Quality Assurance Project Plan
Troutdale Gravel Aquifer
Boeing Portland Facility
Gresham, Oregon

February 22,2013

Prepared for

The Boeing Company

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1.0 INTRODUCTION

This quality assurance project plan (QAPP) establishes the quality assurance and quality control (QA/QC) objectives for the Troutdale Gravel Aquifer (TGA) corrective measures currently being implemented at The Boeing Portland (Boeing) Facility in Gresham, Oregon. The TGA remedy is currently undergoing Resource Conservation and Recovery Act (RCRA) corrective action as required by the Oregon Department of Environmental Quality (DEQ) Consent Order (Order; No. LQSR-NWR-04-12) dated September 8, 2008 (DEQ 2008). This plan presents the QA organization and procedures developed to meet project QA objectives. These QA/QC procedures are intended to facilitate meeting project data quality objectives developed in accordance with U.S. Environmental Protection Agency (EPA) and DEQ guidance (see Section 12.0, References) and generating data that are representative of actual conditions at the site. The Consent Order identified constituents of concern as volatile organic compounds (VOCs) including trichloroethene (TCE); 1,1,1-trichloroethane (TCA); tetrachloroethene (PCE); and potential constituents of concern including 1,1-dichloroethene (1,1 DCE); cis 1,2-dichloroethene (cis DCE); and vinyl chloride (VC). The goal of the project QA/QC program is to provide a reasonable degree of confidence in project data and results by establishing a system of quality and performance checks on data collection, analysis, and reporting activities, as well as to provide for appropriate and timely corrective action to achieve compliance with established performance and quality criteria. This QAPP supersedes the previous versions of the project QAPP (Landau Associates 1994) prepared for the remedial investigation (RI) phases of the project,the Building 85-001 Expansion QAPP (Landau Associates 2008), and the QAPP developed with modifications to the testing labororatory (Landau Associates 2012).

This QAPP is divided into the following sections:

- Project QA organization and responsibilities (Section 2.0)
- Data quality objectives (Section 3.0)
- Preventive maintenance/calibration procedures (Section 4.0)
- Analytical procedures (Section 5.0)
- Data reduction, validation, and reporting (Section 6.0)
- Internal quality control (Section 7.0)
- Specific routine procedures used to assess data (Section 8.0)
- Performance and system audits (Section 9.0)
- Corrective actions (Section 10.0)
- Reporting (Section 11.0).

2.0 PROJECT QA ORGANIZATION AND RESPONSIBILTIES

The project QA organization for evaluation of groundwater, soil, and soil vapor quality is shown on Figure 1. The project team organizational structure was developed based on the requirements of the field and laboratory activities. The team consists of personnel from Boeing and Boeing contractors, Landau Associates and their subcontractors, and Boeing's contract laboratory Eurofins Lancaster Laboratories, Inc. (LLI). The key positions/contractors and associated responsibilities are described below.

- Boeing Project Manager — Responsible for overseeing the implementation of the Consent Order at the facility and communicating status and issues related to the TGA remedy to DEQ's project manager. The Boeing project manager is the contact for the consultant project manager. The Boeing project manager is:

  Name: Mr. Ken Chaput
  Address: The Boeing Company
  P.O. Box 3707 MS 6Y-94
  Seattle, WA 98124-2207
  Telephone: (206) 290-6545
  Fax: (425) 965-4180
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- Consultant Project Manager — Responsible for implementation of all aspects of the TGA remedy work plans, sampling and analysis plan (SAP), and QAPP. Specific responsibilities include review and approval of revisions to documentation, overseeing that all technical procedures are followed, reporting of deviations from the DEQ-approved RI work plans, SAP, and QAPP to the Boeing project manager, and overseeing that data collected will satisfy the QA objectives discussed in Section 2.0 of this document The consultant project manager is:

  Name: Ms. Christine Kimmel
  Address: Landau Associates, Inc.
  130 2nd Avenue South
  Edmonds, Washington 98020
  Telephone: (425) 778-0907
  Fax: (425) 778-6409
  Email: ckimmel@landauinc.com

- DEQ Project Manager — Responsible for overseeing the implementation of the Consent Order on behalf of DEQ. The DEQ project coordinator is:

  Name: Mr. Robert Williams
  Address: Department of Environmental Quality
  2020 SW Fourth Ave., suite 400
  Portland, Oregon 97201-4987
  Telephone: (503) 229-6802
  Fax: (503) 229-6945
  Email: WILLIAMS.Robert@deq.state.or.us

- Analytical Laboratory — Responsible for providing sample bottles, performing chemical analyses per the QAPP, and reporting of data as required by the QAPP. LLI is the selected laboratory for the remaining phases of the TGA remedy activities. The laboratory project manager is:

Name:	Kay Hower
Address:	Eurofins Lancaster Laboratories, Inc. 940 Hensley Street Richmond, CA 94801
Telephone:	(510) 232-8894
Fax:	(510) 232-4913
Email:	KHower@lancasterlabs.com

- Environmental Media Sampling Personnel – Responsible for implementing the sampling and handling procedures as specified in the QAPP and/or applicable DEQ-approved project plans, ensuring all field procedures follow the appropriate project plan, notifying the consultant project manager of any difficulties encountered during the field program, and implementing corrective actions to the field procedures as approved by the Boeing project manager.

3.0 DATA QUALITY OBJECTIVES

The overall objective of the QA/QC program is to establish confidence in project data to assure that data are of known and appropriate quality sufficient to support its intended use for either design parameters for bioremediation, continued monitoring purposes, or disposal characterization purposes. To accomplish this goal, project data should be technically sound, statistically valid, and properly documented (EPA 1994), having been evaluated against established criteria for precision, accuracy, representativeness, completeness, and comparability (PARCC), as defined in EPA guidance (1988).

The QA procedures presented in this QAPP are based on data quality objectives (summarized in Table 1) that were developed in accordance with EPA (1988, 2006) and TGA Consent Order (DEQ 2008) and other DEQ guidance documents (DEQ 2001, 2003, 2010a, 2010b) and reflect the intended use of project data. The project data quality objectives prescribe the sampling program design (e.g., type of analysis, sampling protocols) and the level of quality and the PARCC of data to be collected and analyzed for TGA remedy activities.

Based on previous site data, certain VOCs have been identified as constituents of potential concern at the site including TCE, TCA, PCE, cis DCE, 12 DCE and VC (DEQ 2008). Overall data objectives for the TGA remedy are to further characterize documented or suspected source areas, evaluate remedy progress, further evaluate the interrelationship between the TGA and underlying Troutdale Sandstone Aquifer (TSA) and the potential for constituent migration between the two aquifers, and further evaluate the likelihood of the presence of dense nonaqueous phase liquid (DNAPL).

The target control limits (the range within which project data of acceptable quality should fall) for the PARCC parameters are presented in Tables 2a, 2b, and 2c. The target control limits will be used to evaluate data acceptability as noted in Section 8.0. The control limits listed in these tables will be the QC goals for data acceptance. Field and laboratory precision will be determined through the collection and analysis of duplicate samples. Field precision will be assessed on a case-by-case basis. Laboratory accuracy will be determined through the use of laboratory spiked samples. In field duplicates, both field variability and laboratory variability are potential sources of error; therefore, both will be considered in any investigation of relative percent difference (RPD) values outside the target control limits. Data acceptability will be determined on the basis of the results of this qualitative review of error sources and, therefore, will be case-specific.

The QA objectives for representativeness, completeness, and comparability will be achieved by:

- Collecting samples from onsite and offsite sampling points that have been located to produce adequate distribution of data
- Implementing standardized, uniform field sampling procedures (DEQ 2008)

- Collecting field equipment blanks for non-dedicated equipment and analyzing laboratory method blanks to verify that the analytical results are representative of the sampled item and not influenced by cross contamination
- Reporting data in conventional and standard units.

PARCC parameters are defined and discussed further in Section 8.0.

The TGA Remedy quantitation limits are presented in Table 3. Quantitation limits will generally equal those listed in EPA SW-846 documentation (EPA 1986), or the lowest quantitation limit routinely achievable for laboratory data, depending on effects by matrix interferences. Target quantitation limits have been lowered where practical to accommodate use of the data in human and environmental assessments; however, for some constituents, the risk associated with the quantitation limit will still exceed $1x10^{-6}$ (EPA 2009). Instances may arise where high sample concentrations, nonhomogeneity of samples, or matrix interferences preclude achieving the desired quantification limits and associated QC criteria. If this occurs, the laboratory will report the reason(s) for deviating from these quantitation limits or noncompliance with QC criteria.

4.0 PREVENTIVE MAINTENANCE/CALIBRATION PROCEDURES

Laboratory and field instruments will be operated, calibrated, and maintained by qualified personnel according to the manufacturer's guidelines and recommendations, as well as criteria in the analytical method. Documentation of routine and special preventive maintenance and calibration information will be maintained in a field or laboratory logbook or reference file and will be available upon request. Each maintenance and calibration logbook entry will include the date and initials of the individual performing the activity. The subsections below summarize preventive maintenance and calibration procedures for field and laboratory instruments.

4.1 FIELD INSTRUMENTS

Periodic schedules for preventive maintenance of field instruments, including equipment testing, parts replacement, and general cleaning will be followed according to the manufacturer's instructions. Field equipment performance will be evaluated against check standards and calibration blanks, as appropriate, for each parameter before use and at least once during a sampling day or when a meter drift is suspected. Field instruments requiring calibration will include water level indicators, pH and conductivity meters for groundwater sampling events, and a photoionization detector that will be used for health and safety air monitoring purposes during soil and groundwater sampling events.

4.2 LABORATORY INSTRUMENTS

The analytical laboratory manager is responsible for maintaining laboratory instruments in good working order, including routine maintenance and calibration and training of personnel in maintenance and calibration procedures. Laboratory instruments will be properly calibrated with appropriate check standards and calibration blanks for each parameter before beginning each analysis. Instrument performance check standards, where required, and calibration blank results will be recorded in a laboratory logbook dedicated to each instrument. At a minimum, the preventive maintenance schedules contained in the EPA methods and in the equipment manufacturer's instructions will be followed. Laboratory calibration procedures and schedules will be as described in the laboratory QAPP and will be available for review by DEQ, if requested.

5.0 ANALYTICAL PROCEDURES

Water samples will routinely be analyzed for VOCs; metals (arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury); total diesel-range petroleum hydrocarbons (TPH-Dx); fats, oil, and grease (FOG); and conventional parameters [total organic carbon (TOC), chloride, sulfate, methane/ethane/ethane/acetylene (MEEA), nitrate, nitrite, and alkalinity]. Soil samples will routinely be analyzed for VOCs, TPH-Dx, and metals [total and Toxicity Characteristic Leaching Procedure (TCLP)], and soil vapor samples will routinely be analyzed for VOCs. Laboratory chemical analyses for all constituents for water, soil, and soil vapor samples will be conducted by LLI. The laboratory is qualified to perform the analyses using standard, documented laboratory analytical procedures and is an Oregon State certified laboratory (Appendix A). The laboratory QAPP and standard operating procedures (SOPs) provide data quality procedures according to the protocols for the analytical methods and cleanup steps. The data quality procedures are at a level sufficient to meet the sampling program data quality objectives; the laboratory QAPP and standard operating procedures can be provided upon request. Analytical methods and associated extraction procedures are listed in Table 4.

6.0 DATA REDUCTION, VALIDATION, AND REPORTING

Analytical reports from the laboratory will include QC results and any other necessary analytical information to enable reviewers to determine the quality of the data. The consultant's QA officer or QA task leader will be responsible to the consultant's project manager for conducting checks for adherence to the QC elements specified in this QAPP. The consultant's QA officer (or designee) will prepare a laboratory data validation report, as described below. If significant nonconformities are found, additional laboratory data will be evaluated by the consultant's QA officer.

Analytical data for the specific tasks will be reported in the units specified by the quantitation limits as listed in Table 3. These units have been selected to provide for comparability of the data with previously generated relevant site data.

The analytical laboratory will provide reports that include the following elements:

- Case narrative, including adherence to prescribed protocols, nonconformity events, corrective measures, and/or data deficiencies
- Sample analytical results
- Surrogate recoveries
- Matrix spike/matrix spike duplicate results
- Laboratory control sample/laboratory control sample duplicate results
- Laboratory duplicate results
- Blank results
- Sample custody (including signed, original chain-of-custody records, sample log-in forms, air or freight bills, and documentation of condition of custody seals)
- Analytical responsibility.

The analytical laboratory will routinely archive raw laboratory data, including initial and continuing calibration data, chromatograms, quantitation reports, bench sheets, analyst notes, and instrument logs, and will provide these data in addition to those deliverables listed above, if requested by the consultant's QA officer or QA task leader.

Data validation will be performed based on data in the laboratory report package obtained as part of the TGA remedy (see Section 3.0). Validation will be performed according to portions of the EPA guidelines on data validation (EPA 1999, 2004) and will include evaluations of the following QA components:

- Chain-of-custody records
- Holding times
- Field blanks

- Laboratory method blanks
- Surrogate recoveries
- Laboratory matrix spikes and matrix spike duplicates
- Laboratory control sample/laboratory control sample duplicate results
- Laboratory duplicates
- Field duplicates
- Audit/corrective action records
- Completeness
- Overall assessment of data quality.

