Columbia Analytical Services™

QUALITY ASSURANCE MANUAL

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Annual review of this QAM has been performed and the QAM still reflects current practice.
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3.0 INTRODUCTION AND COMPANY QUALITY ASSURANCE POLICY

Columbia Analytical Services, Inc. (CAS) is a professional consulting laboratory which performs chemical and microbiological analyses on a wide variety of sample matrices, including drinking water, groundwater, surface water, wastewater, soil, sediment, sludge, tissue, industrial and hazardous waste, and other material. CAS/Rochester is a part of a multi Lab Network operating throughout the USA. See Corporate Organization Chart (Appendix B) for locations.

It is a policy at CAS that there will be sufficient Quality Assurance (QA) activities conducted in the laboratory to ensure that all analytical data generated and processed will be scientifically sound, legally defensible, of known and documented quality, and will accurately reflect the material being tested. This goal is achieved by ensuring that adequate Quality Control (QC) procedures are used throughout the monitoring process, and by establishing a means to assess performance of these Quality Control and other QA activities. The Quality and Ethics Policy Statement is in Appendix H and is posted on the employee bulletin board.

We recognize that quality assurance requires a commitment to quality and ethics by everyone in the organization - individually, within each operating unit, and throughout the entire laboratory. All employees of CAS undergo lengthy data integrity training and are encouraged to participate in CAS open door policy to ensure a quality product and protect employees from any undue pressures. CAS also has stringent requirements and signed statements from employees to protect client confidentiality and ethical agreements. All personnel must familiarize themselves with the quality documentation and implement the policies and procedures in their work. These policies and procedures also apply to any national security concerns.

The information in this document has been organized according to the format described in *National Environmental Laboratory Accreditation Program (NELAP) Quality Systems Standards*, July 2003 in order to meet the compliance requirements of this standard. This document is controlled under policies required by CAS Document Control SOP (ADM-DOCCTRL). Each CAS network laboratory maintains its own lab specific Quality Assurance Manual.

4.0 QUALITY SYSTEM PROGRAM DESCRIPTION

The purpose of the QA program at CAS is to ensure that our clients are provided with analytical data that is scientifically sound, legally defensible, and of known and documented quality. The concept of Quality Assurance can be extended, and is expressed in the Vision of CAS:

> "CAS Holdings, Inc. applies creative thinking and strategic integration of our talents to be the best in all business endeavors we pursue. The Company is a leader in our industry demonstrated by:
>
> - Unprecedented customer satisfaction
> - Sustained profitability
> - Exceptional technical excellence
> - Superior Quality Systems
>
> We value our company's most valuable asset, our employee-owners. We are committed to make CAS Holdings Inc the preferred place to work and grow as individuals and professionals."

In support of this vision, our QA program addresses all aspects of laboratory operations, including laboratory organization and personnel, standard operating procedures, sample management, sample and quality control data, calibration data, standards traceability data, equipment maintenance records, method proficiency data (such as method detection limit studies and control charts), document storage and staff training records.

4.1 Facilities and Equipment

CAS features over 17,000 square feet of laboratory and administrative workspace at its Rochester, NY location. The facility is secured to the rest of the building using a swipe card entry system. Upon hire, each employee is assigned an access card and security code that must be used with their card. This employee-specific card provides access to the lab. SOP's are in place to protect the integrity of samples throughout the laboratory process (SMO-ICOC). A company software Quality Assurance plan exists to provide standard procedures to protect the integrity of electronic data. The laboratory has been designed and constructed to provide safeguards against cross-contamination of samples and is arranged according to work function, which enhances the efficiency of analytical operations.

Specialized areas include:

- Shipping and Receiving/Purchasing
- Sample Management Office
- Separate sample storage areas. See section 8 for further discussion of storage.
- Inorganic/Metals Sample Preparation Laboratories (2)
- ICP and ICP/MS Laboratory
- AA Laboratory
- Water Chemistry & General Chemistry Laboratories
- Gas Chromatography Laboratory (including a separate sample preparation laboratory)
- Gas Chromatography/Mass Spectrometry Laboratory (including a separate sample preparation laboratory)
- Volatile Organics Laboratory (including a separate standard preparation laboratory)
- HPLC and Petroleum Laboratory (including GC and GC/MS)
- Air Laboratory (Volatiles by GC/MS from canisters)
- Microbiology Laboratory
- Laboratory Deionized Water System
- Laboratory Management, Client Service, Report Generation and Administration
- Data Archive
- Information Technology (IT) and LIMS
- Hazardous Waste Storage Area

In addition, segregated laboratory areas were designed for efficient and safe handling of a variety of sample types. Figures 4-1, 4-2, and 4-3 shows the facility location and layout of our Rochester, NY location. The laboratory is equipped with state-of-the-art analytical and administrative support equipment. Appendix A lists the major equipment at the Rochester facility, illustrating the laboratory's depth and overall capabilities. All analytical instrumentation must be verified for each test prior to reporting data to ensure documented quality (see analytical SOPs and/or ADM-TRANDOC).

Good housekeeping is an essential practice at CAS. Each department is responsible for their own area, keeping isles clear, counters free of debris and chemicals that may cause contamination during analysis. A contracted cleaning service removes all garbage and recyclables, mops the floors, and vacuums each working day.

4.2 Technical Elements of the Quality Assurance (QA) Program

4.2.1 Quality Assurance Manual.

This document describes in detail the company's quality assurance program as well as provides information about test methods available, personnel, equipment, and facilities. The contents of the manual are reviewed annually by the Quality Assurance Program Manager (QAPM) and revised as needed to ensure that it continuously reflects current policies and practices. Personnel information is also updated annually as needed. The QAPM and the Lab Manager must approve all revisions before they are put into effect.

4.2.2 Standard Operating Procedures (SOPs) and Laboratory Notebooks

CAS maintains SOPs for use in both technical and administrative functions. Included in the list of available SOPs (Appendix G) are procedures for the preparation of an SOP document, and for enforcing the control of documents through the laboratory (ADM-SOP & ADM-DOCCTRL, respectively). Each SOP is implemented as written and has been reviewed and approved by the Laboratory Director, the Quality Assurance Program Manager. In most cases, the SOP has also been approved by the appropriate laboratory supervisor. The SOPs are reviewed annually and are revised as necessary to reflect actual objectives, flow of tasks, and staff responsibilities. The document control process associated with an SOP ensures that only the most currently prepared version of an SOP is being used for guidance and instruction. In addition to SOPs, each laboratory supervisor maintains a current file of all the promulgated methodology used to perform analyses. This file is accessible to all laboratory staff regardless of discipline. Laboratory notebook entries have been standardized following the guidelines in the *Making Entries into Logbooks and onto Benchsheets* SOP (SOP No. ADM-DATANTRY). The entries made into laboratory notebooks are reviewed and approved by the appropriate supervisor at a regular interval (quarterly)

4.2.3 Standard Reference Materials, Reagents, and Consumable Materials

All analytical measurements generated at CAS are performed using materials and/or processes that are traceable to a Standard Reference Material (SRM). Metrology equipment (analytical balances, thermometers, etc...) is calibrated using SRMs traceable to the National Institute of Standards and Technology (NIST) at the frequency described in Section 11. Consumable SRMs routinely purchased by the laboratories (e.g. primary stock standards) are purchased from nationally-recognized, reputable vendors. Most vendors have fulfilled the requirements for ISO 9001 certification and/or are accredited by A_2LA. Traceability throughout the laboratory is accomplished by following the guidelines set in the SOP, *Making Entries Into Logbooks and Onto Benchsheets* (ADM-DATANTRY).

All sampling containers provided to the client by the laboratory are purchased as precleaned (Level 1) containers, with certificates of analysis available for each bottle type. Certifications of Analysis provided by the vendors of reference materials and bottles are reviewed prior to use and kept on file by the laboratory.

The laboratory checks new lots of reagents for unacceptable levels of contamination prior to use in sample preservation, sample preparation, and sample analysis by following the SOP, *Checking New Lots of Chemicals for Contamination* (ADM-CTMN).

4.2.4 Operational Assessments

There are a number of methods used to assess the laboratory and its daily operations. In addition to the routine quality control (QC) measurements used by a laboratory to measure quality, the senior laboratory management staff at CAS examine a number of other performance indicators to assess the overall ability of the laboratory to successfully perform analyses for its clients. On-time performance, Analytical Report defect rate and Customer Invoice defect rate are a few of the measurements performed at CAS that are used to assess performance from an external perspective (i.e. client satisfaction). A frequent, routine assessment must also be made of the laboratory's facilities and resources in anticipation of accepting an additional or increased workload. CAS utilizes a number of different methods to insure that adequate resources are available in anticipation of the demand for service. Regularly scheduled senior staff meetings, tracking of outstanding proposals and an accurate, current synopsis of incoming work all assist the senior staff in properly allocating resources to achieve the required results.

4.2.5 Additional Quality Records

Quality Reports to Management, Internal and External Audits, and NCAR Forms discuss quality assurance program issues, continuous process improvements, and corrective actions throughout the program and are the responsibility of the QAPM.

4.2.6 Deviation from Standard Operating Procedures, Policies, or Standard Specifications

When a customer requests a modification to an SOP, policy, or standard specification the Project Manager handling that project must discuss the proposed deviation with the lab director, departmental manager, or QA to obtain approval for the deviation. All project-specific requirements must be on-file and with the service request upon logging in the samples. A Project-Specific Communication Form is available to document such deviations.

4.3 Subcontracting

Analytical services are subcontracted when CAS/Rochester needs to balance workload and/or when the requested analyses are not performed in Rochester. However, subcontracting is only done with the knowledge and approval of the client. Subcontracting to another CAS laboratory is preferred over external-laboratory subcontracting. Further, subcontracting is only done to capable and qualified laboratories approved by the client. Subcontractors must be accredited by the applicable state or program to which apply to the samples being analyzed. Established procedures are followed to qualify external subcontract laboratories, see *Qualifying Subcontract Labs* (ADM-SUBLAB).

Figure 4-1
CAS/Rochester Laboratory Floor Plan

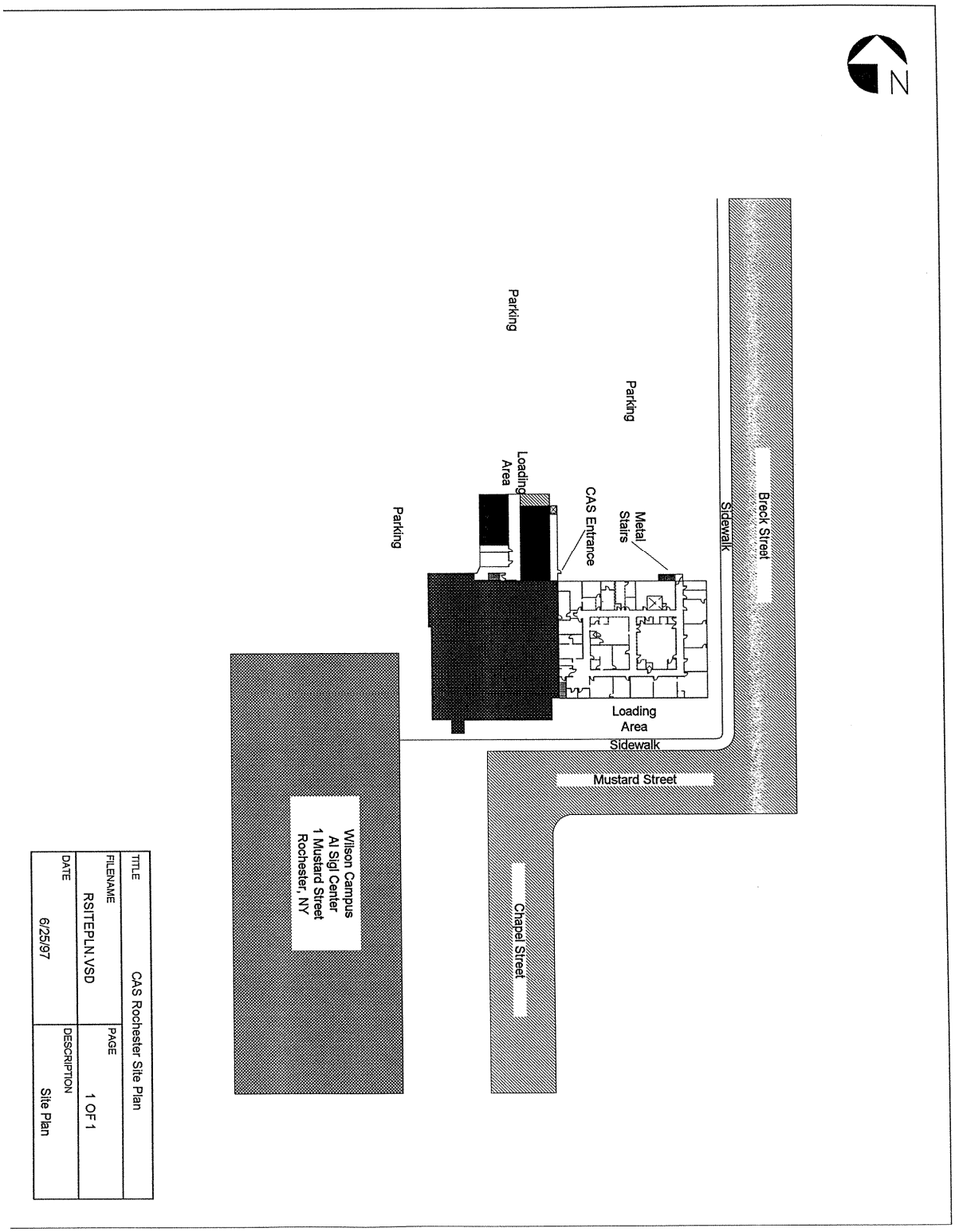


Figure 4-2
CAS/Rochester Laboratory Floor Plan

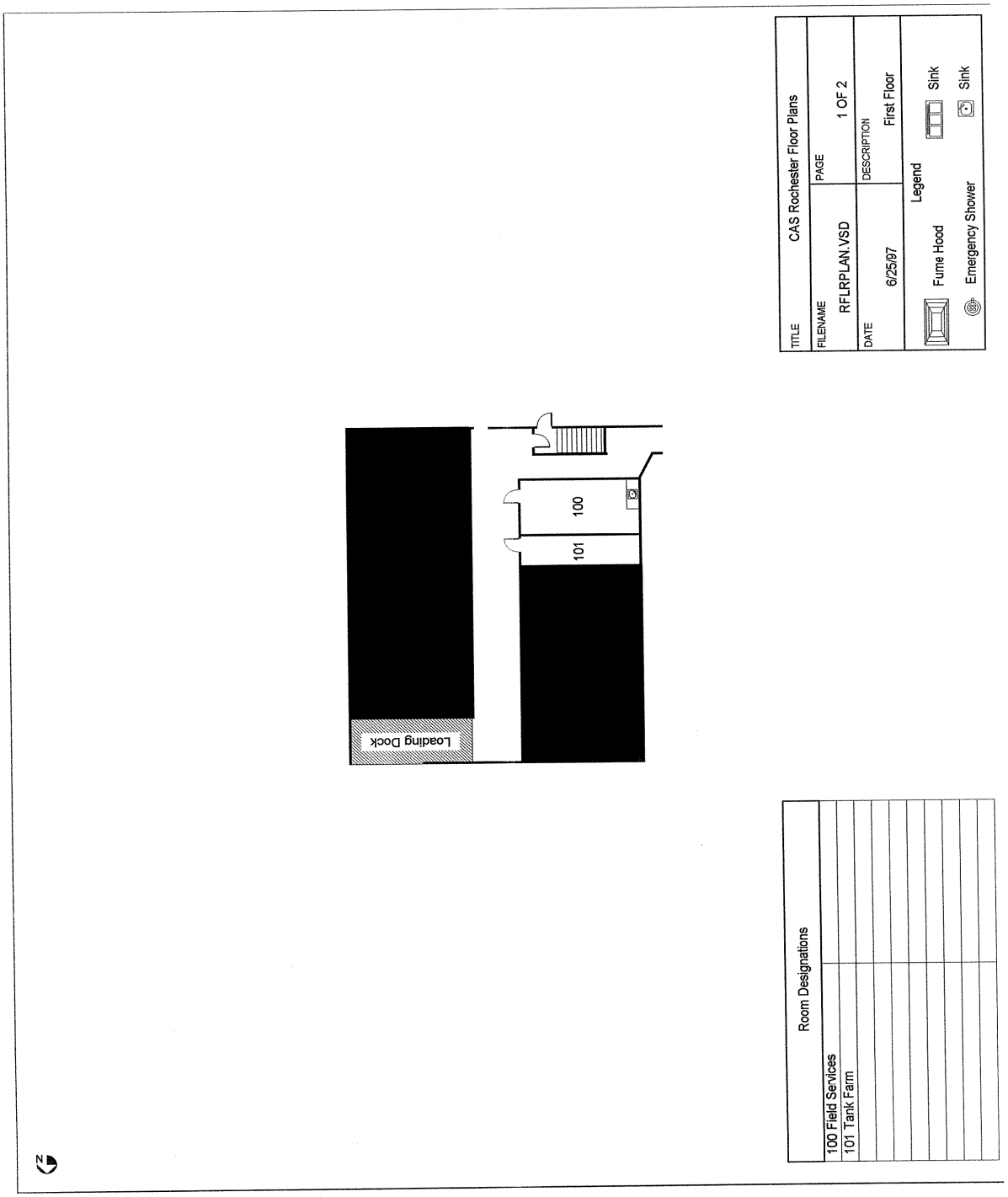
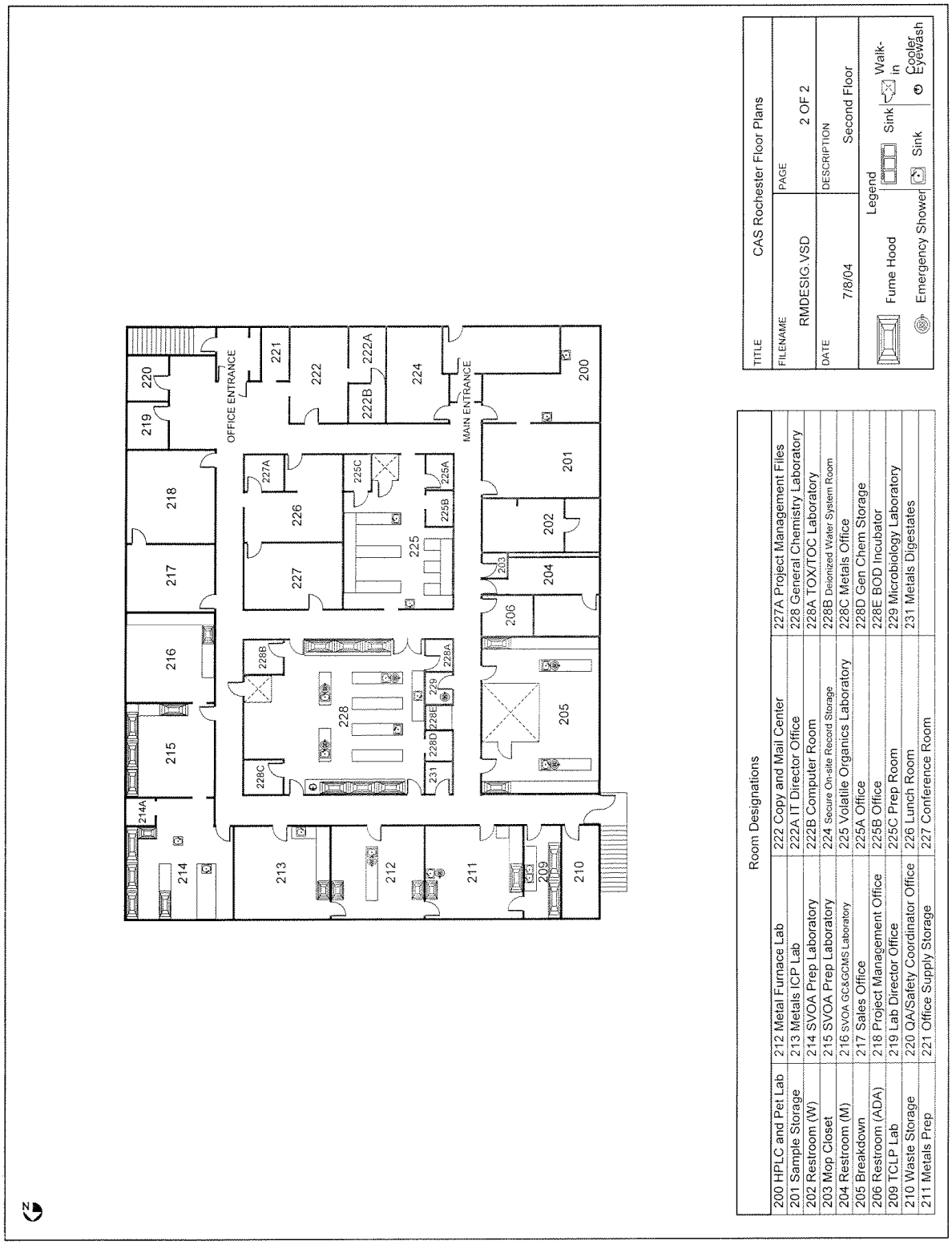


Figure 4-3
CAS/Rochester Laboratory Floor Plan



5.0 STATEMENT OF PROFESSIONAL CONDUCT AND LABORATORY PRACTICE

One of the most important aspects of the success of CAS as a company is the emphasis placed on the integrity of the data provided and the services rendered. This success is reliant on both the professional conduct of all employees within CAS as well as established laboratory practices. All personnel involved with environmental testing and calibration activities must familiarize themselves with the quality documentation and implement the policies and procedures in their work.

5.1 Professional Conduct

To promote quality, CAS requires certain standards of conduct and ethical performance among employees. The following examples of documented CAS policy are representative of these standards, and are not intended to be limiting or all-inclusive:

- Under no circumstances is the willful act of fraudulent manipulation of analytical data condoned. Such acts are to be reported immediately to senior management for appropriate corrective action.

- Unless specifically required in writing by a client, alteration, deviation or omission of written contractual requirements is not permitted. Such changes must be in writing and approved by senior management.

- Falsification of data in any form will not be tolerated. While much analytical data is subject to professional judgment and interpretation, outright falsification, whenever observed or discovered, will be documented, and appropriate remedies and punitive measures will be taken toward those individuals responsible.

- Unauthorized release of confidential information about the company or its clients is taken very seriously and is subject to formal disciplinary action. All employees sign a confidentiality agreement upon hire to protect the company and client's confidentiality and proprietary rights.

5.2 Prevention and Detection of Improper, Unethical or Illegal Actions

It is the intention of CAS to proactively prevent and/or detect any improper, unethical or illegal action conducted within the laboratory. This is performed by the implementation of a program designed for not only the detection but also prevention. Prevention consists of educating all laboratory personnel in their roles and duties as employees, company policies, inappropriate practices, and their corresponding implications as described in Section 5.3 of this document.

In addition to education, appropriate and inappropriate practices are included in SOPs such as manual integration, data review and specific method procedures. Other aspects of this program include electronic data tape audits, post-analysis and whenever possible single blind and/or double blind analyses. All aspects of this program is documented and retained on file according to the company policy on record retention.

5.3 Laboratory Ethics Training Plan (Data Integrity Training Plan)

An in-depth (approximately 8 hour) initial Data Integrity/Ethics Training and an annual refresher training is required for each new on-site employee including all full and part time personnel.

Topics covered are documented in writing and provided to all trainees. Key topics covered are the organizational mission and its relationship to the critical need for honesty and full disclosure in all analytical reporting, how and when to report data integrity issues and record keeping. Training includes discussion regarding all data integrity procedures, data integrity training documentation, in-depth data monitoring and data integrity procedure documentation.

Trainees are required to understand that any infractions of the laboratory data integrity procedures will result in a detailed investigation that could lead to very serious consequences including immediate termination, or civil/criminal prosecution.

The initial and annual refresher data integrity training shall have a signature attendance sheet that demonstrates all staff members have participated and understand their obligation related to data integrity/ethics.

Senior managers/department heads acknowledge their support of these procedures by upholding the spirit and intent of the laboratory's data integrity procedures and effectively implement the specific requirements of the procedures.

The training session includes, at a minimum, the following legal and ethical topics:

- Examples of improper actions (defined by DoD as deviations from contract-specified or method-specified analytical practices and may be intentional or unintentional)
- Examples of unethical or illegal actions (deliberate falsification), including at a minimum:
  - Improper data manipulations
  - Adjustments to time clocks
  - Inappropriate changes in concentrations of standards
  - Making failed requirements appear acceptable
- Proper written narration by the analyst with respect to those cases where analytical data may be useful, but are in one sense or another partially deficient.
- CAS Employee Handbook (overview including mechanism for reporting and seeking advice on ethical decisions, organizational mission and its relationship to critical need for honesty and full disclosure).
- CAS' Commitment to Excellence in Data Quality Ethics Agreement (overview including legal consequences and other specific examples of breaches of ethical behavior)
- Measures taken to prevent and detect fraud; how and when to report data integrity issues.
- Record keeping
- Data validation (in-depth data monitoring and electronic audits)
- Implications of laboratory data fraud and data investigations
- Potential punishments and penalties for improper, unethical or illegal actions (immediate termination, or civil/criminal prosecution)

It is the responsibility of the Quality Assurance Program Manager to ensure that the training plan described in this section including content and frequency is conducted. All employees may review the mechanism for reporting and seeking advice on ethical decisions as well as the legal consequences of unethical behavior in the CAS Employee Handbook & CAS Commitment to Excellence in Data Quality Statement, both of which are available to all employees. In addition, the Excellence in data Quality Statement is reviewed and signed on an annual basis by all laboratory personnel.

5.4 Laboratory Practices Affecting Personnel

CAS makes an attempt to ensure that it is impartial and its employees are free from any commercial, financial, or other undue pressures that might affect their technical judgement or quality of work. This is accomplished by utilizing each of the following policies, programs and procedures, wherever necessary.

- CAS Corporate Ethics Point Program – An anonymous and confidential reporting system available to all employees that is used to communicate misconduct and other concerns. The program shall help minimize negative morale and promote a positive work place. Associated upper management is notified and the investigations are documented.

- Open Door Policy (CAS Employee Handbook) – Employees are encouraged to bring any work related problems or concerns to the attention of local management or their Human Resources representative. However, depending on the extent or sensitivity of the concern, employees are encouraged to directly contact any member of upper management.

- Project Scheduling – Jobs are scheduled (when prior notice is available) according to capacity and work schedules set and discussed by customer service personnel and laboratory supervisors. The scheduling is done not only to prevent missed holding times and on-time deliveries but as a way for management and analysts to be prepared for incoming samples and to utilize flexible work schedules, whenever necessary.

- Flexible Work Hours – Analysts are able to work flexible work hours (with management approval). Additionally, analysts may "team" with a co-worker (again with approval) and work split shifts in order to extend the work day and increase the number of samples that can be analyzed, whenever necessary.

- Gifts and Favors (CAS Employee Handbook) – To avoid possible conflict of interest implications, employees do not receive unusual gifts or favors to, nor accept such gifts or favors from, persons outside the Company who are, or may be, in any way concerned with the projects on the Company is professionally engaged. Anything beyond an occasional meal, an evening's entertainment, or a nominal holiday gift is considered an "unusual gift or favor".

6.0 PROJECT ORGANIZATION AND RESPONSIBILITIES

The CAS/Rochester staff, consisting of approximately 50 employees, includes chemists, technicians and support personnel. They represent diverse educational backgrounds and experience, and provide the comprehensive skills that a modern, state-of-the-art analytical laboratory requires.

CAS is committed to providing an environment that encourages excellence. Everyone within CAS shares responsibility for maintaining and improving the quality of our analytical services. The responsibilities of key personnel within the laboratory are described below. An organizational chart of the laboratory, as well as the resumes of key personnel, can be found in Appendix B. Specific Job Descriptions are available and kept on file by human resources.

- The role of the **Laboratory Director** is to provide technical, operational, and administrative leadership through planning, allocation and management of personnel and equipment resources. This person is responsible for quality (including compliance with the current version of the Quality Systems, NELAC, Chapter 5), overall laboratory efficiency, and financial performance of the Rochester CAS facility. The Laboratory Director also provides support for business development by identifying and developing new markets and through continuing support of the management of existing client activities. The Lab Director, QA Program Manager and Business Development Manager are authorized signatories for the Rochester facility.
- The responsibility of the **Quality Assurance Program Manager** (QAPM) is to provide a focus for overall QA activities within the laboratory and maintain compliance with the Quality Systems Standards (NELAC, Chapter 5). This person works with individual laboratory production units to establish effective quality assurance and quality control. The QAPM is also responsible for maintaining this QA Manual and performing an annual review of it, updating it if necessary; reviewing, approving, and controlling SOPs; ensure continuous process improvements through the use of control charts and proficiency test samples; reviewing data (Section 12.0); maintaining the laboratory's certifications and approvals (Section 13.0); performing internal QA audits (Section 13.0); preparing QA reports (Section 16.0); maintaining training documentation for all employees including IDCs, CDCs, Training Plan forms, and seminar attendance; maintaining MDL study documentation, responding to QA needs, problems, and requests from technical staff. This person is a technical advisor and is responsible for summarizing and reporting overall unit performance.
- The Quality Assurance Director (Corporate Quality Assurance) is responsible for the overall QA program at all the CAS laboratories. The QA Director is responsible for performing an annual on-site audit at each CAS laboratory and preparing a written report; maintaining a data base of information about state certifications and accreditation programs; writing laboratory-wide SOPs; maintaining a data base of CAS-approved subcontract laboratories; providing assistance to QAPMs and laboratory managers; preparing an annual QA activity report; etc.

