA 608 *10103603*	9.63 4.30 - 13.0	**Acceptable**	-0.863
7115 beta-BHC (beta-Hexachlorocyclohexane)*	3.9 µg/L	EPA 608 *10103603*	4.57 1.87 - 6.33	**Acceptable**	-0.269
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)*	5.9 µg/L	EPA 608 *10103603*	7.17 2.93 - 9.89	**Acceptable**	-0.440
7240 alpha-Chlordane*	<0.050 µg/L	EPA 608 *10103603*	1.05 0.00 - 2.46	**Acceptable**	
7245 gamma-Chlordane*	5.9 µg/L	EPA 608 *10103603*	7.68 3.14 - 10.4	**Acceptable**	-0.719
7510 Endosulfan I*	6.1 µg/L	EPA 608 *10103603*	7.67 2.11 - 11.0	**Acceptable**	-0.297
7515 Endosulfan II*	5.8 µg/L	EPA 608 *10103603*	6.52 2.18 - 8.87	**Acceptable**	0.252
7520 Endosulfan sulfate*	9.3 µg/L	EPA 608 *10103603*	10.9 4.12 - 15.9	**Acceptable**	-0.357
7530 Endrin aldehyde*	8.6 µg/L	EPA 608 *10103603*	9.19 2.67 - 13.9	**Acceptable**	0.176
7535 Endrin ketone*	2.1 µg/L	EPA 608 *10103603*	2.45 0.312 - 5.69	**Acceptable**	-1.00
7540 Endrin*	13 µg/L	EPA 608 *10103603*	14.6 5.07 - 21.6	**Acceptable**	-0.109
7810 Methoxychlor*	8.4 µg/L	EPA 608 *10103603*	8.83 2.34 - 14.0	**Acceptable**	0.124
▲ Summary for Method **EPA 608**		Analytes Evaluated **13**	Acceptable **13**	Acceptance Percentage **100.0%**	
▼ Summary for Method **EPA 8081A**				Overall method evaluation **Acceptable**	
7105 delta-BHC*	5.3 µg/L	EPA 8081A *10178606*	8.31 3.11 - 11.6	**Acceptable**	-1.44
7110 alpha-BHC (alpha-Hexachlorocyclohexane)*	7.4 µg/L	EPA 8081A *10178606*	9.63 4.30 - 13.0	**Acceptable**	-0.863
7115 beta-BHC (beta-Hexachlorocyclohexane)*	3.9 µg/L	EPA 8081A *10178606*	4.57 1.87 - 6.33	**Acceptable**	-0.269
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)*	5.9 µg/L	EPA 8081A *10178606*	7.17 2.93 - 9.89	**Acceptable**	-0.440
7240 alpha-Chlordane*	<0.050 µg/L	EPA 8081A *10178606*	1.05 0.00 - 2.46	**Acceptable**	
7245 gamma-Chlordane*	5.9 µg/L	EPA 8081A *10178606*	7.68 3.14 - 10.4	**Acceptable**	-0.719
7510 Endosulfan I*	6.1 µg/L	EPA 8081A *10178606*	7.67 2.11 - 11.0	**Acceptable**	-0.297
7515 Endosulfan II*	5.8 µg/L	EPA 8081A *10178606*	6.52 2.18 - 8.87	**Acceptable**	0.252
7520 Endosulfan sulfate*	9.3 µg/L	EPA 8081A *10178606*	10.9 4.12 - 15.9	**Acceptable**	-0.357
7530 Endrin aldehyde*	8.6 µg/L	EPA 8081A *10178606*	9.19 2.67 - 13.9	**Acceptable**	0.176
7535 Endrin ketone*	2.1 µg/L	EPA 8081A *10178606*	2.45 0.312 - 5.69	**Acceptable**	-1.00
7540 Endrin*	13 µg/L	EPA 8081A *10178606*	14.6 5.07 - 21.6	**Acceptable**	-0.109
7810 Methoxychlor*	8.4 µg/L	EPA 8081A *10178606*	8.83 2.34 - 14.0	**Acceptable**	0.124
▲ Summary for Method **EPA 8081A**		Analytes Evaluated **13**	Acceptable **13**	Acceptance Percentage **100.0%**	

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits Warning Limits	PEO-122-2 N Pass Rate
7105 delta-BHC*	µg/L	7.35	8.31	1.42	6.09	2.58	3.11 - 11.6 4.52 - 10.2	24 83.3%
7110 alpha-BHC (alpha-Hexachlorocyclohexane)*	µg/L	8.66	9.63	1.46	8.06	2.53	4.30 - 13.0 5.75 - 11.6	24 91.7%
7115 beta-BHC (beta-Hexachlorocyclohexane)*	µg/L	4.10	4.57	0.743	4.67	0.490	1.87 - 6.33 2.61 - 5.58	23 87.5%
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)*	µg/L	6.41	7.17	1.16	5.97	1.62	2.93 - 9.89	24 91.7%
7240 alpha-Chlordane*	µg/L	1.02	1.05	0.188	0.945	0.448	0.00 - 2.46	14 84.2%
7245 gamma-Chlordane*	µg/L	6.77	7.68	1.21	6.23	1.68	3.14 - 10.4 4.35 - 9.19	18 94.7%
7510 Endosulfan I*	µg/L	6.54	7.67	1.48	6.84	1.53	2.11 - 11.0 3.58 - 9.50	24 100.0%
7515 Endosulfan II*	µg/L	5.52	6.52	1.11	6.14	1.40	2.18 - 8.87 3.30 - 7.75	24 100.0%
7520 Endosulfan sulfate*	µg/L	10.0	10.9	1.96	9.80	1.87	4.12 - 15.9 6.08 - 13.9	23 91.3%
7530 Endrin aldehyde*	µg/L	8.27	9.19	1.87	9.31	2.25	2.67 - 13.9 4.54 - 12.0	24 100.0%
7535 Endrin ketone*	µg/L	3.00	2.45	0.896	2.88	0.987	0.312 - 5.69	24 87.5%
7540 Endrin*	µg/L	13.3	14.6	2.76	12.7	3.84	5.07 - 21.6 7.83 - 18.9	24 100.0%
7810 Methoxychlor*	µg/L	8.16	8.83	1.94	8.17	2.14	2.34 - 14.0 4.28 - 12.0	23 100.0%

The evaluation, certified value, and acceptance criteria are based on EPA Criteria Document NCRL-cs-0045 (December 30, 1998), NELAC Fields of Testing NPW/Drinking Water (June 1, 2005 and RCRA 2002-02), and ISO Guide 43. The assigned value is the prepared value where applicable.

Authorized for release by _____ **Date** 10/6/2005

Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, A2LA, or any other federal agency. RTC is accredited by NVLAP and A2LA to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0 and A2LA certificate 2122.01.

Blank
Page

1 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report
DMRQAWETT **WETT 25**
Commenced 1-Jun-2005 | Concluded 2-Sep-2005

RT Labcode RT1061

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

NVLAP® Labcode: 200393-0

ACCREDITED
Certificate # 2122.01

This report may contain data that are not covered by the NVLAP accreditation.

WET-011
Fathead Minnow Acute MHSF 20° C

Program: DMRQAWETT

WET-011

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
752 Fathead Minnow Acute MHSF 20° - LC50	33.0 %	EPA 2000.0 *0*	20.8 <6.25 - 53.8	Acceptable	0.739

WET-011

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
752 Fathead Minnow Acute MHSF 20° - LC50	%	20.8	20.8	16.5	20.8	16.5	<6.25 - 53.8	22 0.0%

WET-015
Fathead Minnow Chronic MHSF

Program: DMRQAWETT

WET-015

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
756 Fathead Minnow Chronic MHSF - Survival NOEC	25.0 %	EPA 1000.0 *0*	25.0 12.5 - 50.0	Acceptable	
808 Fathead Minnow Chronic MHSF - Growth IC25 (ON)	30.1 %	EPA 1000.0 *0*	32.9 6.9 - 58.9	Acceptable	-0.233
809 Fathead Minnow Chronic MHSF - Growth IC25 (SN)	42.0 %	EPA 1000.0 *0*	37.8 <6.25 - 70.8	Acceptable	0.255
810 Fathead Minnow Chronic MHSF - Growth NOEC (ON)	25.0 %	EPA 1000.0 *0*	25.0 12.5 - 50.0	Acceptable	
811 Fathead Minnow Chronic MHSF - Growth NOEC (SN)	25.0 %	EPA 1000.0 *0*	25.0 12.5 - 50.0	Acceptable	

WET-015

Study Summary

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
756 Fathead Minnow Chronic MHSF - Survival NOEC	%	25.0	25.0		25.0		12.5 - 50.0	33 0.0%
808 Fathead Minnow Chronic MHSF - Growth IC25 (ON)	%	32.9	32.9	12.0	29.9	5.00	6.9 - 58.9	28 0.0%
809 Fathead Minnow Chronic MHSF - Growth IC25 (SN)	%	37.8	37.8	16.5	37.8	16.5	<6.25 - 70.8	21 0.0%
810 Fathead Minnow Chronic MHSF - Growth NOEC (ON)	%	25.0	25.0		25.0		12.5 - 50.0	31 0.0%
811 Fathead Minnow Chronic MHSF - Growth NOEC (SN)	%	25.0	25.0		25.0		12.5 - 50.0	14 0.0%

WET-017
Ceriodaphnia Acute MHSF 20° C

Program: DMRQAWETT

Evaluation

WET-017

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
762 Ceriodaphnia Acute MHSF 20° - LC50		%	EPA 2002.0 *0*	29.8 <6.25 - 60.2	Acceptable	-0.243

Labcode: 200393-0

ACCREDITED Certificate # 2122.01

Study Summary

WET-017

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
762 Ceriodaphnia Acute MHSF 20° - LC50	%	29.8	29.8	15.2	29.8	15.2	<6.25 - 60.2	23 0.0%

WET-021
Ceriodaphnia Chronic MHSF

Program: DMRQAWETT

Evaluation

WET-021

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
766 Ceriodaphnia Chronic MHSF - Survival NOEC	50.0	%	EPA 1002.0 *0*	25.0 12.5 - 50.0	Acceptable	
767 Ceriodaphnia Chronic MHSF - Reproduction IC25	34.5	%	EPA 1002.0 *0*	26.4 <6.25 - 53.6	Acceptable	0.596
768 Ceriodaphnia Chronic MHSF - Reproduction NOEC	25.0	%	EPA 1002.0 *0*	25.0 6.25 - 50.0	Acceptable	

Study Summary

WET-021

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
766 Ceriodaphnia Chronic MHSF - Survival NOEC	%	25.0	25.0		25.0		12.5 - 50.0	30 0.0%
767 Ceriodaphnia Chronic MHSF - Reproduction IC25	%	26.4	26.4	13.6	26.4	13.6	<6.25 - 53.6	28 0.0%
768 Ceriodaphnia Chronic MHSF - Reproduction NOEC	%	25.0	25.0		25.0		6.25 - 50.0	31 0.0%

WET-032
Daphnia Magna Acute MHSF 20° C

Program: DMRQAWETT

Evaluation

WET-032

Analyte	Result	Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
788 Daphnia Magna Acute MHSF 20° - LC50	22.9	%	EPA 2021.0 *0*	26.5 <6.25 - 53.6	Acceptable	-0.267

Study Summary

WET-032

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
788 Daphnia Magna Acute MHSF 20° - LC50	%	26.5	26.5	13.5	26.5	13.4	<6.25 - 53.6	24 0.0%

The evaluation, certified value, and acceptance criteria are based on EPA Criteria Document NCRL-cs-0045 (December 30, 1998), NELAC Fields of Testing NPW/Drinking Water (June 1, 2005 and RCRA 2002-02), and ISO Guide 43. The assigned value is the prepared value where applicable.

Authorized for release by _____ **Date** 9/22/2005

Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, A2LA, or any other federal agency. RTC is accredited by NVLAP and A2LA to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0 and A2LA certificate 2122.01.

1 Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report

WPCHEM/DMRQA 25 **WP05-3B**

Commenced 20-Jul-2005 | Concluded 2-Sep-2005

RT Labcode RT1061A

NVLAP® Labcode: 200393-0

This report may contain data that are not covered by the NVLAP accreditation.

A2LA ACCREDITED Certificate # 2122.01

Energy Laboratories - Billings
ATTN: Dr. Andrew Vaulkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00947
PHONE 406 252-6325
FAX 406 252-6069
EMAIL cvalkenbur@aol.com

PEI-029

Oil and Grease

Program: PEI-029

Evaluation

Analyte	Result Units	Method	Assigned Value / Acceptance Limits	Evaluation	Z
1860 Oil & Grease	47 mg/L	EPA 413.1 *10077608*	48.0 30.6 - 58.8	Acceptable	0.490
1860 Oil & Grease	47 mg/L	EPA 413.2 *10078009*	*48.0* 30.6 - 58.8	Acceptable	0.490

Study Summary

PEI-029

Analyte	Units	Certified Value	Assigned Value	EPA Std. Dev.	Study Mean	Study Std. Dev.	Acceptance Limits / Warning Limits	N / Pass Rate
1860 Oil & Grease	mg/L	44.7	48.0	4.69	45.0	4.61	30.6 - 58.8 35.3 - 54.1	47 95.7%

The evaluation, certified value, and acceptance criteria are based on EPA Criteria Document NCRL-cs-0045 (December 30, 1998), NELAC Fields of Testing NPW/Drinking Water (June 1, 2005 and RCRA 2002-02), and ISO Guide 43. The assigned value is the prepared value where applicable.

Authorized for release by _____ **Date** 11/4/2005

Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, A2LA, or any other federal agency. RTC is accredited by NVLAP and A2LA to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0 and A2LA certificate 2122.01.

NVLAP®
Labcode: 200393-0

ACCREDITED
Certificate # 2122.01

Blank
Page

Quarterly Study
UST06-1
UST

8-Feb-2006 through 24-Mar-2006

RT1061
RTC Labcode

MT00005
US EPA Labcode

Energy Labs
Andy Valkenburg
PO Box 30916
Billings MT 59107

Thank you for participating in study UST06-1. Additional information about this study may be found online at www.rt-corp.com. If you have any questions or comments about this study please contact me.

Sincerely,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP® Labcode: 200393-0
This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset
Dataset 1

GRO/BTEX in Water

Analysis
EPA 8021B
Other

Method Number 10174808
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Benzene [4] 4375 / SPE-008 - Lot 011068	6.1 mg/Kg	0.00 to 13.9	0.20	2 / 6	**ACCEPTABLE**
Ethylbenzene [4] 4765 / SPE-008 - Lot 011068	4.4 mg/Kg	0.00 to 8.24	0.67	4 / 6	**ACCEPTABLE**
Toluene [4] 5140 / SPE-008 - Lot 011068	20 mg/Kg	0.00 to 39.8	0.43	3 / 6	**ACCEPTABLE**
m+p-Xylene [4] 5240 / SPE-008 - Lot 011068	18 mg/Kg	0.00 to 34.6	0.63	4 / 6	**ACCEPTABLE**
o-Xylene [4] 5250 / SPE-008 - Lot 011068	6.8 mg/Kg	0.00 to 12.1	0.79	4 / 6	**ACCEPTABLE**
Xylene, total [4] 5260 / SPE-008 - Lot 011068	24 mg/Kg	0.00 to 46.6	0.59	4 / 6	**ACCEPTABLE**

Analysis
EPA 8015M
Other

Method Number 99999964
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Gasoline range organics (GRO), C6-C12 [4] 9408 / SPE-008 - Lot 011068	220 mg/Kg	0.00 to 477	-0.12	3 / 35	**ACCEPTABLE**
Total Purgeable Hydrocarbons [4] 99990 / SPE-008 - Lot 011068	266 mg/Kg	0.00 to 477	0.44		**ACCEPTABLE**

Petroleum Hydrocarbons in Soil

Analysis
EPA 8015B
Other

Method Number 10173601
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Diesel range organics (DRO) 9369 / SPE-007 - Lot 011093	843 mg/Kg	148 to 1460	0.18	5 / 33	**ACCEPTABLE**

Analysis
TX1005
Gas Chromatography - Flame Ionization Detection

Method Number 90000010
Technology Code GC-FID

	Result Units	Accept / Warn	Z	Rank	Evaluation
Residual Range Organics (RRO), C28-C35 104 / SPE-026TX-H - Lot 011105	953 mg/Kg	300 to 1320 420 to 900	2.44	3 / 2	**ACCEPTABLE**
Residual Range Organics (RRO), C28-C35 104 / SPE-026TX-L - Lot 011106	21 mg/Kg	7.86 to 23.6 10.5 to 21.0	2.02	2 / 1	**ACCEPTABLE**
Diesel range organics (DRO) 9369 / SPE-026TX-H - Lot 011105	2560 mg/Kg	558 to 3550	0.68	4 / 5	**ACCEPTABLE**
Diesel range organics (DRO) 9369 / SPE-026TX-L - Lot 011106	28 mg/Kg	3.24 to 44.5	0.40	2 / 4	**ACCEPTABLE**
Gasoline range organics (GRO), C6-C12 9408 / SPE-026TX-H - Lot 011105	2250 mg/Kg	1180 to 2990	0.37	4 / 5	**ACCEPTABLE**
Gasoline range organics (GRO), C6-C12 9408 / SPE-026TX-L - Lot 011106	29 mg/Kg	18.3 to 45.6	-0.43	3 / 4	**ACCEPTABLE**

End of Dataset 1

Sample Information

Diesel in Soil
SPE-007

Study Lot 011093
Mfg Lot 011093

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Diesel range organics (DRO) 9369 Petroleum Hydrocarbons in Soil	mg/Kg	804.42	218.76	847.33	295.49	804.42	218.76	936

Gasoline in Soil
SPE-008

Study Lot 011068
Mfg Lot 011068

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Benzene 4375 GRO/BTEX in Water	mg/Kg	5.54	2.79	5.49	2.26	5.54	2.79	6.50
Ethylbenzene 4765 GRO/BTEX in Water	mg/Kg	3.28	1.65	3.31	1.38	3.28	1.65	4.30
Toluene 5140 GRO/BTEX in Water	mg/Kg	16.66	7.70	16.66	6.85	16.66	7.70	22.0
m+p-Xylene 5240 GRO/BTEX in Water	mg/Kg	13.56	7.01	13.73	5.81	13.56	7.01	17.8
o-Xylene 5250 GRO/BTEX in Water	mg/Kg	4.93	2.38	5.03	2.09	4.93	2.38	6.50
Xylene, total 5260 GRO/BTEX in Water	mg/Kg	18.51	9.36	18.78	7.91	18.51	9.36	24.3
Gasoline range organics (GRO), C6-C12 9408 GRO/BTEX in Water	mg/Kg	230.26	82.16	234.01	76.59	230.26	82.16	283
Total Purgeable Hydrocarbons 99990 GRO/BTEX in Water	mg/Kg	230.00	82.20			230.00	82.20	283

TX TPH in Soil - High Level
SPE-026TX-H

Study Lot 011105
Mfg Lot 011105

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Residual Range Organics (RRO), C28-C35 104 Petroleum Hydrocarbons in Soil	mg/Kg	660.00	120.00			660.00	120.00	1200
Diesel range organics (DRO) 9369 Petroleum Hydrocarbons in Soil	mg/Kg	2,054.57	748.22	2,047.20	651.32	2,054.57	748.22	2500
Gasoline range organics (GRO), C6-C12 9408 Petroleum Hydrocarbons in Soil	mg/Kg	2,083.07	453.16	2,078.60	322.70	2,083.07	453.16	2530

TX TPH in Soil - Low Level
SPE-026TX-L

Study Lot 011106
Mfg Lot 011106

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Residual Range Organics (RRO), C28-C35 104 Petroleum Hydrocarbons in Soil	mg/Kg	15.72	2.62			15.70	2.62	26.2
Diesel range organics (DRO) 9369 Petroleum Hydrocarbons in Soil	mg/Kg	23.86	10.31	24.05	7.62	23.86	10.31	25.0
Gasoline range organics (GRO), C6-C12 9408 Petroleum Hydrocarbons in Soil	mg/Kg	31.92	6.82	31.85	5.33	31.92	6.82	39.2

Program analyte accrediting footnotes

1 NELAC
2 EPA
3 NVLAP
4 A2LA
5 NELAC Experimental

Quarterly Study
LPTP06-S1
RCRA

8-Feb-2006 through 24-Mar-2006

RT1061
RTC Labcode

MT00005
US EPA Labcode

Energy Labs
Andy Valkenburg
PO Box 30916
Billings MT 59107

Thank you for participating in study LPTP06-S1. Additional information about this study may be found online at www.rt-corp.com. If you have any questions or comments about this study please contact me.

Sincerely,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

NVLAP®
Labcode: 200393-0
This report may contain data that are not covered by the NVLAP accreditation.

ACCREDITED
Certificate # 2122.01

Dataset
Dataset 1

Misc. Analytes

Analysis
EPA 6010B
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10155609
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Rank	Evaluation
pH [4] 1900 / SPE-001 - Lot 011090	3.6 Units	3.10 to 4.17	-0.19	1 / 17	**ACCEPTABLE**

TCLP Metals

Analysis
EPA 6010B
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10155609
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Rank	Evaluation
Arsenic, As [4] 1010 / SPE-005 - Lot 001083	4.9 mg/L	3.14 to 6.08	0.59	9 / 15	**ACCEPTABLE**
Barium, Ba [4] 1015 / SPE-005 - Lot 001083	0.8 mg/L	0.320 to 1.04	0.99	13 / 15	**ACCEPTABLE**
Cadmium, Cd [4] 1030 / SPE-005 - Lot 001083	2.4 mg/L	0.993 to 3.53	0.33	8 / 15	**ACCEPTABLE**
Chromium, Cr (total) [4] 1040 / SPE-005 - Lot 001083	0.3 mg/L	0.0482 to 0.587	-0.19	2 / 15	**ACCEPTABLE**
Lead, Pb [4] 1075 / SPE-005 - Lot 001083	0.6 mg/L	0.169 to 1.08	-0.15	4 / 15	**ACCEPTABLE**
Selenium, Se [4] 1140 / SPE-005 - Lot 001083	4.7 mg/L	2.81 to 6.28	0.27	6 / 14	**ACCEPTABLE**
Silver, Ag [4] 1150 / SPE-005 - Lot 001083	0 mg/L	0.00 to 0.0592	-4.16	14 / 14	**ACCEPTABLE**

Trace Metals

Analysis
EPA 6010B
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10155609
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aluminum, Al [1, 4] 1000 / SPE-001 - Lot 011090	6090 mg/Kg	0.00 to 12300	0.19	5 / 32	**ACCEPTABLE**
Antimony, Sb [1, 4] 1005 / SPE-001 - Lot 011090	23.4 mg/Kg	0.00 to 144	-0.45	14 / 40	**ACCEPTABLE**
Arsenic, As [1, 4] 1010 / SPE-001 - Lot 011090	7.12 mg/Kg	0.00 to 56.2	-0.34	14 / 45	**ACCEPTABLE**
Barium, Ba [1, 4] 1015 / SPE-001 - Lot 011090	40.8 mg/Kg	12.4 to 88.2	0.44	16 / 40	**ACCEPTABLE**
Beryllium, Be [1, 4] 1020 / SPE-001 - Lot 011090	57.8 mg/Kg	37.6 to 72.0	0.53	18 / 42	**ACCEPTABLE**
Boron, B [1, 4] 1025 / SPE-001 - Lot 011090	66.0 mg/Kg	31.9 to 109	-0.34	11 / 26	**ACCEPTABLE**
Cadmium, Cd [1, 4] 1030 / SPE-001 - Lot 011090	112 mg/Kg	75.3 to 191	0.17	8 / 48	**ACCEPTABLE**
Calcium, Ca [1, 4] 1035 / SPE-001 - Lot 011090	3720 mg/Kg	2360 to 4740	0.43	8 / 27	**ACCEPTABLE**
Chromium, Cr (total) [1, 4] 1040 / SPE-001 - Lot 011090	166 mg/Kg	101 to 218	0.34	14 / 44	**ACCEPTABLE**
Cobalt, Co [1, 4] 1050 / SPE-001 - Lot 011090	140 mg/Kg	89.6 to 179	0.40	12 / 36	**ACCEPTABLE**
Copper, Cu [1, 4] 1055 / SPE-001 - Lot 011090	61.3 mg/Kg	36.0 to 72.6	1.15	29 / 40	**ACCEPTABLE**
Iron, Fe [1, 4] 1070 / SPE-001 - Lot 011090	3540 mg/Kg	1970 to 5300	-0.18	5 / 34	**ACCEPTABLE**
Lead, Pb [1, 4] 1075 / SPE-001 - Lot 011090	75.8 mg/Kg	55.0 to 98.7	-0.15	13 / 50	**ACCEPTABLE**
Magnesium, Mg [1, 4] 1085 / SPE-001 - Lot 011090	204 mg/Kg	74.0 to 349	-0.16	5 / 29	**ACCEPTABLE**

Trace Metals (continued)

(continued)

Analysis
EPA 6010B
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10155609
Technology Code ICP-AES

	Result	Units	Accept / Warn	Z	Rank	Evaluation
Manganese, Mn [1, 4] 1090 / SPE-001 - Lot 011090	284	mg/Kg	185 to 360	0.39	17 / 35	**ACCEPTABLE**
Molybdenum, Mo [1, 4] 1100 / SPE-001 - Lot 011090	1.18	mg/Kg	0.00 to 5.56	0.10	6 / 36	**ACCEPTABLE**
Nickel, Ni [1, 4] 1105 / SPE-001 - Lot 011090	77.4	mg/Kg	48.1 to 102	0.24	9 / 42	**ACCEPTABLE**
Potassium, K [1, 4] 1125 / SPE-001 - Lot 011090	3850	mg/Kg	2470 to 4570	0.94	15 / 25	**ACCEPTABLE**
Selenium, Se [1, 4] 1140 / SPE-001 - Lot 011090	143	mg/Kg	104 to 229	-1.14	35 / 46	**ACCEPTABLE**
Silicon, Si [4] 1145 / SPE-001 - Lot 011090	233	mg/Kg	0.00 to 1930	-1.27	9 / 10	**ACCEPTABLE**
Silver, Ag [1, 4] 1150 / SPE-001 - Lot 011090	104	mg/Kg	31.4 to 168	0.18	6 / 40	**ACCEPTABLE**
Sodium, Na [1, 4] 1155 / SPE-001 - Lot 011090	850	mg/Kg	588 to 1190	-0.06	2 / 28	**ACCEPTABLE**
Strontium, Sr [4] 1160 / SPE-001 - Lot 011090	457	mg/Kg	337 to 585	-0.09	2 / 21	**ACCEPTABLE**
Thallium, Tl [1, 4] 1165 / SPE-001 - Lot 011090	0	mg/Kg	0.00 to 29.3	-1.15	15 / 41	**ACCEPTABLE**
Tin, Sn [1, 4] 1175 / SPE-001 - Lot 011090	168	mg/Kg	39.8 to 272	0.31	8 / 24	**ACCEPTABLE**
Titanium, Ti [4] 1180 / SPE-001 - Lot 011090	14.9	mg/Kg	0.00 to 63.1	-0.34	7 / 24	**ACCEPTABLE**
Vanadium, V [1, 4] 1185 / SPE-001 - Lot 011090	114	mg/Kg	68.8 to 142	0.68	21 / 37	**ACCEPTABLE**
Zinc, Zn [1, 4] 1190 / SPE-001 - Lot 011090	731	mg/Kg	508 to 1000	-0.29	13 / 43	**ACCEPTABLE**

End of Dataset 1

Dataset
Dataset 2

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Idaho Bureau of Laboratories

346 Dan Rousselle
2220 Old Penitentiary road
Boise ID 83712
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

118 Donald Lafara
901 S. Stewart Street
Ste. 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

BNAs - Solids

Analysis
EPA 8270C
Gas Chromatography - Mass Spectrometry

Method Number 10185805
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,2-Dichlorobenzene [4] 4610 / SPE-003 - Lot 011047	1900 µg/Kg	413 to 3380	0.01	1 / 22	**ACCEPTABLE**
1,3-Dichlorobenzene [4] 4615 / SPE-003 - Lot 011047	3900 µg/Kg	684 to 7050	0.03	2 / 22	**ACCEPTABLE**
1,4-Dichlorobenzene [4] 4620 / SPE-003 - Lot 011047	2700 µg/Kg	532 to 4440	0.33	7 / 22	**ACCEPTABLE**
Hexachlorobutadiene [1, 4] 4835 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 21	**ACCEPTABLE**
Hexachloroethane [1, 4] 4840 / SPE-003 - Lot 011047	410 µg/Kg	136 to 739	-0.28	10 / 22	**ACCEPTABLE**
Naphthalene [1, 4] 5005 / SPE-003 - Lot 011047	5600 µg/Kg	537 to 11800	-0.30	8 / 23	**ACCEPTABLE**
Nitrobenzene [1, 4] 5015 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	**ACCEPTABLE**
Pyridine [4] 5095 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 19	**ACCEPTABLE**
1,2,4-Trichlorobenzene [1, 4] 5155 / SPE-003 - Lot 011047	3200 µg/Kg	575 to 5530	0.18	3 / 22	**ACCEPTABLE**

BNAs - Solids (continued)

(continued)

Analysis
EPA 8270C
Gas Chromatography - Mass Spectrometry

Method Number 10185805
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Acenaphthene [1, 4] 5500 / SPE-003 - Lot 011047	8100 µg/Kg	1540 to 15000	-0.08	3 / 22	ACCEPTABLE
Acenaphthylene [1, 4] 5505 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	ACCEPTABLE
Aniline [4] 5545 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 18	ACCEPTABLE
Anthracene [1, 4] 5555 / SPE-003 - Lot 011047	0 µg/Kg	0.00 to 300		/ 22	ACCEPTABLE
Benzo(a)anthracene [1, 4] 5575 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	ACCEPTABLE
Benzo(a)pyrene [1, 4] 5580 / SPE-003 - Lot 011047	1800 µg/Kg	0.00 to 2740	0.97	24 / 22	ACCEPTABLE
Benzo(b)fluoranthene [1, 4] 5585 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	ACCEPTABLE
Benzo(g,h,i)perylene [1, 4] 5590 / SPE-003 - Lot 011047	550 µg/Kg	0.00 to 910	0.75	18 / 22	ACCEPTABLE
Benzidine [4] 5595 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 15	ACCEPTABLE
Benzo(k)fluoranthene [1, 4] 5600 / SPE-003 - Lot 011047	380 µg/Kg	47.2 to 1020	-0.95	20 / 22	ACCEPTABLE
Benzoic acid [4] 5610 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 19	ACCEPTABLE
Benzyl alcohol [4] 5630 / SPE-003 - Lot 011047	3000 µg/Kg	0.00 to 4780	0.94	25 / 22	ACCEPTABLE
4-Bromophenyl phenyl ether [1, 4] 5660 / SPE-003 - Lot 011047	3100 µg/Kg	833 to 5060	0.22	6 / 22	ACCEPTABLE
Butyl benzyl phthalate [1, 4] 5670 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	ACCEPTABLE
Carbazole [4] 5680 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 15	ACCEPTABLE
4-Chloro-3-methylphenol [1, 4] 5700 / SPE-003 - Lot 011047	2300 µg/Kg	385 to 3790	0.38	14 / 22	ACCEPTABLE
4-Chloroaniline [4] 5745 / SPE-003 - Lot 011047	0 µg/Kg	0.00 to 7220	-10.00	5 / 22	ACCEPTABLE
bis(2-Chloroethoxy)methane [1, 4] 5760 / SPE-003 - Lot 011047	7900 µg/Kg	1480 to 13200	0.29	7 / 22	ACCEPTABLE
bis(2-Chloroethyl) ether [4] 5765 / SPE-003 - Lot 011047	1900 µg/Kg	0.00 to 4890	-0.42	13 / 22	ACCEPTABLE
bis(2-Chloroisopropyl) ether [1, 4] 5780 / SPE-003 - Lot 011047	7700 µg/Kg	914 to 14600	-0.02	1 / 21	ACCEPTABLE
2-Chloronaphthalene [1, 4] 5795 / SPE-003 - Lot 011047	2100 µg/Kg	0.00 to 4420	0.73	13 / 22	ACCEPTABLE
2-Chlorophenol [1, 4] 5800 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	ACCEPTABLE
4-Chlorophenyl phenylether [1, 4] 5825 / SPE-003 - Lot 011047	2100 µg/Kg	799 to 3110	0.38	12 / 22	ACCEPTABLE
Chrysene [1, 4] 5855 / SPE-003 - Lot 011047	1700 µg/Kg	371 to 3090	-0.06	2 / 22	ACCEPTABLE
Dibenz(a,h) anthracene [1, 4] 5895 / SPE-003 - Lot 011047	3000 µg/Kg	31.4 to 4640	0.87	22 / 22	ACCEPTABLE
Dibenzofuran [1, 4] 5905 / SPE-003 - Lot 011047	4500 µg/Kg	619 to 8690	-0.11	5 / 22	ACCEPTABLE
Di-n-butyl phthalate [1, 4] 5925 / SPE-003 - Lot 011047	7800 µg/Kg	0.00 to 19700	0.14	4 / 22	ACCEPTABLE
3,3'-Dichlorobenzidine [4] 5945 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	ACCEPTABLE
2,4-Dichlorophenol [1, 4] 6000 / SPE-003 - Lot 011047	5300 µg/Kg	843 to 10100	-0.12	4 / 22	ACCEPTABLE
Diethyl phthalate [1, 4] 6070 / SPE-003 - Lot 011047	8600 µg/Kg	0.00 to 19200	0.28	13 / 22	ACCEPTABLE
2,4-Dimethylphenol [1, 4] 6130 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	ACCEPTABLE

BNAs - Solids (continued)

(continued)

Analysis
EPA 8270C
Gas Chromatography - Mass Spectrometry

Method Number 10185805
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Dimethyl phthalate [1, 4] 6135 / SPE-003 - Lot 011047	12000 µg/Kg	0.00 to 21500	0.66	18 / 22	ACCEPTABLE
2,4-Dinitrophenol [1, 4] 6175 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 22	ACCEPTABLE
2,4-Dinitrotoluene (2,4-DNT) [1, 4] 6185 / SPE-003 - Lot 011047	6800 µg/Kg	475 to 13300	-0.04	1 / 22	ACCEPTABLE
2,6-Dinitrotoluene (2,6-DNT) [1, 4] 6190 / SPE-003 - Lot 011047	4100 µg/Kg	1000 to 6310	0.50	14 / 21	ACCEPTABLE
Di-n-octyl phthalate [1, 4] 6200 / SPE-003 - Lot 011047	7100 µg/Kg	0.00 to 13600	0.54	10 / 21	ACCEPTABLE
bis(2-Ethylhexyl) phthalate (DEHP) [1, 4] 6255 / SPE-003 - Lot 011047	4700 µg/Kg	0.00 to 7430	1.13	23 / 21	ACCEPTABLE
Fluoranthene [1, 4] 6265 / SPE-003 - Lot 011047	5300 µg/Kg	839 to 10200	-0.14	4 / 21	ACCEPTABLE
Fluorene [1, 4] 6270 / SPE-003 - Lot 011047	2000 µg/Kg	601 to 3090	0.38	12 / 21	ACCEPTABLE
Hexachlorobenzene [1, 4] 6275 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 21	ACCEPTABLE
Hexachlorocyclopentadiene [1, 4] 6285 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 21	ACCEPTABLE
Indeno(1,2,3-cd) pyrene [1, 4] 6315 / SPE-003 - Lot 011047	1200 µg/Kg	0.00 to 2280	0.28	9 / 21	ACCEPTABLE
Isophorone [1, 4] 6320 / SPE-003 - Lot 011047	7700 µg/Kg	0.00 to 15300	0.38	13 / 21	ACCEPTABLE
2-Methyl-4,6-dinitrophenol [1, 4] 6360 / SPE-003 - Lot 011047	770 µg/Kg	0.00 to 7650	-1.06	21 / 20	ACCEPTABLE
2-Methylnaphthalene [4] 6385 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 21	ACCEPTABLE
2-Methylphenol (o-Cresol) [1, 4] 6400 / SPE-003 - Lot 011047	6900 µg/Kg	838 to 10700	0.70	19 / 21	ACCEPTABLE
3+4-Methylphenol (m+p-Cresol) [4] 6412 / SPE-003 - Lot 011047	2300 µg/Kg	107 to 4930	-0.27	9 / 17	ACCEPTABLE
2-Nitroaniline [4] 6460 / SPE-003 - Lot 011047	580 µg/Kg	152 to 918	0.35	9 / 21	ACCEPTABLE
3-Nitroaniline [4] 6465 / SPE-003 - Lot 011047	0 µg/Kg	0.00 to 792	-6.00	5 / 21	ACCEPTABLE
4-Nitroaniline [4] 6470 / SPE-003 - Lot 011047	810 µg/Kg	0.00 to 1380	0.69	12 / 21	ACCEPTABLE
2-Nitrophenol [1, 4] 6490 / SPE-003 - Lot 011047	720 µg/Kg	0.00 to 2340	0.07	3 / 21	ACCEPTABLE
4-Nitrophenol [1, 4] 6500 / SPE-003 - Lot 011047	3500 µg/Kg	0.00 to 9120	0.15	4 / 21	ACCEPTABLE
n-Nitrosodimethylamine [4] 6530 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 17	ACCEPTABLE
n-Nitrosodiphenylamine [4] 6535 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 20	ACCEPTABLE
n-Nitrosodi-n-propylamine [1, 4] 6545 / SPE-003 - Lot 011047	3200 µg/Kg	0.00 to 6060	0.59	17 / 20	ACCEPTABLE
Pentachlorophenol [1, 4] 6605 / SPE-003 - Lot 011047	5400 µg/Kg	0.00 to 18400	-0.41	10 / 21	ACCEPTABLE
Phenanthrene [1, 4] 6615 / SPE-003 - Lot 011047	6000 µg/Kg	587 to 10800	0.18	5 / 21	ACCEPTABLE
Phenol [1, 4] 6625 / SPE-003 - Lot 011047	4200 µg/Kg	0.00 to 7560	0.41	9 / 21	ACCEPTABLE
Pyrene [1, 4] 6665 / SPE-003 - Lot 011047	0 µg/Kg	0 to 0		/ 21	ACCEPTABLE
2,4,5-Trichlorophenol [1, 4] 6835 / SPE-003 - Lot 011047	6000 µg/Kg	0.00 to 13900	-0.32	8 / 21	ACCEPTABLE
2,4,6-Trichlorophenol [1, 4] 6840 / SPE-003 - Lot 011047	7000 µg/Kg	814 to 12800	0.11	3 / 21	ACCEPTABLE

BNAs - Solids (continued)

Group Analysis Summary
Acceptable 70 / 70
Score 100.0% - **(Acceptable)**

Herbicides

Herbicides

Analysis
EPA 8151
Gas Chromatography - Electron Capture Detection

Method Number 10183003
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Rank	Evaluation
Pentachlorophenol [4] 6605 / SPE-004 - Lot 011030	0.26 µg/Kg	0.00 to 673	-1.43	12 / 8	**ACCEPTABLE**
2,4-D [1, 4] 8545 / SPE-004 - Lot 011030	0.18 µg/Kg	0.00 to 626	-1.48	19 / 11	**ACCEPTABLE**
Dalapon [4] 8555 / SPE-004 - Lot 011030	0.069 µg/Kg	0.00 to 161	-0.94	6 / 8	**ACCEPTABLE**
2,4-DB [4] 8560 / SPE-004 - Lot 011030	0 µg/Kg	0 to 0		/ 10	**ACCEPTABLE**
Dicamba [1, 4] 8595 / SPE-004 - Lot 011030	0.20 µg/Kg	0.00 to 395	-2.17	19 / 11	**ACCEPTABLE**
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) [4] 8620 / SPE-004 - Lot 011030	0.19 µg/Kg	0.00 to 614	-1.27	15 / 10	**ACCEPTABLE**
Silvex (2,4,5-TP) [1, 4] 8650 / SPE-004 - Lot 011030	0.28 µg/Kg	0.00 to 688	-2.00	19 / 11	**ACCEPTABLE**
2,4,5-T [1, 4] 8655 / SPE-004 - Lot 011030	0.12 µg/Kg	0.00 to 215	-2.01	18 / 11	**ACCEPTABLE**

Misc. Analytes

Analysis
EPA 1010
Other

Method Number 10116606
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Ignitability 1780 / SPE-029 - Lot 011067	66.1 °C	44.3 to 76.9	1.02	9 / 10	**ACCEPTABLE**

Analysis
EPA 9012
Other

Method Number 10193201
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Cyanide [1, 4] 1635 / SPE-011 - Lot 011083	166 mg/Kg	0.00 to 323	0.28	12 / 12	**ACCEPTABLE**

Analysis
EPA 6020
Mass Spectrometry - Inductively Coupled Plasma

Method Number 10156000
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
pH [4] 1900 / SPE-001 - Lot 011090	3.6 Units	3.10 to 4.17	-0.19	1 / 17	**ACCEPTABLE**

Analysis
EPA 9045D
Other

Method Number 99544822
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
pH [4] 1900 / SPE-023 - Lot 011071	7.6 Units	6.98 to 7.77	1.73	13 / 13	**ACCEPTABLE**

OrganoPhosphorus Pesticides

Organophrosphorus pesticides

Analysis
E507M
Gas Chromatography - Mass Spectrometry

Method Number 88663516
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chlorfenvinphos 7255 / SPE-021 - Lot 011056	5.0 mg/Kg	0.00 to 14.7	-0.86	2 / 4	**ACCEPTABLE**

OrganoPhosphorus Pesticides (continued)

Organophrosphorus pesticides

(continued)

Analysis
E507M
Gas Chromatography - Mass Spectrometry

Method Number 88663516
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Diazinon 7410 / SPE-021 - Lot 011056	3.5 mg/Kg	0.00 to 15.0	-0.08	2 / 10	**ACCEPTABLE**
Ethoprop 7570 / SPE-021 - Lot 011056	3.5 mg/Kg	0.00 to 11.1	0.24	2 / 8	**ACCEPTABLE**
Malathion 7770 / SPE-021 - Lot 011056	3.4 mg/Kg	0.00 to 8.28	-0.26	4 / 10	**ACCEPTABLE**
Phorate 7985 / SPE-021 - Lot 011056	1.6 mg/Kg	0.172 to 4.30	-0.93	8 / 8	**ACCEPTABLE**
Tetrachlorvinphos (Stirophos, Gardona) 8200 / SPE-021 - Lot 011056	2.2 mg/Kg	0.00 to 4.01	0.68	6 / 7	**ACCEPTABLE**
Disulfoton 8625 / SPE-021 - Lot 011056	3.6 mg/Kg	0.598 to 8.09	-0.60	5 / 10	**ACCEPTABLE**

PCBs in Soil

Analysis
EPA 8082
Gas Chromatography - Electron Capture Detection

Method Number 10179007
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aroclor-1016 (PCB-1016) [1, 4] 8880 / SPE-010 - Lot 011031	0 µg/Kg	0 to 0		/ 17	**ACCEPTABLE**
Aroclor-1221 (PCB-1221) [1, 4] 8885 / SPE-010 - Lot 011031	28000 µg/Kg	10700 to 49500	-0.32	8 / 19	**ACCEPTABLE**
Aroclor-1232 (PCB-1232) [1, 4] 8890 / SPE-010 - Lot 011031	0 µg/Kg	0.00 to 0.00		/ 18	**ACCEPTABLE**
Aroclor-1242 (PCB-1242) [1, 4] 8895 / SPE-010 - Lot 011031	0 µg/Kg	0 to 0		/ 17	**ACCEPTABLE**
Aroclor-1248 (PCB-1248) [1, 4] 8900 / SPE-010 - Lot 011031	0 µg/Kg	0 to 0		/ 18	**ACCEPTABLE**
Aroclor-1254 (PCB-1254) [1, 4] 8905 / SPE-010 - Lot 011031	0 µg/Kg	0 to 0		/ 18	**ACCEPTABLE**
Aroclor-1260 (PCB-1260) [1, 4] 8910 / SPE-010 - Lot 011031	0 µg/Kg	0 to 0		/ 18	**ACCEPTABLE**

Pesticides - Solids

Analysis
EPA 8081A
Gas Chromatography - Electron Capture Detection

Method Number 10178606
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aldrin [1, 4] 7025 / SPE-009 - Lot 011042	290 µg/Kg	99.4 to 515	-0.25	7 / 21	**ACCEPTABLE**
delta-BHC [1, 4] 7105 / SPE-009 - Lot 011042	160 µg/Kg	0.00 to 340	-0.02	1 / 21	**ACCEPTABLE**
alpha-BHC (alpha-Hexachlorocyclohexane) [1, 4] 7110 / SPE-009 - Lot 011042	70 µg/Kg	9.37 to 147	-0.35	12 / 20	**ACCEPTABLE**
beta-BHC (beta-Hexachlorocyclohexane) [1, 4] 7115 / SPE-009 - Lot 011042	0 µg/Kg	0.0 to 0.0		/ 21	**ACCEPTABLE**
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane) [1, 4] 7120 / SPE-009 - Lot 011042	300 µg/Kg	73.3 to 569	-0.25	9 / 21	**ACCEPTABLE**
alpha-Chlordane [1, 4] 7240 / SPE-009 - Lot 011042	290 µg/Kg	18.5 to 575	-0.07	2 / 19	**ACCEPTABLE**
gamma-Chlordane [1, 4] 7245 / SPE-009 - Lot 011042	310 µg/Kg	51.5 to 599	-0.17	6 / 19	**ACCEPTABLE**
Chlordane (total) [1, 4] 7250 / SPE-027 - Lot 011028	240 µg/Kg	16.4 to 452	0.08	2 / 11	**ACCEPTABLE**
4,4'-DDD [1, 4] 7355 / SPE-009 - Lot 011042	58 µg/Kg	0.00 to 164	-0.55	19 / 21	**ACCEPTABLE**
4,4'-DDE [1, 4] 7360 / SPE-009 - Lot 011042	290 µg/Kg	29.9 to 593	-0.23	9 / 21	**ACCEPTABLE**

Pesticides - Solids (continued)

(continued)

Analysis
EPA 8081A
Gas Chromatography - Electron Capture Detection

Method Number 10178606
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Rank	Evaluation
4,4'-DDT [1, 4] 7365 / SPE-009 - Lot 011042	320 µg/Kg	0.00 to 659	0.11	4 / 21	**ACCEPTABLE**
Dieldrin [1, 4] 7470 / SPE-009 - Lot 011042	190 µg/Kg	78.5 to 330	-0.34	11 / 21	**ACCEPTABLE**
Endosulfan I [1, 4] 7510 / SPE-009 - Lot 011042	150 µg/Kg	25.8 to 262	0.15	5 / 21	**ACCEPTABLE**
Endosulfan II [1, 4] 7515 / SPE-009 - Lot 011042	220 µg/Kg	18.7 to 452	-0.21	6 / 20	**ACCEPTABLE**
Endosulfan sulfate [1, 4] 7520 / SPE-009 - Lot 011042	180 µg/Kg	0.00 to 366	-0.03	2 / 20	**ACCEPTABLE**
Endrin aldehyde [1, 4] 7530 / SPE-009 - Lot 011042	190 µg/Kg	4.19 to 377	-0.01	1 / 20	**ACCEPTABLE**
Endrin ketone [1, 4] 7535 / SPE-009 - Lot 011042	140 µg/Kg	0.00 to 328	-0.25	7 / 18	**ACCEPTABLE**
Endrin [1, 4] 7540 / SPE-009 - Lot 011042	350 µg/Kg	110 to 571	0.12	4 / 20	**ACCEPTABLE**
Heptachlor [1, 4] 7685 / SPE-009 - Lot 011042	110 µg/Kg	28.5 to 195	-0.06	2 / 20	**ACCEPTABLE**
Heptachlor epoxide [1, 4] 7690 / SPE-009 - Lot 011042	0 µg/Kg	0 to 0		/ 4	**ACCEPTABLE**
Methoxychlor [1, 4] 7810 / SPE-009 - Lot 011042	130 µg/Kg	0.00 to 311	-0.41	10 / 20	**ACCEPTABLE**
Toxaphene (Chlorinated camphene) [1, 4] 8250 / SPE-028 - Lot 011029	250 µg/Kg	4.83 to 458	0.24	7 / 12	**ACCEPTABLE**