Section 8.0 presents statistical tests used to determine data PARCC during data evaluation and validation. If a portion of the data is outside the limits specified in Tables 2a, 2b, or 2c, or in EPA guidelines (EPA 1999, 2004), or if sample collection and/or documentation practices are deficient, corrective action(s) will be initiated. Corrective action, as described in Section 10.0, will be determined by the consultant's QA task leader and the laboratory project manager in consultation with the project manager, and may include any of the following actions:

- Rejection of the data and resampling
- Qualification of the data
- Modification of field and/or laboratory procedures.

Data qualification arising from data validation activities will be described in the data validation report, rather than in individual corrective action reports.

7.0 INTERNAL QUALITY CONTROL

Internal quality control will be accomplished through specific quality control samples collected or measurements taken in the field or laboratory. The quality control samples will be used to evaluate data PARCC of the analytical results for this project (see detailed discussion of these parameters in Section 8.0). Analytical methods (referenced in Table 4) specify routine procedures required to evaluate if data are within proper QC limits. Additional internal QC includes collection and analysis of a number of field and laboratory QC samples, which are described in the following subsections.

Field and laboratory QC samples will be used to evaluate data validity and representativeness. Field and laboratory QC samples will include blind field duplicates, field equipment blanks, field trip blanks, laboratory matrix or method spikes, laboratory matrix spike duplicates, laboratory duplicates, laboratory control samples, laboratory control duplicate samples, and laboratory method blanks.

A sampling event, as defined for the purpose of QC sample frequency, consists of a set of groundwater quality samples collected during a regularly scheduled quarterly or semiannual monitoring event or the set of groundwater, soil, or soil vapor samples collected during a soil investigation, bioremediation, system modification, or construction oversight phase(s) of the TGA remedy project.

7.1 BLIND FIELD DUPLICATES

Blind field duplicates for water will consist of a split sample collected at a sample location, which will be given a separate sample number that cannot be associated by the laboratory to the specific sample location. Blind field duplicate samples will not be collected for soil or soil vapor. Duplicate water quality samples will be collected by alternately filling sample containers for both the original and the corresponding duplicate sample at the same sample location to decrease variability between duplicates. Blind field duplicates will be collected at a frequency of at least one per 20 samples, not including QC samples, but not less than one duplicate per sampling event.

7.2 FIELD EQUIPMENT BLANKS

Field equipment rinsate blanks will be collected for groundwater, surface water, and soil samples to be analyzed for VOCs where undedicated equipment is used. The rinsate blanks will consist of deionized water (supplied by the analytical laboratory) passed over or through decontaminated sampling equipment and collected in the appropriate sample containers. Equipment surfaces actually exposed to the samples being collected will be rinsed. No rinsate blanks will be collected from dedicated or disposable field equipment. Field equipment rinsate blanks will be collected at a rate of one blank per 20 samples per

sample type (i.e., water quality and soil), not including QC samples, but not less than one blank per sampling event.

7.3 FIELD TRIP BLANKS

Field trip blanks will consist of deionized water sealed in a sample container by the analytical laboratory. The trip blank will be transported to and from the field, and then returned to the laboratory unopened for analysis. One trip blank sample per cooler containing samples for VOC analysis will be evaluated to determine possible sample contamination during transport.

7.4 LABORATORY MATRIX SPIKES

For each sample matrix (groundwater and soil), a minimum of one laboratory matrix spike per 20 samples, not including QC samples, or one spike sample per sampling event, if fewer than 20 samples are obtained, will be analyzed for all constituents. Spiking compounds and associated control limits are listed in Table 3. These analyses will be performed to provide information on accuracy and to verify that extraction and concentration levels are acceptable. The laboratory spikes will follow EPA guidance for matrix spikes.

7.5 LABORATORY MATRIX SPIKE DUPLICATES OR LABORATORY DUPLICATES

For each sample matrix (groundwater and soil), a minimum of one laboratory matrix spike duplicate (for organic analysis of groundwater and soil) or laboratory duplicate (for inorganic analysis of water or soil) per 20 samples, not including QC samples, or one matrix spike or laboratory duplicate sample per sampling event, if fewer than 20 samples are obtained, will be analyzed for all constituents. Spiking compounds and associated control limits are listed in Table 3. These analyses will be performed to provide information on the precision of chemical analyses. The laboratory spikes will follow EPA guidance for matrix spike duplicates.

7.6 LABORATORY CONTROL SAMPLES OR LABORATORY CONTROL SAMPLE DUPLICATES

A minimum of one laboratory control sample and/or laboratory control sample duplicate per 20 samples, not including QC samples, or one laboratory control sample per sample batch if fewer than 20 samples are obtained, will be analyzed for all parameters.

7.7 LABORATORY METHOD BLANKS

A minimum of one laboratory method blank per 20 samples, or one every 12 hours or one per batch of samples analyzed (if fewer than 20 samples are analyzed) will be analyzed for all constituents to assess possible laboratory contamination. Dilution water will be used whenever possible and appropriate. Laboratory method blanks will contain the same reagents used for the associated sample analysis. The generation and analysis of additional method, reagent, and glassware blanks may be necessary to verify that laboratory procedures do not contaminate samples.

8.0 SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA

Analytical laboratory data will be reviewed to confirm that the QA/QC objectives for the PARCC parameters are met. The PARCC parameters and the associated statistical test used in their evaluation are described in the following sections.

8.1 PRECISION

Precision is a measure of "the reproducibility of analyses under a given set of conditions" (EPA 1989). Precision is best expressed in terms of the standard deviation or RPD. QA/QC sample types that test precision include field and laboratory duplicates and matrix spikes, blank spike duplicates, or laboratory control sample duplicates. The estimate of precision of duplicate measurements will be expressed as an RPD, which is calculated:

$$RPD = \left| \frac{D_1 - D_2}{(D_1 + D_2)/2} \right| x\ 100$$

where: D_1 = first sample value

D_2 = second sample value (duplicate).

The RPDs will be routinely calculated and compared with data quality objective control limits as listed in Table 1. For field duplicates, RPD control limits shall be 20 percent for groundwater and 35 percent for soil and soil vapor. If duplicate groundwater sample values are within five times the QL, then the control limit will be plus or minus the QL for water or plus or minus two times the QL for soil and soil vapor.

8.2 ACCURACY

Accuracy is a measure of "the bias in a measurement system" (EPA 1989). Numerically, accuracy can be described as an average of measurements of the same property, X, with an accepted reference or true value, T, usually expressed as the difference between the two values (X-T), the difference as a percentage of the reference or true value (100 (X-T)/T), or as a ratio (X/T). Accuracy is expressed as the percent recovery of spiked (matrix, surrogate spike, or laboratory control) samples:

$$\frac{Percent}{Recovery} = \frac{(Total\ Analyte\ Found)}{Analyte\ Added}\ x\ 100$$

The percent recovery will be routinely calculated and checked against data quality objective control limits as listed in Tables 2a, 2b, and 2c.

The accuracy of the major ion geochemical data will be checked by calculating the change-balance error:

$$Error = \frac{\sum cations - \sum anions}{\sum cations + \sum anions} x\,100$$

where the concentration of cations and anions are expressed in millequivalents per liter. If the error is greater than $\pm$5 percent, the data will not be used in the evaluation of geochemical water types.

8.3 REPRESENTATIVENESS

Representativeness expresses "the degree to which data accurately and precisely represent selected characteristics" (EPA 1989). Representativeness can be evaluated using replicate samples, additional sampling locations, and blanks. Representativeness for the project will be monitored as outlined in Section 3.0.

8.4 COMPLETENESS

Completeness is a measure of "the amount of valid data obtained from a measurement system compared to the amount that could be expected to be obtained under 'normal' conditions" (EPA 1989). It is calculated as the number of valid (i.e., non-rejected) data points divided by the total number of data points requested. Completeness for the project will be established as outlined in Section 3.0. Completeness will be routinely evaluated and compared to the data quality objective acceptable percentage of 90 percent, as listed in Table 1.

8.5 COMPARABILITY

Comparability is the "degree of confidence with which one data set can be compared to another" (EPA 1989). QA procedures in this document will provide for measurements that are consistent and representative of the media and conditions measured. All sampling procedures and analytical methods used for TGA Remedy activities will be consistent to provide comparability of results for samples and split samples. Data collected under this QAPP will also be calculated, qualified, and reported in units consistent with EPA and DEQ guidelines. Quantitation limits are listed in Table 3, and QC samples are described in Section 7.0.

9.0 PERFORMANCE AND SYSTEM AUDITS

Internal performance and/or system audits will be conducted, if specifically requested by DEQ, to monitor performance of the laboratory and field measurement systems or as a possible corrective action measure, as needed. Performance audits are conducted to determine the accuracy of the total measurement system(s) and generally consist of quantitative data independently obtained for comparison with routinely obtained data in a measurement system (e.g., performance evaluation samples). System audits consist of direct observations of work being performed (field sampling activities and laboratory operations), and inspection of equipment use, calibration, and maintenance to verify adherence to QA/QC requirements.

A system audit of field sampling activities will be conducted by the consultant's QA officer or designee. Preferably, the audit will be conducted by an individual that has no direct responsibilities for the activities being audited. DEQ will be notified of any system audit in advance, so that DEQ personnel may attend. Checklists for the field system audit are presented in Tables 5, 6, and 7. The field system audit will consist of direct observation of field work during various site characterization activities (e.g., drilling of monitoring wells; groundwater, surface water, and soil vapor sampling).

At the beginning of the field system audit, the auditor(s) will meet with the audited party to define the scope of the audit. The physical audit will consist of reviewing audited activities, completing the audit checklist, and noting any nonconformances, deficiencies, and relevant observations. An exit review will be conducted with the audited party to present preliminary audit findings.

The auditor or designee will prepare an audit report that includes findings, nonconformances, observations, recommended corrective action, and a schedule for completion of such action, as well as a copy of the field checklist. An example audit report format is provided in Tables 5, 6, and 7.

For each identified nonconformance, the auditor will issue a corrective action report as part of the audit report to notify the responsible party (the individual responsible for implementing the recommended corrective action) of the recommended corrective action and its schedule for completion (see Section 10.0). If a field corrective action is required, the project manager and/or QA task leader will be notified. The audit report will be distributed to the consultant's QA officer and project manager and, if appropriate, to the Boeing project manager.

The audit will remain open until all corrective action is completed by the responsible party and approved by the consutant's QA officer and QA task leader. Once all findings are corrected and documented on corrective action reports, the audit will be closed by the consultant's QA officer or QA task leader. Closure may be affected by either a memorandum to be filed with the audit report or by another appropriate method.

A laboratory system audit will be conducted, as needed, using guidelines setup by the analytical testing contractor.

10.0 CORRECTIVE ACTIONS

Corrective actions will be required if there are deviations from the methods or QA requirements established in this QAPP or there are equipment or analytical malfunctions. Corrective action procedures will be implemented based on the type of unacceptable data and will be developed on a case-by-case basis. The following corrective actions may be included:

- Altering procedures in the field
- Using a different batch of sample containers
- Performing an audit of field or laboratory procedures
- Reanalyzing samples (if holding times allow)
- Collecting verification samples
- Evaluating sampling and analytical procedures to determine possible causes of the discrepancies
- Accepting the data with no action, acknowledging the level of uncertainty
- Rejecting the data as unusable.

During field operations and sampling procedures, the field personnel will be responsible for conducting and reporting required corrective action. A description of any corrective action taken will be entered in the daily field notebook. If field conditions do not allow for conformance with this QAPP, the consultant's project manager and/or QA task leader will be consulted immediately. For any corrective action or field condition resulting in a revision of this QAPP, the QA task leader will consult with the consultant's QA officer, who will authorize changes or exceptions to the QAPP, as necessary, and appropriate.

During laboratory analysis, the laboratory Project Manager will be responsible for taking required corrective actions in response to equipment malfunctions. If an analysis does not meet data quality goals outlined in this QAPP, corrective action will generally follow the guidelines in the EPA analytical methods noted in this QAPP and the EPA guidelines for data validation (1999, 2004). If analytical conditions are such that nonconformance with this QAPP is indicated, the consultant's QA officer and/or QA task leader will be notified as soon as possible so that any additional corrective actions can be taken.

Corrective action reports (Table 8) will be used to document responses to reported nonconformances. These reports may be generated from internal or external audits or from informal reviews of project activities. Corrective action reports will be reviewed initially for appropriateness of recommendations and actions by the consultant's QA officer (for QA matters) and by the consultant's project manager (for technical approach). The consultant's project manager and QA officer will jointly define responsibilities for scheduling, performing, documenting, and assessing the effectiveness of the required action. The contractor's QA officer is ultimately responsible for implementation of appropriate corrective action and maintenance of a complete record of QC issues and corrective actions.

11.0 REPORTING

QA reports will include analytical reports from the laboratory and corrective action reports from the consultant's QA officer. All reports required under this QAPP will be submitted to the project manager or QA task leader.