- The **Health and Safety Officer** is responsible for the administration of the laboratory health and safety policies. This includes the formulation and implementation of safety policies, the supervision of new-employee safety training, the review of accidents, incidents and prevention plans, the monitoring of hazardous waste disposal and the conducting of departmental safety inspections. The safety officer is also designated as the Chemical Hygiene Officer.
- The **Client Services Manager** is responsible for the Client Services Department (customer services/project managers, and marketing functions). The Client Services Department provides a complete interface with clients from initial project specification to final deliverables.
- The **Project Manager** is a senior-level, non-line scientist assigned to each client to act as a technical liaison between the client and the laboratory. The Project Manager is responsible for ensuring that the analyses performed by the laboratory meet all project, contract, and regulatory-specific requirements. This entails coordinating with the CAS laboratory and administrative staff to ensure that client-specific needs are understood, and that the services CAS provides are properly executed and satisfy the requirements of the client.
- **Information Technology** (IT) staff are responsible for the administration of the Laboratory Information Management System (LIMS) and other necessary support services. Other functions of the IT staff include laboratory network maintenance, education of analytical staff in the use of scientific software, custom software development and implementation, Electronic Data Deliverable (EDD) generation and data back-up, archival and integrity operations.
- The Analytical Laboratory is divided into operational units, based upon specific disciplines. Each department is responsible for establishing, maintaining and documenting a quality control program based upon the requirements within the Quality Assurance Manual. Each **Department Supervisor/Manager** has the responsibility to ensure that quality control functions are carried out as planned, and to guarantee the production of high quality data. Supervisors have the responsibility to monitor the day-to-day operations to ensure that productivity and data quality objectives are met. Each analyst in the laboratory has the responsibility to carry out testing according to prescribed methods, standard operating procedures and quality control guidelines particular to the laboratory in which he/she is working.
- The **Sample Management Office** plays a key role in the laboratory QA program by providing documentation for all samples received by the laboratory, distributing samples, and maintaining proper storage.
- **Support Services** are provided by corporate purchasing departemtn and/or local purchasing representative to coordinate facility and instrument maintenance, ordering of standards, supplies, reagents, and any other services required.

Analytical work will be conducted by the laboratory under the approval of the client. If any aspect of a project requires sub-contracting, CAS project manager shall notify the client and obtain approval for any sub-contractors prior to completing the analytical program.

7.0 SAMPLING, SAMPLE PRESERVATION, AND HANDLING PROCEDURES

The quality of analytical results is highly dependent upon the quality of the procedures used to collect, preserve and store samples. CAS recommends that clients follow sampling guidelines described in reference methods including EPA, NIOSH, ASTM, and SW846. Sample handling factors that must be taken into account to insure accurate, defensible analytical results include:

- Amount of sample taken
- Type of container used
- Type of sample preservation
- Sample storage time
- Proper custodial documentation

CAS uses the sample preservation, container, and holding-time recommendations published in a number of documents. The primary documents of reference are: USEPA SW-846, Third Edition (wastewater, soils, and hazardous waste samples), USEPA 600/4-79-020 and 600/4-82-057 (wastewater samples), USEPA 600/4-88-039, 600/4-91-010 and 600/R-93/100 (drinking water samples) and NIOSH, Manual of Analytical Methods 4th Edition (air samples) . The complete citation for each reference can be found in section 18.0 of this document. The container, preservation and holding time information are summarized in Table 7-1.

CAS routinely provides sample containers with appropriate preservatives for our clients. The containers are purchased as "precleaned" to a level 1 status, and conform to the requirements for analytical sample established by the USEPA. Certificates of analysis for the sampling containers are available upon request. Our sample kits typically consist of foam-lined, precleaned shipping coolers, specially prepared and labeled sample containers individually wrapped in bubble wrap, chain-of-custody (COC) forms, and custody seals. An example of a sample container label and a custody seal is shown in Figure 7-1. Figure 7-2 is a copy of the chain-of-custody form used at CAS. For extremely large sample container shipments, the containers may be shipped in their original boxes. Such shipments will consist of several boxes of labeled sample containers and sufficient materials (bubble wrap, COC forms, custody seals, shipping coolers, etc...) to allow the sampling personnel to process the sample containers and return them to CAS. The proper preservative will be always be added to the sample containers or provided in a separate vial prior to shipment, unless otherwise instructed by the client. See SOP, ADM-CTMN for information about the testing of chemicals added as preservatives. See SOP, SMO-BPS for more specific information regarding the packing and shipping of sample kits. See SOP, SMO-GEN for the Sample Acceptance Policy. CAS keeps client-specific shipping requirements on file and utilizes all major transportation carriers to guarantee that sample shipping requirements (same-day, overnight, etc.) are met. CAS also provides its own courier service that makes regularly scheduled trips to the Buffalo, Rochester area.

Table 7-1
Sample Preservation and Holding Times[a]

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Bacterial Tests						
Coliform, Fecal and Total	SM9223B	W	Sterile P,G	100	Cool, ≤6°C, 0.008% $Na_2S_2O_3$[d]	6-24 hours[e]
Inorganic Tests						
Acidity	SM2310B	W	P,G	250	Cool, ≤6°C	14 days
Alkalinity	SM2320B	W	P,G	250	Cool, ≤6°C	14 days
Ammonia	350.1	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Ash, Percent	ASTM D482	NonAq Liq	P,G	8 oz.	Cool, ≤6°C	None Listed
Biochemical Oxygen Demand (BOD/ CBOD)	SM5210B	W	P,G	1000	Cool, ≤6°C	48 hours
Bromide	300.0/9056	W	P,G	250	Cool, ≤6°C	28 days
Chemical Oxygen Demand (COD)	410.4	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Chemical Oxygen Demand (COD)	410.4	S	G	4 oz.	Cool, ≤6°C	28 days
Chloride	300.0/ SM4500Cl E	W	P,G	250	Cool, ≤6°C	28 days
Chlorine, Total Residual	SM4500Cl F	W	P,G	500	None Required- field analysis preferred	15 minutes
Chlorine Demand	SM 409A	W	P,G	500	Cool, ≤6°C	None listed
Chlorophyll a	SM 10200H	W	P,G, or filter	1000 or filter	Filter immediately and freeze filter	None listed
Color	SM2120B	W	P,G	100	Cool, ≤6°C	48 hours
Cyanide, Total and Amenable to Chlorination	335.4/ SM 4500CN G /9012A	W	P,G	250	Cool, ≤6°C, NaOH to pH>12	14 days
Cyanide, Weak Acid Dissociable	SM4500CN G	W	P,G	500	Cool, ≤6°C, NaOH to pH >12	14 days
Cyanide, Total	9012A	S	P,G	250	Cool, ≤6 °C	14 days
Density	ASTM D4052	NonAq Liq	P,G	250	None	None listed
Ethylene Glycol	NYSDEC 89-9	W	G	2x40 mL	Cool, ≤6°C	None listed
Ferrous Iron	SM 3500 Fe-D	W	P,G	250	No headspace – field analysis preferred	None listed – field preferred
Fluoride	300.0/9056	W	P,G	250	Cool, ≤6°C	28 days
Hardness	SM2340C	W	P,G	250	HNO_3 to pH<2	6 months
Hydrogen Ion (pH)	SM4500 H+B/ 9040	W	P,G	100	None Required – field analysis preferred	15 minutes
Ignitability – closed cup	1010	Liquid	G	3 x 40mL	Cool, ≤6°C	14 days
Ignitability – open cup	ASTM D92	S	G	4oz.	Cool, ≤6°C	None listed
Kjeldahl and Organic Nitrogen	351.2	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days

Table 7-1
Sample Preservation and Holding Times[a]

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Nitrate	300.0/9056	W	P,G	250	Cool, ≤6°C	48 hours
Nitrate-Nitrite	353.2	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Nitrite	300.0/9056/ 353.2	W	P,G	250	Cool, ≤6°C	48 hours
Orthophosphate	365.1	W	P,G	250	Filter Immediately, Cool, ≤6°C	48 hours
Perchlorate	6850	W,S	P	250, 4oz.	Cool, ≤6°C	28 days
Phenolics, Total	420.4/9066	W	Amber G Only	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Phosphorus, Total	365.1	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Reactive Cyanide and Sulfide	Chpt7/9010	W,S	P,G	10g	Cool, ≤6 °C, no headspace	None listed
Residue, Total	SM2540B	W	P,G	250	Cool, ≤6°C	7 days
Residue, Filterable (TDS)	SM2540C	W	P,G	250	Cool, ≤6°C	7 days
Residue, Nonfilterable (TSS)	SM2540D	W	P,G	1000	Cool, ≤6°C	7 days
Residue, Settleable	SM2540F	W	P,G	1000	Cool, ≤6°C	48 hours
Residue, Volatile	160.4	W	P,G	250	Cool, ≤6°C	7 days
Silica, Dissolved	USGS I-2700-85	W	P Only	250	Cool, ≤6°C	28 days
Specific Conductance	120.1	W	P,G	100	Cool, ≤6°C	28 days
Specific Gravity	ASTM D1475	NonAq Liq	P,G	250	None	None listed
Sulfate	SM15 426C	W	P,G	250	Cool, ≤6°C	28 days
Sulfide, Acid Soluble	SM 4500-S F /9034	W	P,G	500	Cool, ≤6°C, Add Zinc Acetate plus Sodium Hydroxide to pH>9	7 days
Sulfide, Acid Volatile (AVS)	EPA Draft 1991	S	G	8 oz.	Cool, ≤6°C No headspace	14 days
Sulfite	SM 4500-SO32-B	W	P,G	250	None Required- field analysis preferred	15 minutes
Surfactants (MBAS)	SM 5540C	W	P,G	500	Cool, ≤6°C	48 hours
Temperature	170.1	W	P,G	50	None Required	Analyze immediately
Turbidity	180.1	W	P,G	50	Cool, ≤6°C	48 hours
Water, Percent	ASTM E203	W	P,G	4 oz.	Cool, ≤6°C	None listed

Table 7-1
Sample Preservation and Holding Times[a]

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Metals						
Chromium VI	218.6/ SM3500Cr B	W	P,G	250	Cool, ≤6°C Buffering = pH 9.3-9.7 with specific solution	24 hours: 28 days if buffered
Chromium VI	7196A/ 7199	S	P,G	4 oz.	Cool, ≤6°C	30 days until digestion; 7 days until pH adjustment and analysis
Mercury, Low Level	1631E	W	Fluoropolymer bottle and cap	500	5 mL 1:1 HCl Cool ≤6°C until BrCl Room Temp after BrCl	28 days to BrCl 90 days from collection to analysis
Mercury	245.1/7470A	W	P,G	250	HNO_3 to pH<2	28 days
Mercury	245.5/7471	S	P,G	4 oz.	Cool, ≤6°C	28 days
Metals, except Chromium VI and Mercury	200.7/200.8/6010/06020	W	P,G	250	HNO_3 to pH<2	180 days
Metals, except Chromium VI and Mercury	6010B/6020	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	180 days
Organics						
Oil and Grease	1664A	W	G, Teflon-Lined Cap	1000	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Organic Carbon, Total (TOC)	SM20 5310C /9060	W	G	3x40	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Organic Carbon, Total (TOC)	EPA Lloyd Kahn	S	G	4 oz	Cool, ≤6°C, no headspace	14 days
Petroleum Hydrocarbons, Total Recoverable (gravimetric)	1664A	W	G, Teflon-Lined Cap	1000	Cool, ≤6°C, HCl or H_2SO_4 to pH<2	28 days
Petroleum Hydrocarbons, Total	310-13	W	G, Teflon-Lined Cap	2000	Cool, ≤6°C, HCl or H_2SO_4 to pH<2	7 days until extraction; 40 days after extraction
Petroleum Hydrocarbons, Total	310-13	S	G, Teflon-Lined Cap	2000	Cool, ≤6°C	14 days until extraction; 40 days after extraction

Table 7-1
Sample Preservation and Holding Times[a]

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Volatile Organics						
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	524.2/ 601/ 602/ 624/ 8021/ 8260B	W	G, Teflon-Lined Septum Cap	3x40	**No Residual Chlorine Present**: HCl to pH<2, Cool, ≤6°C, No Headspace **Residual Chlorine Present**: 10% $Na_2S_2O_3$, HCl to pH<2, Cool, ≤6°C, No Headspace	14 days 7 days if not chemically preserved
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8021/8260B	S	G, Teflon-Lined Cap	8 oz.	Cool, ≤6°C, Minimize Headspace	14 days
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8021/8260B	S - 5035	G, Teflon-Lined, Septum Cap	8 oz.	Freeze at -20°C on site in vial	14 days
					Frozen in coring tool on site	48 hours
					Cool, 4°C, freeze at lab within 48 hours	14 days
					Cool, 4°C, methanol preserved within 48 hours	14 days
					Cool, 4°C in vial	48 hours
					Cool, 4°C in coring tool	48 hours
					Cool, 4°C, sodium bisulfate	14 days
Acrolein	624/8260B	W	G, Teflon-Lined Septum Cap	3x40	Adjust pH to 4-5, Cool, ≤6°C, No Headspace or If not pH 4-5	14 days 3 days if not adjusted to pH 4-5
Petroleum Hydrocarbons, Volatile (Gasoline-Range Organics)	8015B	W	G, Teflon-Lined Septum Cap	3x40	Cool, ≤6°C, HCl to pH<2 No Headspace	14 days 7 days if not chemically preserved
Petroleum Hydrocarbons, Volatile (Gasoline-Range Organics)	8015B	S	G, Teflon-Lined Cap	8 oz.	Cool, ≤6°C Minimize Headspace	14 days
Volatiles	TO-15	Air	Cannisters	6 L	None Required	30 days recommended

Table 7-1
Sample Preservation and Holding Times[a]

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Semivolatile Organics						
Petroleum Hydrocarbons, Extractable (Diesel-Range Organics)	8015B	W,S	G, Teflon-Lined Cap	1000, 4 oz.	Cool, ≤6°C	7 days until extraction;[f] 40 days after extraction
EDB and DBCP	504.1	W	G, Teflon-Lined Cap	3x40	Cool, ≤6°C, No Headspace	14 days
EDB and DBCP	8011	W	G, Teflon-Lined Cap	3x40	Cool, ≤6°C, No Headspace	28 days
Non-Halogenated Organics	8015B	W,S, NonAq Liq	G, Teflon-Lined Cap	3x40, 4 oz.	Cool, ≤6°C, No Headspace[g]	14 days
Phenols, Phthalate Esters, Nitrosamines, Nitroaromatics and Cyclic Ketones, Haloethers, Chlorinated Hydrocarbons	625/ 8270C	W,S	G, Teflon-Lined Cap	1000, 4 oz.	Cool, ≤6°C, store in dark[g]	7 days until extraction;[f] 40 days after extraction
Chlorinated Phenolics	625/ 8270C	W	G, Teflon-Lined Cap	1000	Cool, ≤6°C	30 days until extraction, 30 days after extraction
Polynuclear Aromatic Hydrocarbons	625/ 8310/ 8270C	W,S	G, Teflon-Lined Cap	1000, 4 oz.	Cool, ≤6°C, Store in Dark	7 days until extraction;[f] 40 days after extraction
Organochlorine Pesticides and PCBs	608/ 8081/ 8082	W,S	G, Teflon-Lined Cap	1000, 4 oz.	Cool, ≤6°C	7 days until extraction;[f] 40 days after extraction
Chlorinated Herbicides	8151A	W,S	G, Teflon-Lined Cap	1000, 4 oz.	Cool, ≤6°C	7 days until extraction;[f] 40 days after extraction
Metabolic/Fatty/Organic Acids	In house	W	G, Teflon-Lined Cap	250	Cool, ≤6°C	28 days recommended
Carbonyl Compounds (Formaldehyde)	8315A	W	G, Teflon-Lined Cap	1000	Cool, ≤6°C	3 days until extraction, 3 days after extraction
Carbonyl Compounds (Formaldehyde)	8315A	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days
Toxicity Characteristic Leaching Procedure (TCLP)						
Mercury	7470A	HW	P,G	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: HNO_3 to pH<2	28 days until extraction; 28 days after extraction
Metals, except Mercury	6010B	HW	P,G	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: HNO_3 to pH<2	180 days until extraction; 180 days after extraction
Volatile Organics	8260B	HW	G, Teflon-Lined Cap	125g	Sample: Cool, ≤6°C Minimize Headspace TCLP extract: Cool, ≤6°C, HCl to pH<2, No Headspace	14 days until extraction; 14 days after extraction
Semivolatile Organics	8270C	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C, Store in Darkg TCLP extract: Cool, ≤6°C, Store in Dark	14 days until TCLP ext'n; 7 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: Cool, ≤6°C	14 days until TCLP ext'n; 7 days until extraction; 40 days after extraction
Chlorinated Herbicides	8151	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: Cool, ≤6°C	14 days until TCLP ext'n; 7 days until extraction; 40 days after extraction

Table 7-1
Sample Preservation and Holding Times[a]

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
CLP						
Cyanide, Total	ILM05.3	W	P,G	500	Cool, ≤6°C, NaOH to pH 12, plus 0.6 g Ascorbic Acid	12 days[h]
	ILM05.3	S	P,G	8 oz.	Cool, ≤6°C	12 days[h]
Mercury	ILM05.3	W	P,G	500	HNO_3 to pH<2	26 days[h]
	ILM05.3	S	P,G	8 oz.	Cool, ≤6°C	26 days[h]
Metals, except Mercury	ILM05.3	W	P,G	500	HNO3 to pH<2	180 days[h]
	ILM05.3	S	P,G	8 oz.	Cool, ≤6°C	180 days[h]
Volatile Organics	OLM04.3	W,S	G, Teflon-Lined Cap	3x40	W-Cool, ≤6°C, Minimize Headspace Soil – see SOP	10 days[h]
Semivolatile Organics	OLM04.3	W,S	G, Teflon-Lined Cap	2000	Cool, ≤6°C, Store in Dark[g]	5 days until extraction;[h,i] 40 days after extraction
Organochlorine Pesticides and PCBs	OLM04.3	W,S	G, Teflon-Lined Cap	2000	Cool, ≤6°C	5 days until extraction;[h,i] 40 days after extraction

Provide additional volume when specified by client QAPP- especially for Semi-Volatiles

a See Section 18.0 for sources of holding time information. Holding time is from collection to analysis unless otherwise specified.
b W = Water; S = Soil or Sediment; HW = Hazardous Waste; A = Air
c P = Polyethylene; G = Glass
d For chlorinated water samples
e The recommended maximum holding time is variable, and is dependent upon the geographical proximity of sample source to the laboratory.
f Fourteen days until extraction for soil, sediment, and sludge samples.
g If the water sample contains residual chlorine, 10% sodium thiosulfate is used to dechlorinate.
h Number of days following sample receipt at the laboratory.
i Ten days until extraction for soil, sediment, and sludge samples.

Figure 7-1
Sample Container Label and Custody Seal

CLIENT: JOB#: 006
LOCATION:
DATE SAMPLED:
ANALYSIS:
PRESERVATIVE:
COMMENTS:

Custody Seal

Date _____ Project _____

Signature _____ Container# _____ of _____

Columbia Analytical Services, INC.
An Employee-Owned Company
www.caslab.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

One Mustard St., Suite 250 • Rochester, NY 14609-0859 • (716) 288-5380 • 800-695-7222 x11 • FAX (716) 288-8475 PAGE _____ OF _____

SR #

CAS Contact

Project Name	Project Number
Project Manager	Report CC
Company/Address	
Phone #	FAX#
Sampler's Signature	Sampler's Printed Name

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE

NUMBER OF CONTAINERS

- GC/MS VOA's ☐ 8260 ☐ 624 ☐ CLP
- GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP
- GC VOA's ☐ 8021 ☐ 601/602
- PESTICIDES/ PCB's ☐ 8081 ☐ 608 ☐ CLP ☐ 8082
- STAR'S LIST 8021 VOA's ☐ TOTAL ☐ TCLP
- STAR'S LIST 8270 SVOA's ☐ TOTAL ☐ TCLP
- TCLP ☐ VOA's ☐ SVOA's ☐ METALS ☐ H/P
- WASTE CHARACTERIZATION ☐ React ☐ Corros. ☐ Ignit.
- METALS, TOTAL (List in comments below)
- METALS, DISSOLVED (List in comments below)

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

TURNAROUND REQUIREMENTS
_____ **RUSH** (SURCHARGES APPLY)
_____ **24 hr** _____ **48 hr** _____ **5 day**
_____ **STANDARD**
REQUESTED FAX DATE
_____
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
_____ V. Speicalized Forms / Custom Report
Edata _____ Yes _____ No

INVOICE INFORMATION
PO#
BILL TO:
SUBMISSION #:

SAMPLE RECEIPT: CONDITION/COOLER TEMP: _____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm	Firm	Firm	Firm	Firm	Firm
Date/Time	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Return to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC-0402-40

Figure 7-2
Chain of Custody Form

8.0 SAMPLE CUSTODY

Standard Operating Procedures have been established for the receiving of samples into the laboratory. These procedures ensure that samples are received and properly logged into the laboratory, and that all associated documentation, including chain of custody forms, is complete and consistent with the samples received. See SOP, SMO-GEN for detailed information.

Sample Acceptance Policy:

Samples delivered to the CAS Sample Management Office (SMO) and are received by a Sample Custodian. The Chain of Custody (COC) is reviewed for completeness and accuracy and a Cooler Receipt and Preservation Form (CRPF) (Figure 8-1) is used to document the condition of the cooler and its contents as received by the sample custodian. Verification of sample integrity by the Sample Custodian includes the following activities:

- Assessment of custody seal presence/absence, location and signature.
- Temperature of sample containers upon receipt.
- Chain of custody documents present and properly completed.

  Entries should be made in blue or black ink and at a minimum, shall include sample identification, description, date, time, and location of sample collection, the name and signature(s) of the sample collector and intermediate sample custodian(s), date and time of each sample transfer, and signature of the CAS Sample Custodian upon receipt. For an example COC, see Figure 7-2.
- Sample containers checked for integrity (broken, leaking, etc...)
- Sample is clearly marked with the sample ID, date and time of collection.
- Appropriate containers (size, type) are received for the requested analyses.
- Sample container labels and/or tags agree with chain of custody entries (Identification, required analyses, etc...)
- Assessment of proper sample preservation (If inadequate, corrective action is employed).
- VOC containers are inspected for the presence/absence of bubbles. (No assessment of proper preservation is performed for VOC containers by SMO personnel).

Any anomalies or discrepancies observed during the initial assessment are recorded on the CRPF and/or chain of custody documents. All potential problems with a sample shipment are addressed by contacting the client and discussing the pertinent issues. When the Project Manager and client have reached a satisfactory resolution, the log-in process may commence. The laboratory has formally accepted the samples. If resolution cannot be reached with the

client or the samples do not comply with the requirements of the CRPF, these samples may be rejected by the laboratory.

Sample Log-in;

During the log-in process, each sample is given a unique laboratory code and an analytical request form is generated. The laboratory code consists of an order number and submission number. Each sample is given an order number by the LIMS system based upon the order of log-in. A submission number is assigned to a particular job in the same manner. The submission number is coded with the lab location and year as follows:

e.g. Submission No. R28001784 = R - Rochester
28 - Year 2008
001784 - Job Number (sequential number of jobs logged)

The analytical request contains client information, sample descriptions, sample matrix information, required analyses, sample collection dates, analysis due dates and other pertinent information. This analytical request is reviewed by the appropriate Project Manager for accuracy, completeness, consistency of requested analyses and for client project objectives and COC.

Each container received by the lab receives a unique barcode which is scanned by those handling the sample for storage, analysis, or disposal. The sample tracking information from the scan is put in a database which can create a complete Internal Chain of Custody for each sample container. This information is reported in package reports only.

Storage and Disposal:

All samples, except those designated for metals analyses, are kept in a refrigerated condition (0 to 6°C) until they undergo analysis. Samples are stored in one of three walk-in refrigerators, segregated by method of analysis. The volatiles refrigerator is designated for samples for volatiles analysis. Samples for semivolatile analysis share a refrigerator with samples for metals analysis. Samples for general chemistry analysis share a cooler with the Sample Management group. Sample extracts are stored in their own refrigerators or freezers within their own department. The temperature of each temperature controlled storage facility used at CAS is monitored daily and the data recorded in a logbook according to ADM-DALYCK.

Most aqueous and soil samples are retained at 0-6°C in refrigerators for at least 30 days from receipt (unless other arrangements have been made in advance). Sample are required to be held for at least 60 days for CLP/ASP package work. Samples removed from the refrigerators are moved to an ambient temperature storage room and stored for at least 30 more days. Upon expiration of these time limits, the samples are either returned to the client or disposed of according to approved disposal practices. All samples are characterized according to hazardous/non-hazardous waste criteria and are segregated accordingly. All hazardous waste samples are disposed of according to formal procedures outlined in the Sample Disposal SOP

(SMO-SPLDIS). It should be noted that all waste produced at the laboratory, including the laboratory's own various hazardous waste streams, is treated in accordance with all applicable local and Federal laws. The bar coding system used to track samples through the lab, including disposal, produces cradle to grave sample history for each sample aliquot.

Figure 8-1

Cooler Receipt And Preservation Check Form

Project/Client_____Submission Number_____.

Cooler received on_____ by:_____**COURIER:** CAS UPS FEDEX VELOCITY CLIENT

1.	Were custody seals on outside of cooler?			YES	NO	
2.	Were custody papers properly filled out (ink, signed, etc.)?			YES	NO	
3.	Did all bottles arrive in good condition (unbroken)?			YES	NO	
4.	Did any VOA vials have significant* air bubbles?			YES	NO	N/A
5.	Were **Ice** or **Ice packs** present?			YES	NO	
6.	Where did the bottles originate?			CAS/ROC,	CLIENT	
7.	Temperature of cooler(s) upon receipt:	_____	_____	_____	_____	_____
	Is the temperature within 0° - 6° C?:	Yes	Yes	Yes	Yes	Yes
	If No, Explain Below	No	No	No	No	No

Date/Time Temperatures Taken: _____

Thermometer ID: 161 / IR GUN#2 / IR GUN#3 Reading From: Temp Blank / Sample Bottle

If out of Temperature, note packing/ice condition, Client Approval to Run Samples:_____
PC Secondary Review: _____

Cooler Breakdown: Date :_____by:_____

1.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	YES	NO	
2.	Did all bottle labels and tags agree with custody papers?	YES	NO	
3.	Were correct containers used for the tests indicated?	YES	NO	
4.	Air Samples: Cassettes / Tubes Intact	Canisters Pressurized	Tedlar® Bags Inflated	N/A

Explain any discrepancies: _____

pH	Reagent	YES	NO	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
Residual Chlorine (-)	For TCN and Phenol			If present, contact PM to add ascorbic acid					
	$Na_2S_2O_3$	-	-						
	Zn Aceta	-	-						
	HCl	*	*						

*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet

Yes = All samples OK

No = Samples were preserved at lab as listed

PM OK to Adjust: _____

Bottle lot numbers:_____
Other Comments:

PC Secondary Review: _____ *significant air bubbles are greater than 5-6 mm

9.0 QUALITY CONTROL OBJECTIVES (PRECISION, ACCURACY, SENSITIVITY, AND COMPLETENESS)

A primary focus of Columbia Analytical Services Quality Assurance (QA) Program is to ensure the accuracy, precision and comparability of all analytical results. CAS has established Quality Control (QC) objectives for precision and accuracy that are used to determine the acceptability of the data that is generated in its laboratories. These QC limits are either specified in the methodology or are statistically derived and are based on the laboratory's actual historical data obtained from control-charting the various QC measurements for each analytical method. The Quality Control objectives are defined below and the acceptable numeric values are shown in the table in Appendix C. The actual types of QC samples required for analysis is discussed in the specific analytical SOP.

9.1 Accuracy

Accuracy is a measure of the closeness of an individual measurement (or an average of multiple measurements) to the true or expected value. Accuracy is determined by calculating the mean value of results from ongoing analyses of standard reference materials, standard solutions and laboratory-fortified blanks. In addition, laboratory-fortified (i.e. matrix-spiked) samples are also measured; this indicates the accuracy or bias in the actual sample matrix. Accuracy is expressed as percent recovery (% REC) of the measured value, relative to the true or expected value. The acceptance limits for accuracy (shown in the table in Appendix C) originate from two different sources: Where acceptance limits are defined and stated in the individual methods, CAS has adopted the limits without modification. If no acceptance limits are given in a method, CAS adopts the limits derived from control charts that are generated for each appropriate method. These control charts are updated once a year for the appropriate Surrogate, Laboratory Control Sample, and Matrix Spike compounds.

$$\text{Accuracy (\%REC)} = \frac{A - B}{C} \times 100$$

Where A = Analyte total concentration from spiked sample
B = Analyte concentration from unspiked sample
C = Concentration of spike added

9.2 Precision

Precision is the ability of an analytical method or instrument to reproduce its own measurement. It is a measure of the variability, or random error, in sampling, sample handling and in laboratory analysis.

Precision is measured through the use of replicate sample analyses within the same batch and is expressed as the relative percent difference (RPD) between the replicate measurements.

$$RPD = \frac{D1 - D2}{(D1+D2)/2} \times 100$$

Where D1 = Original Result
D2 = Duplicate Result

9.3 Practical Quantitation Limits

The PQLs used at CAS are the routinely reported lower limits of quantitation which take into account day-to-day fluctuations in instrument sensitivity as well as other factors. These PQLs are the levels to which CAS routinely reports results in order to minimize false positive or false negative results. The PQL is normally two to ten times the method detection limit (MDL), which is determined by a procedure outlined in 40 CFR 136, Appendix B. MDLs for analytical methods routinely performed at CAS are determined annually.

9.4 Completeness

Completeness is a measure of the amount of valid data that is obtained, compared to the amount that is expected. It is expected that all analyses conducted in accordance with the approved analytical methods and standard laboratory operating procedures will meet QC acceptance criteria for 95% if the samples tested, however, the CAS objective for completeness is 100%.

$$\text{Completeness (\%)} = \frac{\text{valid data obtained}}{\text{total data planned}} \times 100$$

9.5 Representativeness

Representativeness is the degree to which a samples aliquot that is analyzed gives results identical to analysis of the whole. CAS has sample handling protocols to ensure that the sample given to the laboratory for analysis is thoroughly homogenized before the aliquot for analysis is removed. See SOP SMO-SPLPREP. Further, analytical SOPs specify appropriate sample sizes to further ensure the sample aliquot that is analyzed is representative of the whole.