Group Analysis Summary
Acceptable 22 / 22
Score 100.0% - **(Acceptable)**

TCLP Metals

Analysis
EPA 7470A
Other

Method Number 10165807
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Mercury, Hg [4] 1095 / SPE-005 - Lot 001083	0.03 mg/L	0.0192 to 0.0740	-1.82	13 / 12	**ACCEPTABLE**

Analysis
EPA 6020
Mass Spectrometry - Inductively Coupled Plasma

Method Number 10156000
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Arsenic, As [4] 1010 / SPE-005 - Lot 001083	4.7 mg/L	3.14 to 6.08	0.18	4 / 15	**ACCEPTABLE**
Barium, Ba [4] 1015 / SPE-005 - Lot 001083	0.7 mg/L	0.320 to 1.04	0.15	1 / 15	**ACCEPTABLE**
Cadmium, Cd [4] 1030 / SPE-005 - Lot 001083	2.2 mg/L	0.993 to 3.53	-0.14	4 / 15	**ACCEPTABLE**
Chromium, Cr (total) [4] 1040 / SPE-005 - Lot 001083	0.3 mg/L	0.0482 to 0.587	-0.19	2 / 15	**ACCEPTABLE**
Lead, Pb [4] 1075 / SPE-005 - Lot 001083	0.6 mg/L	0.169 to 1.08	-0.15	4 / 15	**ACCEPTABLE**
Selenium, Se [4] 1140 / SPE-005 - Lot 001083	3.9 mg/L	2.81 to 6.28	-1.11	13 / 14	**ACCEPTABLE**
Silver, Ag [4] 1150 / SPE-005 - Lot 001083	0 mg/L	0.00 to 0.0592	-4.16	14 / 14	**ACCEPTABLE**

TCLP Semi-VOAs

Analysis
EPA 1311
Other

Method Number 10118806
Technology Code NA

TCLP Semi-VOAs (continued)

(continued)

Analysis
EPA 1311
Other
Method Number 10118806
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Hexachlorobutadiene 4835 / SPE-015 - Lot 011055	0.52 mg/L	0.00 to 1.18	0.90	5 / 3	ACCEPTABLE
Hexachloroethane 4840 / SPE-015 - Lot 011055	0.98 mg/L	0.00 to 3.35	-0.04	1 / 3	ACCEPTABLE
Nitrobenzene 5015 / SPE-015 - Lot 011055	4.2 mg/L	1.15 to 7.81 1.47 to 2.73	6.67	3 / 3	ACCEPTABLE
Pyridine 5095 / SPE-015 - Lot 011055	0 mg/L	0 to 0		/ 3	ACCEPTABLE
2,4-Dinitrotoluene (2,4-DNT) 6185 / SPE-015 - Lot 011055	3.5 mg/L	0.0997 to 5.54	0.75	3 / 3	ACCEPTABLE
Hexachlorobenzene 6275 / SPE-015 - Lot 011055	0 mg/L	0 to 0		/ 3	ACCEPTABLE
Pentachlorophenol 6605 / SPE-015 - Lot 011055	5.4 mg/L	0.00 to 8.59	0.96	4 / 3	ACCEPTABLE
2,4,5-Trichlorophenol 6835 / SPE-015 - Lot 011055	1.6 mg/L	0.00 to 2.79	0.59	3 / 3	ACCEPTABLE
2,4,6-Trichlorophenol 6840 / SPE-015 - Lot 011055	4.8 mg/L	0.00 to 8.22	0.64	3 / 3	ACCEPTABLE

Analysis
EPA 8270C
Gas Chromatography - Mass Spectrometry
Method Number 10185805
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
2-Methylphenol (o-Cresol) 6400 / SPE-015 - Lot 011055	1.7 mg/L	0.00 to 3.53	0.26	1 / 3	ACCEPTABLE
3+4-Methylphenol (m+p-Cresol) 6412 / SPE-015 - Lot 011055	2.1 mg/L	0.00 to 3.77	0.76	4 / 3	ACCEPTABLE
Total Cresol 6413 / SPE-015 - Lot 011055	3.8 mg/L	0.00 to 7.29	0.53	3 / 3	ACCEPTABLE

Trace Metals

Analysis
EPA 7196A
Other
Method Number 10162400
Technology Code NA

	Result Units	Accept / Warn	Z	Rank	Evaluation
Chromium VI, Cr(VI) [1, 4] 1045 / SPE-012 - Lot 011033	104 mg/Kg	64.0 to 170	-0.73	8 / 7	ACCEPTABLE

Analysis
EPA 6020
Mass Spectrometry - Inductively Coupled Plasma
Method Number 10156000
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Aluminum, Al [1, 4] 1000 / SPE-001 - Lot 011090	5480 mg/Kg	0.00 to 12300	-0.09	2 / 32	ACCEPTABLE
Antimony, Sb [1, 4] 1005 / SPE-001 - Lot 011090	26.1 mg/Kg	0.00 to 144	-0.37	10 / 40	ACCEPTABLE
Arsenic, As [1, 4] 1010 / SPE-001 - Lot 011090	5.05 mg/Kg	0.00 to 56.2	-1.53	29 / 45	ACCEPTABLE
Barium, Ba [1, 4] 1015 / SPE-001 - Lot 011090	42.6 mg/Kg	12.4 to 88.2	0.65	20 / 40	ACCEPTABLE
Beryllium, Be [1, 4] 1020 / SPE-001 - Lot 011090	52.3 mg/Kg	37.6 to 72.0	-0.43	12 / 42	ACCEPTABLE
Boron, B [1, 4] 1025 / SPE-001 - Lot 011090	70.1 mg/Kg	31.9 to 109	-0.02	2 / 26	ACCEPTABLE
Cadmium, Cd [1, 4] 1030 / SPE-001 - Lot 011090	118 mg/Kg	75.3 to 191	0.68	21 / 48	ACCEPTABLE
Chromium, Cr (total) [1, 4] 1040 / SPE-001 - Lot 011090	169 mg/Kg	101 to 218	0.49	18 / 44	ACCEPTABLE
Cobalt, Co [1, 4] 1050 / SPE-001 - Lot 011090	145 mg/Kg	89.6 to 179	0.73	20 / 36	ACCEPTABLE
Copper, Cu [1, 4] 1055 / SPE-001 - Lot 011090	57.0 mg/Kg	36.0 to 72.6	0.44	17 / 40	ACCEPTABLE

Trace Metals (continued)

(continued)

Analysis
EPA 6020
Mass Spectrometry - Inductively Coupled Plasma

Method Number 10156000
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Iron, Fe [1, 4] 1070 / SPE-001 - Lot 011090	4240 mg/Kg	1970 to 5300	1.08	26 / 34	**ACCEPTABLE**
Lead, Pb [1, 4] 1075 / SPE-001 - Lot 011090	84.1 mg/Kg	55.0 to 98.7	0.99	34 / 50	**ACCEPTABLE**
Manganese, Mn [1, 4] 1090 / SPE-001 - Lot 011090	294 mg/Kg	185 to 360	0.73	20 / 35	**ACCEPTABLE**
Molybdenum, Mo [1, 4] 1100 / SPE-001 - Lot 011090	1.29 mg/Kg	0.00 to 5.56	0.30	7 / 36	**ACCEPTABLE**
Nickel, Ni [1, 4] 1105 / SPE-001 - Lot 011090	79.3 mg/Kg	48.1 to 102	0.45	17 / 42	**ACCEPTABLE**
Selenium, Se [1, 4] 1140 / SPE-001 - Lot 011090	175 mg/Kg	104 to 229	0.39	19 / 46	**ACCEPTABLE**
Silver, Ag [1, 4] 1150 / SPE-001 - Lot 011090	116 mg/Kg	31.4 to 168	0.71	21 / 40	**ACCEPTABLE**
Strontium, Sr [4] 1160 / SPE-001 - Lot 011090	491 mg/Kg	337 to 585	0.73	9 / 21	**ACCEPTABLE**
Thallium, Tl [1, 4] 1165 / SPE-001 - Lot 011090	0.778 mg/Kg	0.00 to 29.3	0.08	3 / 41	**ACCEPTABLE**
Tin, Sn [1, 4] 1175 / SPE-001 - Lot 011090	182 mg/Kg	39.8 to 272	0.68	13 / 24	**ACCEPTABLE**
Titanium, Ti [4] 1180 / SPE-001 - Lot 011090	14.6 mg/Kg	0.00 to 63.1	-0.37	9 / 24	**ACCEPTABLE**
Vanadium, V [1, 4] 1185 / SPE-001 - Lot 011090	100 mg/Kg	68.8 to 142	-0.46	15 / 37	**ACCEPTABLE**
Zinc, Zn [1, 4] 1190 / SPE-001 - Lot 011090	805 mg/Kg	508 to 1000	0.61	18 / 43	**ACCEPTABLE**

Volatiles - High Level (Solids)

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Acetone [4] 4315 / SPE-002-H - Lot 011095	25 mg/Kg	0.00 to 56.9	0.15	4 / 23	**ACCEPTABLE**
Acetonitrile [4] 4320 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 9	**ACCEPTABLE**
Acrolein (Propenal) [4] 4325 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 12	**ACCEPTABLE**
Benzene [4] 4375 / SPE-002-H - Lot 011095	19 mg/Kg	13.1 to 25.0	-0.01	1 / 26	**ACCEPTABLE**
Bromobenzene [4] 4385 / SPE-002-H - Lot 011095	5.5 mg/Kg	2.97 to 7.80	0.14	6 / 25	**ACCEPTABLE**
Bromodichloromethane [4] 4395 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 26	**ACCEPTABLE**
Bromoform [4] 4400 / SPE-002-H - Lot 011095	14 mg/Kg	6.90 to 19.8	0.31	5 / 26	**ACCEPTABLE**
2-Butanone (Methyl ethyl ketone, MEK) [4] 4410 / SPE-002-H - Lot 011095	27 mg/Kg	0.00 to 53.1	0.17	4 / 22	**ACCEPTABLE**
Carbon disulfide [4] 4450 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 16	**ACCEPTABLE**
Carbon tetrachloride [4] 4455 / SPE-002-H - Lot 011095	18 mg/Kg	6.12 to 24.5	0.87	23 / 26	**ACCEPTABLE**
Chlorobenzene [4] 4475 / SPE-002-H - Lot 011095	24 mg/Kg	16.5 to 32.7	-0.22	9 / 26	**ACCEPTABLE**
Chloroethane [4] 4485 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 25	**ACCEPTABLE**
2-Chloroethyl vinyl ether [4] 4500 / SPE-002-H - Lot 011095	0 mg/Kg	0.0 to 0.0		/ 12	**ACCEPTABLE**
Chloroform [4] 4505 / SPE-002-H - Lot 011095	13 mg/Kg	7.21 to 19.2	-0.11	5 / 26	**ACCEPTABLE**

Volatiles - High Level (Solids) (continued)

(continued)

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,2-Dibromo-3-chloropropane (DBCP) [4] 4570 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 23	ACCEPTABLE
1,2-Dibromoethane (EDB, Ethylene dibromide) [4] 4585 / SPE-002-H - Lot 011095	23 mg/Kg	13.2 to 33.0	-0.04	2 / 23	ACCEPTABLE
Dibromomethane [4] 4595 / SPE-002-H - Lot 011095	15 mg/Kg	8.58 to 21.0	0.10	3 / 25	ACCEPTABLE
1,2-Dichlorobenzene [4] 4610 / SPE-002-H - Lot 011095	18 mg/Kg	11.1 to 25.7	-0.16	2 / 26	ACCEPTABLE
1,3-Dichlorobenzene [4] 4615 / SPE-002-H - Lot 011095	27 mg/Kg	18.8 to 34.8	0.08	1 / 26	ACCEPTABLE
1,4-Dichlorobenzene [4] 4620 / SPE-002-H - Lot 011095	24 mg/Kg	18.8 to 30.5 20.8 to 28.6	-0.11	4 / 26	ACCEPTABLE
Dichlorodifluoromethane [4] 4625 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 25	ACCEPTABLE
1,1-Dichloroethane [4] 4630 / SPE-002-H - Lot 011095	11 mg/Kg	5.19 to 17.5	-0.16	6 / 25	ACCEPTABLE
1,2-Dichloroethane [4] 4635 / SPE-002-H - Lot 011095	24 mg/Kg	12.9 to 33.3	0.26	9 / 26	ACCEPTABLE
1,1-Dichloroethylene [4] 4640 / SPE-002-H - Lot 011095	0 mg/Kg	0.0 to 0.0		/ 26	ACCEPTABLE
cis-1,2-Dichloroethylene [4] 4645 / SPE-002-H - Lot 011095	0 mg/Kg	0.00 to 0		/ 25	ACCEPTABLE
1,2-Dichloropropane [4] 4655 / SPE-002-H - Lot 011095	8.8 mg/Kg	5.18 to 13.0	-0.23	6 / 26	ACCEPTABLE
cis-1,3-Dichloropropene [4] 4680 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 26	ACCEPTABLE
trans-1,3-Dichloropropene [4] 4685 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 23	ACCEPTABLE
Ethylbenzene [4] 4765 / SPE-002-H - Lot 011095	7.2 mg/Kg	4.33 to 10.0	0.01	1 / 26	ACCEPTABLE
2-Hexanone [4] 4860 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 22	ACCEPTABLE
Isopropylbenzene [4] 4900 / SPE-002-H - Lot 011095	10 mg/Kg	5.51 to 15.7	-0.36	11 / 25	ACCEPTABLE
Methyl bromide (Bromomethane) [4] 4950 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 24	ACCEPTABLE
Methyl chloride (Chloromethane) [4] 4960 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 25	ACCEPTABLE
Methylene chloride (Dichloromethane) [4] 4975 / SPE-002-H - Lot 011095	5.0 mg/Kg	3.14 to 9.68	-1.29	28 / 26	ACCEPTABLE
Methyl tert-butyl ether (MTBE) [4] 5000 / SPE-002-H - Lot 011095	24 mg/Kg	11.7 to 35.9	0.05	3 / 23	ACCEPTABLE
Styrene [4] 5100 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 25	ACCEPTABLE
1,1,1,2-Tetrachloroethane [4] 5105 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 23	ACCEPTABLE
1,1,2,2-Tetrachloroethane [4] 5110 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 26	ACCEPTABLE
Tetrachloroethylene (Perchloroethylene) [4] 5115 / SPE-002-H - Lot 011095	30 mg/Kg	14.4 to 39.2	0.77	15 / 23	ACCEPTABLE
Toluene [4] 5140 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 26	ACCEPTABLE
1,2,4-Trichlorobenzene [4] 5155 / SPE-002-H - Lot 011095	15 mg/Kg	6.01 to 23.9	0.02	1 / 24	ACCEPTABLE
1,1,1-Trichloroethane [4] 5160 / SPE-002-H - Lot 011095	28 mg/Kg	13.6 to 38.1	0.53	15 / 25	ACCEPTABLE
1,1,2-Trichloroethane [4] 5165 / SPE-002-H - Lot 011095	3.9 mg/Kg	2.15 to 5.89	-0.19	5 / 25	ACCEPTABLE
Trichloroethene (Trichloroethylene) [4] 5170 / SPE-002-H - Lot 011095	14 mg/Kg	8.41 to 18.6	0.31	8 / 25	ACCEPTABLE
Trichlorofluoromethane [4] 5175 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 24	ACCEPTABLE

Volatiles - High Level (Solids) (continued)

(continued)

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,2,3-Trichloropropane [4] 5180 / SPE-002-H - Lot 011095	16 mg/Kg	6.28 to 25.8	-0.01	1 / 24	**ACCEPTABLE**
1,2,4-Trimethylbenzene [4] 5210 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 24	**ACCEPTABLE**
1,3,5-Trimethylbenzene [4] 5215 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 24	**ACCEPTABLE**
Vinyl acetate [4] 5225 / SPE-002-H - Lot 011095	0 mg/Kg	0 to 0		/ 11	**ACCEPTABLE**
Vinyl chloride [4] 5235 / SPE-002-H - Lot 011095	0 mg/Kg	0.00 to 0.20		/ 25	**ACCEPTABLE**
m+p-Xylene [4] 5240 / SPE-002-H - Lot 011095	21 mg/Kg	10.0 to 31.7	0.04	1 / 25	**ACCEPTABLE**
o-Xylene [4] 5250 / SPE-002-H - Lot 011095	22 mg/Kg	12.5 to 32.0	-0.07	1 / 25	**ACCEPTABLE**
Xylene, total [4] 5260 / SPE-002-H - Lot 011095	43 mg/Kg	28.6 to 56.7	0.08	2 / 22	**ACCEPTABLE**

Group Analysis Summary
Acceptable 53 / 53
Score 100.0% - **(Acceptable)**

Volatiles - Low Level (Solids)

Analysis
EPA 8260
Gas Chromatography - Mass Spectrometry

Method Number 10184404
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Acetone [4] 4315 / SPE-002-L - Lot 011096	100 µg/Kg	0.00 to 439	-0.21	3 / 20	**ACCEPTABLE**
Benzene [1, 4] 4375 / SPE-002-L - Lot 011096	43.1 µg/Kg	19.9 to 58.0	0.66	15 / 31	**ACCEPTABLE**
Bromobenzene [4] 4385 / SPE-002-L - Lot 011096	143 µg/Kg	22.5 to 238	0.36	12 / 29	**ACCEPTABLE**
Bromodichloromethane [1, 4] 4395 / SPE-002-L - Lot 011096	94.3 µg/Kg	39.5 to 143	0.18	7 / 31	**ACCEPTABLE**
Bromoform [1, 4] 4400 / SPE-002-L - Lot 011096	69.1 µg/Kg	11.1 to 123	0.10	3 / 31	**ACCEPTABLE**
2-Butanone (Methyl ethyl ketone, MEK) [4] 4410 / SPE-002-L - Lot 011096	158 µg/Kg	0.00 to 345	0.35	7 / 19	**ACCEPTABLE**
Carbon disulfide [4] 4450 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 4	**ACCEPTABLE**
Carbon tetrachloride [1, 4] 4455 / SPE-002-L - Lot 011096	62.5 µg/Kg	0.00 to 119	0.17	9 / 29	**ACCEPTABLE**
Chlorobenzene [1, 4] 4475 / SPE-002-L - Lot 011096	118 µg/Kg	44.7 to 171	0.47	16 / 31	**ACCEPTABLE**
Chloroethane [4] 4485 / SPE-002-L - Lot 011096	69.0 µg/Kg	0.00 to 248	-0.93	17 / 28	**ACCEPTABLE**
2-Chloroethyl vinyl ether [4] 4500 / SPE-002-L - Lot 011096	<50 µg/Kg	0 to 0		/ 3	**ACCEPTABLE**
Chloroform [1, 4] 4505 / SPE-002-L - Lot 011096	72.8 µg/Kg	31.4 to 106	0.35	7 / 31	**ACCEPTABLE**
Dibromochloromethane [1, 4] 4575 / SPE-002-L - Lot 011096	82.6 µg/Kg	19.2 to 143	0.07	2 / 31	**ACCEPTABLE**
1,2-Dibromoethane (EDB, Ethylene dibromide) [4] 4585 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 5	**ACCEPTABLE**
Dibromomethane [4] 4595 / SPE-002-L - Lot 011096	151 µg/Kg	76.5 to 221	0.10	7 / 30	**ACCEPTABLE**
1,2-Dichlorobenzene [1, 4] 4610 / SPE-002-L - Lot 011096	120 µg/Kg	52.0 to 162	0.71	17 / 31	**ACCEPTABLE**
1,3-Dichlorobenzene [1, 4] 4615 / SPE-002-L - Lot 011096	202 µg/Kg	78.2 to 277	0.75	19 / 31	**ACCEPTABLE**

Volatiles - Low Level (Solids) (continued)

(continued)

Analysis
EPA 8260
Gas Chromatography - Mass Spectrometry

Method Number 10184404
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
1,4-Dichlorobenzene [1, 4] 4620 / SPE-002-L - Lot 011096	186 µg/Kg	71.6 to 274	0.38	17 / 31	ACCEPTABLE
Dichlorodifluoromethane [4] 4625 / SPE-002-L - Lot 011096	<25 µg/Kg	0 to 0		/ 4	ACCEPTABLE
1,1-Dichloroethane [1, 4] 4630 / SPE-002-L - Lot 011096	189 µg/Kg	34.3 to 304	0.45	13 / 31	ACCEPTABLE
1,2-Dichloroethane [1, 4] 4635 / SPE-002-L - Lot 011096	113 µg/Kg	39.3 to 180	0.14	5 / 31	ACCEPTABLE
1,1-Dichloroethylene [4] 4640 / SPE-002-L - Lot 011096	119 µg/Kg	19.8 to 204	0.24	8 / 32	ACCEPTABLE
cis-1,2-Dichloroethylene [4] 4645 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 4	ACCEPTABLE
1,2-Dichloropropane [4] 4655 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 4	ACCEPTABLE
cis-1,3-Dichloropropene [4] 4680 / SPE-002-L - Lot 011096	<5.34 µg/Kg	0 to 0		/ 4	ACCEPTABLE
trans-1,3-Dichloropropene [4] 4685 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 4	ACCEPTABLE
trans-1,2-Dichloroethylene [4] 4700 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 5	ACCEPTABLE
Ethylbenzene [1, 4] 4765 / SPE-002-L - Lot 011096	108 µg/Kg	10.8 to 175	0.55	18 / 32	ACCEPTABLE
2-Hexanone [4] 4860 / SPE-002-L - Lot 011096	<100 µg/Kg	0 to 0		/ 4	ACCEPTABLE
Isopropylbenzene [4] 4900 / SPE-002-L - Lot 011096	50.6 µg/Kg	12.7 to 74.9	0.66	17 / 27	ACCEPTABLE
Methyl bromide (Bromomethane) [4] 4950 / SPE-002-L - Lot 011096	<25 µg/Kg	0 to 0		/ 5	ACCEPTABLE
Methyl chloride (Chloromethane) [4] 4960 / SPE-002-L - Lot 011096	<25 µg/Kg	0 to 0		/ 5	ACCEPTABLE
Methylene chloride (Dichloromethane) [1, 4] 4975 / SPE-002-L - Lot 011096	164 µg/Kg	50.1 to 269	0.13	5 / 31	ACCEPTABLE
4-Methyl-2-pentanone (MIBK) [1, 4] 4995 / SPE-002-L - Lot 011096	<100 µg/Kg	0.00 to 104		/ 16	ACCEPTABLE
Methyl tert-butyl ether (MTBE) [4] 5000 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 5	ACCEPTABLE
Styrene [4] 5100 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 5	ACCEPTABLE
1,1,1,2-Tetrachloroethane [1, 4] 5105 / SPE-002-L - Lot 011096	162 µg/Kg	45.7 to 257	0.31	10 / 30	ACCEPTABLE
1,1,2,2-Tetrachloroethane [1, 4] 5110 / SPE-002-L - Lot 011096	94.3 µg/Kg	23.6 to 150	0.35	10 / 29	ACCEPTABLE
Tetrachloroethylene (Perchloroethylene) [1, 4] 5115 / SPE-002-L - Lot 011096	57.6 µg/Kg	14.0 to 88.2	0.53	14 / 27	ACCEPTABLE
Toluene [1, 4] 5140 / SPE-002-L - Lot 011096	202 µg/Kg	71.5 to 284	0.69	22 / 31	ACCEPTABLE
1,2,4-Trichlorobenzene [4] 5155 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 5	ACCEPTABLE
1,1,1-Trichloroethane [1, 4] 5160 / SPE-002-L - Lot 011096	28.7 µg/Kg	11.3 to 43.6	0.23	6 / 28	ACCEPTABLE
1,1,2-Trichloroethane [4] 5165 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 4	ACCEPTABLE
Trichloroethene (Trichloroethylene) [1, 4] 5170 / SPE-002-L - Lot 011096	135 µg/Kg	42.7 to 204	0.44	14 / 30	ACCEPTABLE
Trichlorofluoromethane [4] 5175 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 4	ACCEPTABLE
1,2,3-Trichloropropane [4] 5180 / SPE-002-L - Lot 011096	109 µg/Kg	18.6 to 177	0.42	9 / 26	ACCEPTABLE
1,2,4-Trimethylbenzene [4] 5210 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 6	ACCEPTABLE
1,3,5-Trimethylbenzene [4] 5215 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 5	ACCEPTABLE

Volatiles - Low Level (Solids) (continued)

(continued)

Analysis
EPA 8260
Gas Chromatography - Mass Spectrometry

Method Number 10184404
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Rank	Evaluation
Vinyl acetate [4] 5225 / SPE-002-L - Lot 011096	<25 µg/Kg	0 to 0		/ 4	**ACCEPTABLE**
Vinyl chloride [4] 5235 / SPE-002-L - Lot 011096	<25 µg/Kg	0 to 0		/ 4	**ACCEPTABLE**
m+p-Xylene [4] 5240 / SPE-002-L - Lot 011096	416 µg/Kg	91.8 to 634	0.59	16 / 29	**ACCEPTABLE**
o-Xylene [4] 5250 / SPE-002-L - Lot 011096	<5 µg/Kg	0 to 0		/ 5	**ACCEPTABLE**
Xylene, total [1, 4] 5260 / SPE-002-L - Lot 011096	416 µg/Kg	95.9 to 627	0.62	17 / 30	**ACCEPTABLE**

Group Analysis Summary

Acceptable 53 / 53
Score 100.0% - **(Acceptable)**

End of Dataset 2

Sample Information

Metals in Soil

SPE-001

Study Lot 011090
Mfg Lot 011090

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aluminum, Al 1000 Trace Metals	mg/Kg	5,680.00	2,170.00	6,718.49	3,951.68	5,675.72	2,166.06	8340
Antimony, Sb 1005 Trace Metals	mg/Kg	39.12	35.10	42.04	32.90	39.12	35.10	110
Arsenic, As 1010 Trace Metals	mg/Kg	7.72	1.74	9.11	8.46	7.72	1.74	51.1
Barium, Ba 1015 Trace Metals	mg/Kg	37.20	8.27	39.20	20.15	37.19	8.27	80.2
Beryllium, Be 1020 Trace Metals	mg/Kg	54.78	5.74	54.69	15.38	54.78	5.74	60.4
Boron, B 1025 Trace Metals	mg/Kg	70.38	12.82	72.86	28.60	70.38	12.82	97.8
Cadmium, Cd 1030 Trace Metals	mg/Kg	110.00	11.70	111.65	29.09	110.34	11.67	174
Calcium, Ca 1035 Trace Metals	mg/Kg	3,550.32	395.55	3,729.49	1,146.34	3,550.32	395.55	3980
Chromium, Cr (total) 1040 Trace Metals	mg/Kg	159.44	19.55	163.21	46.06	159.44	19.55	150
Cobalt, Co 1050 Trace Metals	mg/Kg	134.10	14.83	135.68	40.80	134.10	14.83	145
Copper, Cu 1055 Trace Metals	mg/Kg	54.29	6.10	55.59	16.82	54.29	6.10	63.4
Iron, Fe 1070 Trace Metals	mg/Kg	3,638.54	555.05	3,662.29	842.01	3,638.54	555.05	4500
Lead, Pb 1075 Trace Metals	mg/Kg	76.89	7.28	77.02	18.47	76.89	7.28	115
Magnesium, Mg 1085 Trace Metals	mg/Kg	211.38	45.80	213.81	92.93	211.38	45.80	300
Manganese, Mn 1090 Trace Metals	mg/Kg	272.67	29.26	277.10	85.72	272.67	29.26	279
Molybdenum, Mo 1100 Trace Metals	mg/Kg	1.12	0.58	1.23	0.95	1.12	0.57	5.05
Nickel, Ni 1105 Trace Metals	mg/Kg	75.25	9.06	75.31	22.98	75.25	9.06	78.4
Potassium, K 1125 Trace Metals	mg/Kg	3,521.54	350.10	3,614.69	985.37	3,521.54	350.10	3590
Selenium, Se 1140 Trace Metals	mg/Kg	166.80	20.88	187.38	165.01	166.80	20.88	216
Silicon, Si 1145 Trace Metals	mg/Kg	737.73	396.62	960.67	656.51	737.73	396.62	1200
Silver, Ag 1150 Trace Metals	mg/Kg	99.83	22.82	86.10	49.16	99.83	22.82	112
Sodium, Na 1155 Trace Metals	mg/Kg	855.00	88.80	986.04	595.15	854.59	88.77	1080
Strontium, Sr 1160 Trace Metals	mg/Kg	460.85	41.33	453.27	51.62	460.85	41.33	466
Thallium, Tl 1165 Trace Metals	mg/Kg	0.73	0.63	4.48	20.17	0.73	0.63	26.6
Tin, Sn 1175 Trace Metals	mg/Kg	155.86	38.69	147.68	43.95	155.86	38.69	151
Titanium, Ti 1180 Trace Metals	mg/Kg	19.87	14.42	25.18	22.07	19.87	14.42	45.6
Vanadium, V 1185 Trace Metals	mg/Kg	105.60	12.27	117.39	84.34	105.60	12.27	93.3
Zinc, Zn 1190 Trace Metals	mg/Kg	754.62	82.20	759.00	223.40	754.62	82.20	757
pH 1900 Misc. Analytes	Units	3.63	0.18	3.82	0.82	3.63	0.18	3.68

Volatiles on Soil - High Level

SPE-002-H

Study Lot 011095
Mfg Lot 011095

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Acetone 4315 Volatiles - High Level (Solids)	mg/Kg	23.32	11.18	24.06	10.82	23.32	11.18	20.3
Acetonitrile 4320 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00

Volatiles on Soil - High Level

SPE-002-H
(continued)

Study Lot 011095
Mfg Lot 011095

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Acrolein (Propenal) 4325 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Benzene 4375 Volatiles - High Level (Solids)	mg/Kg	19.01	1.98	19.82	6.42	19.01	1.98	19.0
Bromobenzene 4385 Volatiles - High Level (Solids)	mg/Kg	5.39	0.81	6.59	6.68	5.39	0.81	5.20
Bromodichloromethane 4395 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Bromoform 4400 Volatiles - High Level (Solids)	mg/Kg	13.33	2.14	13.01	2.66	13.33	2.14	12.7
2-Butanone (Methyl ethyl ketone, MEK) 4410 Volatiles - High Level (Solids)	mg/Kg	25.40	9.23	31.92	35.84	25.40	9.23	25.6
Carbon disulfide 4450 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Carbon tetrachloride 4455 Volatiles - High Level (Solids)	mg/Kg	15.32	3.07	15.13	3.25	15.32	3.07	14.8
Chlorobenzene 4475 Volatiles - High Level (Solids)	mg/Kg	24.60	2.71	24.37	4.41	24.60	2.71	23.6
Chloroethane 4485 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
2-Chloroethyl vinyl ether 4500 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00	4.83	5.94	0.51	2.19	0.00
Chloroform 4505 Volatiles - High Level (Solids)	mg/Kg	13.22	2.00	14.26	7.78	13.22	2.00	13.2
1,2-Dibromo-3-chloropropane (DBCP) 4570 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
1,2-Dibromoethane (EDB, Ethylene dibromide) 4585 Volatiles - High Level (Solids)	mg/Kg	23.14	3.30	26.61	18.03	23.14	3.30	22.7
Dibromomethane 4595 Volatiles - High Level (Solids)	mg/Kg	14.80	2.07	17.15	12.36	14.80	2.07	14.5
1,2-Dichlorobenzene 4610 Volatiles - High Level (Solids)	mg/Kg	18.39	2.44	18.06	3.48	18.39	2.44	17.9
1,3-Dichlorobenzene 4615 Volatiles - High Level (Solids)	mg/Kg	26.79	2.66	26.20	6.11	26.79	2.66	26.6
1,4-Dichlorobenzene 4620 Volatiles - High Level (Solids)	mg/Kg	24.67	1.94	25.42	3.60	24.69	3.03	25.1
Dichlorodifluoromethane 4625 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
1,1-Dichloroethane 4630 Volatiles - High Level (Solids)	mg/Kg	11.32	2.04	12.23	7.09	11.32	2.04	11.2
1,2-Dichloroethane 4635 Volatiles - High Level (Solids)	mg/Kg	23.12	3.41	26.39	21.34	23.12	3.41	23.1
1,1-Dichloroethylene 4640 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00	1.66	2.58	0.14	0.35	0.00
cis-1,2-Dichloroethylene 4645 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
1,2-Dichloropropane 4655 Volatiles - High Level (Solids)	mg/Kg	9.10	1.30	9.00	1.78	9.10	1.30	8.96
cis-1,3-Dichloropropene 4680 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
trans-1,3-Dichloropropene 4685 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Ethylbenzene 4765 Volatiles - High Level (Solids)	mg/Kg	7.19	0.95	7.31	1.78	7.19	0.95	6.85
2-Hexanone 4860 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Isopropylbenzene 4900 Volatiles - High Level (Solids)	mg/Kg	10.61	1.70	10.80	1.69	10.61	1.70	9.32
Methyl bromide (Bromomethane) 4950 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Methyl chloride (Chloromethane) 4960 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Methylene chloride (Dichloromethane) 4975 Volatiles - High Level (Solids)	mg/Kg	6.41	1.09	6.85	2.20	6.41	1.09	6.14
Methyl tert-butyl ether (MTBE) 5000 Volatiles - High Level (Solids)	mg/Kg	23.81	4.04	30.41	33.74	23.81	4.04	23.7
Styrene 5100 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
1,1,1,2-Tetrachloroethane 5105 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00

Volatiles on Soil - High Level

Study Lot 011095
Mfg Lot 011095

SPE-002-H
(continued)

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
1,1,2,2-Tetrachloroethane 5110 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Tetrachloroethylene (Perchloroethylene) 5115 Volatiles - High Level (Solids)	mg/Kg	26.83	4.14	26.09	6.86	26.83	4.14	28.1
Toluene 5140 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
1,2,4-Trichlorobenzene 5155 Volatiles - High Level (Solids)	mg/Kg	14.94	2.98	15.26	8.76	14.94	2.98	15.4
1,1,1-Trichloroethane 5160 Volatiles - High Level (Solids)	mg/Kg	25.82	4.08	25.44	6.02	25.82	4.08	26.2
1,1,2-Trichloroethane 5165 Volatiles - High Level (Solids)	mg/Kg	4.02	0.62	4.95	5.74	4.02	0.62	4.08
Trichloroethene (Trichloroethylene) 5170 Volatiles - High Level (Solids)	mg/Kg	13.48	1.69	13.14	2.35	13.48	1.69	13.2
Trichlorofluoromethane 5175 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
1,2,3-Trichloropropane 5180 Volatiles - High Level (Solids)	mg/Kg	16.03	3.25	19.19	17.72	16.03	3.25	16.7
1,2,4-Trimethylbenzene 5210 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
1,3,5-Trimethylbenzene 5215 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Vinyl acetate 5225 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
Vinyl chloride 5235 Volatiles - High Level (Solids)	mg/Kg	0.00	0.00					0.00
m+p-Xylene 5240 Volatiles - High Level (Solids)	mg/Kg	20.85	3.61	22.24	8.19	20.85	3.61	19.7
o-Xylene 5250 Volatiles - High Level (Solids)	mg/Kg	22.23	3.25	22.65	3.31	22.23	3.25	20.6
Xylene, total 5260 Volatiles - High Level (Solids)	mg/Kg	42.61	4.68	42.37	11.66	42.61	4.68	40.2

Volatiles on Soil - Low Level

Study Lot 011096
Mfg Lot 011096

SPE-002-L

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Acetone 4315 Volatiles - Low Level (Solids)	µg/Kg	122.60	105.41	235.46	372.80	122.60	105.41	148
Benzene 4375 Volatiles - Low Level (Solids)	µg/Kg	38.94	6.34	47.24	57.33	38.94	6.34	41.0
Bromobenzene 4385 Volatiles - Low Level (Solids)	µg/Kg	130.20	35.89	129.84	33.55	130.20	35.89	128
Bromodichloromethane 4395 Volatiles - Low Level (Solids)	µg/Kg	91.15	17.20	93.96	23.91	91.15	17.20	93.3
Bromoform 4400 Volatiles - Low Level (Solids)	µg/Kg	67.21	18.70	69.02	20.08	67.21	18.70	67.3
2-Butanone (Methyl ethyl ketone, MEK) 4410 Volatiles - Low Level (Solids)	µg/Kg	133.15	70.75	144.68	77.42	133.15	70.75	111
Carbon disulfide 4450 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Carbon tetrachloride 4455 Volatiles - Low Level (Solids)	µg/Kg	59.09	19.90	58.56	17.72	59.09	19.90	59.4
Chlorobenzene 4475 Volatiles - Low Level (Solids)	µg/Kg	108.05	21.10	107.99	27.07	108.05	21.10	107
Chloroethane 4485 Volatiles - Low Level (Solids)	µg/Kg	111.42	45.51	115.20	45.83	111.42	45.51	170
2-Chloroethyl vinyl ether 4500 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Chloroform 4505 Volatiles - Low Level (Solids)	µg/Kg	68.48	12.35	70.74	25.82	68.48	12.35	69.8
Dibromochloromethane 4575 Volatiles - Low Level (Solids)	µg/Kg	81.13	20.66	81.21	20.19	81.13	20.66	79.5
1,2-Dibromoethane (EDB, Ethylene dibromide) 4585 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Dibromomethane 4595 Volatiles - Low Level (Solids)	µg/Kg	148.62	24.04	147.34	26.95	148.62	24.04	146
1,2-Dichlorobenzene 4610 Volatiles - Low Level (Solids)	µg/Kg	107.03	18.33	109.76	43.26	107.03	18.33	108

Volatiles on Soil - Low Level

SPE-002-L
(continued)

Study Lot 011096
Mfg Lot 011096

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
1,3-Dichlorobenzene 4615 Volatiles - Low Level (Solids)	µg/Kg	177.33	33.06	175.18	57.29	177.33	33.06	179
1,4-Dichlorobenzene 4620 Volatiles - Low Level (Solids)	µg/Kg	173.01	33.82	178.16	64.32	173.01	33.82	176
Dichlorodifluoromethane 4625 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
1,1-Dichloroethane 4630 Volatiles - Low Level (Solids)	µg/Kg	168.92	44.87	165.30	45.13	168.92	44.87	178
1,2-Dichloroethane 4635 Volatiles - Low Level (Solids)	µg/Kg	109.82	23.52	110.77	29.50	109.82	23.52	114
1,1-Dichloroethylene 4640 Volatiles - Low Level (Solids)	µg/Kg	111.66	30.62	113.04	32.79	111.66	30.62	126
cis-1,2-Dichloroethylene 4645 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
1,2-Dichloropropane 4655 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
cis-1,3-Dichloropropene 4680 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
trans-1,3-Dichloropropene 4685 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
trans-1,2-Dichloroethylene 4700 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Ethylbenzene 4765 Volatiles - Low Level (Solids)	µg/Kg	92.96	27.39	92.36	25.14	92.96	27.39	92.9
2-Hexanone 4860 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Isopropylbenzene 4900 Volatiles - Low Level (Solids)	µg/Kg	43.79	10.37	41.55	12.36	43.79	10.37	40.2
Methyl bromide (Bromomethane) 4950 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Methyl chloride (Chloromethane) 4960 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Methylene chloride (Dichloromethane) 4975 Volatiles - Low Level (Solids)	µg/Kg	159.41	36.44	154.70	37.10	159.41	36.44	175
4-Methyl-2-pentanone (MIBK) 4995 Volatiles - Low Level (Solids)	µg/Kg	49.31	18.20	50.64	18.46	49.31	18.20	50.9
Methyl tert-butyl ether (MTBE) 5000 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Styrene 5100 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
1,1,1,2-Tetrachloroethane 5105 Volatiles - Low Level (Solids)	µg/Kg	151.12	35.14	146.78	36.97	151.12	35.14	147
1,1,2,2-Tetrachloroethane 5110 Volatiles - Low Level (Solids)	µg/Kg	86.86	21.08	87.55	25.00	86.86	21.08	95.6
Tetrachloroethylene (Perchloroethylene) 5115 Volatiles - Low Level (Solids)	µg/Kg	51.10	12.36	51.32	12.61	51.10	12.36	51.1
Toluene 5140 Volatiles - Low Level (Solids)	µg/Kg	177.74	35.40	173.12	37.17	177.74	35.40	185
1,2,4-Trichlorobenzene 5155 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
1,1,1-Trichloroethane 5160 Volatiles - Low Level (Solids)	µg/Kg	27.46	5.39	32.54	29.52	27.46	5.39	27.5
1,1,2-Trichloroethane 5165 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Trichloroethene (Trichloroethylene) 5170 Volatiles - Low Level (Solids)	µg/Kg	123.29	26.87	122.61	30.46	123.29	26.87	124
Trichlorofluoromethane 5175 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
1,2,3-Trichloropropane 5180 Volatiles - Low Level (Solids)	µg/Kg	97.83	26.41	96.30	35.56	97.83	26.41	102
1,2,4-Trimethylbenzene 5210 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
1,3,5-Trimethylbenzene 5215 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Vinyl acetate 5225 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Vinyl chloride 5235 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
m+p-Xylene 5240 Volatiles - Low Level (Solids)	µg/Kg	363.03	90.41	369.59	106.39	363.03	90.41	353

Volatiles on Soil - Low Level

SPE-002-L
(continued)

Study Lot 011096
Mfg Lot 011096

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
o-Xylene 5250 Volatiles - Low Level (Solids)	µg/Kg	0.00	0.00					0.00
Xylene, total 5260 Volatiles - Low Level (Solids)	µg/Kg	361.51	88.55	356.54	109.38	361.51	88.55	353

BNAs in Soil

SPE-003

Study Lot 011047
Mfg Lot 011047

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
1,2-Dichlorobenzene 4610 BNAs - Solids	µg/Kg	1,896.30	494.56	1,852.79	510.71	1,896.30	494.56	4880
1,3-Dichlorobenzene 4615 BNAs - Solids	µg/Kg	3,867.95	1,061.31	3,812.24	1,069.69	3,867.95	1,061.31	13500
1,4-Dichlorobenzene 4620 BNAs - Solids	µg/Kg	2,484.18	650.68	2,436.06	663.69	2,484.18	650.68	8640
Hexachlorobutadiene 4835 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Hexachloroethane 4840 BNAs - Solids	µg/Kg	437.87	100.53	411.21	134.08	437.87	100.53	1310
Naphthalene 5005 BNAs - Solids	µg/Kg	6,152.74	1,872.03	6,070.03	1,718.74	6,152.74	1,872.03	10500
Nitrobenzene 5015 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Pyridine 5095 BNAs - Solids	µg/Kg	0.00	0.00					0.00
1,2,4-Trichlorobenzene 5155 BNAs - Solids	µg/Kg	3,051.97	825.58	2,994.24	838.49	3,051.97	825.58	5800
Acenaphthene 5500 BNAs - Solids	µg/Kg	8,269.78	2,242.46	8,127.64	2,155.12	8,269.78	2,242.46	14700
Acenaphthylene 5505 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Aniline 5545 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Anthracene 5555 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Benzo(a)anthracene 5575 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Benzo(a)pyrene 5580 BNAs - Solids	µg/Kg	1,352.14	463.69	1,330.55	434.77	1,352.14	463.69	4190
Benzo(b)fluoranthene 5585 BNAs - Solids	µg/Kg	0.00	0.00	250.00	262.78	249.15	320.29	0.00
Benzo(g,h,i)perylene 5590 BNAs - Solids	µg/Kg	430.21	159.93	437.97	153.68	430.21	159.93	654
Benzidine 5595 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Benzo(k)fluoranthene 5600 BNAs - Solids	µg/Kg	533.60	162.13	511.85	178.95	533.60	162.13	764
Benzoic acid 5610 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Benzyl alcohol 5630 BNAs - Solids	µg/Kg	2,187.50	865.21	2,085.03	871.80	2,187.50	865.21	3910
4-Bromophenyl phenyl ether 5660 BNAs - Solids	µg/Kg	2,945.14	704.20	2,912.91	756.68	2,945.14	704.20	3990
Butyl benzyl phthalate 5670 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Carbazole 5680 BNAs - Solids	µg/Kg	0.00	0.00					0.00
4-Chloro-3-methylphenol 5700 BNAs - Solids	µg/Kg	2,087.17	567.31	2,039.67	565.03	2,087.17	567.31	3300
4-Chloroaniline 5745 BNAs - Solids	µg/Kg	6,560.00	656.00		6,560.00	656.00		0.00
bis(2-Chloroethoxy)methane 5760 BNAs - Solids	µg/Kg	7,331.51	1,950.32	7,225.36	1,906.37	7,331.51	1,950.32	12600
bis(2-Chloroethyl) ether 5765 BNAs - Solids	µg/Kg	2,264.36	874.91	2,235.06	801.81	2,264.36	874.91	4370
bis(2-Chloroisopropyl) ether 5780 BNAs - Solids	µg/Kg	7,738.13	2,274.68	7,124.71	2,833.34	7,738.13	2,274.68	14400
2-Chloronaphthalene 5795 BNAs - Solids	µg/Kg	1,355.99	1,020.21	1,347.09	860.73	1,355.99	1,020.21	2700

BNAs in Soil

SPE-003

(continued)