11.1 LABORATORY REPORTS

The laboratory project manager will transmit written reports that summarize the test procedures and provide test results and QC data required for validation, as well as the elements listed in Section 7.0. Laboratory reports and analytical results will be signed by the laboratory manager and submitted in data packages to the Boeing project manager and the consultant's project manager or QA task leader.

11.2 QUALITY ASSURANCE REPORTS TO MANAGEMENT

Reports of significant QA deficiencies will be immediately provided to the consultant's QA officer by the QA task leader upon discovery. Verbal notice will be followed with written documentation through a technical memorandum and a corrective action report. The consultant's QA officer will be responsible for reporting QA problems to the project manager.

All reported data will include results of the QA data validation review and conclusions containing information regarding data accuracy, precision, completeness, and any corrective action and sampling procedure alteration documentation. Data validation reports will be submitted to DEQ in the periodic progress report following completion of data validation.

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This QAPP has been prepared under the supervision and direction of the following key staff:

LANDAU ASSOCIATES, INC.

Christine B. Kimmel, L.G.
Senior Geologist

CBK/tam

12.0 REFERENCES

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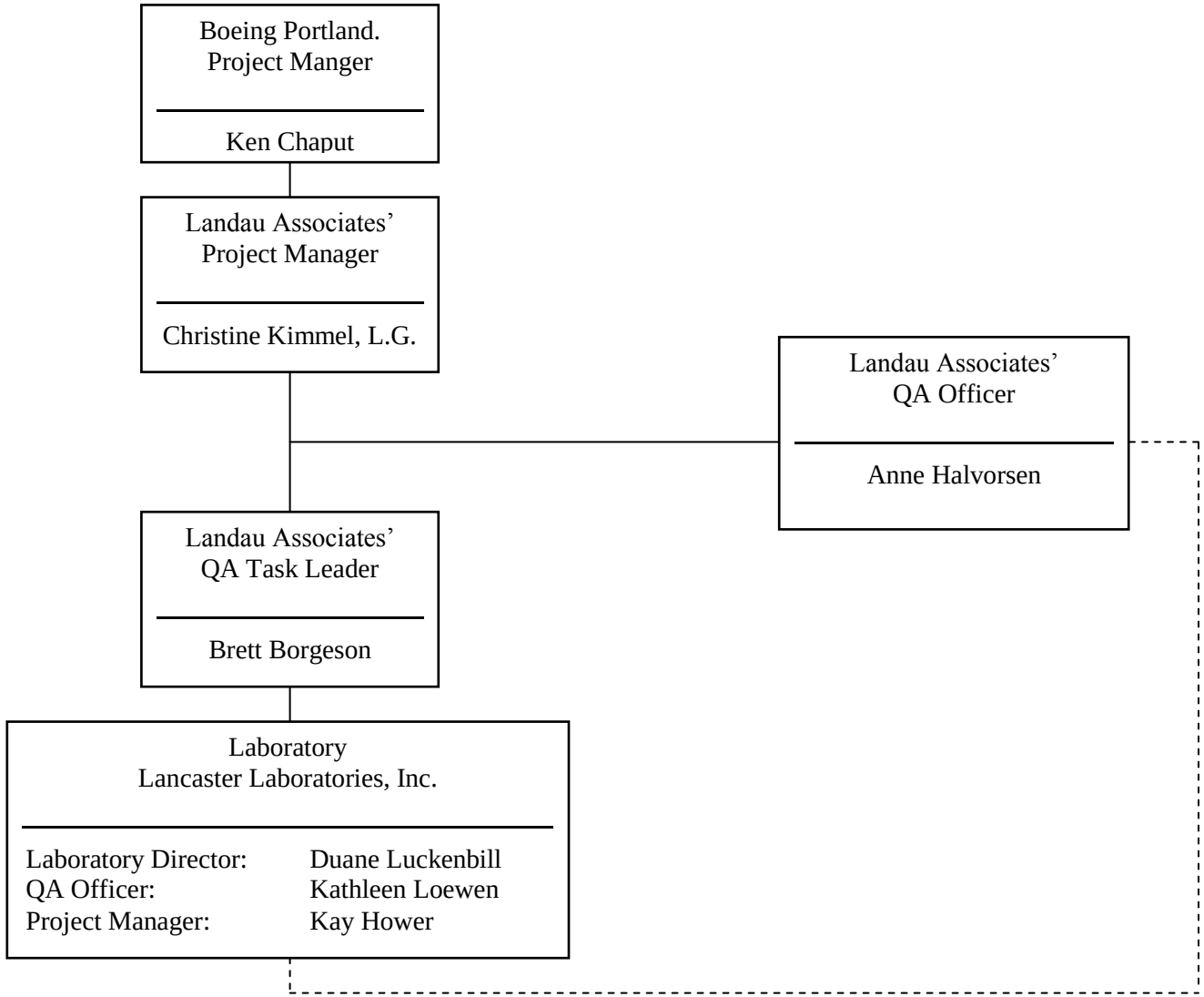

LANDAU ASSOCIATES

Project-Wide QAPP
Boeing Portland
Gresham, OR

Project Quality Assurance Organization

Figure
1

TABLE 1
DATA QUALITY OBJECTIVES AND SAMPLING PROGRAMS
BOEING OF PORTLAND
PORTLAND, OREGON

Data Quality Objective Parameter	Sampling Programs
Data Users	Boeing, Oregon Department of Environmental Quality
Data Use/Decision	Monitoring/Characterization/Necessity of Remedial Action
Data Type	Concentrations of Constituents of Concern (a)
Data Quality Objectives (b)	
- Precision (c,d)	Matrix spike and laboratory duplicates Field duplicates
- Accuracy (c,d)	Matrix and surrogate spikes
- Representativeness (c)	Field and laboratory blanks (e) Sampling protocols
- Completeness (c)	90 percent
- Comparability	Follow Method SW-846
Quantitation Limit (f)	See Table 3

(a) Potential constituents of concern are identified in Section 1.0 of this QAPP.

(b) Developed in accordance with EPA (1989, 2006) and DEQ (2001) guidance documents.

(c) Criteria for the evaluation of precision, accuracy, representativeness, and completeness are discussed in Section 8.0 of this QAPP.

(d) Control limits for evaluation of precision and accuracy for project analytes are listed in Tables 2 and 3.

(e) Quality assurance blank concentrations will be monitored and corrective action determined On a case-by-case basis, as described in Section 10.0 of this QAPP.

(f) Quantitation limits may be affected by matrix interferences. Values are based on current laboratory data.

TABLE 2a
MATRIX SPIKE/SURROGATE RECOVERY/
LABORATORY CONTROL SAMPLE LIMITS FOR WATER
BOEING OF PORTLAND
PORTLAND, OREGON

Compound	MS/MSD	LCS/LCSD	LCS Spike Max RPD (a)	LCS Max RPD	DUP RPD
Volatile Organic Compounds (Method 8260C by 25 ml purge)					
1,1,1-Trichloroethane	85-140	79-127	30	30	---
1,1,2,2-Tetrachloroethane	75-131	80-125	30	30	---
1,1,2-Trichloroethane	85-129	80-120	30	30	---
1,1-Dichloroethane	88-136	89-122	30	30	---
1,1-Dichloroethene	83-150	80-123	30	30	---
1,2-Dichloroethane	82-135	80-127	30	30	---
1,2-Dichloropropane	91-126	80-120	30	30	---
112Trichloro122Trifluoroethane	87-158	78-132	30	30	---
2-Butanone	58-168	70-130	30	30	---
2-Hexanone	59-169	80-129	30	30	---
4-Methyl-2-pentanone	69-149	70-123	30	30	---
Acetone	57-163	58-146	30	30	---
Benzene	87-126	80-120	30	30	---
Bromodichloromethane	82-133	80-120	30	30	---
Bromoform	60-138	70-128	30	30	---
Bromomethane	69-135	66-124	30	30	---
Carbon Disulfide	73-157	80-128	30	30	---
Carbon Tetrachloride	81-148	74-133	30	30	---
Chlorobenzene	78-133	80-120	30	30	---
Chloroethane	70-139	67-124	30	30	---
Chloroform	86-136	80-120	30	30	---
Chloromethane	55-152	55-135	30	30	---
Dibromochloromethane	79-125	80-120	30	30	---
Ethylbenzene	80-140	80-120	30	30	---
Methylene Chloride	84-122	80-120	30	30	---
Styrene	63-151	80-122	30	30	---
Tetrachloroethene	63-156	80-120	30	30	---
Toluene	83-127	80-120	30	30	---
Trichloroethene	85-131	80-120	30	30	---
Trichlorofluoromethane	67-161	66-134	30	30	---
Vinyl Acetate	57-159	57-157	30	30	---
Vinyl Chloride	65-151	65-127	30	30	---
cis-1,2-Dichloroethene	82-129	80-120	30	30	---
cis-1,3-Dichloropropene	74-132	74-120	30	30	---
m+p-Xylene	81-137	80-120	30	30	---
o-Xylene	81-137	80-120	30	30	---
trans-1,2-Dichloroethene	88-127	80-121	30	30	---
trans-1,3-Dichloropropene	71-128	80-120	30	30	---

Surrogate Data

Compound	CASnumber	Recovery
Dibromofluoromethane	1868-53-7	77 - 114
1,2-Dichloroethane-d4	17060-07-0	74 - 113
Toluene-d8	2037-26-5	77 - 110
4-Bromofluorobenzene	460-00-4	78 - 110

NWTPH-Dx

Diesel Range Organics	60-120	50 - 120	20	20	---
Motor Oil	NA	NA	NA	20	---

Surrogate	CASnumber	Recovery
Chlorobenzene	108-90-7	50 - 150
Orthoterphenyl	84-15-1	50 - 150

TABLE 2a
MATRIX SPIKE/SURROGATE RECOVERY/
LABORATORY CONTROL SAMPLE LIMITS FOR WATER
BOEING OF PORTLAND
PORTLAND, OREGON

Compound	MS/MSD	LCS/LCSD	LCS Spike Max RPD (a)	LCS Max RPD	DUP RPD
Methane, Ethane, Ethene, Acetylene Headspace Analysis by RSK-175					
Acetylene	75-125	75-125	20	20	---
Ethane	34-153	80-120	20	20	---
Ethene	35-162	75-130	20	20	---
Methane	35-157	80-120	20	20	---
Surrogate	**CASnumber**	**Recovery**			
Propene	115-07-1	42-131			
Metals (Method 6010C)					
Aluminum	75-125	90-112			20
Antimony	87-122	88-111			20
Arsenic	81-123	80-120			20
Barium	78-118	90-110			20
Beryllium	87-114	90-111			20
Cadmium	83-116	90-112			20
Calcium	81-118	90-112			20
Chromium	81-120	90-110			20
Cobalt	87-112	90-110			20
Copper	86-122	90-112			20
Iron	75-125	90-112			20
Lead	75-125	88-110			20
Magnesium	75-125	89-110			20
Manganese	75-125	90-110			20
Nickel	86-115	90-111			20
Potassium	83-123	85-115			20
Selenium	75-125	80-120			20
Silver	75-125	80-120			20
Sodium	75-125	87-114			20
Thallium	83-116	85-113			20
Vanadium	90-111	90-110			20
Zinc	85-117	90-111			20
Mercury (Method 7470A)	80-120	80-120			20
Conventionals					
Alkalinity SM 20 2320B	59 - 128	97 - 101	5	5	5
Chloride EPA 300.0	90 - 110*	90 - 110	20	20	20
Nitrate EPA 300.0	90 - 110*	90 - 110	20	20	20
Nitrite	90 - 110*	90 - 110	20	20	20
Sulfate EPA 300.0	90 - 110*	90 - 110	20	20	20
Ortho-Phosphorus EPA 300.0	90 - 110*	90 - 110	20	20	20
Hardness Calculation SM 18 2340B	NA	NA	NA	NA	NA
TOC SM 20 5310C	63 - 142*	91 - 113	20	20	3
TSS** SM20 2540D	NA	80 - 107	NA	NA	20
Total Phosphorous as P04 EPA 365.1	90 - 110*	90 - 110	20	20	4
FOG EPA1664A (HEM)	78-114	78-114	16	16	29
FOG EPA1664A (SGT-HEM)	64-132	64-114	26	26	25

NA = Not analyzed.
* MS only
** DUP Only

(a) RPD = Relative Percent Difference.

Note that the statistical QC limits are evaluated every 6 months and are subject to change.