9.6 Comparability

Comparability expresses the confidence with which one data set can be compared to another. To ensure comparability, SOPs are used for the preservation, handling, and analysis of all samples. Data is reported in units specified by the customer.

10.0 QUALITY CONTROL PROCEDURES

The specific types, frequencies, and processes for quality control sample analysis are described in detail in method-specific standard operating procedures. These sample types and frequencies have been adopted for each method and a definition of each type of QC sample is provided below. In addition, a number of other quality control processes which may impact analytical results are also described below.

10.1 Modified Procedures

CAS strives to perform published methods as described in the referenced documents. If there is a material deviation from the published method, the method is cited as a "Modified" method in the analytical report. Standard operating procedures are available to analysts and are also available to our clients for review. If the modification is such that the method becomes "Performance Based," client approval is obtained for the use of the method prior to the performance of the analysis.

10.2 Review of Requests, Tenders and Contracts (Procedures for Accepting New Work)

Requests for new work must be reviewed prior to signing any contracts or otherwise agreeing to perform the work. The specific methods to be used must be agreed upon between the laboratory and the client. A capability review is to be performed to determine if the laboratory has or needs to obtain certification to perform the work, and to determine if the laboratory has the resources (personnel, equipment, materials, capacity) to perform the work. The laboratory must inform the client of the results of this review if it indicates any potential conflict, deficiency, lack of appropriate accreditation status, or inability on the laboratory's part to complete the client's work. Any differences between the request or tender and the contract shall be resolved before any work commences. The client should be notified at this time if work is expected to be subcontracted. Each contract shall be acceptable both to the laboratory and the client. Records shall be maintained of pertinent discussions with a client relating to the client's requirements or the results of the work.

Due to the increase in analytes used in the industry and found in the environment, analytes are requested to be analyzed using existing methodologies and/or new methodologies. These requests must be reviewed prior to accepting new work and creating new methodologies. These requests typically include:

1. The addition of analytes to an existing scan.
2. Complete start-up of an established method.
3. Analyte(s) requested with no established method.
4. Specific Confidentiality requests

The addition of analytes to an existing scan.
The analytical method is reviewed to determine if its use is appropriate for the new analyte. The standards are purchased from a commercial vendor and prepared. If the analyte is available from more than one source, a second source is purchased and used to verify the calibration standard. A reference is spiked with a mid-level concentration of the appropriate standard and analyzed to determine retention time, resolution, etc. Temperature programs and instrument conditions may be modified to optimize resolution for the analyte. If the analyte may be resolved and detected by the method, an MDL study is performed to determine a detection limit suitable for the analyte. The in-house SOP may be written or modified to include the analyte. A demonstration of capability is performed for the analyte.

Complete start-up of an established method
The method is obtained and reviewed by the analyst, technical manager, and/or supervisor to determine if the instrumentation and reagents needed by the method are available. If the required instrumentation is available, then reagents, standards, equipment, and supplies are gathered and purchased. If the analyte(s) are available from more than one source, a second source is purchased and used to verify the calibration source. A qualified analyst performs the method, elution times are determined, temperature programs are optimized, and batch QC is performed to monitor accuracy and precision. An MDL study is performed per instrument to determine detection limit(s) and each analyst performing the method must complete an Initial Demonstration of Capability (IDOC) study. An SOP is written by a qualified analyst and the QAPM. The method, which allows for the acceptable precision and accuracy, shall be used. Proficiency testing should be used, if available, to verify the laboratory's procedures.

Analyte(s) requested with no established method.
The analyte to be analyzed is researched and reviewed by the technical manager for chemical nature, formula, and other related information. The Merck Index and CRC Handbook are reviewed for boiling point, vapor pressure to determine the type of compound. After determining the type of compound, it is assumed that it can be analyzed by an existing method. If not, a modification of an existing method or the creation of a new method may be tried. Differing approaches to testing the analyte may be tried, comparing the efficiency of the various approaches. Follow procedures outlined above. Precision and accuracy should be documented using the MDL and DOC studies where applicable.

Specific confidentiality requests
Investigate the confidentiality requests of the client. The client may have specific requests regarding the release of the report/data, the retention of the samples and the data, and the disposal of the samples.

Method Performance
Reporting limits are based upon an MDL study performed according to ADM-MDL. At Columbia Analytical Services, the MDL is equal to the limit of detection (LOD) which is used to determine the limit of quantitation (LOQ). See SOP, ADM-MDL.

10.3 Analytical Batch

The basic unit for analytical quality control is the analytical batch. In an analytical batch, all the samples, both field samples and quality control samples, are to be handled and processed in exactly the same way. All of the data from each analysis is to be manipulated in exactly the same manner.

The minimum requirements of an analytical batch are:

1. The number of field samples in a batch is not to exceed 20.

2. All field samples in a batch are of the same matrix.

3. The QC samples to be processed with the field samples include:
   - Method Blank - to determine possible laboratory contamination.
   - Laboratory Control Sample - to assess method performance.
   - Matrix Spike (field sample) - to assess possible matrix problems.
   - Duplicate Matrix Spike or Duplicate (field) Sample - to assess batch precision and possible matrix problems.

4. A single lot of reagents is used to process the batch of samples.

5. Refer to SOP, *Analytical Batches and Sequences* (ADM-BCHSQ), for additional batching requirements. Specific project, program or method requirements may create exceptions. The more stringent QC requirements shall be followed in most all cases.

10.4 Method Blank

The method blank is either analyte-free water or analyte-free soil (when available), subjected to the entire analytical process. When analyte-free soil is not available, anhydrous sodium sulfate, organic-free sand, or an acceptable substitute may be used instead. The method blank is analyzed to demonstrate that the analytical system itself is not contaminated with the analyte(s) being measured. The method blank results should be below the reporting limit for the analyte(s) being tested. A method blank is included with the analysis of every analytical batch, every 20 samples, or as stated in the SOP, whichever is more frequent.

10.5 Calibration Blanks

Calibration blanks are prepared along with calibration standards. Calibration blanks are free of the analyte of interest, and provide the zero point of the calibration curve.

10.6 Continuing Calibration Blanks

Continuing calibration blanks (CCBs) are solutions of either analyte-free water or solvent that are analyzed in order to verify the zero point of the analytical system. The frequency of CCB analysis is either once every ten samples or as indicated in the method, whichever is greater.

10.7 Calibration Standards

Calibration standards are solutions of known concentration prepared from primary standard solutions which are, in turn, prepared from stock standard materials. Calibration standards are used to calibrate the instrument response with respect to analyte concentration. Standards are analyzed in accordance with the requirements stated in the particular method being used.

10.8 Initial (or Independent) Calibration Verification Standards

Initial (or independent) calibration verification standards (ICVs) are standards that are analyzed *after* calibration but *prior to* sample analysis, in order to verify the calibration of the analytical system. They are prepared from materials obtained from a source independent of that used for preparing the calibration standards. ICVs are also analyzed in accordance with method-specific requirements.

10.9 Continuing Calibration Verification Standards

Continuing calibration verification standards (CCVs) are midrange standards that are analyzed in order to verify that the calibration of the analytical system is still acceptable. The frequency of CCV analysis is either once every ten samples, or as indicated in the method, whichever is greater.

10.10 Internal Standards

Internal standards consist of known amounts of specific compounds that are added to each sample following sample preparation or extraction. Internal standards are generally used for GC/MS and ICP-MS procedures to correct sample results that have been affected by changes in instrument conditions or changes caused by certain matrix effects. The integrated area of the internal standard compared to the continuing calibration check standard should vary by no more than the limits specified in each method.

10.11 Surrogates

Surrogates are organic compounds which are similar in chemical composition and chromatographic behavior to the analytes of interest, but which are not normally found in environmental samples. Depending on the analytical method, one or more of these compounds is added to method blanks, calibration and check standards, and samples (including duplicates, matrix spike samples, duplicate matrix spike samples and laboratory control samples) prior to extraction and analysis in order to monitor the method performance on each sample. The percent recovery is calculated for each surrogate, and the recovery is a measurement of the overall method performance. The acceptance criteria for these various analytes are listed in Appendix C, along with other data quality capabilities.

10.12 Matrix Spikes

Matrix spiked samples are aliquots of samples to which a known amount of the target analyte (or analytes) has been added. The samples are then prepared and analyzed in the same analytical batch, and in exactly the same manner as are routine samples. The spike recovery measures the effects of interferences caused by the sample matrix and reflects the accuracy of the method for the particular matrix in question. Spike recoveries are calculated as discussed in Section 9.1.

For the appropriate methods, matrix spiked samples are prepared and analyzed at a minimum frequency of one spiked sample (and one duplicate spiked sample, if appropriate) per twenty samples. Control limits are summarized in Appendix C.

Note: A sample identified as a field blank, equipment blank, or trip blank is <u>not</u> to be matrix spiked.

10.13 Laboratory Duplicates and Duplicate Matrix Spikes

Duplicates are additional replicates of samples that are subjected to the same preparation and analytical scheme as the original sample. Depending on the method of analysis, either a duplicate analysis (and/or a matrix spiked sample) or a matrix spiked sample and matrix spike duplicate sample (MS/MSD) are analyzed. The relative percent difference between duplicate analyses or between an MS and MSD is a measure of the precision for a given method and analytical batch. The relative percent difference (RPD) for these analyses is calculated as discussed in Section 9.2.

Depending on the method of analysis, either duplicate and/or matrix spike duplicate analyses are performed at a minimum frequency of one set per 20 samples. Control limits are summarized in Appendix C.

Note: A sample identified as a field blank, equipment blank, or trip blank is <u>not</u> to be duplicated.

10.14 Laboratory Control Samples

The laboratory control sample (LCS) is an aliquot of analyte-free water or analyte-free soil (or anhydrous sodium sulfate or equivalent) to which known amounts of the method analyte(s) is(are) added. A standard reference material (SRM) of known matrix type, containing certified amounts of target analytes, may also be used as an LCS. The LCS sample is prepared and analyzed in the same analytical batch, and in exactly the same manner, as the other routine samples. Stock solutions used for LCSs are purchased or prepared independently of calibration standards. The percent recovery (% REC.) of the target analytes in the LCS assists in determining whether the methodology is in control and whether the laboratory is capable of making accurate and precise measurements at the required reporting limit. Comparison of batch-to-batch LCS analyses enables the laboratory to evaluate batch-to-batch precision and accuracy. An LCS is prepared and analyzed at a minimum frequency of one LCS per 20 samples, with every analytical batch or as stated in the method, whichever is more frequent. Acceptance criteria for LCS analyses are summarized in Appendix C.

10.15 Interference Check Samples

An interference check sample (ICS) is a solution containing both interfering and analyte elements of known concentration that can be analyzed to verify background and interelement correction factors in metals analyses. The ICS is prepared to contain known concentrations of interfering elements that will provide an adequate test of the correction factors. The ICS is spiked with the elements of interest at concentrations of approximately ten times the instrument detection limits. The ICS is analyzed at the beginning and end of an analytical run or every eight hours, whichever is more frequent, and the results must be within ± 20% of the true values.

10.16 Post Digestion Spikes

Post digestion spikes are samples prepared for metals analyses that have an analyte spike added to determine if matrix effects may be a factor in the results. The spike addition should produce a method-specified minimum concentration above the instrument detection limit. A post digestion spike is analyzed with each batch of samples and recovery criteria are specified for each method.

10.17 Source and Preparation of Standard Reference Materials

CAS relies on a primary vendor for the majority of its analytical supplies. Consumable primary stock standards are obtained from certified commercial sources All reference materials that are received at CAS are recorded by the technical staff in the appropriate notebook(s) and are stored under conditions that provide maximum protection against deterioration and contamination. The notebook entry includes such information as an assigned logbook identification code, the source of the material (i.e. vendor identification), solvent (if applicable) and concentration of analyte(s), reference to the certificate of analysis and an assigned expiration date. In addition, the date that the standard is received in the laboratory is marked on the container.

Stock solutions and/or calibration standard solutions are prepared fresh as often as necessary according to their stability. After preparation, all standard solutions are properly labeled with standard name, concentration, date, preparer, and expiration date; these entries are also recorded in the appropriate notebook. See SOP*, Making Entries onto Benchsheets and Logbooks* (ADM-DATANTRY). To ensure traceability, all standards are labeled with an in-house code that can be traced back to the original stock standard received by the vendor and thus, the certificate of analysis. Prior to introduction into the analytical system/process, some reference materials are verified for accuracy with a second, independent source of the material. In addition, the independent source of reference material is also used to check the calibration standards for signs of deterioration. All standards, reagents and reference materials shall be stored per analytical SOP requirements to ensure their integrity. Safe handling and transportation of these materials are discussed in the respective analytical SOP and/or Laboratory Safety Manual.

The laboratory produces its own Deionized Water. This water meets the specifications of ASTM Type II water. The conductivity and pH are checked by the laboratory every business day using meters calibrated according to GEN-150.1/9040 and GEN-120.1. Other checks are performed regularly by the subcontracted water system service. These checks are discussed further in ADM-DALYCK. The laboratory may use the results of laboratory method blanks for impromptu checks of TOC, TDS, and chloroform if a problem is suspected. The water in the volatiles department is further purified by a Millipore polishing system.

10.18 Control Charting

The generation of control charts is performed every 6 months. MS, LCS, and Surrogate recoveries are charted to monitor trends. Charts are used to determine new control limits as needed. The Quality Assurance Program Manager compares the newly generated statistical limits to the old and determines whether the new acceptance criteria is to replace the previous criteria. Investigative action may be taken if charts reveal a potential problem with data quality. See SOP for *Determination of Statistical Control Limits* (ADM-CRTL-LIM). Old charts are archived for a period of 5 years.

10.19 Proficiency Testing Participation

Each discipline and test method for most analytes are monitored using A2LA or NELAP approved vendors for Proficiency Testing on a semi-annual basis. Results of the proficiency samples are reviewed by the Laboratory Director, the QAPM, the Corporate QA Director and the laboratory staff. Any problems surfacing during the review are investigated, and corrective action is taken regarding any and all deficiencies.

Proficiency test results are often used to show continued acceptable performance per analyst.

10.20 Glassware Washing

Glassware washing and maintenance play an crucial role in the daily operation of a laboratory. The glassware used at CAS undergoes a rigorous cleansing procedure prior to every usage. Departmental specific glassware washing SOP's (GEN-GC, MET-GC and EXT-GC) have been generated that outline the various procedures used at CAS; each is specific to the end-use of the equipment as well as to the overall analytical requirements of the project.

11.0 CALIBRATION PROCEDURES AND FREQUENCY

All equipment and instruments used at CAS are operated, maintained and calibrated according to the manufacturer's guidelines and recommendations, as well as to criteria set forth in the applicable analytical methodology. Operation and calibration are performed by personnel who have been properly trained in these procedures. Documentation of calibration information is maintained in appropriate reference files. The frequency of calibration and concentration of calibration standards are determined by the manufacturers guidelines, the analytical method, or the requirements of special contracts. See specific analytical SOP's for frequency and criteria. Generally, purchased standards have a shelf life of 12-36 months and prepared standards have a shelf life of 1-12 months. Recalibration is required at anytime that the instrument is not operating correctly or functioning at the proper sensitivity. Brief descriptions of the calibration procedures for our major laboratory equipment and instruments are described below.

11.1 Temperature Control Devices

Temperatures are monitored and recorded for all of our temperature-regulating devices including ovens, incubators and refrigerators. Bound record books are kept which contain recorded temperatures, identification and location of equipment, and the initials of the technician who performed the checks. All thermometers have been identified and the calibration of these thermometers is checked annually (or quarterly for digital devices) against a National Institute of Standards and Technology (NIST) certified thermometer. The ice point of the reference thermometer is verified by the laboratory annually. The reference thermometers are sent out every two years for calibration verification by a thermometer calibration service at the temperatures of use. Calibration records are maintained by the QA PM. Temperatures of controlled devices are recorded daily. Refrigerators and freezers containing samples are monitored continuously with max/min thermometers or circle chart thermometers (See SOP SMO-DALYCK).

11.2 Analytical Balances

Analytical balances are serviced on an annual basis by a professional metrology organization. New certificates of calibration for each balance are issued to the laboratory on an annual basis. The calibration of each analytical balance is checked prior to use with Class-1 verified weights, which assess the accuracy of the balance at the working range. The reference weights are verified annually by the metrology organization. Bound record books are kept which contain the recorded measurements, identification and location of equipment, and the initials of the technician who performed the checks. (See SOP SMO-DALYCK).

11.3 Inductively Coupled Plasma (ICP) and ICP-Mass Spectrometry (ICP-MS)

Each emission line on the ICP is calibrated daily against a blank and three standards. Analyses of calibration standards, initial and continuing calibration verification standards, and inter-element interference check samples are carried out as specified in the applicable Standard Operating Procedures (SOPs) and/or appropriate USEPA method citations (see Section 18 for references).

11.4 Atomic Absorption Spectrophotometers (AAS)

These instruments are calibrated daily using a minimum of four standards and a blank. Calibration is validated using reference standards, and is verified at a minimum frequency of once every ten samples.

11.5 GC/MS Systems

All GC/MS instruments are calibrated at a minimum of five different concentration levels for the analytes of interest or at a number of levels as prescribed by the method (e.g. The 600 numbered methods require a minimum of three levels), using procedures outlined in Standard Operating Procedures (SOPs) and/or appropriate USEPA method citations. All SRMs used for this function are "EPA-Certified." Compounds selected as system performance check compounds (SPCCs) must show a method-specified response factor in order for the calibration to be considered valid. Calibration check compounds (CCCs) must also meet method specifications for percent difference from the multipoint calibration. Method-specific instrument tuning is regularly checked using bromofluorobenzene (BFB) for volatile organic chemical (VOC) analysis, or decafluorotriphenylphosphine (DFTPP) for semi-volatile analysis. Mass spectral peaks for the tuning compounds must conform both in mass numbers and in relative intensity criteria before analyses can proceed.

11.6 Gas Chromatographs

Calibration and standardization follow SOP guidelines and/or appropriate USEPA method citations. Initial calibration standards are prepared at three to five concentration levels for each analyte of interest. The lowest standard is near the method reporting limit; additional standards define the working range of the GC detector. Results are used to establish response factors and retention-time windows for each analyte. Calibration is verified at a minimum frequency of once every ten samples.

11.7 Infrared Analyzer

The instrument is calibrated using a blank and four standards. The calibration is validated at the beginning of each analysis, and continuing calibration is verified at a minimum frequency of once every ten samples.

11.8 UV-Visible Spectrophotometer (manual colorimetric analyses)

Routine calibrations for colorimetric and turbidimetric analyses involve generating a 5-point calibration curve including a blank. Correlation coefficients must meet method or SOP specifications before analysis can proceed. Independent calibration verification standards (ICVs) are analyzed with each batch of samples. Continuing calibration is verified at a minimum frequency of once every ten samples.

11.9 Flow Injection Analyzer (automated colorimetric analysis)

A minimum of five standards and a blank (unless otherwise specified in the applicable SOP) are used to calibrate the instrument daily. Standard CAS acceptance limits are used to evaluate the calibration curve prior to sample analysis. All linear regressions must have a correlation coefficient of 0.995 or better before analysis may proceed.

11.10 Ion Chromatographs

Calibration of the ion chromatograph (IC) involves generating a minimum of a 5-point calibration curve. A correlation coefficient of 0.995 or better for the curve is required before analysis can proceed. Quality Control (QC) samples that are routinely analyzed include blanks and laboratory control samples. The target analytes typically determined by the IC include nitrate, chloride, fluoride, and sulfate.

11.11 Turbidimeter

Calibration of the turbidimeter requires analysis of formazin and polymer standards measured as NTU. Quality Control samples that are routinely analyzed include blanks, and duplicates.

11.12 HPLC

Calibration and standardization follow SOP guidelines and/or appropriate USEPA method citations. Initial calibration standards are prepared with at least five concentration levels for each analyte of interest. Results are used to establish response factors and retention-time windows for each analyte. Calibration is verified at a minimum frequency of once every ten samples.

11.13 Other Instruments

Calibration for the total organic carbon (TOC) and other instruments is performed following manufacturer's recommendations and applicable SOPs.

12.0 DATA REDUCTION, VALIDATION, AND REPORTING

CAS reports the analytical data produced in its laboratories to the client via the certified analytical report. This report typically includes a transmittal letter, a case narrative, client project information, specific test results, quality control data, chain of custody information, and any other project-specific support documentation. The following procedures describe our data reduction, validation and reporting procedures.

12.1 Laboratory Information Management System (LIMS)

CAS/Rochester currently uses StarLIMS v.6.11a throughout the laboratory. This data management and retrieval system is the PC based StarLIMS that runs on a Novell Network. The LIMS is used for sample tracking, sample workload projections, sample result storage, reporting, and invoicing. The system allows you to acquire data from instrumentation and can generate ASCII, spreadsheet, database, and/or print files.
Periodically, historical data is checked on the LIMs for authenticity and ability to recreate data files. These files are reviewed for data integrity and possible corruption. See Software Quality Assurance Plan.

12.2 Data Reduction and Custody

All data is initially reviewed and processed by analysts using appropriate methods (e.g. chromatographic software, instrument printouts, hand calculation, etc.) The resulting data set is either manually entered (e.g. some general chemistry parameters) into the LIMS system or is electronically transferred into LIMS from the software used to process the original data set (e.g. chromatographic software). A file of all raw data is generated and given to the departmental supervisor or other certified analyst for secondary review (see SOP, ADM-DREV). Once the complete data set has been reviewed to be complete and correct by two analysts, the LIMs data is validated against the raw data which allows the data to be available to Project Managers and Report Writers. Upon approval of the data the supervisor relinquishes the raw data file to a Report Writer, who generates a final report from the LIMS system. The resulting final report is then reviewed by the Project Manager for accuracy. Typically, all data is reported in the units and MRLs listed in Appendix C. An estimation of the uncertainty of the measurements is available upon request using the procedures in the CAS SOP ADM-UNCERT. Assessment of the analytical data includes a check on data consistency by looking for comparability of duplicate analyses, comparability of previous data from the same sampling location (if available), adherence to accuracy and precision control limits, and anomalous low or high parameter values. Once the data has been checked for accuracy and acceptability, the final report and raw data is forwarded to the Lab Director or Quality Assurance Project Manager, who further reviews the data package for errors. When the entire data set has been found to be acceptable the report is signed, distributed, and the raw data is filed for approximately one year, then archived.

All hard copy and electronic backups are archived in a secured room for a period of at least 5 years from the date of the final report (as discussed in section 12.6.1). It is not unusual to have various clients require a 10-year retention of records, therefore, the archivist, project manager, and possibly the client are consulted prior to the destruction of the records.

12.3 Confirmation Analysis

12.3.1 Gas Chromatographic Analyses

For gas chromatographic (GC) analyses, most positive results are confirmed by a second column, a second detector, or by GC/MS analysis, unless exempted by one of the following situations:

- The analyte of interest produces a chromatogram containing "pattern" peaks which match appropriate standards. These analytes include polychlorinated biphenyls (PCBs) and hydrocarbon fuels (e.g., gasoline and diesel).

- The sample is analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX), and the sample is found, by a separate analysis, to contain gasoline. In a sample containing no gasoline, the presence of BTEX compounds will be confirmed.

- The sample meets all of the following requirements:

    1. All samples (liquid or solid) come from the same source (e.g., groundwater samples from the same well) for continuous monitoring.

    2. All analytes have been previously analyzed, identified and confirmed by a second column or by GC/MS. The documents indicating previous confirmation must be available for review.

    3. The resulting chromatogram is relatively simple and does not contain complex or overlapping peaks.

    4. The chromatogram is largely unchanged from the one for which confirmation was carried out.

12.3.2 Confirmation Data

Confirmation data will be provided as specified in the method. Details regarding confirmation and acceptance criteria are in SOP, ADM-CONFIRM. Identification criteria for GC or GC/MS methods are summarized below:

- GC Methods – For The analyte must fall within plus or minus three times the standard deviation (SD) of the retention time of the daily midpoint standard in order to be qualitatively identified. The retention-time windows will be established and documented, as specified in the appropriate Standard Operating Procedure (SOP).

- GC/MS Methods - Two criteria are used to verify identification:

    1. Elution of the analyte in the sample will occur at the same relative retention time (RRT) as that of the analyte in the standard.

2. The mass spectrum of the analyte in the sample must, in the opinion of a qualified analyst or the department manager, correspond to the spectrum of the analyte in the standard or the current GC/MS reference library.

12.4 Data Validation

The integrity of the data generated in the laboratory is primarily assessed by the analyst, supervisor and project manager through the use of a variety of measures that may include reagent blanks, laboratory fortified blanks, duplicates, matrix spikes and QC samples. The numerical criteria for evaluation of these QC samples are listed in Appendix C; these various QC sample analyses are evaluated using the flow diagrams found in Figures 12-1 through 12-9. Other validation measures of the data include a check of the linearity of the calibration curve, an accuracy check of the QC standards and a check of the system sensitivity. Data transcriptions and calculations are also reviewed. Specific calculations used for determining the concentration or value of the measured parameters from the raw data are given in each of the analytical methods or CAS SOPs.
The QA department performs in-depth periodic monitoring of the data integrity program using data validation and electronic data audits (see ADM-IAUD and ADM-E DATA).

12.5 Data Reporting

When an analyst determines that the data has met the data quality objectives (and/or any client-specific data quality objectives) of the method and has qualified any anomalies in a clear, acceptable fashion, the data is validated by the supervisor. Validated data is reported from LIMS by report writers using specialized forms created by LIMS (see SOP, ADM-RG). Prior to release of the report to the client, the project manager must also review the entire body of data for completeness and to ensure that any and all client-specified objectives were successfully achieved. If required, samples exceeding any established state/federal maximum contaminant level or reportable concentration level, must be reported to the client. A case narrative may be written by the project manager to explain any unusual problems with a specific analysis or sample, client-specific objectives, exceedences, etc... The original raw data, along with a copy of the final report, is filed for archiving. CAS maintains control of analytical results by adhering to standard operating procedures and by observing sample custody requirements. All data are calculated and reported in units consistent with project specifications, to enable easy comparison of data from report to report. Typical qualifiers used to flag analytical results are listed in Appendix D.

12.6 Document Control

A document control system ensures that all documents are accounted for when the project is complete. A submission number is assign to each project for reporting and filing purposes. This number is associated with each order number (sample).

12.6.1 Documentation and Archiving of Routine Analysis Data

The archiving system includes all of the following items for each set of analyses performed:

- Benchsheets describing sample preparation (if appropriate)
- Instrument parameters
- Sample analysis sequence
- Analysis benchsheets and instrument printouts

- Chromatograms and peak integration reports for all samples, standards, blanks, spikes and reruns
- Log book ID number for the appropriate standards
- Copies of report submitted to the client

Individual sets of analyses are indexed by analysis date and/or submission number. Since many analyses are performed with computer-based data systems, the final sample concentrations can be automatically calculated. If additional calculations are needed, they are written on the integration report or securely stapled to the chromatogram, if done on a separate sheet. The archive room is a separte file room in which files shall be maintained for a period of at least five years (from date of report issue). It is not unusual to have various clients require a 10-year retention of records, such as NAVY and NYS Drinking Water Programs, therefore the archivist, project manager, and possibly the client are consulted prior to destruction of the records. The archive room is kept locked and access keys are controlled. All documents must be signed out if needed outside of the archive room and returned in a timely manner. A designated archivist monitors filing, incoming, and outgoing data from the archive. See SOP, ADM-ARCH for procedures for data archiving.

In the event that the laboratory transfer's ownership or goes out of business, laboratory records shall be maintained for the contracted period and clients shall be notified prior to early destruction / disposal of samples or data.

All related quality documentation such as the quality manual, standard operating procedures, temperature and balance records, maintenance logs, (see Section 4.2 QAM) etc. are controlled and retained by the laboratory for 5-10 years depending upon the program (See ADM-DOC_CTRL).

12.6.2 Reporting Deliverables

In order to meet individual project needs, CAS provides several levels of analytical reports. Basic specifications for each level of deliverable are described in Table 12-1. Turnaround time and package level are negotiable on a project to project basis.

12.6.3 Electronic Data Deliverables (EDD)

CAS/Rochester offers standard Excel format as well as a variety of custom developed EDDs such as ASCII, dBase, and GISKEY. EDDs are available upon request on a project to project basis.