Study Lot 011047
Mfg Lot 011047

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
2-Chlorophenol 5800 BNAs - Solids	µg/Kg	0.00	0.00					0.00
4-Chlorophenyl phenylether 5825 BNAs - Solids	µg/Kg	1,953.02	384.58	1,907.45	456.80	1,953.02	384.58	2690
Chrysene 5855 BNAs - Solids	µg/Kg	1,728.10	452.36	1,725.94	470.81	1,728.10	452.36	2500
Dibenz(a,h) anthracene 5895 BNAs - Solids	µg/Kg	2,335.41	768.00	2,343.73	754.84	2,335.41	768.00	3730
Dibenzofuran 5905 BNAs - Solids	µg/Kg	4,654.11	1,345.20	4,474.52	1,474.94	4,654.11	1,345.20	7980
Di-n-butyl phthalate 5925 BNAs - Solids	µg/Kg	7,215.56	4,159.31	10,405.2	18,806.10	7,215.56	4,159.31	12300
3,3'-Dichlorobenzidine 5945 BNAs - Solids	µg/Kg	0.00	0.00					0.00
2,4-Dichlorophenol 6000 BNAs - Solids	µg/Kg	5,484.58	1,547.10	5,337.00	1,724.17	5,484.58	1,547.10	9510
Diethyl phthalate 6070 BNAs - Solids	µg/Kg	7,526.29	3,903.78	7,338.82	3,474.66	7,526.29	3,903.78	9980
2,4-Dimethylphenol 6130 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Dimethyl phthalate 6135 BNAs - Solids	µg/Kg	9,346.02	4,043.43	9,130.12	3,715.24	9,346.02	4,043.43	9980
2,4-Dinitrophenol 6175 BNAs - Solids	µg/Kg	0.00	0.00					0.00
2,4-Dinitrotoluene (2,4-DNT) 6185 BNAs - Solids	µg/Kg	6,891.57	2,138.76	6,847.30	1,872.15	6,891.57	2,138.76	10600
2,6-Dinitrotoluene (2,6-DNT) 6190 BNAs - Solids	µg/Kg	3,658.86	885.20	3,646.68	864.85	3,658.86	885.20	5430
Di-n-octyl phthalate 6200 BNAs - Solids	µg/Kg	5,660.45	2,654.02	5,657.09	2,418.82	5,660.45	2,654.02	9720
bis(2-Ethylhexyl) phthalate (DEHP) 6255 BNAs - Solids	µg/Kg	3,056.02	1,459.33	3,090.13	1,290.86	3,056.02	1,459.33	5060
Fluoranthene 6265 BNAs - Solids	µg/Kg	5,520.63	1,560.49	5,445.28	1,474.69	5,520.63	1,560.49	7340
Fluorene 6270 BNAs - Solids	µg/Kg	1,843.69	414.30	1,807.56	448.72	1,843.69	414.30	2530
Hexachlorobenzene 6275 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Hexachlorocyclopentadiene 6285 BNAs - Solids	µg/Kg	0.00	0.00					0.00
Indeno(1,2,3-cd) pyrene 6315 BNAs - Solids	µg/Kg	1,086.99	397.26	1,099.07	371.23	1,086.99	397.26	1540
Isophorone 6320 BNAs - Solids	µg/Kg	6,598.64	2,899.93	6,506.00	2,581.73	6,598.64	2,899.93	11800
2-Methyl-4,6-dinitrophenol 6360 BNAs - Solids	µg/Kg	2,565.01	1,693.96	2,797.33	1,753.89	2,565.01	1,693.96	7630
2-Methylnaphthalene 6385 BNAs - Solids	µg/Kg	0.00	0.00					0.00
2-Methylphenol (o-Cresol) 6400 BNAs - Solids	µg/Kg	5,746.55	1,636.28	5,658.16	1,625.94	5,746.55	1,636.28	9970
3+4-Methylphenol (m+p-Cresol) 6412 BNAs - Solids	µg/Kg	2,517.88	803.64	2,486.96	749.46	2,517.88	803.64	4790
2-Nitroaniline 6460 BNAs - Solids	µg/Kg	535.12	127.78	523.93	124.41	535.12	127.78	893
3-Nitroaniline 6465 BNAs - Solids	µg/Kg	600.00	100.00			600.00	100.00	0.00
4-Nitroaniline 6470 BNAs - Solids	µg/Kg	640.45	245.04	1,020.83	1,946.26	640.45	245.04	1150
2-Nitrophenol 6490 BNAs - Solids	µg/Kg	678.45	555.15	740.43	557.67	678.45	555.15	2230
4-Nitrophenol 6500 BNAs - Solids	µg/Kg	3,204.86	1,972.38	3,148.57	1,775.58	3,204.86	1,972.38	6150
n-Nitrosodimethylamine 6530 BNAs - Solids	µg/Kg	0.00	0.00					0.00
n-Nitrosodiphenylamine 6535 BNAs - Solids	µg/Kg	0.00	0.00					0.00
n-Nitrosodi-n-propylamine 6545 BNAs - Solids	µg/Kg	2,501.17	1,187.30	2,506.87	1,004.30	2,501.17	1,187.30	4600
Pentachlorophenol 6605 BNAs - Solids	µg/Kg	6,945.47	3,814.39	7,222.34	3,654.19	6,945.47	3,814.39	9980

BNAs in Soil

SPE-003 (continued)

Study Lot 011047
Mfg Lot 011047

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Phenanthrene 6615 BNAs - Solids	µg/Kg	5,698.39	1,703.81	5,648.75	1,576.12	5,698.39	1,703.81	8460
Phenol 6625 BNAs - Solids	µg/Kg	3,671.94	1,294.61	3,601.88	1,260.51	3,671.94	1,294.61	6990
Pyrene 6665 BNAs - Solids	µg/Kg	0.00	0.00					0.00
2,4,5-Trichlorophenol 6835 BNAs - Solids	µg/Kg	6,757.63	2,380.66	6,821.25	2,233.91	6,757.63	2,380.66	9230
2,4,6-Trichlorophenol 6840 BNAs - Solids	µg/Kg	6,787.58	1,991.28	6,683.53	1,931.50	6,787.58	1,991.28	9180

Herbicides in Soil

SPE-004

Study Lot 011030
Mfg Lot 011030

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Pentachlorophenol 6605 Herbicides	µg/Kg	216.90	151.99	218.54	127.15	216.90	151.99	448
2,4-D 8545 Herbicides	µg/Kg	206.74	139.90	212.52	131.79	206.74	139.90	366
Dalapon 8555 Herbicides	µg/Kg	38.51	40.73	120.19	141.69	38.51	40.73	81.5
2,4-DB 8560 Herbicides	µg/Kg	0.00	0.00					0.00
Dicamba 8595 Herbicides	µg/Kg	166.02	76.44	172.28	92.18	166.02	76.44	218
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) 8620 Herbicides	µg/Kg	182.95	143.59	184.28	127.86	182.95	143.59	331
Silvex (2,4,5-TP) 8650 Herbicides	µg/Kg	275.76	137.43	300.76	194.57	275.76	137.43	390
2,4,5-T 8655 Herbicides	µg/Kg	86.19	42.85	103.68	71.63	86.19	42.85	119

TCLP Metals in Soil

SPE-005

Study Lot 001083
Mfg Lot 001083

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Arsenic, As 1010 TCLP Metals	mg/L	4.61	0.49	4.73	0.57	4.61	0.49	4.61
Barium, Ba 1015 TCLP Metals	mg/L	0.68	0.12	0.76	0.36	0.68	0.12	0.700
Cadmium, Cd 1030 TCLP Metals	mg/L	2.26	0.42	2.29	0.42	2.26	0.42	2.30
Chromium, Cr (total) 1040 TCLP Metals	mg/L	0.32	0.09	0.40	0.22	0.32	0.09	0.350
Lead, Pb 1075 TCLP Metals	mg/L	0.62	0.15	0.68	0.27	0.62	0.15	0.600
Mercury, Hg 1095 TCLP Metals	mg/L	0.05	0.01	0.07	0.05	0.05	0.01	0.0500
Selenium, Se 1140 TCLP Metals	mg/L	4.55	0.58	4.61	0.62	4.55	0.58	4.60
Silver, Ag 1150 TCLP Metals	mg/L	0.03	0.01	0.04	0.01	0.03	0.01	0.0400

Pesticides in Soil

SPE-009

Study Lot 011042
Mfg Lot 011042

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aldrin 7025 Pesticides - Solids	µg/Kg	307.10	69.23	306.24	72.68	307.10	69.23	406
delta-BHC 7105 Pesticides - Solids	µg/Kg	161.25	59.61	162.45	61.85	161.25	59.61	199
alpha-BHC (alpha-Hexachlorocyclohexane) 7110 Pesticides - Solids	µg/Kg	78.11	22.92	87.08	39.23	78.11	22.92	91.4
beta-BHC (beta-Hexachlorocyclohexane) 7115 Pesticides - Solids	µg/Kg	0.00	0.00	116.60	134.45	108.68	136.09	0.00
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane) 7120 Pesticides - Solids	µg/Kg	321.00	82.56	304.52	125.43	321.00	82.56	410

Pesticides in Soil
SPE-009
(continued)

Study Lot 011042
Mfg Lot 011042

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
alpha-Chlordane 7240 Pesticides - Solids	µg/Kg	296.81	92.78	288.93	99.59	296.81	92.78	389
gamma-Chlordane 7245 Pesticides - Solids	µg/Kg	325.15	91.20	310.66	108.88	325.15	91.20	419
4,4'-DDD 7355 Pesticides - Solids	µg/Kg	74.49	29.79	85.52	58.67	74.49	29.79	72.3
4,4'-DDE 7360 Pesticides - Solids	µg/Kg	311.26	93.78	310.69	100.00	311.26	93.78	374
4,4'-DDT 7365 Pesticides - Solids	µg/Kg	306.58	117.51	304.71	124.29	306.58	117.51	408
Dieldrin 7470 Pesticides - Solids	µg/Kg	204.36	41.94	204.32	47.76	204.36	41.94	248
Endosulfan I 7510 Pesticides - Solids	µg/Kg	144.02	39.42	146.68	58.70	144.02	39.42	177
Endosulfan II 7515 Pesticides - Solids	µg/Kg	235.16	72.16	236.19	68.64	235.16	72.16	280
Endosulfan sulfate 7520 Pesticides - Solids	µg/Kg	182.03	61.33	196.14	109.03	182.03	61.33	234
Endrin aldehyde 7530 Pesticides - Solids	µg/Kg	190.59	62.13	193.93	70.46	190.59	62.13	303
Endrin ketone 7535 Pesticides - Solids	µg/Kg	154.37	57.89	148.09	65.45	154.37	57.89	177
Endrin 7540 Pesticides - Solids	µg/Kg	340.43	76.83	333.27	94.95	340.43	76.83	426
Heptachlor 7685 Pesticides - Solids	µg/Kg	111.71	27.74	111.01	25.90	111.71	27.74	144
Heptachlor epoxide 7690 Pesticides - Solids	µg/Kg	0.00	0.00					0.00
Methoxychlor 7810 Pesticides - Solids	µg/Kg	151.53	53.15	156.02	59.22	151.53	53.15	181

PCB in Soil
SPE-010

Study Lot 011031
Mfg Lot 011031

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1016 (PCB-1016) 8880 PCBs in Soil	µg/Kg	0.00	0.00					0.00
Aroclor-1221 (PCB-1221) 8885 PCBs in Soil	µg/Kg	30,077.90	6,461.72	26,302.1	10,618.30	30,077.9	6,461.72	39300
Aroclor-1232 (PCB-1232) 8890 PCBs in Soil	µg/Kg	0.00	0.00					0.00
Aroclor-1242 (PCB-1242) 8895 PCBs in Soil	µg/Kg	0.00	0.00					0.00
Aroclor-1248 (PCB-1248) 8900 PCBs in Soil	µg/Kg	0.00	0.00					0.00
Aroclor-1254 (PCB-1254) 8905 PCBs in Soil	µg/Kg	0.00	0.00					0.00
Aroclor-1260 (PCB-1260) 8910 PCBs in Soil	µg/Kg	0.00	0.00					0.00

Cyanide in Soil
SPE-011

Study Lot 011083
Mfg Lot 011083

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Cyanide 1635 Misc. Analytes	mg/Kg	149.73	57.92	140.56	63.37	149.73	57.92	153

Chromium VI in Soil
SPE-012

Study Lot 011033
Mfg Lot 011033

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chromium VI, Cr(VI) 1045 Trace Metals	mg/Kg	116.96	17.66	111.38	22.73	116.96	17.66	134

TCLP Semi-VOAs in Soil
SPE-015

Study Lot 011055
Mfg Lot 011055

TCLP Semi-VOAs in Soil

SPE-015

Study Lot 011055
Mfg Lot 011055

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Hexachlorobutadiene 4835 TCLP Semi-VOAs	mg/L	0.24	0.31	0.24	0.26	0.24	0.31	0.501
Hexachloroethane 4840 TCLP Semi-VOAs	mg/L	1.01	0.78	0.99	0.59	1.01	0.78	1.60
Nitrobenzene 5015 TCLP Semi-VOAs	mg/L	2.10	0.32					7.10
Pyridine 5095 TCLP Semi-VOAs	mg/L	0.00	0.00					0.00
2,4-Dinitrotoluene (2,4-DNT) 6185 TCLP Semi-VOAs	mg/L	2.82	0.91	2.82	0.77	2.82	0.91	4.03
Hexachlorobenzene 6275 TCLP Semi-VOAs	mg/L	0.00	0.00					0.00
2-Methylphenol (o-Cresol) 6400 TCLP Semi-VOAs	mg/L	1.53	0.67	1.53	0.55	1.53	0.67	3.50
3+4-Methylphenol (m+p-Cresol) 6412 TCLP Semi-VOAs	mg/L	1.53	0.75	1.55	0.58	1.53	0.75	2.90
Total Cresol 6413 TCLP Semi-VOAs	mg/L	3.05	1.41	3.08	1.12	3.05	1.41	6.40
Pentachlorophenol 6605 TCLP Semi-VOAs	mg/L	3.90	1.56	3.89	1.27	3.90	1.56	6.77
2,4,5-Trichlorophenol 6835 TCLP Semi-VOAs	mg/L	1.31	0.49	1.30	0.37	1.31	0.49	1.99
2,4,6-Trichlorophenol 6840 TCLP Semi-VOAs	mg/L	3.88	1.45	3.87	1.22	3.88	1.45	5.97

Organophosphorus Pesticides in Soil

SPE-021

Study Lot 011056
Mfg Lot 011056

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chlorfenvinphos 7255 OrganoPhosphorus Pesticides	mg/Kg	7.16	2.50			7.16	2.50	7.16
Diazinon 7410 OrganoPhosphorus Pesticides	mg/Kg	3.78	3.72	3.80	3.37	3.78	3.72	7.40
Ethoprop 7570 OrganoPhosphorus Pesticides	mg/Kg	2.85	2.74	2.93	2.47	2.85	2.74	7.80
Malathion 7770 OrganoPhosphorus Pesticides	mg/Kg	3.79	1.50	3.76	1.32	3.79	1.50	4.99
Phorate 7985 OrganoPhosphorus Pesticides	mg/Kg	2.24	0.69	2.08	0.84	2.24	0.69	3.12
Tetrachlorvinphos (Stirophos, Gardona) 8200 OrganoPhosphorus Pesticides	mg/Kg	1.67	0.78	1.65	0.66	1.67	0.78	4.61
Disulfoton 8625 OrganoPhosphorus Pesticides	mg/Kg	4.34	1.25	4.35	1.12	4.34	1.25	7.02

Corrosivity - Soil

SPE-023

Study Lot 011071
Mfg Lot 011071

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
pH 1900 Misc. Analytes	Units	7.37	0.13	7.38	0.11	7.37	0.13	7.50

Chlordane in Soil

SPE-027

Study Lot 011028
Mfg Lot 011028

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chlordane (total) 7250 Pesticides - Solids	µg/Kg	234.41	72.68	228.44	68.72	234.41	72.68	261

Toxaphene in Soil

SPE-028

Study Lot 011029
Mfg Lot 011029

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Toxaphene (Chlorinated camphene) 8250 Pesticides - Solids	µg/Kg	231.66	75.61	237.12	71.54	231.66	75.61	314

Flash Point

SPE-029

Study Lot 011067
Mfg Lot 011067

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Ignitability 1780 Misc. Analytes	°C	60.59	5.42	62.02	19.08	60.59	5.42	65.0

Program analyte accrediting footnotes

1 NELAC
2 EPA
3 NVLAP
4 A2LA
5 NELAC Experimental

Soldier Springs Road
Laramie, WY 82070
307.742.5452
www.rt-corp.com

Performance Evaluation Report
RCRA **LPTP05-S2**
Commenced 4-May-2005 | Concluded 17-Jun-2005

RT Labcode RT1061

Energy Laboratories - Billings
ATTN: Dr. Andy Valkenburg
PO Box 30916
Billings, MT 59107
US

EPA Lab MT00005
PHONE 406-252-6325
FAX 406-252-6069
EMAIL cvalkenbur@aol.com

PEO-115TX-H

TPH in Water by TX Methods - High Concentrations

Program: RCRA

PEO-115TX-H

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
9369 Diesel range organics (DRO), C12-C28	35	mg/L	TNRCC1005	0	**Acceptable**	-0.0308
9408 Gasoline range organics (GRO), C6-C12	39	mg/L	TNRCC1005	0	**Acceptable**	0.389

PEO-115TX-H

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
9369 Diesel range organics (DRO), C12-C28	mg/L	35.4	40.1	35.4	13.0	3.54 - 74.4	
9408 Gasoline range organics (GRO), C6-C12	mg/L	32.0	58.2	32.0	18.0	3.20 - 86.0	

PEO-115TX-L

TPH in Water by TX Methods - Low Concentrations

Program: RCRA

PEO-115TX-L

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
9369 Diesel range organics (DRO), C12-C28	1.5	mg/L	TNRCC1005	0	**Acceptable**	-2.95
9408 Gasoline range organics (GRO), C6-C12	4.0	mg/L	TNRCC1005	0	**Acceptable**	-0.0738

PEO-115TX-L

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
9369 Diesel range organics (DRO), C12-C28	mg/L	3.67	5.65	3.67	0.735	1.47 - 5.88	
9408 Gasoline range organics (GRO), C6-C12	mg/L	4.06	6.25	4.06	0.813	0.00 - 6.50	

SPE-001

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required**						
1000 Aluminum	6360	mg/Kg	EPA 6010B	10155609	**Acceptable**	0.250
1005 Antimony	29	mg/Kg	EPA 6010B	10155609	**Acceptable**	0.0664
1010 Arsenic	19	mg/Kg	EPA 6010B	10155609	**Acceptable**	-1.11
1015 Barium	151	mg/Kg	EPA 6010B	10155609	**Acceptable**	0.429
1020 Beryllium	<5	mg/Kg	EPA 6010B	10155609	**Acceptable**	
1025 Boron	8	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.968
1030 Cadmium	40	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.611
1035 Calcium	1130	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.667
1040 Chromium	235	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.531
1050 Cobalt	64	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.120
1055 Copper	60	mg/Kg	EPA 6010B	10155609	**Acceptable**	0.263
1070 Iron	4500	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.0229
1075 Lead	41	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.545
1085 Magnesium	868	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.769
1090 Manganese	719	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.484
1100 Molybdenum	65	mg/Kg	EPA 6010B	10155609	**Acceptable**	0.345
1105 Nickel	94	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.295
1125 Potassium	1830	mg/Kg	EPA 6010B	10155609	**Acceptable**	0.479
1140 Selenium	153	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.714
1145 Silicon	587	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.583
1150 Silver	79	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.0450
1155 Sodium	4030	mg/Kg	EPA 6010B	10155609	**Acceptable**	1.10
1160 Strontium	101	mg/Kg	EPA 6010B	10155609	**Acceptable**	0.402
1165 Thallium	53	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.482
1175 Tin	64	mg/Kg	EPA 6010B	10155609	**Acceptable**	-1.63
1180 Titanium	19	mg/Kg	EPA 6010B	10155609	**Acceptable**	0.347
1185 Vanadium	68	mg/Kg	EPA 6010B	10155609	**Acceptable**	1.08
1190 Zinc	39	mg/Kg	EPA 6010B	10155609	**Acceptable**	-0.891
1000 Aluminum	6910	mg/Kg	EPA 6020	10156000	**Acceptable**	0.416
1005 Antimony	30	mg/Kg	EPA 6020	10156000	**Acceptable**	0.108
1010 Arsenic	16	mg/Kg	EPA 6020	10156000	**Acceptable**	-1.99
1015 Barium	164	mg/Kg	EPA 6020	10156000	**Acceptable**	1.36
1020 Beryllium	<5	mg/Kg	EPA 6020	10156000	**Acceptable**	
1025 Boron	9	mg/Kg	EPA 6020	10156000	**Acceptable**	-0.806
1030 Cadmium	47	mg/Kg	EPA 6020	10156000	**Acceptable**	1.33
1040 Chromium	247	mg/Kg	EPA 6020	10156000	**Acceptable**	0.0483
1050 Cobalt	68	mg/Kg	EPA 6020	10156000	**Acceptable**	0.315
1055 Copper	59	mg/Kg	EPA 6020	10156000	**Acceptable**	0.0877
1075 Lead	48	mg/Kg	EPA 6020	10156000	**Acceptable**	0.685
1090 Manganese	755	mg/Kg	EPA 6020	10156000	**Acceptable**	-0.0255
1100 Molybdenum	74	mg/Kg	EPA 6020	10156000	**Acceptable**	1.12
1105 Nickel	95	mg/Kg	EPA 6020	10156000	**Acceptable**	-0.190
1140 Selenium	163	mg/Kg	EPA 6020	10156000	**Acceptable**	-0.119
1150 Silver	94	mg/Kg	EPA 6020	10156000	**Acceptable**	1.31
1160 Strontium	97	mg/Kg	EPA 6020	10156000	**Acceptable**	0.179
1165 Thallium	63	mg/Kg	EPA 6020	10156000	**Acceptable**	1.18
1175 Tin	99	mg/Kg	EPA 6020	10156000	**Acceptable**	1.55
1180 Titanium	31	mg/Kg	EPA 6020	10156000	**Acceptable**	1.61
1185 Vanadium	58	mg/Kg	EPA 6020	10156000	**Acceptable**	0.124
1190 Zinc	44	mg/Kg	EPA 6020	10156000	**Acceptable**	0.000
1095 Mercury	29	mg/Kg	EPA 7471A	10166208	**Acceptable**	-0.151
1900 pH	8.53	UNITS	EPA 9045C	10198400	**Acceptable**	1.00
Extraction Method - **Other - No Description Required**						

SPE-001

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1000 Aluminum	mg/Kg	5530	5150	5530	3320	0.000 - 15500	
1005 Antimony	mg/Kg	27.4	82.0	27.4	24.1	0.000 - 99.7	
1010 Arsenic	mg/Kg	22.8	62.1	22.7	3.20	12.5 - 68.3	
1015 Barium	mg/Kg	145	160	145	14.0	103 - 187	
1020 Beryllium	mg/Kg	1.16	32.2	1.09	0.190	0.00 - 2.15	
1025 Boron	mg/Kg	14.0	102	11.8	6.19	0.000 - 112	
1030 Cadmium	mg/Kg	42.2	44.1	42.2	3.60	31.4 - 53.0	
1035 Calcium	mg/Kg	1210	1410	1220	108	850 - 1570	
1040 Chromium	mg/Kg	246	251	246	20.7	184 - 308	
1050 Cobalt	mg/Kg	65.1	68.4	65.1	9.20	37.5 - 92.7	
1055 Copper	mg/Kg	58.5	61.1	58.5	5.70	41.4 - 75.6	
1070 Iron	mg/Kg	4520	4710	4520	874	1900 - 7140	
1075 Lead	mg/Kg	44.1	51.2	44.1	5.69	27.0 - 61.2	
1085 Magnesium	mg/Kg	925	1310	925	74.1	703 - 1440	
1090 Manganese	mg/Kg	757	850	757	78.5	522 - 993	
1095 Mercury	mg/Kg	29.9	41.1	29.9	5.96	12.0 - 47.8	
1100 Molybdenum	mg/Kg	61.0	63.1	61.0	11.6	26.2 - 95.8	
1105 Nickel	mg/Kg	96.8	98.3	96.8	9.48	68.4 - 125	
1125 Potassium	mg/Kg	1690	1770	1690	292	814 - 2570	
1140 Selenium	mg/Kg	165	171	165	16.8	115 - 215	
1145 Silicon	mg/Kg	1020	n/a	1020	743	0.000 - 3250	
1150 Silver	mg/Kg	79.5	92.5	79.5	11.1	46.2 - 113	
1155 Sodium	mg/Kg	3630	3950	3630	363	2540 - 4720	
1160 Strontium	mg/Kg	93.8	162	93.8	17.9	40.1 - 178	
1165 Thallium	mg/Kg	55.9	62.9	55.9	6.02	37.8 - 74.0	
1175 Tin	mg/Kg	81.9	94.8	81.9	11.0	48.9 - 115	
1180 Titanium	mg/Kg	15.7	20.1	15.7	9.50	0.000 - 44.2	
1185 Vanadium	mg/Kg	56.7	72.1	56.7	10.5	25.2 - 88.2	
1190 Zinc	mg/Kg	44.0	80.5	44.0	5.61	27.2 - 88.6	
1900 pH	UNITS	8.31	8.31	8.31	0.219	7.48 - 9.14	

SPE-002-H
VOAs in Soil - High Concentration

Program: RCRA

SPE-002-H

Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
▶ *Extraction Method* - **EPA 5035**					
▼ Summary for Method **EPA 8260**				Overall method evaluation **Acceptable**	
4315 Acetone	<4 mg/Kg	EPA 8260	10184404	**Acceptable**	
4320 Acetonitrile	<4 mg/Kg	EPA 8260	10184404	**Acceptable**	
4325 Acrolein (Propenal)	<4 mg/Kg	EPA 8260	10184404	**Acceptable**	
4375 Benzene	10.6 mg/Kg	EPA 8260	10184404	**Acceptable**	0.366
4385 Bromobenzene	6.26 mg/Kg	EPA 8260	10184404	**Acceptable**	0.605
4395 Bromodichloromethane	10.7 mg/Kg	EPA 8260	10184404	**Acceptable**	-0.0957
4400 Bromoform	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4410 2-Butanone (Methyl ethyl ketone, MEK)	<5 mg/Kg	EPA 8260	10184404	**Acceptable**	
4450 Carbon disulfice	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4455 Carbon tetrachloride	8.94 mg/Kg	EPA 8260	10184404	**Acceptable**	0.179
4475 Chlorobenzene	9.76 mg/Kg	EPA 8260	10184404	**Acceptable**	0.0343
4485 Chloroethane	1.24 mg/Kg	EPA 8260	10184404	**Acceptable**	0.0794
4500 2-Chloroethyl vinyl ether	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4505 Chloroform	13.1 mg/Kg	EPA 8260	10184404	**Acceptable**	0.0397
4570 1,2-Dibromo-3-chloropropane (DBCP)	3.86 mg/Kg	EPA 8260	10184404	**Acceptable**	0.177
4575 Dibromochloromethane	10.3 mg/Kg	EPA 8260	10184404	**Acceptable**	-0.0500
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)	7.93 mg/Kg	EPA 8260	10184404	**Acceptable**	0.171
4595 Dibromomethane	6.16 mg/Kg	EPA 8260	10184404	**Acceptable**	0.495
4610 1,2-Dichlorobenzene	12.7 mg/Kg	EPA 8260	10184404	**Acceptable**	0.271
4615 1,3-Dichlorobenzene	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4620 1,4-Dichlorobenzene	14.8 mg/Kg	EPA 8260	10184404	**Acceptable**	0.168
4625 Dichlorodifluoromethane	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4630 1,1-Dichloroethane	1.96 mg/Kg	EPA 8260	10184404	**Acceptable**	0.344
4635 1,2-Dichloroethane	10.2 mg/Kg	EPA 8260	10184404	**Acceptable**	0.313
4640 1,1-Dichloroethylene	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4645 cis-1,2-Dichloroethylene	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4655 1,2-Dichloropropane	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4680 cis-1,3-Dichloropropene	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4685 trans-1,3-Dichloropropylene	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4700 trans-1,2-Dichloroethylene	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4765 Ethylbenzene	3.96 mg/Kg	EPA 8260	10184404	**Acceptable**	-0.122
4860 2-Hexanone	<4 mg/Kg	EPA 8260	10184404	**Acceptable**	
4900 Isopropylbenzene	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4950 Methyl bromide (Bromomethane)	5.20 mg/Kg	EPA 8260	10184404	**Acceptable**	1.28
4960 Methyl chloride (Chloromethane)	5.59 mg/Kg	EPA 8260	10184404	**Acceptable**	0.0263
4975 Methylene chloride (Dichloromethane)	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
4995 4-Methyl-2-pentanone (MIBK)	<4 mg/Kg	EPA 8260	10184404	**Acceptable**	
5000 Methyl tert-butyl ether (MTBE)	11.1 mg/Kg	EPA 8260	10184404	**Acceptable**	0.378
5100 Styrene	12.8 mg/Kg	EPA 8260	10184404	**Acceptable**	0.198
5105 1,1,1,2-Tetrachloroethane	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
5110 1,1,2,2-Tetrachloroethane	11.2 mg/Kg	EPA 8260	10184404	**Acceptable**	0.304
5115 Tetrachloroethylene (Perchloroethylene)	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
5140 Toluene	2.02 mg/Kg	EPA 8260	10184404	**Acceptable**	0.216
5155 1,2,4-Trichlorobenzene	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
5160 1,1,1-Trichloroethane	10.5 mg/Kg	EPA 8260	10184404	**Acceptable**	0.0922
5165 1,1,2-Trichloroethane	9.48 mg/Kg	EPA 8260	10184404	**Acceptable**	0.267
5170 Trichloroethene (Trichloroethylene)	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
5175 Trichlorofluoromethane	<0.2 mg/Kg	EPA 8260	10184404	**Acceptable**	
5180 1,2,3-Trichloropropane	4.46 mg/Kg	EPA 8260	10184404	**Acceptable**	0.620
5210 1,2,4-Trimethylbenzene	5.35 mg/Kg	EPA 8260	10184404	**Acceptable**	0.474
5215 1,3,5-Trimethylbenzene	4.87 mg/Kg	EPA 8260	10184404	**Acceptable**	0.468

SPE-002-H

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
5225 Vinyl acetate	<0.2	mg/Kg	EPA 8260	10184404	**Acceptable**	
5235 Vinyl chloride	<0.2	mg/Kg	EPA 8260	10184404	**Acceptable**	
5240 m+p-Xylene	24.8	mg/Kg	EPA 8260	10184404	**Acceptable**	0.115
5250 o-Xylene	2.24	mg/Kg	EPA 8260	10184404	**Acceptable**	-0.420
5260 Xylene, total	27.0	mg/Kg	EPA 8260	10184404	**Acceptable**	0.0626

▲ Summary for Method **EPA 8260** — Analytes Evaluated **56** — Acceptable **56** — Acceptance Percentage **100.0%**

Extraction Method - **EPA 5035**

SPE-002-H

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4315 Acetone	mg/Kg	1.35	N/A	1.35	0.693	0.000 - 3.53	
4320 Acetonitrile	mg/Kg		<0.6			0 - 0.6	
4325 Acrolein (Propenal)	mg/Kg		0			0 - 0	
4375 Benzene	mg/Kg	9.92	14.5	9.92	1.86	4.34 - 15.5	
4385 Bromobenzene	mg/Kg	5.66	8.39	5.66	0.992	2.68 - 8.64	
4395 Bromodichloromethane	mg/Kg	10.9	16.1	10.9	2.09	4.63 - 17.2	
4400 Bromoform	mg/Kg	0.142	0.142	0.142	0.0421	0.00 - 0.268	
4410 2-Butanone (Methyl ethyl ketone, MEK)	mg/Kg	3.52	4.45	3.52	1.51	0.000 - 8.05	
4450 Carbon disulfide	mg/Kg		0			0 - 0	
4455 Carbon tetrachloride	mg/Kg	8.66	13.8	8.66	1.56	3.98 - 13.3	
4475 Chlorobenzene	mg/Kg	9.70	14.3	9.70	1.75	4.45 - 15.0	
4485 Chloroethane	mg/Kg	1.19	2.44	1.19	0.630	0.000 - 3.08	
4500 2-Chloroethyl vinyl ether	mg/Kg		0			0 - 0	
4505 Chloroform	mg/Kg	13.0	19.6	13.0	2.52	5.44 - 20.6	
4570 1,2-Dibromo-3-chloropropane (DBCP)	mg/Kg	3.70	6.18	3.70	0.906	0.982 - 6.42	
4575 Dibromochloromethane	mg/Kg	10.4	15.5	10.4	2.00	4.40 - 16.4	
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)	mg/Kg	7.67	11.7	7.67	1.52	3.11 - 12.2	
4595 Dibromomethane	mg/Kg	5.66	8.64	5.66	1.01	2.63 - 8.69	
4610 1,2-Dichlorobenzene	mg/Kg	12.0	18.0	12.0	2.58	4.26 - 19.7	
4615 1,3-Dichlorobenzene	mg/Kg		0			0 - 0	
4620 1,4-Dichlorobenzene	mg/Kg	14.3	21.4	14.3	2.97	5.39 - 23.2	
4625 Dichlorodifluoromethane	mg/Kg		0			0 - 0	
4630 1,1-Dichloroethane	mg/Kg	1.84	2.97	1.84	0.349	0.793 - 2.89	
4635 1,2-Dichloroethane	mg/Kg	9.64	15.1	9.64	1.79	4.27 - 15.0	
4640 1,1-Dichloroethylene	mg/Kg		<0.5			0.00 - 0.50	
4645 cis-1,2-Dichloroethylene	mg/Kg		0			0 - 0	
4655 1,2-Dichloropropane	mg/Kg		0			0 - 0	
4680 cis-1,3-Dichloropropene	mg/Kg		0			0 - 0	
4685 trans-1,3-Dichloropropylene	mg/Kg		0			0 - 0	
4700 trans-1,2-Dichloroethylene	mg/Kg		0			0 - 0	
4765 Ethylbenzene	mg/Kg	4.05	5.90	4.05	0.740	1.83 - 6.27	
4860 2-Hexanone	mg/Kg		0			0 - 0	
4900 Isopropylbenzene	mg/Kg		0			0 - 0	
4950 Methyl bromide (Bromomethane)	mg/Kg	3.35	3.78	3.35	1.45	0.000 - 7.70	
4960 Methyl chloride (Chloromethane)	mg/Kg	5.52	8.55	5.52	2.66	0.000 - 13.5	
4975 Methylene chloride (Dichloromethane)	mg/Kg		<0.50			0.00 - 0.50	
4995 4-Methyl-2-pentanone (MIBK)	mg/Kg		0			0 - 0	
5000 Methyl tert-butyl ether (MTBE)	mg/Kg	10.2	15.1	10.2	2.38	3.06 - 17.3	
5100 Styrene	mg/Kg	12.3	17.3	12.3	2.53	4.71 - 19.9	
5105 1,1,1,2-Tetrachloroethane	mg/Kg		0			0 - 0	
5110 1,1,2,2-Tetrachloroethane	mg/Kg	10.4	15.8	10.4	2.63	2.51 - 18.3	
5115 Tetrachloroethylene (Perchloroethylene)	mg/Kg		<0.50			0.00 - 0.50	
5140 Toluene	mg/Kg	1.95	2.95	1.95	0.324	0.978 - 3.24	
5155 1,2,4-Trichlorobenzene	mg/Kg		0			0 - 0	
5160 1,1,1-Trichloroethane	mg/Kg	10.3	14.9	10.3	2.17	3.79 - 16.8	
5165 1,1,2-Trichloroethane	mg/Kg	9.00	12.6	9.00	1.80	3.60 - 14.4	
5170 Trichloroethene (Trichloroethylene)	mg/Kg	0.307	<0.50	0.307	0.325	0.000 - 1.28	

SPE-002-H

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
5175 Trichlorofluoromethane	mg/Kg		0			0 - 0	
5180 1,2,3-Trichloropropane	mg/Kg	3.84	6.07	3.84	1.00	0.840 - 6.84	
5210 1,2,4-Trimethylbenzene	mg/Kg	4.90	6.41	4.90	0.949	2.05 - 7.75	
5215 1,3,5-Trimethylbenzene	mg/Kg	4.43	6.65	4.43	0.941	1.61 - 7.25	
5225 Vinyl acetate	mg/Kg		0			0 - 0	
5235 Vinyl chloride	mg/Kg		0			0 - 0	
5240 m+p-Xylene	mg/Kg	24.2	31.6	24.2	5.20	8.60 - 39.8	
5250 o-Xylene	mg/Kg	2.47	3.67	2.47	0.548	0.826 - 4.11	
5260 Xylene, total	mg/Kg	26.7	35.3	26.7	4.79	12.3 - 41.1	

SPE-002-L
VOAs in Soil - Low Concentration

Program: RCRA

SPE-002-L

Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
▶ *Extraction Method* - **EPA 5035**					
▼ Summary for Method **EPA 8260**				Overall method evaluation **Acceptable**	
4315 Acetone	1170 µg/Kg	EPA 8260	10184404	**Acceptable**	0.959
4375 Benzene	90.6 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.234
4385 Bromobenzene	59.1 µg/Kg	EPA 8260	10184404	**Acceptable**	0.201
4395 Bromodichloromethane	91.6 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.425
4400 Bromoform	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4410 2-Butanone (Methyl ethyl ketone, MEK)	68.1 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.182
4455 Carbon tetrachloride	78.8 µg/Kg	EPA 8260	10184404	**Acceptable**	0.138
4475 Chlorobenzene	98.8 µg/Kg	EPA 8260	10184404	**Acceptable**	0.134
4485 Chloroethane	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4500 2-Chloroethyl vinyl ether	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4505 Chloroform	118 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.233
4570 1,2-Dibromo-3-chloropropane (DBCP)	48.4 µg/Kg	EPA 8260	10184404	**Acceptable**	1.23
4575 Dibromochloromethane	84.0 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.421
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)	75.5 µg/Kg	EPA 8260	10184404	**Acceptable**	0.152
4595 Dibromomethane	56.0 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0287
4610 1,2-Dichlorobenzene	117 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0427
4615 1,3-Dichlorobenzene	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4620 1,4-Dichlorobenzene	137 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0361
4625 Dichlorodifluoromethane	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4630 1,1-Dichloroethane	15.5 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.588
4635 1,2-Dichloroethane	101 µg/Kg	EPA 8260	10184404	**Acceptable**	0.286
4640 1,1-Dichloroethylene	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4645 cis-1,2-Dichloroethylene	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4655 1,2-Dichloropropane	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4680 cis-1,3-Dichloropropene	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4685 trans-1,3-Dichloropropylene	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4700 trans-1,2-Dichloroethylene	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4765 Ethylbenzene	38.5 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.206
4860 2-Hexanone	<50 µg/Kg	EPA 8260	10184404	**Acceptable**	
4900 Isopropylbenzene	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4950 Methyl bromide (Bromomethane)	27.8 µg/Kg	EPA 8260	10184404	**Acceptable**	0.0323
4960 Methyl chloride (Chloromethane)	53.5 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.229
4975 Methylene chloride (Dichloromethane)	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
4995 4-Methyl-2-pentanone (MIBK)	<50 µg/Kg	EPA 8260	10184404	**Acceptable**	
5000 Methyl tert-butyl ether (MTBE)	103 µg/Kg	EPA 8260	10184404	**Acceptable**	0.0755
5100 Styrene	115 µg/Kg	EPA 8260	10184404	**Acceptable**	0.257
5105 1,1,1,2-Tetrachloroethane	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
5110 1,1,2,2-Tetrachloroethane	99.9 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0335
5115 Tetrachloroethylene (Perchloroethylene)	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
5140 Toluene	23.9 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0872
5155 1,2,4-Trichlorobenzene	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
5160 1,1,1-Trichloroethane	97.1 µg/Kg	EPA 8260	10184404	**Acceptable**	0.122
5165 1,1,2-Trichloroethane	87.8 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0353
5170 Trichloroethene (Trichloroethylene)	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
5175 Trichlorofluoromethane	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
5180 1,2,3-Trichloropropane	34.2 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.571
5210 1,2,4-Trimethylbenzene	50.5 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0294
5215 1,3,5-Trimethylbenzene	45.6 µg/Kg	EPA 8260	10184404	**Acceptable**	0.0242
5235 Vinyl chloride	<5 µg/Kg	EPA 8260	10184404	**Acceptable**	
5240 m+p-Xylene	227 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0179
5250 o-Xylene	24.5 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.199

SPE-002-L

Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
5260 Xylene, total	251 µg/Kg	EPA 8260	10184404	**Acceptable**	-0.0741
▲ Summary for Method **EPA 8260**	Analytes Evaluated **52**	Acceptable **52**	Acceptance Percentage **100.0%**		
Extraction Method - **EPA 5035**					

SPE-002-L

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4315 Acetone	µg/Kg	776	N/A	822	417	0.000 - 2010	
4375 Benzene	µg/Kg	96.4	162	96.4	24.8	22.0 - 171	
4385 Bromobenzene	µg/Kg	56.2	83.9	56.2	14.4	13.0 - 99.4	
4395 Bromodichloromethane	µg/Kg	104	160	104	29.2	16.4 - 192	
4400 Bromoform	µg/Kg		0			0 - 0	
4410 2-Butanone (Methyl ethyl ketone, MEK)	µg/Kg	73.0	89.0	73.0	26.9	0.000 - 154	
4455 Carbon tetrachloride	µg/Kg	75.2	138	75.2	26.1	0.000 - 154	
4475 Chlorobenzene	µg/Kg	95.7	143	95.7	23.2	26.1 - 165	
4485 Chloroethane	µg/Kg	11.9	34.4	11.9	7.29	0.000 - 33.8	
4500 2-Chloroethyl vinyl ether	µg/Kg		0			0 - 0	
4505 Chloroform	µg/Kg	125	196	125	30.0	35.0 - 215	
4570 1,2-Dibromo-3-chloropropane (DBCP)	µg/Kg	33.6	61.8	33.6	12.0	0.000 - 69.6	
4575 Dibromochloromethane	µg/Kg	95.0	155	95.0	26.1	16.7 - 173	
4585 1,2-Dibromoethane (EDB, Ethylene dibromide)	µg/Kg	72.0	118	72.0	23.0	3.00 - 141	
4595 Dibromomethane	µg/Kg	56.5	86.4	56.5	17.4	4.30 - 109	
4610 1,2-Dichlorobenzene	µg/Kg	118	180	118	23.4	47.8 - 188	
4615 1,3-Dichlorobenzene	µg/Kg		0			0 - 0	
4620 1,4-Dichlorobenzene	µg/Kg	138	194	138	27.7	54.9 - 221	
4625 Dichlorodifluoromethane	µg/Kg		0			0 - 0	
4630 1,1-Dichloroethane	µg/Kg	18.4	29.7	18.4	4.93	3.61 - 33.2	
4635 1,2-Dichloroethane	µg/Kg	94.4	151	94.4	23.1	25.1 - 164	
4640 1,1-Dichloroethylene	µg/Kg		0			0 - 0	
4645 cis-1,2-Dichloroethylene	µg/Kg		0			0 - 0	
4655 1,2-Dichloropropane	µg/Kg		0			0 - 0	
4680 cis-1,3-Dichloropropene	µg/Kg		0			0 - 0	
4685 trans-1,3-Dichloropropylene	µg/Kg		0			0 - 0	
4700 trans-1,2-Dichloroethylene	µg/Kg		0			0 - 0	
4765 Ethylbenzene	µg/Kg	40.6	59.0	40.6	10.2	10.0 - 71.2	
4860 2-Hexanone	µg/Kg		0			0 - 0	
4900 Isopropylbenzene	µg/Kg		0			0 - 0	
4950 Methyl bromide (Bromomethane)	µg/Kg	27.2	74.6	27.2	18.6	0.000 - 83.0	
4960 Methyl chloride (Chloromethane)	µg/Kg	62.1	131	62.1	37.5	0.000 - 175	
4975 Methylene chloride (Dichloromethane)	µg/Kg	12.6	<10	12.6	4.41	0.000 - 25.8	
4995 4-Methyl-2-pentanone (MIBK)	µg/Kg		0			0 - 0	
5000 Methyl tert-butyl ether (MTBE)	µg/Kg	101	173	101	26.5	21.5 - 181	
5100 Styrene	µg/Kg	107	179	107	31.1	13.7 - 200	
5105 1,1,1,2-Tetrachloroethane	µg/Kg		0			0 - 0	
5110 1,1,2,2-Tetrachloroethane	µg/Kg	101	158	101	32.8	2.60 - 199	
5115 Tetrachloroethylene (Perchloroethylene)	µg/Kg		0			0 - 0	
5140 Toluene	µg/Kg	24.5	29.5	24.5	6.88	3.86 - 45.1	
5155 1,2,4-Trichlorobenzene	µg/Kg		0			0 - 0	
5160 1,1,1-Trichloroethane	µg/Kg	93.3	169	93.3	31.1	0.000 - 187	
5165 1,1,2-Trichloroethane	µg/Kg	88.7	136	88.7	25.5	12.2 - 165	
5170 Trichloroethene (Trichloroethylene)	µg/Kg	5.17	<10	5.17	2.92	0.000 - 13.9	
5175 Trichlorofluoromethane	µg/Kg		0			0 - 0	
5180 1,2,3-Trichloropropane	µg/Kg	41.8	60.7	41.8	13.3	1.90 - 81.7	
5210 1,2,4-Trimethylbenzene	µg/Kg	50.9	74.1	50.9	13.6	10.1 - 91.7	
5215 1,3,5-Trimethylbenzene	µg/Kg	45.3	66.5	45.3	12.4	8.10 - 82.5	
5235 Vinyl chloride	µg/Kg		0			0 - 0	
5240 m+p-Xylene	µg/Kg	228	283	228	56.0	60.0 - 396	
5250 o-Xylene	µg/Kg	26.0	36.7	26.0	7.52	3.44 - 48.6	

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
5260 Xylene, total	µg/Kg	256	320	256	67.5	53.5 - 459	

SPE-003
BNAs in Soil

Program: RCRA

SPE-003

Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
▶ *Extraction Method* - **Other - No Description Required**					
▼ Summary for Method **EPA 8270C**				Overall method evaluation	**Acceptable**
4610 1,2-Dichlorobenzene	610 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.220
4615 1,3-Dichlorobenzene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
4620 1,4-Dichlorobenzene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
4835 Hexachlorobutadiene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
4840 Hexachloroethane	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5005 Naphthalene	600 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.188
5015 Nitrobenzene	4200 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.118
5095 Pyridine	<670 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5155 1,2,4-Trichlorobenzene	1700 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.0169
5500 Acenaphthene	1300 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.256
5505 Acenaphthylene	1100 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.235
5545 Aniline	1200 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.835
5555 Anthracene	760 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.368
5575 Benzo(a)anthracene	3400 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.155
5580 Benzo(a)pyrene	280 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.755
5585 Benzo(b)fluoranthene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5590 Benzo(g,h,i)perylene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5595 Benzidine	<670 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5600 Benzo(k)fluoranthene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5610 Benzoic acid	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5630 Benzyl alcohol	1400 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.238
5660 4-Bromophenyl phenyl ether	5400 µg/Kg	EPA 8270C	10185805	**Acceptable**	0.121
5670 Butyl benzyl phthalate	2700 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.558
5680 Carbazole	4700 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.470
5700 4-Chloro-3-methylphenol	540 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.321
5745 4-Chloroaniline	560 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.458
5760 bis(2-Chloroethoxy)methane	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5765 bis(2-Chloroethyl) ether	490 µg/Kg	EPA 8270C	10185805	**Acceptable**	-1.04
5780 bis(2-Chloroisopropyl) ether	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5795 2-Chloronaphthalene	2400 µg/Kg	EPA 8270C	10185805	**Acceptable**	0.262
5800 2-Chlorophenol	1400 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.501
5825 4-Chlorophenyl phenylether	8100 µg/Kg	EPA 8270C	10185805	**Acceptable**	0.267
5855 Chrysene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5895 Dibenz(a,h) anthracene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
5905 Dibenzofuran	5400 µg/Kg	EPA 8270C	10185805	**Acceptable**	0.240
5925 Di-n-butyl phthalate	4000 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.550
5945 3,3'-Dichlorobenzidine	<670 µg/Kg	EPA 8270C	10185805	**Acceptable**	
6000 2,4-Dichlorophenol	1300 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.490
6070 Diethyl phthalate	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
6130 2,4-Dimethylphenol	3300 µg/Kg	EPA 8270C	10185805	**Acceptable**	0.0240
6135 Dimethyl phthalate	3500 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.359
6175 2,4-Dinitrophenol	1500 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.563
6185 2,4-Dinitrotoluene (2,4-DNT)	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
6190 2,6-Dinitrotoluene (2,6-DNT)	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
6200 Di-n-octyl phthalate	5000 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.101
6255 bis(2-Ethylhexyl) phthalate (DEHP)	1100 µg/Kg	EPA 8270C	10185805	**Not acceptable**	
6265 Fluoranthene	250 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.963
6270 Fluorene	3400 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.0130
6275 Hexachlorobenzene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
6285 Hexachlorocyclopentadiene	<670 µg/Kg	EPA 8270C	10185805	**Acceptable**	
6315 Indeno(1,2,3-cd) pyrene	<330 µg/Kg	EPA 8270C	10185805	**Acceptable**	
6320 Isophorone	650 µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.383