TABLE 2b
MATRIX SPIKE/SURROGATE RECOVERY/
LABORATORY CONTROL SAMPLE LIMITS FOR SOIL
BOEING OF PORTLAND
PORTLAND, OREGON

Compound	Units	MS/MSD	LCS/LCSD	LCS Spike Max RPD	LCS Max RPD	DUP RPD
Volatile Organic Compounds (Method 8260C by 25 ml purge)						
1,1,1-Trichloroethane	µg/kg	64-142	71-125	30	30	---
1,1,2,2-Tetrachloroethane	µg/kg	40-152	71-123	30	30	---
1,1,2-Trichloroethane	µg/kg	54-139	80-120	30	30	---
1,1-Dichloroethane	µg/kg	63-142	80-120	30	30	---
1,1-Dichloroethene	µg/kg	61-149	73-129	30	30	---
1,2-Dichloroethane	µg/kg	68-131	71-129	30	30	---
1,2-Dichloropropane	µg/kg	62-135	77-120	30	30	---
112Trichloro122trifluoroethane	µg/kg	56-156	64-137	30	30	---
2-Butanone	µg/kg	37-163	46-153	30	30	---
2-Hexanone	µg/kg	32-160	45-155	30	30	---
4-Methyl-2-pentanone	µg/kg	46-139	61-134	30	30	---
Acetone	µg/kg	31-195	32-209	30	30	---
Benzene	µg/kg	55-143	80-120	30	30	---
Bromodichloromethane	µg/kg	53-136	78-120	30	30	---
Bromoform	µg/kg	38-124	70-120	30	30	---
Bromomethane	µg/kg	42-168	32-162	30	30	---
Carbon Disulfide	µg/kg	48-146	67-122	30	30	---
Carbon Tetrachloride	µg/kg	45-153	69-122	30	30	---
Chlorobenzene	µg/kg	49-135	80-120	30	30	---
Chloroethane	µg/kg	39-152	37-154	30	30	---
Chloroform	µg/kg	61-142	80-120	30	30	---
Chloromethane	µg/kg	51-163	56-120	30	30	---
Dibromochloromethane	µg/kg	51-128	77-120	30	30	---
Ethylbenzene	µg/kg	44-141	80-120	30	30	---
Methylene Chloride	µg/kg	61-141	76-124	30	30	---
Styrene	µg/kg	35-134	76-120	30	30	---
Tetrachloroethene	µg/kg	42-149	78-126	30	30	---
Toluene	µg/kg	50-146	80-120	30	30	---
Trichloroethene	µg/kg	53-144	80-120	30	30	---
Trichlorofluoromethane	µg/kg	47-163	58-133	30	30	---
Vinyl Acetate	µg/kg	21-139	56-137	30	30	---
Vinyl Chloride	µg/kg	50-154	53-120	30	30	---
cis-1,2-Dichloroethene	µg/kg	60-136	80-120	30	30	---
cis-1,3-Dichloropropene	µg/kg	51-131	74-120	30	30	---
m+p-Xylene	µg/kg	44-137	80-120	30	30	---
o-Xylene	µg/kg	42-137	80-120	30	30	---
trans-1,2-Dichloroethene	µg/kg	59-142	79-120	30	30	---
trans-1,3-Dichloropropene	µg/kg	49-129	77-120	30	30	---

Surrogate Data

Compound	CASnumber	Recovery
Dibromofluoromethane	1868-53-7	50 - 141
1,2-Dichloroethane-d4	17060-07-0	54 - 135
Toluene-d8	2037-26-5	52 - 141
4-Bromofluorobenzene	460-00-4	50 - 131

NWTPH-Dx						
Diesel Range Organics	mg/kg	60-120	50 - 133	20	20	---
Motor Oil	mg/kg	NA	NA	NA	NA	---

Surrogate	CASnumber	Recovery
Chlorobenzene	108-90-7	50 - 150
Orthoterphenyl	84-15-1	50 - 150

TABLE 2b
MATRIX SPIKE/SURROGATE RECOVERY/
LABORATORY CONTROL SAMPLE LIMITS FOR SOIL
BOEING OF PORTLAND
PORTLAND, OREGON

Compound	Units	MS/MSD	LCS/LCSD	LCS Spike Max RPD	LCS Max RPD	DUP RPD
Metals (Method 6010B/C)						
Aluminum		90-110	80-120			20
Antimony		75-125	80-120			20
Arsenic		75-125	80-120			20
Barium		75-125	80-120			20
Beryllium		83-111	80-120			20
Cadmium		75-125	80-120			20
Calcium		75-125	80-120			20
Chromium		75-125	80-120			20
Cobalt		78-113	80-120			20
Copper		75-125	80-120			20
Iron		75-125	80-120			20
Lead		75-125	80-120			20
Magnesium		75-125	80-120			20
Manganese		75-125	80-120			20
Nickel		75-125	80-120			20
Potassium		75-125	80-120			20
Selenium		75-125	80-120			20
Silver		75-125	80-120			20
Sodium		75-125	80-120			20
Thallium		75-125	80-120			20
Vanadium		75-125	80-120			20
Zinc		75-125	80-120			20
Mercury (7471A)		80-120	80-120			20
Metals (Method 6020)						
Aluminum		75-125	80-120			20
Antimony		75-125	80-120			20
Arsenic		75-125	80-120			20
Barium		75-125	80-120			20
Beryllium		75-125	80-120			20
Cadmium		75-125	80-120			20
Calcium		75-125	80-120			20
Chromium		75-125	80-120			20
Cobalt		75-125	80-120			20
Copper		75-125	80-120			20
Iron		75-125	80-120			20
Lead		75-125	80-120			20
Magnesium		75-125	80-120			20
Manganese		75-125	80-120			20
Nickel		75-125	80-120			20
Potassium		75-125	80-120			20
Selenium		75-125	80-120			20
Silver		75-125	80-120			20
Sodium		75-125	80-120			20
Thallium		75-125	80-120			20
Vanadium		75-125	80-120			20
Zinc		75-125	80-120			20

NA = Not Analyzed.

RPD = Relative Percent Difference.

Note: The statistical QC limits are evaluated every 6 months and are subject to change.

TABLE 2c
MATRIX SPIKE/SURROGATE RECOVERY/
LABORATORY CONTROL SAMPLE LIMITS FOR AIR
BOEING OF PORTLAND
PORTLAND, OREGON

Compound	Units	MS/MSD	LCS/LCSD	Spike Max RPD	LCS Max RPD
Volatile Organic Compounds (Method TO-15)					
1,1,1-Trichloroethane	µg/m3	NA	70-130	NA	25
1,1-Dichloroethene	µg/m3	NA	64-117	NA	25
Tetrachloroethene	µg/m3	NA	70-130	NA	25
Trichloroethene	µg/m3	NA	70-130	NA	25
Vinyl Chloride	µg/m3	NA	70-130	NA	25
cis-1,2-Dichloroethene	µg/m3	NA	69-120	NA	25

Surrogate	CASnumber	Recovery
1,2-Dichloroethane-d4	17060-07-0	70 - 130
Toluene-d8	2037-26-5	70 - 130
4-Bromofluorobenzene	460-00-4	70 - 130

NA = Not Analyzed.

RPD = Relative Percent Difference.

Note: The statistical QC limits are evaluated every 6 months and are subject to change.

TABLE 3
QUANTITATION LIMIT GOALS (a)
BOEING OF PORTLAND
PORTLAND, OREGON

Volatile Organics - EPA Method 8260C	Water Standard LOQ (µg/L)	Soil LOQ (µg/kg)
Chloromethane	0.5	5.0
Bromomethane	0.5	5.0
Vinyl Chloride	0.2	5.0
Chloroethane	0.5	5.0
Methylene Chloride	0.5	5.0
Acetone	5.0	20
Carbon Disulfide	0.5	5.0
1,1-Dichloroethene	0.2	5.0
1,1-Dichloroethane	0.5	5.0
trans-1,2-Dichloroethene	0.2	5.0
cis-1,2-Dichloroethene	0.2	5.0
Chloroform	0.2	5.0
1,2-Dichloroethane	0.2	5.0
2-Butanone	5.0	10
1,1,1-Trichloroethane	0.5	5.0
Carbon Tetrachloride	0.2	1.0
Vinyl Acetate	0.5	10
Bromodichloromethane	0.5	5.0
1,2-Dichloropropane	0.5	5.0
cis-1,3-Dichloropropene	0.2	5.0
Trichloroethene	0.2	5.0
Dibromochloromethane	0.5	5.0
1,1,2-Trichloroethane	0.2	5.0
Benzene	0.2	1.0
trans-1,3-Dichloropropene	0.2	5.0
Bromoform	0.5	5.0
4-Methyl-2-Pentanone (MIBK)	5.0	10
2-Hexanone	5.0	10
Tetrachloroethene	0.2	1.0
1,1,2,2-Tetrachloroethane	0.2	5.0
Toluene	0.2	5.0
Chlorobenzene	0.5	5.0
Ethylbenzene	0.5	5.0
Styrene	0.5	5.0
Trichlorofluoromethane	0.5	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane	0.5	10
m,p-Xylene	0.5	5.0
o-Xylene	0.5	5.0

Volatile Organics - Method TO-15	Soil Vapor (µg/m^3)	Soil Vapor MDL (µg/m^3)
1,1,1-Trichloroethane	5.5	1.1
Trichloroethene	5.4	1.1
Tetrachloroethene	6.8	1.4
cis-1,2-Dichloroethene	4.0	0.79
1,1-Dichloroethene	4.0	0.79
Vinyl Chloride	2.6	0.51

TABLE 3
QUANTITATION LIMIT GOALS (a)
BOEING OF PORTLAND
PORTLAND, OREGON

Diesel-Range and Motor Oil-Range Petroleum Hydrocarbons - NWTPH-Dx (b)	Water Standard LOQ (mg/L)	Soil (mg/kg)
Diesel-range	0.10	7.0
Motor oil-range	0.25	30

Conventional Parameters	Water LOQ (mg/L) @ DF1	Water LOQ (mg/L) @ DF5
Alkalinity (SM 2320B)	2.0	NA
Chloride (EPA 300.0)	0.4	2.0
Nitrate (EPA 300.0)	0.1	0.5
Sulfate (EPA 300.0)	1.0	5.0
ortho-Phosphorous (EPA 300.0)	0.5	NA
Hardness (Calc 6010)	0.4	NA
Total Organic Carbon (SM 5310C)	1.0	NA
Total Suspended Solids (SM 2540D)	12	NA
Total Phosphorous as Phosphate (EPA 365.1)	0.31	NA
FOG (EPA 1664A)	5.00	NA

Note: For Anions (chloride, sulfate, and ortho-phosphorus), in order to meet the limit of 1 mg/l for Sulfate the lab will run all of the anions undiluted (dilution factor of 1). If the data cannot be reported at a DF1 due to interferences elevated levels, we will re-run and report at a dilution factor or 5 (DF 5).

Methane, Ethane, Ethene, Acetylene - Method RSK-175	Water Standard LOQ (µg/L)	Water Low Level LOQ (µg/L)
Methane	15	
Ethane	5.0	
Ethene	5.0	
Acetylene	5.0	

Total Metals - Methods 6010C/7000 series (Mercury)	Water Standard LOQ (mg/L)	Water Low Level LOQ (mg/L)	Soil (mg/kg)
Arsenic	0.04	0.0051	4.00
Barium	0.01	0.00026	1.0
Cadmium	0.01	0.00027	1.0
Chromium	0.03	0.0011	3.0
Lead	0.03	0.0022	3.0
Selenium	0.04	0.0069	4.0
Silver	0.01	0.00091	1.0
Mercury	0.0002	0.00005	0.2
Calcium (for Hardness)	0.4	0.0705	40
Magnesium (for Hardness)	0.2	0.0067	20

LOQ = Level of quantitation.
MDL = Method detection limit.

(a) Quantitation limit goals are based on current laboratory data and may be modified during the investigation process as methodology is refined. Quantitation limits listed for soil are based on wet weight; those calculated by the laboratory for soil, on dry weight basis, may be higher. Laboratory quantitation limits will be based on the lowest standard on the calibration curve. Instances may arise where high sample concentrations, nonhomogeneity of samples, or matrix interferences preclude achieving the desired quantitation limits and associated QC criteria.

(b) NWTPH-Dx with Acid/Silica Gel Cleanup.

TABLE 4
ANALYTICAL METHODS (a)
BOEING OF PORTLAND
PORTLAND, OREGON

Sample Type	Analysis Type	Extraction/Cleanup	Analytical Method
Water Quality	Volatile organic compounds	None	8260C
	Conventional parameters (b)	None	Standard EPA methods (300 series)
	Total Organic Carbon	None	EPA 415.1
	Methane/ethane/ethane/acetylene	None	Modified RSK 175
	Diesel and oil-range petroleum hydrocarbons	Acid/Silica Gel Cleanup.	NWTPH-Dx
Vapor	Volatile organic compounds		TO-15
Soil	Volatile organic compounds	None	SW8260C
	Total metals	None	6010C-7000 series
NPDES	Conventional parameters		
	Alkalinity	None	SM 2320B
	Chloride	None	EPA 300.0
	Nitrate	None	EPA 300.0
	ortho-Phosphorous	None	EPA 300.0
	Hardness *	None	SM 18 2340B/6010C
	Total Organic Carbon	None	SM 5310C
	Total Suspended Solids	None	SM 2540D
	Total Phosphorous as Phosphate	None	EPA 365.1

*Hardness based on a calculation using Calcium & Magnesium by SW-846 6010B

(a) Methods are from SW-846 (SW-846, Third Edition, with most recent updates. U.S. Environmental Protection Agency).

(b) Includes nitrate, ortho-phosphorus, total phosphate, sulfate, alkalinity, and chloride.