Figure 12-1
Evaluation of Method Calibration

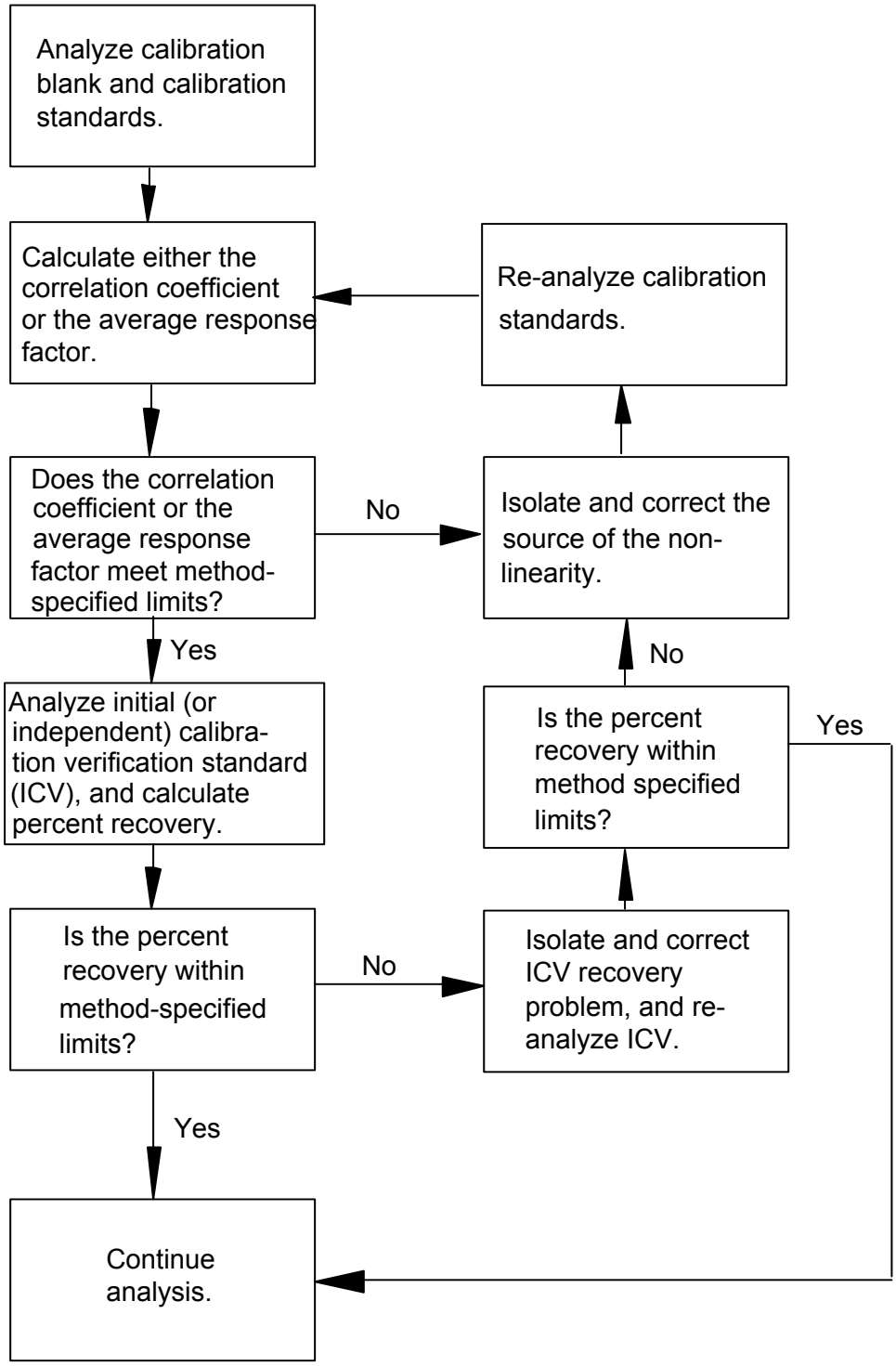


Figure 12-2
Evaluation of Continuing Calibration

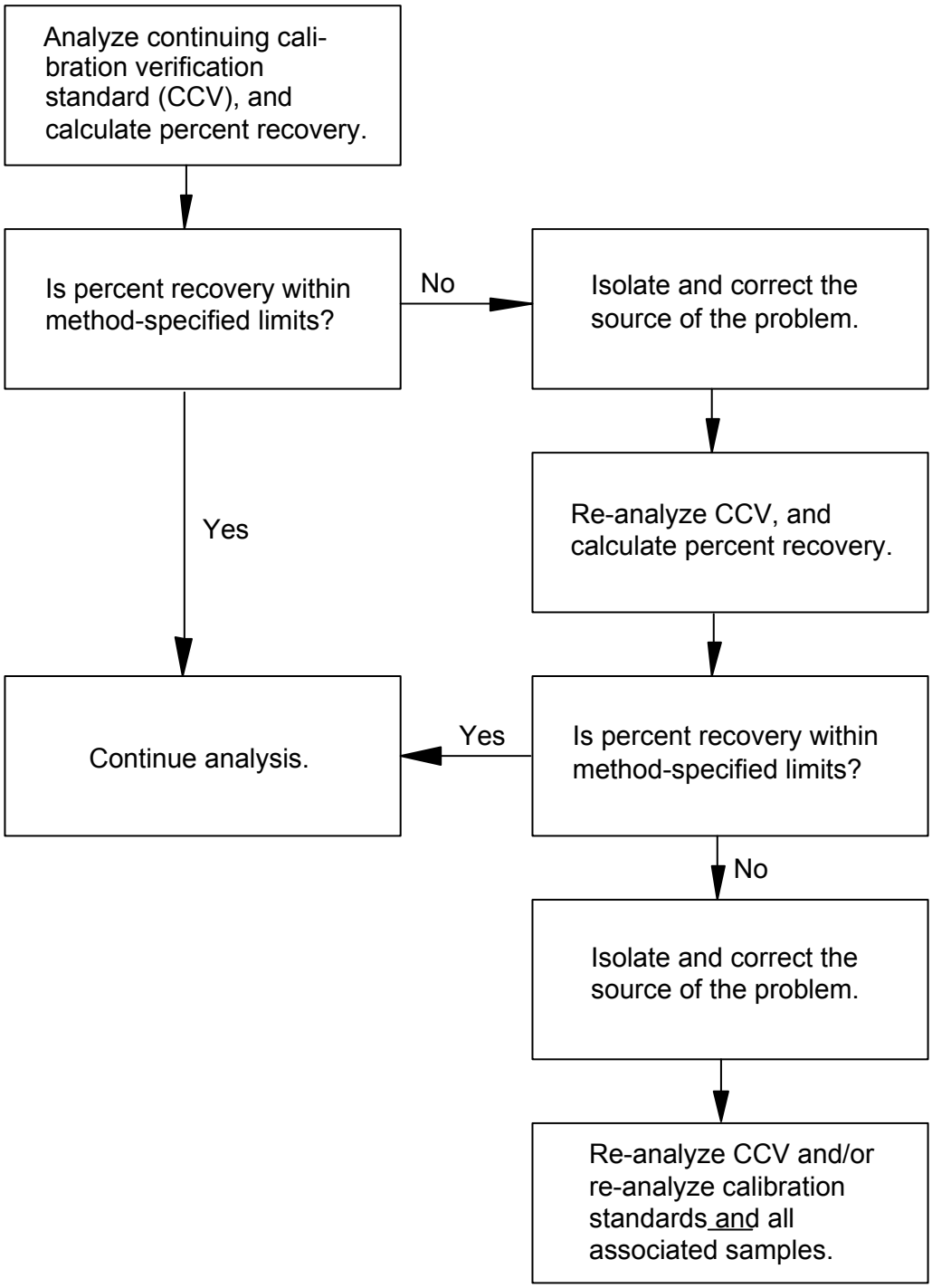


Figure 12-3
Evaluation of Method Blank and Instrument Blank Results

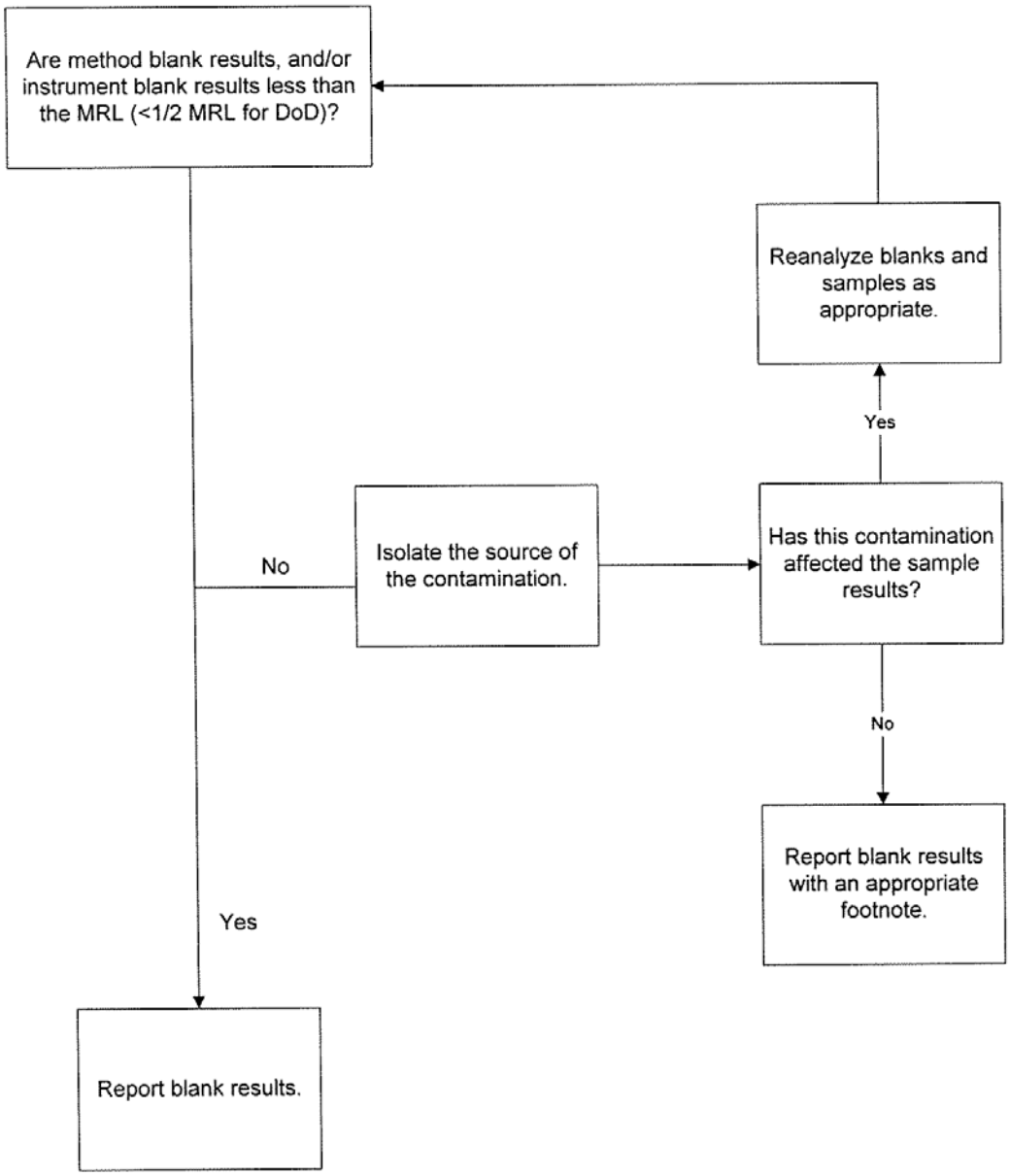


Figure 12-4
Evaluation of Sample Results for Inorganic Analyses

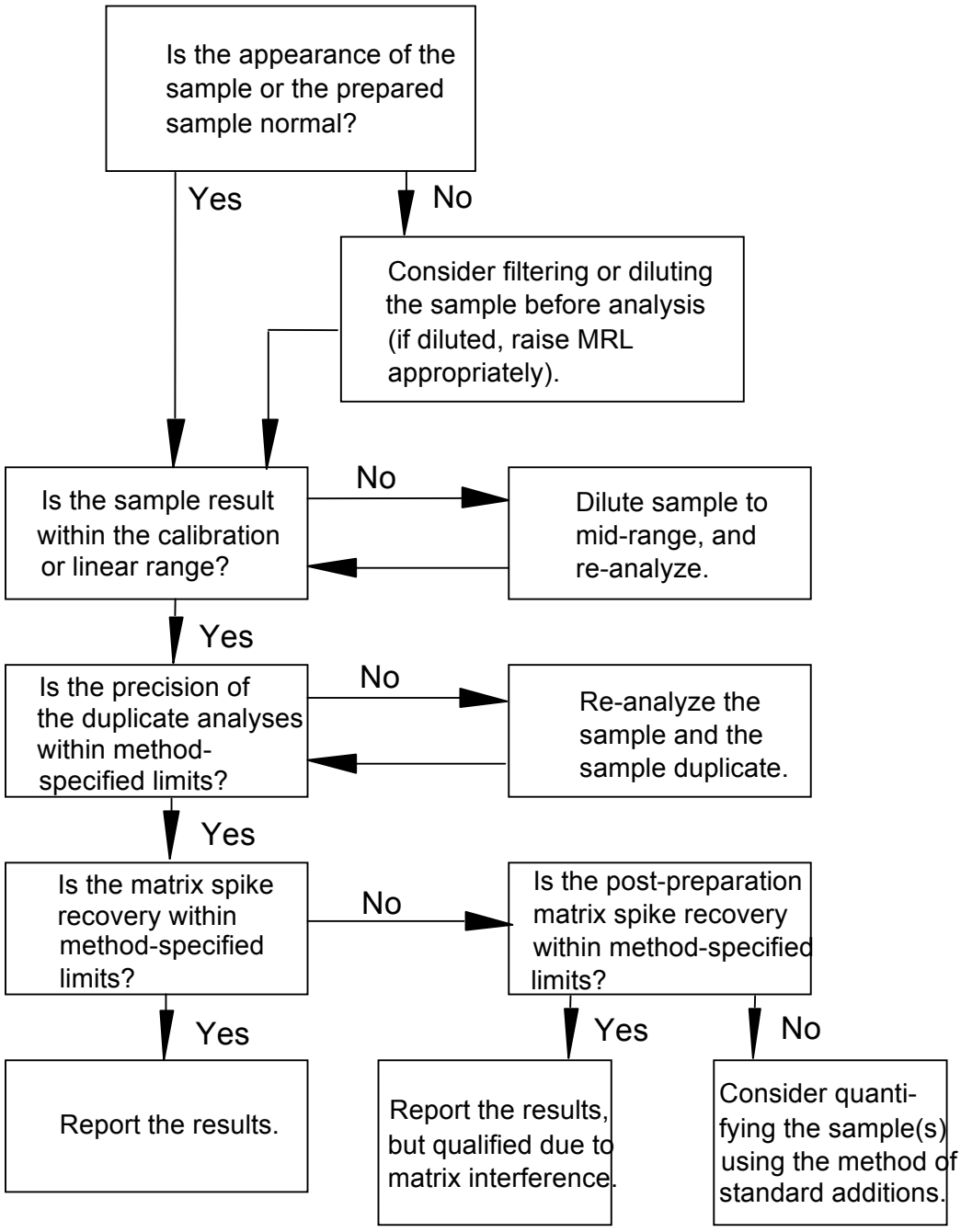


Figure 12-5
Evaluation of Sample Results for Organic Analyses

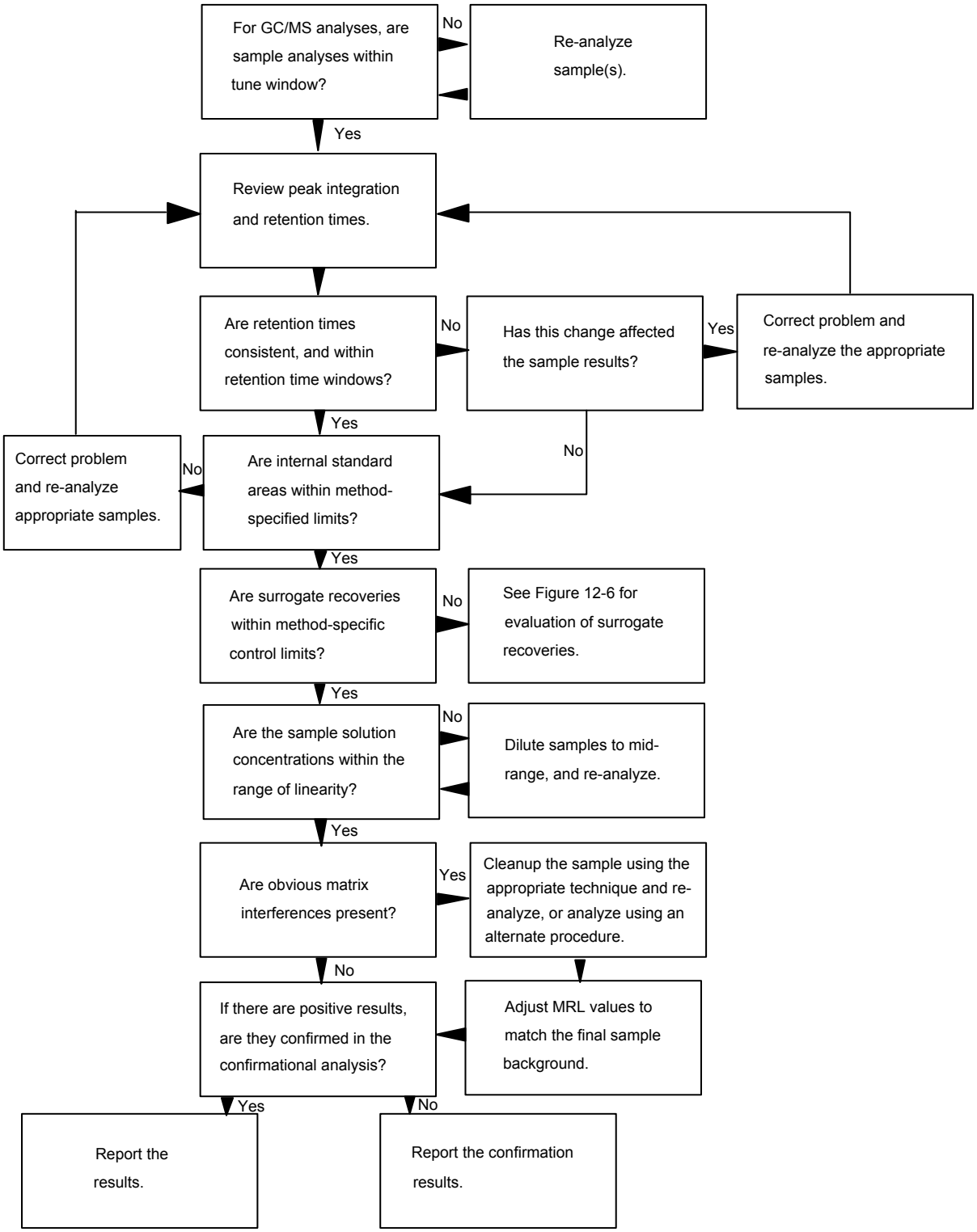


Figure 12-6
Evaluation of Surrogate Compound Recoveries

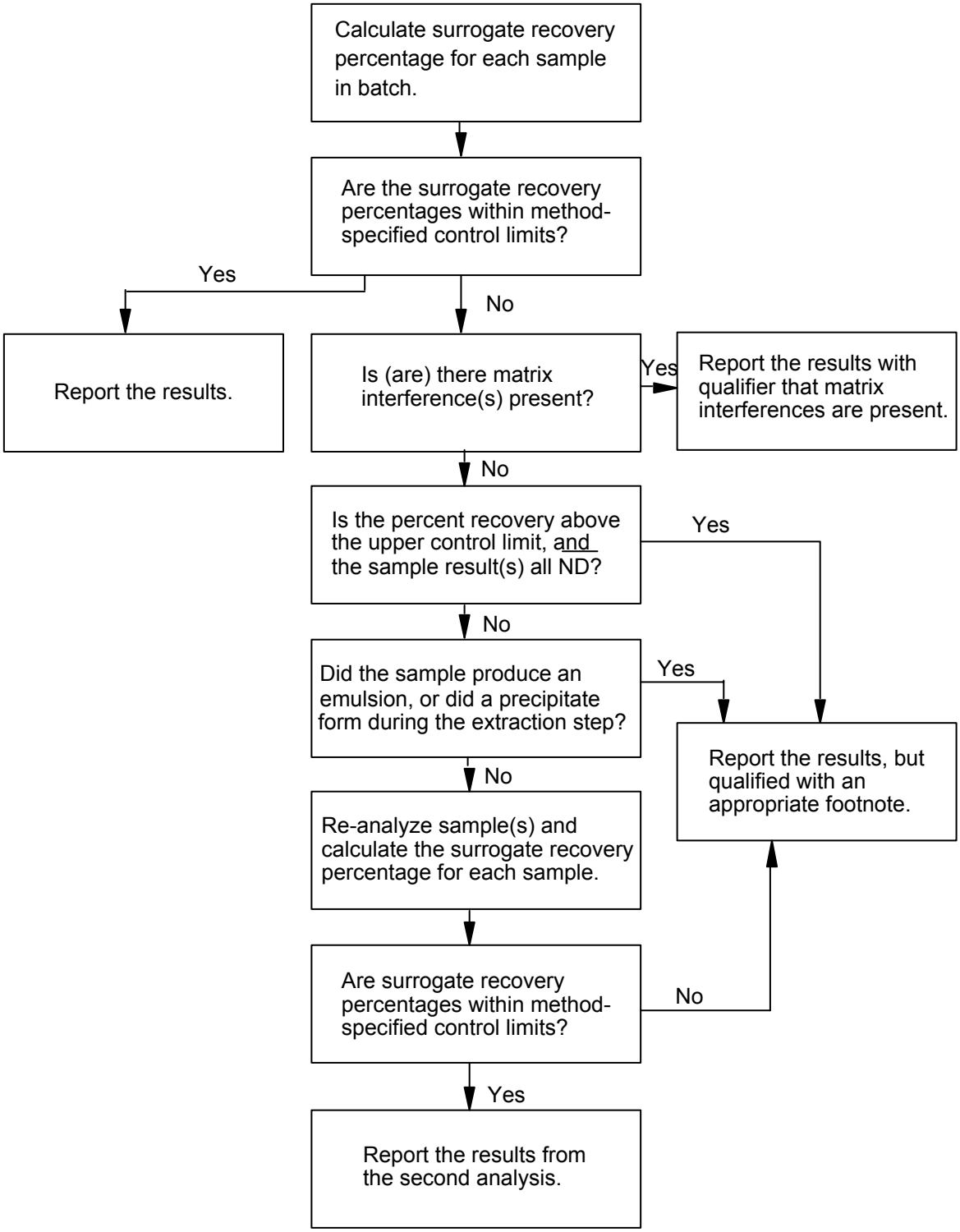


Figure 12-7
Evaluation of Duplicate Sample and/or Duplicate Matrix Spike Results

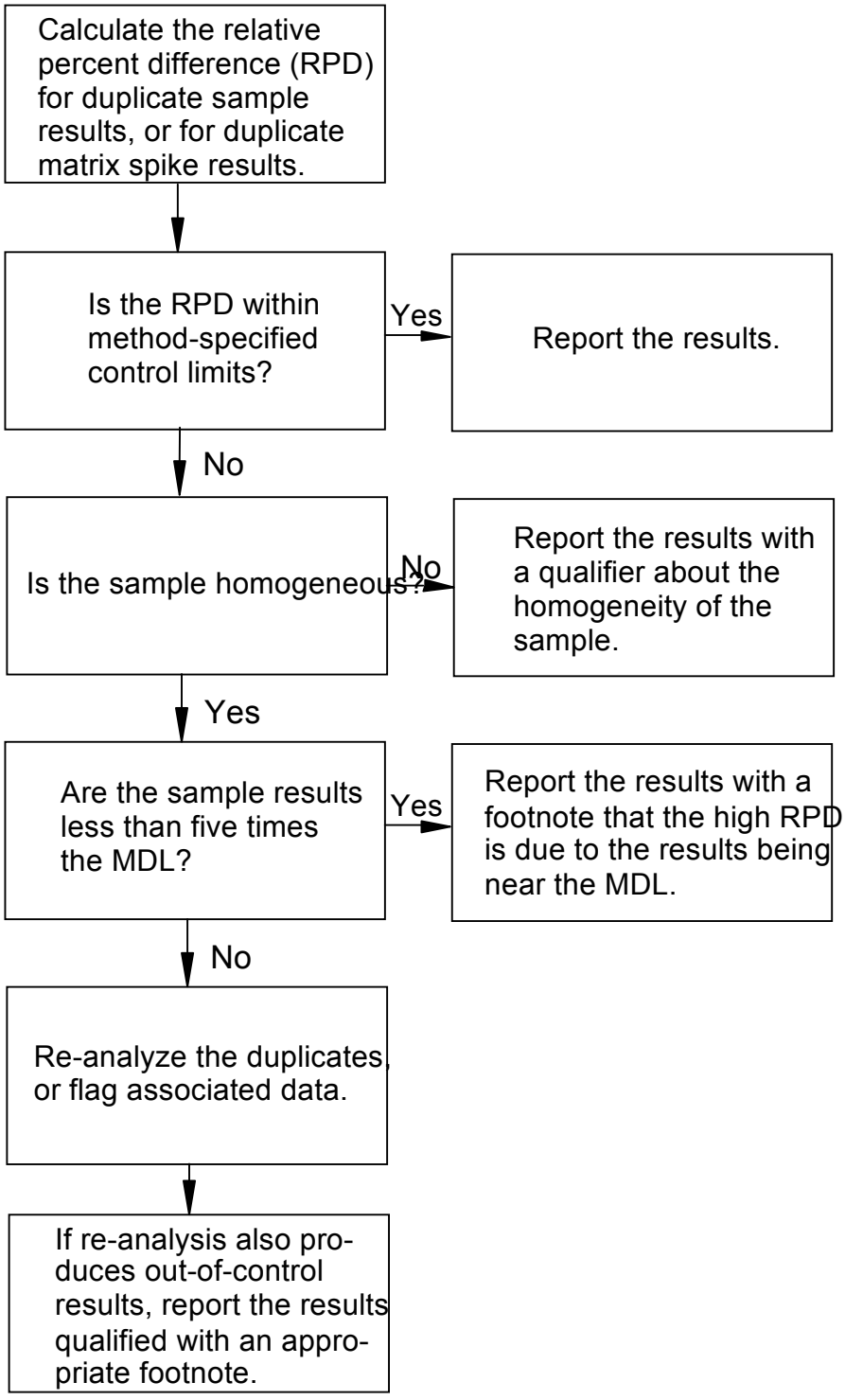


Figure 12-8
Evaluation of Matrix Spike Recoveries

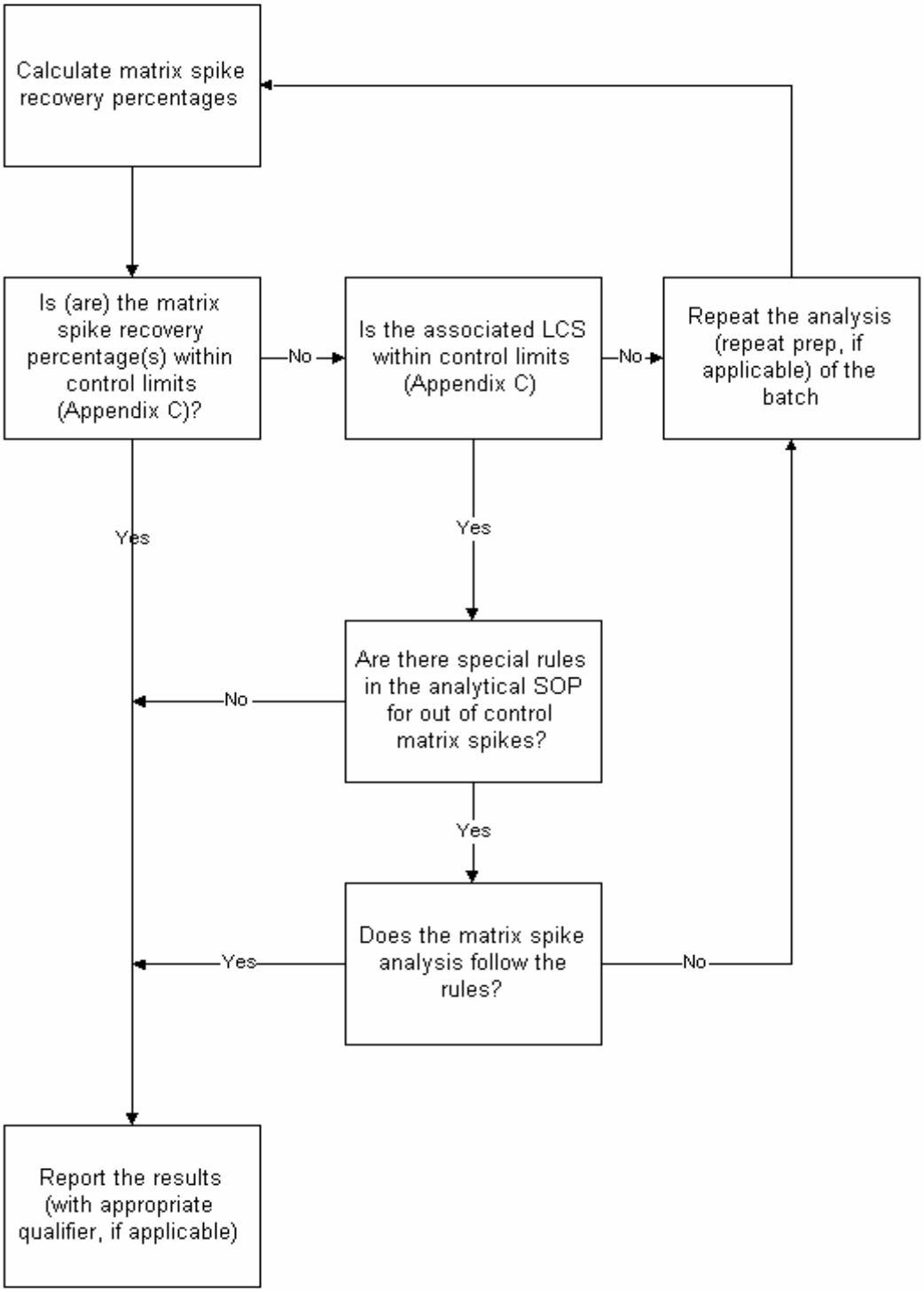


Figure 12-9
Evaluation of Laboratory Control Sample (LCS) Results

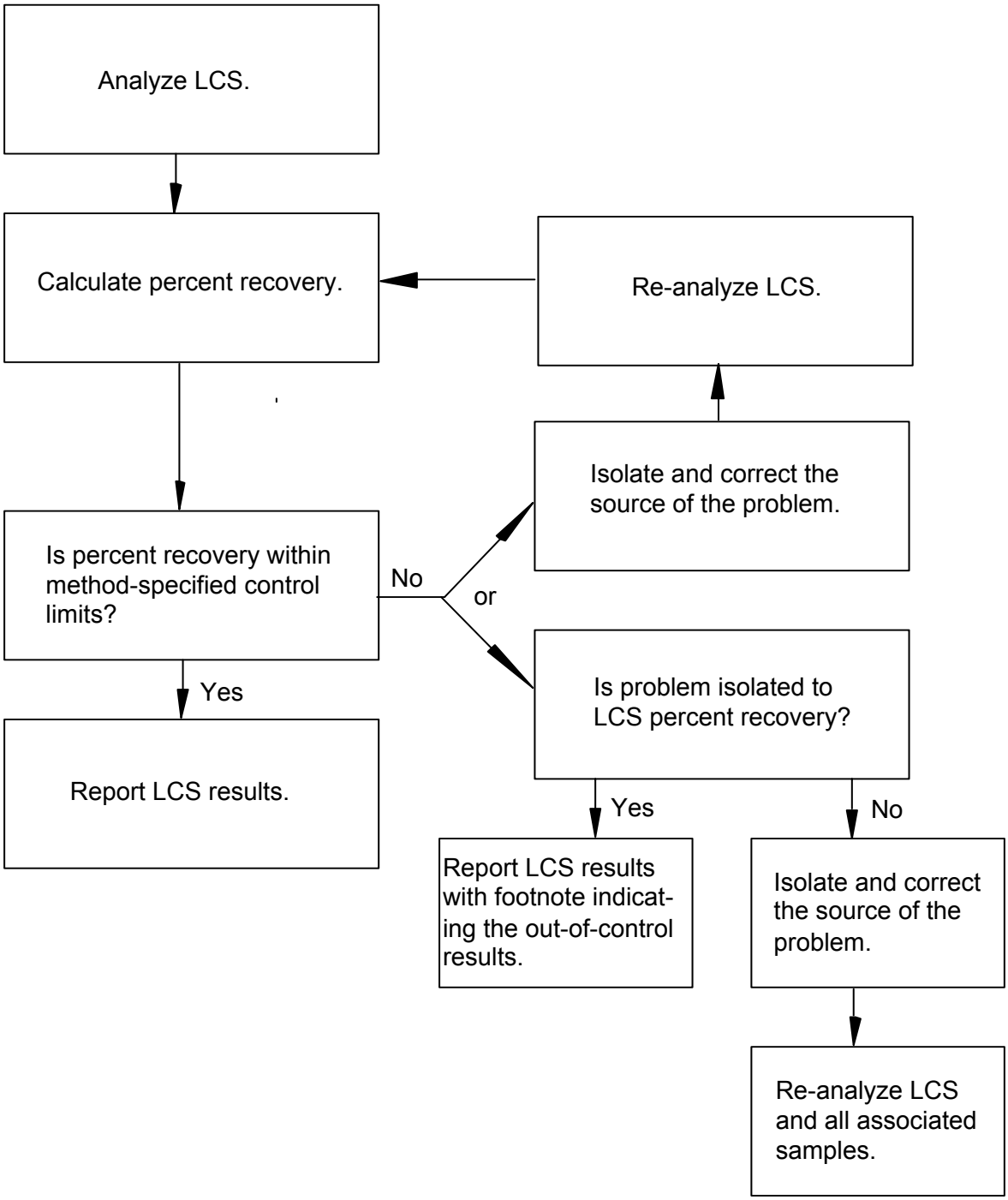


Table 12-1
Laboratory Data Deliverables

Package 1. A Routine Certified Analytical Report Includes the Following

1. Transmittal Letter
2. Sample Analytical Results
3. Method Blank Results
4. Surrogate Recovery Results for appropriate organic methods, including associated EPA or CAS acceptance criteria
5. Chain of Custody Documents

Package 2. In Addition to the Package 1 Deliverables, this Report Includes the Following:

1. Case Narrative

Package 3. In Addition to the Package 2 Deliverables, this Report Includes the Following:

1. Calibration Summaries and Results of initial and continuing calibration verification standards, with calculated recoveries
2. Method Blank Summaries

Package 4. In Addition to the Package 3 Deliverables, this Report Includes the Following:

1. Sample Quantitation Report
2. Standards Prepartation Information

Package 5. Full Data Packages

A complete validatable data package, fulfills all deliverable requirements, as specified in the EPA CLP Statement of Work. The data package may include diskette deliverables, upon request.