SPE-003

Evaluation

	Analyte	Result	Units	Method	Method ID	Evaluation	Z
6360	2-Methyl-4,6-dinitrophenol	4100	µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.0878
6385	2-Methylnaphthalene	<330	µg/Kg	EPA 8270C	10185805	**Acceptable**	
6400	2-Methylphenol (o-Cresol)	3000	µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.476
6412	3+4-Methylphenol (m+p-Cresol)	5800	µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.433
6460	2-Nitroaniline	4600	µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.350
6465	3-Nitroaniline	4500	µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.289
6470	4-Nitroaniline	1500	µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.326
6490	2-Nitrophenol	3500	µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.221
6500	4-Nitrophenol	3700	µg/Kg	EPA 8270C	10185805	**Acceptable**	0.0155
6530	n-Nitrosodimethylamine	<330	µg/Kg	EPA 8270C	10185805	**Acceptable**	
6535	n-Nitrosodiphenylamine	<330	µg/Kg	EPA 8270C	10185805	**Acceptable**	
6545	n-Nitrosodi-n-propylamine	580	µg/Kg	EPA 8270C	10185805	**Not acceptable**	
6605	Pentachlorophenol	3900	µg/Kg	EPA 8270C	10185805	**Acceptable**	0.320
6615	Phenanthrene	1900	µg/Kg	EPA 8270C	10185805	**Acceptable**	-0.243
6625	Phenol	<330	µg/Kg	EPA 8270C	10185805	**Acceptable**	
6665	Pyrene	<330	µg/Kg	EPA 8270C	10185805	**Acceptable**	
6835	2,4,5-Trichlorophenol	<330	µg/Kg	EPA 8270C	10185805	**Acceptable**	
6840	2,4,6-Trichlorophenol	<330	µg/Kg	EPA 8270C	10185805	**Acceptable**	

▲ Summary for Method **EPA 8270C** Analytes Evaluated **70** Acceptable **68** Acceptance Percentage **97.1%**

Extraction Method - **Other - No Description Required**

SPE-003

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4610 1,2-Dichlorobenzene	µg/Kg	673	673	673	286	0.000 - 1530	
4615 1,3-Dichlorobenzene	µg/Kg	329	329	329	186	0.000 - 887	
4620 1,4-Dichlorobenzene	µg/Kg	163	163	163	90.0	0.000 - 433	
4835 Hexachlorobutadiene	µg/Kg	155	155	155	67.7	0.000 - 358	
4840 Hexachloroethane	µg/Kg	156	1470	156	84.7	0.000 - 410	
5005 Naphthalene	µg/Kg	640	1220	640	213	0.00 - 1280	
5015 Nitrobenzene	µg/Kg	4370	8380	4370	1440	50.0 - 8690	
5095 Pyridine	µg/Kg	415	997	415	578	0.000 - 2150	
5155 1,2,4-Trichlorobenzene	µg/Kg	1710	5640	1710	593	0.000 - 3490	
5500 Acenaphthene	µg/Kg	1390	1590	1390	351	337 - 2440	
5505 Acenaphthylene	µg/Kg	1210	2410	1210	469	0.000 - 2620	
5545 Aniline	µg/Kg	2310	3260	2310	1330	0.000 - 6300	
5555 Anthracene	µg/Kg	848	1680	848	239	131 - 1570	
5575 Benzo(a)anthracene	µg/Kg	3520	4720	3520	772	1200 - 5840	
5580 Benzo(a)pyrene	µg/Kg	347	864	347	88.7	80.9 - 613	
5585 Benzo(b)fluoranthene	µg/Kg		0			0 - 0	
5590 Benzo(g,h,i)perylene	µg/Kg		0			0 - 0	
5595 Benzidine	µg/Kg		0			0 - 0	
5600 Benzo(k)fluoranthene	µg/Kg		0			0 - 0	
5610 Benzoic acid	µg/Kg	1900	3820	1900	1280	0.000 - 5740	
5630 Benzyl alcohol	µg/Kg	1560	2230	1560	671	0.000 - 3570	
5660 4-Bromophenyl phenyl ether	µg/Kg	5260	6820	5260	1160	1780 - 8740	
5670 Butyl benzyl phthalate	µg/Kg	3130	3680	3130	771	817 - 5440	
5680 Carbazole	µg/Kg	5400	6590	5400	1490	930 - 9870	
5700 4-Chloro-3-methylphenol	µg/Kg	602	793	602	193	23.0 - 1180	
5745 4-Chloroaniline	µg/Kg	749	749	749	413	0.000 - 1990	
5760 bis(2-Chloroethoxy)methane	µg/Kg		0			0 - 0	
5765 bis(2-Chloroethyl) ether	µg/Kg	694	1030	694	197	0.00 - 1290	
5780 bis(2-Chloroisopropyl) ether	µg/Kg		0			0 - 0	
5795 2-Chloronaphthalene	µg/Kg	2030	3910	2030	1410	0.000 - 6260	
5800 2-Chlorophenol	µg/Kg	1670	2530	1670	539	53.0 - 3290	
5825 4-Chlorophenyl phenylether	µg/Kg	7620	10200	7620	1800	2220 - 13000	
5855 Chrysene	µg/Kg		0			0 - 0	

SPE-003

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
5895 Dibenz(a,h) anthracene	µg/Kg		0			0 - 0	
5905 Dibenzofuran	µg/Kg	5100	8100	5100	1250	1350 - 8850	
5925 Di-n-butyl phthalate	µg/Kg	4600	5430	4600	1090	1330 - 7870	
5945 3,3'-Dichlorobenzidine	µg/Kg		0			0 - 0	
6000 2,4-Dichlorophenol	µg/Kg	1550	2050	1550	510	20.0 - 3080	
6070 Diethyl phthalate	µg/Kg	246	<333	246	552	0.000 - 1900	
6130 2,4-Dimethylphenol	µg/Kg	3270	8470	3270	1250	0.000 - 7020	
6135 Dimethyl phthalate	µg/Kg	3780	4750	3780	780	1440 - 6120	
6175 2,4-Dinitrophenol	µg/Kg	2220	3690	2220	1280	0.000 - 6060	
6185 2,4-Dinitrotoluene (2,4-DNT)	µg/Kg		0			0 - 0	
6190 2,6-Dinitrotoluene (2,6-DNT)	µg/Kg		0			0 - 0	
6200 Di-n-octyl phthalate	µg/Kg	5140	4620	5140	1380	1000 - 9280	
6255 bis(2-Ethylhexyl) phthalate (DEHP)	µg/Kg		<330			0.00 - 330	
6265 Fluoranthene	µg/Kg	328	540	328	81.0	85.0 - 571	
6270 Fluorene	µg/Kg	3410	4620	3410	771	1100 - 5720	
6275 Hexachlorobenzene	µg/Kg		0			0 - 0	
6285 Hexachlorocyclopentadiene	µg/Kg		0			0 - 0	
6315 Indeno(1,2,3-cd) pyrene	µg/Kg		0			0 - 0	
6320 Isophorone	µg/Kg	742	983	742	240	22.0 - 1460	
6360 2-Methyl-4,6-dinitrophenol	µg/Kg	4280	6820	4280	2050	0.000 - 10400	
6385 2-Methylnaphthalene	µg/Kg		0			0 - 0	
6400 2-Methylphenol (o-Cresol)	µg/Kg	3500	5030	3500	1050	350 - 6650	
6412 3+4-Methylphenol (m+p-Cresol)	µg/Kg	6830	10020	6830	2380	0.000 - 14000	
6460 2-Nitroaniline	µg/Kg	5090	6650	5090	1400	890 - 9290	
6465 3-Nitroaniline	µg/Kg	4930	9080	4930	1490	460 - 9400	
6470 4-Nitroaniline	µg/Kg	1730	2810	1730	706	0.000 - 3850	
6490 2-Nitrophenol	µg/Kg	3820	6610	3820	1450	0.000 - 8170	
6500 4-Nitrophenol	µg/Kg	3680	4950	3680	1290	0.000 - 7550	
6530 n-Nitrosodimethylamine	µg/Kg		0			0 - 0	
6535 n-Nitrosodiphenylamine	µg/Kg		0			0 - 0	
6545 n-Nitrosodi-n-propylamine	µg/Kg		0			0 - 0	
6605 Pentachlorophenol	µg/Kg	3420	4850	3420	1500	0.000 - 7920	
6615 Phenanthrene	µg/Kg	2010	2440	2010	453	651 - 3370	
6625 Phenol	µg/Kg		0			0 - 0	
6665 Pyrene	µg/Kg		0			0 - 0	
6835 2,4,5-Trichlorophenol	µg/Kg		0			0 - 0	
6840 2,4,6-Trichlorophenol	µg/Kg		0			0 - 0	

SPE-004

Herbicides in Soil

Program: RCRA

SPE-004

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required**						
6605 Pentachlorophenol	135	µg/Kg	EPA 8151A	10183207	**Acceptable**	-0.818
7780 MCPP	<4000	µg/Kg	EPA 8151A	10183207	**Acceptable**	
8545 2,4-D	311	µg/Kg	EPA 8151A	10183207	**Acceptable**	-0.462
8555 Dalapon	230	µg/Kg	EPA 8151A	10183207	**Acceptable**	1.48
8560 2,4-DB	<50	µg/Kg	EPA 8151A	10183207	**Acceptable**	
8595 Dicamba	275	µg/Kg	EPA 8151A	10183207	**Acceptable**	0.164
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	99	µg/Kg	EPA 8151A	10183207	**Acceptable**	-0.315
8650 Silvex (2,4,5-TP)	282	µg/Kg	EPA 8151A	10183207	**Acceptable**	-0.486
8655 2,4,5-T	341	µg/Kg	EPA 8151A	10183207	**Acceptable**	-0.166
Extraction Method - **Other - No Description Required**						

SPE-004

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
6605 Pentachlorophenol	µg/Kg	191	308	191	68.5	0.000 - 397	
7780 MCPP	µg/Kg		0			0 - 0	
8545 2,4-D	µg/Kg	389	356	389	169	0.000 - 896	
8555 Dalapon	µg/Kg	121	483	121	73.8	0.000 - 531	
8560 2,4-DB	µg/Kg		0			0 - 0	
8595 Dicamba	µg/Kg	256	288	256	116	0.000 - 604	
8620 Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	µg/Kg	138	322	138	124	0.000 - 510	
8650 Silvex (2,4,5-TP)	µg/Kg	354	445	354	148	0.000 - 798	
8655 2,4,5-T	µg/Kg	365	412	365	145	0.000 - 800	

SPE-005

TCLP Metals in Soil

Program: RCRA

SPE-005

Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
Extraction Method - **EPA 1311**					
1010 Arsenic	<0.5 mg/L	EPA 6010B	10155609	**Acceptable**	
1015 Barium	<10 mg/L	EPA 6010B	10155609	**Acceptable**	
1030 Cadmium	<0.1 mg/L	EPA 6010B	10155609	**Acceptable**	
1040 Chromium	<0.5 mg/L	EPA 6010B	10155609	**Acceptable**	
1075 Lead	<0.5 mg/L	EPA 6010B	10155609	**Acceptable**	
1140 Selenium	<0.1 mg/L	EPA 6010B	10155609	**Acceptable**	
1150 Silver	<0.5 mg/L	EPA 6010B	10155609	**Acceptable**	
1010 Arsenic	<0.5 mg/L	EPA 6020	10156000	**Acceptable**	
1015 Barium	<10 mg/L	EPA 6020	10156000	**Acceptable**	
1030 Cadmium	<0.1 mg/L	EPA 6020	10156000	**Acceptable**	
1040 Chromium	<0.5 mg/L	EPA 6020	10156000	**Acceptable**	
1075 Lead	<0.5 mg/L	EPA 6020	10156000	**Acceptable**	
1140 Selenium	<0.1 mg/L	EPA 6020	10156000	**Acceptable**	
1150 Silver	<0.5 mg/L	EPA 6020	10156000	**Acceptable**	
1095 Mercury	<0.02 mg/L	EPA 7470A	10165807	**Acceptable**	
Extraction Method - **EPA 1311**					

SPE-005

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1010 Arsenic	mg/L		0.141			0.00 - 0.334	
1015 Barium	mg/L	0.766	0.766	0.766	0.397	0.000 - 1.96	
1030 Cadmium	mg/L	0.0137	0.0137	0.0137	0.00315	0.00 - 0.145	
1040 Chromium	mg/L	0.00439	0.00439	0.0043	0.00225	0.000 - 0.0111	
1075 Lead	mg/L	0.0154	0.225	0.0154	0.0112	0.000 - 1.12	
1095 Mercury	mg/L		<0.005			0.00 - 0.005	
1140 Selenium	mg/L	0.0148	0.0148	0.0148	0.0113	0.000 - 0.0887	
1150 Silver	mg/L	0.0181	0.0181			0.000 - 0.105	

SPE-007

Diesel in Soil

Program: RCRA

SPE-007

Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
9369 Diesel range organics (DRO), C12-C28	885 mg/Kg	EPA 8015B	10173601	**Acceptable**	-0.322
9369 Diesel range organics (DRO), C12-C28	940 mg/Kg	SW8015M as D	0	**Acceptable**	-0.0921

SPE-007

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
9369 Diesel range organics (DRO), C12-C28	mg/Kg	962	1260	965	334	244 - 1680	

SPE-008
Gasoline in Soil

Program: RCRA

SPE-008
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required**						
9408 Gasoline range organics (GRO), C6-C12	90	mg/Kg	EPA 8015B	10173601	**Acceptable**	-0.670
4375 Benzene	10	mg/Kg	EPA 8021	10174400	**Acceptable**	0.445
4765 Ethylbenzene	8.6	mg/Kg	EPA 8021	10174400	**Acceptable**	1.01
5000 Methyl tert-butyl ether (MTBE)	3.5	mg/Kg	EPA 8021	10174400	**Acceptable**	3.77
5005 Naphthalene	8.7	mg/Kg	EPA 8021	10174400	**Acceptable**	0.648
5140 Toluene	8.9	mg/Kg	EPA 8021	10174400	**Acceptable**	0.562
5240 m+p-Xylene	16	mg/Kg	EPA 8021	10174400	**Acceptable**	-0.232
5250 o-Xylene	4.0	mg/Kg	EPA 8021	10174400	**Acceptable**	0.120
5260 Xylene, total	20	mg/Kg	EPA 8021	10174400	**Acceptable**	-0.148
9408 Gasoline range organics (GRO), C6-C12	65	mg/Kg	SW8015M as G	0	**Acceptable**	-1.79
Extraction Method - **Other - No Description Required**						

SPE-008
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4375 Benzene	mg/Kg	9.27	9.27	9.27	1.64	4.35 - 14.2	
4765 Ethylbenzene	mg/Kg	7.86	7.86	7.86	0.730	5.67 - 10.1	
5000 Methyl tert-butyl ether (MTBE)	mg/Kg	2.64	2.64	2.64	0.228	0.00 - 3.70	
5005 Naphthalene	mg/Kg	7.91	7.91	7.91	1.22	4.25 - 11.6	
5140 Toluene	mg/Kg	8.31	8.31	8.31	1.05	5.16 - 11.5	
5240 m+p-Xylene	mg/Kg	16.6	16.6	16.6	2.59	8.83 - 24.4	
5250 o-Xylene	mg/Kg	3.91	3.91	3.91	0.750	1.66 - 6.16	
5260 Xylene, total	mg/Kg	20.5	20.5	20.5	3.37	10.4 - 30.6	
9408 Gasoline range organics (GRO), C6-C12	mg/Kg	105	96.7	83.5	38.4	29.5 - 199	

SPE-009
Chlorinated Pesticides in Soil

Program: RCRA

SPE-009
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
▶ *Extraction Method* - **Other - No Description Required**						
▼ Summary for Method **EPA 8081A**					Overall method evaluation **Acceptable**	
7025 Aldrin	170	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.832
7105 delta-BHC	250	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.807
7110 alpha-BHC (alpha-Hexachlorocyclohexane)	<15	µg/Kg	EPA 8081A	10178606	**Acceptable**	
7115 beta-BHC (beta-Hexachlorocyclohexane)	230	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.612
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	270	µg/Kg	EPA 8081A	10178606	**Acceptable**	0.502
7240 alpha-Chlordane	<8.5	µg/Kg	EPA 8081A	10178606	**Acceptable**	
7245 gamma-Chlordane	200	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.545
7355 4,4'-DDD	94	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.571
7360 4,4'-DDE	<8.5	µg/Kg	EPA 8081A	10178606	**Acceptable**	
7365 4,4'-DDT	260	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.796
7470 Dieldrin	110	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.662
7510 Endosulfan I	80	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.0213
7515 Endosulfan II	150	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.976
7520 Endosulfan sulfate	180	µg/Kg	EPA 8081A	10178606	**Acceptable**	-1.64
7530 Endrin aldehyde	130	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.214
7535 Endrin ketone	<12	µg/Kg	EPA 8081A	10178606	**Acceptable**	
7540 Endrin	230	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.593
7685 Heptachlor	250	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.858
7690 Heptachlor epoxide	220	µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.624
7810 Methoxychlor	170	µg/Kg	EPA 8081A	10178606	**Acceptable**	-1.30
▲ Summary for Method **EPA 8081A**	Analytes Evaluated **20**			Acceptable **20**	Acceptance Percentage **100.0%**	
▶ *Extraction Method* - **Other - No Description Required**						

SPE-009
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
7025 Aldrin	µg/Kg	211	244	211	49.3	63.1 - 359	
7105 delta-BHC	µg/Kg	301	341	301	63.2	111 - 491	
7110 alpha-BHC (alpha-Hexachlorocyclohexane)	µg/Kg		0			0 - 0	
7115 beta-BHC (beta-Hexachlorocyclohexane)	µg/Kg	267	297	267	60.5	85.5 - 449	
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	µg/Kg	246	281	246	47.8	103 - 389	
7240 alpha-Chlordane	µg/Kg		0			0 - 0	
7245 gamma-Chlordane	µg/Kg	233	277	233	60.5	51.5 - 415	
7355 4,4'-DDD	µg/Kg	113	111	113	33.3	13.1 - 213	
7360 4,4'-DDE	µg/Kg	4.62	<5.0	4.62	4.53	0.000 - 18.2	
7365 4,4'-DDT	µg/Kg	312	350	312	65.3	116 - 508	
7470 Dieldrin	µg/Kg	128	146	128	27.2	46.4 - 210	
7510 Endosulfan I	µg/Kg	81.0	338	81.0	46.9	0.000 - 222	
7515 Endosulfan II	µg/Kg	190	210	190	41.0	67.0 - 313	
7520 Endosulfan sulfate	µg/Kg	287	305	287	65.4	90.8 - 483	
7530 Endrin aldehyde	µg/Kg	144	282	144	65.3	0.000 - 340	
7535 Endrin ketone	µg/Kg	12.7	n/a	12.7	10.1	0.000 - 43.0	
7540 Endrin	µg/Kg	264	284	264	57.3	92.1 - 436	
7685 Heptachlor	µg/Kg	306	373	306	65.3	110 - 502	
7690 Heptachlor epoxide	µg/Kg	252	232	252	51.3	98.1 - 406	
7810 Methoxychlor	µg/Kg	235	254	235	50.0	85.0 - 385	

SPE-010
PCBs in Soil

Program: RCRA

SPE-010
Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required**					
8880 Aroclor-1016 (PCB-1016)	<17 µg/Kg	EPA 8082	10179007	**Acceptable**	
8885 Aroclor-1221 (PCB-1221)	<33 µg/Kg	EPA 8082	10179007	**Acceptable**	
8890 Aroclor-1232 (PCB-1232)	<17 µg/Kg	EPA 8082	10179007	**Acceptable**	
8895 Aroclor-1242 (PCB-1242)	<17 µg/Kg	EPA 8082	10179007	**Acceptable**	
8900 Aroclor-1248 (PCB-1248)	<17 µg/Kg	EPA 8082	10179007	**Acceptable**	
8905 Aroclor-1254 (PCB-1254)	<17 µg/Kg	EPA 8082	10179007	**Acceptable**	
8910 Aroclor-1260 (PCB-1260)	480 µg/Kg	EPA 8082	10179007	**Acceptable**	0.108
Extraction Method - **Other - No Description Required**					

SPE-010
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
8880 Aroclor-1016 (PCB-1016)	µg/Kg		0			0 - 0	
8885 Aroclor-1221 (PCB-1221)	µg/Kg		0			0 - 0	
8890 Aroclor-1232 (PCB-1232)	µg/Kg		0			0 - 0	
8895 Aroclor-1242 (PCB-1242)	µg/Kg		0			0 - 0	
8900 Aroclor-1248 (PCB-1248)	µg/Kg		0			0 - 0	
8905 Aroclor-1254 (PCB-1254)	µg/Kg		0			0 - 0	
8910 Aroclor-1260 (PCB-1260)	µg/Kg	470	785	470	92.7	192 - 863	

SPE-011
Anions in Soil 1

Program: RCRA

SPE-011
Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required**					
1635 Cyanide	3.62 mg/Kg	EPA 9012	10193201	**Acceptable**	-0.455
Extraction Method - **Other - No Description Required**					

SPE-011
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1635 Cyanide	mg/Kg	4.02	25.5	4.02	0.879	1.38 - 28.1	

SPE-012
Chromium VI in Soil

Program: RCRA

SPE-012
Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required**					
1045 Chromium VI	96 mg/Kg	EPA 7196A	10162400	**Acceptable**	-0.505
Extraction Method - **Other - No Description Required**					

SPE-012
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1045 Chromium VI	mg/Kg	106	138	106	19.8	46.6 - 165	

SPE-015
TCLP Semi-VOAs
Program: RCRA

SPE-015
Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	0.020	mg/L	EPA 8081A	10178606	**Acceptable**	-1.25
7250 Chlordane, total	<0.025	mg/L	EPA 8081A	10178606	**Acceptable**	
7540 Endrin	<0.00050	mg/L	EPA 8081A	10178606	**Acceptable**	
7685 Heptachlor	<0.00050	mg/L	EPA 8081A	10178606	**Acceptable**	
7810 Methoxychlor	<0.00050	mg/L	EPA 8081A	10178606	**Acceptable**	
8250 Toxaphene (Chlorinated camphene)	<0.050	mg/L	EPA 8081A	10178606	**Acceptable**	
8545 2,4-D	0.70	mg/L	EPA 8151A	10183207	**Acceptable**	-0.928
8650 Silvex (2,4,5-TP)	<0.0020	mg/L	EPA 8151A	10183207	**Acceptable**	
▼ Summary for Method **EPA 8270C**					Overall method evaluation **Acceptable**	
4835 Hexachlorobutadiene	<0.050	mg/L	EPA 8270C	10185805	**Acceptable**	
4840 Hexachloroethane	0.052	mg/L	EPA 8270C	10185805	**Acceptable**	0.0182
5015 Nitrobenzene	0.10	mg/L	EPA 8270C	10185805	**Acceptable**	0.250
5095 Pyridine	<0.10	mg/L	EPA 8270C	10185805	**Acceptable**	
6185 2,4-Dinitrotoluene (2,4-DNT)	<0.050	mg/L	EPA 8270C	10185805	**Acceptable**	
6275 Hexachlorobenzene	<0.050	mg/L	EPA 8270C	10185805	**Acceptable**	
6400 2-Methylphenol (o-Cresol)	<0.050	mg/L	EPA 8270C	10185805	**Acceptable**	
6412 3+4-Methylphenol (m+p-Cresol)	<0.050	mg/L	EPA 8270C	10185805	**Acceptable**	
6413 Total Cresol	<0.050	mg/L	EPA 8270C	10185805	**Acceptable**	
6605 Pentachlorophenol	<0.25	mg/L	EPA 8270C	10185805	**Acceptable**	
6835 2,4,5-Trichlorophenol	<0.050	mg/L	EPA 8270C	10185805	**Acceptable**	
6840 2,4,6-Trichlorophenol	0.092	mg/L	EPA 8270C	10185805	**Acceptable**	0.550
▲ Summary for Method **EPA 8270C**	Analytes Evaluated **12**		Acceptable **12**		Acceptance Percentage **100.0%**	

SPE-015
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
4835 Hexachlorobutadiene	mg/L		<0.200			0.00 - 2.00	
4840 Hexachloroethane	mg/L	0.0518	0.0668	0.0213	0.0246	0.00 - 0.200	
5015 Nitrobenzene	mg/L	0.096	0.125	0.0968	0.0536	0.048 - 0.144	
5095 Pyridine	mg/L		<0.100			0.00 - 0.100	
6185 2,4-Dinitrotoluene (2,4-DNT)	mg/L		<0.13			0.00 - 0.13	
6275 Hexachlorobenzene	mg/L		<0.200			0.00 - 0.200	
6400 2-Methylphenol (o-Cresol)	mg/L		<0.100			0.00 - 0.100	
6412 3+4-Methylphenol (m+p-Cresol)	mg/L	0.156	0.156			0.00 - 0.455	
6413 Total Cresol	mg/L	0.156	0.156			0.00 - 0.455	
6605 Pentachlorophenol	mg/L		<0.200			0.00 - 0.200	
6835 2,4,5-Trichlorophenol	mg/L		<0.150			0.00 - 0.15	
6840 2,4,6-Trichlorophenol	mg/L	0.081	0.081	0.0781	0.0503	0.021 - 0.141	
7120 gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	mg/L	0.0240	0.0240			0.0144 - 0.0336	
7250 Chlordane, total	mg/L		<0.500			0.00 - 0.500	
7540 Endrin	mg/L		<0.02			0.00 - 0.02	
7685 Heptachlor	mg/L		<0.008			0.00 - 0.008	
7810 Methoxychlor	mg/L		<0.5			0.00 - 0.50	
8250 Toxaphene (Chlorinated camphene)	mg/L		0			0 - 0	
8545 2,4-D	mg/L	1.11	1.50			0.00 - 1.65	
8650 Silvex (2,4,5-TP)	mg/L		0			0 - 0	

SPE-021
Organophosphorus Pesticides

Program: RCRA

SPE-021

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required**						
7300 Chlorpyrifos	2.7	mg/Kg	E507M	0	**Acceptable**	-2.60
7410 Diazinon	0.098	mg/Kg	E507M	0	**Acceptable**	-1.37
7570 Ethoprop	<0.0033	mg/Kg	E507M	0	**Acceptable**	
7770 Malathion	3.5	mg/Kg	E507M	0	**Acceptable**	-1.51
7985 Phorate	0.95	mg/Kg	E507M	0	**Acceptable**	-1.10
8200 Tetrachlorvinphos (Stirophos, Gardona)	6.2	mg/Kg	E507M	0	**Acceptable**	-23.7
8610 Dichlorovos (DDVP, Dichlorvos)	0.040	mg/Kg	E507M	0	**Acceptable**	-0.971
8625 Disulfoton	1.9	mg/Kg	E507M	0	**Acceptable**	-1.53
Extraction Method - **Other - No Description Required**						

SPE-021

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
7300 Chlorpyrifos	mg/Kg	3.88	4.63	3.88	0.454	2.52 - 5.24	
7410 Diazinon	mg/Kg	0.337	0.600	0.337	0.174	0.000 - 0.859	
7570 Ethoprop	mg/Kg		0			0 - 0	
7770 Malathion	mg/Kg	5.09	6.25	5.09	1.05	1.94 - 8.24	
7985 Phorate	mg/Kg	1.36	1.88	1.36	0.373	0.241 - 2.48	
8200 Tetrachlorvinphos (Stirophos, Gardona)	mg/Kg	12.9	13.4	12.9	0.283	6.20 - 19.6	
8610 Dichlorovos (DDVP, Dichlorvos)	mg/Kg	0.238	0.800	0.238	0.204	0.000 - 0.850	
8625 Disulfoton	mg/Kg	2.95	4.01	2.95	0.686	0.892 - 5.01	

SPE-023
Corrosivity

Program: RCRA

SPE-023

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
1625 Corrosivity (pH)	5.15	pH Units	EPA 9045C	10198400	**Acceptable**	-0.429

SPE-023

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1625 Corrosivity (pH)	pH Units	5.22	5.22	5.22	0.163	4.73 - 5.71	

SPE-026TX-H
TPH in Soil by TX Methods - High Concentrations

Program: RCRA

SPE-026TX-H

Evaluation

Analyte	Result	Units	Method	Method ID	Evaluation	Z
104 Residual Range Organics (RRO), C28-C35	709	mg/Kg	TNRCC1005	0	**Acceptable**	1.52
9369 Diesel range organics (DRO), C12-C28	1380	mg/Kg	TNRCC1005	0	**Acceptable**	-0.0830
9408 Gasoline range organics (GRO), C6-C12	828	mg/Kg	TNRCC1005	0	**Acceptable**	-0.850

SPE-026TX-H

Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
104 Residual Range Organics (RRO), C28-C35	mg/Kg	375	425	375	220	0.000 - 1040	
9369 Diesel range organics (DRO), C12-C28	mg/Kg	1420	1750	1420	482	0.000 - 2870	
9408 Gasoline range organics (GRO), C6-C12	mg/Kg	1060	1410	1060	273	241 - 1880	

SPE-026TX-L
TPH in Soil by TX Methods - Low Concentrations
Program: RCRA

SPE-026TX-L
Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
104 Residual Range Organics (RRO), C28-C35	54 mg/Kg	TNRCC1005	0	**Acceptable**	-0.619
9369 Diesel range organics (DRO), C12-C28	63 mg/Kg	TNRCC1005	0	**Acceptable**	-2.71
9408 Gasoline range organics (GRO), C6-C12	43 mg/Kg	TNRCC1005	0	**Acceptable**	3.39

SPE-026TX-L
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
104 Residual Range Organics (RRO), C28-C35	mg/Kg	68.3	90.1	68.3	23.1	0.00 - 138	
9369 Diesel range organics (DRO), C12-C28	mg/Kg	112	145	112	18.1	57.7 - 166	
9408 Gasoline range organics (GRO), C6-C12	mg/Kg	27.4	60.2	27.4	4.60	13.6 - 66.2	

SPE-027
Chlordane in Soil
Program: RCRA

SPE-027
Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required** 7250 Chlordane, total *Extraction Method* - **Other - No Description Required**	200 µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.551

SPE-027
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
7250 Chlordane, total	µg/Kg	249	262	249	88.9	0.000 - 516	

SPE-028
Toxaphene in Soil
Program: RCRA

SPE-028
Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
Extraction Method - **Other - No Description Required** 8250 Toxaphene (Chlorinated camphene) *Extraction Method* - **Other - No Description Required**	100 µg/Kg	EPA 8081A	10178606	**Acceptable**	-0.877

SPE-028
Study Summary

Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
8250 Toxaphene (Chlorinated camphene)	µg/Kg	127	135	127	30.8	34.6 - 219	

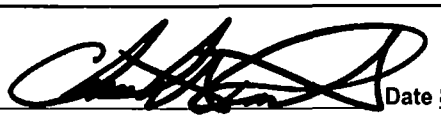
SPE-029
Flash Point
Program: RCRA

SPE-029
Evaluation

Analyte	Result Units	Method	Method ID	Evaluation	Z
1780 Ignitability	33.9 ° C	EPA 1010	10116606	**Acceptable**	1.03

SPE-029
Study Summary

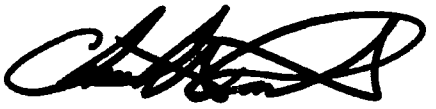
Analyte	Units	Certified Value	Assigned Value	Study Mean	Study Std. Dev.	Acceptance Limits	Warning Limits
1780 Ignitability	° C	29.3	30.0	29.3	4.45	16.0 - 42.7	

Authorized for release by  **Date** 8/4/2005

Certifying Officer - QA/QC Manager

Questions / Comments?
Christopher Rucinski
phone: (307) 742-5452
email: reports@rt-corp.com

This report shall not be reproduced, except in full, without the written approval of the laboratory. A laboratory may not claim endorsement by NVLAP, NIST, or any other federal agency. RTC is accredited by NVLAP to perform PT programs for the scope of accreditation under NVLAP Lab Code 200393-0.



Quarterly Study
WPMIC07-3B
WPMICRO / DMRQA 27
18-Jul-2007 through 31-Aug-2007

RT1061
RTC Labcode

MT00005
US EPA Labcode

Energy Labs
Andy Valkenburg
PO Box 30916
Billings MT 59107

Thank you for participating in study WPMIC07-3B. Additional information about this study may be found online at www.rt-corp.com. If you have any questions or comments about this study please contact me.

Sincerely,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

ACCREDITED
Certificate # 2122.01

Dataset

Dataset 1

Include in DMRQA Study

Evaluations from this dataset will be included in DMRQA 27.

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Alaska DEC
DEC Health Lab
386 Shera Hickman
CS Laboratory Approval Officer
5251 Hinkle Road
Anchorage AK 99507
UNITED STATES

Accrediting Labcode MT00005
Colorado Dept. of Public Health & Environment

610 Kelly Morgan
4300 S Cherry Creek Drive South (WQCD-CADM B2)
Denver CO 80246
UNITED STATES

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Idaho Bureau of Laboratories

383 Sandra Radwin
2220 Old Penitentiary Road
Boise ID 83712
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau
168 Jeff May
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

Accrediting Labcode MT00005
Nevada Division of Env. Protection

366 Sara Rairick
901 S Stewart Street
Ste 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

615 Tim Flor
523 East Capital
Pierre SD 57501
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII, TMS-Q

217 Jim Gindelberger
1595 Wynkoop Street
Denver CO 80202-1129
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 W. 25th Street
Cheyenne WY 82002
UNITED STATES

Microbiology

Analysis
1603
Other

Method Number 99999965
Technology Code NA

	Result	Units	Accept / Warn	Z	Evaluation
Escherichia coli [4] 2525 / MIC-003 - Lot 012478	75	CFU/100m	15.3 to 439		**Acceptable**

Analysis
SM 18th ED 9221 C
OTHER

Method Number 20036606
Technology Code OTHER

	Result	Units	Accept / Warn	Z	Evaluation
Total Coliform, MPN [1, 4] 2501 / MIC-003 - Lot 012478	60	MPN/100	36 to 250		**Acceptable**

Microbiology (continued)

Analysis
SM 18/19/20thED 9221 E
OTHER

Method Number 20036208
Technology Code OTHER

	Result Units	Accept / Warn	Z	Evaluation
Fecal coliform, MPN [1, 4] 2531 / MIC-003 - Lot 012478	100 MPN/100	36.3 to 465		**Acceptable**

Analysis
SM 18/19/20th ED 9223B
OTHER

Method Number 20037609
Technology Code OTHER

	Result Units	Accept / Warn	Z	Evaluation
Escherichia coli, MPN [4] 2526 / MIC-003 - Lot 012478	160 MPN/100	36.7 to 397		**Acceptable**

Analysis
SM 18/19/20/21thED 9222 B
Filtration - Immunomagnetic Separation - Immunoflourescence Assay

Method Number 20036800
Technology Code IMS-FA

	Result Units	Accept / Warn	Z	Evaluation
Total coliforms [1, 4] 2500 / MIC-003 - Lot 012478	63 CFU/100m	33.3 to 400		**Acceptable**

Analysis
SM 18/19/20/21th ED 9222 D
Filtration - Immunomagnetic Separation - Immunoflourescence Assay

Method Number 20037405
Technology Code IMS-FA

	Result Units	Accept / Warn	Z	Evaluation
Fecal coliforms [1, 4] 2530 / MIC-003 - Lot 012478	66 CFU/100m	22.9 to 264		**Acceptable**

End of Dataset 1

Dataset

Dataset 2

Include in DMRQA Study

Evaluations from this dataset will be included in DMRQA 27.

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Alaska DEC
DEC Health Lab
382 Sherri Trask
Microbiology Cert. Officer-EHL
5251 Hinkle Road
Anchorage AK 99507
UNITED STATES

Accrediting Labcode MT00005
Colorado Dept. of Public Health & Environment

610 Kelly Morgan
4300 S Cherry Creek Drive South (WQCD-CADM B2)
Denver CO 80246
UNITED STATES

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Idaho Bureau of Laboratories

383 Sandra Radwin
2220 Old Penitentiary Road
Boise ID 83712
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau
168 Jeff May
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

Accrediting Labcode MT00005
Nevada Division of Env. Protection

366 Sara Rairick
901 S Stewart Street
Ste 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

615 Tim Flor
523 East Capital
Pierre SD 57501
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII, TMS-Q

217 Jim Gindelberger
1595 Wynkoop Street
Denver CO 80202-1129
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 W. 25th Street
Cheyenne WY 82002
UNITED STATES

Microbiology

Analysis
SM 18/19/20th ED 9223B
OTHER

Method Number 20037609
Technology Code OTHER

	Result Units	Accept / Warn	Z	Evaluation
Total Coliform, MPN [1, 4] 2501 / MIC-003 - _ot 012478	160 MPN/100	36 to 250		**Acceptable**

End of Dataset 2

Sample Information

Microbiological - Quantitative

MIC-003

Study Lot 012478
Mfg Lot 012478

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total coliforms 2500 Microbiology	CFU/100ml	127.49	54.56	121.79	40.53	121.47	45.88	100
Total Coliform, MPN 2501 Microbiology	MPN/100ml	143.00	41.90	151.94	99.49	132.16	56.28	120
Escherichia coli 2525 Microbiology	CFU/100ml	98.41	58.39	95.00	48.24	90.34	50.34	100
Escherichia coli, MPN 2526 Microbiology	MPN/100ml	132.29	54.08	125.11	38.84	126.24	44.16	120
Fecal coliforms 2530 Microbiology	CFU/100ml	86.18	35.99	82.75	35.59	77.72	31.72	100
Fecal coliform, MPN 2531 Microbiology	MPN/100ml	144.11	63.40	189.44	185.91	127.08	58.79	100

Program analyte accrediting footnotes

1 NELAC
2 EPA
3 Other
4 A2LA
5 NELAC Experimental

Quarterly Study
WP07-3B
WPCHEM / DMRQA 27
18-Jul-2007 through 31-Aug-2007

RT1061
RTC Labcode

MT00005
US EPA Labcode

Energy Labs
Andy Valkenburg
PO Box 30916
Billings MT 59107

Thank you for participating in study WP07-3B. Additional information about this study may be found online at www.rt-corp.com. If you have any questions or comments about this study please contact me.

Sincerely,

Christopher Rucinski
Quality Director

2931 Soldier Springs Road
Laramie, WY 82070
(307) 742-5452
www.rt-corp.com

ACCREDITED
Certificate # 2122.01

Dataset

Dataset 1

Include in DMRQA Study

Evaluations from this dataset will be included in DMRQA 27.

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Alaska DEC
DEC Health Lab
386 Shera Hickman
CS Laboratory Approval Officer
5251 Hinkle Road
Anchorage AK 99507
UNITED STATES

Accrediting Labcode MT00005
Colorado Dept. of Public Health & Environment

610 Kelly Morgan
4300 S Cherry Creek Drive South (WQCD-CADM B2)
Denver CO 80246
UNITED STATES

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Idaho Bureau of Laboratories

383 Sandra Radwin
2220 Old Penitentiary Road
Boise ID 83712
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau
168 Jeff May
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

Accrediting Labcode MT00005
Nevada Division of Env. Protection

366 Sara Rairick
901 S Stewart Street
Ste 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

615 Tim Flor
523 East Capital
Pierre SD 57501
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII, TMS-Q

217 Jim Gindelberger
1595 Wynkoop Street
Denver CO 80202-1129
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 W. 25th Street
Cheyenne WY 82002
UNITED STATES

Acids

Acid Compouds - WPCHEM

Analysis
EPA 625
Gas Chromatography - Mass Spectrometry

Method Number 10107401
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Benzoic acid [4] 5610 / O-022 - Lot 012444	57 µg/L	26.4 to 185 52.8 to 158	-1.84	**Acceptable**
4-Chloro-3-methylphenol [4] 5700 / O-022 - Lot 012444	127 µg/L	42.7 to 141 59.2 to 125	2.13	**Acceptable**
2-Chlorophenol [1, 4] 5800 / O-022 - Lot 012444	188 µg/L	54.4 to 244 86.0 to 212	1.23	**Acceptable**
2,4-Dichlorophenol [1, 4] 6000 / O-022 - Lot 012444	135 µg/L	44.7 to 168 65.2 to 147	1.40	**Acceptable**
2,4-Dimethylphenol [1, 4] 6130 / O-022 - Lot 012444	76 µg/L	13.5 to 92.8 26.7 to 79.5	1.73	**Acceptable**

Acids (continued)

Acid Compouds - WPCHEM

(continued)

Analysis
EPA 625
Gas Chromatography - Mass Spectrometry

Method Number 10107401
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
2,4-Dinitrophenol [1, 4] 6175 / O-022 - Lot 012444	182 µg/L	10.0 to 213 36.1 to 177	2.12	**Acceptable**
2-Methyl-4,6-dinitrophenol [1, 4] 6360 / O-022 - Lot 012444	171 µg/L	45.7 to 189 69.5 to 165	2.26	**Acceptable**
2-Methylphenol (o-Cresol) [1, 4] 6400 / O-022 - Lot 012444	54 µg/L	11.0 to 73.2 21.4 to 62.8	1.15	**Acceptable**
4-Methylphenol (p-Cresol) [1, 4] 6410 / O-022 - Lot 012444	86 µg/L	4.47 to 119 23.6 to 99.9	1.27	**Acceptable**
3+4-Methylphenol (m+p-Cresol) [1, 4] 6412 / O-022 - Lot 012444	86 µg/L	4.47 to 119 23.6 to 99.9	1.27	**Acceptable**
2-Nitrophenol [1, 4] 6490 / O-022 - Lot 012444	125 µg/L	32.9 to 186 58.4 to 161	0.61	**Acceptable**
4-Nitrophenol [1, 4] 6500 / O-022 - Lot 012444	60 µg/L	0.00 to 233 5.01 to 188	-0.79	**Acceptable**
Pentachlorophenol [1, 4] 6605 / O-022 - Lot 012444	118 µg/L	22.4 to 125 39.6 to 108	2.57	**Acceptable**
Phenol [1, 4] 6625 / O-022 - Lot 012444	66 µg/L	0.00 to 166 4.81 to 133	-0.10	**Acceptable**
2,4,5-Trichlorophenol [1, 4] 6835 / O-022 - Lot 012444	139 µg/L	36.5 to 131 52.3 to 115	3.49	**Not Acceptable**
2,4,6-Trichlorophenol [1, 4] 68400 / O-022 - Lot 012444	136 µg/L	58.9 to 228 87.0 to 200	-0.26	**Acceptable**

Group Analysis Summary

Acceptable 15 / 16
Score 93.8% - **(Acceptable)**

Base/Neutrals

Base/Neutrals

Analysis
EPA 625
Gas Chromatography - Mass Spectrometry

Method Number 10107401
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Naphthalene [1, 4] 5005 / O-121-1 - Lot 012490	50 µg/L	15.6 to 64.6 23.8 to 56.5	1.21	**Acceptable**
Pyridine [4] 5095 / O-121-2B - Lot 012455	49 µg/L	0.00 to 131	-0.58	**Acceptable**
Acenaphthene [1, 4] 5500 / O-121-1 - Lot 012490	154 µg/L	58.8 to 178 78.7 to 158	1.78	**Acceptable**
Acenaphthylene [1, 4] 5505 / O-121-1 - Lot 012490	101 µg/L	39.2 to 120 52.6 to 106	1.61	**Acceptable**
Aniline [4] 5545 / O-121-2B - Lot 012455	81 µg/L	12.9 to 126	0.60	**Acceptable**
Anthracene [1, 4] 5555 / O-121-1 - Lot 012490	178 µg/L	77.3 to 228 102 to 203	1.00	**Acceptable**
Benzo(a)anthracene [1, 4] 5575 / O-121-1 - Lot 012490	172 µg/L	76.0 to 210 98.3 to 187	1.31	**Acceptable**

Base/Neutrals (continued)

Base/Neutrals

Analysis
EPA 625
Gas Chromatography - Mass Spectrometry

(continued)
Method Number 10107401
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Benzo(a)pyrene [1, 4] 5580 / O-121-1 - Lot 012490	94 µg/L	34.5 to 114 47.8 to 101	1.49	**Acceptable**
Benzo(b)fluoranthene [1, 4] 5585 / O-121-1 - Lot 012490	106 µg/L	39.1 to 136 55.3 to 120	1.14	**Acceptable**
Benzo(g,h,i)perylene [1, 4] 5590 / O-121-1 - Lot 012490	136 µg/L	56.5 to 185 77.9 to 164	0.71	**Acceptable**
Benzo(k)fluoranthene [1, 4] 5600 / O-121-1 - Lot 012490	133 µg/L	30.0 to 170 53.3 to 146	1.42	**Acceptable**
Benzyl alcohol [4] 5630 / O-121-2B - Lot 012455	83 µg/L	13.6 to 177	-0.01	**Acceptable**
Carbazole [4] 5680 / O-121-2B - Lot 012455	53 µg/L	15.9 to 66.9	1.36	**Acceptable**
4-Chloroaniline [4] 5745 / O-121-2B - Lot 012455	27 µg/L	0.00 to 62.6	0.04	**Acceptable**
Chrysene [1, 4] 5855 / O-121-1 - Lot 012490	128 µg/L	40.9 to 134 56.4 to 119	2.59	**Acceptable**
Dibenz(a,h) anthracene [1, 4] 5895 / O-121-1 - Lot 012490	93 µg/L	20.8 to 104 34.7 to 90.5	2.18	**Acceptable**
Fluoranthene [1, 4] 6265 / O-121-1 - Lot 012490	136 µg/L	50.7 to 138 65.1 to 123	2.89	**Acceptable**
Fluorene [1, 4] 6270 / O-121-1 - Lot 012490	158 µg/L	77.1 to 200 97.5 to 179	0.96	**Acceptable**
Indeno(1,2,3-cd) pyrene [1, 4] 6315 / O-121-1 - Lot 012490	81 µg/L	16.5 to 84.7 27.9 to 73.4	2.67	**Acceptable**
1-Methylnaphthalene [4] 6380 / O-121-2B - Lot 012455	142 µg/L	15.8 to 205 47.4 to 174	0.99	**Acceptable**
2-Nitroaniline [4] 6460 / O-121-2B - Lot 012455	145 µg/L	94.0 to 282	-1.69	**Acceptable**
3-Nitroaniline [4] 6465 / O-121-2B - Lot 012455	114 µg/L	24.8 to 231	-0.40	**Acceptable**
4-Nitroaniline [4] 6470 / O-121-2B - Lot 012455	55 µg/L	26.9 to 108 40.4 to 94.2	-0.91	**Acceptable**
Phenanthrene [1, 4] 6615 / O-121-1 - Lot 012490	65 µg/L	25.4 to 65.6 32.1 to 58.9	2.91	**Acceptable**
Pyrene [1, 4] 6665 / O-121-1 - Lot 012490	65 µg/L	18.9 to 80.9 29.2 to 70.6	1.46	**Acceptable**