TABLE 5
FIELD OPERATIONS AUDIT CHECKLIST
BOEING OF PORTLAND
PORTLAND, OREGON

FIELD OBSERVATIONS

Yes ___ No ___ N/A ___ 1. Was permission granted to enter and inspect the facility? (Required if RCRA inspection.)

Yes ___ No ___ N/A ___ 2. Is permission to enter the facility documented? If yes, where is it documented?

Yes ___ No ___ N/A ___ 3. Were split samples offered to the facility? If yes, was the offer accepted or declined?

Yes ___ No ___ N/A ___ 4. Is the offering of split samples recorded? If yes, where is it recorded?

Yes ___ No ___ N/A ___ 5. If the offer to split samples was accepted, were the split samples collected? If yes, how were they identified?

Yes ___ No ___ N/A ___ 6. Are the number, frequency, and types of field measurements and observations taken as specified in the project plan or as directed by the project coordinator? If yes, where are they recorded?

Yes ___ No ___ N/A ___ 7. Are samples collected in the types of containers specified for each type of analysis? If no, what kind of sample containers were used?

TABLE 5
FIELD OPERATIONS AUDIT CHECKLIST
BOEING OF PORTLAND
PORTLAND, OREGON

FIELD OBSERVATIONS

Yes ___ No ___ N/A ___ 8. Are samples preserved as required? If no or N/A, explain.

Yes ___ No ___ N/A ___ 9. Are the number, frequency, and types of samples collected as specified in the project plan or as directed by the project coordinator?
If no, explain why not.

Yes ___ No ___ N/A ___ 10. Are samples packed for preservation when required (i.e., packed in ice, etc.)?
If no or N/A, explain why.

Yes ___ No ___ N/A ___ 11. Is sample custody maintained at all times? How?

TABLE 6
FIELD OPERATIONS AUDIT CHECKLIST

DOCUMENT CONTROL

Yes ___ No ___ N/A ___ 1. Have all unused and voided accountable documents been returned to the coordinator by the team members?

Yes ___ No ___ N/A ___ 2. Were any accountable documents lost or destroyed?
If yes, have document numbers of all lost or destroyed accountable documents been recorded and where are they recorded?

Yes ___ No ___ N/A ___ 3. Are all samples identified with sample tags? If no, how are samples identified?

Yes ___ No ___ N/A ___ 4. Are all sample tags completed (e.g., station no., location, date, time, analyses, signatures of samplers, type, preservatives, etc.)?
If yes, describe types of information recorded.

Yes ___ No ___ N/A ___ 5. Are all samples collected listed on a chain-of-custody record?
If yes, describe the type of chain-of-custody record used and what information is recorded.

Yes ___ No ___ N/A ___ 6. If used, are the sample tag numbers recorded on the chain-of-custody documents?

Yes ___ No ___ N/A ___ 7. Does information on sample tags and chain-of-custody records match?

Yes ___ No ___ N/A ___ 8. Does the chain-of-custody record indicate the method of sample shipment?

TABLE 6
FIELD OPERATIONS AUDIT CHECKLIST

DOCUMENT CONTROL

Yes ___ No ___ N/A ___ 9 Is the chain-of-custody record included with the samples in the shipping container?

Yes ___ No ___ N/A ___ 10. If used, do the sample traffic reports agree with the sample tags?

Yes ___ No ___ N/A ___ 11. If required, has a receipt for the samples been provided to the facility (required by RCRA)? Describe where offer of a receipt is documented.

Yes ___ No ___ N/A ___ 12. If used, are blank samples identified?

Yes ___ No ___ N/A ___ 13. If collected, are duplicate samples identified on sample tags and chain-of-custody records?

Yes ___ No ___ N/A ___ 14. If used, are spiked samples identified?

Yes ___ No ___ N/A ___ 15. Are logbooks signed by the individual who checked out the logbook from the project coordinator?

Yes ___ No ___ N/A ___ 16. Are logbooks dated upon receipt from the project coordinator?

Yes ___ No ___ N/A ___ 17. Are logbook entries dated and identified by author?

TABLE 6
FIELD OPERATIONS AUDIT CHECKLIST

DOCUMENT CONTROL

Yes ___ No ___ N/A ___ 19. Is the facility's approval or disapproval to take photographs noted in a logbook?

Yes ___ No ___ N/A ___ 19. Are photographs documented in logbooks (e.g., time, date, description of subject, photographer, etc.)?

Yes ___ No ___ N/A ___ 20. If film from a self-developing camera is used, are photos matched with logbook documentation?

Yes ___ No ___ N/A ___ 21. Are sample tag numbers recorded?
If yes, describe where they are recorded.

Yes ___ No ___ N/A ___ 22. Are calibration of pH meters, conductivity meters, etc., documented?
If yes, describe where this is documented.

Yes ___ No ___ N/A ___ 23. Are amendments to the project plan documented?
If yes, describe where the amendments are documented.

TABLE 7
FIELD OPERATIONS AUDIT CHECKLIST

DEBRIEFING WITH PROJECT COORDINATOR

Yes___ No____ N/A___ 1. Was a debriefing held with project coordinator and/or other participants?

Yes___ No____ N/A___ 2. Were any recommendations made to the project participants during the debriefing? If yes, list recommendations.

TABLE 8
CORRECTIVE ACTION REPORT
BOEING OF PORTLAND
PORLTAND, OREGON

Project Task and Name: _____

Sampling Dates Involved: _____

Material to be Sampled: _____

Measurement Parameter: _____

Acceptable Data Range: _____

_____

Means of Detecting Problems (field observations, systems audit, etc.): _____

_____

Problem Areas Requiring Corrective Action: _____

_____

_____

_____

_____

Schedule for Corrective Action: _____

_____

_____

Measures to Correct Problems: _____

_____

_____

_____

_____

Corrective Actions Initiated By: _____

Title: _____

Approval for Corrective Actions: _____

Title: _____ Date: _____

Signature: _____

APPENDIX A

Eurofins Lancaster Laboratories
Oregon State Certification

Oregon

Environmental Laboratory Accreditation Program

Department of Agriculture, Laboratory Division
Department of Environmental Quality, Laboratory Division
Oregon Health Authority, Public Health Division

NELAP Recognized

ORELAP Fields of Accreditation

ORELAP ID: PA200001
EPA CODE: PA00009
Certificate: PA200001 - 010

Lancaster Laboratories, Inc

2425 New Holland Pike
Lancaster PA 17601-5994

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MATRIX : Air

Reference	Code	Description
EPA TO-14A	**10248609**	**Volatile Organic Compounds with SUMMA canister and GC/MS**

Analyte Code	*Analyte*
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4695	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon-114)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4620	1,4-Dichlorobenzene
4375	Benzene
4455	Carbon tetrachloride
4475	Chlorobenzene
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4625	Dichlorodifluoromethane (Freon-12)
4765	Ethylbenzene
4835	Hexachlorobutadiene
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4975	Methylene chloride (Dichloromethane)
5100	Styrene
5115	Tetrachloroethylene (Perchloroethylene)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5235	Vinyl chloride
5260	Xylene (total)

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EPA TO-15 **10248803** **VOCs collected in Canisters by GC/MS**

Analyte Code	*Analyte*
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
5155	1,2,4-Trichlorobenzene
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
4615	1,3-Dichlorobenzene
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
4410	2-Butanone (Methyl ethyl ketone, MEK)
4995	4-Methyl-2-pentanone (MIBK)
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4760	Ethyl acrylate
4765	Ethylbenzene
4835	Hexachlorobutadiene
4840	Hexachloroethane
4870	Iodomethane (Methyl iodide)
4900	Isopropylbenzene
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4975	Methylene chloride (Dichloromethane)
4855	n-Hexane
5100	Styrene
5115	Tetrachloroethylene (Perchloroethylene)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
5170	Trichloroethene (Trichloroethylene)
5225	Vinyl acetate
5230	Vinyl bromide (Bromoethane)
5235	Vinyl chloride
5260	Xylene (total)

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MATRIX : Non-Potable Water

Reference	Code	Description
EPA 1010	**10116606**	**Pensky-Martens Closed-Cup Method for Determining Ignitability**

Analyte Code	*Analyte*
1780	Ignitability

EPA 130.2	**10007202**	**Hardness - Titrimetric, EDTA**

Analyte Code	*Analyte*
1750	Hardness

EPA 1311	**10118606**	**Toxicity Characteristic Leaching Procedure**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 1312	**10119003**	**Synthetic Precipitation Leaching Procedure**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 160.1	**10009208**	**Total Dissolved Solids, dried @ 180 C.**

Analyte Code	*Analyte*
1955	Residue-filterable (TDS)

EPA 160.4	**10010409**	**Total Volatile Solids, ignition @ 550 C.**

Analyte Code	*Analyte*
1970	Residue-volatile

EPA 1613B	**10120602**	**Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS.**

Analyte Code	*Analyte*
9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)
9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)
9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)
9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)
9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)
9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)
9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)
9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)
9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)
9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)
9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)
9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)
9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)
9480	2,3,4,6,7,8-Hexachlorodibenzofuran
9549	2,3,4,7,8-Pentachlorodibenzofuran
9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)
9612	2,3,7,8-Tetrachlorodibenzofuran
9438	Hpcdd, total
9444	Hpcdf, total
9468	Hxcdd, total
9483	Hxcdf, total
9555	Pecdd, total
9552	Pecdf, total
9609	TCDD, total

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Analyte Code	*Analyte*
9615	TCDF, total

EPA 1631E **10237204** **Mercury in Water by Oxidation, Purge & Trap, and Cold Vapor Atomic Fluorescence**

Analyte Code	*Analyte*
1095	Mercury

EPA 1664A (HEM) **10127807** **N-Hexane Extractable Material (Oil and Grease) by Extraction and Gravimetry**

Analyte Code	*Analyte*
1803	n-Hexane Extractable Material (O&G)
2050	Total Petroleum Hydrocarbons (TPH)

EPA 200.7 5 **10014003** **ICP - metals**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 200.8 5.5 **10014809** **Metals by ICP-MS**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead

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Analyte Code	*Analyte*
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 218.6 **10027802** **Dissolved Hexavalent Chromium by Ion Chromatography**

Analyte Code	*Analyte*
1045	Chromium VI

EPA 245.1 3 **10036609** **Mercury by Cold Vapor Atomic Absorption**

Analyte Code	*Analyte*
1095	Mercury

EPA 300.0 2.1 **10053200** **Methods for the Determination of Inorganic Substances in Environmental Samples**

Analyte Code	*Analyte*
1540	Bromide
1575	Chloride
1730	Fluoride
1810	Nitrate as N
1840	Nitrite as N
1870	Orthophosphate as P
2000	Sulfate

EPA 3005A **10133207** **Acid Digestion of waters for Total Recoverable or Dissolved Metals**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 3010A **10133605** **Acid Digestion of Aqueous samples and Extracts for Total Metals**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 3020A **10134404** **Acid Digestion of Aqueous samples and Extracts for Total Metals for Analysis by GFAA**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 3060A **10136604** **Alkaline Digestion for Hexavalent Chromium**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 335.4 **10061402** **Methods for the Determination of Inorganic Substances in Environmental Samples**

Analyte Code	*Analyte*
1645	Total cyanide

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EPA 351.2 2 **10065404** **Total Kjeldahl Nitrogen - Block Digest, Phenate**

Analyte Code	*Analyte*
1795	Kjeldahl nitrogen - total

EPA 3510C **10138202** **Separatory Funnel Liquid-liquid extraction**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 353.2 2 **10067604** **Nitrate/Nitrite Nitrogen - Automated, Cadmium**

Analyte Code	*Analyte*
1810	Nitrate as N
1820	Nitrate-nitrite
1840	Nitrite as N

EPA 3630C **10146802** **Silica gel cleanup**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 3640A **10147203** **Gel Preparation Cleanup**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 365.1 2 **10070005** **Phosphorous - Colorimetric, Automated persulfate**

Analyte Code	*Analyte*
1910	Phosphorus, total

EPA 3660B **10148400** **Sulfur cleanup**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 375.4 **10073800** **Sulfate - Turbidimetric.**

Analyte Code	*Analyte*
2000	Sulfate

EPA 376.1 **10074201** **Sulfide - Titrimetric, Iodine.**

Analyte Code	*Analyte*
2005	Sulfide

EPA 410.4 2 **10077404** **Chemical Oxygen Demand - Colorimetric, Automated.**

Analyte Code	*Analyte*
1565	Chemical oxygen demand

EPA 415.1 **10078407** **Organic carbon - Combustion or Oxidation**

Analyte Code	*Analyte*
2040	Total organic carbon

EPA 425.1 **10080601** **Methylene Blue Active Substances**

Analyte Code	*Analyte*

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Analyte Code	*Analyte*
2025	Surfactants - MBAS

EPA 5030B **10153409** **Purge and trap for aqueous samples**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 6010B **10155609** **ICP - AES**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 6010C **10155803** **ICP - AES**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1080	Lithium
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium

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Analyte Code	*Analyte*
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
2017	Sulfur
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 602 **10102202** **Purgeable Aromatics by GC/PID Purge & Trap**