13.0 AUDITS AND VERIFICATION PRACTICES

Quality Control (QC) audits are an essential part of CAS's QA program. There are two types of audits used at the facility: System Audits are conducted to qualitatively evaluate the operational details of the field and laboratory QA program, while Performance Audits are conducted by analyzing performance evaluation samples in order to quantitatively evaluate the outputs of the various measurement systems.

The system audit examines the presence and appropriateness of laboratory systems. External system audits of CAS are conducted regularly by various regulatory agencies and clients. Appendix F summarizes some of the major programs in which CAS/Rochester participates. Additionally, internal system audits of CAS/Rochester are conducted regularly by the Quality Assurance Program Manager and by the CAS Quality Assurance Director. The internal system audits are scheduled as four to five auditing events:

- Comprehensive lab-wide system audit - annually
- Audits examining compliance with all QA program requirements as applied to selected projects - 2 per year.

The results of each audit are reported to the Laboratory Director and Supervisors for review and comment. Any deficiencies noted by the auditor are summarized in an audit report and corrective action is taken within a specified length of time to correct each deficiency. Should problems impacting data quality be found during an internal audit, any client whose data is adversely impacted will be given written notification if not already provided. (See SOP ADM-IAUD).

Additionally, CAS/Rochester participates in the analysis of performance evaluation (PE) samples. Results of the performance evaluation samples and audits are reviewed by the Laboratory Director, the QA Program Manager, the Corporate QA Director and the laboratory staff. Any problems surfacing during the audit are investigated, and corrective action is taken regarding any and all deficiencies. See SOP ADM-PTS.

14.0 PREVENTIVE MAINTENANCE

Preventive maintenance is a crucial element of Columbia Analytical Services Quality Assurance program. Instruments at CAS (e.g., GC/MS systems, atomic absorption spectrometers, analytical balances, gas and liquid chromatographs, etc...) are maintained under commercial service contracts or by qualified, in-house personnel. All instruments are operated and maintained according to the instrument operating manuals. All routine and special maintenance activities pertaining to the instruments are recorded in instrument maintenance logbooks. The maintenance logbooks used at CAS contain extensive information about the instruments used at the laboratory.

All preventive maintenance requires a reference to acceptable QC to verify instrument has returned to proper operating functions. An initial demonstration of analytical control is required on **every** instrument used at CAS before sample analyses may proceed. If an instrument is modified or repaired, a return to analytical control is **required** before subsequent sample analyses can continue. When an instrument is acquired at the laboratory, the following information is recommended to be noted in a bound maintenance notebook specifically associated with the new equipment:

- Instrument Name, manufacturer, make, model and type
- The equipment's serial number.
- Date the equipment was received.
- Date the equipment was placed into service.
- Condition of equipment when received (new, used, reconditioned, etc...)
- Prior history of damage, malfunction, modification or repair (if known).

Preventative maintenance procedures, frequencies, etc... are available for each instrument used at CAS. They may be found in the various SOPs for routine methods performed on an instrument and may also be found in the operating or maintenance manuals provided with the equipment at the time of purchase. Responsibility for ensuring that routine maintenance is performed lies with the section supervisor. Each laboratory section maintains a critical parts inventory. The parts inventories include the items needed to perform the preventative maintenance procedures listed in Appendix E. This inventory or "parts list" also includes the items needed to perform any other routine maintenance and certain in-house non-routine repairs.

When performing maintenance on an instrument (whether preventative or otherwise), additional information about the problem, attempted repairs, etc... is also recorded in the notebook. Typical logbook entries include the following information:

- Details and symptoms of the problem
- Repairs and/or maintenance performed
- Description and/or part number of replaced parts
- Source(s) of the replaced parts
- Analyst's signature and date
- Demonstration of return to analytical control

For most major equipment, back-up equipment is available to avoid downtime. All major analytical equipment is summarized in Appendix A. The section supervisor is responsible to coordinate repair with the manufacturer. The project manager shall assess the effect of the downtime on the samples in-house and notify the appropriate clients of any delays and/or the possibilities of subcontracting.

15.0 CORRECTIVE ACTION AND COMPLAINTS

Failure to meet established analytical controls, such as the quality control objectives outlined in Sections 9.0 and 12.0, prompts corrective action. In general, corrective action may take several forms and may involve a review of the calculations, a check of the instrument maintenance and operation, a review of analytical technique and methodology, and reanalysis of quality control and field samples. If a potential problem develops that cannot be solved directly by the responsible analyst, the supervisor, the department manager, and/or the QAPM may examine and pursue alternative solutions. In addition, the appropriate project manager may be notified in order to ascertain if contact with the client is necessary. If events cast doubt on the validity of test results, the client shall be notified within 3 business days of the discovery. This should give the laboratory time to ascertain the extent of the problem.

The QAPM initiates corrective action due to a performance audit or a check sample problem; the affected laboratory personnel are promptly informed, as are the laboratory supervisors and managers. If a problem is to be investigated due to suspected inappropriate actions or vulnerabilities related to data integrity, the investigation will be handled in a confidential manner until a follow up evaluation, full investigation, or other appropriate actions have been completed and the issues clarified. All investigations that result in finding of inappropriate activity shall be documented through Human Resources and shall include any disciplinary actions involved. The personnel files are kept on record for at least 5 years. In cases where data quality is or may be impacted, the client is notified.

A Nonconformity and Corrective Action Form is generated to document and notify the appropriate personnel of the nonconformity. Procedures for issuing and filing nonconformities are discussed in SOP, *Corrective Action* (ADM-CA). The form is in Figure 15-1.

In special cases, the Laboratory Director may give permission to the analyst, Supervisor, or Project Manager to deviate from CAS Policy. Typically, a Nonconformity form must be issued to the Director and signed off as being acceptable. Otherwise verbal instructions are given and documented on the raw data as being accepted by the Laboratory Director.

In cases were there are complaints from the clients, follow policy procedures outlined in the SOP, *Handling Customer Feedback* (ADM-FDBK).

Corrective actions may also be used to monitor continuous process improvements and tracking of missed proficiency test samples. Laboratory management is responsible for following through with the proficiency testing programs, ensuring that the corrective actions are implemented after testing, and evaluating the effectivness of the corrective action.

Figure 15-1

Nonconformity and Corrective Action Report

NONCONFORMITY

N&CA Report No. _____

PROCEDURE (SOP or METHOD): EVENT DATE: _____

EVENT: ☐ Missed Holding Time ☐ QC Failure ☐ Lab Error (spilled sample, spiking error, etc.)
☐ Method Blank Contamination ☐ Login Error ☐ Project Management Error
☐ Equipment Failure ☐ Unacceptable PT Sample Result ☐ Other (describe):

SAMPLES / PROJECTS / CUSTOMERS / SYSTEMS AFFECTED

DETAILED DESCRIPTION

ORIGINATOR: _____ DATE: _____

PROJECT CHEMIST(s): _____ NOTIFIED BY: _____ DATE: _____

CORRECTIVE ACTION AND OUTCOME

Re-establishment of conformity must be demonstrated and documented. Describe the steps that were taken, or are planned to be taken, to correct the particular Nonconformity and prevent its reoccurrence. Include Project Chemist instructions here.

Is the data to be flagged in the Analytical Report with an appropriate qualifier? ☐ **No** ☐ **Yes**

APPROVAL AND NOTIFICATION

Supervisor Verification and Approval of Corrective Action _____ Date: _____
Comments:

QA PM Verification and Approval of Corrective Action _____ Date: _____
Comments:

Customer Notified by ☐ Telephone ☐ Fax ☐ E-mail ☐ Narrative ☐ Not notified
Project Chemist Verification and Approval of Corrective Action _____ Date: _____
Comments: (Retain record)

16.0 QUALITY ASSURANCE REPORTS

Quality assurance requires an active, ongoing commitment by CAS personnel at all levels of the organization. Information flow and feedback mechanisms are designed so that analysts, supervisors and managers are aware of quality assurance issues in the laboratory.

Analysts performing routine tests in the laboratory are aware of the various method acceptance criteria and in-house control limits that must be met in order to generate acceptable results. Any non-conformities and corrective actions may also be attached to the data prior to review. Supervisors, or designee, review all of the completed analytical batches to ensure that all QC criteria have been examined and any deficiencies noted and corrected if possible.

It is the responsibility of each laboratory unit to provide the Project Manager with a final report of the data, accompanied by signature approval. Footnotes and/or narrative notes must also accompany any data package if problems were encountered that require further explanation to the client. Each data package is submitted to the appropriate project manager, who in turn reviews the entire collection of analytical data for completeness. The Project Manager must also review the entire body of data to ensure that any and all client-specified objectives were successfully achieved. A case narrative may be written by the project manager to explain any unusual problems with a specific analysis or sample, etc...

The Quality Assurance Program Manager provides overview support to the Project Manager if required to do so (e.g. contractually specified, etc...) The Quality Assurance Program Manager is also responsible for the oversight of all internal and external audits, for all performance evaluation sample and analysis programs, and for all laboratory certification/accreditation responsibilities.

The QAPM also prepares quarterly reports for the QA Director which summarizes the various QA/QC activities that have occurred during the previous quarter. These reports include a summary of the various audits performed during the last quarter, new accreditations/certifications received by the laboratory, scores of the most current performance evaluation studies, updates/revisions to controlled documents, etc...

On an annual basis, the lab director shall review the laboratory's quality system to introduce any necessary changes or improvements. The review will take into account the outcome of recent internal or external audits, proficiency results, changes in volume and type of work, feedback from clients or authorities, corrective action reports, complaints, etc. See SOP ADM-MGMTRVW.

17.0 PERSONNEL TRAINING

Technical position descriptions are available for all employees, regardless of position or level of seniority. These documents are maintained by the QA Program Manager and Human Resources. In order to assess the technical capabilities and qualifications of a potential employee, all candidates for employment at CAS are evaluated, in part, against the appropriate technical description.

Training begins the first day of employment at CAS when the administrative, quality assurance, and health and safety policies are presented and discussed. Each new employee is presented with example ethical dilemmas and resolutions as an initial Ethics training. Within 12 months, each employee shall participate in an 8-hour company Ethics Training Seminar. Thereafter, ethics training is on-going throughout the tenure of each employee.

Technical training is documented following SOP requirements discussed in *Documentation of Technical Training* (ADM-TRANDOC). Training for analytical procedures typically begins with the reading of the analytical SOP. Hands-on training begins with the observation of an experienced analyst performing the method, followed by the trainee performing the method under close supervision, and culminating with independent performance of the method on quality control samples. Successful completion of the analysis must include an Initial Demonstration of Capability Study of four replicate quality control samples. If quality control samples are not available (tests such as Paint Filter, Settleable Solids, Cation Exchange Capacity, Chlorophyll a, Chlorine Demand, Open Cup Ignitability, Dissolved Oxygen, Odor, SPLP extraction, TCLP extraction, and Dry Weight Percent Solids), a supervisor may sign an acknowledgment of the analyst's proficiency, as referenced in ADM-TRANDOC as Critical Job Function Authorization Statement.

Continued demonstration of capability is performed at least annually using a PT sample, a 4-replicate accuracy and precision study, or signing of a Critical Job Function Authorization Statement as a supervisor's acknowledgement of proficiency (for tests without quality control samples). Copies of all training forms and certifications (demonstrations of capability) are reviewed and maintained by the QA department.

Safety training begins with the reading of the *Safety Manual*. All employees are recommended to attend quarterly safety meetings during which the safety programs discussed and safety training is presented by the Environmental, Health and Safety Officer.

CAS encourages its personnel to continue to learn and develop new skills that will enhance their performance and value to the company. Ongoing training occurs for all employees through a variety of mechanisms. The "CAS University" education system, external and internal technical seminars and training courses, laboratory-specific training exercises and performance of external PE samples analysis are all used to provide employees with professional growth opportunities.

Safety and QA/QC requirements are integral parts of all technical SOPs and, consequently, are integral parts of all processes at CAS.

18.0 REFERENCES FOR ANALYTICAL PROCEDURES

The analytical methods used at CAS generally depend upon the end-use of the data. Since most of our work involves the analysis of environmental samples for regulatory purposes, specified federal and/or state testing methodologies are used and followed closely. Several factors are involved with the selection of analytical methods to be used in the laboratory. These include the method detection limit, the concentration of the analyte being measured, method selectivity, accuracy and precision of the method, the type of sample being analyzed, and the regulatory compliance objectives. Typical methods used at CAS are taken from the following references:

- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, 1986 and Updates I (7/92), II (9/94), IIA (8/93), IIB (1/95), and III (12/96). See Chapters 1, 2, 3, and 4.

- *Methods for Chemical Analysis of Water and Wastes*, EPA 600/4-79-020, Revised March 1983.

- *Methods for the Determination of Metals in Environmental Samples*, EPA 600/4-91-010, June 1991 and Supplement I, EPA/600/R-94/111, May, 1994.

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*, EPA 600/4-82-057, July 1982 and 40 CFR Part 136, Appendix A.

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

- *Methods for the Determination of Organic Compounds in Drinking Water*, EPA 600/4-88-039, December 1988 and Supplement I (7/90) and Supplement II (8/92).

- *Standard Methods for the Examination of Water and Wastewater*, 16th Edition, 1985; 17th Edition, 1989; 18th Edition, 1992, and 19th Edition, 1995.

- 40 CFR Part 136, Guidelines for Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act.

- 40 CFR Part 141, National Primary Driniking Water Regulations.

- State-specific total petroleum hydrocarbon methods for the analysis of samples for gasoline, diesel, and other petroleum hydrocarbon products.

- Annual Book of ASTM Standards.

- EPA Contract Laboratory Program, Statement of Work for Organics Analysis, OLM04.2. May 1999 and OLM04.3.

- EPA Contract Laboratory Program, Statement of Work for Inorganics Analysis, ILM04.1 and ILM05.1.

- G*ood Automated Laboratory Practices, Priciples and Guidance to Regulations For Ensuring Data Integrity In Automated Laboratory Operations*, EPA 2185, August 1995.

- *National Environmental Laboratory Accreditation Conference*, *Quality Standards, Chapters 1-5*, July 2003.

APPENDIX A

MAJOR ANALYTICAL EQUIPMENT

March 29, 2006

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
MASS SPECTROMETERS - VOAs					
GC/MS #3	Gas Chromatograph	HP 5890II	3133A37456	VOAs	2001
	Mass Spec Detector	HP 5971A	3118A02764		
	AutoSampler	Archon	13070		
	Concentrator	Tekmar 2000	91227014		
	Computer Workstation	Gateway P5-133	5360356		
	Analytical Software	Enviroquant Chemstation G1032C v.C.01.00			
GC/MS #5	Gas Chromatograph	HP 5890II	3121A35679	VOAs	1991
	Mass Spec Detector	HP 5971	3118A02532		
	AutoSampler	Archon	12727		
	Concentrator	Tekmar 3000	98125008		
	Computer Workstation	Gateway P5-133	5360357		
	Analytical Software	Enviroquant Chemstation G1032C v.c.01.00			
GC/MS #6	Gas Chromatograph	HP 6890	US00023178	VOAs	1998
	Mass Spec Detector	HP 5973	US82311143		
	AutoSampler	Archon			
	Concentrator	EST Encon	261043003		
	Computer Workstation	HP Kayak XA	US3T653217		
	Analytical Software	Enviroquant Chemstation G1701BA v.B.00.00			
GC/MS #7	Gas Chromatograph	HP 5890II	3235A43994	VOAs	2001
	Mass Spec Detector	HP 5971	323A03964		
	AutoSampler	Archon	13589		
	Concentrator	Tekmar 2000	91267022		
	Computer Workstation	Compaq DeskPro	6124FR4ZD257		
	Analytical Software	Enviroquant Chemstation G1701BA v.B.01.00			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GC/MS #8	Gas Chromatograph	HP 5890II	3126A36850	VOAs	2004
	Mass Spec Detector	HP 5972	3435A01975		
	AutoSampler	EST Centurion	CENT145061104		
	Concentrator	EST Encon	374062504		
	Computer Workstation	Compaq DeskPro	6946CJM7M878		
	Analytical Software	Enviroquant Chemstation G1701BA v.B.01.00			
GC/MS #9	Gas Chromatograph	HP 6890	US00029263	VOAs in air TO-15	2004
	Mass Spec Detector	HP 5973	US91922619		
	AutoSampler	Enteck 7016CA	00156		
	Concentrator	Enteck 7100	0088		
	Computer Workstation	HP Kayak XA	92181198		
	Analytical Software	Enviroquant Chemstation G1701BA v.B.01.00 Enteck Smart Lab 2000 v3.32			
GC/MS #10	Gas Chromatograph	Agilent 6890N	CN10633045	VOAs	2006
	Mass Spec Detector	Agilent 5975B	US62723782		
	Purge and Trap	EST-Varian Archon	14702		
	Concentrator	EST Encon	ELEC-523103006E PATH-523103006P		
	Computer Workstation	Dell E520	8PT52C1		
	Analytical Software	Chemstation	D.03.00.552		
GC/MS #11	Instrument	EST Markelou HS9000	HS137042108	VOAs	2008
	Gas Chromatograph	Agilent 6890N	US00033857		
	Mass Spec Detector	Agilent 5973	US94212218		
	Concentrator				
	Computer Workstation	HP Kayak xA	FR94720557		
	Analytical Software	HP Enviroquant 61701BA	B.0100		

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Digital Display 1-Channel	Mass Flow Controller Digital Display	MKS Instruments 247C	92290101A	VOAs	2006
Digital Display 4-Channel		MKS Instruments 246B	94200203A	VOAs	2006
Flow Controller #1	Mass Flow Controllers	Model 1359C-10000SK	0258C10583442	VOAs	2006
Flow Controller #2		Model 1359C-00200SK	0258C10598442	VOAs	2006
Flow Controller #3		Model 1359C-000205SK	0258C15231304	VOAs	2006
Flow Controller #4		Model 1359C-00010SK	0258C10581442	VOAs	2006

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
MASS SPECTROMETERS -SVOAs					
GC/MS 5973A	Gas Chromatograph	HP 6890	US00024148	SemiVOAs/CLP	1998
	Mass Spec Detector	HP 5973	US82311266		
	AutoSampler	HP 7683	CN23021382		
	Injector	Agilent 7683	US10301831		
	Computer Workstation	Gateway GP7-600	17904248		
	Analytical Software	HP Chemstation B.02.05 EnviroQuant G1701BA v.B.01.00			
GC/MS 5973B	Gas Chromatograph	HP 6890	US00029105	SemiVOAs/CLP	1999
	Mass Spec Detector	HP 5973	US91911849		
	AutoSampler	HP7683	US81501041		
	Injector	HP7683	US93408790		
	Computer Workstation	HP Kayak XA6/400	US92280466		
	Analytical Software	HP Chemstation B.02.05 EnviroQuant G1701BA v.B.01.00			
GC/MS 5973C	Gas Chromatograph	Agilent 6890N (G1530N)	US10232036	SemiVOAs	2002
	Mass Spec Detector	Agilent 5973 (G2578A)	US21853642		
	AutoSampler	Agilent 7683 (G2614A)	US00307019		
	Injector	Agilent 7683 (G2613A) Agilent LVI being installed	CN23126455		
	Computer Workstation	Gateway P7-450	13645026		
	Analytical Software	HP Chemstation Enviroquant G1701 v.D.00.00.38			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GAS CHROMATOGRAPHS - EXTRACTABLES					
HP5890(II)-B	Gas Chromatograph	HP 5890	2728A14298	Petroleum Hydrocarbons	1988
	Detector	FID	(integrated)		
	Autosampler	HP7673	3417A35264		
	Injector	HP7673	3120A26909		
	Controller	HP7673	3416A35332		
	Computer Workstation	Gateway P5-133	5360538		
	Analytical Software	HPChemstation G1034C v.03.00			
HP6890- D	Gas Chromatograph	HP 6890	22174	Pest/PCB/8011	1998
	Detector	Dual ECD			
	Injector	HP7683	US93408790		
	Autosampler	G2614A	US81800809		
	Computer Workstation	DELL	7BQRS71		
	Analytical Software	Enviroquant MSD Chemstation D.01.02.16 15 June 2001			
HP5890(II)- F	Gas Chromatograph	HP 5890II	2950A26574	8011	1989
	Detector	Dual ECD			
	Autosampler	18596B	3032A22303		
	Injector	HP7673	3205A29661		
	Computer Workstation	HP Vectra XA 5/233	US81450241		
	Analytical Software	HP Chemstation v.B.02.05 EnviroQuant G1701BA v.B.01.00			
6890N- G	Gas Chromatograph	Agilent 6890N	US10520018	Herb/PCB	2005
	Detector	Micro ECD			
	Injector	Agilent G2913A	CN51624717		
	Autosampler	Agilent G2614A	CN51032422		
	Computer Workstation	DELL	7BQRS71		
	Analytical Software	Enviroquant MSD Chemstation D.01.02.16 15 June 2001			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HP5890(II)-H	Gas Chromatograph	HP 5890II	3336A56596	Alcohols/ WAPA	2005
	Detector	FID	(integrated)		
	Autosampler	18596C	US22508151		
	Injector	Agilent 6890	CN34222775		
	Controller	G1512A	CN00005087		
	Computer Workstation	HP KAYAK XA	US8345093		
	Analytical Software	HP Chemstation B.02.05 EnviroQuant G1701BA v.B.01.00			
6890N- I	Gas Chromatograph	Agilent 6890N	US10552066	Petroleum Hydrocarbons	2008
	Detector	FID			
	Injector	Agilent G2913A_7683B	CN60931630		
	Autosampler	Agilent G2614A	CN60738562		
	Computer Workstation	DELL	818W761		
	Analytical Software	Chemstation D.02.00.275			
HP5890(II)-L	Gas Chromatograph	HP 5890II	2950A27718	Herb/PCB	1989
	Detector	Dual ECD			
	Autosampler	18596C	US4008144		
	Injector	Agilent 6890	CN22321966		
	Computer Workstation	HP Vectra XA 5/233	US81450241		
	Analytical Software	HP Chemstation v.B.02.05 EnviroQuant G1701BA v.B.01.00			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
EXTRACTABLES SUPPORT EQUIPMENT					
GPC	GPC	OI Analytical AP2000	A122330318	Cleanups	2002
RapidVap #1	Nitrogen Evaporation System	LabConco RapidVap	11296345E	Concentrations	2001
RapidVap #2	Nitrogen Evaporation System	LabConco RapidVap	20998065F	Concentrations	2002
RapidVap #3	Nitrogen Evaporation System	LabConco RapidVap	70975713	Concentrations	2007
N-EVAP	Organomation N-EVAP	Model 112	7531	Concentrations	
Hot Orbital Shaker		Armalab OR200	3560	Extractions	2004
Automated Soxhlet #1	Automated Soxhlet	Gerhardt SOX416	1/8465080006	Extractions	2008
Automated Soxhlet #2	Automated Soxhlet	Gerhardt SOX416	1/8465080007	Extractions	2008
Autoshaker#1	Lab-Line Extraction Mixer	Model 6000	0904-3735	Extractions	2004
Autoshaker#2	Lab-Line Extraction Mixer	Model 6000	0904-3736	Extractions	2004
Autoshaker#3	Lab-Line Extraction Mixer	Model 6000	0904-3737	Extractions	2004
SPE-DEX 4790#1	Solid Phase Extractor	Horizon	05-0593	Extractions	2005
SPE-DEX 4790#2	Solid Phase Extractor	Horizon	05-0595	Extractions	2005
SPE-DEX 4790#3	Solid Phase Extractor	Horizon	05-0594	Extractions	2005
Tekmar 500		TM-500	7460E	Sonication	
Tekmar 600		TM-600	13232	Sonication	
VibraCell #1		VC375	15144E	Sonication	
VibraCell#2		VC505	37629G	Sonication	

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GAS CHROMATOGRAPHS - VOLATILES					
V1	Gas Chromatograph	Varian 3400	4808	VOAs	1998
	PID Detector	OI 4430	OI 1009		
	PID Controller	OIA 5200	A240213		
	ELCD Detector	OIA 4420	2942-8-686		
	AutoSampler	Tekmar 2016	89016001		
	Concentrator	Tekmar 2000	91063007		
	Computer Workstation	GP6-233	9767125		
	Analytical Software	Varian System Control v.4.5.2	D57543610		
V2	Gas Chromatograph	Varian 3300	4130	Alcohols/Gases	1999
	Detector	FID	(integrated)		
	Computer Workstation	PowerFlex	120518		
	Analytical Software	Varian System Control v.4.51	D57543610		
V3	Gas Chromatograph	Varian 3400	10989	VOAs	1999
	PID Controller	OIA 5200	B509500481		
	PID Detector	OI 4430			
	ELCD Detector	OIA 5300	B05223456		
	AutoSampler	Varian Archon	13316		
	Concentrator	Tekmar 3000	98124003		
	Computer Workstation	Gateway 2000	10221502		
	Analytical Software	Varian System Control v.4.51	D57543610		
V4	Gas Chromatograph	Varian 3400	15248	VOAs	2001
	PID Detector	OI 4436	OI1000		
	ELCD Detector	OI 5300	C449553665		
	PID Controller		A218047		
	AutoSampler	Archon	13596		
	Concentrator	Encon	130122900 E/P		
	Computer Workstation	GP6-233	9767125		
	Analytical Software	Varian System Control v.4.5.2	D57543610		