Group Analysis Summary
Acceptable 25 / 25
Score 100.0% - **(Acceptable)**

Demands

Analysis
SM 18/19/20th ED 5210 B
Other

Method Number 20027401
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation

Demands (continued)

Analysis
SM 18/19/20th ED 5210 B
Other

(continued)
Method Number 20027401
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Biochemical oxygen demand (BOD) [1, 3, 4] 1530 / I-026 - Lot 012294	34 mg/L	16.9 to 51.0 22.6 to 45.3	0.01	**Acceptable**
Carbonaceous BOD (CBOD) [1, 3, 4] 1555 / I-026 - Lot 012294	27 mg/L	13.1 to 45.6 18.5 to 40.1	-0.43	**Acceptable**

Analysis
EPA 410.4
Other

Method Number 10077006
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Chemical oxygen demand (COD) [1, 3, 4] 1565 / I-026 - Lot 012294	50 mg/L	37.5 to 67.6 42.5 to 62.6	-0.50	**Acceptable**

Herbicides

Herbicides

Analysis
EPA 615
Other

Method Number 10105609
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Pentachlorophenol [4] 6605 / O-094 - Lot 012468	4.6 µg/L	2.51 to 7.53	-0.31	**Acceptable**
Acifluorfen [4] 8505 / O-094 - Lot 012468	4.0 µg/L	0.453 to 7.44	0.05	**Acceptable**
Bentazon [4] 8530 / O-094 - Lot 012468	7.2 µg/L	1.11 to 10.0 2.59 to 8.52	1.11	**Acceptable**
2,4-D Total [1, 4] 8545 / O-094 - Lot 012468	4.0 µg/L	0.00 to 9.60 1.18 to 7.92	-0.33	**Acceptable**
2,4-DB [4] 8560 / O-094 - Lot 012468	8.0 µg/L	4.32 to 12.9	-0.37	**Acceptable**
Dicamba [1, 4] 8595 / O-094 - Lot 012468	7.1 µg/L	2.79 to 14.4 4.72 to 12.4	-0.77	**Acceptable**
3,5-Dichlorobenzoic acid [4] 8600 / O-094 - Lot 012468	7.8 µg/L	2.04 to 14.3 4.09 to 12.3	-0.18	**Acceptable**
Dichloroprop [4] 8605 / O-094 - Lot 012468	6.4 µg/L	3.65 to 11.0	-0.95	**Acceptable**
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) [4] 8620 / O-094 - Lot 012468	5.1 µg/L	0.00 to 12.8	-0.27	**Acceptable**
Picloram [4] 8645 / O-094 - Lot 012468	2.7 µg/L	0.00 to 5.98	0.18	**Acceptable**
Silvex (2,4,5-TP) [1, 4] 8650 / O-094 - Lot 012468	2.6 µg/L	0.218 to 4.34 0.905 to 3.65	0.47	**Acceptable**
2,4,5-T [1, 4] 8655 / O-094 - Lot 012468	7.3 µg/L	0.910 to 12.1 2.78 to 10.3	0.42	**Acceptable**

Group Analysis Summary
Acceptable 12 / 12
Score 100.0% - **(Acceptable)**

Minerals

Minerals (continued)

Analysis
SM 18/19/20thED 2320 B
Other
Method Number 20003003
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Alkalinity as CaCO3 [1, 3, 4] 1505 / I-027-12 - Lot 012281/2	28 mg/L	22.2 to 32.9 24.0 to 31.1	0.24	**Acceptable**

Analysis
SM 18/19/20thED 2340 B
Other
Method Number 20003401
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Hardness, total as CaCO3 [1, 3, 4] 1755 / I-027-12 - Lot 012281/2	134 mg/L	129 to 157 133 to 153	-1.89	**Acceptable**

Analysis
SM 17/18/19/20thED 2510 B
Other
Method Number 20003809
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Specific conductance, Conductivity (25°C) [1, 3, 4] 1610 / I-027-12 - Lot 012281/2	424 µmhos/cm	375 to 470 394 to 452	0.07	**Acceptable**

Analysis
SM 18th ED 4500-S D
Other
Method Number 20026204
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Sulfide [1, 4] 2005 / I-257 - Lot 011819	5.44 mg/L	2.53 to 8.42 3.51 to 7.43	-0.03	**Acceptable**

Analysis
EPA 300.0
Ion Chromatography Electroconductivity
Method Number 10053006
Technology Code IC-COND

	Result Units	Accept / Warn	Z	Evaluation
Chloride [1, 3, 4] 1575 / I-051 - Lot 012319	88 mg/L	74.9 to 100 79.1 to 95.8	0.13	**Acceptable**
Fluoride [1, 3, 4] 1730 / I-051 - Lot 012319	2.3 mg/L	1.80 to 2.60 1.94 to 2.47	0.73	**Acceptable**
Sulfate [1, 3, 4] 2000 / I-051 - Lot 012319	27 mg/L	23.1 to 34.0 24.9 to 32.2	-0.84	**Acceptable**

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry
Method Number 10013408
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Evaluation
Calcium, Ca [1, 3, 4] 1035 / I-027-12 - Lot 012281/2	12.1 mg/L	10.9 to 14.7 11.6 to 14.0	-1.11	**Acceptable**
Magnesium, Mg [1, 3, 4] 1085 / I-027-12 - Lot 012281/2	25.1 mg/L	23.3 to 31.2 24.6 to 29.9	-1.65	**Acceptable**
Potassium, K [1, 3, 4] 1125 / I-027-12 - Lot 012281/2	9.64 mg/L	7.54 to 11.4 8.19 to 10.8	0.23	**Acceptable**
Sodium, Na [1, 3, 4] 1155 / I-027-12 - Lot 012281/2	13.1 mg/L	10.3 to 14.2 10.9 to 13.6	1.29	**Acceptable**

Analysis
SM 18thED 2540 B
Gravimetry
Method Number 20004608
Technology Code GRAV

	Result Units	Accept / Warn	Z	Evaluation

Minerals (continued)

Analysis
SM 18thED 2540 B
Gravimetry

(continued)
Method Number 20004608
Technology Code GRAV

	Result Units	Accept / Warn	Z	Evaluation
Residue, total (TS) [1, 4] 1950 / I-079 - Lot 012358	370 mg/L	319 to 423	-0.08	**Acceptable**

Analysis
SM 18/19/20thED 2540 C
Gravimetry

Method Number 20004404
Technology Code GRAV

	Result Units	Accept / Warn	Z	Evaluation
Residue-filterable (TDS) [1, 3, 4] 1955 / I-079 - Lot 012358	320 mg/L	253 to 417 280 to 390	-0.56	**Acceptable**

Miscellaneous Analytes

Analysis
EPA 180.1
Other

Method Number 10011402
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Turbidity [1, 4, 5] 2055 / I-250 - Lot 012366	16.7 NTU	11.8 to 20.2 13.2 to 18.8	0.52	**Acceptable**

Analysis
EPA 335.1
Other

Method Number 10059800
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Amenable cyanide [4] 1510 / I-251 - Lot 012351	0.308 mg/L	0.163 to 0.479 0.216 to 0.426	-0.25	**Acceptable**

Analysis
EPA 335.4
Other

Method Number 10061208
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Total cyanide [1, 3, 4] 1645 / I-031 - Lot 002089	0.880 mg/L	0.616 to 1.28 0.727 to 1.17	-0.62	**Acceptable**

Analysis
EPA 420.2
Other

Method Number 10079604
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Total phenolics [1, 3, 4] 1905 / I-032 - Lot 002050	0.052 mg/L	0.0365 to 0.126 0.0515 to 0.111	-1.97	**Acceptable**

Analysis
SM 18th ED 2310 B
Other

Method Number 20002806
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Acidity, as CaCO3 [1, 4, 5] 1500 / I-248 - Lot 012313	790 mg/L	701 to 877 731 to 848	0.02	**Acceptable**

Analysis
SM 18/19/20/21stED 4500-Cl G
Other

Method Number 20015207
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation

Miscellaneous Analytes (continued)

Analysis
SM 18/19/20/21stED 4500-Cl G
Other

(continued)
Method Number 20015207
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Total residual chlorine [1, 3, 4] 1940 / I-033 - Lot 012340	0.61 mg/L	0.441 to 0.765 0.495 to 0.711	0.13	**Acceptable**

Analysis
EPA 300.0
Ion Chromatography Electroconductivity

Method Number 10053006
Technology Code IC-COND

	Result Units	Accept / Warn	Z	Evaluation
Bromide [1, 4, 5] 1540 / I-051 - Lot 012319	2.3 mg/L	1.66 to 3.38	-0.77	**Acceptable**

Analysis
SM 18thED 2540 D
Gravimetry

Method Number 20004802
Technology Code GRAV

	Result Units	Accept / Warn	Z	Evaluation
Residue-nonfilterable (TSS) [1, 3, 4] 1960 / I-079 - Lot 012358	40 mg/L	31.6 to 48.6 34.5 to 45.8	-0.04	**Acceptable**

Analysis
SM 17/18/19/20/21stED 4500-H+-B
Ion Selective Electrode

Method Number 20016404
Technology Code ISE

	Result Units	Accept / Warn	Z	Evaluation
pH [1, 3, 4] 1900 / I-027-3 - Lot 012261	6.20 Units	5.98 to 6.38	0.20	**Acceptable**

Analysis
SM 18th ED 2540 F
Gravimetry

Method Number 20005009
Technology Code GRAV

	Result Units	Accept / Warn	Z	Evaluation
Residue-settleable [1, 4, 5] 1965 / I-253 - Lot 012357	15 mL/L	10.5 to 18.5 11.8 to 17.2	0.37	**Acceptable**

Analysis
ASTM D2036-91B
OTHER

Method Number 30011202
Technology Code OTHER

	Result Units	Accept / Warn	Z	Evaluation
Cyanide, WAD [4] 1647 / I-251 - Lot 012351	0.254 mg/L	0.223 to 0.413 0.254 to 0.382	-2.01	**Acceptable**

Nutrients

Analysis
EPA 350.1
Other

Method Number 10063204
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Ammonia as N [1, 3, 4] 1515 / I-028-1 - Lot 012305	12.9 mg/L	9.49 to 16.1 10.6 to 15.0	0.09	**Acceptable**

Analysis
EPA 351.2
Other

Method Number 10065006
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation

Nutrients (continued)

Analysis
EPA 351.2
Other

(continued)
Method Number 10065006
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Kjeldahl nitrogen, total (TKN) [1, 2, 3, 4] 1795 / I-028-2 - Lot 012332	13.5 mg/L	7.77 to 15.2 9.01 to 13.9	1.64	**Acceptable**

Analysis
EPA 365.1
Other

Method Number 10069600
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Orthophosphate as P [1, 3, 4] 1870 / I-028-1 - Lot 012305	4.23 mg/L	3.25 to 4.68 3.49 to 4.44	1.11	**Acceptable**
Phosphorus, total [1, 2, 3, 4] 1910 / I-028-2 - Lot 012332	2.13 mg/L	1.63 to 2.50 1.78 to 2.35	0.45	**Acceptable**

Analysis
EPA 300.0
Ion Chromatography Electroconductivity

Method Number 10053006
Technology Code IC-COND

	Result Units	Accept / Warn	Z	Evaluation
Nitrate as N [1, 3, 4] 1810 / I-028-1 - Lot 012305	15.0 mg/L	12.0 to 18.6 13.1 to 17.5	-0.26	**Acceptable**
Nitrate as N [1, 3, 4] 1810 / I-051 - Lot 012319	36.9 mg/L	28.1 to 43.5 30.7 to 40.9	0.42	**Acceptable**
Nitrate+nitrite as N [1, 4] 1820 / I-028-1 - Lot 012305	15.0 mg/L	11.9 to 18.5 13.0 to 17.4	-0.17	**Acceptable**
Nitrite as N [1, 4] 1840 / I-028-3 - Lot 012334	3.22 mg/L	2.91 to 3.92 3.07 to 3.75	-1.14	**Acceptable**
Nitrite as N [1, 4] 1840 / I-051 - Lot 012319	3.44 mg/L	2.12 to 3.86	1.56	**Acceptable**
Orthophosphate as P [1, 3, 4] 1870 / I-051 - Lot 012319	3.5 mg/L	2.90 to 4.21 3.12 to 3.99	-0.25	**Acceptable**

PCBs in Water

Analysis
EPA 608
Gas Chromatography - Electron Capture Detection

Method Number 10103603
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Evaluation
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1221 (PCB-1221) [1, 4] 8885 / O-020 - Lot 002157	<1.0 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1232 (PCB-1232) [1, 3, 4] 8890 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1248 (PCB-1248) [1, 3, 4] 8900 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / O-020 - Lot 002157	3.9 µg/L	1.80 to 5.19 2.37 to 4.62	0.72	**Acceptable**
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**

Pesticides

Pesticides

Analysis
EPA 608
Gas Chromatography - Electron Capture Detection

Method Number 10103603
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Evaluation
Aldrin [1, 3, 4] 7025 / O-122-1 - Lot 012439	5.6 µg/L	2.17 to 10.6 3.58 to 9.21	-0.56	**Acceptable**
delta-BHC [1, 4] 7105 / O-122-2 - Lot 012443	4.1 µg/L	1.15 to 7.34	-0.14	**Acceptable**
alpha-BHC (alpha-Hexachlorocyclohexane) [1, 4] 7110 / O-122-2 - Lot 012443	9.5 µg/L	4.25 to 12.9 5.70 to 11.5	0.64	**Acceptable**
beta-BHC (beta-Hexachlorocyclohexane) [1, 4] 7115 / O-122-2 - Lot 012443	11 µg/L	5.06 to 16.3 6.93 to 14.4	0.18	**Acceptable**
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane) [1, 4] 7120 / O-122-2 - Lot 012443	2.9 µg/L	1.28 to 4.61 1.84 to 4.06	-0.09	**Acceptable**
alpha-Chlordane [1, 4] 7240 / O-122-2 - Lot 012443	3.8 µg/L	1.99 to 6.05 2.67 to 5.38	-0.33	**Acceptable**
gamma-Chlordane [1, 4] 7245 / O-122-2 - Lot 012443	3.4 µg/L	1.82 to 5.99 2.51 to 5.29	-0.73	**Acceptable**
Chlordane (total) [1, 3, 4] 7250 / O-024-2 - Lot 012428	11 µg/L	4.73 to 18.2 6.97 to 16.0	-0.21	**Acceptable**
4,4'-DDD [1, 3, 4] 7355 / O-122-1 - Lot 012439	6.6 µg/L	3.04 to 9.88 4.18 to 8.74	0.12	**Acceptable**
4,4'-DDE [1, 3, 4] 7360 / O-122-1 - Lot 012439	8.6 µg/L	4.39 to 12.6 5.76 to 11.2	0.08	**Acceptable**
4,4'-DDT [1, 3, 4] 7365 / O-122-1 - Lot 012439	7.6 µg/L	3.39 to 12.8 4.96 to 11.2	-0.32	**Acceptable**
Dieldrin [1, 3, 4] 7470 / O-122-1 - Lot 012439	8.9 µg/L	5.26 to 13.3 6.60 to 12.0	-0.28	**Acceptable**
Endosulfan I [1, 4] 7510 / O-122-2 - Lot 012443	7.6 µg/L	2.26 to 11.7 3.83 to 10.1	0.41	**Acceptable**
Endosulfan II [1, 4] 7515 / O-122-2 - Lot 012443	11 µg/L	3.36 to 14.3 5.18 to 12.4	1.21	**Acceptable**
Endosulfan sulfate [1, 4] 7520 / O-122-2 - Lot 012443	3.0 µg/L	1.25 to 5.01 1.87 to 4.38	-0.20	**Acceptable**
Endrin aldehyde [1, 4] 7530 / O-122-2 - Lot 012443	14 µg/L	6.01 to 28.2 9.70 to 24.5	-0.84	**Acceptable**
Endrin ketone [1, 4, 5] 7535 / O-122-2 - Lot 012443	3.8 µg/L	1.92 to 6.15 2.82 to 5.24	-0.33	**Acceptable**
Endrin [1, 4] 7540 / O-122-2 - Lot 012443	16 µg/L	5.74 to 24.5 8.87 to 21.4	0.27	**Acceptable**
Heptachlor [1, 3, 4] 7685 / O-122-1 - Lot 012439	5.4 µg/L	3.01 to 12.7 4.62 to 11.1	-1.52	**Acceptable**
Heptachlor epoxide [1, 3, 4] 7690 / O-122-1 - Lot 012439	8.3 µg/L	4.76 to 13.2 6.17 to 11.8	-0.49	**Acceptable**
Methoxychlor [1, 4] 7810 / O-122-2 - Lot 012443	12 µg/L	3.86 to 22.3 6.93 to 19.2	-0.35	**Acceptable**
Toxaphene (Chlorinated camphene) [1, 4] 8250 / O-093 - Lot 012435	21 µg/L	0.00 to 47.6 5.72 to 39.3	-0.18	**Acceptable**

Group Analysis Summary

Acceptable 22 / 22
Score 100.0% - **(Acceptable)**

Trace Metals

Analysis
SM 18th ED 3500-Cr D
Other

Method Number 20009001
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Chromium VI, Cr(VI) [1, 4] 1045 / I-034-3 - Lot 012301	362 µg/L	256 to 374 275 to 355	2.37	**Acceptable**

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10013408
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Evaluation
Aluminum, Al [1, 3, 4] 1000 / I-305-1 - Lot 012306	701 µg/L	565 to 858 614 to 809	-0.21	**Acceptable**
Antimony, Sb [1, 3, 4] 1005 / I-305-2 - Lot 012307/3	138 µg/L	132 to 245 151 to 226	-2.67	**Acceptable**
Arsenic, As [1, 3, 4] 1010 / I-305-1 - Lot 012306	161 µg/L	131 to 190 140 to 180	0.08	**Acceptable**
Barium, Ba [1, 4] 1015 / I-305-2 - Lot 012307/3	592 µg/L	517 to 672 543 to 646	-0.10	**Acceptable**
Beryllium, Be [1, 3, 4] 1020 / I-305-1 - Lot 012306	64.2 µg/L	54.5 to 74.3 57.8 to 71.0	-0.06	**Acceptable**
Boron, B [1, 4] 1025 / I-305-2 - Lot 012307/3	1100 µg/L	921 to 1310 985 to 1240	-0.21	**Acceptable**
Cadmium, Cd [1, 3, 4] 1030 / I-305-1 - Lot 012306	147 µg/L	126 to 170 134 to 163	-0.18	**Acceptable**
Chromium, Cr (total) [1, 3, 4] 1040 / I-305-1 - Lot 012306	99.1 µg/L	84.9 to 115 89.9 to 110	-0.16	**Acceptable**
Cobalt, Co [1, 3, 4] 1050 / I-305-1 - Lot 012306	209 µg/L	187 to 241 196 to 232	-0.53	**Acceptable**
Copper, Cu [1, 3, 4] 1055 / I-305-1 - Lot 012306	307 µg/L	302 to 368 313 to 357	-2.51	**Acceptable**
Iron, Fe [1, 3, 4] 1070 / I-305-1 - Lot 012306	370 µg/L	362 to 471 380 to 453	-2.56	**Acceptable**
Lead, Pb [1, 3, 4] 1075 / I-305-1 - Lot 012306	296 µg/L	262 to 345 276 to 331	-0.54	**Acceptable**
Manganese, Mn [1, 3, 4] 1090 / I-305-1 - Lot 012306	678 µg/L	617 to 763 641 to 739	-0.49	**Acceptable**
Molybdenum, Mo [1, 3, 4] 1100 / I-305-2 - Lot 012307/3	75.5 µg/L	30.4 to 137	-0.45	**Acceptable**
Nickel, Ni [1, 3, 4] 1105 / I-305-1 - Lot 012306	160 µg/L	141 to 186 148 to 178	-0.45	**Acceptable**
Selenium, Se [1, 3, 4] 1140 / I-305-1 - Lot 012306	497 µg/L	448 to 656 483 to 621	-1.59	**Acceptable**
Silver, Ag [1, 3, 4] 1150 / I-305-2 - Lot 012307/3	91.5 µg/L	58.6 to 104	1.32	**Acceptable**
Strontium, Sr [1, 3, 4] 1160 / I-305-2 - Lot 012307/3	207 µg/L	191 to 250 201 to 240	-1.37	**Acceptable**
Thallium, Tl [1, 3, 4] 1165 / I-305-2 - Lot 012307/3	373 µg/L	323 to 496 352 to 467	-1.26	**Acceptable**
Tin, Sn [1, 3, 4] 1175 / I-305-2 - Lot 012307/3	1640 µg/L	1320 to 2020 1440 to 1910	-0.27	**Acceptable**

Trace Metals (continued)

Analysis
EPA 200.7
Atomic Emission - Inductvely Coupled Plasma Spectrometry

(continued)
Method Number 10013408
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Evaluation
Titanium, Ti [1, 3, 4] 1180 / I-305-2 - Lot 012307/3	179 µg/L	148 to 195 156 to 187	0.92	**Acceptable**
Vanadium, V [1, 3, 4] 1185 / I-305-1 - Lot 012306	750 µg/L	675 to 861 706 to 830	-0.57	**Acceptable**
Zinc, Zn [1, 3, 4] 1190 / I-305-1 - Lot 012306	700 µg/L	581 to 779 614 to 746	0.60	**Acceptable**

Analysis
EPA 245.1
Atomic Absorption - Cold Vapor Spectrometry

Method Number 10036201
Technology Code CVAAS

	Result Units	Accept / Warn	Z	Evaluation
Mercury, Hg [1, 3, 4] 1095 / I-305-1 - Lot 012306	5.08 µg/L	0.60 to 9.00	0.31	**Acceptable**

Volatiles

Volatiles

Analysis
EPA 624
Gas Chromatography - Mass Spectrometry

Method Number 10107207
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Acetone [4] 4315 / O-120-3B - Lot 012486	112 µg/L	21.5 to 186	0.30	**Acceptable**
Acrolein (Propenal) [4] 4325 / O-120-3B - Lot 012486	42 µg/L	0.00 to 95.0	0.43	**Acceptable**
Acrylonitrile [4] 4340 / O-120-3B - Lot 012486	118 µg/L	70.1 to 175	-0.27	**Acceptable**
Benzene [1, 3, 4] 4375 / O-120-1 - Lot 012480	9.4 µg/L	7.63 to 16.4 9.10 to 15.0	-1.79	**Acceptable**
Bromodichloromethane [1, 3, 4] 4395 / O-120-2 - Lot 012481	51 µg/L	41.0 to 78.3 47.2 to 72.1	-1.39	**Acceptable**
Bromoform [1, 3, 4] 4400 / O-120-2 - Lot 012481	88 µg/L	59.7 to 126 70.8 to 115	-0.46	**Acceptable**
2-Butanone (Methyl ethyl ketone, MEK) [4] 4410 / O-120-3B - Lot 012486	47 µg/L	0.00 to 115	-0.32	**Acceptable**
Carbon disulfide [4] 4450 / O-120-3B - Lot 012486	56 µg/L	32.7 to 108	-1.15	**Acceptable**
Carbon tetrachloride [1, 3, 4] 4455 / O-120-2 - Lot 012481	112 µg/L	74.1 to 186 92.7 to 167	-0.97	**Acceptable**
Chlorobenzene [1, 3, 4] 4475 / O-120-2 - Lot 012481	102 µg/L	79.4 to 137 89.1 to 128	-0.66	**Acceptable**
Chloroethane [1, 4] 4485 / O-120-3A - Lot 012482	82 µg/L	30.7 to 123	0.35	**Acceptable**
2-Chloroethyl vinyl ether [4] 4500 / O-120-3B - Lot 012486	87 µg/L	18.3 to 169	-0.26	**Acceptable**
Chloroform [1, 3, 4] 4505 / O-120-2 - Lot 012481	29 µg/L	24.0 to 45.5 27.6 to 41.9	-1.60	**Acceptable**
1,2-Dibromo-3-chloropropane (DBCP) [4] 4570 / O-120-3B - Lot 012486	58 µg/L	18.4 to 108	-0.34	**Acceptable**

Volatiles (continued)

Volatiles

Analysis
EPA 624
Gas Chromatography - Mass Spectrometry

(continued)
Method Number 10107207
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Dibromochloromethane [1, 3, 4] 4575 / O-120-2 - Lot 012481	36 µg/L	29.8 to 58.1 34.5 to 53.4	-1.69	**Acceptable**
1,2-Dibromoethane (EDB, Ethylene dibromide) [4] 4585 / O-120-3B - Lot 012486	15 µg/L	8.41 to 22.2 10.7 to 19.9	-0.13	**Acceptable**
Dibromomethane [4] 4595 / O-120-3B - Lot 012486	19 µg/L	12.8 to 27.7	-0.52	**Acceptable**
1,2-Dichlorobenzene [1, 3, 4] 4610 / O-120-1 - Lot 012480	16 µg/L	10.7 to 21.5 12.5 to 19.7	-0.06	**Acceptable**
1,4-Dichlorobenzene [1, 3, 4] 4620 / O-120-1 - Lot 012480	25 µg/L	17.8 to 34.6 20.6 to 31.8	-0.43	**Acceptable**
Dichlorodifluoromethane [4] 4625 / O-120-3B - Lot 012486	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
1,1-Dichloroethane [1, 4, 5] 4630 / O-120-3A - Lot 012482	50 µg/L	38.7 to 77.4 45.2 to 71.0	-1.25	**Acceptable**
1,2-Dichloroethane [1, 3, 4] 4635 / O-120-2 - Lot 012481	126 µg/L	103 to 193 118 to 178	-1.46	**Acceptable**
1,1-Dichloroethylene [1, 4] 4640 / O-120-3A - Lot 012482	67 µg/L	41.3 to 116 53.7 to 104	-0.94	**Acceptable**
cis-1,2-Dichloroethylene [1, 4, 5] 4645 / O-120-3A - Lot 012482	118 µg/L	110 to 196 124 to 182	-2.43	**Acceptable**
1,2-Dichloropropane [1, 4] 4655 / O-120-3A - Lot 012482	65 µg/L	45.0 to 90.5 52.6 to 82.9	-0.36	**Acceptable**
cis-1,3-Dichloropropene [1, 4, 5] 4680 / O-120-3A - Lot 012482	48 µg/L	36.5 to 67.9	-0.56	**Acceptable**
trans-1,3-Dichloropropene [1, 4] 4685 / O-120-3A - Lot 012482	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
trans-1,2-Dichloroethylene [1, 4] 4700 / O-120-3A - Lot 012482	90 µg/L	67.7 to 145 80.7 to 132	-1.28	**Acceptable**
Ethylbenzene [1, 3, 4] 4765 / O-120-1 - Lot 012480	15 µg/L	10.2 to 20 2 11.9 to 18.6	-0.12	**Acceptable**
2-Hexanone [1, 4, 5] 4860 / O-120-3A - Lot 012482	88 µg/L	31.8 to 94.3 42.3 to 83.9	2.39	**Acceptable**
Methyl bromide (Bromomethane) [1, 4] 4950 / O-120-3A - Lot 012482	32 µg/L	15.6 to 62.2	-0.77	**Acceptable**
Methyl chloride (Chloromethane) [1, 4] 4960 / O-120-3A - Lot 012482	116 µg/L	53.6 to 214	-0.49	**Acceptable**
Methylene chloride (Dichloromethane) [1, 3, 4] 4975 / O-120-2 - Lot 012481	69 µg/L	51.5 to 116 62.3 to 105	-1.38	**Acceptable**
Styrene [1, 4] 5100 / O-120-3A - Lot 012482	96 µg/L	61.1 to 133 73.0 to 120	-0.06	**Acceptable**
1,1,1,2-Tetrachloroethane [4] 5105 / O-120-3B - Lot 012486	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
1,1,2,2-Tetrachloroethane [1, 4] 5110 / O-120-3A - Lot 012482	90 µg/L	57.9 to 143 72.0 to 129	-0.73	**Acceptable**
Tetrachloroethylene (Perchloroethylene) [1, 3, 4] 5115 / O-120-2 - Lot 012481	125 µg/L	75.7 to 172 91.7 to 156	0.08	**Acceptable**

Volatiles (continued)

Volatiles

Analysis
EPA 624
Gas Chromatography - Mass Spectrometry

(continued)
Method Number 10107207
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Toluene [1, 3, 4] 5140 / O-120-1 - Lot 012480	27 µg/L	20.4 to 37.3 23.3 to 34.5	-0.67	**Acceptable**
1,1,1-Trichloroethane [1, 3, 4] 5160 / O-120-2 - Lot 012481	29 µg/L	22.4 to 47.4 26.6 to 43.3	-1.42	**Acceptable**
1,1,2-Trichloroethane [1, 4] 5165 / O-120-3A - Lot 012482	90 µg/L	69.0 to 129 79.0 to 119	-0.90	**Acceptable**
Trichloroethene (Trichloroethylene) [1, 3, 4] 5170 / O-120-2 - Lot 012481	24 µg/L	15.9 to 33.7 18.9 to 30.7	-0.27	**Acceptable**
Trichlorofluoromethane [1, 4] 5175 / O-120-3A - Lot 012482	33 µg/L	19.7 to 78.7	-2.61	**Acceptable**
1,2,3-Trichloropropane [4] 5180 / O-120-3B - Lot 012486	112 µg/L	31.8 to 206	-0.24	**Acceptable**
Vinyl chloride [1, 4] 5235 / O-120-3A - Lot 012482	58 µg/L	33.3 to 133	-1.79	**Acceptable**
m+p-Xylene [4] 5240 / O-120-1 - Lot 012480	29 µg/L	14.7 to 39.2 18.8 to 35.2	0.49	**Acceptable**
o-Xylene [4] 5250 / O-120-1 - Lot 012480	16 µg/L	7.55 to 22.9 10.1 to 20.3	0.31	**Acceptable**
Xylene, total [1, 4] 5260 / O-120-1 - Lot 012480	45 µg/L	23.3 to 58.8 29.2 to 52.9	0.67	**Acceptable**

Group Analysis Summary

Acceptable 47 / 47
Score 100.0% - **(Acceptable)**

End of Dataset 1

Dataset

Dataset 2

Include in DMRQA Study

Evaluations from this dataset will be included in DMRQA 27.

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Alaska DEC
DEC Health Lab
386 Shera Hickman
CS Laboratory Approval Officer
5251 Hinkle Road
Anchorage AK 99507
UNITED STATES

Accrediting Labcode MT00005
Colorado Dept. of Public Health & Environment

610 Kelly Morgan
4300 S Cherry Creek Drive South (WQCD-CADM B2)
Denver CO 80246
UNITED STATES

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Idaho Bureau of Laboratories

383 Sandra Radwin
2220 Old Penitentiary Road
Boise ID 83712
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau
168 Jeff May
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

Accrediting Labcode MT00005
Nevada Division of Env. Protection

366 Sara Rairick
901 S Stewart Street
Ste 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

615 Tim Flor
523 East Capital
Pierre SD 57501
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII, TMS-Q

217 Jim Gindelberger
1595 Wynkoop Street
Denver CO 80202-1129
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 W. 25th Street
Cheyenne WY 82002
UNITED STATES

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
T-amylmethylether (TAME) 4370 / O-256 - Lot 012253	78 µg/L	56.1 to 104 64.1 to 96.1	-0.26	**Acceptable**
tert-Butyl alcohol 4420 / O-256 - Lot 012253	23 µg/L	11.9 to 47.7 17.9 to 41.7	-1.14	**Acceptable**
Ethyl-t-butylether (ETBE) 4770 / O-256 - Lot 012253	27 µg/L	11.3 to 45.3 17.0 to 39.6	-0.23	**Acceptable**
Methyl tert-butyl ether (MTBE) 5000 / O-256 - Lot 012253	58 µg/L	39.9 to 88.6 48.0 to 80.5	-0.77	**Acceptable**
Di-isopropylether (DIPE) 9375 / O-256 - Lot 012253	43 µg/L	18.2 to 72.8 27.3 to 63.7	-0.27	**Acceptable**

Acids

Acid Compouds - WPCHEM

Analysis
EPA 8270C
Gas Chromatography - Mass Spectrometry

Method Number 10185805
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Benzoic acid [4] 5610 / O-022 - Lot 012444	57 µg/L	26.4 to 185 52.8 to 158	-1.84	**Acceptable**
4-Chloro-3-methylphenol [4] 5700 / O-022 - Lot 012444	127 µg/L	42.7 to 141 59.2 to 125	2.13	**Acceptable**
2-Chlorophenol [1, 4] 5800 / O-022 - Lot 012444	188 µg/L	54.4 to 244 86.0 to 212	1.23	**Acceptable**
2,4-Dichlorophenol [1, 4] 6000 / O-022 - Lot 012444	135 µg/L	44.7 to 168 65.2 to 147	1.40	**Acceptable**
2,4-Dimethylphenol [1, 4] 6130 / O-022 - Lot 012444	76 µg/L	13.5 to 92.8 26.7 to 79.5	1.73	**Acceptable**
2,4-Dinitrophenol [1, 4] 6175 / O-022 - Lot 012444	182 µg/L	10.0 to 213 36.1 to 177	2.12	**Acceptable**
2-Methyl-4,6-dinitrophenol [1, 4] 6360 / O-022 - Lot 012444	171 µg/L	45.7 to 189 69.5 to 165	2.26	**Acceptable**
2-Methylphenol (o-Cresol) [1, 4] 6400 / O-022 - Lot 012444	54 µg/L	11.0 to 73.2 21.4 to 62.8	1.15	**Acceptable**
4-Methylphenol (p-Cresol) [1, 4] 6410 / O-022 - Lot 012444	86 µg/L	4.47 to 119 23.6 to 99.9	1.27	**Acceptable**
3+4-Methylphenol (m+p-Cresol) [1, 4] 6412 / O-022 - Lot 012444	86 µg/L	4.47 to 119 23.6 to 99.9	1.27	**Acceptable**
2-Nitrophenol [1, 4] 6490 / O-022 - Lot 012444	125 µg/L	32.9 to 186 58.4 to 161	0.61	**Acceptable**
4-Nitrophenol [1, 4] 6500 / O-022 - Lot 012444	60 µg/L	0.00 to 233 5.01 to 188	-0.79	**Acceptable**
Pentachlorophenol [1, 4] 6605 / O-022 - Lot 012444	118 µg/L	22.4 to 125 39.6 to 108	2.57	**Acceptable**
Phenol [1, 4] 6625 / O-022 - Lot 012444	66 µg/L	0.00 to 166 4.81 to 133	-0.10	**Acceptable**
2,4,5-Trichlorophenol [1, 4] 6835 / O-022 - Lot 012444	139 µg/L	36.5 to 131 52.3 to 115	3.49	**Not Acceptable**
2,4,6-Trichlorophenol [1, 4] 68400 / O-022 - Lot 012444	136 µg/L	58.9 to 228 87.0 to 200	-0.26	**Acceptable**

Group Analysis Summary

Acceptable 15 / 16
Score 93.8% - **(Acceptable)**

Base/Neutrals

Base/Neutrals

Analysis
EPA 8270C
Gas Chromatography - Mass Spectrometry

Method Number 10185805
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Naphthalene [1, 4] 5005 / O-121-1 - Lot 012490	50 µg/L	15.6 to 64.6 23.8 to 56.5	1.21	**Acceptable**
Acenaphthene [1, 4] 5500 / O-121-1 - Lot 012490	154 µg/L	58.8 to 178 78.7 to 158	1.78	**Acceptable**

Base/Neutrals (continued)

Base/Neutrals

(continued)

Analysis
EPA 8270C
Gas Chromatography - Mass Spectrometry

Method Number 10185805
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Acenaphthylene [1, 4] 5505 / O-121-1 - Lot 012490	101 µg/L	39.2 to 120 52.6 to 106	1.61	**Acceptable**
Anthracene [1, 4] 5555 / O-121-1 - Lot 012490	178 µg/L	77.3 to 228 102 to 203	1.00	**Acceptable**
Benzo(a)anthracene [1, 4] 5575 / O-121-1 - Lot 012490	172 µg/L	76.0 to 210 98.3 to 187	1.31	**Acceptable**
Benzo(a)pyrene [1, 4] 5580 / O-121-1 - Lot 012490	94 µg/L	34.5 to 114 47.8 to 101	1.49	**Acceptable**
Benzo(b)fluoranthene [1, 4] 5585 / O-121-1 - Lot 012490	106 µg/L	39.1 to 136 55.3 to 120	1.14	**Acceptable**
Benzo(g,h,i)perylene [1, 4] 5590 / O-121-1 - Lot 012490	136 µg/L	56.5 to 185 77.9 to 164	0.71	**Acceptable**
Benzo(k)fluoranthene [1, 4] 5600 / O-121-1 - Lot 012490	133 µg/L	30.0 to 170 53.3 to 146	1.42	**Acceptable**
Chrysene [1, 4] 5855 / O-121-1 - Lot 012490	128 µg/L	40.9 to 134 56.4 to 119	2.59	**Acceptable**
Dibenz(a,h) anthracene [1, 4] 5895 / O-121-1 - Lot 012490	93 µg/L	20.8 to 104 34.7 to 90.5	2.18	**Acceptable**
Fluoranthene [1, 4] 6265 / O-121-1 - Lot 012490	136 µg/L	50.7 to 138 65.1 to 123	2.89	**Acceptable**
Fluorene [1, 4] 6270 / O-121-1 - Lot 012490	158 µg/L	77.1 to 200 97.5 to 179	0.96	**Acceptable**
Indeno(1,2,3-cd) pyrene [1, 4] 6315 / O-121-1 - Lot 012490	81 µg/L	16.5 to 84.7 27.9 to 73.4	2.67	**Acceptable**
Phenanthrene [1, 4] 6615 / O-121-1 - Lot 012490	65 µg/L	25.4 to 65.6 32.1 to 58.9	2.91	**Acceptable**
Pyrene [1, 4] 6665 / O-121-1 - Lot 012490	65 µg/L	18.9 to 80.9 29.2 to 70.6	1.46	**Acceptable**

Group Analysis Summary

Acceptable 16 / 16
Score 100.0% - **(Acceptable)**

Analysis
EPA 625
Gas Chromatography - Mass Spectrometry

Method Number 10107401
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Pyridine [4] 5095 / O-121-2B - Lot 012455	49 µg/L	0.00 to 131	-0.58	**Acceptable**
Aniline [4] 5545 / O-121-2B - Lot 012455	81 µg/L	12.9 to 126	0.60	**Acceptable**
Benzyl alcohol [4] 5630 / O-121-2B - Lot 012455	83 µg/L	13.6 to 177	-0.01	**Acceptable**
Carbazole [4] 5680 / O-121-2B - Lot 012455	53 µg/L	15.9 to 66.9	1.36	**Acceptable**
4-Chloroaniline [4] 5745 / O-121-2B - Lot 012455	27 µg/L	0.00 to 62.6	0.04	**Acceptable**
1-Methylnaphthalene [4] 6380 / O-121-2B - Lot 012455	142 µg/L	15.8 to 205 47.4 to 174	0.99	**Acceptable**

Base/Neutrals (continued)

Base/Neutrals

Analysis
EPA 625
Gas Chromatography - Mass Spectrometry

(continued)
Method Number 10107401
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
2-Nitroaniline [4] 6460 / O-121-2B - Lot 012455	145 µg/L	94.0 to 282	-1.69	**Acceptable**
3-Nitroaniline [4] 6465 / O-121-2B - Lot 012455	114 µg/L	24.8 to 231	-0.40	**Acceptable**
4-Nitroaniline [4] 6470 / O-121-2B - Lot 012455	55 µg/L	26.9 to 108 40.4 to 94.2	-0.91	**Acceptable**

Herbicides

Herbicides

Analysis
EPA 8151A
Gas Chromatography - Electron Capture Detection

Method Number 10183207
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Evaluation
Pentachlorophenol [4] 6605 / O-094 - Lot 012468	4.3 µg/L	2.51 to 7.53	-0.52	**Acceptable**
Acifluorfen [4] 8505 / O-094 - Lot 012468	3.8 µg/L	0.453 to 7.44	-0.12	**Acceptable**
Bentazon [4] 8530 / O-094 - Lot 012468	7.0 µg/L	1.11 to 10.0 2.59 to 8.52	0.97	**Acceptable**
2,4-D Total [1, 4] 8545 / O-094 - Lot 012468	4.2 µg/L	0.00 to 9.60 1.18 to 7.92	-0.21	**Acceptable**
2,4-DB [4] 8560 / O-094 - Lot 012468	9.0 µg/L	4.32 to 12.9	0.22	**Acceptable**
Dicamba [1, 4] 8595 / O-094 - Lot 012468	6.6 µg/L	2.79 to 14.4 4.72 to 12.4	-1.03	**Acceptable**
3,5-Dichlorobenzoic acid [4] 8600 / O-094 - Lot 012468	7.2 µg/L	2.04 to 14.3 4.09 to 12.3	-0.47	**Acceptable**
Dichloroprop [4] 8605 / O-094 - Lot 012468	6.7 µg/L	3.65 to 11.0	-0.64	**Acceptable**
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) [4] 8620 / O-094 - Lot 012468	4.6 µg/L	0.00 to 12.8	-0.48	**Acceptable**
Picloram [4] 8645 / O-094 - Lot 012468	2.2 µg/L	0.00 to 5.98	-0.26	**Acceptable**
Silvex (2,4,5-TP) [1, 4] 8650 / O-094 - Lot 012468	2.6 µg/L	0.218 to 4.34 0.905 to 3.65	0.47	**Acceptable**
2,4,5-T [1, 4] 8655 / O-094 - Lot 012468	7.1 µg/L	0.910 to 12.1 2.78 to 10.3	0.31	**Acceptable**

Group Analysis Summary
Acceptable 12 / 12
Score 100.0% - **(Acceptable)**

Minerals

Analysis
SM 18th ED 4500-S E
Other

Method Number 20026408
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation

Minerals (continued)

Analysis
SM 18th ED 4500-S E
Other

(continued)
Method Number 20026408
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Sulfide [1, 4] 2005 / I-257 - Lot 011819	5.6 mg/L	2.53 to 8.42 3.51 to 7.43	0.13	**Acceptable**

Analysis
EPA 6010A
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10155405
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Evaluation
Calcium, Ca [1, 3, 4] 1035 / I-027-12 - Lot 012281/2	12.1 mg/L	10.9 to 14.7 11.6 to 14.0	-1.11	**Acceptable**
Magnesium, Mg [1, 3, 4] 1085 / I-027-12 - Lot 012281/2	25.1 mg/L	23.3 to 31.2 24.6 to 29.9	-1.65	**Acceptable**
Potassium, K [1, 3, 4] 1125 / I-027-12 - Lot 012281/2	9.64 mg/L	7.54 to 11.4 8.19 to 10.8	0.23	**Acceptable**
Sodium, Na [1, 3, 4] 1155 / I-027-12 - Lot 012281/2	13.1 mg/L	10.3 to 14.2 10.9 to 13.6	1.29	**Acceptable**

Analysis
SM 18/19/20thED 4500 F-C
OTHER

Method Number 20012800
Technology Code OTHER

	Result Units	Accept / Warn	Z	Evaluation
Fluoride [1, 3, 4] 1730 / I-051 - Lot 012319	2.2 mg/L	1.80 to 2.60 1.94 to 2.47	-0.02	**Acceptable**

Miscellaneous Analytes

Analysis
Kelada-01
OTHER

Method Number 0
Technology Code OTHER

	Result Units	Accept / Warn	Z	Evaluation
Total cyanide [1, 3, 4] 1645 / I-031 - Lot 002089	0.880 mg/L	0.616 to 1.28 0.727 to 1.17	-0.62	**Acceptable**

Nutrients

Analysis
EPA 353.2
Colorimetric

Method Number 10067206
Technology Code COLOR

	Result Units	Accept / Warn	Z	Evaluation
Nitrate as N [1, 3, 4] 1810 / I-028-1 - Lot 012305	15.9 mg/L	12.0 to 18 6 13.1 to 17 5	0.56	**Acceptable**
Nitrate+nitrite as N [1, 4] 1820 / I-028-1 - Lot 012305	15.9 mg/L	11.9 to 18 5 13.0 to 17 4	0.65	**Acceptable**
Nitrite as N [1, 4] 1840 / I-028-3 - Lot 012334	3.49 mg/L	2.91 to 3.92 3.07 to 3.75	0.46	**Acceptable**

PCBs in Oil

PCBs in Oil (continued)

Analysis
EPA 8082
Gas Chromatography - Electron Capture Detection

Method Number 10179007
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Evaluation
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / O-072 - Lot 002170	<2.0 mg/Kg	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1221 (PCB-1221) [4] 8885 / O-072 - Lot 002170	<2.0 mg/Kg	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1232 (PCB-1232) [4] 8890 / O-072 - Lot 002170	<2.0 mg/Kg	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / O-072 - Lot 002170	19 mg/Kg	2.41 to 40.4 8.74 to 34.0	-0.38	**Acceptable**
Aroclor-1248 (PCB-1248) [4] 8900 / O-072 - Lot 002170	<2.0 mg/Kg	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / O-072 - Lot 002170	<2.0 mg/Kg	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / O-072 - Lot 002170	<2.0 mg/Kg	0.0 to 0.0 0.0 to 0.0		**Acceptable**

PCBs in Water

Analysis
EPA 8082
Gas Chromatography - Electron Capture Detection

Method Number 10179007
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Evaluation
Aroclor-1016 (PCB-1016) [1, 3, 4] 8880 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1221 (PCB-1221) [1, 4] 8885 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1232 (PCB-1232) [1, 3, 4] 8890 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1242 (PCB-1242) [1, 3, 4] 8895 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1248 (PCB-1248) [1, 3, 4] 8900 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
Aroclor-1254 (PCB-1254) [1, 3, 4] 8905 / O-020 - Lot 002157	3.9 µg/L	1.80 to 5.19 2.37 to 4.62	0.72	**Acceptable**
Aroclor-1260 (PCB-1260) [1, 3, 4] 8910 / O-020 - Lot 002157	<0.50 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**

Pesticides

Pesticides

Analysis
EPA 8081A
Gas Chromatography - Electron Capture Detection

Method Number 10178606
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Evaluation
Aldrin [1, 3, 4] 7025 / O-122-1 - Lot 012439	5.6 µg/L	2.17 to 10.6 3.58 to 9.21	-0.56	**Acceptable**
delta-BHC [1, 4] 7105 / O-122-2 - Lot 012443	4.1 µg/L	1.15 to 7.34	-0.14	**Acceptable**

Pesticides (continued)

Pesticides

(continued)