Analyte Code	*Analyte*
4375	Benzene
4765	Ethylbenzene
5000	Methyl tert-butyl ether (MTBE)
5005	Naphthalene
5100	Styrene
5140	Toluene
5260	Xylene (total)

EPA 6020 **10156000** **Inductively Coupled Plasma-Mass Spectrometry**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1185	Vanadium
1190	Zinc

EPA 6020A **10156408** **Inductively Coupled Plasma-Mass Spectrometry**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium

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Analyte Code	*Analyte*
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 608 **10103603** **Organochlorine Pesticides & PCBs by GC/ECD**

Analyte Code	*Analyte*
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7685	Heptachlor
7690	Heptachlor epoxide
7810	Methoxychlor
8250	Toxaphene (Chlorinated camphene)

EPA 610 **10104402** **Polynuclear Hydrocarbons by HPLC/UV-VIS**

Analyte Code	*Analyte*
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene

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Analyte Code	*Analyte*
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene
5895	Dibenz(a,h) anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene
6615	Phenanthrene
6665	Pyrene

EPA 624 **10107207** **Volatile Organic Compounds by purge and trap GC/MS**

Analyte Code	*Analyte*
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5182	1,2,3-Trimethylbenzene
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4412	2-Chloro-2-methybutane (tert-Amyl chloride)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane

ORELAP Fields of Accreditation

ORELAP ID: PA200001
EPA CODE: PA00009
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Lancaster Laboratories, Inc

2425 New Holland Pike
Lancaster PA 17601-5994

Issue Date: 03/02/2012 ***Expiration Date:*** 09/11/2012

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Analyte Code	*Analyte*
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4555	Cyclohexane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
9375	Di-isopropylether (DIPE)
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4975	Methylene chloride (Dichloromethane)
5005	Naphthalene
4435	n-Butylbenzene
4825	n-Heptane
4855	n-Hexane
5029	n-Propane
5090	n-Propylbenzene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 625 **10300002** **Base/Neutrals and Acids by GC/MS**

Analyte Code	*Analyte*
6703	1,1'-Biphenyl (BZ-0)
6715	1,2,4,5-Tetrachlorobenzene
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6221	1,2-Diphenylhydrazine
4615	1,3-Dichlorobenzene
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
9501	1-Methylphenanthrene
6735	2,3,4,6-Tetrachlorophenol
9363	2,3-Dichloroaniline
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol

ORELAP Fields of Accreditation

ORELAP ID: PA200001
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Analyte Code	*Analyte*
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrotoluene (2,6-DNT)
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6460	2-Nitroaniline
6490	2-Nitrophenol
5945	3,3'-Dichlorobenzidine
6405	3-Methylphenol (m-Cresol)
6465	3-Nitroaniline
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
6700	alpha-Terpineol
5545	Aniline
5555	Anthracene
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5630	Benzyl alcohol
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
5680	Carbazole
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
5895	Dibenz(a,h) anthracene
5905	Dibenzofuran
6070	Diethyl phthalate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
6210	Diphenyl ether (Diphenyl Oxide)
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6315	Indeno(1,2,3-cd) pyrene
6320	Isophorone
5005	Naphthalene
5875	n-Decane

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Analyte Code	*Analyte*
6230	n-Docosane
6235	n-Dodecane
6240	n-Eicosane
6300	n-Hexadecane
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6565	n-Nitrosopyrrolidine
6580	n-Octadecane
6745	n-Tetradecane
6590	Pentachlorobenzene
6605	Pentachlorophenol
6615	Phenanthrene
6625	Phenol
6665	Pyrene
5095	Pyridine

EPA 7196A **10162400** **Chromium Hexavalent colorimetric**

Analyte Code	*Analyte*
1045	Chromium VI

EPA 7199 **10163005** **Determination of Hexavalent Chromium in Drinking Water, Groundwater and Industrial Wastewater Effluents by Ion Chromatography**

Analyte Code	*Analyte*
1045	Chromium VI

EPA 7470A **10165807** **Mercury in Liquid Waste by Cold Vapor Atomic Absorption**

Analyte Code	*Analyte*
1095	Mercury

EPA 8011 **10173009** **1,2-Dibromoethane and 1,2-Dibromo-3-chloropropane by Microextraction and GC/ECD**

Analyte Code	*Analyte*
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4580	Dibromochloropropane

EPA 8015B **10173601** **Non-halogenated organics using GC/FID**

Analyte Code	*Analyte*
9369	Diesel range organics (DRO)
4747	Ethane
4750	Ethanol
4752	Ethene
4785	Ethylene glycol
9408	Gasoline range organics (GRO)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4926	Methane
4930	Methanol
4420	tert-Butyl alcohol
2050	Total Petroleum Hydrocarbons (TPH)

EPA 8021B **10174808** **Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge & Trap**

Analyte Code	*Analyte*
4375	Benzene

ORELAP Fields of Accreditation

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Analyte Code	*Analyte*
4765	Ethylbenzene
4900	Isopropylbenzene
5000	Methyl tert-butyl ether (MTBE)
5245	m-Xylene
5250	o-Xylene
5255	p-Xylene
5140	Toluene
5260	Xylene (total)

EPA 8081A **10178606** **Organochlorine Pesticides by GC/ECD**

Analyte Code	*Analyte*
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
7740	Kepone
7810	Methoxychlor
7870	Mirex
8250	Toxaphene (Chlorinated camphene)

EPA 8082 **10179007** **Polychlorinated Biphenyls (PCBs) by GC/ECD**

Analyte Code	*Analyte*
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)
8912	Aroclor-1262 (PCB-1262)
8913	Aroclor-1268 (PCB-1268)

EPA 8141A **10182000** **Organophosphorous Pesticides by GC/NPD**

Analyte Code	*Analyte*
7065	Atrazine
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7220	Carbophenothion
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o

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Analyte Code	*Analyte*
7385	Demeton-s
7410	Diazinon
8605	Dichloroprop (Dichlorprop)
8610	Dichlorovos (DDVP, Dichlorvos)
8625	Disulfoton
7550	EPN
7565	Ethion
7570	Ethoprop
7580	Famphur
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7835	Metolachlor
7850	Mevinphos
7905	Naled
7955	Parathion, ethyl
7985	Phorate
8110	Ronnel
8125	Simazine
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 8151A **10183207** **Chlorinated Herbicides by GC/ECD**

Analyte Code	*Analyte*
8655	2,4,5-T
8545	2,4-D
8560	2,4-DB
8555	Dalapon
8595	Dicamba
8605	Dichloroprop (Dichlorprop)
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
7775	MCPA
7780	MCPP
6605	Pentachlorophenol
8645	Picloram
8650	Silvex (2,4,5-TP)

EPA 8260B **10184802** **Volatile Organic Compounds by purge and trap GC/MS**

Analyte Code	*Analyte*
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane

ORELAP Fields of Accreditation

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Analyte Code	*Analyte*
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
5635	Benzyl chloride
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4555	Cyclohexane
4560	Cyclohexanone
4580	Dibromochloropropane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
9375	Di-isopropylether (DIPE)
4745	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4785	Ethylene glycol
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4772	Fluoromethane (Freon 41)
9408	Gasoline range organics (GRO)
4835	Hexachlorobutadiene
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
5240	m+p-xylene
4925	Methacrylonitrile
4940	Methyl acetate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)

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Analyte Code	*Analyte*
4975	Methylene chloride (Dichloromethane)
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
5085	n-Propylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8260C **10307003** **Volatile Organics: GC/MS (capillary column)**

Analyte Code	*Analyte*
5105	1,1,1,2-Tetrachloroethane
5185	1,1,1-Trichloro-2,2,2-trifluoroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4695	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon-114)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4675	1,3-Dichloropropene
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
5020	2-Nitropropane
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)

ORELAP Fields of Accreditation

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Analyte Code	*Analyte*
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
5635	Benzyl chloride
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4705	cis & trans-1,2-Dichloroethene
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4555	Cyclohexane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
4745	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
9408	Gasoline range organics (GRO)
4835	Hexachlorobutadiene
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
5240	m+p-xylene
4940	Methyl acetate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4825	n-Heptane
4855	n-Hexane
5250	o-Xylene
5080	Propionitrile (Ethyl cyanide)
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)

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Analyte Code	*Analyte*
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8270C **10185805** **Semivolatile Organic compounds by GC/MS**

Analyte Code	*Analyte*
6703	1,1'-Biphenyl (BZ-0)
6705	1,2,3,4-Tetrachlorobenzene
6707	1,2,3,4-Tetrahydronaphthalene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6155	1,2-Dinitrobenzene
6221	1,2-Diphenylhydrazine
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6165	1,4-Dinitrobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
6420	1,4-Naphthoquinone
6630	1,4-Phenylenediamine
5790	1-Chloronaphthalene
6380	1-Methylnaphthalene
6425	1-Naphthylamine
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrotoluene (2,6-DNT)
5515	2-Acetylaminofluorene
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5050	2-Picoline (2-Methylpyridine)
5945	3,3'-Dichlorobenzidine
6100	3,3'-Dimethoxybenzidine
6120	3,3'-Dimethylbenzidine
5740	3-Chloroaniline
6355	3-Methylcholanthrene
6405	3-Methylphenol (m-Cresol)
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6105	4-Dimethyl aminoazobenzene
6410	4-Methylphenol (p-Cresol)

ORELAP Fields of Accreditation

ORELAP ID: PA200001
EPA CODE: PA00009
Certificate: PA200001 - 010

Lancaster Laboratories, Inc

2425 New Holland Pike
Lancaster PA 17601-5994

Issue Date: 03/02/2012 ***Expiration Date:*** 09/11/2012

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Analyte Code	*Analyte*
6470	4-Nitroaniline
6500	4-Nitrophenol
6510	4-Nitroquinoline 1-oxide
6570	5-Nitro-o-toluidine
6112	6-Methylchrysene
6115	7,12-Dimethylbenz(a) anthracene
6125	a-a-Dimethylphenethylamine
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
4357	alpha-Methylstyrene
5545	Aniline
5555	Anthracene
5560	Aramite
7065	Atrazine
5570	Benzaldehyde
5567	Benzenethiol
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5630	Benzyl alcohol
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
7180	Caprolactam
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
7405	Diallate
5900	Dibenz(a, j) acridine
5895	Dibenz(a,h) anthracene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6295	Hexachloropropene
6312	Indene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone

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Analyte Code	*Analyte*
6345	Methapyrilene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5010	n, n-Dimethyl formamide
6443	n, n-Dimethylacetamide
5005	Naphthalene
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethalamine
6555	n-Nitrosomorpholine
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
8290	o,o,o-Triethyl phosphorothioate
7955	Parathion, ethyl
6590	Pentachlorobenzene
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
6650	Pronamide (Kerb)
6665	Pyrene
5095	Pyridine
6670	Quinoline
6685	Safrole
8210	Tetraethyl pyrophosphate (TEPP)
8235	Thionazin (Zinophos)
6750	Thiophenol (Benzenethiol)
8310	tris-(2,3-Dibromopropyl) phosphate (tris-BP)

EPA 8270D **10186002 Semivolatile Organic compounds by GC/MS**

Analyte Code	*Analyte*
6703	1,1'-Biphenyl (BZ-0)
6705	1,2,3,4-Tetrachlorobenzene
6707	1,2,3,4-Tetrahydronaphthalene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6221	1,2-Diphenylhydrazine
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6165	1,4-Dinitrobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
6420	1,4-Naphthoquinone
6630	1,4-Phenylenediamine
5790	1-Chloronaphthalene
6380	1-Methylnaphthalene
6425	1-Naphthylamine
4659	2,2'-Oxybis(1-chloropropane)
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,5-Trichlorophenol
6000	2,4-Dichlorophenol

ORELAP Fields of Accreditation

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Analyte Code	*Analyte*
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrotoluene (2,6-DNT)
5515	2-Acetylaminofluorene
5735	2-Chloroaniline
5795	2-Chloronaphthalene
5800	2-Chlorophenol
5868	2-Methoxyphenol (Guaiacol)
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
6385	2-Methylnaphthalene
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5945	3,3'-Dichlorobenzidine
6120	3,3'-Dimethylbenzidine
6355	3-Methylcholanthrene
6405	3-Methylphenol (m-Cresol)
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
4910	4-Isopropyltoluene (p-Cymene)
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
6112	6-Methylchrysene
6115	7,12-Dimethylbenz(a) anthracene
6125	a-a-Dimethylphenethylamine
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
5545	Aniline
5555	Anthracene
5560	Aramite
7065	Atrazine
5565	Benzal chloride
5570	Benzaldehyde
5567	Benzenethiol
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
6062	bis(2-Ethylhexyl)adipate
5670	Butyl benzyl phthalate
7180	Caprolactam
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
7405	Diallate
9354	Dibenz(a, h) acridine
5900	Dibenz(a, j) acridine
5895	Dibenz(a,h) anthracene

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Analyte Code	*Analyte*
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6312	Indene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone
6345	Methapyrilene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5010	n, n-Dimethyl formamide
6443	n, n-Dimethylacetamide
5005	Naphthalene
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethalamine
6555	n-Nitrosomorpholine
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
8290	o,o,o-Triethyl phosphorothioate
7955	Parathion, ethyl
6590	Pentachlorobenzene
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
6665	Pyrene
5095	Pyridine
6685	Safrole
8235	Thionazin (Zinophos)
8310	tris-(2,3-Dibromopropyl) phosphate (tris-BP)