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HP1	Gas Chromatograph	HP5890II	3121A35575	VOAs	2001
	PID Detector	OIA 4430	31030		
	FID Detector	(integrated)	-		
	AutoSampler	Tekmar 2016	89220008		
	Concentrator	Tekmar 2000	89013002		
	Sample Heater	Tekmar	91065008		
	Computer Workstation	Gateway GP5-233	9352344		
	Analytical Software	Varian System Control v.4.5.2	00159-1908-cd1-22bd		
T6	Gas Chromatograph	Varian 3400	4143	VOAs/VPH/GRO	1998
	PID Detector	OI 4430	OI1006		
	FID Detector	Integrated	-		
	AutoSampler	Tekmar 2016	91298028		
	Concentrator	Tekmar 2000	91331001		
	Sample Heater	Tekmar	88264001		
	Computer Workstation	Gateway GP5-233	9352344		
	Analytical Software	Varian System Control v.4.5.2	00159-1a08-cd1-22bd		

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HPLC					
HPLC02 (LC/MS)	Binary Pump	Agilent 1100	DE11108496	Perchlorate	2005
	Column Thermostat	Agilent 1100	DE11120893		
	Wellplate Autosampler	Agilent 1100	DE11300879		
	Sample Thermostat	Agilent 1100	DE82207519		
	MSD	Agilent G1946D	US12411208		
	Computer Workstation	HP Vectra	US12475439		
	Analytical Software	Chemstation for HPLC Rev.A.10.02			
HPLC03	Binary Pumps	Shimadzu LCD10ADVP	1(A) C20963851348US 2(B) C20963851344US	Metabolic Acids Hydroquinone Tolytriazole PAHs	2005
	UV/VIS Detector	Shimadzu SPD10AVVP	C21004050470US		
	Fluorescence Detector	Waters 470	470-00067		
	Electrochemical Detector	BAS LC4C/CC5	LC-4C 7014		
	AutoSampler	Shimadzu SIL10ADVP	C21053850511US		
	System Controller	Shimadzu SCL10AVP	C21013851302US		
	Degasser	Shimadzu DGU 14A	101076		
	Temperature Control Module	Waters	TCM-001304		
	Computer Workstation				
	Analytical Software				
HPLC04	Solvent Delivery System	HP1050	3019A00475	Formaldehyde UV-MISC	2007
	Variable Wavelength UV Detector	HP1050	3225J01126		
	Scanning Fluorescence Detector	HP1046A			
	AutoSampler	HP1050	LR47359C		
	Quaternary Pump	HP1050			
	Column Thermostat	HP1050			
	Analytical Software	Chemstation for HPLC Rev A.09.0E1206	Data Acquisition and Instrument Control		

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HPLC05	Degasser	Degasser G1322A	JP 7305035	To Be Determined	2007
	Binary Pump	Agilent 1100/G1312A	US70600653		
	Diode Array Detector	Agilent 1100/G1315B	DE11112376		
	AutoSampler	Agilent 1100/G1313A ALS	DE72003859		
	Analytical Software	Chemstation for HPLC Rev A 09.0S1206	Data Acquisition and Instrument Control		

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
METALS					
FIMS	CVAA-FIMS	Perkin Elmer	1258	Mercury	1997
	Computer Workstation	Soyata			
	Analytical Software	PE AA WinLab for Windows v.2.50			
4100ZL #1	AA	Perkin Elmer AA 4100ZL	6066	Furnace Metals	1991
	Computer Workstation	Gateway GP5-233			
	Analytical Software	PE AA WinLab for Windows v.2.50			
4100ZL #2	AA	Perkin Elmer AA 4100ZL	6245	Furnace Metals	1998
	Computer Workstation	Gateway GP6-400			
	Analytical Software	PE AA WinLab for Windows v.2.50			
Leeman Hydra AFG+	CVAF	Leeman Hydra AFG+	112-00067-1	Low Level Mercury (Method 1631)	2004
	Computer Workstation	Dell Dimension 2400	35180912881		
	Analytical Software	WinHg Runner 1.5 CT Rev0.286	-		
ICP #1	Instrument	Perkin Elmer Optima 3000XL	069N4060401	Metals - Low Level	1994
	Computer Workstation	Gateway GP5-233	10221500		
	Analytical Software	PE ICP WinLab v.1.42			
ICP #2	Instrument	Perkin Elmer Optima 3000XL	069N6062602	Metals - Low Level	1999
	Computer Workstation	Gateway GP5-233	9352702		
	Analytical Software	PE ICP WinLab v.1.42			
ICP #3	Instrument	Perkin Elmer 5300DV	077N5112802	Metals	2006
	Computer Workstation	Dell Optiplex GX620			
	Analytical Software	PE ICP WinLab v.3.1			
ICPMS	SCIEX ICP/MS	Perkin Elmer Elan 9000	PO370203	Metals	2002
	Autosampler	PE AS93Plus			
	Computer Workstation	Dell Optiplex GX150			
	Analytical Software	ELAN v.2.4			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HOTBLOCKS - METALS					
Hotblock #1		Environmental Express		Metals Digestions	2001
Hotblock #2		Environmental Express		Metals Digestions	2001
Hotblock #3		Environmental Express		Metals Digestions	2005
Hotblock #4		Environmental Express		Metals Digestions	2005
ModBlock A		CPI		Metals Digestions	2003
ModBlock B		CPI		Metals Digestions	2003

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GENERAL CHEMISTRY					
TOC#1	TOC Analyzer	OI Model 1010	J245710349	TOC - waters	2003
	Autosampler	OI Model 1051	B247751184		
	Computer Workstation	Gateway GP6-300	10709094		
	Analytical Software	OI WinTOC for 1010 v.01 Rev 225	-		
TOC#2	TOC Analyzer	Dohrman DC190	9507646	TOC - soils	2001
	Boat Sampler	Dohrman 183 s/s1	9507610		
Lachat 8000	Flow Injection System	Lachat 8000		Chloride, TKN, NO2/NO3, NH3, Alkalinity, Hardness, Phosphorus, Silica, Cr6+	1999
	Colorimeter	Lachat	A83000-1286		
	Pump	Lachat	A82000-525		
	Autosampler	Lachat	A81010-168		
	Computer Workstation	Gateway GP6-233	9767124		
	Analytical Software	Omnion FIA v.2	-		
Technicon #2	Flow Injection System	Technicon		Phenol	Pre-1982
	Colorimeter	Technicon	199-006701D		
	Pump	Technicon	PR0276		
	Chart Recorder	Technicon	82A3321		
	Autosampler	Technicon	681-Rest worn off		
	Module	Technicon	83035		
AquaKem	Instrument	AquaKem 200	A0419913	Nitrite, Ammonia, Phosphate, Chloride, Hexavalent Chromium, Cyanide	2005
	Computer Workstation	Sell SX280	3KSDF1J		
	Analytical Software	6.5.AQ1 rc4			

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC#1	Ion Chromatograph	Dionex Series 4000i		Anions	Pre-1982
	Basic Chromatography Module	Dionex	871602		
	Gradient Pump	Dionex	871608		
	Conductivity Detector	Dionex	871242		
	Controller Pump	Dionex	31528		
	Autosampler	Dionex	931526		
	Integrator	4270	037/24782		
	Computer Workstation	Gateway GP6-400	11809650		
	Analytical Software	Dionex PeakNet v.5.1	116-987-2806		
IC#3	Ion Chromatograph	Metrohm 861 Advanced Compact IC		Anions	2005
	Basic Chromatography Module	Metrohm	861-02114		
	Pump	Metrohm	62824100s20		
	Conductivity Detector	Metrohm	integrated		
	Autosampler	Metrohm	838-04105		
	Computer Workstation	Dell OptiPlex GX520	6VRC581		
	Analytical Software	IC NET 2.3 SR2	A.701.0016		
IC # 4	Ion Chromatograph	Dionex 500DX		ANIONS	2007
	Basic Chromatography Module	LC20-1	97110393		
	Gradient Pump	GP40-1	97110534		
	Conductivity Detector	ED40-1	97110074		
	Autosampler	AS40-1	97110671		
	Computer Workstation	Gateway 2000 GP6-266	10239250		
	Analytical Software	Peaknet 5.21	192-994-1564		

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC # 5	Ion Chromatograph	Dionex ICS-1000	7090145	Cr6+ ANIONS	2007
	Gradient Pump	GP40			
	Conductivity Detector	DS6	7081071		
	Autosampler	AS40	7090325		
	Computer Workstation	Dell Optiplex 745	1441DAA99		
	Analytical Software	Chromeleon 6.80	56276		
Adiabatic Calorimeter	Adiabatic Calorimeter	Parr 1241	3744	BTU, Combustion Prep	1997
Isoperibol Calorimeter	Isoperibol Calorimeter	Parr 6300	27187	BTU, Combustion Prep	2004
Autoclave	Autoclave	Amsco	none	Micro/TPO4	Pre-1970
Midi A	Midi Cyanide Distillation System	BSL Co	none	Cyanide/Phenol/ Sulfide Distillation	1997
Midi B	Midi Cyanide Distillation System	BSL Co	none	Cyanide/Phenol/ Sulfide Distillation	1997
Midi C	Midi Cyanide Distillation System			Cyanide/Phenol/ Sulfide Distillation	2004

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Bullwinkle	pH Meter	Orion SA520	2305	pH	1990
Rocky	pH Meter	Orion 720A	5012		1992
	pH Electrode	Orion 915600			
	Fluoride Electrode	Orion 9409			
	Reference Electrode	Orion 90-01-00			
Jenway	pH/Conductivity Meter	Jenway 4330	1344	pH/Conductivity	2000
SympHony	pH/Conductivity Meter	SympHony SB80PC	D00582	ph/Conductivity	2008
Turbidimeter	Turbidimeter	HF Scientific Micro 100	609246	Turbidity	2000
MR 21	Spectro-photometer	Milton Roy Spectronic 21	1225601	COD, MBAS, Cr6+, Ferrous Iron	1989
Buck IR	IR Spec / TPH Analyzer	Buck Scientific HC404	492	TPH	1994
DO Meter #1	Dissolved Oxygen Meter	YSI Model 54A	D8024621	DO, BOD	Pre-1990
DO Meter #2	Dissolved Oxygen Meter	YSI Model 57	A9016921	DO, BOD	Pre-1990
Open Cup	Open Cup Flashpoint Tester	Koehler Instru.Co. Model 420	none	Ignitability - solids	1989
Closed Cup	Closed Cup Flashpoint Tester	Boekel Model 152800	none	Ignitability - liquids	1993
Aquameter	Aquameter	Beckman KF4	none	% Water	1988
Density Meter	Density Meter	DE40	MPJ17625	Density	2007
Autotitrator	Robotic Titrosampler	Metrohm 855		Photoprocessing Samples	2007
	Pump Unit	Metrohm 772			
	Dosing Interface	Metrohm 846			
	Dosino	(7) Metrohm 800			
	Computer Workstation	Dell Optiplex 745			
	Analytical Software				

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
TKN Digestion Blocks	Technicon	Technicon block	206	TKN digest	<1997
		Omega CN 2110 Temperature Controller	-		
	AIM600	Al Scientific Pty Ltd AIM600	4726A12136	TKN digest	2007
Vacuum Pumps		Gast DOL-101-AA	787	1664	
		Gast DOA-P704-AA		1664	
		Gast 0522-U31-G18DX	687	General Filtration	
		Gast 0522-U31-G18DX	987	General Filtration	
Mettler Toledo PB602-1	**Top Loading Balances**	Mettler Toledo PB602-1	1118331281	Wetchem/Metals	
American Scientific PTL2500-1		American Scientific PTL2500-1	20466	Wetchem	
Denver S-400		Denver S-400	25232	Extractables	
Fisher		Fisher	7384	Metals	
Fisher Scientific 7303 OA		Fisher Scientific 7303 OA	13556	Volatiles	
Fisher Analytical Balance	**Analytical Balances**	Fisher Analytical Balance	8887	Volatiles	1990
Mettler AG204		Mettler Toledo Balance	120330501	Wetchem	2001
Mettler AE240		Mettler Analytical Balance	F96727	Wetchem	1996 used
Thermolyne 48000	**Muffle Furnace**	Thermolyne 48000		Volatile/Fixed Solids	

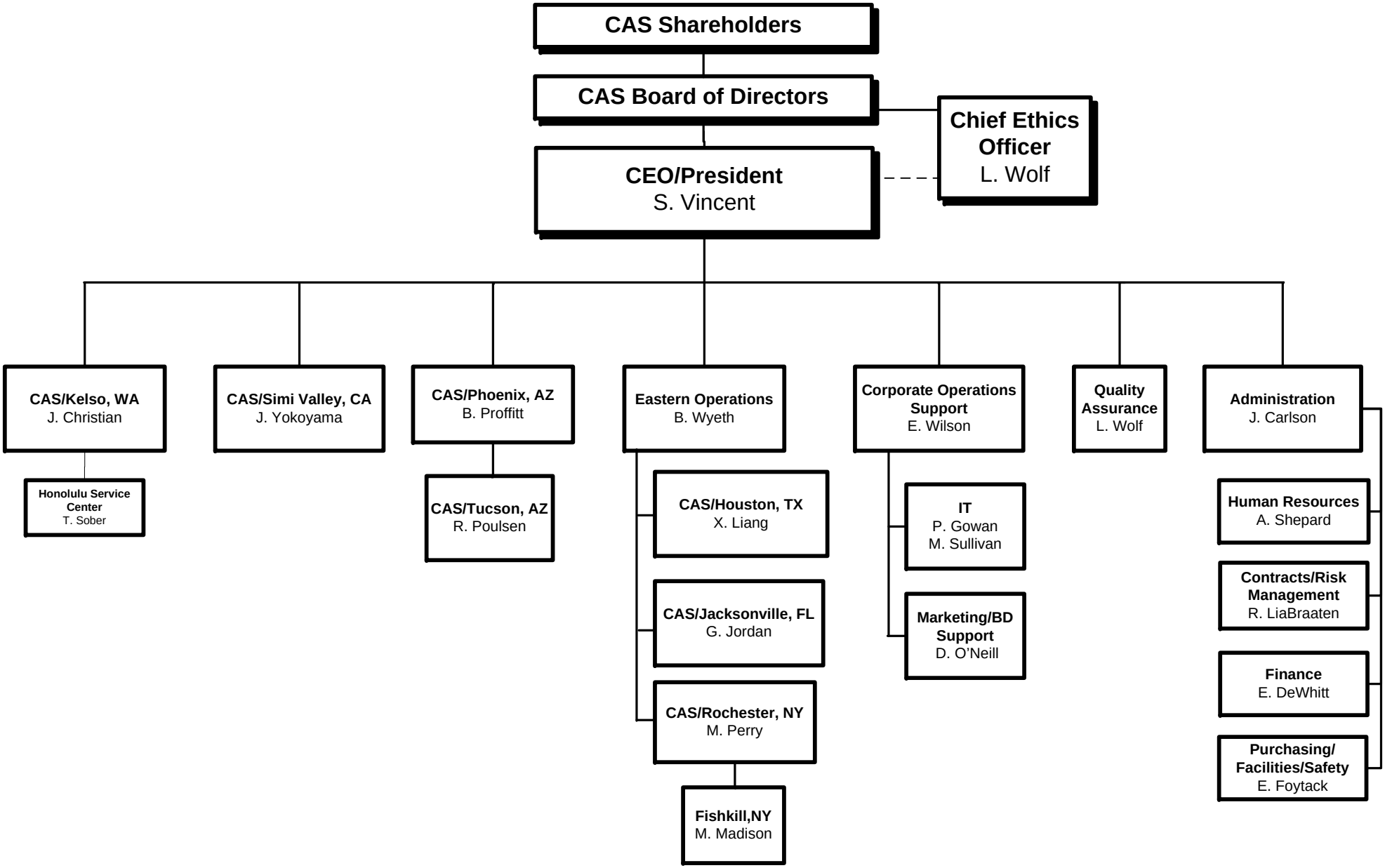
Note that the computers listed with the instruments are dedicated to that instrument for data aquisition, but the data files are saved to a lab-wide network and data may be accessed by any computer with the correct software - provided the user is authorized to do so.

APPENDIX B

ORGANIZATIONAL CHART and RESUMES OF KEY PERSONNEL

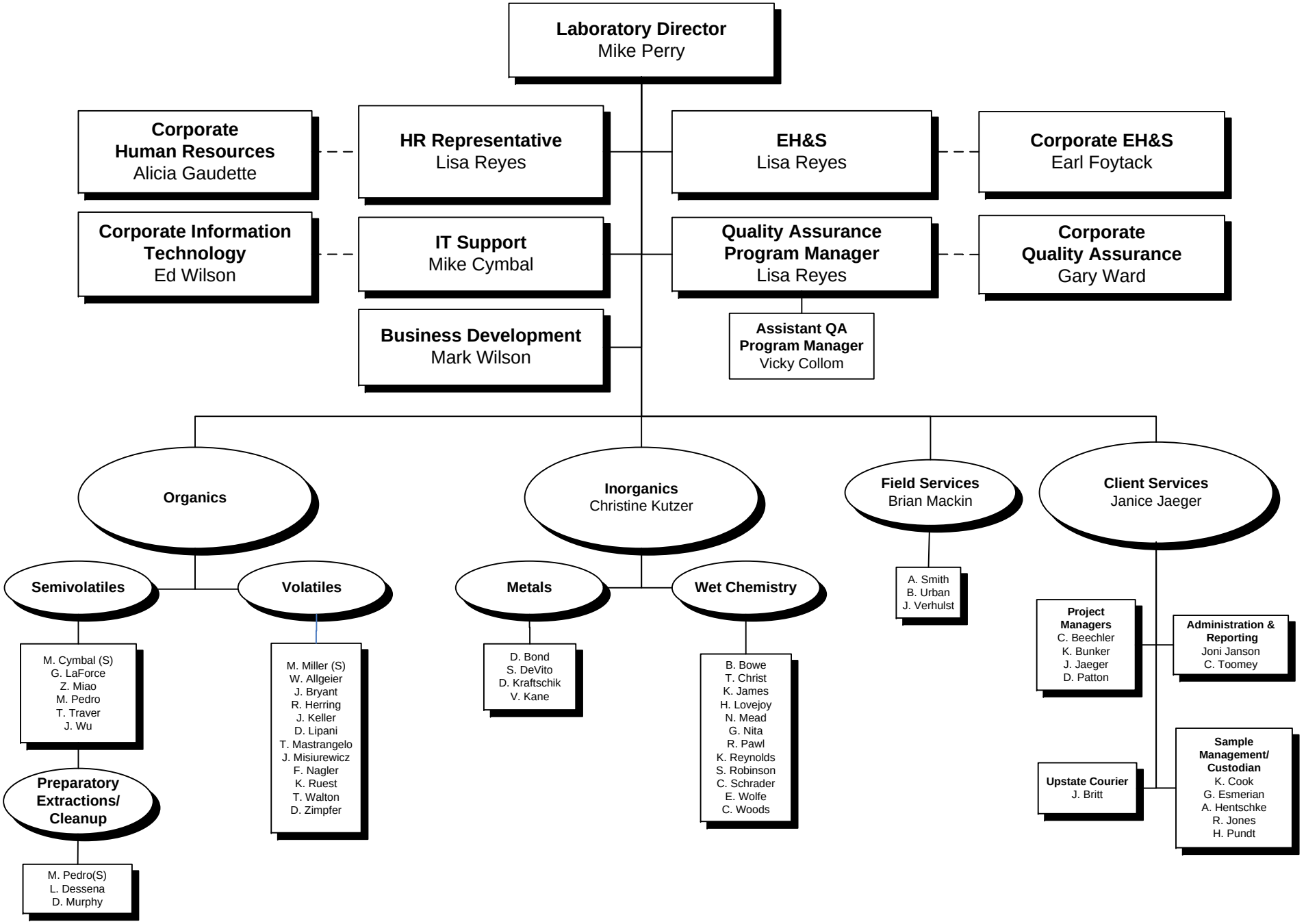
March 29, 2006

Columbia Analytical Services, Inc.
Laboratory Division Organization



Revised 09/03/08

Columbia Analytical Services, Inc.
Rochester, New York Laboratory Organization



Revised 7/7/08 do

MICHAEL K. PERRY

1996 TO PRESENT

Columbia Analytical Services, Inc., 1 Mustard St., Suite 250, Rochester, NY 14609 (585) 228-5380

Current Position Responsibilities

LABORATORY DIRECTOR – 1996 to Present

Primary responsibilities include management of all laboratory departments, scheduling, productivity, reporting and evaluation of analytical methodologies, project planning and Quality Assurance/Quality Control protocols. In addition, other responsibilities include direct responsibility for contracts and consultants relating to the EPA SITE program, ACOE remediation program and the technical interface for the New York State ASP CLP program and other large national based clients.

Documentation of Demonstration of Capabilities is available for review.

Experience

Project Chemist, *General Testing Corporation, Rochester, New York,* 1995-1996. In addition to the duties of Laboratory Director listed below, responsibilities expanded to include the supervision of four teams of Project Chemists. Production management was shifted to the Laboratory Supervisors in order to increase client contact. Directly responsible for contracts and consultants relating to the EPA SITE program, ACOE remediation program and the New York State ASP CLP program.

Laboratory Director, *General Testing Corporation, Rochester, New York,* 1985-1995. Primary responsibilities included management of all laboratory departments, scheduling, productivity, reporting and evaluation of analytical methodologies and Quality Assurance/Quality Control protocols.

Instrument Manager, *General Testing Corporation, Rochester, New York,* 1979-1985. Responsibilities included operation and maintenance of all laboratory instruments and supervision of personnel associated with the instrumentation laboratory. Analyses included metals, volatile organics, pesticides/PCBs, and semi-volatile organics.

Senior Quality Assurance Technician, *Coca-Cola Corporation, Atlanta, Georgia*, 1976-1979. Responsible for analysis of raw materials and finished product using both wet chemistry and instrumentation techniques.

Laboratory Technician, *Penwalt Pharmaceutical Company, Rochester, New York,* 1975. Worked in the Quality Control Department.

Education

Coursework toward MS, Chemistry, *Rochester Institute of Technology, Rochester, New York,* 1983-1986
GC/MS, *ACS Short Course,* 1986
Effective Management of Chemical Analysis Laboratories, *ACS Short Course,* 1985
BS, Chemistry, *Georgia State University, Atlanta, Georgia,* 1979
AAS, Chemistry, *State University of New York at Alfred, Alfred, New York,* 1975

Affiliations

American Chemical Society

LISA M. REYES

1997 TO PRESENT

Columbia Analytical Services, Inc., 1 Mustard St., Suite 250, Rochester, NY 14609 (585) 2285380

Current Position Responsibilities

QUALITY ASSURANCE/QUALITY CONTROL PROGRAM MANAGER – 1997 to Present

Responsible for the overall coordination of the laboratory QA program and for ensuring that established quality objectives are met. Responsible for Quality Assurance functions including the Quality Assurance Manual, certifications, documenting standard operating procedures, and maintaining performance evaluation records. Oversees balance calibration and sample storage temperature control. Maintains certifications/accreditations for regulatory agencies and client certifications or approval programs. Acts as primary point of contact during laboratory audits. Provides audit responses and initiates any changes in procedures resulting from an audit. Coordinates the analysis of performance evaluation samples required for certification/accreditation programs. Reports and reviews results for these analyses. Conducts internal audits and makes recommendations for corrective action.

Provides technical assistance to laboratory staff on QA/QC issues, project feasibility, and methods interpretation/development.

Documentation of Demonstration of Capabilities is available for review.

Experience

Environmental Chemist, *TreaTek-CRA Company/Conestoga-Rovers & Associates, Niagara Falls, New York*, 1992-1997. Data quality, assessments and validations of ASP, CLP, and SW-846 organic and inorganic analytical data. Liaison with analytical contract laboratories, CRA field personnel, and state and federal agencies. Prepared QAPPs, laboratory bidding documents, and contracts. Also responsible for performance of laboratory audits

Manager of Quality Management Office, *Huntingdon Analytical Services, Middleport, New York*, 1989-1992. Manager of QA for Environmental, Agrochemical, Asbestos, and Engineering Soil laboratories. Responsible for in-house QA/QC programs, inspections, and instrument maintenance. Also responsible for employee safety and hazardous waste training, as well as manifesting hazardous waste. Routinely performed inorganic analyses, and reviewed analytical data, reports, and CLP packages.

Research Assistant, *Research Foundation, State University of New York College at Brockport, Brockport, New York*, 1986-1989. Performed routine sampling of surface water and lakes. Also did inorganic analyses on water and soil matrices. Assisted in graduate projects dealing with fish, plankton, water chemistry, and crayfish.

Education

CLP Inorganic Data Validation, *US EPA Region II, Westchester Community, Westchester, New York,* 1993.
CLP Organic Data Validation, *US EPA Region II, Westchester Community, Westchester, New York,* 1992.
BS, Biology, *State University of New York at Brockport, Brockport, New York,* 1988

Affiliations

American Chemical Society

MARK WILSON

1996 TO PRESENT

Columbia Analytical Services, Inc., 1 Mustard St., Suite 250, Rochester, NY 14609 (585) 228-5380

Current Position

Responsibilities

DIRECTOR OF BUSINESS DEVELOPMENT II – 2004 to Present

Responsible for sales maintenance for the Rochester laboratory territory including coordination of marketing and sales with national sales team.

Documentation of Demonstration of Capabilities is available for review.

Experience

Client Services Manager*, Columbia Analytical Services, Rochester, NY*, 1996-2004. Responsible for supervision of Project Chemists, sales staff, Sample Management Office (SMO) and reporting departments. Responsible for project management and client interface regarding analytical services.

Laboratory Manager, *Columbia Analytical Services, Rochester, New York*, 1996. Responsible for supervision of laboratory staff, scheduling of projects, evaluations of analytical QC procedures, and review of all analytical data.

Laboratory Manager, *General Testing Corporation, Rochester, New York,* 1992-1996. Responsibilities were primarily same as above.

Assistant Laboratory Director, *General Testing Corporation, Rochester, New York,* 1988-1992. Was responsible for assisting lab director with supervision of lab staff, scheduling of projects, evaluations of analytical and QC procedures, and review of all analytical data.

Organics Department Manager, *General Testing Corporation, Rochester, New York,* 1986-1996. Responsible for supervising all organics analyses including GC/MS, GC volatile organics, and GC extractables, and coordinating production and method development.

Organic Extractables Manager, *General Testing Corporation, Rochester, New York*, 1985-1992. Was responsible for GC operation and analysis, GC maintenance, trouble shooting, development, and GC/MS operation and start up.

Staff Technician II, *Medical Center University of Kentucky, Lexington, Kentucky,* 1979-1985. Was responsible for GC and AA analysis on biological fluids, drug screening and monitoring, heavy metals analysis, thin-layer chromatography, HPLC, and water testing.

Education

BS, Medical Technology with 32 hours of Chemistry, *State University of New York at Buffalo, Buffalo, New York,* 1978.

JANICE M. JAEGER

1996 TO PRESENT

Columbia Analytical Services, Inc., 1 Mustard St., Suite 250, Rochester, NY 14609 (585) 288-5380

Current Position

Responsibilities

CLIENT SERVICES MANAGER I, 2004-Present

Responsible for the supervision of Project Managers, Sample Management Office (SMO) and Reporting Departments. Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress if their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base.

Documentation of Demonstration of Capabilities is available for review.

Experience

Project Manager III, *Columbia Analytical Services, Rochester, NY*. 1996-2004. Assist clients to determine what analyses are required. Responsibilities primarily as above without the supervisory role.

Customer Service Representative/Sample Receiving, *General Testing Corporation, Rochester, New York,* 1989-1996. Primary responsibilities included client services as listed above. Also responsible for sample receipt, log in and distribution as well as bottle preparation.

Surgical Assistant, *Penfield Veterinary Hospital Rochester, New York,* 1984-1989. Primary responsibilities included preparation of instruments, surgical area, and animal for surgery. Also responsible for monitoring the animal before and after surgery.

Education

BA, Pre-Veterinary Medicine and Pre-Professional Zoology (double Major), *Ohio Wesleyan University, Delaware, Ohio,* 1983.

CHRISTINE M. KUTZER

1996 TO PRESENT

Columbia Analytical Services, Inc., 1 Mustard St., Suite 250, Rochester, NY 14609 (585) 288-5380

Current Position

TECHNICAL MANAGER II, INORGANICS LABORATORY – 2004 to Present

Responsibilities

Plans and manages all activities in the Inorganics Department, including Metals and General Chemistry. Responsible for coordinating the workload and scheduling employees' daily activities. Assist in the operation, troubleshooting, and maintenance of instrumentation. Responsible for scheduling samples. Accountable for analytical data entry, analytical data approval and High Level metals package generation through MARRS.

Documentation of Demonstration of Capabilities is available for review.

Experience

Technical Manager II, Metals and Organics Prep Laboratories, *Columbia Analytical Services, Inc., Rochester, New York,* 2002-2004. Duties as above for Metals Department. Responsible for coordinating the workload and scheduling employees' daily activities and troubleshooting in the organics preparation laboratory.

Technical Manager I, Metals Laboratory, *Columbia Analytical Services, Inc., Rochester, New York,* 1996-2002. Duties as above for Metals Department.

Analyst III, *Columbia Analytical Services, Rochester, New York*, 1996. Responsible for instrument troubleshooting and maintenance, digestion of samples, and TCLP extractions. Also responsible for data entry, approval, and package review.

Chemist, *General Testing Corporation, Rochester, New York,* 1992-1996. Duties were as listed above.

Education

BS, Chemistry, *St. Bonaventure University, Olean, New York,* 1992

MICHAEL W. CYMBAL

1996 TO PRESENT

Columbia Analytical Services, Inc., 1 Mustard St., Suite 250, Rochester, NY 14609 (585) 288-5380

Current Position

TECHNICAL MANAGER I – Information Technology 1998 to Present

- Extractables Department 2004 to Present

Responsibilities

Responsible for computer systems (Novel Lan, Starlims) and instrument analysis of software. Also responsible for client spreadsheets and disk deliverables, computer maintenance and upgrades.

Responsible for the oversight of the extractables department including extactions and instrumental analysis (HPLC, GC, and GC/MS).

Documentation of Demonstration of Capabilities is available for review.

Experience

Systems Analyst III, *Columbia Analytical Services, Inc., Rochester, New York,* 1997-1998. Duties primarily as above.