Analysis
EPA 8081A
Gas Chromatography - Electron Capture Detection

Method Number 10178606
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Evaluation
alpha-BHC (alpha-Hexachlorocyclohexane) [1, 4] 7110 / O-122-2 - Lot 012443	9.5 µg/L	4.25 to 12.9 5.70 to 11.5	0.64	**Acceptable**
beta-BHC (beta-Hexachlorocyclohexane) [1, 4] 7115 / O-122-2 - Lot 012443	11 µg/L	5.06 to 16.3 6.93 to 14.4	0.18	**Acceptable**
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane) [1, 4] 7120 / O-122-2 - Lot 012443	2.9 µg/L	1.28 to 4.61 1.84 to 4.06	-0.09	**Acceptable**
alpha-Chlordane [1, 4] 7240 / O-122-2 - Lot 012443	3.8 µg/L	1.99 to 6.05 2.67 to 5.38	-0.33	**Acceptable**
gamma-Chlordane [1, 4] 7245 / O-122-2 - Lot 012443	3.4 µg/L	1.82 to 5.99 2.51 to 5.29	-0.73	**Acceptable**
4,4'-DDD [1, 3, 4] 7355 / O-122-1 - Lot 012439	6.6 µg/L	3.04 to 9.88 4.18 to 8.74	0.12	**Acceptable**
4,4'-DDE [1, 3, 4] 7360 / O-122-1 - Lot 012439	8.6 µg/L	4.39 to 12.6 5.76 to 11.2	0.08	**Acceptable**
4,4'-DDT [1, 3, 4] 7365 / O-122-1 - Lot 012439	7.6 µg/L	3.39 to 12.8 4.96 to 11.2	-0.32	**Acceptable**
Dieldrin [1, 3, 4] 7470 / O-122-1 - Lot 012439	8.9 µg/L	5.26 to 13.3 6.60 to 12.0	-0.28	**Acceptable**
Endosulfan I [1, 4] 7510 / O-122-2 - Lot 012443	7.6 µg/L	2.26 to 11.7 3.83 to 10.1	0.41	**Acceptable**
Endosulfan II [1, 4] 7515 / O-122-2 - Lot 012443	11 µg/L	3.36 to 14.3 5.18 to 12.4	1.21	**Acceptable**
Endosulfan sulfate [1, 4] 7520 / O-122-2 - Lot 012443	3.0 µg/L	1.25 to 5.01 1.87 to 4.38	-0.20	**Acceptable**
Endrin aldehyde [1, 4] 7530 / O-122-2 - Lot 012443	14 µg/L	6.01 to 28.2 9.70 to 24.5	-0.84	**Acceptable**
Endrin ketone [1, 4, 5] 7535 / O-122-2 - Lot 012443	3.8 µg/L	1.92 to 6.15 2.82 to 5.24	-0.33	**Acceptable**
Endrin [1, 4] 7540 / O-122-2 - Lot 012443	16 µg/L	5.74 to 24.5 8.87 to 21.4	0.27	**Acceptable**
Heptachlor [1, 3, 4] 7685 / O-122-1 - Lot 012439	5.4 µg/L	3.01 to 12.7 4.62 to 11.1	-1.52	**Acceptable**
Heptachlor epoxide [1, 3, 4] 7690 / O-122-1 - Lot 012439	8.3 µg/L	4.76 to 13.2 6.17 to 11.8	-0.49	**Acceptable**
Methoxychlor [1, 4] 7810 / O-122-2 - Lot 012443	12 µg/L	3.86 to 22.3 6.93 to 19.2	-0.35	**Acceptable**
Toxaphene (Chlorinated camphene) [1, 4] 8250 / O-093 - Lot 012435	21 µg/L	0.00 to 47.6 5.72 to 39.3	-0.18	**Acceptable**

Group Analysis Summary

Acceptable 21 / 21
Score 100.0% - **(Acceptable)**

Analysis
EPA 8081
Gas Chromatography - Electron Capture Detection

Method Number 10178402
Technology Code GC-ECD

	Result Units	Accept / Warn	Z	Evaluation
Chlordane (total) [1, 3, 4] 7250 / O-024-2 - Lot 012428	11 µg/L	4.73 to 18.2 6.97 to 16.0	-0.21	**Acceptable**

Trace Metals

Analysis
EPA 7470A
Atomic Absorption - Cold Vapor Spectrometry

Method Number 10165807
Technology Code CVAAS

	Result Units	Accept / Warn	Z	Evaluation
Mercury, Hg [1, 3, 4] 1095 / I-305-1 - Lot 012306	5.08 µg/L	0.60 to 9.00	0.31	**Acceptable**

Analysis
EPA 6010A
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10155405
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Evaluation
Aluminum, Al [1, 3, 4] 1000 / I-305-1 - Lot 012306	701 µg/L	565 to 858 614 to 809	-0.21	**Acceptable**
Antimony, Sb [1, 3, 4] 1005 / I-305-2 - Lot 012307/3	138 µg/L	132 to 245 151 to 226	-2.67	**Acceptable**
Arsenic, As [1, 3, 4] 1010 / I-305-1 - Lot 012306	161 µg/L	131 to 190 140 to 180	0.08	**Acceptable**
Barium, Ba [1, 4] 1015 / I-305-2 - Lot 012307/3	592 µg/L	517 to 672 543 to 646	-0.10	**Acceptable**
Beryllium, Be [1, 3, 4] 1020 / I-305-1 - Lot 012306	64.2 µg/L	54.5 to 74.3 57.8 to 71.0	-0.06	**Acceptable**
Boron, B [1, 4] 1025 / I-305-2 - Lot 012307/3	1100 µg/L	921 to 1310 985 to 1240	-0.21	**Acceptable**
Cadmium, Cd [1, 3, 4] 1030 / I-305-1 - Lot 012306	147 µg/L	126 to 170 134 to 163	-0.18	**Acceptable**
Chromium, Cr (total) [1, 3, 4] 1040 / I-305-1 - Lot 012306	99.1 µg/L	84.9 to 115 89.9 to 110	-0.16	**Acceptable**
Cobalt, Co [1, 3, 4] 1050 / I-305-1 - Lot 012306	209 µg/L	187 to 241 196 to 232	-0.53	**Acceptable**
Copper, Cu [1, 3, 4] 1055 / I-305-1 - Lot 012306	307 µg/L	302 to 368 313 to 357	-2.51	**Acceptable**
Iron, Fe [1, 3, 4] 1070 / I-305-1 - Lot 012306	370 µg/L	362 to 471 380 to 453	-2.56	**Acceptable**
Lead, Pb [1, 3, 4] 1075 / I-305-1 - Lot 012306	296 µg/L	262 to 345 276 to 331	-0.54	**Acceptable**
Manganese, Mn [1, 3, 4] 1090 / I-305-1 - Lot 012306	678 µg/L	617 to 763 641 to 739	-0.49	**Acceptable**
Molybdenum, Mo [1, 3, 4] 1100 / I-305-2 - Lot 012307/3	75.5 µg/L	30.4 to 137	-0.45	**Acceptable**
Nickel, Ni [1, 3, 4] 1105 / I-305-1 - Lot 012306	160 µg/L	141 to 186 148 to 178	-0.45	**Acceptable**
Selenium, Se [1, 3, 4] 1140 / I-305-1 - Lot 012306	497 µg/L	448 to 656 483 to 621	-1.59	**Acceptable**
Silver, Ag [1, 3, 4] 1150 / I-305-2 - Lot 012307/3	91.5 µg/L	58.6 to 104	1.32	**Acceptable**
Strontium, Sr [1, 3, 4] 1160 / I-305-2 - Lot 012307/3	207 µg/L	191 to 250 201 to 240	-1.37	**Acceptable**
Thallium, Tl [1, 3, 4] 1165 / I-305-2 - Lot 012307/3	373 µg/L	323 to 496 352 to 467	-1.26	**Acceptable**
Tin, Sn [1, 3, 4] 1175 / I-305-2 - Lot 012307/3	1640 µg/L	1320 to 2020 1440 to 1910	-0.27	**Acceptable**

Trace Metals (continued)

(continued)

Analysis
EPA 6010A
Atomic Emission - Inductvely Coupled Plasma Spectrometry

Method Number 10155405
Technology Code ICP-AES

	Result Units	Accept / Warn	Z	Evaluation
Titanium, Ti [1, 3, 4] 1180 / I-305-2 - Lot 012307/3	179 µg/L	148 to 195 156 to 187	0.92	**Acceptable**
Vanadium, V [1, 3, 4] 1185 / I-305-1 - Lot 012306	750 µg/L	675 to 861 706 to 830	-0.57	**Acceptable**
Zinc, Zn [1, 3, 4] 1190 / I-305-1 - Lot 012306	700 µg/L	581 to 779 614 to 746	0.60	**Acceptable**

Volatiles

Volatiles

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Acetone [4] 4315 / O-120-3B - Lot 012486	106 µg/L	21.5 to 186	0.08	**Acceptable**
Acetonitrile [4] 4320 / O-120-3B - Lot 012486	30 µg/L	10.0 to 43.6	0.57	**Acceptable**
Acrolein (Propenal) [4] 4325 / O-120-3B - Lot 012486	<20 µg/L	0.00 to 95.0		**Acceptable**
Acrylonitrile [4] 4340 / O-120-3B - Lot 012486	115 µg/L	70.1 to 175	-0.44	**Acceptable**
Benzene [1, 3, 4] 4375 / O-120-1 - Lot 012480	10 µg/L	7.63 to 16.4 9.10 to 15.0	-1.39	**Acceptable**
Bromodichloromethane [1, 3, 4] 4395 / O-120-2 - Lot 012481	49 µg/L	41.0 to 78.3 47.2 to 72.1	-1.71	**Acceptable**
Bromoform [1, 3, 4] 4400 / O-120-2 - Lot 012481	92 µg/L	59.7 to 126 70.8 to 115	-0.10	**Acceptable**
2-Butanone (Methyl ethyl ketone, MEK) [4] 4410 / O-120-3B - Lot 012486	49 µg/L	0.00 to 115	-0.23	**Acceptable**
Carbon disulfide [4] 4450 / O-120-3B - Lot 012486	65 µg/L	32.7 to 108	-0.43	**Acceptable**
Carbon tetrachloride [1, 3, 4] 4455 / O-120-2 - Lot 012481	128 µg/L	74.1 to 186 92.7 to 167	-0.11	**Acceptable**
Chlorobenzene [1, 3, 4] 4475 / O-120-2 - Lot 012481	110 µg/L	79.4 to 137 89.1 to 128	0.17	**Acceptable**
Chloroethane [1, 4] 4485 / O-120-3A - Lot 012482	67 µg/L	30.7 to 123	-0.64	**Acceptable**
2-Chloroethyl vinyl ether [4] 4500 / O-120-3B - Lot 012486	90 µg/L	18.3 to 169	-0.14	**Acceptable**
Chloroform [1, 3, 4] 4505 / O-120-2 - Lot 012481	31 µg/L	24.0 to 45.5 27.6 to 41.9	-1.04	**Acceptable**
1,2-Dibromo-3-chloropropane (DBCP) [4] 4570 / O-120-3B - Lot 012486	50 µg/L	18.4 to 108	-0.88	**Acceptable**
Dibromochloromethane [1, 3, 4] 4575 / O-120-2 - Lot 012481	43 µg/L	29.8 to 58.1 34.5 to 53.4	-0.20	**Acceptable**
1,2-Dibromoethane (EDB, Ethylene dibromide) [4] 4585 / O-120-3B - Lot 012486	16 µg/L	8.41 to 22.2 10.7 to 19.9	0.31	**Acceptable**

Volatiles (continued)

Volatiles

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

(continued)
Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
Dibromomethane [4] 4595 / O-120-3B - Lot 012486	19 µg/L	12.8 to 27.7	-0.52	**Acceptable**
1,2-Dichlorobenzene [1, 3, 4] 4610 / O-120-1 - Lot 012480	15 µg/L	10.7 to 21.5 12.5 to 19.7	-0.61	**Acceptable**
1,3-Dichlorobenzene [1, 3, 4] 4615 / O-120-1 - Lot 012480	16 µg/L	10.1 to 21.0 11.9 to 19.1	0.26	**Acceptable**
1,4-Dichlorobenzene [1, 3, 4] 4620 / O-120-1 - Lot 012480	25 µg/L	17.8 to 34.6 20.6 to 31.8	-0.43	**Acceptable**
Dichlorodifluoromethane [4] 4625 / O-120-3B - Lot 012486	<1.0 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
1,1-Dichloroethane [1, 4, 5] 4630 / O-120-3A - Lot 012482	47 µg/L	38.7 to 77.4 45.2 to 71.0	-1.72	**Acceptable**
1,2-Dichloroethane [1, 3, 4] 4635 / O-120-2 - Lot 012481	136 µg/L	103 to 193 118 to 178	-0.79	**Acceptable**
1,1-Dichloroethylene [1, 4] 4640 / O-120-3A - Lot 012482	65 µg/L	41.3 to 116 53.7 to 104	-1.10	**Acceptable**
cis-1,2-Dichloroethylene [1, 4, 5] 4645 / O-120-3A - Lot 012482	132 µg/L	110 to 196 124 to 182	-1.45	**Acceptable**
1,2-Dichloropropane [1, 4] 4655 / O-120-3A - Lot 012482	60 µg/L	45.0 to 90.5 52.6 to 82.9	-1.02	**Acceptable**
cis-1,3-Dichloropropene [1, 4, 5] 4680 / O-120-3A - Lot 012482	43 µg/L	36.5 to 67.9	-1.22	**Acceptable**
trans-1,3-Dichloropropene [1, 4] 4685 / O-120-3A - Lot 012482	<1.0 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**
trans-1,2-Dichloroethylene [1, 4] 4700 / O-120-3A - Lot 012482	94 µg/L	67.7 to 145 80.7 to 132	-0.97	**Acceptable**
Ethylbenzene [1, 3, 4] 4765 / O-120-1 - Lot 012480	14 µg/L	10.2 to 20.2 11.9 to 18.6	-0.72	**Acceptable**
2-Hexanone [1, 4, 5] 4860 / O-120-3A - Lot 012482	52 µg/L	31.8 to 94.3 42.3 to 83.9	-1.06	**Acceptable**
Methyl bromide (Bromomethane) [1, 4] 4950 / O-120-3A - Lot 012482	30 µg/L	15.6 to 62.2	-0.99	**Acceptable**
Methyl chloride (Chloromethane) [1, 4] 4960 / O-120-3A - Lot 012482	130 µg/L	53.6 to 214	-0.11	**Acceptable**
Methylene chloride (Dichloromethane) [1, 3, 4] 4975 / O-120-2 - Lot 012481	59 µg/L	51.5 to 116 62.3 to 105	-2.30	**Acceptable**
4-Methyl-2-pentanone (MIBK) [1, 4] 4995 / O-120-3A - Lot 012482	83 µg/L	42.0 to 133 57.2 to 118	-0.30	**Acceptable**
Methyl tert-butyl ether (MTBE) [1, 4, 5] 5000 / O-120-1 - Lot 012480	17 µg/L	12.0 to 30.7 15.1 to 27.6	-1.40	**Acceptable**
Naphthalene [1, 4] 5005 / O-120-1 - Lot 012480	15 µg/L	8.08 to 32.3 12.1 to 28.3	-1.29	**Acceptable**
Styrene [1, 4] 5100 / O-120-3A - Lot 012482	97 µg/L	61.1 to 133 73.0 to 120	0.03	**Acceptable**
1,1,1,2-Tetrachloroethane [4] 5105 / O-120-3B - Lot 012486	<1.0 µg/L	0.0 to 0.0 0.0 to 0.0		**Acceptable**

Volatiles (continued)

Volatiles

(continued)

Analysis
EPA 8260B
Gas Chromatography - Mass Spectrometry

Method Number 10184802
Technology Code GC-MS

	Result Units	Accept / Warn	Z	Evaluation
1,1,2,2-Tetrachloroethane [1, 4] 5110 / O-120-3A - Lot 012482	83 µg/L	57.9 to 143 72.0 to 129	-1.23	**Acceptable**
Tetrachloroethylene (Perchloroethylene) [1, 3, 4] 5115 / O-120-2 - Lot 012481	141 µg/L	75.7 to 172 91.7 to 156	1.07	**Acceptable**
Toluene [1, 3, 4] 5140 / O-120-1 - Lot 012480	27 µg/L	20.4 to 37.3 23.3 to 34.5	-0.67	**Acceptable**
1,1,1-Trichloroethane [1, 3, 4] 5160 / O-120-2 - Lot 012481	32 µg/L	22.4 to 47.4 26.6 to 43.3	-0.70	**Acceptable**
1,1,2-Trichloroethane [1, 4] 5165 / O-120-3A - Lot 012482	89 µg/L	69.0 to 129 79.0 to 119	-1.00	**Acceptable**
Trichloroethene (Trichloroethylene) [1, 3, 4] 5170 / O-120-2 - Lot 012481	25 µg/L	15.9 to 33.7 18.9 to 30.7	0.07	**Acceptable**
Trichlorofluoromethane [1, 4] 5175 / O-120-3A - Lot 012482	30 µg/L	19.7 to 78.7	-3.09	**Acceptable**
1,2,3-Trichloropropane [4] 5180 / O-120-3B - Lot 012486	120 µg/L	31.8 to 206	0.04	**Acceptable**
1,2,4-Trimethylbenzene [4] 5210 / O-120-1 - Lot 012480	18 µg/L	8.16 to 32.6 12.2 to 28.6	-0.59	**Acceptable**
1,3,5-Trimethylbenzene [4] 5215 / O-120-1 - Lot 012480	16 µg/L	7.00 to 28.0 10.5 to 24.5	-0.43	**Acceptable**
Vinyl acetate [4] 5225 / O-120-3B - Lot 012486	<1.0 µg/L	0.0 to 0.0		**Acceptable**
Vinyl chloride [1, 4] 5235 / O-120-3A - Lot 012482	55 µg/L	33.3 to 133	-2.00	**Acceptable**
m+p-Xylene [4] 5240 / O-120-1 - Lot 012480	27 µg/L	14.7 to 39.2 18.8 to 35.2	0.00	**Acceptable**
o-Xylene [4] 5250 / O-120-1 - Lot 012480	15 µg/L	7.55 to 22.9 10.1 to 20.3	-0.08	**Acceptable**
Xylene, total [1, 4] 5260 / O-120-1 - Lot 012480	42 µg/L	23.3 to 58.8 29.2 to 52.9	0.16	**Acceptable**

Group Analysis Summary

Acceptable 55 / 55
Score 100.0% - **(Acceptable)**

End of Dataset 2

Dataset

Dataset 3

Include in DMRQA Study

Evaluations from this dataset will be included in DMRQA 27.

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Alaska DEC
DEC Health Lab
386 Shera Hickman
CS Laboratory Approval Officer
5251 Hinkle Road
Anchorage AK 99507
UNITED STATES

Accrediting Labcode MT00005
Colorado Dept. of Public Health & Environment

610 Kelly Morgan
4300 S Cherry Creek Drive South (WQCD-CADM B2)
Denver CO 80246
UNITED STATES

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Idaho Bureau of Laboratories

383 Sandra Radwin
2220 Old Penitentiary Road
Boise ID 83712
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau
168 Jeff May
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

615 Tim Flor
523 East Capital
Pierre SD 57501
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII, TMS-Q

217 Jim Gindelberger
1595 Wynkoop Street
Denver CO 80202-1129
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 W. 25th Street
Cheyenne WY 82002
UNITED STATES

Minerals

Analysis
EPA 200.8
Mass Spectrometry - Inductively Coupled Plasma

Method Number 10014401
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Evaluation
Calcium, Ca [1, 3, 4] 1035 / I-027-12 - Lot 012281/2	11.4 mg/L	10.9 to 14.7 11.6 to 14.0	-2.26	**Acceptable**
Magnesium, Mg [1, 3, 4] 1085 / I-027-12 - Lot 012281/2	24.6 mg/L	23.3 to 31.2 24.6 to 29.9	-2.02	**Acceptable**
Potassium, K [1, 3, 4] 1125 / I-027-12 - Lot 012281/2	9.12 mg/L	7.54 to 11.4 8.19 to 10.8	-0.57	**Acceptable**
Sodium, Na [1, 3, 4] 1155 / I-027-12 - Lot 012281/2	11.9 mg/L	10.3 to 14.2 10.9 to 13.6	-0.53	**Acceptable**

Trace Metals

Analysis
EPA 200.8
Mass Spectrometry - Inductively Coupled Plasma

Method Number 10014401
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Evaluation
Aluminum, Al [1, 3, 4] 1000 / I-305-1 - Lot 012306	602 µg/L	565 to 858 614 to 809	-2.24	**Acceptable**

Trace Metals (continued)

Analysis
EPA 200.8
Mass Spectrometry - Inductively Coupled Plasma

(continued)
Method Number 10014401
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Evaluation
Antimony, Sb [1, 3, 4] 1005 / I-305-2 - Lot 012307/3	136 µg/L	132 to 245 151 to 226	-2.77	**Acceptable**
Arsenic, As [1, 3, 4] 1010 / I-305-1 - Lot 012306	154 µg/L	131 to 190 140 to 180	-0.63	**Acceptable**
Barium, Ba [1, 4] 1015 / I-305-2 - Lot 012307/3	605 µg/L	517 to 672 543 to 646	0.40	**Acceptable**
Beryllium, Be [1, 3, 4] 1020 / I-305-1 - Lot 012306	63.2 µg/L	54.5 to 74.3 57.8 to 71.0	-0.36	**Acceptable**
Boron, B [1, 4] 1025 / I-305-2 - Lot 012307/3	1060 µg/L	921 to 1310 985 to 1240	-0.83	**Acceptable**
Cadmium, Cd [1, 3, 4] 1030 / I-305-1 - Lot 012306	141 µg/L	126 to 170 134 to 163	-1.01	**Acceptable**
Chromium, Cr (total) [1, 3, 4] 1040 / I-305-1 - Lot 012306	93.2 µg/L	84.9 to 115 89.9 to 110	-1.34	**Acceptable**
Cobalt, Co [1, 3, 4] 1050 / I-305-1 - Lot 012306	201 µg/L	187 to 241 196 to 232	-1.43	**Acceptable**
Copper, Cu [1, 3, 4] 1055 / I-305-1 - Lot 012306	318 µg/L	302 to 368 313 to 357	-1.52	**Acceptable**
Iron, Fe [1, 3, 4] 1070 / I-305-1 - Lot 012306	442 µg/L	362 to 471 380 to 453	1.41	**Acceptable**
Lead, Pb [1, 3, 4] 1075 / I-305-1 - Lot 012306	279 µg/L	262 to 345 276 to 331	-1.75	**Acceptable**
Manganese, Mn [1, 3, 4] 1090 / I-305-1 - Lot 012306	603 µg/L	617 to 763 641 to 739	-3.55	**Not Acceptable**
Mercury, Hg [1, 3, 4] 1095 / I-305-1 - Lot 012306	4.45 µg/L	0.60 to 9.00	-0.12	**Acceptable**
Molybdenum, Mo [1, 3, 4] 1100 / I-305-2 - Lot 012307/3	60.1 µg/L	30.4 to 137	-1.32	**Acceptable**
Nickel, Ni [1, 3, 4] 1105 / I-305-1 - Lot 012306	158 µg/L	141 to 186 148 to 178	-0.72	**Acceptable**
Selenium, Se [1, 3, 4] 1140 / I-305-1 - Lot 012306	566 µg/L	448 to 656 483 to 621	0.41	**Acceptable**
Silver, Ag [1, 3, 4] 1150 / I-305-2 - Lot 012307/3	81.4 µg/L	58.6 to 104	0.00	**Acceptable**
Strontium, Sr [1, 3, 4] 1160 / I-305-2 - Lot 012307/3	223 µg/L	191 to 250 201 to 240	0.28	**Acceptable**
Thallium, Tl [1, 3, 4] 1165 / I-305-2 - Lot 012307/3	407 µg/L	323 to 496 352 to 467	-0.08	**Acceptable**
Tin, Sn [1, 3, 4] 1175 / I-305-2 - Lot 012307/3	1640 µg/L	1320 to 2020 1440 to 1910	-0.27	**Acceptable**
Titanium, Ti [1, 3, 4] 1180 / I-305-2 - Lot 012307/3	181 µg/L	148 to 195 156 to 187	1.17	**Acceptable**
Vanadium, V [1, 3, 4] 1185 / I-305-1 - Lot 012306	703 µg/L	675 to 861 706 to 830	-2.09	**Acceptable**
Zinc, Zn [1, 3, 4] 1190 / I-305-1 - Lot 012306	693 µg/L	581 to 779 614 to 746	0.39	**Acceptable**

Volatiles

Volatiles

Analysis
EPA 8021B
Other

Method Number 10174808
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Benzene [1, 3, 4] 4375 / O-120-1 - Lot 012480	11 µg/L	7.63 to 16.4 9.10 to 15.0	-0.71	**Acceptable**
Ethylbenzene [1, 3, 4] 4765 / O-120-1 - Lot 012480	13 µg/L	10.2 to 20.2 11.9 to 18.6	-1.32	**Acceptable**
Toluene [1, 3 4] 5140 / O-120-1 - Lot 012480	26 µg/L	20.4 to 37.3 23.3 to 34.5	-1.03	**Acceptable**
m+p-Xylene [4] 5240 / O-120-1 - Lot 012480	25 µg/L	14.7 to 39.2 18.8 to 35.2	-0.49	**Acceptable**
o-Xylene [4] 5250 / O-120-1 - Lot 012480	14 µg/L	7.55 to 22.9 10.1 to 20.3	-0.48	**Acceptable**
Xylene, total [1, 4] 5260 / O-120-1 - Lot 012480	38 µg/L	23.3 to 58.8 29.2 to 52.9	-0.52	**Acceptable**

End of Dataset 3

Dataset

Dataset 4

Include in DMRQA Study

Evaluations from this dataset will be included in DMRQA 27.

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Alaska DEC
DEC Health Lab
386 Shera Hickman
CS Laboratory Approval Officer
5251 Hinkle Road
Anchorage AK 99507
UNITED STATES

Accrediting Labcode MT00005
Colorado Dept. of Public Health & Environment

610 Kelly Morgan
4300 S Cherry Creek Drive South (WQCD-CADM B2)
Denver CO 80246
UNITED STATES

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Idaho Bureau of Laboratories

383 Sandra Radwin
2220 Old Penitentiary Road
Boise ID 83712
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau
168 Jeff May
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

Accrediting Labcode MT00005
Nevada Division of Env. Protection

366 Sara Rairick
901 S Stewart Street
Ste 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

615 Tim Flor
523 East Capital
Pierre SD 57501
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII, TMS-Q

217 Jim Gindelberger
1595 Wynkoop Street
Denver CO 80202-1129
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division
206 Edward Mock
122 W. 25th Street
Cheyenne WY 82002
UNITED STATES

Minerals

Analysis
EPA 6020
Mass Spectrometry - Inductively Coupled Plasma

Method Number 10156000
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Evaluation
Calcium, Ca [1, 3, 4] 1035 / I-027-12 - Lot 012281/2	11.4 mg/L	10.9 to 14.7 11.6 to 14.0	-2.26	**Acceptable**
Magnesium, Mg [1, 3, 4] 1085 / I-027-12 - Lot 012281/2	24.6 mg/L	23.3 to 31.2 24.6 to 29.9	-2.02	**Acceptable**
Potassium, K [1, 3, 4] 1125 / I-027-12 - Lot 012281/2	9.12 mg/L	7.54 to 11.4 8.19 to 10.8	-0.57	**Acceptable**
Sodium, Na [1, 3, 4] 1155 / I-027-12 - Lot 012281/2	11.9 mg/L	10.3 to 14.2 10.9 to 13.6	-0.53	**Acceptable**

Trace Metals

Trace Metals (continued)

Analysis
EPA 6020
Mass Spectrometry - Inductively Coupled Plasma

Method Number 10156000
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Evaluation
Aluminum, Al [1, 3, 4] 1000 / I-305-1 - Lot 012306	602 µg/L	565 to 858 614 to 809	-2.24	**Acceptable**
Antimony, Sb [1, 3, 4] 1005 / I-305-2 - Lot 012307/3	136 µg/L	132 to 245 151 to 226	-2.77	**Acceptable**
Arsenic, As [1, 3, 4] 1010 / I-305-1 - Lot 012306	154 µg/L	131 to 190 140 to 180	-0.63	**Acceptable**
Barium, Ba [1, 4] 1015 / I-305-2 - Lot 012307/3	605 µg/L	517 to 672 543 to 646	0.40	**Acceptable**
Beryllium, Be [1, 3, 4] 1020 / I-305-1 - Lot 012306	63.2 µg/L	54.5 to 74.3 57.8 to 71.0	-0.36	**Acceptable**
Boron, B [1, 4] 1025 / I-305-2 - Lot 012307/3	1060 µg/L	921 to 1310 985 to 1240	-0.83	**Acceptable**
Cadmium, Cd [1, 3, 4] 1030 / I-305-1 - Lot 012306	141 µg/L	126 to 170 134 to 163	-1.01	**Acceptable**
Chromium, Cr (total) [1, 3, 4] 1040 / I-305-1 - Lot 012306	93.2 µg/L	84.9 to 115 89.9 to 110	-1.34	**Acceptable**
Cobalt, Co [1, 3, 4] 1050 / I-305-1 - Lot 012306	201 µg/L	187 to 241 196 to 232	-1.43	**Acceptable**
Copper, Cu [1, 3, 4] 1055 / I-305-1 - Lot 012306	318 µg/L	302 to 368 313 to 357	-1.52	**Acceptable**
Iron, Fe [1, 3, 4] 1070 / I-305-1 - Lot 012306	442 µg/L	362 to 471 380 to 453	1.41	**Acceptable**
Lead, Pb [1, 3, 4] 1075 / I-305-1 - Lot 012306	279 µg/L	262 to 345 276 to 331	-1.75	**Acceptable**
Manganese, Mn [1, 3, 4] 1090 / I-305-1 - Lot 012306	603 µg/L	617 to 763 641 to 739	-3.55	**Not Acceptable**
Mercury, Hg [1, 3, 4] 1095 / I-305-1 - Lot 012306	4.45 µg/L	0.60 to 9.00	-0.12	**Acceptable**
Molybdenum, Mo [1, 3, 4] 1100 / I-305-2 - Lot 012307/3	60.1 µg/L	30.4 to 137	-1.32	**Acceptable**
Nickel, Ni [1, 3, 4] 1105 / I-305-1 - Lot 012306	158 µg/L	141 to 186 148 to 178	-0.72	**Acceptable**
Selenium, Se [1, 3, 4] 1140 / I-305-1 - Lot 012306	566 µg/L	448 to 656 483 to 621	0.41	**Acceptable**
Silver, Ag [1, 3, 4] 1150 / I-305-2 - Lot 012307/3	81.4 µg/L	58.6 to 104	0.00	**Acceptable**
Strontium, Sr [1, 3, 4] 1160 / I-305-2 - Lot 012307/3	223 µg/L	191 to 250 201 to 240	0.28	**Acceptable**
Thallium, Tl [1, 3, 4] 1165 / I-305-2 - Lot 012307/3	407 µg/L	323 to 496 352 to 467	-0.08	**Acceptable**
Tin, Sn [1, 3, 4] 1175 / I-305-2 - Lot 012307/3	1640 µg/L	1320 to 2020 1440 to 1910	-0.27	**Acceptable**
Titanium, Ti [1, 3, 4] 1180 / I-305-2 - Lot 012307/3	181 µg/L	148 to 195 156 to 187	1.17	**Acceptable**
Vanadium, V [1, 3, 4] 1185 / I-305-1 - Lot 012306	703 µg/L	675 to 861 706 to 830	-2.09	**Acceptable**

Trace Metals (continued)

Analysis
EPA 6020
Mass Spectrometry - Inductively Coupled Plasma

(continued)
Method Number 10156000
Technology Code ICP-MS

	Result Units	Accept / Warn	Z	Evaluation
Zinc, Zn [1, 3, 4] 1190 / I-305-1 - Lot 012306	693 µg/L	581 to 779 614 to 746	0.39	**Acceptable**

End of Dataset 4

Dataset

Dataset 5

Include in DMRQA Study

Evaluations from this dataset will be included in DMRQA 27.

Accreditors

Evaluations of this dataset will be sent to the accreditor(s) listed below using your laboratory's labcode listed above each accrediting agency. If any of the information listed below is incorrect, please contact RTC immediately.

Accrediting Labcode MT00005
Alaska DEC
DEC Health Lab
386 Shera Hickman
CS Laboratory Approval Officer
5251 Hinkle Road
Anchorage AK 99507
UNITED STATES

Accrediting Labcode MT00005
Colorado Dept. of Public Health & Environment

610 Kelly Morgan
4300 S Cherry Creek Drive South (WQCD-CADM B2)
Denver CO 80246
UNITED STATES

Accrediting Labcode MT00005
Florida Dept. of Health

229 Stephen Arms
PO Box 210
1217 Pearl Street
Jacksonville FL 32231
UNITED STATES

Accrediting Labcode MT00005
Idaho Bureau of Laboratories

383 Sandra Radwin
2220 Old Penitentiary Road
Boise ID 83712
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Environmental Quality
Water Protection Bureau
168 Jeff May
PO Box 200901
Helena MT 59620-0901
UNITED STATES

Accrediting Labcode MT00005
Montana Dept. of Public Health & Human Services
Environmental Laboratory Services
235 Judy Halm
PO Box 4369
Helena MT 59604-4369
UNITED STATES

Accrediting Labcode MT00005
Nevada Division of Env. Protection

Accrediting Labcode MT00005
Nevada Division of Env. Protection

366 Sara Rairick
901 S Stewart Street
Ste 4001
Carson City NV 89701-5249
UNITED STATES

Accrediting Labcode MT00005
North Dakota Department of Health

119 Errol Erickson
Chemistry Division
2635 E. Main Ave.
PO Box 937
Bismarck ND 58502-0937
UNITED STATES

Accrediting Labcode MT00005
South Dakota DENR

615 Tim Flor
523 East Capital
Pierre SD 57501
UNITED STATES

Accrediting Labcode MT00005
USEPA Region VIII, TMS-Q

217 Jim Gindelberger
1595 Wynkoop Street
Denver CO 80202-1129
UNITED STATES

Accrediting Labcode MT00005
Wyoming DEQ
Water Quality Division

206 Edward Mock
122 W. 25th Street
Cheyenne WY 82002
UNITED STATES

Miscellaneous Analytes

Analysis
EPA 418.1
Other

Method Number 10078805
Technology Code NA

	Result Units	Accept / Warn	Z	Evaluation
Total recoverable petroleum hydrocarbons (TRPH) [1, 4] 1935 / I-254 - Lot 012317	26 mg/L	12.1 to 42.1 17.1 to 37.1	-0.23	**Acceptable**

Analysis
EPA 413.1
Gravimetry

Method Number 10077608
Technology Code GRAV

	Result Units	Accept / Warn	Z	Evaluation
Oil & Grease [1, 3, 4] 1860 / I-029 - Lot 012346	25 mg/L	13.1 to 34.0 16.6 to 30.5	0.42	**Acceptable**

End of Dataset 5

Sample Information

Demand
PEI-026

Study Lot 012294
Mfg Lot 012294

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Biochemical oxygen demand (BOD) 1530 Demands	mg/L	33.96	5.69	36.29	18.26	33.81	5.79	53.5
Carbonaceous BOD (CBOD) 1555 Demands	mg/L	29.30	5.40	32.97	11.97	30.94	6.16	53.5
Chemical oxygen demand (COD) 1565 Demands	mg/L	52.53	5.03	55.47	10.66	53.88	5.97	54.7

Minerals
PEI-027-12

Study Lot 012281/2
Mfg Lot 012281/012282

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Calcium, Ca 1035 Minerals	mg/L	12.80	0.61	12.72	1.74	12.62	0.81	12.6
Magnesium, Mg 1085 Minerals	mg/L	27.28	1.32	26.88	2.69	27.06	1.58	27.2
Potassium, K 1125 Minerals	mg/L	9.49	0.65	9.21	1.34	9.30	0.63	9.45
Sodium, Na 1155 Minerals	mg/L	12.25	0.66	11.89	1.80	12.03	0.88	12.1
Alkalinity as CaCO3 1505 Minerals	mg/L	27.56	1.79	27.66	2.14	27.54	2.21	26.9
Specific conductance, Conductivity (25°C) 1610 Minerals	µmhos/cm	423.00	14.70	423.97	62.51	422.90	14.26	425
Hardness, total as CaCO3 1755 Minerals	mg/L	143.00	4.77	142.31	17.77	142.21	5.62	143

pH
PEI-027-3

Study Lot 012261
Mfg Lot 012261

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
pH 1900 Miscellaneous Analytes	Units	6.18	0.10	6.20	0.19	6.19	0.05	6.18

Simple Nutrients
PEI-028-1

Study Lot 012305
Mfg Lot 012305

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Ammonia as N 1515 Nutrients	mg/L	12.80	1.10	13.28	2.45	13.22	1.07	13.3
Nitrate as N 1810 Nutrients	mg/L	15.29	1.10	15.79	2.85	15.26	0.95	15.4
Nitrate+nitrite as N 1820 Nutrients	mg/L	15.19	1.09	14.72	3.37	15.18	1.22	15.3
Orthophosphate as P 1870 Nutrients	mg/L	3.97	0.24	4.82	8.11	3.96	0.25	3.95

Complex Nutrients
PEI-028-2

Study Lot 012332
Mfg Lot 012332

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Kjeldahl nitrogen, total (TKN) 1795 Nutrients	mg/L	11.47	1.23	92.63	768.50	11.50	1.46	11.7
Phosphorus, total 1910 Nutrients	mg/L	2.07	0.14	2.07	0.60	2.03	0.17	2.04

Nitrite in Water
PEI-028-3

Study Lot 012334
Mfg Lot 012334

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Nitrite as N 1840 Nutrients	mg/L	3.41	0.17	38.62	341.46	3.42	0.21	3.41

Oil and Grease
PEI-029

Study Lot 012346
Mfg Lot 012346

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric

Oil and Grease
PEI-029 (continued)

Study Lot 012346
Mfg Lot 012346

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Oil & Grease 1860 Miscellaneous Analytes	mg/L	23.55	3.47	24.65	9.20	23.17	4.04	25.5

Total Cyanide
PEI-031

Study Lot 002089
Mfg Lot 002089

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total cyanide 1645 Miscellaneous Analytes	mg/L	0.95	0.11	15.11	91.01	0.90	0.14	0.950

Total Phenolics
PEI-032

Study Lot 002050
Mfg Lot 002050

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total phenolics 1905 Miscellaneous Analytes	mg/L	0.08	0.01	0.11	0.15	0.08	0.02	0.0815

Total Residual Chlorine
PEI-033

Study Lot 012340
Mfg Lot 012340

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total residual chlorine 1940 Miscellaneous Analytes	mg/L	0.60	0.05	0.67	0.34	0.61	0.05	0.606

Chromium VI
PEI-034-3

Study Lot 012301
Mfg Lot 012301

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chromium VI, Cr(VI) 1045 Trace Metals	µg/L	315.06	19.81	313.29	149.10	312.83	21.70	317 ± 1.9

Anions
PEI-051

Study Lot 012319
Mfg Lot 012319

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Bromide 1540 Miscellaneous Analytes	mg/L	2.52	0.29	5.03	14.31	2.52	0.29	2.56 ±
Chloride 1575 Minerals	mg/L	87.47	4.18	87.52	11.12	87.27	4.90	87.4 ± 0.463
Fluoride 1730 Minerals	mg/L	2.20	0.13	2.66	4.69	2.19	0.21	2.20 ±
Nitrate as N 1810 Nutrients	mg/L	35.82	2.56	37.98	3.63	37.67	3.01	36.1 ± 0.191
Nitrite as N 1840 Nutrients	mg/L	2.99	0.29	3.00	0.29	2.99	0.29	3.03 ±
Orthophosphate as P 1870 Nutrients	mg/L	3.55	0.22	3.60	0.72	3.45	0.21	3.54 ±
Sulfate 2000 Minerals	mg/L	28.53	1.82	28.51	3.41	28.70	2.61	28.9 ± 0.153

Residue (Whole-Volume)
PEI-079

Study Lot 012358
Mfg Lot 012358

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Residue, total (TS) 1950 Minerals	mg/L	371.35	17.34	355.40	96.73	371.35	17.34	374
Residue-filterable (TDS) 1955 Minerals	mg/L	335.21	27.36	335.77	36.52	335.21	16.94	335
Residue-nonfilterable (TSS) 1960 Miscellaneous Analytes	mg/L	40.13	2.84	40.26	4.94	40.58	2.14	41.9

Acidity
PEI-248

Study Lot 012313
Mfg Lot 012313

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Acidity, as CaCO3 1500 Miscellaneous Analytes	mg/L	789.32	29.28	781.10	75.37	757.23	21.28	800

Turbidity
PEI-250

Study Lot 012366
Mfg Lot 012366

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Turbidity 2055 Miscellaneous Analytes	NTU	15.97	1.40	15.70	1.44	15.64	1.52	16.2 ± 0.086

Cyanide Amenable to Chlorination
PEI-251

Study Lot 012351
Mfg Lot 012351

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Amenable cyanide 1510 Miscellaneous Analytes	mg/L	0.32	0.05	0.32	0.14	0.32	0.02	0.318 ±
Cyanide, WAD 1647 Miscellaneous Analytes	mg/L	0.32	0.03					0.318

Settleable Solids
PEI-253

Study Lot 012357
Mfg Lot 012357

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Residue-settleable 1965 Miscellaneous Analytes	mL/L	14.51	1.34	13.94	2.09	14.24	1.17	14.2 ± 0.07

Total Recoverable Petroleum Hydrocarbons
PEI-254

Study Lot 012317
Mfg Lot 012317

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Total recoverable petroleum hydrocarbons (TRPH) 1935 Miscellaneous Analytes	mg/L	27.14	5.00	27.78	7.12	26.57	1.18	29.2 ± 0.13

Sulfide
PEI-257

Study Lot 011819
Mfg Lot 011819

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Sulfide 2005 Minerals	mg/L	5.47	0.98	11.34	17.05	5.41	0.92	5.80 ± 0.031

Trace Metals (Whole Volume) Sample 1
PEI-305-1

Study Lot 012306
Mfg Lot 012306

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aluminum, Al 1000 Trace Metals	µg/L	711.44	48.86	718.07	69.14	720.64	76.85	713
Arsenic, As 1010 Trace Metals	µg/L	160.24	9.87	158.37	9.58	157.10	8.64	160
Beryllium, Be 1020 Trace Metals	µg/L	64.39	3.30	67.11	3.24	67.02	3.57	65.6
Cadmium, Cd 1030 Trace Metals	µg/L	148.34	7.29	151.67	8.30	151.53	11.01	149
Chromium, Cr (total) 1040 Trace Metals	µg/L	99.89	5.00	101.44	5.01	101.04	3.93	100
Cobalt, Co 1050 Trace Metals	µg/L	213.76	8.95	218.20	12.33	217.73	13.66	214
Copper, Cu 1055 Trace Metals	µg/L	334.95	11.13	330.56	18.10	330.36	20.03	334
Iron, Fe 1070 Trace Metals	µg/L	416.46	18.13	449.62	135.84	413.20	38.06	413
Lead, Pb 1075 Trace Metals	µg/L	303.49	13.99	307.80	21.95	305.71	22.23	304
Manganese, Mn 1090 Trace Metals	µg/L	689.92	24.46	702.87	54.77	708.26	37.00	687
Mercury, Hg 1095 Trace Metals	µg/L	4.63	1.45	4.66	1.35	4.63	1.45	6.01
Nickel, Ni 1105 Trace Metals	µg/L	163.38	7.48	166.00	9.85	162.99	6.63	163
Selenium, Se 1140 Trace Metals	µg/L	551.94	34.64	559.79	42.22	561.70	46.74	566
Vanadium, V 1185 Trace Metals	µg/L	767.78	31.06	771.93	38.36	772.51	38.68	770
Zinc, Zn 1190 Trace Metals	µg/L	680.11	32.99	717.00	78.65	699.94	26.88	677

Trace Metals (Whole Volume) Sample 2

PEI-305-2

Study Lot 012307/3
Mfg Lot 012307/308

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Antimony, Sb 1005 Trace Metals	µg/L	188.15	18.82	162.00	42.86	165.47	43.99	200
Barium, Ba 1015 Trace Metals	µg/L	594.55	25.85	634.40	35.64	634.26	39.61	596
Boron, B 1025 Trace Metals	µg/L	1,113.27	64.05	1,128.92	86.75	1,116.07	81.01	1120
Molybdenum, Mo 1100 Trace Metals	µg/L	83.52	17.69	83.10	15.32	83.52	17.69	103
Silver, Ag 1150 Trace Metals	µg/L	81.41	7.62	90.11	26.12	81.41	7.62	92.2
Strontium, Sr 1160 Trace Metals	µg/L	220.32	9.74	231.00	20.40	229.33	21.69	220
Thallium, Tl 1165 Trace Metals	µg/L	409.27	28.87	422.50	45.73	411.15	34.38	409
Tin, Sn 1175 Trace Metals	µg/L	1,671.53	117.64					1670
Titanium, Ti 1180 Trace Metals	µg/L	171.81	7.84	182.55	4.97	181.82	4.66	173

PCBs in Water

PEO-020

Study Lot 002157
Mfg Lot 002157

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1016 (PCB-1016) 8880 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1221 (PCB-1221) 8885 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1232 (PCB-1232) 8890 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1242 (PCB-1242) 8895 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1248 (PCB-1248) 8900 PCBs in Water	µg/L	0.00	0.00					0.00
Aroclor-1254 (PCB-1254) 8905 PCBs in Water	µg/L	3.49	0.56	3.61	0.38	3.65	0.31	3.92 ± 0.038
Aroclor-1260 (PCB-1260) 8910 PCBs in Water	µg/L	0.00	0.00					0.00

Acids

PEO-022

Study Lot 012444
Mfg Lot 012444

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Benzoic acid 5610 Acids	µg/L	105.60	26.40	79.77	53.98	76.50	58.36	176 ± 1.71
4-Chloro-3-methylphenol 5700 Acids	µg/L	92.06	16.44	90.26	28.21	92.77	24.93	110 ± 1.07
2-Chlorophenol 5800 Acids	µg/L	149.24	31.60	142.71	40.44	144.89	37.35	195 ± 1.89
2,4-Dichlorophenol 6000 Acids	µg/L	106.25	20.53	106.37	22.76	105.18	24.07	137 ± 1.33
2,4-Dimethylphenol 6130 Acids	µg/L	53.11	13.22	61.60	9.62	61.37	11.91	70.0 ± 0.68
2,4-Dinitrophenol 6175 Acids	µg/L	107.00	35.40	110.68	57.52	110.35	52.14	158 ± 1.53
2-Methyl-4,6-dinitrophenol 6360 Acids	µg/L	117.20	23.84	114.52	33.83	110.13	22.36	133 ± 1.3
2-Methylphenol (o-Cresol) 6400 Acids	µg/L	42.11	10.37	47.04	14.45	44.10	10.80	58.0 ± 0.563
4-Methylphenol (p-Cresol) 6410 Acids	µg/L	61.75	19.09	72.14	18.40	71.54	22.02	91.2 ± 0.885
3+4-Methylphenol (m+p-Cresol) 6412 Acids	µg/L	61.75	19.09	69.78	18.28	68.78	20.41	91.2 ± 0.885
2-Nitrophenol 6490 Acids	µg/L	109.49	25.54	109.03	19.01	107.81	19.56	142 ± 1.38
4-Nitrophenol 6500 Acids	µg/L	96.28	45.63	94.09	50.50	87.56	48.79	174 ± 1.68
Pentachlorophenol 6605 Acids	µg/L	73.89	17.16	83.66	18.85	82.98	19.61	90.7 ± 0.88
Phenol 6625 Acids	µg/L	69.10	32.15	69.67	33.95	65.96	34.76	123 ± 1.19