EPA 8270D SIM **10242509** **Semivolatile Organic compounds by GC/MS Selective Ion Monitoring**

Analyte Code	*Analyte*
6380	1-Methylnaphthalene
5500	Acenaphthene
5505	Acenaphthylene

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Analyte Code	*Analyte*
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene
5895	Dibenz(a,h) anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene
6615	Phenanthrene
6665	Pyrene

EPA 8290A **10187403** **Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS**

Analyte Code	*Analyte*
9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)
9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)
9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)
9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)
9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)
9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)
9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)
9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)
9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)
9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)
9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)
9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)
9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)
9480	2,3,4,6,7,8-Hexachlorodibenzofuran
9549	2,3,4,7,8-Pentachlorodibenzofuran
9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)
9612	2,3,7,8-Tetrachlorodibenzofuran
9438	Hpcdd, total
9444	Hpcdf, total
9468	Hxcdd, total
9483	Hxcdf, total
9555	Pecdd, total
9552	Pecdf, total
9609	TCDD, total
9615	TCDF, total

EPA 8310 **10187607** **Polynuclear Aromatic Hydrocarbons by HPLC/UV-VIS**

Analyte Code	*Analyte*
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene
5895	Dibenz(a,h) anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene

ORELAP Fields of Accreditation

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Analyte Code	*Analyte*
6615	Phenanthrene
6665	Pyrene

EPA 8315A **10188008** **Determination of Carbonyl Compounds by HPLC/UV-VIS**

Analyte Code	*Analyte*
6110	2,5-Dimethylbenzaldehyde
4300	Acetaldehyde
4325	Acrolein (Propenal)
5570	Benzaldehyde
4430	Butylaldehyde (Butanal)
4545	Crotonaldehyde
4815	Formaldehyde
5125	m-Tolualdehyde (1,3-Tolualdehyde)
6755	o-Tolualdehyde (1,2-Tolualdehyde)
6760	p-Tolualdehyde (1,4-Tolualdehyde)
4040	Valeraldehyde (Pentanal, Pentanaldehyde)

EPA 8330A **10190008** **Nitroaromatics and Nitramines by High Performance Liquid Chromatography (HPLC)**

Analyte Code	*Analyte*
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)

EPA 8332 **10190406** **HPLC Nitroglycerine**

Analyte Code	*Analyte*
6485	Nitroglycerin

EPA 9012A **10193405** **Total and Amenable Cyanide (automated colorimetric with off-line distillation)**

Analyte Code	*Analyte*
1645	Total cyanide

EPA 9040B **10197203** **pH Electrometric Measurement**

Analyte Code	*Analyte*
1900	pH

EPA 9045C **10198400** **Soil and Waste pH**

Analyte Code	*Analyte*
1900	pH

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EPA 9056 **10199403** **Determination of Inorganic Anions by Ion Chromatography**

Analyte Code	*Analyte*
1540	Bromide
1575	Chloride
1730	Fluoride
1810	Nitrate as N
1840	Nitrite as N
1870	Orthophosphate as P
2000	Sulfate

EPA 9060 **10200201** **Total Organic Carbon**

Analyte Code	*Analyte*
2040	Total organic carbon

EPA 9066 **10200609** **Phenolics (Colorimetric, Automated 4-AAP with Distillation)**

Analyte Code	*Analyte*
1905	Total phenolics

EPA 9095A **10204203** **Paint Filter Liquids Test**

Analyte Code	*Analyte*
8031	Extraction/Preparation

NWTPH-Dx **90018409** **Oregon DEQ TPH Diesel Range**

Analyte Code	*Analyte*
9369	Diesel range organics (DRO)

NWTPH-Gx **90018603** **Oregon DEQ TPH Gasoline Range Organics by GC/FID-PID Purge & Trap**

Analyte Code	*Analyte*
9408	Gasoline range organics (GRO)

NWTPH-HCID **90013200** **Oregon DEQ Total Petroleum Hydrocarbon ID**

Analyte Code	*Analyte*
2050	Total Petroleum Hydrocarbons (TPH)

OA-1 **90013802** **Iowa TPH Gx by GC/PID Purge & Trap**

Analyte Code	*Analyte*
9408	Gasoline range organics (GRO)

OA-2 **90014009** **Iowa TPH Dx**

Analyte Code	*Analyte*
9369	Diesel range organics (DRO)

SM 2120 B 20th ED **20224004** **Color by Visual Comparison**

Analyte Code	*Analyte*
1605	Color

SM 2310 B 20th ED **20044206** **Acidity by Titration**

Analyte Code	*Analyte*
1500	Acidity, as CaCO3

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SM 2320 B 20th ED **20045209** **Alkalinity by Titration**

Analyte Code	*Analyte*
1505	Alkalinity as CaCO3

SM 2340 B 20th ED **20046202** **Hardness by calculation**

Analyte Code	*Analyte*
1750	Hardness

SM 2340 C 20th ED **20047205** **Hardness by EDTA Titration**

Analyte Code	*Analyte*
1750	Hardness

SM 2510 B 20th ED **20048208** **Conductivity by Probe**

Analyte Code	*Analyte*
1610	Conductivity

SM 2540 B 20th ED **20049007** **Total Solids**

Analyte Code	*Analyte*
1950	Residue-total

SM 2540 C 20th ED **20050004** **Total Dissolved Solids**

Analyte Code	*Analyte*
1955	Residue-filterable (TDS)

SM 2540 D 20th ED **20050800** **Total Suspended Solids**

Analyte Code	*Analyte*
1960	Residue-nonfilterable (TSS)

SM 2540 F 20th ED **20051803** **Settleable Solids**

Analyte Code	*Analyte*
1965	Residue-settleable

SM 3500-Cr B 20th ED **20065809** **Chromium by Colorimetric Method**

Analyte Code	*Analyte*
1045	Chromium VI

SM 4500-CN C 20th ED **20091605** **Cyanide, Total After Distillation**

Analyte Code	*Analyte*
1635	Cyanide

SM 4500-CN E 20th ED **20092404** **Cyanide by Colorimetric Determination**

Analyte Code	*Analyte*
1635	Cyanide

SM 4500-CN G 20th ED **20093203** **Cyanide Amenable to Chlorination after Distillation**

Analyte Code	*Analyte*
1510	Amenable cyanide

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SM 4500-F⁻B 20th ED **20101002** **Fluoride Distillation**

Analyte Code	*Analyte*
1730	Fluoride

SM 4500-F⁻C 20th ED **20102005** **Fluoride by Ion Selective Electrode**

Analyte Code	*Analyte*
1730	Fluoride

SM 4500-H+ B 20th ED **20104807** **pH by Probe**

Analyte Code	*Analyte*
1900	pH

SM 4500-NH3 D 20th ED **20109006** **Ammonia by Selective Ion Probe**

Analyte Code	*Analyte*
1515	Ammonia as N

SM 4500-O G 20th ED **20121204** **Dissolved Oxygen by Membrane Electrode Method**

Analyte Code	*Analyte*
1880	Oxygen, dissolved

SM 4500-S2⁻D 20th ED **20125400** **Sulfide by Methylene Blue Method**

Analyte Code	*Analyte*
2005	Sulfide

SM 4500-SO3⁻B 20th ED **20130205** **Sulfite by Iodometric Method**

Analyte Code	*Analyte*
2015	Sulfite-SO3

SM 5210 B 20th ED **20134809** **Biochemical Oxygen Demand, 5-Day (BOD5)**

Analyte Code	*Analyte*
1530	Biochemical oxygen demand
1555	Carbonaceous BOD, CBOD

SM 5310 B 20th ED **20137400** **Total Organic Carbon by Combustion Infra-red Method**

Analyte Code	*Analyte*
2040	Total organic carbon

SM 5310 C 20th ED **20138403** **Total Organic Carbon by Persulfate-Ultraviolet Oxidation Method**

Analyte Code	*Analyte*
2040	Total organic carbon

SM 5540 C 20th ED **20144609** **Surfactants as MBAS**

Analyte Code	*Analyte*
2025	Surfactants - MBAS

WA EPH **60015001** **Extractable Petroleum Hydrocarbons**

Analyte Code	*Analyte*
9369	Diesel range organics (DRO)

ORELAP Fields of Accreditation

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WA VPH	**60015056**	**Volatile Petroleum Hydrocarbons (VPH) by GC/PID Purge & Trap**

Analyte Code	*Analyte*
9408	Gasoline range organics (GRO)

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MATRIX : Solids

Reference	Code	Description
EPA 1010	**10116606**	**Pensky-Martens Closed-Cup Method for Determining Ignitability**
Analyte Code	***Analyte***	
1780	Ignitability	
EPA 1311	**10118806**	**Toxicity Characteristic Leaching Procedure**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 1312	**10119003**	**Synthetic Precipitation Leaching Procedure**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 3005A	**10133207**	**Acid Digestion of waters for Total Recoverable or Dissolved Metals**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 3010A	**10133605**	**Acid Digestion of Aqueous samples and Extracts for Total Metals**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 3020A	**10134404**	**Acid Digestion of Aqueous samples and Extracts for Total Metals for Analysis by GFAA**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 3050B	**10135601**	**Acid Digestion of Sediments, Sludges, and soils**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 3060A	**10136604**	**Alkaline Digestion for Hexavalent Chromium**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 3510C	**10138202**	**Separatory Funnel Liquid-liquid extraction**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 3540C	**10140202**	**Soxhlet Extraction**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	
EPA 3546	**10141205**	**Microwave Extraction**
Analyte Code	***Analyte***	
8031	Extraction/Preparation	

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EPA 3550B **10141807** **Ultrasonic Extraction**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 3620B **10145809** **Florisil Cleanup**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 3630C **10146802** **Silica gel cleanup**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 3640A **10147203** **Gel Preparation Cleanup**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 3660B **10148400** **Sulfur cleanup**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 5035 **10154004** **Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples**

Analyte Code	*Analyte*
8031	Extraction/Preparation

EPA 6010B **10155609** **ICP - AES**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

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EPA 6010C **10155803** **ICP - AES**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1080	Lithium
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
2017	Sulfur
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 6020 **10156000** **Inductively Coupled Plasma-Mass Spectrometry**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1085	Magnesium
1090	Manganese
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium

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Analyte Code	*Analyte*
1190	Zinc

EPA 6020A **10156408** **Inductively Coupled Plasma-Mass Spectrometry**

Analyte Code	*Analyte*
1000	Aluminum
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1025	Boron
1030	Cadmium
1035	Calcium
1040	Chromium
1050	Cobalt
1055	Copper
1070	Iron
1075	Lead
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1160	Strontium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

EPA 7196A **10162400** **Chromium Hexavalent Colorimetric**

Analyte Code	*Analyte*
1045	Chromium VI

EPA 7199 **10163005** **Determination of Hexavalent Chromium in Drinking Water, Groundwater and Industrial Wastewater Effluents by Ion Chromatography**

Analyte Code	*Analyte*
1045	Chromium VI

EPA 7471A **10166208** **Mercury in Solid Waste by Cold Vapor Atomic Absorption**

Analyte Code	*Analyte*
1095	Mercury

EPA 8015B **10173601** **Non-halogenated organics using GC/FID**

Analyte Code	*Analyte*
9369	Diesel range organics (DRO)
4750	Ethanol
4785	Ethylene glycol
9408	Gasoline range organics (GRO)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4930	Methanol
4420	tert-Butyl alcohol

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EPA 8021B **10174808** **Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge & Trap**

Analyte Code	*Analyte*
5210	1,2,4-Trimethylbenzene
5215	1,3,5-Trimethylbenzene
4910	4-Isopropyltoluene (p-Cymene)
4375	Benzene
4765	Ethylbenzene
4900	Isopropylbenzene
5000	Methyl tert-butyl ether (MTBE)
5245	m-Xylene
5005	Naphthalene
4435	n-Butylbenzene
5090	n-Propylbenzene
5250	o-Xylene
5255	p-Xylene
4440	sec-Butylbenzene
4445	tert-Butylbenzene
5140	Toluene
5260	Xylene (total)

EPA 8081A **10178606** **Organochlorine Pesticides by GC/ECD**

Analyte Code	*Analyte*
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
7740	Kepone
7810	Methoxychlor
7870	Mirex
8250	Toxaphene (Chlorinated camphene)

EPA 8082 **10179007** **Polychlorinated Biphenyls (PCBs) by GC/ECD**

Analyte Code	*Analyte*
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)
8912	Aroclor-1262 (PCB-1262)
8913	Aroclor-1268 (PCB-1268)

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EPA 8141A **10182000** **Organophosphorous Pesticides by GC/NPD**

Analyte Code	*Analyte*
7065	Atrazine
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorovos (DDVP, Dichlorvos)
8625	Disulfoton
7550	EPN
7565	Ethion
7570	Ethoprop
7580	Famphur
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7955	Parathion, ethyl
7985	Phorate
8110	Ronnel
8125	Simazine
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 8151A **10183207** **Chlorinated Herbicides by GC/ECD**