Systems Analyst I, *Columbia Analytical Services, Inc., Rochester, New York,* 1996-1997. Duties primarily as above.

Computer Administration, *General Testing Corporation, Rochester, New York,* 1995-1996. Oversaw computer systems (Novel Lan, StarLIMS, Seven Reporting Systems) and created client spreadsheets and disk deliverables.

Analyst, *General Testing Corporation, Rochester, New York,* 1990-1995. Responsible for Organic Analyses (Volatile and Semi-Volatile Pesticides) for GC and GC/MS. Also responsible for Instrument Maintenance and Sample Preparation.

Education

BS, Chemistry, *Robert's Wesleyan College, Rochester, New York,* 1990.

MATTHEW "MATT" M. MILLER

1996 TO PRESENT

Columbia Analytical Services, Inc., 1 Mustard St., Ste. 250, Rochester, NY 14609 585.288.5380

Current Position	**TECHNICAL MANAGER I, VOALATILES LABORATORY** – 1999 to Present
Responsibilities	Responsible for the daily operations of the GC and GC/MS laboratories, including the scheduling of department analyses, instrument calibration, and troubleshooting/maintenance activities. Accountable for personnel training, data approval, quality program support. **Documentation of Demonstration of Capabilities is available for review.**
Experience	**Scientist II, GC/VOA Laboratory,** *Columbia Analytical Services, Rochester, New York,* 1996-1999. Responsible for scheduling analyses, training new analysts, supervising analysts' work, reviewing and validating data, and performing various analyses. I was also responsible for maintaining a QA/QC database for departmental parameters and writing/updating departmental SOP's. Also responsible for VPH method development and putting together instrumentation for VPH and for PRECEPTII evaluation. **Analyst II, Wet Chemistry Laboratory,** *Columbia Analytical Services, Rochester, New York*, 1996. Duties as listed above, except for VPH method development and instrumentation. **GC/VOA Analyst**, *General Testing Corporation, Rochester, New York,* 1994-1996. Responsibilities included analyzing soils and waters on a GC by methods 8010/8020, 601/602, and 8021. Was also responsible for TOC waters and TOX waters, soils, and oils. **Metals Analyst,** *General Testing Corporation, Rochester, New York*, 1993-1994. Was responsible for digestion of waters and soils for analysis by GFAA, ICP, and Flame AA. Analysis of digested samples by above mentioned methods. Also responsible for performing TCLP extractions and Hg analysis. **Wet Chemistry Analyst,** *General Testing Corporation, Rochester, New York,* 1991-1993. As microbiology manager, I was responsible for scheduling analyses, and for analyzing waters and sludge for total and fecal coliform, and SPC by MF, MPN and Colilert methods. I was also responsible for tracking and documenting QA/QC for all micro parameters. In wet chemistry, was responsible for analyzing soils and waters for wet chemistry parameters.
Education	**BS, Aquatic Biology,** *State University of New York at Brockport, Brockport, New York,* 1991. **AAS, Science/Math Curriculum,** *Jefferson Community College, Watertown, New York,* 1989.

APPENDIX C

DATA QUALITY CAPABILITIES

March 29, 2006

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
504.1	1,2-DIBROMOETHANE	WATER	0.06		UG/L	0.0060	30	60-140	50-150
504.1	1,2-DIBROMO-3-CHLOROPROPANE	WATER	0.06		UG/L	0.0040	30	60-140	50-150
524.2	1,1,1,2-TETRACHLOROETHANE	WATER	0.50		UG/L	0.12	20	70-130	70-130
524.2	1,1,1-TRICHLOROETHANE	WATER	0.50		UG/L	0.082	20	70-130	70-130
524.2	1,1,2,2-TETRACHLOROETHANE	WATER	0.50		UG/L	0.078	20	70-130	70-130
524.2	1,1,2-TRICHLOROETHANE	WATER	0.50		UG/L	0.12	20	70-130	70-130
524.2	1,1-DICHLOROETHANE	WATER	0.50		UG/L	0.11	20	70-130	70-130
524.2	1,1-DICHLOROETHENE	WATER	0.50		UG/L	0.094	20	70-130	70-130
524.2	1,1-DICHLOROPROPENE	WATER	0.50		UG/L	0.15	20	70-130	70-130
524.2	1,2,3-TRICHLOROBENZENE	WATER	0.50		UG/L	0.15	20	70-130	70-130
524.2	1,2,3-TRICHLOROPROPANE	WATER	0.50		UG/L	0.15	20	70-130	70-130
524.2	1,2,4-TRICHLOROBENZENE	WATER	0.50		UG/L	0.12	20	70-130	70-130
524.2	1,2,4-TRIMETHYLBENZENE	WATER	0.50		UG/L	0.13	20	70-130	70-130
524.2	1,2-DIBROMO-3-CHLOROPROPANE	WATER	0.50		UG/L	0.29	20	70-130	70-130
524.2	1,2-DIBROMOETHANE	WATER	0.50		UG/L	0.11	20	70-130	70-130
524.2	1,2-DICHLOROBENZENE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	1,2-DICHLOROETHANE	WATER	0.50		UG/L	0.13	20	70-130	70-130
524.2	1,2-DICHLOROPROPANE	WATER	0.50		UG/L	0.097	20	70-130	70-130
524.2	1,3,5-TRIMETHYLBENZENE	WATER	0.50		UG/L	0.12	20	70-130	70-130
524.2	1,3-DICHLOROBENZENE	WATER	0.50		UG/L	0.13	20	70-130	70-130
524.2	1,3-DICHLOROPROPANE	WATER	0.50		UG/L	0.12	20	70-130	70-130
524.2	1,4-DICHLOROBENZENE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	2,2-DICHLOROPROPANE	WATER	0.50		UG/L	0.075	20	70-130	70-130
524.2	2-CHLOROTOLUENE	WATER	0.50		UG/L	0.13	20	70-130	70-130
524.2	4-CHLOROTOLUENE	WATER	0.50		UG/L	0.11	20	70-130	70-130
524.2	BENZENE	WATER	0.50		UG/L	0.099	20	70-130	70-130
524.2	BROMOBENZENE	WATER	0.50		UG/L	0.13	20	70-130	70-130
524.2	BROMOCHLOROMETHANE	WATER	0.50		UG/L	0.15	20	70-130	70-130
524.2	BROMODICHLOROMETHANE	WATER	0.50		UG/L	0.085	20	70-130	70-130
524.2	BROMOFORM	WATER	0.50		UG/L	0.12	20	70-130	70-130
524.2	BROMOMETHANE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	CARBON TETRACHLORIDE	WATER	0.50		UG/L	0.19	20	70-130	70-130
524.2	CHLOROBENZENE	WATER	0.50		UG/L	0.13	20	70-130	70-130
524.2	CHLOROETHANE	WATER	0.50		UG/L	0.17	20	70-130	70-130
524.2	CHLOROFORM	WATER	0.50		UG/L	0.10	20	70-130	70-130
524.2	CHLOROMETHANE	WATER	0.50		UG/L	0.22	20	70-130	70-130
524.2	CIS-1,2-DICHLOROETHENE	WATER	0.50		UG/L	0.081	20	70-130	70-130
524.2	CIS-1,3-DICHLOROPROPENE	WATER	0.50		UG/L	0.077	20	70-130	70-130
524.2	DIBROMOCHLOROMETHANE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	DIBROMOMETHANE	WATER	0.50		UG/L	0.11	20	70-130	70-130
524.2	DICHLORODIFLUOROMETHANE	WATER	0.50		UG/L	0.13	20	70-130	70-130
524.2	ETHYLBENZENE	WATER	0.50		UG/L	0.089	20	70-130	70-130
524.2	HEXACHLOROBUTADIENE	WATER	0.50		UG/L	0.076	20	70-130	70-130
524.2	ISOPROPYLBENZENE	WATER	0.50		UG/L	0.16	20	70-130	70-130
524.2	M+P-XYLENE	WATER	1.0		UG/L	0.29	20	70-130	70-130
524.2	METHYLENE CHLORIDE	WATER	0.50		UG/L	0.15	20	70-130	70-130
524.2	NAPHTHALENE	WATER	0.50		UG/L	0.085	20	70-130	70-130

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
524.2	N-BUTYLBENZENE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	N-PROPYLBENZENE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	O-XYLENE	WATER	0.50		UG/L	0.16	20	70-130	70-130
524.2	P-ISOPROPYLTOLUENE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	SEC-BUTYLBENZENE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	STYRENE	WATER	0.50		UG/L	0.11	20	70-130	70-130
524.2	TERT-BUTYLBENZENE	WATER	0.50		UG/L	0.16	20	70-130	70-130
524.2	TETRACHLOROETHENE	WATER	0.50		UG/L	0.11	20	70-130	70-130
524.2	TOLUENE	WATER	0.50		UG/L	0.085	20	70-130	70-130
524.2	TRANS-1,2-DICHLOROETHENE	WATER	0.50		UG/L	0.11	20	70-130	70-130
524.2	TRANS-1,3-DICHLOROPROPENE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	TRICHLOROETHENE	WATER	0.50		UG/L	0.16	20	70-130	70-130
524.2	TRICHLOROFLUOROMETHANE	WATER	0.50		UG/L	0.14	20	70-130	70-130
524.2	VINYL CHLORIDE	WATER	0.50		UG/L	0.20	20	70-130	70-130
524.2	BROMOFLUOROBENZENE -SURR	WATER	NA		UG/L	NA	NA	70-130	70-130
524.2	1,2-DICHLOROBENZENE-D4 -SURR	WATER	NA		UG/L	NA	NA	70-130	70-130
524.2 ADDITIONAL COMPOUNDS BY REQUEST									
	TERT-BUTYL ALCOHOL	WATER	20		UG/L	3.7	20	70-130	70-130
	METHYL-TERT-BUTYL-ETHER	WATER	0.50		UG/L	0.097	20	70-130	70-130
	2-BUTANONE (MEK)	WATER	5.0		UG/L	1.7	20	70-130	70-130
	2-HEXANONE	WATER	5.0		UG/L	1.8	20	70-130	70-130
	4-METHYL-2-PENTANONE (MIBK)	WATER	5.0		UG/L	1.6	20	70-130	70-130
	ACETONE	WATER	5.0		UG/L	1.9	20	70-130	70-130

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
601	BROMODICHLOROMETHANE	WATER	1.0		UG/L	0.34	30	42-172	42-172
601	BROMOFORM	WATER	1.0		UG/L	0.18	30	13-159	13-159
601	BROMOMETHANE	WATER	1.0		UG/L	0.13	30	d-144	d-144
601	CARBON TETRACHLORIDE	WATER	1.0		UG/L	0.41	30	43-143	43-143
601	CHLOROBENZENE	WATER	1.0		UG/L	0.21	30	38-150	38-150
601	CHLOROETHANE	WATER	1.0		UG/L	0.47	30	46-137	46-137
601	2-CHLOROETHYLVINYL ETHER	WATER	1.0		UG/L	0.26	30	14-186	14-186
601	CHLOROFORM	WATER	1.0		UG/L	0.33	30	49-133	49-133
601	CHLOROMETHANE	WATER	1.0		UG/L	0.38	30	42-172	42-172
601	DIBROMOCHLOROMETHANE	WATER	1.0		UG/L	0.25	30	13-159	13-159
601	DICHLORODIFLUOROMETHANE	WATER	1.0		UG/L	0.31	30	70-130	50-150
601	1,2-DICHLOROBENZENE	WATER	1.0		UG/L	0.12	30	d-144	d-144
601	1,3-DICHLOROBENZENE	WATER	1.0		UG/L	0.15	30	43-143	43-143
601	1,4-DICHLOROBENZENE	WATER	1.0		UG/L	0.15	30	38-150	38-150
601	1,1-DICHLOROETHANE	WATER	1.0		UG/L	0.32	30	46-137	46-137
601	1,2-DICHLOROETHANE	WATER	1.0		UG/L	0.30	30	14-186	14-186
601	1,1-DICHLOROETHENE	WATER	1.0		UG/L	0.32	30	49-133	49-133
601	TRANS-1,2-DICHLOROETHENE	WATER	1.0		UG/L	0.36	30	d-193	d-193
601	1,2-DICHLOROPROPANE	WATER	1.0		UG/L	0.29	30	d-208	d-208
601	CIS-1,3-DICHLOROPROPENE	WATER	1.0		UG/L	0.27	30	7-187	7-187
601	TRANS-1,3-DICHLOROPROPENE	WATER	1.0		UG/L	0.19	30	42-143	42-143
601	METHYLENE CHLORIDE	WATER	1.0		UG/L	0.39	30	47-132	47-132
601	1,1,2,2-TETRACHLOROETHANE	WATER	1.0		UG/L	0.25	30	51-147	51-147
601	TETRACHLOROETHENE	WATER	1.0		UG/L	0.31	30	28-167	28-167
601	1,1,1-TRICHLOROETHANE	WATER	1.0		UG/L	0.50	30	38-155	38-155
601	1,1,2-TRICHLOROETHANE	WATER	1.0		UG/L	0.28	30	39-136	39-136
601	TRICHLOROETHENE	WATER	1.0		UG/L	0.45	30	35-146	35-146
601	TRICHLOROFLUOROMETHANE	WATER	1.0		UG/L	0.42	30	21-156	21-156
601	VINYL CHLORIDE	WATER	1.0		UG/L	0.40	30	28-163	28-163
601	BROMOCHLOROMETHANE -SURR	WATER	NA		UG/L	NA	NA	60-117	60-117
601	1,2,3 -TRICHLOROPROPANE -SURR	WATER	NA		UG/L	NA	NA	70-124	70-124
601	CHLOROFLUOROBENZENE -SURR	WATER	NA		UG/L	NA	NA	61-120	61-120
602	BENZENE	WATER	1.0		UG/L	0.20	30	39-150	39-150
602	CHLOROBENZENE	WATER	1.0		UG/L	0.21	30	55-135	55-135
602	1,3-DICHLOROBENZENE (M)	WATER	1.0		UG/L	0.36	30	50-141	50-141
602	1,2-DICHLOROBENZENE (O)	WATER	1.0		UG/L	0.15	30	37-154	37-154
602	1,4-DICHLOROBENZENE (P)	WATER	1.0		UG/L	0.39	30	42-143	42-143
602	ETHYLBENZENE	WATER	1.0		UG/L	0.23	30	32-160	32-160
602	TOLUENE	WATER	1.0		UG/L	0.18	30	46-148	46-148
602	M+P-XYLENE	WATER	2.0		UG/L	0.36	30	70-130	50-150
602	O-XYLENE	WATER	1.0		UG/L	0.17	30	70-130	50-150
602	CHLOROFLUOROBENZENE (PID) -SURR	WATER	NA		UG/L	NA	NA	73-110	73-110
601/602 ADDITIONAL COMPOUNDS BY REQUEST									
	CIS-1,2-DICHLOROETHENE	WATER	1.0		UG/L	0.30	30	24-191	24-191
	FREON 113	WATER	1.0		UG/L	0.36	30	70-130	50-150
	METHYL-TERT-BUTYL ETHER (MTBE)	WATER	1.0		UG/L	0.25	30	70-130	50-150
	TOTAL XYLENES	WATER	3.0		UG/L	0.52	30	70-130	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
624 PPL	ACROLEIN	WATER	10		UG/L	4.0	30	36-124	36-124
624 PPL	ACRYLONITRILE	WATER	10		UG/L	1.2	30	71-111	71-111
624 PPL	BENZENE	WATER	1.0		UG/L	0.18	30	37-151	37-151
624 PPL	BROMODICHLOROMETHANE	WATER	1.0		UG/L	0.24	30	35-155	35-155
624 PPL	BROMOFORM	WATER	1.0		UG/L	0.57	30	45-169	45-169
624 PPL	BROMOMETHANE	WATER	1.0		UG/L	0.75	30	d-242	d-242
624 PPL	CARBON TETRACHLORIDE	WATER	1.0		UG/L	0.44	30	70-140	70-140
624 PPL	CHLOROBENZENE	WATER	1.0		UG/L	0.20	30	37-160	37-160
624 PPL	CHLOROETHANE	WATER	1.0		UG/L	0.33	30	14-230	14-230
624 PPL	2-CHLOROETHYLVINYL ETHER	WATER	10		UG/L	0.31	30	d-305	d-305
624 PPL	CHLOROFORM	WATER	1.0		UG/L	0.17	30	51-138	51-138
624 PPL	CHLOROMETHANE	WATER	1.0		UG/L	0.33	30	d-273	d-273
624 PPL	DIBROMOCHLOROMETHANE	WATER	1.0		UG/L	0.26	30	53-149	53-149
624 PPL	1,1-DICHLOROETHANE	WATER	1.0		UG/L	0.30	30	59-155	59-155
624 PPL	1,2-DICHLOROETHANE	WATER	1.0		UG/L	0.14	30	49-155	49-155
624 PPL	1,1-DICHLOROETHENE	WATER	1.0		UG/L	0.31	30	d-234	d-234
624 PPL	TRANS-1,2-DICHLOROETHENE	WATER	1.0		UG/L	0.22	30	54-156	54-156
624 PPL	1,2-DICHLOROPROPANE	WATER	1.0		UG/L	0.25	30	d-210	d-210
624 PPL	CIS-1,3-DICHLOROPROPENE	WATER	1.0		UG/L	0.36	30	d-227	d-227
624 PPL	TRANS-1,3-DICHLOROPROPENE	WATER	1.0		UG/L	0.23	30	17-183	17-183
624 PPL	ETHYLBENZENE	WATER	1.0		UG/L	0.17	30	37-162	37-162
624 PPL	METHYLENE CHLORIDE	WATER	1.0		UG/L	0.20	30	d-221	d-221
624 PPL	1,1,2,2-TETRACHLOROETHANE	WATER	1.0		UG/L	0.27	30	46-157	46-157
624 PPL	TETRACHLOROETHENE	WATER	1.0		UG/L	0.27	30	64-148	64-148
624 PPL	TOLUENE	WATER	1.0		UG/L	0.11	30	47-150	47-150
624 PPL	1,1,1-TRICHLOROETHANE	WATER	1.0		UG/L	0.13	30	52-162	52-162
624 PPL	1,1,2-TRICHLOROETHANE	WATER	1.0		UG/L	0.47	30	52-150	52-150
624 PPL	TRICHLOROETHENE	WATER	1.0		UG/L	0.26	30	71-157	71-157
624 PPL	VINYL CHLORIDE	WATER	1.0		UG/L	0.18	30	d-251	d-251
624	4-BROMOFLUOROBENZENE -SURR	WATER	NA		UG/L	NA	NA	77-117	77-117
624	DIBROMOFLUOROMETHANE-SURR	WATER	NA		UG/L	NA	NA	86-126	86-126
624	1,2-DICHLOROETHANE-D4 -SURR	WATER	NA		UG/L	NA	NA	85-122	85-122
624	TOLUENE-D8 -SURR	WATER	NA		UG/L	NA	NA	85-115	85-115

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
624 ADDITIONAL COMPOUNDS BY REQUEST									
624	1,1,1,2-TETRACHLOROETHANE	WATER	1.0		UG/L	0.37	30	70-130	50-150
624	1,2,3-TRICHLOROPROPANE	WATER	5.0		UG/L	0.10	30	70-130	50-150
624	1,2-DIBROMO-3-CHLOROPROPANE	WATER	1.0		UG/L	0.17	30	70-130	50-150
624	1,2-DIBROMOETHANE	WATER	1.0		UG/L	0.27	30	70-130	50-150
624	1,2-DICHLOROBENZENE	WATER	1.0		UG/L	0.31	30	18-190	18-190
624	1,3-DICHLOROBENZENE	WATER	1.0		UG/L	0.35	30	59-156	59-156
624	1,4-DICHLOROBENZENE	WATER	1.0		UG/L	0.20	30	18-190	18-190
624	1-BROMO-2-CHLOROETHANE	WATER	10		UG/L	1.9	30	70-130	50-150
624	2-BUTANONE (MEK)	WATER	10		UG/L	0.75	30	70-130	50-150
624	2-HEXANONE	WATER	10		UG/L	0.73	30	70-130	50-150
624	4-CHLOROBENZOFLUORIDE	WATER	10		UG/L	1.80	30	50-150	50-150
624	4-METHYL-2-PENTANONE (MIBK)	WATER	10		UG/L	0.54	30	70-130	50-150
624	ACETONE	WATER	10		UG/L	1.3	30	50-150	50-150
624	BROMOCHLOROMETHANE	WATER	1.0		UG/L	0.082	30	70-130	50-150
624	CARBON DISULFIDE	WATER	10		UG/L	0.99	30	70-130	50-150
624	CIS-1,2-DICHLOROETHENE	WATER	1.0		UG/L	0.33	30	70-130	50-150
624	DIBROMOMETHANE	WATER	1.0		UG/L	0.10	30	70-130	50-150
624	DICHLORODIFLUOROMETHANE	WATER	1.0		UG/L	0.29	30	70-130	50-150
624	IODOMETHANE	WATER	5.0		UG/L	1.2	30	70-130	50-150
624	ISOBUTYL ALCOHOL	WATER	100		UG/L	18	30	70-130	50-150
624	M+P XYLENE	WATER	2.0		UG/L	0.25	30	70-130	50-150
624	METHYL-TERT-BUTYL ETHER	WATER	1.0		UG/L	0.17	30	70-130	50-150
624	NAPHTHALENE	WATER	5.0		UG/L	0.14	30	70-130	50-150
624	O-XYLENE	WATER	1.0		UG/L	0.27	30	70-130	50-150
624	STYRENE	WATER	1.0		UG/L	0.33	30	70-130	50-150
624	TERT-BUTYL ALCOHOL	WATER	100		UG/L	3.9	30	50-150	50-150
624	TETRAHYDROFURAN	WATER	10		UG/L	1.1	30	50-150	50-150
624	TRANS-1,4-DICHLORO-2-BUTENE	WATER	1.0		UG/L	0.17	30	70-130	50-150
624	TRICHLOROFLUOROMETHANE	WATER	1.0		UG/L	0.42	30	17-181	17-181
624	TRICHLOROTRIFLUOROETHANE	WATER	1.0		UG/L	0.35	30	70-130	50-150
624	VINYL ACETATE	WATER	5.0		UG/L	0.45	30	50-150	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
625 PPL	1,2,4-TRICHLOROBENZENE	WATER	5.0		UG/L	0.65	30	44-142	44-142
625 PPL	1,2-DICHLOROBENZENE	WATER	5.0		UG/L	0.67	30	32-129	32-129
625 PPL	1,2-DIPHENYLHYDRAZINE	WATER	5.0		UG/L	0.48	30	59-113	59-113
625 PPL	1,3-DICHLOROBENZENE	WATER	5.0		UG/L	0.50	30	d-172	d-172
625 PPL	1,4-DICHLOROBENZENE	WATER	5.0		UG/L	0.58	30	20-124	20-124
625 PPL	2,2-OXYBIS(1-CHLOROPROPANE)	WATER	5.0		UG/L	0.78	30	36-166	36-166
625 PPL	2,4,6-TRICHLOROPHENOL	WATER	5.0		UG/L	0.59	30	37-144	37-144
625 PPL	2,4-DICHLOROPHENOL	WATER	5.0		UG/L	0.37	30	39-135	39-135
625 PPL	2,4-DIMETHYLPHENOL	WATER	5.0		UG/L	1.8	30	39-135	39-135
625 PPL	2,4-DINITROPHENOL	WATER	50		UG/L	14	30	d-191	d-191
625 PPL	2,4-DINITROTOLUENE	WATER	5.0		UG/L	0.53	30	39-139	39-139
625 PPL	2,6-DINITROTOLUENE	WATER	5.0		UG/L	0.55	30	50-158	50-158
625 PPL	2-CHLORONAPHTHALENE	WATER	5.0		UG/L	0.55	30	60-118	60-118
625 PPL	2-CHLOROPHENOL	WATER	5.0		UG/L	0.69	30	23-134	23-134
625 PPL	2-NITROPHENOL	WATER	5.0		UG/L	0.61	30	29-182	29-182
625 PPL	3,3'-DICHLOROBENZIDINE	WATER	5.0		UG/L	0.73	30	d-262	d-262
625 PPL	4,6-DINITRO-2-METHYLPHENOL	WATER	50		UG/L	0.51	30	d-181	d-181
625 PPL	4-BROMOPHENYL-PHENYLETHER	WATER	5.0		UG/L	0.67	30	53-127	53-127
625 PPL	4-CHLORO-3-METHYLPHENOL	WATER	5.0		UG/L	0.50	30	22-147	22-147
625 PPL	4-CHLOROPHENYL-PHENYLETHER	WATER	5.0		UG/L	0.49	30	25-158	25-158
625 PPL	4-NITROPHENOL	WATER	50		UG/L	6.7	30	d-132	d-132
625 PPL	ACENAPHTHENE	WATER	5.0		UG/L	0.48	30	47-145	47-145
625 PPL	ACENAPHTHYLENE	WATER	5.0		UG/L	0.33	30	33-145	33-145
625 PPL	ANTHRACENE	WATER	5.0		UG/L	0.60	30	27-133	27-133
625 PPL	BENZIDINE	WATER	100		UG/L	43	30	10-113	10-113
625 PPL	BENZO(A)ANTHRACENE	WATER	5.0		UG/L	0.54	30	33-143	33-143
625 PPL	BENZO(A)PYRENE	WATER	5.0		UG/L	0.42	30	17-163	17-163
625 PPL	BENZO(B)FLUORANTHENE	WATER	5.0		UG/L	0.54	30	24-159	24-159
625 PPL	BENZO(G,H,I)PERYLENE	WATER	5.0		UG/L	0.62	30	d-219	d-219
625 PPL	BENZO(K)FLUORANTHENE	WATER	5.0		UG/L	0.53	30	11-162	11-162
625 PPL	BIS(-2-CHLOROETHOXY)METHANE	WATER	5.0		UG/L	0.86	30	33-184	33-184
625 PPL	BIS(2-CHLOROETHYL)ETHER	WATER	5.0		UG/L	0.74	30	12-158	12-158
625 PPL	BIS(2-ETHYLHEXYL)PHTHALATE	WATER	5.0		UG/L	0.48	30	8-158	8-158
625 PPL	BUTYL BENZYL PHTHALATE	WATER	5.0		UG/L	0.59	30	d-152	d-152
625 PPL	CHRYSENE	WATER	5.0		UG/L	0.53	30	17-168	17-168
625 PPL	DIBENZO(A,H)ANTHRACENE	WATER	5.0		UG/L	0.63	30	d-227	d-227
625 PPL	DIETHYLPHTHALATE	WATER	5.0		UG/L	0.31	30	d-114	d-114
625 PPL	DIMETHYL PHTHALATE	WATER	5.0		UG/L	0.53	30	d-112	d-112
625 PPL	DI-N-BUTYLPHTHALATE	WATER	5.0		UG/L	0.39	30	1-118	1-118
625 PPL	DI-N-OCTYL PHTHALATE	WATER	5.0		UG/L	0.45	30	4-146	4-146
625 PPL	FLUORANTHENE	WATER	5.0		UG/L	0.32	30	26-137	26-137
625 PPL	FLUORENE	WATER	5.0		UG/L	0.47	30	59-121	59-121
625 PPL	HEXACHLOROBENZENE	WATER	5.0		UG/L	0.43	30	d-152	d-152
625 PPL	HEXACHLOROBUTADIENE	WATER	5.0		UG/L	0.69	30	24-116	24-116
625 PPL	HEXACHLOROCYCLOPENTADIENE	WATER	5.0		UG/L	1.1	30	10-130	10-130
625 PPL	HEXACHLOROETHANE	WATER	5.0		UG/L	0.48	30	40-113	40-113
625 PPL	INDENO(1,2,3-CD)PYRENE	WATER	5.0		UG/L	0.49	30	d-171	d-171
625 PPL	ISOPHORONE	WATER	5.0		UG/L	0.61	30	21-196	21-196
625 PPL	NAPHTHALENE	WATER	5.0		UG/L	0.62	30	21-133	21-133
625 PPL	NITROBENZENE	WATER	5.0		UG/L	0.78	30	35-180	35-180
625 PPL	N-NITROSODIMETHYLAMINE	WATER	5.0		UG/L	0.79	30	27-130	27-130
625 PPL	N-NITROSO-DI-N-PROPYLAMINE	WATER	5.0		UG/L	1.19	30	d-230	d-230
625 PPL	N-NITROSODIPHENYLAMINE	WATER	5.0		UG/L	0.75	30	70-130	70-130
625 PPL	PENTACHLOROPHENOL	WATER	50		UG/L	0.60	30	14-176	14-176
625 PPL	PHENANTHRENE	WATER	5.0		UG/L	0.45	30	54-120	54-120
625 PPL	PHENOL	WATER	5.0		UG/L	0.54	30	5-112	5-112
625 PPL	PYRENE	WATER	5.0		UG/L	0.65	30	52-115	52-115
625	TERPHENYL-d14 -SURR	WATER	NA		UG/L	NA	NA	45-135	45-135
625	NITROBENZENE-d5 -SURR	WATER	NA		UG/L	NA	NA	41-129	41-129
625	PHENOL-d6 -SURR	WATER	NA		UG/L	NA	NA	15-58	15-58
625	2-FLUOROBIPHENYL -SURR	WATER	NA		UG/L	NA	NA	51-111	51-111
625	2-FLUOROPHENOL -SURR	WATER	NA		UG/L	NA	NA	27-78	27-78
625	2,4,6-TRIBROMOPHENOL -SURR	WATER	NA		UG/L	NA	NA	44-146	44-146
625 ADDITIONAL COMPOUNDS BY REQUEST									
625	1,1-BIPHENYL	WATER	5.0		UG/L	0.55	30	50-130	50-130