Acids
PEO-022
(continued)

Study Lot 012444
Mfg Lot 012444

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
2,4,5-Trichlorophenol 6835 Acids	µg/L	83.88	15.78	82.17	24.90	76.99	18.82	102 ± 0.987
2,4,6-Trichlorophenol 68400 Acids	µg/L	143.27	28.14	140.67	29.66	138.80	25.56	184 ± 1.79

Chlordane
PEO-024-2

Study Lot 012428
Mfg Lot 012428

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chlordane (total) 7250 Pesticides	µg/L	11.47	2.25	9.64	2.44	10.15	1.84	12.6 ± 0.122

PCB's in Oil
PEO-072

Study Lot 002170
Mfg Lot 002170

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aroclor-1016 (PCB-1016) 8880 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1221 (PCB-1221) 8885 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1232 (PCB-1232) 8890 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1242 (PCB-1242) 8895 PCBs in Oil	mg/Kg	21.38	6.32	18.66	9.09	20.39	7.99	26.5 ± 0.257
Aroclor-1248 (PCB-1248) 8900 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1254 (PCB-1254) 8905 PCBs in Oil	mg/Kg	0.00	0.00					0.00
Aroclor-1260 (PCB-1260) 8910 PCBs in Oil	mg/Kg	0.00	0.00					0.00

Toxaphene
PEO-093

Study Lot 012435
Mfg Lot 012435

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Toxaphene (Chlorinated camphene) 8250 Pesticides	µg/L	22.48	8.38	22.28	10.89	19.64	6.44	26.3 ± 0.256

Herbicides
PEO-094

Study Lot 012468
Mfg Lot 012468

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Pentachlorophenol 6605 Herbicides	µg/L	5.02	1.38	14.88	29.28	5.00	1.38	5.02 ± 0.049
Acifluorfen 8505 Herbicides	µg/L	3.95	1.16	15.29	27.80	3.95	1.16	4.43 ± 0.043
Bentazon 8530 Herbicides	µg/L	5.56	1.48	7.36	1.38	7.34	1.59	7.41 ± 0.072
2,4-D Total 8545 Herbicides	µg/L	4.55	1.68	5.32	6.47	3.47	1.61	5.90 ± 0.057
2,4-DB 8560 Herbicides	µg/L	8.63	1.70	13.64	18.97	8.63	1.70	8.63 ± 0.072
Dicamba 8595 Herbicides	µg/L	8.58	1.93	8.14	2.81	7.46	0.92	8.58 ± 0.083
3,5-Dichlorobenzoic acid 8600 Herbicides	µg/L	8.17	2.04	26.00	42.16	8.64	2.05	8.17 ± 0.079
Dichloroprop 8605 Herbicides	µg/L	7.31	0.96	6.98	1.70	6.79	0.96	7.31 ± 0.071
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP) 8620 Herbicides	µg/L	5.73	2.35	6.33	3.58	5.73	2.35	6.69 ± 0.065
Picloram 8645 Herbicides	µg/L	2.50	1.16	12.41	22.15	2.50	1.16	3.79 ± 0.037
Silvex (2,4,5-TP) 8650 Herbicides	µg/L	2.28	0.69	6.11	12.70	2.84	0.36	2.84 ± 0.028
2,4,5-T 8655 Herbicides	µg/L	6.52	1.87	14.34	24.60	8.11	2.04	8.33 ± 0.081

Volatile Organic Compounds 1
PEO-120-1

Study Lot 012480
Mfg Lot 012480

Volatile Organic Compounds 1

PEO-120-1

Study Lot 012480
Mfg Lot 012480

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Benzene 4375 Volatiles	µg/L	12.04	1.47	16.42	34.53	11.75	1.21	12.0 ± 0.117
1,2-Dichlorobenzene 4610 Volatiles	µg/L	16.11	1.81	15.72	2.28	15.74	2.13	16.2 ± 0.157
1,3-Dichlorobenzene 4615 Volatiles	µg/L	15.52	1.81	16.00	2.33	16.05	2.24	16.0 ± 0.155
1,4-Dichlorobenzene 4620 Volatiles	µg/L	26.21	2.81	26.19	3.69	25.73	3.20	26.8 ± 0.26
Ethylbenzene 4765 Volatiles	µg/L	15.21	1.67	15.67	2.76	15.07	1.72	15.3 ± 0.146
Methyl tert-butyl ether (MTBE) 5000 Volatiles	µg/L	21.35	3.11	21.24	3.42	20.94	2.43	20.7 ± 0.201
Naphthalene 5005 Volatiles	µg/L	20.20	4.04	19.46	4.64	19.19	4.67	20.2 ± 0.196
Toluene 5140 Volatiles	µg/L	28.88	2.81	41.79	88.35	28.31	2.98	29.4 ± 0.285
1,2,4-Trimethylbenzene 5210 Volatiles	µg/L	20.40	4.08	20.64	3.98	19.60	2.52	20.4 ± 0.198
1,3,5-Trimethylbenzene 5215 Volatiles	µg/L	17.50	3.50	18.22	2.94	17.45	2.04	17.5 ± 0.17
m+p-Xylene 5240 Volatiles	µg/L	26.99	4.08	28.17	3.54	27.73	2.79	27.2 ± 0.264
o-Xylene 5250 Volatiles	µg/L	15.22	2.55	15.75	2.40	15.43	1.91	14.8 ± 0.143
Xylene, total 5260 Volatiles	µg/L	41.05	5.91	45.77	14.71	43.67	4.82	42.0 ± 0.408

Volatile Organic Compounds 2

PEO-120-2

Study Lot 012481
Mfg Lot 012481

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Bromodichloromethane 4395 Volatiles	µg/L	59.65	6.22	93.27	218.48	59.79	7.22	58.0 ± 0.563
Bromoform 4400 Volatiles	µg/L	93.08	11.14	98.71	25.66	94.46	10.66	91.5 ± 0.887
Carbon tetrachloride 4455 Volatiles	µg/L	130.06	18.66	215.42	606.09	128.03	13.76	137 ± 1.33
Chlorobenzene 4475 Volatiles	µg/L	108.38	9.66	106.34	11.51	105.08	11.03	110 ± 1.06
Chloroform 4505 Volatiles	µg/L	34.74	3.58	57.71	148.34	35.10	5.62	34.8 ± 0.337
Dibromochloromethane 4575 Volatiles	µg/L	43.96	4.71	45.47	11.25	44.85	5.47	43.8 ± 0.425
1,2-Dichloroethane 4635 Volatiles	µg/L	147.82	14.98	281.25	896.12	146.55	17.26	148 ± 1.44
Methylene chloride (Dichloromethane) 4975 Volatiles	µg/L	83.86	10.80	81.57	49.33	74.81	11.93	83.9 ± 0.814
Tetrachloroethylene (Perchloroethylene) 5115 Volatiles	µg/L	123.79	16.04	124.77	32.24	121.09	17.00	132 ± 1.28
1,1,1-Trichloroethane 5160 Volatiles	µg/L	34.91	4.18	60.81	173.59	34.90	5.31	35.7 ± 0.346
Trichloroethene (Trichloroethylene) 5170 Volatiles	µg/L	24.79	2.96	33.21	56.03	24.84	2.93	25.2 ± 0.244

Volatile Organic Compounds 3A

PEO-120-3A

Study Lot 012482
Mfg Lot 012482

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Chloroethane 4485 Volatiles	µg/L	76.70	15.16	135.33	360.66	76.69	15.16	76.7 ± 0.619
1,1-Dichloroethane 4630 Volatiles	µg/L	58.06	6.45	109.31	327.92	57.62	7.37	56.5 ± 0.548
1,1-Dichloroethylene 4640 Volatiles	µg/L	78.73	12.49	157.50	483.83	81.04	12.15	80.2 ± 0.778
cis-1,2-Dichloroethylene 4645 Volatiles	µg/L	152.93	14.39	284.07	904.20	142.89	22.49	148 ± 1.44
1,2-Dichloropropane 4655 Volatiles	µg/L	67.72	7.58	118.81	305.29	70.00	6.37	68.6 ± 0.666
cis-1,3-Dichloropropene 4680 Volatiles	µg/L	52.20	7.52	86.03	208.00	52.21	7.52	52.2 ± 0.502

Volatile Organic Compounds 3A

PEO-120-3A
(continued)

Study Lot 012482
Mfg Lot 012482

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
trans-1,3-Dichloropropene 4685 Volatiles	µg/L	0.00	0.00					0.00
trans-1,2-Dichloroethylene 4700 Volatiles	µg/L	106.58	12.94	183.09	514.81	102.33	13.30	107 ± 1.03
2-Hexanone 4860 Volatiles	µg/L	63.07	10.41	66.83	27.06	62.39	18.56	64.6 ± 0.533
Methyl bromide (Bromomethane) 4950 Volatiles	µg/L	38.90	8.98	50.37	100.97	31.81	8.98	38.9 ± 0.377
Methyl chloride (Chloromethane) 4960 Volatiles	µg/L	134.00	36.94	206.06	433.59	134.45	36.94	134 ± 0.947
4-Methyl-2-pentanone (MIBK) 4995 Volatiles	µg/L	87.49	15.15	90.06	25.11	92.21	14.40	89.1 ± 0.864
Styrene 5100 Volatiles	µg/L	96.70	11.90	96.89	12.38	96.89	11.15	96.4 ± 0.935
1,1,2,2-Tetrachloroethane 5110 Volatiles	µg/L	100.36	14.16	98.84	15.38	96.52	12.75	98.3 ± 0.954
1,1,2-Trichloroethane 5165 Volatiles	µg/L	98.97	9.98	101.69	14.85	98.86	12.30	99.8 ± 0.927
Trichlorofluoromethane 5175 Volatiles	µg/L	49.20	6.22	62.49	175.40	33.37	6.22	49.2 ± 0.477
Vinyl chloride 5235 Volatiles	µg/L	83.30	14.15	102.43	236.80	63.12	14.15	83.3 ± 0.808

Volatile Organic Compounds 3B

PEO-120-3B

Study Lot 012486
Mfg Lot 012486

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Acetone 4315 Volatiles	µg/L	103.88	27.47	131.95	172.66	103.88	27.47	110 ± 1.07
Acetonitrile 4320 Volatiles	µg/L	26.83	5.60	38.18	32.92	26.83	5.60	31.1 ± 0.302
Acrolein (Propenal) 4325 Volatiles	µg/L	33.18	20.60	39.73	25.79	33.18	20.60	110 ± 1.07
Acrylonitrile 4340 Volatiles	µg/L	122.67	17.52	126.86	24.38	122.67	17.52	127 ± 1.23
2-Butanone (Methyl ethyl ketone, MEK) 4410 Volatiles	µg/L	53.63	20.46	160.36	665.93	53.63	20.46	50.1 ± 0.486
Carbon disulfide 4450 Volatiles	µg/L	70.47	12.59	74.87	34.67	70.47	12.59	70.7 ± 0.685
2-Chloroethyl vinyl ether 4500 Volatiles	µg/L	93.50	25.08	129.75	199.21	93.50	25.08	93.2 ± 0.904
1,2-Dibromo-3-chloropropane (DBCP) 4570 Volatiles	µg/L	63.08	14.89	70.03	39.09	63.08	14.89	62.3 ± 0.604
1,2-Dibromoethane (EDB, Ethylene dibromide) 4585 Volatiles	µg/L	15.30	2.30	23.78	48.44	15.64	1.73	15.3 ± 0.148
Dibromomethane 4595 Volatiles	µg/L	20.29	2.48	25.49	28.60	20.29	2.48	19.7 ± 0.191
Dichlorodifluoromethane 4625 Volatiles	µg/L	0.00	0.00					0.00
1,1,1,2-Tetrachloroethane 5105 Volatiles	µg/L	0.00	0.00					0.00
1,2,3-Trichloropropane 5180 Volatiles	µg/L	118.83	29.01	195.85	470.46	118.83	29.01	122 ± 1.18
Vinyl acetate 5225 Volatiles	µg/L	0.00	0.00					0.00

Base/Neutrals 1

PEO-121-1

Study Lot 012490
Mfg Lot 012490

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Naphthalene 5005 Base/Neutrals	µg/L	40.12	8.17	41.69	27.71	37.60	12.56	52.1 ± 0.505
Acenaphthene 5500 Base/Neutrals	µg/L	118.50	19.89	117.18	33.07	115.79	35.96	151 ± 1.46
Acenaphthylene 5505 Base/Neutrals	µg/L	79.39	13.41	79.72	18.71	78.69	19.32	98.5 ± 0.955
Anthracene 5555 Base/Neutrals	µg/L	152.79	25.17	143.04	25.77	140.69	25.61	185 ± 1.79
Benzo(a)anthracene 5575 Base/Neutrals	µg/L	142.80	22.26	135.29	31.55	136.84	21.00	166 ± 1.61

Base/Neutrals 1

PEO-121-1
(continued)

Study Lot 012490
Mfg Lot 012490

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Benzo(a)pyrene 5580 Base/Neutrals	µg/L	74.30	13.26	70.55	18.14	71.97	13.94	82.1 ± 0.797
Benzo(b)fluoranthene 5585 Base/Neutrals	µg/L	87.62	16.16	83.97	18.38	85.15	14.18	102 ± 0.986
Benzo(g,h,i)perylene 5590 Base/Neutrals	µg/L	120.75	21.43	121.27	91.72	109.11	23.54	139 ± 1.35
Benzo(k)fluoranthene 5600 Base/Neutrals	µg/L	99.85	23.28	100.52	29.86	100.61	23.37	119 ± 1.1
Chrysene 5855 Base/Neutrals	µg/L	87.61	15.59	92.80	22.39	93.62	19.28	104 ± 1.01
Dibenz(a,h) anthracene 5895 Base/Neutrals	µg/L	62.60	13.95	68.23	30.34	64.48	18.53	74.6 ± 0.724
Fluoranthene 6265 Base/Neutrals	µg/L	94.14	14.49	99.97	20.61	98.55	20.31	115 ± 1.12
Fluorene 6270 Base/Neutrals	µg/L	138.40	20.45	132.41	36.06	133.16	28.89	172 ± 1.67
Indeno(1,2,3-cd) pyrene 6315 Base/Neutrals	µg/L	50.62	11.37	49.91	17.85	49.87	21.84	64.7 ± 0.579
Phenanthrene 6615 Base/Neutrals	µg/L	45.52	6.70	49.17	8.49	48.57	8.99	52.5 ± 0.51
Pyrene 6665 Base/Neutrals	µg/L	49.89	10.34	52.80	12.03	52.52	12.34	57.6 ± 0.558

Base/Neutrals 2B

PEO-121-2B

Study Lot 012455
Mfg Lot 012455

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Pyridine 5095 Base/Neutrals	µg/L	62.42	22.95	62.75	21.31	62.42	22.95	121 ± 1.18
Aniline 5545 Base/Neutrals	µg/L	69.63	18.92	71.58	22.44	69.63	18.92	108 ± 1.05
Benzyl alcohol 5630 Base/Neutrals	µg/L	83.20	31.10	83.36	27.99	83.18	31.14	136 ± 1.32
Carbazole 5680 Base/Neutrals	µg/L	41.41	8.51	47.14	18.03	41.41	8.51	48.3 ± 0.469
4-Chloroaniline 5745 Base/Neutrals	µg/L	26.56	12.02	27.51	11.41	26.56	12.02	34.0 ± 0.33
1-Methylnaphthalene 6380 Base/Neutrals	µg/L	110.60	31.60	108.61	29.09	104.50	14.05	158 ± 1.54
2-Nitroaniline 6460 Base/Neutrals	µg/L	188.00	25.37	146.72	33.82	146.40	25.37	188 ± 1.82
3-Nitroaniline 6465 Base/Neutrals	µg/L	127.92	34.37	150.01	81.70	127.92	34.37	173 ± 1.68
4-Nitroaniline 6470 Base/Neutrals	µg/L	67.29	13.46	66.75	17.81	67.29	13.12	74.8 ± 0.726

Pesticides 1

PEO-122-1

Study Lot 012439
Mfg Lot 012439

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
Aldrin 7025 Pesticides	µg/L	6.39	1.41	6.91	1.94	6.37	1.56	7.71 ± 0.075
4,4'-DDD 7355 Pesticides	µg/L	6.46	1.14	7.49	3.82	6.74	0.81	6.46 ± 0.063
4,4'-DDE 7360 Pesticides	µg/L	8.49	1.37	8.97	2.36	9.10	1.17	9.81 ± 0.087
4,4'-DDT 7365 Pesticides	µg/L	8.10	1.57	8.63	1.84	8.65	1.97	9.08 ± 0.088
Dieldrin 7470 Pesticides	µg/L	9.28	1.34	10.25	3.97	9.30	1.24	9.28 ± 0.09
Heptachlor 7685 Pesticides	µg/L	7.84	1.61	7.75	2.66	7.26	1.61	9.31 ± 0.09
Heptachlor epoxide 7690 Pesticides	µg/L	8.99	1.41	9.40	3.95	8.55	1.08	9.50 ± 0.092

Pesticides 2

PEO-122-2

Study Lot 012443
Mfg Lot 012443

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric

Pesticides 2

PEO-122-2

Study Lot 012443
Mfg Lot 012443

(continued)	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
delta-BHC 7105 Pesticides	µg/L	4.24	1.03	7.33	11.39	4.24	1.03	4.41 ± 0.043
alpha-BHC (alpha-Hexachlorocyclohexane) 7110 Pesticides	µg/L	8.58	1.44	10.30	6.02	9.45	1.69	9.54 ± 0.092
beta-BHC (beta-Hexachlorocyclohexane) 7115 Pesticides	µg/L	10.67	1.87	12.36	7.82	11.29	1.43	12.1 ± 0.117
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane) 7120 Pesticides	µg/L	2.95	0.56	4.87	7.59	3.09	0.49	3.27 ± 0.032
alpha-Chlordane 7240 Pesticides	µg/L	4.02	0.68	4.63	2.68	3.99	0.56	4.44 ± 0.043
gamma-Chlordane 7245 Pesticides	µg/L	3.90	0.70	3.53	0.99	3.74	0.62	4.37 ± 0.042
Endosulfan I 7510 Pesticides	µg/L	6.96	1.57	9.53	6.70	7.84	1.34	8.12 ± 0.079
Endosulfan II 7515 Pesticides	µg/L	8.81	1.82	13.73	8.75	11.64	1.63	10.7 ± 0.103
Endosulfan sulfate 7520 Pesticides	µg/L	3.13	0.63	4.83	6.03	3.08	0.44	3.43 ± 0.033
Endrin aldehyde 7530 Pesticides	µg/L	17.10	3.70	18.25	18.17	14.74	1.33	19.2 ± 0.186
Endrin ketone 7535 Pesticides	µg/L	4.03	0.71	3.98	1.26	4.03	0.61	3.72 ± 0.036
Endrin 7540 Pesticides	µg/L	15.14	3.13	18.59	12.66	15.61	2.07	16.6 ± 0.161
Methoxychlor 7810 Pesticides	µg/L	13.06	3.07	15.96	13.53	12.38	1.72	14.2 ± 0.138

Oxygenates in Water

PEO-256

Study Lot 012253
Mfg Lot 012253

	Units	Proficiency Value	Proficiency Std. Dev.	Mean	Standard Deviation	Robust Mean	Robust Std. Dev.	Gravimetric
T-amylmethylether (TAME) 4370 Miscellaneous Analytes	µg/L	80.10	8.01					80.1
tert-Butyl alcohol 4420 Miscellaneous Analytes	µg/L	29.80	5.96	30.18	8.53	29.86	11.31	29.8
Ethyl-t-butylether (ETBE) 4770 Miscellaneous Analytes	µg/L	28.30	5.66					28.3
Methyl tert-butyl ether (MTBE) 5000 Miscellaneous Analytes	µg/L	64.26	8.13					63.1
Di-isopropylether (DIPE) 9375 Miscellaneous Analytes	µg/L	45.50	9.10					45.5

Program analyte accrediting footnotes

1 NELAC
2 EPA
3 Other
4 A2LA
5 NELAC Experimental

APPENDIX B
Quality Systems Controlled Documents

Quality Assurance Program Manual

Qualifications Manual

Energy Laboratories Analytical Services Catalog

Policies and Procedures Package
- Benefits
- 401-K
- Employee Leave Time, Work Week
- Computer Software Policy
- Work Ethic Policy
- Drug and Alcohol
- Non-Discrimination and Harassment in the Workplace Policy
- Confidentiality Agreement

SOPs
- Organization and Personnel (10-Series)
  - SOP of SOPs'
  - Access and Security
  - Roles and Responsibilities
  - Personnel Training
  - Policies and Procedures
- General Facility Operations (20-Series)
  - Login/Chain of Custody
  - Document Production/Archives
  - Lab Waste Management
  - Internal QA Audits
  - External QA Audits
  - Shipping
  - Property Procurement
  - Lab Notebooks
  - Non-Conformance
  - Sample Storage
  - Purchasing of Laboratory Reagents and Supplies
- General Laboratory Procedures (30-Series)
- Equipment Use and Maintenance (40-Series)
- Analytical Methods (50-Series)

Laboratory Notebooks

APPENDIX C

Quality Assurance / Quality Control Specifications

Appendix A - Table 1 - QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) SPECIFICATIONS - ENERGY LABORATORIES, Inc.

PARAMETER	METHOD REF.	HOLDING TIME**	INITIAL CALIBRATION	CONTINUING CALIBRATION	EXTERNAL CHECK SAMPLE	METHOD BLANK	SURROGATE Recovery	MATRIX SPK Frequency Recovery	DUPLICATE or Matrix Spk Dup	CALIBRATION STANDARDS VERIFICATION	OTHER
BTEX	8021/602 MDHES	14 Days	5 Point 20% RSD 20% RSD of MnRF	Every 12 Hours 85-115% of Initial	Every 48 Hrs 70-130	Every 12 Hrs <PQL	Trifluorotoluene 80-120% Rec.	10% of Smpls 70-130% Rec.	MSD <20% RPD	48 Hrs Check Smpl	PER METHOD SOP Instrument Blk as needed
GRO	MDHES	14 Days	5 Point 25% RSD OF RF 25% RSD of MnRF	Every 12 Hours 75-125% of Initial	Every 12 Hrs 50-150%	Every 12 Hrs <PQL	Trifluorotoluene 50-150% Rec.	10% of Smpls 60-120% Rec.	MSD <20% RPD	48 Hrs Check Smpl	PER METHOD SOP Instrument Blk as needed
DRO	MDHES	Water Extr 7 Days Soil Extr 14 Days Analyze 40 Days	5 Point 25% RSD of MnRF 25% RSD of MnRF	Every 12 Hours 75-125% of Initial	Daily/Batch 60-120%	Every 12 Hrs <PQL	O-terphenyl 50-150% Rec.	10% of Smpls 60-120% Rec.	MSD & BLKSPK <20% RPD	Each Lot of Stds	PER METHOD SOP Instrument Blk as needed
TPH as Diesel	8015 mod	Water Extr 7 Days Soil Extr 14 Days Analyze 40 Days	5 Point 25% RSD of MnRF 25% RSD of MnRF	Every 12 Hours 85-115% of Initial	Daily/Batch 60-140%	Every 12 Hrs <PQL	O-terphenyl 50-150% Rec.	10% of Smpls 60-120% Rec.	MSD & BLKSPK <20% RPD	Each Lot of Stds	PER METHOD SOP Instrument Blk as needed
TPH by Infrared Spectroscopy	418.1	28 Days	4 Point Linear Regression r>.995	Daily 90-110%	Daily/batch 90-110%	10% of Smpls <PQL	NA NA	10% of Smpls 90-110%	MSD <20% RPD	Each Lot of Stds	Calibrate IR wavelength
Purgeable Organics	8260 624*	14 Days	5 Point* <30%RSD Min. RRF 0.25	Every 12 Hrs +/- 25% for CCC +/- 30%*	5% of Smpls QC Limits	10% of Smpls <PQL	3 Surrogates Statistical	10% of Smpls	MSD Statistical Limits	Each Lot of Stds	Tuning every 12 Hrs I.S. areas 50-150% of I.C. Analyte ID RRT +/- .06 Major Ions +/- 20% CLP Guidelines
Regulated and Unregulated Volatile Organic Compounds	524.2	14 Days	5 Point* <30%RSD or Linear Regression Min. RRF 0.25	Every 8 Hrs +/- 30%*	5% of Smpls QC Limits	10% of Smpls <PQL	3 Surrogates 80-120%	N/A	N/A	Each Lot of Stds	Tuning every 8 Hrs I.S. areas 50-150% of I.C. Analyte ID RT +/- 30 sec Major Ions +/- 20% CLP Guidelines
Ignitability	1010	NS	Six Months	NA	5% of Smpls	NA	NA	NA	5% of Smpls	Check Smpl	AS PER METHOD SOP
Corrosivity, pH	9040/9045	Immediately	2 Point bracket sample pH	Every 10thSample +/- 0.1 pH units	per Sequence +/- 0.1 pH units	NA	NA	NA	5% of Smpls	Each lot of Stds	AS PER METHOD SOP
Cyanide Reactivity	9012/9013	14 Days	3 Point Linear Regression r>.995	Every 10 Smpls 85-115% of Initial	NA	5% of Smpls <PQL	NA	NA NA	10% of Smpls 3xLLD or 10%RPD	Check Smpl Instrument	AS PER METHOD SOP
Sulfide Reactivity	9030/9031	7 Days	3 Point Linear Regression r>.995	Every 10 Smpls 85-115% of Initial	NA	5% of Smpls <PQL	NA	NA	10% of Smpls 3xLLD or 10%RPD	Check Smpl Instrument	AS PER METHOD SOP
Specific Gravity	NS	NS	NA	NA	NA	NA	NA	NA	10% of Smpls	NA	
Paint Filter Test	9095	NS	NA	NA	NA	NA	NA	NA	10% of Smpls	NA	
Total Halogens	D808	NS	NA	NA	NA	Batch <0.03 %	NA	NA	10% of Smpls per method	NA	ASTM method

Appendix A - Table 1 - QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) SPECIFICATIONS - ENERGY LABORATORIES, Inc.

PARAMETER	METHOD REF.	HOLDING TIME**	INITIAL CALIBRATION	CONTINUING CALIBRATION	EXTERNAL CHECK SAMPLE	METHOD BLANK	SURROGATE Recovery	MATRIX SPK Frequency Recovery	DUPLICATE or Matrix Spk Dup	CALIBRATION STANDARDS VERIFICATION	OTHER
Acid Digestion	3050		NA	NA	Daily/Batch	Daily/Batch	NA	10% of Smpls	5% of Smpls	NA	AS PER METHOD SOP
Metals, except mercury	ICP/ICPMS	6 Months	2 Point Blank and Std	Every 10 Samples 90-110% of Value	5% of Smpls 90-110% 95-105% for 1st CCV	Daily/Batch <2.2*MDL or 1/10 sample	NA	10% of Smpls 70-130% (200.7) 75-125% (6010)	5% of Smpls 3xLLD or 10%RPD	Check Smpl	AS PER METHOD SOP Instrument Blk as needed Intensity of I.C. Std area Interference Check Std
Mercury	AA	28 days	same as other metals								
TCLP	1311		NA	NA	NA	10% of Smpls	NA	EVERY MATRIX	NA	NA	NA
mercury		28 days to extract									
other metals		180 days to extract									
organics		14 days to extract									
Biochemical Oxygen Demand	405.1	48 hours	Daily, saturated air	NA	Daily 85-115%	Daily <0.2 mg/l	NA	NA	3 replicates/sample		
Chemical Oxygen Demand	410.1	28 days	3 point Linear Regression r>0.995	Every 10 Smpls 85-115% of Initial	10% of Smpls QC Range	Daily/Batch <PQL	NA	10% of Smpls 85-115% Rec.	5% of Smpls 3xLLD or 10%RPD	Check Smpl	AS PER METHOD SOP Instrument Blk as needed
Total Suspended Solids	160.2	7 days	Daily balance calibration	NA	NA	5% of Smpls	NA	NA	5% of Smpls 3xLLD or 10%RPD	NA	
Total Kjeldahl Nitrogen	351.3	28 days	5 pt Linear Regression r>0.995	NA	Daily 90-110%	Daily	NA	10% of Smpls 85-115% Rec.	5% of Smpls 3xLLD or 10%RPD	NA	
Nitrate+Nitrite as N	353.2	28 days	5 point Linear Regression r>0.995	Every 10 Smpls 90-110% of Initial	10% of Smpls 90-110%	10% of Smpls <MDL	NA	10% of Smpls 90-110% Rec.	5% of Smpls 3xLLD or 10%RPD	Check Smpl	AS PER METHOD SOP Instrument Blk as needed
Total Phosphorus as P	365.1	28 days	5 point Linear Regression r>0.995	Every 10 Smpls 90-110% of Initial	10% of Smpls 90-110%	10% of Smpls <MDL	NA	10% of Smpls 90-110% Rec.	5% of Smpls 3xLLD or 10%RPD	Check Smpl	AS PER METHOD SOP Instrument Blk as needed

*QA/QC criteria similar to method shown.

**Holding Times do not reflect actual sample turnaround times.

NS=Not Specified. NA=Not Applicable, Smpl=Sample, IC=Initial Calibration, CC=Continuing Calibration, I.S.=Internal Std, Std=Standard, Blk=Blank, MSD=Matrix Spike Duplicate, MDL=Method Detection Limit,Extr=Extract, RF=Response Factor,MnRF=Mean Response Factor,RRF=Relative Response Factor,RSD=Relative Standard Deviation,RRT=Relative Retention Time,LLD=Lower Limit of Detection. CLP=Contract Laboratory Program SOW 1988

Method Detection Limits are determined annually for chromatographic systems, QA/QC charts as needed. Chain-of-Custody records maintained, sample condition reports for every sample.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
ELEMENTAL ANALYSES BY ICP by EPA Method 200.7/6010B
For Water, Waste, and Soil Analyses

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
Sample Preparation	Soils: 3050 Digestion Waters: Turbidity <1 Analyze direct , >1 digest using 200.2 Total metals are all digested	Meet method QC criteria for the matrix.	1) Reanalyze sample	Reporting: Audit review, "Digestion batch ID for each sample and Date extracted available in Dates Report".
Instrument Initial Calibration (IC)	Daily, or when needed. 1 point calibration and blank	None	None	Calibration of instrument. Calibration validity Tested by ICV and ICB. Reporting: In data QC report
Initial Calibration Verification (ICV)/Instrument Performance Check (IPC)	Immediately follows calibration. Use second source standard.	6010B: R% =90-110 200.7: %R=95-105 immediately after IC,	1) Recalibrate and rerun 2) Prepare fresh standards or/ ICV.	Evaluates accuracy/bias in calibration standards. Reporting: In data QC report
Initial Calibration Blank (ICB)	Immediately follows ICV	<2.2xMDL, or <10% of reporting limit, whichever is greatest.	1) Repour Blanks, recalibrate and rerun. 2) Prepare fresh blank	Evaluates reagent contamination and instrument carryover and background.. Reporting: In data QC report. Blanks values reported down to criteria used.
Low Level Calibration Verification (CRI)	Reporting limit standard analyzed at beginning and end of run.	R%= 50-150	1) None	Verifies instrument ability to quantitate analytes at the reporting limit. Reporting: In data QC report
Interference Check Sample "A" (ICSA)	Run daily	R%=80-120 for interferents +/- 2* reporting limit for analytes	1) Evaluate sample data. Results near reporting limit suspect if failing ICSA. 2) Rerun sample as indicated.	Reporting: In data QC report
Interference Check Sample "AB" (ICSAB)	Run daily	R%=80-120 for interferents	1) Evaluate sample data. Results near reporting limit suspect if failing ICSB. 2) Rerun sample as indicated.	Reporting: In data QC report
Continuing Calibration Verification (CCV)	Run every 10 samples and at end of run.	R% =90-110 as continuing calibration check 200.7: %R=95-105 immediately after IC, 90-110 following CCV's	1) Recalibrate and rerun all samples since last valid CCV 2) Check for sample matrix problems.	Evaluates instrument calibration drift. Reporting: Prior CCV In data QC report, ending CCV = audit review.
Continuing Calibration Blank (CCB)	Run with every CCV and after high level samples as needed.	<2.2xMDL, or <10% of reporting limit, whichever is greatest.	1) Check for high concentration sample 2) Reanalyze CCB. 3) Reanalyze affected samples	Measures analyte carryover in instrument and also evaluates possible contamination in reagents and glassware. Reporting: In data QC report, Blanks values reported down to criteria used.
Instrument Matrix Spike Sample (MS)	6010: Minimum 1/20 samples . 200.7: Minimum 1/10 samples and for each batch. Not performed on digested samples See MS	6010B: %R =75-125 200.7 %R-70-130	1) Rerun spike 2) Evaluate LCS performance.	Evaluates affect of matrix on method performance. Results not evaluated when sample analyte concentration greater than 4X spike level. Reporting: In data QC report.
Instrument Duplicate Sample or Matrix Spike duplicate.	Minimum 1/20 Samples in instrument sequence. Not performed on digested samples	Either 3* PQL or <10%RPD, whichever is greatest. %R= See MS	1) Rerun duplicate/spike 2) Evaluate LCS	Measures method prec sion. MSD may be used instead of duplicate. Reporting: In data QC report.
Method Blank Also see ICB and	Digested Samples, Minimum 1/20 samples or for each batch	< 10% of sample concentration,	1) Re-digest samples from batch which fail acceptance criteria.	Evaluates possible contamination in reagents and glassware. Reporting:

METHOD QA/QC PARAMETERS
ELEMENTAL ANALYSES BY ICP by EPA Method 200.7/6010B
For Water, Waste, and Soil Analyses

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
CCB for direct analyses	whichever is more frequent Direct analyses: Daily and each sequence	<2.2xMDL, or <10% of reporting limit, whichever is greatest.		Reporting: In data QC report, Blank values reported down to criteria used.
Laboratory Control Sample = LFB for direct instrument analyses (undigested).	Digested Samples, Minimum 1/20 samples or for each batch whichever is more frequent Direct analyses: Daily and each sequence.	6010B: %R= 75-125 200.7 %R=85-115 Soils: Within established acceptance ranges for certified material.	1) Repeat LCS analyses 2) Prepare new standards 3) Recalibrate 4) Re-extract and re-analyze samples associated with LFB. 5) Flag data or re-digest batch	Evaluates method precision and accuracy. Reporting: In data QC report
Matrix Spike (MS) (Laboratory Fortified Sample Matrix (LFM)) Pre-digestion for digested samples.	6010: 1/20 samples or 1/Digestion Batch whichever is more frequent. 200.7: 1/10 samples or per batch whichever is more frequent.	6010B: %R= 75-125 200.7: %R=70-130	1) See LCS 2) Flag data or re-digest batch 3) Repeat analyses Note MS recovery performance in soils varies considerably with matrix.	Evaluates digestion extraction efficiency and sample matrix effects on analyses. Reporting: In data QC eport.
Matrix Spike Duplicate (MSD) or digestion duplicate Pre-digestion for digested samples	1/20 samples or 1/Digestion Batch whichever is more frequent	Either +/- 3*LLD or 10% RPD %R=See MS	1) See LCS 2) Flag data or re-digest batch 3) Repeat analyses.	Measures method precision. MSD may be used instead of duplicate. Reporting: In data QC report.
Serial Dilution Sample	when new matrix is encountered	%R=90-110 for analytes >50*PQL	1) Rerun samples 2) Run samples on dilution	Used for screening analyses and for evaluating new matrices.
Inter-element correction Factor Studies	Annually, or whenever instrument changes might affect inter-element corrections.	Comparison to historical data	1) Repeat 2) Correct problem	Correction factors to account for spectral overlap between differing elements.
Upper Linear Range Studies	Annually, or whenever instrument changes might affect sensitivity.	Comparison to historical data	1) Repeat 2) Correct problem 3) Adjust upper calibration limit	Used to determine the upper linear calibration range for the instrument.
MDL/IDL Studies	Annually or whenever instrument changes, which might affect sensitivity.	<2.2 X reporting limit and comparisons to prior studies.	1) Repeat 2) Correct problem 3) Adjust reporting limit to >MDL	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher MDL. Reporting: Audit review
External PE Samples	Semi-annually, WS and WP study samples and internal double blind samples.	Within EPA specified interlaboratory control limits	1) Repeat 2) Correct problem	External review of analytical method accuracy. Historically, excellent performance. Reporting: Current study results available on www. energylab.com website.
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. or as needed	Data statistically within control limits.	1) Correct method problem 2) Adjust control limits	For statistical process control. Reporting: Audit review

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
ELEMENTAL ANALYSES BY ICP-MS by EPA Method 200.8/6020
for Water, Waste, and Soil Analyses

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
Sample Preparation	Soils: 3050 Digestion Waters: Turbidity <1 Analyze direct , >1 digest using 200.2 Total metals are all digested	Meet method QC criteria for the matrix.	1) Reanalyze sample	Reporting: Audit review, "Digestion batch ID for each sample and Date extracted available in Dates Report".
Instrument Tuning	Daily – before calibration, analyze tuning solution; conduct mass calibration, and mass resolution check. Per method requirements	Per individual method requirements:	1) Rerun tuning solutions 2) Adjust instrument parameters and retune 3) Correct Problems	Set instrument parameters for accurate qualitative elemental identification. Tuning solution varies according to matrix anc targeted analytes. Reporting: Audit review
Instrument Initial Calibration (IC)	Daily, or when needed. 2 point calibration and blank	None	None	Calibration of instrument. Calibration validity Tested by ICV and ICB. Reporting: In data QC report
(ICV) Initial Calibration Verification	Immediately follows calibration. Use second source standard.	R% =90-110	1) Recalibrate and rerun 2) Prepare fresh standards or/ ICV.	Evaluates accuracy/bias in calibration standards. Reporting: In data QC report
Initial Calibration Blank (ICB)	Immediately follows ICV	<2.2xMDL, or <10% of reporting limit, whichever is greatest.	1) Repour Blanks, recalibrate and rerun. 2) Prepare fresh blank	Evaluates reagent contamination and instrument carryover and background.. Reporting: In data QC report. Blanks values reported down to criteria used.
Low Level Calibration Verification (CRI)	Reporting limit standard analyzed at beginning and end of run.	R%= 50-150	1) None	Verifies instrument ability to quantitate analytes at the reporting limit. Reporting: In data QC report
Interference Check Sample "A" (ICSA)	Run daily per 6020B requirements	R%=80-120 for interferents +/- 2* reporting limit for analytes	1) Evaluate sample data. Results near reporting limit suspect if failing ICSA. 2) Rerun sample as indicated.	Reporting: In data QC report
Interference Check Sample "AB" (ICSAB)	Run daily for 6020B per 6020B requirements	R%=80-120 for interferents	1) Evaluate sample data. Results near reporting limit suspect if failing ICSB. 2) Rerun sample as indicated.	Reporting: In data QC report
Continuing Calibration Verification (CCV)	Run every 10 samples and at end of run.	R%= 90-110	1) Recalibrate and rerun all samples since last valid CCV 2) Check for sample matrix problems.	Evaluates instrument calibration drift. Reporting: Prior CCV in data QC report, ending CCV = audit review.
Continuing Calibration Blank (CCB)	Run with every CCV and after high level samples as needed.	<2.2xMDL, or <10% of reporting limit, whichever is greatest.	1) Check for high concentration sample 2) Reanalyze CCB. 3) Reanalyze affected samples	Measures analyte carryover in instrument and also evaluates possible contamination in reagents and glassware. Reporting: In data QC report, Blanks values reported down to criteria used.
Instrument Matrix Spike Sample (MS)	6020: Minimum 1/20 samples . 200.8: Minimum 1/10 samples and for each batch. Not performed on digested samples	6020B: %R =75-125 200.8 %R-70-130	1) Rerun spike 2) Evaluate LCS performance.	Evaluates affect of matrix on method performance. Results not evaluated when sample analyte concentration greater than 4X spike level. Reporting: In data QC report.
Instrument Duplicate Sample or Matrix Spike duplicate.	Minimum 1/20 Samples in instrument sequence. Not performed on digested samples	Either 3* PQL or <10%RPD, whichever is greatest. %R= See MS	1) Rerun duplicate/spike 2) Evaluate LCS	Measures method precision. MSD may be used instead of duplicate. Reporting: In data QC report.
Method Blank or	Digested Samples: Minimum 1/20	< 10% of sample	1) Re-digest samples from batch	Evaluates possible contamination in

METHOD QA/QC PARAMETERS
ELEMENTAL ANALYSES BY ICP-MS by EPA Method 200.8/6020
for Water, Waste, and Soil Analyses

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
LRB) (Digested samples only) Also See ICB and CCB for direct analyses	samples or for each batch whichever is more frequent. Direct analyses: Daily and each sequence.	concentration, <2.2xMDL, or <10% of reporting limit, whichever is greatest.	which fail acceptance criteria.	reagents and glassware. Reporting: Reporting: In data QC report, Blank values reported down to criteria used.
Laboratory Control Sample = LFB for direct instrument analyses (undigested).	Digested Samples: Minimum 1/20 samples or for each batch whichever is more frequent. Direct analyses: Daily and each sequence.	6020B: %R= 75-125 200.8 %R=85-115 Soils: Within established acceptance ranges for certified material.	1) Repeat LCS analyses 2) Prepare new standards 3) Recalibrate 4) Re-extract and re-analyze samples associated with LFB. 5) Flag data or re-digest batch	Evaluates method precision and accuracy. Reporting: In data QC report
Matrix Spike (MS) (Laboratory Fortified Sample Matrix (LFM)) Pre-digestion for digested samples.	6010: 1/20 samples or 1/Digestion Batch whichever is more frequent. 200.8: 1/10 samples or per batch whichever is more frequent.	6020B: %R= 75-125 200.8: %R=70-130	1) See LCS 2) Flag data or re-digest batch 3) Repeat analyses Note MS recovery performance in soils varies considerably with matrix.	Evaluates digestion extraction efficiency and sample matrix effects on analyses. Reporting: In data QC report.
Matrix Spike or Digestion duplicate sample	1/20 samples or 1/Digestion Batch whichever is more frequent	Either +/- 3*LLD or 10% RPD %R=See MS	1) See LCS 2) Flag data or re-digest batch 3) Repeat analyses.	Measures method precision. MSD may be used instead of duplicate. Reporting: In data QC report.
Internal Standards	Monitor in all standards, samples, and QC samples.	6010B: 30-140% of IC for all standards, blanks, and samples. 200.7: 60-125% of IC for all analyses.	1) Reanalyze sample 2) Dilute sample and reanalyze. 3) Evaluate associated QC samples in sequence. 4) Reanalyze sequence	Internal standards compensate for instrument drift and sample matrix affects. Internal standards used depend on parameters and sample matrix. Reporting: Audit review
MDL/IDL Studies	IDL's Quarterly, MDL's semiannually, or both whenever instrument changes which might affect sensitivity.	<2.2 X reporting limit and comparisons to prior studies.	1) Repeat 2) Correct problem 3) Adjust reporting limit to >MDL	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher MDL. Reporting: Audit review
Upper Linear Range Studies	Annually, or whenever there are instrument changes, which might affect sensitivity.	Comparison to historical data	1) Repeat 2) Correct problem 3) Adjust upper calibration/quantitation limit	Used to determine the upper linear calibration range for the instrument. Reporting: Audit review
External PE Samples	Semi-annually, WS and WP study samples and internal double blind samples.	Within EPA specified interlaboratory control limits	1) Repeat 2) Correct problem	External review of analytical method accuracy. Historically, excellent performance. Reporting: Current study results available on www. energylab.com website.
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. or as needed	Data statistically within control limits.	1) Correct method problem 2) Adjust control limits	For statistical process control. Reporting: Audit review

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
VOLATILE ORGANICS BY PURGE AND TRAP GC/MS
EPA Method SW-846 8260B for SOIL & WATER

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
Sample Preparation	Methods: Soils: Extracted by 5030B then analyzed by Purge & Trap Waters: 5030B Purge & Trap Surrogates added to all samples	Meet method QC criteria for the matrix.	1) Reanalyze sample	Waters are introduced ir to the GC/MS using Purge & Trap. Soils are extracted into methanol and the methanol extract is added to water and analyzed by Purge and Trap/GC/MS
Initial Calibration	5 point initial calibration Range: 2,5,10, 15, 20 ug/L	If %RSD<15 use avg RF, alternatively use calibration curve (See Note #1).	1. Correct problem 2. Prepare new standards 3. Recalibrate	Calibration of instrument and check of response linearity. Reporting: Audit review
Tuning	BFB Initially and every 12 hours thereafter.	Meet method tuning criteria. (Table 2 SOP ELI 50-006)	1. Adjust instrument 2. Recheck tune 3. Until successful	Evaluate mass sensitivity, mass resolution, isotope ratio, and baseline threshold. Reporting: Audit review
(ICV) Initial Calibration Verification	See LFB using second source standard.			Evaluates accuracy/bias in calibration standards.
Continuing Calibration (CC)	Mid-level standard analyzed every 12 hours to update internal standard response factors (RF)	RF +/- 20% of IC for CCCs, 30% for all others. Internal Std areas R% = 50-150 of IC, See Note #2	1. Correct problem -Reanalyze CC. 2. Re run instrument tune 3. Re-calibrate and re-analyze all samples since last valid calibration check.	Verifies instrument calibration and stability throughout analyses. Reporting: In data validating report package
Method Blank	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent.	<½ PQL	1. Repeat analyses once 2. Correct problem 3. Re-extract and re-analyze all samples associated with method blank.	Measures and evaluates possible contamination in reagents and glassware used in method. Reporting: Routine data reporting package.
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent.	CLP SOW 3/90 %R = 60-140 %RPD = See example QA Matrix Spike reports	1. Repeat analyses 2. Re-extract and reanalyze MS, (if sufficient sample). 3. Evaluate LFB performance.	Evaluates affect of matrix on method performance. Reporting: Routine data reporting package.
Lab Fortified Blank (LFB) or Lab Control Sample (LCS)	Minimum 1/20 samples/matrix and each batch of samples, whichever is more frequent. Use second source standards to check calibration.	%R = 60-140 Includes the 65 compounds on ELI Short List.	1. Repeat analyses 2. Prepare new standards 3. Recalibrate 4. Re-extract and re-analyze all samples associated LFB.	Evaluates method precision and accuracy. Method specifies 70-130 Reporting: Routine data reporting package.
Internal Standards (Samples and QC)	Monitor total areas in each analyses Bromochloromethane-d2 Fluorobenzene Chlorobenzene-d5 1,2-Dichlorobenzene-d5	Samples: Area% 50-150% of IC RT = +/- 30 sec of IC.	1. Repeat analyses 2. Correct Problem 3. Re-prepare samples 4. Analyze different sample 5. Re-analyze set of samples.	Measures instrument stability and sensitivity. Reporting: Audit review
Surrogates	Present in all extracted samples (including QC) 1,2-Dichloroethane-d4 Toluene-d8 p-Bromofluorobenzene	%R = 80-120	1. Repeat analyses 2. Recalibrate with fresh fortification standard. 3. Re-extract samples	Evaluates method performance on each individual sample analyzed. Reporting: Routine data reporting package.
Mass Spectra	Review all target analytes in standards, and also target compounds found in samples.	Spectra must be consistent with library database	1)Verify calibration spectra and retention times 2) Repeat analyses	Used to qualitatively identify target compound hits in samples. Reporting: Audit review