Analyte Code	*Analyte*
8655	2,4,5-T
8545	2,4-D
8560	2,4-DB
8555	Dalapon
8595	Dicamba
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
7775	MCPA
7780	MCPP
6605	Pentachlorophenol
8645	Picloram
8650	Silvex (2,4,5-TP)

EPA 8260B **10184802** **Volatile Organic Compounds by purge and trap GC/MS**

Analyte Code	*Analyte*
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene

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Analyte Code	*Analyte*
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
5635	Benzyl chloride
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4560	Cyclohexanone
4580	Dibromochloropropane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
9375	Di-isopropylether (DIPE)
4745	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
9408	Gasoline range organics (GRO)
4835	Hexachlorobutadiene
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
5240	m+p-xylene
4925	Methacrylonitrile
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate

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Analyte Code	*Analyte*
5000	Methyl tert-butyl ether (MTBE)
4975	Methylene chloride (Dichloromethane)
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8260C **10307003** **Volatile Organics: GC/MS (capillary column)**

Analyte Code	*Analyte*
5105	1,1,1,2-Tetrachloroethane
5185	1,1,1-Trichloro-2,2,2-trifluoroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4695	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon-114)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4675	1,3-Dichloropropene
4620	1,4-Dichlorobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4500	2-Chloroethyl vinyl ether
4535	2-Chlorotoluene
4860	2-Hexanone
5020	2-Nitropropane
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)

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Analyte Code	*Analyte*
4995	4-Methyl-2-pentanone (MIBK)
4315	Acetone
4320	Acetonitrile
4325	Acrolein (Propenal)
4340	Acrylonitrile
4355	Allyl chloride (3-Chloropropene)
4375	Benzene
5635	Benzyl chloride
4385	Bromobenzene
4390	Bromochloromethane
4395	Bromodichloromethane
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4705	cis & trans-1,2-Dichloroethene
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4555	Cyclohexane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
4745	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
9408	Gasoline range organics (GRO)
4835	Hexachlorobutadiene
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
5240	m+p-xylene
4940	Methyl acetate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4825	n-Heptane
4855	n-Hexane
5250	o-Xylene
5080	Propionitrile (Ethyl cyanide)
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)

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Analyte Code	*Analyte*
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8270C **10185805** **Semivolatile Organic compounds by GC/MS**

Analyte Code	*Analyte*
6703	1,1'-Biphenyl (BZ-0)
6705	1,2,3,4-Tetrachlorobenzene
6707	1,2,3,4-Tetrahydronaphthalene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6155	1,2-Dinitrobenzene
6221	1,2-Diphenylhydrazine
6800	1,3,5-Trichlorobenzene
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6165	1,4-Dinitrobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
6420	1,4-Naphthoquinone
6630	1,4-Phenylenediamine
5790	1-Chloronaphthalene
6380	1-Methylnaphthalene
6425	1-Naphthylamine
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrotoluene (2,6-DNT)
5515	2-Acetylaminofluorene
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
5145	2-Methylaniline (o-Toluidine)
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5050	2-Picoline (2-Methylpyridine)
5945	3,3'-Dichlorobenzidine
6100	3,3'-Dimethoxybenzidine
6120	3,3'-Dimethylbenzidine
5740	3-Chloroaniline
6355	3-Methylcholanthrene
6405	3-Methylphenol (m-Cresol)
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6105	4-Dimethyl aminoazobenzene

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Analyte Code	*Analyte*
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
6510	4-Nitroquinoline 1-oxide
6570	5-Nitro-o-toluidine
6112	6-Methylchrysene
6115	7,12-Dimethylbenz(a) anthracene
6125	a-a-Dimethylphenethylamine
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
5545	Aniline
5555	Anthracene
5560	Aramite
7065	Atrazine
5570	Benzaldehyde
5567	Benzenethiol
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5630	Benzyl alcohol
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
7180	Caprolactam
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
7405	Diallate
5900	Dibenz(a, j) acridine
5895	Dibenz(a,h) anthracene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6295	Hexachloropropene
6312	Indene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone

ORELAP Fields of Accreditation

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Lancaster Laboratories, Inc
2425 New Holland Pike
Lancaster PA 17601-5994

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Analyte Code	*Analyte*
6345	Methapyrilene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5010	n, n-Dimethyl formamide
6443	n, n-Dimethylacetamide
5005	Naphthalene
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethalamine
6555	n-Nitrosomorpholine
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
8290	o,o,o-Triethyl phosphorothioate
7955	Parathion, ethyl
6590	Pentachlorobenzene
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
6650	Pronamide (Kerb)
6665	Pyrene
5095	Pyridine
6670	Quinoline
6685	Safrole
8210	Tetraethyl pyrophosphate (TEPP)
8235	Thionazin (Zinophos)
8310	tris-(2,3-Dibromopropyl) phosphate (tris-BP)

EPA 8270D **10186002** **Semivolatile Organic compounds by GC/MS**

Analyte Code	*Analyte*
6703	1,1'-Biphenyl (BZ-0)
6705	1,2,3,4-Tetrachlorobenzene
6707	1,2,3,4-Tetrahydronaphthalene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6221	1,2-Diphenylhydrazine
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6165	1,4-Dinitrobenzene
4735	1,4-Dioxane (1,4- Diethyleneoxide)
6420	1,4-Naphthoquinone
6630	1,4-Phenylenediamine
5790	1-Chloronaphthalene
6380	1-Methylnaphthalene
6425	1-Naphthylamine
4659	2,2'-Oxybis(1-chloropropane)
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,5-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol

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Analyte Code	*Analyte*
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6005	2,6-Dichlorophenol
6190	2,6-Dinitrotoluene (2,6-DNT)
5515	2-Acetylaminofluorene
5735	2-Chloroaniline
5795	2-Chloronaphthalene
5800	2-Chlorophenol
5868	2-Methoxyphenol (Guaiacol)
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
6385	2-Methylnaphthalene
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5945	3,3'-Dichlorobenzidine
6120	3,3'-Dimethylbenzidine
6355	3-Methylcholanthrene
6405	3-Methylphenol (m-Cresol)
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
4910	4-Isopropyltoluene (p-Cymene)
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
6112	6-Methylchrysene
6115	7,12-Dimethylbenz(a) anthracene
6125	a-a-Dimethylphenethylamine
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
5545	Aniline
5555	Anthracene
5560	Aramite
7065	Atrazine
5565	Benzal chloride
5570	Benzaldehyde
5567	Benzenethiol
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
6062	bis(2-Ethylhexyl)adipate
5670	Butyl benzyl phthalate
7180	Caprolactam
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
7405	Diallate
9354	Dibenz(a, h) acridine
5900	Dibenz(a, j) acridine
5895	Dibenz(a,h) anthracene
5905	Dibenzofuran

ORELAP Fields of Accreditation

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Analyte Code	*Analyte*
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6312	Indene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone
6345	Methapyrilene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5010	n, n-Dimethyl formamide
6443	n, n-Dimethylacetamide
5005	Naphthalene
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethalamine
6555	n-Nitrosomorpholine
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
8290	o,o,o-Triethyl phosphorothioate
7955	Parathion, ethyl
6590	Pentachlorobenzene
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
6665	Pyrene
5095	Pyridine
6685	Safrole
8235	Thionazin (Zinophos)
8310	tris-(2,3-Dibromopropyl) phosphate (tris-BP)

EPA 8270D SIM **10242509** **Semivolatile Organic compounds by GC/MS Selective Ion Monitoring**

Analyte Code	*Analyte*
6380	1-Methylnaphthalene
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene

ORELAP Fields of Accreditation

ORELAP ID: PA200001
EPA CODE: PA00009
Certificate: PA200001 - 010

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Analyte Code	*Analyte*
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene
5895	Dibenz(a,h) anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene
6615	Phenanthrene
6665	Pyrene

EPA 8290A **10187403** **Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS**

Analyte Code	*Analyte*
9516	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)
9519	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)
9420	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)
9426	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)
9423	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)
9471	1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)
9453	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)
9474	1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)
9456	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)
9477	1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)
9459	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)
9543	1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)
9540	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)
9480	2,3,4,6,7,8-Hexachlorodibenzofuran
9549	2,3,4,7,8-Pentachlorodibenzofuran
9618	2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)
9612	2,3,7,8-Tetrachlorodibenzofuran
9438	Hpcdd, total
9444	Hpcdf, total
9468	Hxcdd, total
9483	Hxcdf, total
9555	Pecdd, total
9552	Pecdf, total
9609	TCDD, total
9615	TCDF, total

EPA 8310 **10187607** **Polynuclear Aromatic Hydrocarbons by HPLC/UV-VIS**

Analyte Code	*Analyte*
5500	Acenaphthene
5505	Acenaphthylene
5555	Anthracene
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5855	Chrysene
5895	Dibenz(a,h) anthracene
6265	Fluoranthene
6270	Fluorene
6315	Indeno(1,2,3-cd) pyrene
5005	Naphthalene
6615	Phenanthrene

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Analyte Code	*Analyte*
6665	Pyrene

EPA 8315A **10188008** **Determination of Carbonyl Compounds by HPLC/UV-VIS**

Analyte Code	*Analyte*
6110	2,5-Dimethylbenzaldehyde
4300	Acetaldehyde
4325	Acrolein (Propenal)
5570	Benzaldehyde
4430	Butylaldehyde (Butanal)
4545	Crotonaldehyde
4815	Formaldehyde
5125	m-Tolualdehyde (1,3-Tolualdehyde)
6755	o-Tolualdehyde (1,2-Tolualdehyde)
6760	p-Tolualdehyde (1,4-Tolualdehyde)
4040	Valeraldehyde (Pentanal, Pentanaldehyde)

EPA 8318 **10188406** **N-Methylcarbamates by HPLC/UV-VIS**

Analyte Code	*Analyte*
7710	3-Hydroxycarbofuran
7010	Aldicarb (Temik)
7015	Aldicarb sulfone
7020	Aldicarb sulfoxide
7195	Carbaryl (Sevin)
7205	Carbofuran (Furaden)
7800	Methiocarb (Mesurol)
7805	Methomyl (Lannate)
7940	Oxamyl

EPA 8318A **10188600** **N-Methylcarbamates by High Performance Liquid Chromatography (HPLC)**

Analyte Code	*Analyte*
7710	3-Hydroxycarbofuran
7010	Aldicarb (Temik)
7015	Aldicarb sulfone
7020	Aldicarb sulfoxide
7195	Carbaryl (Sevin)
7205	Carbofuran (Furaden)
7800	Methiocarb (Mesurol)
7805	Methomyl (Lannate)
7940	Oxamyl
8080	Propoxur (Baygon)

EPA 8330A **10190008** **Nitroaromatics and Nitramines by High Performance Liquid Chromatography (HPLC)**

Analyte Code	*Analyte*
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin

ORELAP Fields of Accreditation

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Analyte Code	*Analyte*
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)

EPA 9012A **10193405** **Total and Amenable Cyanide (automated colorimetric with off-line distillation)**

Analyte Code	*Analyte*
1645	Total cyanide

EPA 9040B **10197203** **pH Electrometric Measurement**

Analyte Code	*Analyte*
1900	pH

EPA 9045C **10198400** **Soil and Waste pH**

Analyte Code	*Analyte*
1900	pH

EPA 9060 **10200201** **Total Organic Carbon**

Analyte Code	*Analyte*
2040	Total organic carbon

EPA 9066 **10200609** **Phenolics (Colorimetric, Automated 4-AAP with Distillation)**

Analyte Code	*Analyte*
1905	Total phenolics

EPA 9071B **10201602** **Oil and Grease Extraction Method for sludge and sediment samples**

Analyte Code	*Analyte*
1860	Oil & Grease

EPA 9095A **10204203** **Paint Filter Liquids Test**

Analyte Code	*Analyte*
8031	Extraction/Preparation

NWTPH-Dx **90018409** **Oregon DEQ TPH Diesel Range**

Analyte Code	*Analyte*
9369	Diesel range organics (DRO)

NWTPH-Gx **90018603** **Oregon DEQ TPH Gasoline Range Organics by GC/FID-PID Purge & Trap**

Analyte Code	*Analyte*
9408	Gasoline range organics (GRO)

NWTPH-HCID **90013200** **Oregon DEQ Total Petroleum Hydrocarbon ID**

Analyte Code	*Analyte*
2050	Total Petroleum Hydrocarbons (TPH)

OA-1 **90013802** **Iowa TPH Gx by GC/PID Purge & Trap**

Analyte Code	*Analyte*
9408	Gasoline range organics (GRO)

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OA-2 **90014009** **Iowa TPH Dx**

Analyte Code	*Analyte*
9369	Diesel range organics (DRO)

WA EPH **60015001** **Extractable Petroleum Hydrocarbons**

Analyte Code	*Analyte*
9369	Diesel range organics (DRO)

WA VPH **60015056** **Volatile Petroleum Hydrocarbons (VPH) by GC/PID Purge & Trap**

Analyte Code	*Analyte*
9408	Gasoline range organics (GRO)