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
VOLATILE ORGANICS BY PURGE AND TRAP GC/MS
EPA Method SW-846 8260B for SOIL & WATER

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
MDL Studies	MDL - Annually for water and soils and initially for each new instrument setup or analyst.	MDL< PQL	1. Repeat once 2. Correct problem	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher MDL. Reporting: Audit review
External PE Samples	Semi-annually, WP study samples.	Within specified interlaboratory control limits	1. Repeat 2. Correct problem	External review of analytical method accuracy. Reporting: Audit review
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. or as needed	Data statistically within control limits.	1. Correct method problem 2. Adjust control limits 3. Replace analyst	For statistical process control. Reporting: Audit review

Note 1: CCC = Continuing Calibration Check Compounds. Calibration curve (first or higher order), all analytes %RSD<30 then R2 >0.99, RF for System Performance Check Compounds (SPCCs) >0.3000 for Chlorobenzene and 1,1,2,2-Tetrachloroethane;>0.1 for Chloromethane and 1,1-dichloroethane, and Bromoform.
Note 2: RF acceptance criteria for SPCCs same as for initial calibration.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-

Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

TABLE 2.
BFB MASS - INTENSITY SPECIFICATIONS (4-BROMOFLUOROBENZENE)[a]

Mass	Intensity Required (relative abundance)
50	15 to 40% of mass 95
75	30 to 60% of mass 95
95	base peak, 100% relative abundance
96	5 to 9% of mass 95
173	less than 2% of mass 174
174	greater than 50% of mass 95
175	5 to 9% of mass 174
176	greater than 95% but less than 101% of mass 174
177	5 to 9% of mass 176

[a] Alternate tuning criteria may be used (e.g. CLP, Method 524.2, or manufacturers' instructions), provided that method performance is not adversely affected.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
SEMIVOLATILE ANALYSES BY GC/MS
EPA Method 8270C

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
Sample Preparation Extraction	SW-846 Methods: Soils: 3550B or 3545 Waters: 3510C or 3520C Wastes: 3550B, 3545, 3580 Surrogates added to all samples	Meet method QC criteria for the matrix.	1) Re-analyze sample or re-extract sample. If re-extraction outside of holding time report both sets of data.	Minimum sample volume required per sample. (Additional recommend) Soils: 30 grams Water: 1 Liter
Instrument Initial Calibration (IC)	5 point initial calibration Range:20,50,75,100,150	See Note #1	1) Correct problem 2) Prepare new standards 3) Recalibrate	Calibration of instrument and check of response linearity. Reporting: Audit review
Tuning	DFTPP Initially and every 12 hours thereafter.	Meet method tuning criteria. (Table 3 SOP ELI 50-009)	1) Adjust instrument 2) Recheck tune 3) Until successful	Evaluate mass sensitivity, mass resolution, isotope ratio, and baseline threshold. Reporting: Audit review
(ICV) Initial Calibration Verification	Quarterly or with each new lot# of standards used for calibration.	R% = 85-115 of IC	1) Correct problem 2) Prepare new ICV or IC standards	Evaluates accuracy/bias in calibration standards. Reporting: In data validating report package
Continuing Calibration (CC)	Mid-level standard analyzed every 12 hours to update internal standard response factors (RF)	See Note #2	1) Correct problem -Reanalyze CC. 2) Re-run instrument tune 3) Re-calibrate and re-analyze all samples since last valid calibration check.	Verifies instrument calibration and stability throughout analyses. Reporting: In data validating report package
GC Performance Analyte Degradation	Each Tuning: Evaluate TIC areas of DDT breakdown products and chromatographic profile	<20% breakdown	1) Instrument maintenance 2) Re-check tune	Evaluates chromatographic system for reactivity. Reporting: Audit review
Method Blank	Each batch of 20 samples/matrix or when there is a change of reagents , whichever is more frequent.	<½ PQL excepting phthalates	1) Repeat analyses once 2) Correct problem 3) Re-extract and re-analyze all samples associated with method blank.	Measures and evaluates possible contamination in reagents and glassware used in method. Reporting: Routine data reporting package.
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent.	CLP SOW 3/90 (Table 9 - SOP ELI 50-009) or statistical control limits. %RPD = See example QA Matrix Spike reports	1) Repeat analyses 2) Re-extract and reanalyze MS, (if sufficient sample). 3) Evaluate LFB performance. (See Note #3)	Evaluates affect of matrix on method performance. Reporting: Routine data reporting package.
Lab Fortified Blank (LFB) QC Check Sample	Minimum 1/20 samples/matrix and each batch of samples, whichever is more frequent.	(Table 6 - SOP ELI 50-009) or statistical control limits.	1) Repeat analyses 2) Prepare new standards 3) Recalibrate 4) Re-extract and re-analyze all samples associated with LFB.	Evaluates method precision and accuracy. Reporting: Routine data reporting package.
Internal Standards (Samples)	Monitor total areas in each analyses Acenapthene-d10 Phenanthrene-d10 Chrysene-d12 1,4 Dichlorobenzene-d4, Napthalene-d8, and Perylene-d12	Samples: Area% 50-150% of IC RT = +/- 30 sec of IC.	1) Repeat analyses 2) Correct Problem 3) Re-prepare samples 4) Analyze different sample 5) Re-analyze set of samples.	Measures instrument stability and sensitivity. Reporting: Audit review
Mass Spectra	Review all target analytes in standards and reported analytes in samples	Spectra must be consistent with library	1)Verify calibration spectra and retention times	Used to qualitatively identify target compound hits in samples.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
SEMIVOLATILE ANALYSES BY GC/MS
EPA Method 8270C

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS/REPORTING
	in samples.	database	2) Repeat analyses	Reporting: Audit review
Surrogates	Present in all extracted samples (including QC)	CLP-SOW 3/90 (Table 8 - SOP ELI 50-009) or statistical control limits	1) Repeat analyses 2) Recalibrate with fresh fortification standard. 3) Re-extract samples	Evaluates method performance on each individual sample analyzed. Reporting: Routine data reporting package.
MDL Studies	MDL - Annually each for water and for soils, initially for each new instrument setup or analyst. Calculated from method validation study of QC check sample. %R=60-140, %RSD <30	MDL <0.2X of PQL PQL = 10ug/L or 0.33ug/g with exceptions (See Note #4)	1) Repeat once 2) Correct problem	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher reporting limit. Reporting: Audit review
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. Or as needed	Data statistically within control limits.	1) Correct method problem 2) Adjust control limits 3) Replace analyst	For statistical process control. Reporting: Audit review

Note #1 %RSD for CCC (Table 4 SOP ELI 50-009) <30. RF for SPCC's (N-nitroso-di-n-propyl amine, hexachlorocyclopentadiene, 2,4-Dinitrophenol, and 4-Nitrophenol) > 0.050. If % RSD for a compound is < 15, linearity is assumed and average RF is used. If % RSD > 15 (and less than 30 for CCC), use a calibration curve with correlation coefficient >= 0.990. Lower calibration levels are not used for certain compounds. PQL's are adjusted as appropriate.

Note #2 RF for SPCC>0.050, RF of CCC's must be <20% difference from IC. RF of all other compounds must be <30% difference from IC.

Note #3 If any analyte in the MS/MSD fails, QC limits for failed compounds must be within acceptable recovery limits for the blank spike laboratory control sample.

Note #4 PQL for Benzidine, 3,3' Dichlorobenzidine, and pyridine = 20ug/L. 4-Nitrophenol, Pentachlorophenol, 2,4-Dinitrophenol, 4,6-Dinitro-2-methylphenol = 50 ug/L.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC Parameters Volatile Petroleum Hydrocarbons (VPH) per Massachusetts Method January 1998 Revision				
QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS
Sample Preparation	Soils: Methanol Preserved vials required. 10 grams Soil/10mL of methanol VPH Surrogates added to all samples before extraction. Waters: VOA Vials, preserve to a PH<2.	Meet all method QC criteria for the matrix.	1) Reanalyze sample	VPH surrogates added to all sample before extraction.
Instrument Calibration (IC)	5 Point calibration to precede analyses. Use average response factors. Certain compounds are selected for FID calibration and other compounds are used for PID calibration.	25% RSD of Mean Response Factors. Includes individual compound response factors and range response factors.	1. Repeat calibration 2. Correct problem 3. Recalibrate	Used to calibrate instrument response. Consists of a 13 component standard containing both aliphatic and aromatic hydrocarbons
Initial Calibration Verification (ICV)	Follows valid initial calibration (See Blank Spike)		1. Repeat once 2. Recalibrate 3. Prepare fresh standards	Second source standard to evaluate calibration standard biases.
Continuing Calibration Check (CCC)	Every 12 Hours and at the end of every analytical sequence	75-125% of Initial Calibration for the CCC preceding sample analyses.	1. Repeat once 2. Correct problem 3. Recalibrate 4. Reanalyze all samples since last valid calibration check.	Analyses of Mid-level calibration standard to measure drift in instrument sensitivity/method performance.
Method Blank	Minimum 1/20 Samples	½ of PQL for target analytes	1. Repeat once 2. Correct problem 3. Re-analyze all samples since last valid method blank.	Method blank evaluates glassware reagents, and methodology to be free of contamination. Soil method blanks use clean sand.
Matrix Spike and Matrix Spike duplicate (MS/MSD)	Minimum 1/20 samples	(Recommended) 70-130% Recovery. 20% RPD between duplicates.	1. Evaluate matrix, possibly repeat using higher spiking level. 2. Correct problem 3. Verify sample homogeneity for soils.	Evaluates affect of matrix on method performance. Soils are spiked at time of extraction.
Laboratory Fortified Blank (Blank Spike)	Minimum 1/20 samples Soils are prepared using a blank sand matrix.	R% = 70 - 130	1. Repeat once 2. Correct problem 3. Re-analyze all samples since last valid laboratory fortified blank.	Evaluates overall performance of method on a characterized matrix.
Surrogates	TFT spiked into all samples analyzed	Recovery 70-130%	1. Evaluate sample matrix and surrogate spike level. 2. Repeat once 3. Evaluate LFB performance	Evaluates method performance on each individual sample matrix.
Analyte Confirmation in Samples	Confirm target VPH analytes by GC/MS analyses.	Upon client request.	None	Analyte identifications in samples are not routinely confirmed. GC/MS confirmation done only per client request.

METHOD QA/QC Parameters Volatile Petroleum Hydrocarbons (VPH) per Massachusetts Method January 1998 Revision				
MDL Studies	MDL - Annually for soils and water and initially for each new instrument setup or analyst.	MDL<0.3X of PQL	1. Repeat once 2. Correct problem 3. Until successful	Method Detection Limit (MDL) studies are used to verify the ability to measure analyte measurements at the minimum reporting level.
Proof of Competency	Statistical review of method QC data for each analyst.	Data statistically within control limits.	1. Correct method problem 2. Replace analyst	Review of each analyst QC data show them to be skilled competent analysts.
External PE Samples	None	Within interlaboratory control limits	1. Repeat 2. Correct problem	External PE samples are not utilized. Laboratory analyzes internal QC samples as per method.
Control Charting	Annually or as needed	Data statistically within control limits.	1. Correct method problem 2. Adjust control limits 3. Replace analyst	Surrogate, MS, LCBS %recovery, and RPD are done biannually. MS/MSD data not plotted.

ENERGY LABORATORIES, INC. * 1120 S 27th St * PO Box 30916 * Billings, MT 59107-0916
Toll Free 800.735.4489 * 406.252.6325 * FAX 406.252.6069 * eli@energylab.com

METHOD QA/QC PARAMETERS
Extractable Petroleum Hydrocarbons (EPH) per Massachusetts Method
January 1998 Revision

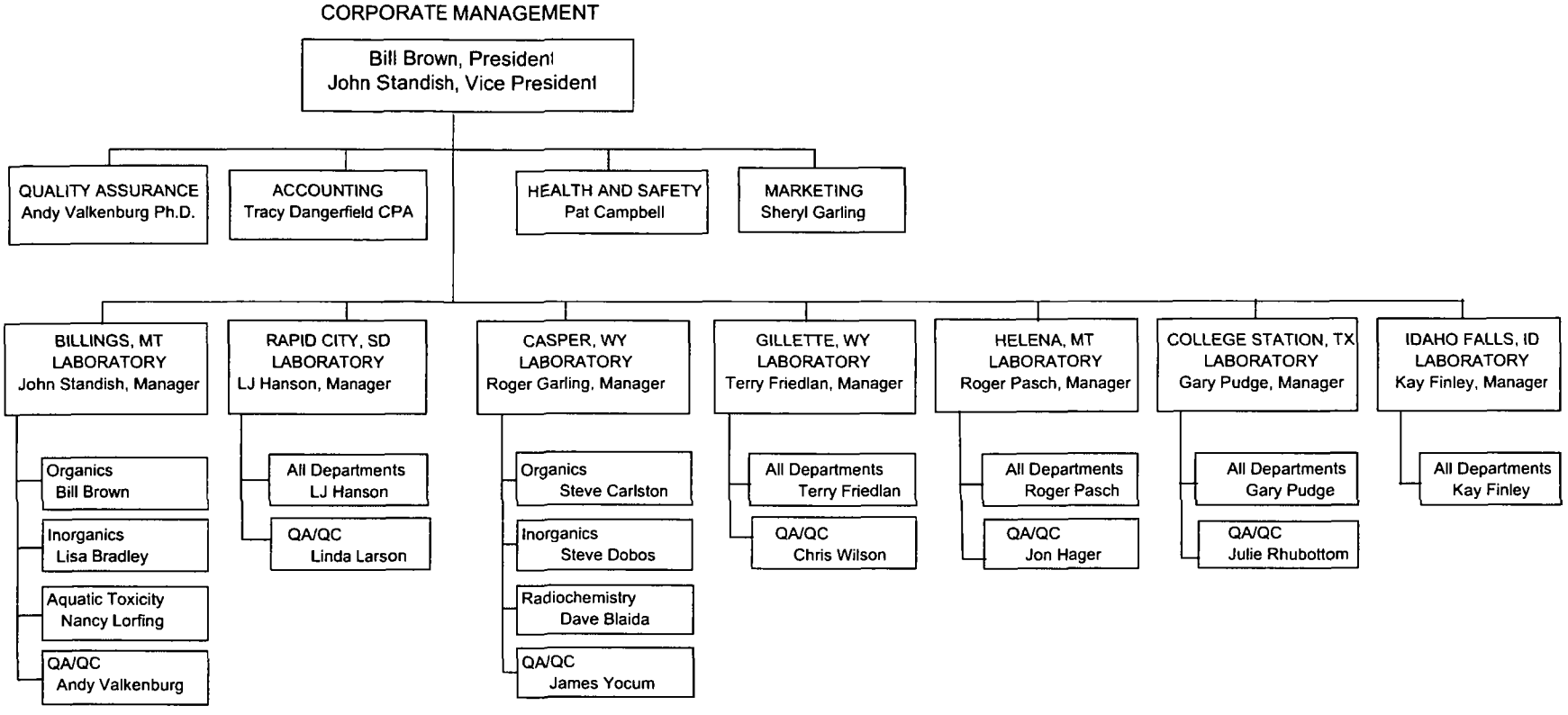
QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS
Sample Preparation	Methods: Soils: 3550 (30 grams to 1mL) Waters: 3510 or 3520 (1 Liter to 1 mL) 1mL of EPH extraction surrogates added to all samples prior to extraction. 1 ml of EPH separation surrogates added to extract just prior to separation.	Meet all method QC criteria for the matrix.	1) Re-analyze sample	Samples are extracted using Methylene chloride solvent and then the extract is concentrated. Following separation of extract into an aliphatic and aromatic fraction each fraction is independently analyzed by GC/FID. Sample amount and final extract volume may be adjusted based on analyte levels and/or sample matrix.
Fractionation Check	Per each Lot # of Separation Cartridges Used	Effective separation of target analytes into appropriate fraction. R%=40-140 except the more volatile target analytes with >20% recovery.	1. Repeat once 2. Correct problem (adjust elution volumes) 3. Prepare new standards 4. Recalibrate	Uses aliphatic and aromatic hydrocarbon standards in hexane. The more volatile aromatic and aliphatic compounds may have lower recoveries than method specified limits.
Initial Calibration (IC)	5 point initial calibration each for aliphatics and aromatics, external standardization option of method chosen. Aliphatic Standard Solution Aromatic Standard Solution Range: 5,50,200,500,and 1000 ug/mL. To precede sample analyses.	25% RSD MnRF 25%RSD each component.	1. Repeat once 2. Correct problem 3. Prepare new standards 4. Recalibrate	Used to Calibrate instrument, evaluates chromatographic separation effectiveness, and instrument response linearity.
Chromatography	1) Each IC or CCC- Resolution is verified 2) Retention Time Windows –Use RRT and analyst discretion for instrument stability.	Chromatographic resolution: Monitored against historical performance levels. 50% separation of phenanthrene and anthracene.	1. Repeat once 2. Adjust column conditions 3. Perform instrument maintenance 4. Replace GC column	Verifies that gas chromatographic system is operating properly. Resolution criteria for two selected PAH pairs are not met as per method specifications.
Initial Calibration Verification (ICV)	Follows the IC, using second source calibration standards. DRO standard used to verify aliphatic IC standard and a separate PAH standard is used for aromatics.	+/- 25% of MnRF +/- 25% RF each component	1. Repeat once 2. Prepare fresh standards and reanalyze. 3. Recalibrate and re-analyze all affected samples.	Evaluates accuracy of calibration standards.
Continuing Calibration Check (CCC)	Mid-level standard analyzed every 12 hours and at the end of every analytical sequence	+/- 25% of MnRF +/- 25% RF each component	1. Repeat once 2. Correct problem 3. Re-calibrate and re-analyze all samples since last valid calibration check.	Verifies instrument calibration and stability throughout analyses. No QC criteria for the CC following sample analyses.
Method Blank	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent.	<½ PQL	1. Repeat analyses once 2. Correct problem 3. Re-extract and re-analyze all samples associated with method blank.	Measures and evaluates possible contamination in reagents and glassware used in method.

QA SAMPLE/ INDICATOR	FREQUENCY	ACCEPTANCE CRITERIA	CORRECTIVE ACTION	COMMENTS
Instrument Blank	Each 12 hour sequence or as indicated, such as after a heavily contaminated extract. A method blank analyses can be substituted for an instrument blank.	<½ PQL	1. Repeat analyses once 2. Perform Instrument maintenance 3. Re-analyze all associated samples in sequence where contamination level may affect result.	Measures and evaluates possible contamination in gas chromatographic analysis system.
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	Each batch of 20 samples/matrix or when there is a change of reagents, whichever is more frequent. Fortified with 5 or more representative aliphatic and 5 or more aromatic compounds. Uses a second source standard.	%R = 40-140 except for the more volatile aromatic and aliphatic compounds which may have lower recovery. %RPD = 50% (advisory)	1. Repeat GC analyses 2. Re-extract and reanalyze MS/MSD, (if sufficient sample) or select another sample to MS. 3. Evaluate LFB performance.	Evaluates affect of individual matrix on method performance and method precision. Poor MS/MSD QC performance does not necessarily reject extraction batch group. Control limits are advisory due to sample matrix effects.
Blank Spike (BLKSPK)	Minimum 1/20 samples/matrix and each batch of samples, whichever is more frequent. Same spiking solution as for MS/MSD	%R = 40-140	1. Repeat analyses 2. Prepare new standards 3. Recalibrate 4. Re-extract and re-analyze all samples associated with LFB.	Evaluates method accuracy. Used for ongoing proof of competency.
Extraction Surrogates	Added to all samples prior to extraction (including QC). Ortho-Terphenyl (PAH fraction) and 1-Chloro-octadecane (Aliphatic fraction).	%R = 40-140 Control limits are advisory due to possible sample matrix effects.	1. Repeat analyses 2. Evaluate for matrix effects 3. Re-extract samples if method batch performance is suspected.	Evaluates extraction and separation method performance on each individual sample analyzed. Water samples containing sediment may have reduced analyte and surrogate extraction efficiency. Extraction performance alone can be evaluated from an EPH screening result.
Separation Surrogates	Surrogates added to sample extract prior to fractionation. 2-Bromonapthalene and 2-Fluorobiphenyl.	%R = 40-140 in Aromatic fraction. Control limits are advisory due to possible sample matrix effects.	1. Repeat analyses 2. Evaluate for matrix effects 3. Re-extract samples if method batch performance is suspected.	Evaluates the effectiveness of the aliphatic/aromatic separation step. Proportional Level of presence of either surrogate in the aliphatic fraction suggests incomplete separation of the more volatile PAH's from the aliphatic fraction.
EPH Screening	Analyses of extract prior to the separation step of the EPH method.	%R = 40-140 for extraction surrogates. Full EPH recommended if TEH result >0.1mg/L for waters or 50ug/g for soils.	1. Repeat analyses 2. Evaluate for matrix effects 3. Re-extract samples if method batch performance is suspected.	Evaluates method extraction performance on each individual sample analyzed. Target analyte levels in result are used to determine if full EPH analyses is necessary.
PAH Target Analyte Confirmations	Analyses performed by 8270 on Aromatic fraction if PAH target analytes are present above MTDEQ limits.	Meets 8270 analyses criteria	1. Repeat analyses to meet all 8270 method QC criteria	Confirms and accurately quantitates PAH levels in aromatic extract. 8270 method isconsidered less sensitive to false positives than the EPH method..
MDL Studies	MDL – Annually for water and soils and initially for each new instrument setup or analyst.	MDL< PQL	1. Repeat once 2. Correct problem	Evaluates overall method detection limits in clean sample matrix. Actual samples may have higher MDL.
External PE Samples	None	Within specified interlaboratory control limits	1. Repeat 2. Correct problem	External review of analytical method accuracy. See BLKSPK.
Control Charting and Proof of Competency	Annual, statistical review of method QC data for each analyst. or as needed	Data statistically within control limits.	1. Correct method problem 2. Adjust control limits 3. Replace analyst or extractionist	For statistical process control and demonstration of capability for analysts.

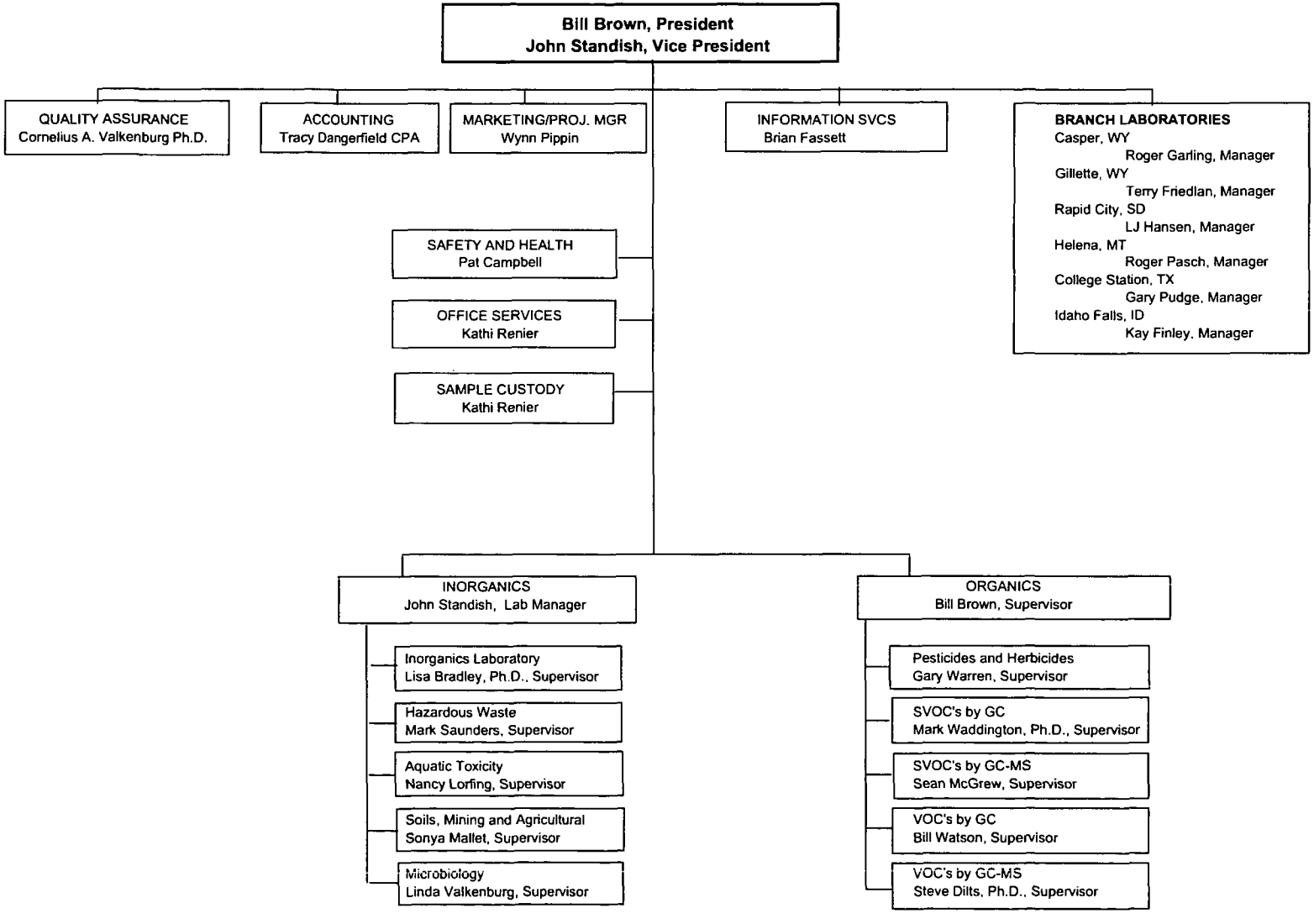
APPENDIX D
Organizational Charts

Corporate Organizational Chart
ELI-Billings Organization Chart

ENERGY LABORATORIES, INC.
CORPORATE ORGANIZATIONAL CHART



ENERGY LABORATORIES, INC.
BILLINGS ORGANIZATIONAL CHART



APPENDIX E

Curricula Vitae of Key Laboratory Personnel

WILLIAM T. BROWN

President
Director of Organic Analysis Department

Experienced in laboratory methods development, on-site sampling and analysis, and analytical chemistry.

Education & Academic Training

Bachelor of Science in Fish and Wildlife, Montana State University, Bozeman, MT, Management, 1977

Organic Chemistry and Analytical Instruments, Eastern Montana College, Billings, Montana. 1980

Operation and maintenance of Dionex Ion Chromatograph, Dionex Corporation, 1977.

Modern Techniques in Gas Chromatography, American Chemical Society Short Course, 1988.

Gas Chromatography Mass Spectrometry, American Chemical Society Short Course, 1989.

Finnigan Mat Company Gas Chromatograph Mass Spectrometry Training Course, 1989.

Analysis of Water & Waste Samples by U.S. EPA Methods, American Chemical Society Short Course, 1990.

Professional Experience

1986 to present, President, Chemist - Energy Laboratories, Inc., Billings, Montana. In charge of the development of the trace organics analytical department. Develops test methods, selects equipment, and trains technical staff in the analysis of trace organic compounds in samples of environmental and commercial interest.

1981 - 1987, Manager - Energy Laboratories, Inc., Branch Laboratory, Gillette, Wyoming. Responsible for routine analysis and quality control of water, natural gas, and petroleum products. Involved in field on site sampling and testing, meter calibrations, and supervision of branch laboratory staff.

1979 - 1981, Laboratory Technician - Energy Laboratories, Inc., Billings, Montana. Responsible for the natural gas and petroleum products department of the lab including field natural gas testing. Also involved with various work in water and soil analysis including formal training in ion chromatography.

1977 - 1979, Fisheries Biologist - Water and Forests Department of the Government of Niger, Africa. While in the Peace Corps, responsible for developing fisheries management programs in a specific region including monitoring water quality by on-site testing.

JOHN M. STANDISH

Lab Director/Chief Chemist

Experienced in the examination of many types of environmentally related samples including water, soil, coal, and air pollutants

Education and Academic Training

Bachelor of Science in Biology, College of Great Falls, Great Falls, MT, 1973

Managing the Chemical Analysis Laboratory, 32 hr seminar, 1979

Financial Management of the Closely Held Business, 8 hr seminar, 1985

Hiring and Firing, 8 hr seminar, 1986

MS-DOS Operating Systems, 16 hr class, 1986

Dale Carnegie Training, 14 week training 1986

Taking Control of Your Workday, 8 hr seminar, 1989

Pittsburgh Conference of Analytical Chemistry, 5 day conference, 1989 & 1992

Unix Operating Systems, 24 hr class, 1991

New Sample Preparation Methods for Chemical Analysis, American Chemical Society Short Course, 1992.

Professional Experience

1981 - Present, Chief Chemist - Energy Laboratories, Inc., Billings, Montana. Coordinates laboratory analysis with client contracts. Responsible for direction, training, and supervision of the analytical laboratory staff. Involved in new procedural and equipment development, quality assurance program, client relations, and report preparation.

1974 - 1981, Director of Chemical and Environmental Laboratory - Northern Testing Laboratories, Inc., Billings, Montana. Responsible for personnel training and supervision, laboratory schedules, client relations and analytical methodology development. Chief areas of analysis were soils, water, coal, air pollution, and meteorological monitoring.

Professional Organizations

American Society of Testing and Materials
Montana Mining Association
Montana Geological Society
Northwestern Mining Association

CORNELIUS A. VALKENBURG Ph.D.

Senior Analytical Chemist/Quality Assurance Officer

Education

Ph.D., Analytical Chemistry, Montana State University, Bozeman, Montana, 1987
Bachelor of Arts, Biology with minor in Chemistry, Carroll College, Helena, Montana, 1979
Technical Writing, University of Nevada, Las Vegas, Nevada, 1988
Emergency Medical Training, Hillsboro Medical Hospital, 1981
Mass Spectrometry, Oregon Graduate Center, 1981
Dale Carnegie Management Training, Billings, Montana, 1996
Dale Carnegie Graduate Assistant Training, Billings, Montana 1997

Professional Experience

1992- Present, Analytical Chemist/Quality Assurance Officer - Energy Laboratories, Inc., Billings, Montana. Corporate Quality Assurance Officer responsible for the Quality Assurance monitoring of laboratory operations. Performs method development, prepares and updates standard operating procedures, performs technical training, and involved with special projects. Manages laboratory solvent recycling program.

1989 - 1992, Senior Organic Analytical Chemist - ICF Kaiser Engineers, Las Vegas, Nevada. Provide supervisory and technical support in the design, preparation, analysis, and multi-laboratory certification of analytical method performance evaluation materials used to evaluate current and proposed EPA organic analytical procedures. Also review proposed EPA methods contracts for technical accuracy. Secondary duties as Laboratory Safety Officer.

1987 - 1989, Senior Scientist - Lockheed Engineering and Sciences Company, Environmental Programs (Organic Chemistry Section), Las Vegas, Nevada. Responsible for research and development projects as applied to improved methods for the analysis of EPA priority pollutants. Areas of study include: liquid-liquid extractions, solid-phase extraction, soil leachability modeling (TCLP), chemical derivatives for gas and liquid chromatography, production of performance evaluation materials, gas chromatographic methods, supercritical fluid chromatography and extraction, and laboratory automation.

1981 - 1987, Ph.D. Candidate, Graduate Research, Assistant - Montana State University, Department of Chemistry, Bozeman, Montana. Research in gas chromatographic detector design, modification, and characterization by computer modeling. Teaching of undergraduate laboratories in the areas of inorganic, organic, and analytical chemistry.

1981 - 1981, Research and Development Chemist - Falls Chemicals, Great Falls, Montana. Methods development for the analysis of raw materials and formulated products used or produced by Falls Chemicals. Performed optimization studies for plant chemical processes.

1980 - 1981, Research Technician - Oregon Graduate Center, Beaverton, Oregon. Synthesis and purification of polyamine dueterated analogues for their use as internal standards in mass spectrometry.

1978 - 1979, Field Technician and Student Researcher - State of Montana Water Quality Bureau and Carroll College, Helena, Montana. Evaluate the effects of subsurface drainage on saline seep areas.

Summer 1978, Lab Technician - American Chemet Corporation, East Helena, Montana. Quality control for the manufacture of CuO and CuO_2, and the trace analysis of Pb. Methods used were wet chemistry, electrochemistry, and atomic absorption.

Professional Organizations

American Chemical Society

WYNN PIPPIN

Project Manager

Education

B.S. Microbiology, Agronomy, South Dakota State University, Brookings, South Dakota 1977

B.A. Biology/Chemistry, South Dakota State University, Brookings, South Dakota 1977

Masters credits in Hydrology, University of Wyoming, Laramie, Wyoming 1981-1982

Professional Experience

1997-Present, Project Manager, Energy Laboratories, Inc., Billings, Montana. Duties include Project Management of Safe Drinking Water Act (SDWA), refinery RFI clients and others. Performs data review of technical reports issued to clients. Represents Energy Laboratories, Inc. at various marketing activities.

1989-1997, Project Manager, Inter-Mountain Laboratories, Inc., Bozeman, Montana. Analyzed water and soil samples for VOCs, SVOCs, Pesticides and Herbicides. Supervised laboratory personnel, served as project manager for Safe Drinking Water Act (SDWA), Resource Conservation and Recovery Act (RCRA), mining and refinery clients. Served as Quality Assurance Officer for the laboratory.

1981-1989, Chemist, Wyoming Department of Agriculture, Laramie, Wyoming. Analyzed water, soil, tissue samples for general chemistry, metals, VOCs, pesticides, herbicides, method development for metals in tissue.

1978-1981, Program Director, South Dakota Department of Agriculture, Pierre, South Dakota. Supervised soil/water irrigation compatibility program.

1977-1978, Chemist, Desert Research Institute, Reno, Nevada. Analyzed water samples for anions, perform cation/anion balances, experiment with extraction of U w/resin.

STEPHEN B. DILTS, Ph.D.

Senior Analytical Chemist

Education

Ph.D., Analytical Chemistry, Washington State University, Pullman, WA, 1993
M.S., Analytical Chemistry, Washington State University, Pullman, WA, 1985
B.S., Chemistry, Montana State University, Bozeman, MT, 1981

Professional Experience

1994-Present, Senior Analytical Chemist- Energy Laboratories, Inc., Billings, MT.
Volatile organics GC/MS supervisor and analyst.

1993-1994, Senior Analytical Chemist- Energy Laboratories, Inc., Billings, MT.
Supervisor of the organics extraction laboratory.

1989-1993, Research Assistant- Department of Civil and Environmental Engineering, WSU, Pullman, WA. Performed field research in the analysis of atmospheric organic compounds.

1986-1989, Chemist- Montana Department of Agriculture-Laboratory Bureau, Bozeman, MT. Performed pesticide, hazardous waste and toxicological analysis for regulatory purposes.

1982-1985, Research Assistant- Department of Civil and Environmental Engineering, WSU, Pullman , WA. Performed field research in the analysis of atmospheric sulfur compounds.

1982, Laboratory Technician- Halliburton Services, Inc., Evansville, WY. Performed oil field water, cement, and soils analysis.

Professional Organizations

American Chemical Society

NANCY LORFING

Aquatic Toxicologist/Supervisor

Academic Training

Bachelor of Science, Biology (Chemistry Minor), Eastern Montana College, Billings, MT, 1970

Professional Experience

1992 - Present, Aquatic Toxicologist - Energy Laboratories, Inc., Billings, Montana. Responsible for supervision and management of aquatic toxicology department. Duties include performance of aquatic acute and chronic aquatic toxicity testing using Ceriodaphnia and Pimephales promelas (fathead minnows), field sampling, and client interaction.

1977 - 1992, Orthopedic Technician - Orthopedic Surgeons, P.S.C, Billings, Montana. Physicians assistant responsible for patient medical history screening, minor medical procedures, clerical duties and patient file recordkeeping.

1970 - 1975, Biologist - Montana Fish and Game Department, Billings, Montana. Duties included field work on a 5 year pheasant study and general clerical duties.

TIMOTHY D. BAILEY Ph.D.

Senior Analytical Chemist

Laboratory instrumentation experience working for a commercial laboratory and for a major international chemical producer. Tim is knowledgeable with inductively coupled plasma optical emission (ICP-OES) and mass spectrometer (ICP-MS), and atomic absorption (AA) techniques. He has extensive experience with implementation of EPA Good Laboratory Practices programs, statistical quality management for laboratory analysis, and EPA SW-846, 500, and 600 series analytical methodologies.

Education

Ph.D., Analytical Chemistry, University of Wisconsin-Madison, Madison, Wisconsin, 1989
Bachelor of Arts, Chemistry, Montana State University, Bozeman, Montana, 1980

Professional Experience

1994- Present, Senior Analytical Chemist - Energy Laboratories, Inc., Billings, Montana.

1989-1994, Project Leader/Senior Research Chemist - The Dow Chemical Company, Midland, Michigan.
1988-1989, Graduate Technical Assistant/Chemistry Department Instrument Center - University of Wisconsin-Madison, Madison, Wisconsin.

1984-1988, Graduate Teaching Assistant/Analytical and General Chemistry - University of Wisconsin-Madison, Madison, Wisconsin.

1980-1984, Analytical Chemist - Energy Laboratories, Inc., Billings, Montana.

LISA A. BRADLEY Ph.D.

Senior Analytical Chemist/Supervisor

Experienced in atomic absorption spectroscopy (AA), inductively coupled plasma optical emission (ICP-OES), and mass spectrometry (ICP-MS).

Education

Ph.D., Analytical Chemistry, Indiana University - Bloomington, Indiana, 1995
Bachelor of Science, Chemistry, Montana State University, Bozeman, Montana, 1990

Professional Experience

1996- Present, Supervisor, Analytical Chemist - Energy Laboratories, Inc., Billings, Montana. Supervisors inorganics laboratory. Performs chemical analysis using laboratory instrumentation.

October, 1990-1995, Research Assistant/Department of Chemistry - Indiana University, Bloomington, Indiana.

August, 1990-December, 1992, Associate Instructor of Chemistry - Indiana University, Bloomington, Indiana.

1986-1990, Undergraduate Research Assistant - Montana State University, Bozeman, Montana.

1989, Laboratory Assistant - InterMountain Laboratory, Bozeman, Montana.

MONTANA DEPARTMENT OF
PUBLIC HEALTH AND HUMAN SERVICES
ENVIRONMENTAL LABORATORY

Recognizes that

Energy Laboratories, Inc. - Billings

of

Billings MT

has completed the requirements for Montana certification and is licensed to analyze Montana's Public Drinking Water Supplies. See attached listing.

Montana Certification Number:	**CERT0044**	
	Chemistry	Microbiology
EXPIRATION DATE:	**06/30/2009**	**06/30/2009**

Judy Halm
Laboratory Certification Officer
DPHHS Environmental Laboratory

Date Issued: 6/23/2006

DEPARTMENT OF
PUBLIC HEALTH AND HUMAN SERVICES
STATE OF MONTANA

ENVIRONMENTAL LABORATORY

CERTIFIED DRINKING WATER PARAMETERS

ENERGY LABORATORY, INC.
1120 South 27th Street
Billings MT 59107-0916
CERT0044
Chemistry Expiration 6/30/2009
Microbiology Expiration 6/30/2009

MICROBIOLOGY PARAMETERS

PARAMETER	METHOD 1	METHOD2	METHOD 3
Total Coliforms	SM 9223 (Colilert)	SM 9221 A,B (MTube)	SM 9222 A,B (MF)
Fecal Coliforms	SM 9222 D (MF)		
Heterotrophic Plate Count	SM 9215 B (Pour Plate)	SM 9215 D (MF)	

HERBICIDE PARAMETERS

PARAMETER	METHOD
2,4,5-TP	EPA 515.1
2,4-D	EPA 515.1

PRIMARY INORGANIC PARAMETERS

PARAMETER	METHOD 1	METHOD 2
Antimony	EPA 200.8	
Arsenic	EPA 200.8	EPA 200.7
Barium	EPA 200.8	EPA 200.7
Beryllium	EPA 200.8	EPA 200.7
Cadmium	EPA 200.8	EPA 200.7
Chromium	EPA 200.8	EPA 200.7
Copper	EPA 200.8	EPA 200.7
Lead	EPA 200.8	EPA 200.7
Mercury	EPA 200.8	EPA 245.1
Nickel	EPA 200.8	EPA 200.7
Selenium	EPA 200.8	
Thallium	EPA 200.8	
Uranium	EPA 200.8	
Cyanide	EPA 335.4	
Fluoride	SM 4500-F-C	EPA 300.0
Nitrate	EPA 353.2	EPA 300.0
Nitrite	EPA 353.2	EPA 300.0
Turbidity	EPA 180.1	

PRIMARY ORGANIC PARAMETERS

PARAMETER	METHOD 1	METHOD 2
Alachlor	EPA 505	EPA 525.2
Atrazine	EPA 505	EPA 525.2
Chlordane	EPA 505	EPA 525.2
Dalapon	EPA 515.1	

Dinoseb	EPA 515.1	
Endothal	EPA 548.1	
Endrin	EPA 505	EPA 525.2
Heptachlor	EPA 505	EPA 525.2
Heptachlor Epoxide	EPA 505	EPA 525.2
Lindane	EPA 505	EPA 525.2
Methoxychlor	EPA 505	EPA 525.2
Pentachlorphenol	EPA 515.1	EPA 525.2
Picloram	EPA 515.1	
Simazine	EPA 505	EPA 525.2
Toxaphene	EPA 505	EPA 525.2
1,2-Dibromo-3-Chlorpropane	EPA 504.1	
1,2,3-Trichloropropane	EPA 504.1	
Benzo(A) Pyrene	EPA 525.2	
Di (Ethylhexyl) Phthalate	EPA 525.2	
Di (Ethylhexyl)Adipate	EPA 525.2	
Ethylene Dibromide	EPA 504.1	
Hexachlorobenzene	*EPA 505*	*EPA 525.2*
Hexachlorocyclopentadiene	EPA 505	EPA 525.2
PCBs As Decachlorbiphenyl	EPA 508A	
PCB Screen	EPA505	EPA 525.2
Bromodicloromethane	EPA 524.2	
Bromoform	EPA 524.2	
Chlorodibromethane	EPA 524.2	
Chloroform	EPA 524.2	
Total Trihalomethanes	EPA 524.2	
1,1,1-Trichloroethane	EPA 524.2	
1,1,2-Trichloroethane	EPA 524.2	
1,1-Dichloroethylene	EPA 524.2	
1,2 Dichlorobenzene	EPA 524.2	
1,2,4-Trichlorobenzene	EPA 524.2	
1,2-Dichloroethane	EPA 524.2	
1,2-Dichloropropane	EPA 524.2	
1,4-Dichlorobenzene	EPA 524.2	
Benzene	EPA 524.2	
Carbon Tetrachloride	EPA 524.2	
Chlorobenzene	EPA 524.2	
cis-1,2-Dichloroethylene	EPA 524.2	
Dichloromethane	EPA 524.2	
Ethylbenzene	EPA 524.2	
Styrene	EPA 524.2	
Tetrachloroethylene	EPA 524.2	
Toluene	EPA 524.2	
trans-1,2-Dichloroethylene	EPA 524.2	
Trichloroethylene	EPA 524.2	
Vinyl Chloride	EPA 524.2	
Xylenes	EPA 524.2	

SECONDARY PARAMETERS

PARAMETER	METHOD 1	METHOD 2
Aluminum	EPA 200.8	EPA 200.7
Iron	EPA 200.7	EPA 200.8
Manganese	EPA 200.8	EPA 200.7
Silver	EPA 200.8	EPA 200.7
Zinc	EPA 200.8	EPA 200.7
Chloride	EPA 300.0	

Corrosivity	9045 B
Odor	SM 2150 B
pH	SM 4500-H
Sulfate	EPA 300.0
Total Dissolved Solids	SM 2540 C
Alkalinity	SM 2320 B
Silica	EPA 200.7

STATE MONITORED AND/OR UNREGULATED PARAMETERS

PARAMETER	METHOD 1	METHOD 2
Calcium	EPA 200.7	
Sodium	EPA 200.7	
Conductivity	SM 2510 B	
Ortho-Phosphate	EPA 365.1	
Temperature	SM 2550	
Butachlor	EPA 525.2	
Metaloachlor	EPA 525.2	
Metribuzin	EPA 525.2	
Aldrin	EPA 505	EPA 525.2
Dicamba	EPA 515.1	
Dieldrin	EPA 505	EPA 525.2
Propachlor	EPA 525.2	
1,1,1,2-Tetrachloroethane	EPA 524.2	
1,1,2,2-Tetrachloroethane	EPA 524.2	
1,1-Dichloropropane	EPA 524.2	
1,1-Dichloropropene	EPA 524.2	
1,2,3-Trichlorobenzene	EPA 524.2	
1,2,3-Trichloropane	EPA 524.2	
1,2,4-Trimethylbenzene	EPA 524.2	
1,3,5-Trimethylbenzene	EPA 524.2	
1,3-Dichlorobenzene	EPA 524.2	
1,3-Dichloropropane	EPA 524.2	
2,2-Dichlorobenzene	EPA 524.2	
Bromobenzene	EPA 524.2	
Bromochloromethane	EPA 524.2	
Bromomethane	EPA 524.2	
Chloroethane	EPA 524.2	
Cis-1,3-Dichloropropene	EPA 524.2	
Dibromomethane	EPA 524.2	
Dichlorodifluoromethane	EPA 524.2	
Fluorotrichloromethane	EPA 524.2	
Hexachlorobutadiene	EPA 524.2	
Isopropylbenzene	EPA 524.2	
Naphthalene	EPA 524.2	
n-Butylbenzene	EPA 524.2	
n-Propylbenzene	EPA 524.2	
o-Chlorotoluene	EPA 524.2	
p-Chlorotoluene	EPA 524.2	
p-Isopropyltoluene	EPA 524.2	
sec-Butylbenzene	EPA 524.2	
tert-Butylbenzene	EPA 524.2	
trans-1.3-Dichloropropene	EPA 524.2	

DISINFECTION BYPRODUCTS

PARAMETER	METHOD 1	METHOD 2
Chlorite	EPA 300.0	
Bromochloroacetic Acid	EPA 552.2	
Dibromoacectic Acid	EPA 552.2	
Dichloroacetic Acid	EPA 552.2	
Monobromoacetic Acid	EPA 552.2	
Monochloroacetic Acid	EPA 552.2	
TrichloroAcetic Acid	EPA 552.2	
Residual Free Chlorine	SM 4500-CL-G	
Boron	EPA 200.8	EPA 200.7
Molybdenum	EPA 200.8	EPA 200.7
Bromide	EPA 300.0	
Hydrogen Sulfide	ASTM D1945	
Langelier Index	SM203	
Phenols	EPA 420.2	
Ammonia	350.1	
Total Hardness	EPA 200.7	
Magnesium	EPA 200.8	EPA 200.7
Potassium	EPA 200.8	EPA 200.7
Maximum Trihalomethane Potential	EPA 524.2	
Maximum HAA5 potential	EPA 552.2	