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
625	1-METHYLNAPHTHALENE	WATER	5.0		UG/L	0.62	30	50-130	50-130
625	2,4,5-TRICHLOROPHENOL	WATER	5.0		UG/L	0.84	30	40-110	40-110
625	2-CHLOROPYRIDINE	WATER	10		UG/L	0.42	30	58-130	50-130
625	2-METHYLNAPHTHALENE	WATER	5.0		UG/L	0.45	30	42-107	42-107
625	2-METHYLPHENOL	WATER	5.0		UG/L	0.79	30	16-102	16-102
625	2-NITROANILINE	WATER	50		UG/L	0.59	30	63-112	63-112
625	3-CHLOROPYRIDINE	WATER	10		UG/L	0.67	30	56-130	50-130
625	3-NITROANILINE	WATER	50		UG/L	0.43	30	56-111	56-111
625	4-CHLOROANILINE	WATER	5.0		UG/L	0.72	30	39-107	39-107
625	4-METHYLPHENOL	WATER	5.0		UG/L	1.5	30	26-99	26-99
625	4-NITROANILINE	WATER	50		UG/L	0.59	30	50-130	50-130
625	ACETOPHENONE	WATER	5.0		UG/L	1.35	30	40-130	40-130
625	ANILINE	WATER	5.0		UG/L	0.78	30	13-123	13-123
625	ATRAZINE	WATER	5.0		UG/L	1.3	30	50-130	50-130
625	BENZALDEHYDE	WATER	5.0		UG/L	1.3	30	50-130	50-130
625	BENZOIC ACID	WATER	50		UG/L	15	30	30-130	30-130
625	BENZYL ALCOHOL	WATER	5.0		UG/L	1.1	30	31-109	31-109
625	CAPROLACTAM	WATER	50		UG/L	1.0	30	50-130	50-130
625	CARBAZOLE	WATER	5.0		UG/L	0.47	30	70-130	70-130
625	DIBENZOFURAN	WATER	5.0		UG/L	0.41	30	70-130	70-130
625	PYRIDINE	WATER	5.0		UG/L	1.0	30	10-130	10-130
680	MONOCHLOROBIPHENYLS, TOTAL	WATER	0.005		UG/L	0.0017	30	50-125	50-125
680	DICHLOROBIPHENYLS, TOTAL	WATER	0.006		UG/L	0.0014	30	50-125	50-125
680	TRICHLOROBIPHENYLS, TOTAL	WATER	0.006		UG/L	0.0015	30	50-125	50-125
680	TETRACHLOROBIPHENYLS, TOTAL	WATER	0.010		UG/L	0.0023	30	50-125	50-125
680	PENTACHLOROBIPHENYLS, TOTAL	WATER	0.010		UG/L	0.0045	30	50-125	50-125
680	HEXACHLOROBIPHENYLS, TOTAL	WATER	0.020		UG/L	0.0032	30	50-125	50-125
680	HEPTACHLOROBIPHENYLS, TOTAL	WATER	0.020		UG/L	0.0033	30	50-125	50-125
680	OCTACHLOROBIPHENYLS, TOTAL	WATER	0.040		UG/L	0.0054	30	50-125	50-125
680	NONACHLOROBIPHENYLS, TOTAL	WATER	0.025		UG/L	0.0057	30	50-125	50-125
680	DECACHLOROBIPHENYLS, TOTAL	WATER	0.040		UG/L	0.0085	30	50-125	50-125
680	GAMMA-BHC -SURR	WATER	NA		UG/L	NA	30	59-128	59-128
680	4-4'-DDT -SURR	WATER	NA		UG/L	NA	30	45-155	45-155
680	MONOCHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	DICHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	TRICHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	TETRACHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	PENTACHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	HEXACHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	HEPTACHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	OCTACHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	NONACHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	DECACHLOROBIPHENYLS, TOTAL	SOIL			UG/KG		30	30-130	30-130
680	GAMMA-BHC -SURR	SOIL	NA		UG/KG	NA	NA	30-150	30-150
680	4-4'-DDT -SURR	SOIL	NA		UG/KG	NA	NA	30-150	30-150
8011	1,2-DIBROMOETHANE	WATER	0.06		UG/L	0.0062	30	70-130	50-150
8011	1,2-DIBROMO-3-CHLOROPROPANE	WATER	0.06		UG/L	0.0057	30	70-130	50-150
8011	TETRACHLORO-META-XYLENE (TCMX) -SU	WATER	NA		UG/L	NA	NA	70-130	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8015B-SVOA-SILOX	N,N-DIMETHYLFORAMIDE	WATER	2000		UG/L	411	30	50-150	50-150
8015B-SVOA-SILOX	HEXAMETHYLCYCLOTRISILOXANE	WATER	2000		UG/L	447	30	50-150	50-150
8015B-SVOA-SILOX	OCTAMETHYLCYCLOTRISILOXANE	WATER	2000		UG/L	460	30	50-150	50-150
8015B-SVOA-SILOX	OCTAMETHYLTETRASILOXANE	WATER	2000		UG/L	473	30	50-150	50-150
8015B-SVOA(WAPA)	1,4-DIOXANE	WATER	1000		UG/L	310	30	70-130	70-130
8015B-SVOA(WAPA)	2-PROPANOL (ISOPROPANOL)	WATER	1000		UG/L	339	30	70-130	70-130
8015B-SVOA(WAPA)	ETHYL ACETATE	WATER	1000		UG/L	320	30	70-130	70-130
8015B-SVOA(WAPA)	ISOBUTYL ALCOHOL (ISOBUTANOL)	WATER	1000		UG/L	275	30	50-150	50-150
8015B-SVOA(WAPA)	METHANOL	WATER	1000		UG/L	260	30	70-130	50-150
8015B-SVOA(WAPA)	N-BUTANOL (1-BUTANOL)	WATER	1000		UG/L	322	30	70-130	70-130
8015B-SVOA	1-BUTANOL (N-BUTANOL)	WATER	1000		UG/L	320	30	70-130	70-130
8015B-SVOA	1-METHOXY-2-PROPANOL	WATER	1000		UG/L	190	30	70-130	70-130
8015B-SVOA	1-PROPANOL (N-PROPANOL)	WATER	1000		UG/L	215	30	65-143	65-143
8015B-SVOA	2-ETHOXYETHANOL (CELLOSOLVE)	WATER	1000		UG/L	130	30	70-130	50-150
8015B-SVOA	2-ETHYLHEXANOL	WATER	1000		UG/L	464	30	70-130	50-150
8015B-SVOA	2-PROPANOL (ISOPROPANOL)	WATER	1000		UG/L	340	30	70-130	70-130
8015B-SVOA	DIMETHYLSULFOXIDE	WATER	1000		UG/L		30	50-150	50-150
8015B-SVOA	ETHANOL	WATER	1000		UG/L	440	30	70-130	50-150
8015B-SVOA	ETHER (DIETHYL ETHER)	WATER	1000		UG/L	296	30	50-150	50-150
8015B-SVOA	ETHYL ACETATE	WATER	1000		UG/L	320	30	70-130	70-130
8015B-SVOA	ISOPROPYL ETHER	WATER	1000		UG/L	135	30	50-150	50-150
8015B-SVOA	METHANOL	WATER	1000		UG/L	260	30	70-130	50-150
8015B-SVOA	METHYL CELLOSOLVE (2-METHOXYETHANO	WATER	1000		UG/L	79	30	50-150	70-130
8015B-SVOA	METHYL-TERT-BUTYL ETHER	WATER	1000		UG/L		30	70-130	70-130
8015B-SVOA	N-BUTYL ACETATE	WATER	1000		UG/L		30	40-150	40-150
8015B-SVOA	N-PROPYL ACETATE	WATER	1000		UG/L		30	40-150	40-150
8015B-SVOA	SEC-BUTANOL (2-BUTANOL)	WATER	1000		UG/L	260	30	70-130	50-150
8015B-SVOA	TETRAHYDROFURAN	WATER	1000		UG/L		30	50-150	50-150
8015B-SVOA	1-PROPANOL-OPTIONAL SURR	WATER	NA		UG/L	NA	NA	50-150	50-150
8015B-SVOA	2-HEXANONE-OPTIONAL SURR	WATER	NA		UG/L	NA	NA	50-150	50-150
8015B-SVOA	n-BUTANOL-OPTIONAL SURR	WATER	NA		UG/L	NA	NA	50-150	50-150
8015B -VOA	METHANOL	WATER	1000		UG/L	488	30	70-130	50-150
8015B -VOA	ETHANOL	WATER	1000		UG/L	267	30	70-130	50-150
8015B -VOA	ISOPROPANOL	WATER	1000		UG/L	164	30	70-130	50-150
8015B -VOA	N-PROPANOL	WATER	1000		UG/L	279	30	70-130	50-150
8015B -VOA	SEC-BUTANOL	WATER	1000		UG/L	214	30	70-130	50-150
8015B -VOA	N-BUTANOL	WATER	1000		UG/L	172	30	70-130	50-150
8015B -VOA	N-PROPANOL -SURR/TARGET	WATER	NA		UG/L	NA	NA	65-143	65-143
8015B -VOA	MINERAL SPIRITS	WATER	100		UG/L	35	30	41-145	41-145
8015B -VOA	1,4-DIFLUOROBENZENE -SURR	WATER	NA		UG/L	NA	NA	59-122	59-122
8015B -VOA	MINERAL SPIRITS	SOIL	100		UG/KG		30	70-130	50-150
8015B -VOA	1,4-DIFLUOROBENZENE -SURR	SOIL	NA		UG/KG	NA	NA	85-115	85-115
8015B	GASOLINE RANGE ORGANICS	WATER	50		UG/L	10	30	70-130	50-150
8015B	CHLOROFLUOROBENZENE (FID) -SURR	WATER	NA		UG/L	NA	NA	65-136	65-136
8015B	GASOLINE RANGE ORGANICS	SOIL	50		UG/KG	7.7	50	70-130	50-150
8015B	CHLOROFLUOROBENZENE (FID) -SURR	SOIL	NA		UG/KG	NA	NA	44-131	44-131
8015B	DIESEL RANGE ORGANICS	WATER	100		UG/L	61	30	10-154	10-154
8015B	O-TERPHENYL -SURR	WATER	NA		UG/L	NA	NA	56-128	56-128
8015B	DIESEL RANGE ORGANICS	SOIL	40000		UG/KG	13000	50	51-114	51-114
8015B	O-TERPHENYL -SURR	SOIL	NA		UG/KG	NA	NA	68-138	68-138

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8015B ETPH-CT	ETPH	WATER	75		UG/L	14	30	50-150	50-150
8015B ETPH-CT	FUEL OIL #2	WATER	100		UG/L	11	30	50-150	50-150
8015B ETPH-CT	FUEL OIL #4	WATER	100		UG/L	NA	30	50-150	50-150
8015B ETPH-CT	FUEL OIL #6	WATER	100		UG/L	NA	30	50-150	50-150
8015B ETPH-CT	KEROSENE	WATER	100		UG/L	NA	30	50-150	50-150
8015B ETPH-CT	MOTOR OIL	WATER	1000		UG/L	NA	30	50-150	50-150
8015B ETPH-CT	O-TERPHENYL-SURR	WATER	NA		UG/L	NA	NA	44-148	44-148
8015B ETPH-CT	ETPH	SOIL	2500		UG/KG		30	50-150	50-150
8015B ETPH-CT	FUEL OIL #2	SOIL	3300		UG/KG		30	50-150	50-150
8015B ETPH-CT	FUEL OIL #4	SOIL	3300		UG/KG		30	50-150	50-150
8015B ETPH-CT	FUEL OIL #6	SOIL	3300		UG/KG		30	50-150	50-150
8015B ETPH-CT	KEROSENE	SOIL	3300		UG/KG		30	50-150	50-150
8015B ETPH-CT	MOTOR OIL	SOIL	33000		UG/KG		30	50-150	50-150
8015B ETPH-CT	O-TERPHENYL-SURR	SOIL	NA		UG/KG	NA	NA	25-148	25-148
8015B FINGERPRINT	FUEL OIL #2	WATER	1000		UG/L	220	30	50-150	50-150
8015B FINGERPRINT	GASOLINE	WATER	1000		UG/L	190	30	50-150	50-150
8015B FINGERPRINT	KEROSENE	WATER	1000		UG/L	290	30	50-150	50-150
8015B FINGERPRINT	MINERAL SPIRITS	WATER	1000		UG/L		30	50-150	50-150
8015B FINGERPRINT	MOTOR OIL	WATER	10000		UG/L		30	50-150	50-150
8015B FINGERPRINT	FUEL OIL #2	SOIL	100		MG/KG	29	30	50-150	50-150
8015B FINGERPRINT	GASOLINE	SOIL	100		MG/KG	23	30	50-150	50-150
8015B FINGERPRINT	KEROSENE	SOIL	100		MG/KG	66	30	50-150	50-150
8015B FINGERPRINT	MINERAL SPIRITS	SOIL	100		MG/KG		30	50-150	50-150
8015B FINGERPRINT	MOTOR OIL	SOIL	1000		MG/KG		30	50-150	50-150
8015B RSK	ETHANE	WATER	1.0		UG/L	0.11	30	50-150	50-150
8015B RSK	ETHYLENE	WATER	1.0		UG/L	0.11	30	50-150	50-150
8015B RSK	METHANE	WATER	2.0		UG/L	0.18	30	50-150	50-150
8015B RSK	PROPANE	WATER	1.0		UG/L	0.34	30	50-150	50-150
8015B RSK	ACETYLENE	WATER	3.0		UG/L	0.13	30	50-150	50-150
NY 310-13	FUEL OIL #2	WATER	1000		UG/L	220	30	46-150	46-150
NY 310-13	FUEL OIL #4	WATER	1000		UG/L	410	30	50-150	50-150
NY 310-13	FUEL OIL #6	WATER	1000		UG/L	400	30	50-150	50-150
NY 310-13	GASOLINE	WATER	1000		UG/L	190	30	50-150	50-150
NY 310-13	KEROSENE	WATER	1000		UG/L	290	30	50-150	50-150
NY 310-13	LUBE OIL	WATER	1000		UG/L	250	30	50-150	50-150
NY 310-13	N-DODECANE	WATER	1000		UG/L	120	30	50-150	50-150
NY 310-13	FUEL OIL #2	SOIL	100		MG/KG	29	30	70-155	70-155
NY 310-13	FUEL OIL #4	SOIL	100		MG/KG	22	30	50-150	50-150
NY 310-13	FUEL OIL #6	SOIL	100		MG/KG	26	30	50-150	50-150
NY 310-13	GASOLINE	SOIL	100		MG/KG	23	30	50-150	50-150
NY 310-13	KEROSENE	SOIL	100		MG/KG	66	30	50-150	50-150
NY 310-13	LUBE OIL	SOIL	100		MG/KG	29	30	50-150	50-150
NY 310-13	N-DODECANE	SOIL	100		MG/KG	8.5	30	50-150	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8021	1,1,2,2-TETRACHLOROETHANE	WATER	1.0		UG/L	0.25	30	70-130	70-130
8021	1,1,2-TRICHLOROETHANE	WATER	1.0		UG/L	0.17	30	70-130	70-130
8021	1,1-DICHLOROETHANE	WATER	1.0		UG/L	0.21	30	70-130	70-130
8021	1,1-DICHLOROETHENE	WATER	1.0		UG/L	0.27	30	70-130	70-130
8021	1,2-DICHLOROBENZENE	WATER	1.0		UG/L	0.17	30	70-130	70-130
8021	1,2-DICHLOROETHANE	WATER	1.0		UG/L	0.15	30	70-130	70-130
8021	1,2-DICHLOROPROPANE	WATER	1.0		UG/L	0.16	30	70-130	70-130
8021	1,3-DICHLOROBENZENE	WATER	1.0		UG/L	0.17	30	70-130	70-130
8021	1,4-DICHLOROBENZENE	WATER	1.0		UG/L	0.16	30	70-130	70-130
8021	2-CHLOROETHYLVINYL ETHER	WATER	1.0		UG/L	0.14	30	50-150	50-150
8021	BENZENE	WATER	1.0		UG/L	0.31	30	70-130	70-130
8021	BROMODICHLOROMETHANE	WATER	1.0		UG/L	0.34	30	70-130	70-130
8021	BROMOFORM	WATER	1.0		UG/L	0.17	30	70-130	70-130
8021	BROMOMETHANE	WATER	2.0		UG/L	0.12	30	50-150	50-150
8021	CARBON TETRACHLORIDE	WATER	1.0		UG/L	0.42	30	70-130	70-130
8021	CHLOROBENZENE	WATER	1.0		UG/L	0.22	30	70-130	70-130
8021	CHLOROETHANE	WATER	1.0		UG/L	0.48	30	50-150	50-150
8021	CHLOROFORM	WATER	1.0		UG/L	0.30	30	70-130	70-130
8021	CHLOROMETHANE	WATER	1.0		UG/L	0.39	30	50-150	50-150
8021	CIS-1,2-DICHLOROETHENE	WATER	1.0		UG/L	0.23	30	70-130	70-130
8021	CIS-1,3-DICHLOROPROPENE	WATER	1.0		UG/L	0.21	30	70-130	70-130
8021	DIBROMOCHLOROMETHANE	WATER	1.0		UG/L	0.11	30	70-130	70-130
8021	DICHLORODIFLUOROMETHANE	WATER	1.0		UG/L	0.29	30	50-150	50-150
8021	ETHYLBENZENE	WATER	1.0		UG/L	0.23	30	70-130	70-130
8021	FREON 113	WATER	1.0		UG/L	0.38	30	70-130	70-130
8021	M+P-XYLENE	WATER	2.0		UG/L	0.36	30	70-130	70-130
8021	METHYLENE CHLORIDE	WATER	1.0		UG/L	0.24	30	70-130	70-130
8021	O-XYLENE	WATER	1.0		UG/L	0.17	30	70-130	70-130
8021	TETRACHLOROETHENE	WATER	1.0		UG/L	0.30	30	70-130	70-130
8021	TOLUENE	WATER	1.0		UG/L	0.18	30	70-130	70-130
8021	TRANS-1,2-DICHLOROETHENE	WATER	1.0		UG/L	0.26	30	70-130	70-130
8021	TRANS-1,3-DICHLOROPROPENE	WATER	1.0		UG/L	0.19	30	70-130	70-130
8021	TRICHLOROETHENE	WATER	1.0		UG/L	0.15	30	70-130	70-130
8021	TRICHLOROFLUOROMETHANE	WATER	1.0		UG/L	0.42	30	50-150	50-150
8021	VINYL CHLORIDE	WATER	1.0		UG/L	0.41	30	50-150	50-150
8021	1,2,3 TRICHLOROPROPANE -SURR	WATER	NA		UG/L	NA	NA	61-117	61-117
8021	BROMOCHLOROMETHANE -SURR	WATER	NA		UG/L	NA	NA	70-114	70-114
8021	CHLOROFLUOROBENZENE-SURR	WATER	NA		UG/L	NA	NA	72-116	72-116
8021	CHLOROFLUOROBENZENE (PID) -SURR	WATER	NA		UG/L	NA	NA	77-113	77-113

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8021	1,1,1-TRICHLOROETHANE	SOIL	1.0		UG/KG	0.33	30	70-130	70-130
8021	1,1,2,2-TETRACHLOROETHANE	SOIL	1.0		UG/KG	0.10	30	70-130	70-130
8021	1,1,2-TRICHLOROETHANE	SOIL	1.0		UG/KG	0.25	30	70-130	70-130
8021	1,1-DICHLOROETHANE	SOIL	1.0		UG/KG	0.27	30	70-130	70-130
8021	1,1-DICHLOROETHENE	SOIL	1.0		UG/KG	0.29	30	70-130	70-130
8021	1,2-DICHLOROBENZENE	SOIL	1.0		UG/KG	0.22	30	70-130	70-130
8021	1,2-DICHLOROETHANE	SOIL	1.0		UG/KG	0.29	30	70-130	70-130
8021	1,2-DICHLOROPROPANE	SOIL	1.0		UG/KG	0.20	30	70-130	70-130
8021	1,3-DICHLOROBENZENE	SOIL	1.0		UG/KG	0.23	30	70-130	70-130
8021	1,4-DICHLOROBENZENE	SOIL	1.0		UG/KG	0.20	30	70-130	70-130
8021	2-CHLOROETHYLVINYL ETHER	SOIL	1.0		UG/KG	0.12	30	50-150	50-150
8021	BENZENE	SOIL	1.0		UG/KG	0.20	30	70-130	70-130
8021	BROMODICHLOROMETHANE	SOIL	1.0		UG/KG	0.20	30	70-130	70-130
8021	BROMOFORM	SOIL	1.0		UG/KG	0.12	30	70-130	70-130
8021	BROMOMETHANE	SOIL	2.0		UG/KG	0.26	30	50-150	50-150
8021	CARBON TETRACHLORIDE	SOIL	1.0		UG/KG	0.34	30	70-130	70-130
8021	CHLOROBENZENE	SOIL	1.0		UG/KG	0.23	30	70-130	70-130
8021	CHLOROETHANE	SOIL	1.0		UG/KG	0.29	30	50-150	50-150
8021	CHLOROFORM	SOIL	1.0		UG/KG	0.26	30	70-130	70-130
8021	CHLOROMETHANE	SOIL	1.0		UG/KG	0.64	30	50-150	50-150
8021	CIS-1,2-DICHLOROETHENE	SOIL	1.0		UG/KG	0.25	30	70-130	70-130
8021	CIS-1,3-DICHLOROPROPENE	SOIL	1.0		UG/KG	0.23	30	70-130	70-130
8021	DIBROMOCHLOROMETHANE	SOIL	1.0		UG/KG	0.23	30	70-130	70-130
8021	ETHYLBENZENE	SOIL	1.0		UG/KG	0.21	30	70-130	70-130
8021	FREON 113	SOIL	1.0		UG/KG	0.28	30	70-130	70-130
8021	M+P-XYLENE	SOIL	2.0		UG/KG	0.39	30	70-130	70-130
8021	METHYLENE CHLORIDE	SOIL	1.0		UG/KG	0.63	30	70-130	70-130
8021	O-XYLENE	SOIL	1.0		UG/KG	0.19	30	70-130	70-130
8021	TETRACHLOROETHENE	SOIL	1.0		UG/KG	0.27	30	70-130	70-130
8021	TOLUENE	SOIL	1.0		UG/KG	0.17	30	70-130	70-130
8021	TRANS-1,2-DICHLOROETHENE	SOIL	1.0		UG/KG	0.27	30	70-130	70-130
8021	TRANS-1,3-DICHLOROPROPENE	SOIL	1.0		UG/KG	0.21	30	70-130	70-130
8021	TRICHLOROETHENE	SOIL	1.0		UG/KG	0.25	30	70-130	70-130
8021	TRICHLOROFLUOROMETHANE	SOIL	1.0		UG/KG	0.26	30	50-150	50-150
8021	VINYL CHLORIDE	SOIL	1.0		UG/KG	0.80	30	50-150	50-150
8021	1,2,3-TRICHLOROPROPANE -SURR	SOIL	NA		UG/KG	NA	NA	57-141	57-141
8021	CHLOROFLUOROBENZENE -SURR	SOIL	NA		UG/KG	NA	NA	41-146	41-146
8021	CHLOROFLUOROBENZENE (PID) -SURR	SOIL	NA		UG/KG	NA	NA	20-155	20-155
8021	BROMOCHLOROMETHANE -SURR	SOIL	NA		UG/KG	NA	NA	64-130	64-130

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8021 STARS	1,2,4-TRIMETHYLBENZENE	WATER	1.0		UG/L	0.27	30	70-130	70-130
8021 STARS	1,3,5-TRIMETHYLBENZENE	WATER	1.0		UG/L	0.24	30	70-130	70-130
8021 STARS	BENZENE	WATER	0.7		UG/L	0.18	30	70-130	70-130
8021 STARS	ETHYLBENZENE	WATER	1.0		UG/L	0.21	30	70-130	70-130
8021 STARS	ISOPROPYLBENZENE	WATER	1.0		UG/L	0.18	30	70-130	70-130
8021 STARS	M+P-XYLENE	WATER	2.0		UG/L	0.41	30	70-130	70-130
8021 STARS	METHYL-TERT-BUTYLETHER	WATER	1.0		UG/L	0.29	30	70-130	70-130
8021 STARS	NAPHTHALENE	WATER	1.0		UG/L	0.73	30	70-130	70-130
8021 STARS	N-BUTYLBENZENE	WATER	1.0		UG/L	0.24	30	70-130	70-130
8021 STARS	N-PROPYLBENZENE	WATER	1.0		UG/L	0.21	30	70-130	70-130
8021 STARS	O-XYLENE	WATER	1.0		UG/L	0.28	30	70-130	70-130
8021 STARS	P-ISOPROPYLTOLUENE	WATER	1.0		UG/L	0.25	30	70-130	70-130
8021 STARS	SEC-BUTYLBENZENE	WATER	1.0		UG/L	0.20	30	70-130	70-130
8021 STARS	TERT-BUTYLBENZENE	WATER	1.0		UG/L	0.19	30	70-130	70-130
8021 STARS	TOLUENE	WATER	1.0		UG/L	0.20	30	70-130	70-130
8021 STARS	CHLOROFLUOROBENZENE (PID) -SURR	WATER	NA		UG/L	NA	NA	77-113	77-113
8021 STARS	1,2,4-TRIMETHYLBENZENE	SOIL	1.0		UG/KG	0.29	30	70-130	70-130
8021 STARS	1,3,5-TRIMETHYLBENZENE	SOIL	1.0		UG/KG	0.23	30	70-130	70-130
8021 STARS	BENZENE	SOIL	1.0		UG/KG	0.19	30	70-130	70-130
8021 STARS	ETHYLBENZENE	SOIL	1.0		UG/KG	0.19	30	70-130	70-130
8021 STARS	ISOPROPYLBENZENE	SOIL	1.0		UG/KG	0.21	30	70-130	70-130
8021 STARS	M+P-XYLENE	SOIL	2.0		UG/KG	0.44	30	70-130	70-130
8021 STARS	METHYL-TERT-BUTYLETHER	SOIL	1.0		UG/KG	0.25	30	70-130	70-130
8021 STARS	NAPHTHALENE	SOIL	1.0		UG/KG	0.27	30	70-130	70-130
8021 STARS	N-BUTYLBENZENE	SOIL	1.0		UG/KG	0.25	30	70-130	70-130
8021 STARS	N-PROPYLBENZENE	SOIL	1.0		UG/KG	0.23	30	70-130	70-130
8021 STARS	O-XYLENE	SOIL	1.0		UG/KG	0.19	30	70-130	70-130
8021 STARS	P-ISOPROPYLTOLUENE	SOIL	1.0		UG/KG	0.23	30	70-130	70-130
8021 STARS	SEC-BUTYLBENZENE	SOIL	1.0		UG/KG	0.20	30	70-130	70-130
8021 STARS	TERT-BUTYLBENZENE	SOIL	1.0		UG/KG	0.24	30	70-130	70-130
8021 STARS	TOLUENE	SOIL	1.0		UG/KG	0.17	30	70-130	70-130
8021 STARS	CHLOROFLUOROBENZENE (PID) -SURR	SOIL	NA		UG/KG	NA	NA	20-155	20-155

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8081A TCL	4,4'-DDD	WATER	0.10		UG/L	0.0051	30	63-107	63-107
8081A TCL	4,4'-DDE	WATER	0.10		UG/L	0.0032	30	30-127	30-127
8081A TCL	4,4'-DDT	WATER	0.10		UG/L	0.0079	30	39-154	39-154
8081A TCL	ALDRIN	WATER	0.05		UG/L	0.0034	30	24-122	24-122
8081A TCL	ALPHA-BHC	WATER	0.05		UG/L	0.0023	30	70-130	50-150
8081A TCL	ALPHA-CHLORDANE	WATER	0.05		UG/L	0.0022	30	36-127	36-127
8081A TCL	ALPHA-ENDOSULFAN	WATER	0.05		UG/L	0.0019	30	39-125	39-125
8081A TCL	BETA-BHC	WATER	0.05		UG/L	0.0046	30	63-107	63-107
8081A TCL	BETA-ENDOSULFAN	WATER	0.10		UG/L	0.0049	30	64-107	64-107
8081A TCL	DELTA-BHC	WATER	0.05		UG/L	0.0026	30	49-116	49-116
8081A TCL	DIELDRIN	WATER	0.10		UG/L	0.0051	30	37-151	37-151
8081A TCL	ENDOSULFAN SULFATE	WATER	0.10		UG/L	0.0022	30	17-134	17-134
8081A TCL	ENDRIN	WATER	0.10		UG/L	0.0052	30	39-146	39-146
8081A TCL	ENDRIN ALDEHYDE	WATER	0.10		UG/L	0.0033	30	10-115	10-115
8081A TCL	ENDRIN KETONE	WATER	0.10		UG/L	0.0021	30	70-110	70-130
8081A TCL	GAMMA-BHC (LINDANE)	WATER	0.05		UG/L	0.0018	30	44-131	44-131
8081A TCL	GAMMA-CHLORDANE	WATER	0.05		UG/L	0.0039	30	48-122	48-122
8081A TCL	HEPTACHLOR	WATER	0.05		UG/L	0.0037	30	37-123	37-123
8081A TCL	HEPTACHLOR EPOXIDE	WATER	0.05		UG/L	0.0049	30	74-104	70-130
8081A TCL	METHOXYCHLOR	WATER	0.50		UG/L	0.0046	30	62-130	62-130
8081A TCL	TOXAPHENE	WATER	1.00		UG/L	0.20	30	46-84	46-84
8081A TCL	DECACHLOROBIPHENYL (DCB) -SURR	WATER	NA		UG/L	NA	NA	11-131	11-131
8081A TCL	TETRACHLORO-META-XYLENE (TCMX) -SU	WATER	NA		UG/L	NA	NA	13-125	13-125
8081A ADDITIONAL COMPOUNDS BY REQUEST									
8081A	CHLORDANE, TECHNICAL	WATER	0.25		UG/L	0.045	30	50-150	50-150
8081A	FAMPHUR	WATER	1.0		UG/L	0.240	30	50-150	50-150
8081A	HEXACHLOROBENZENE	WATER	0.05		UG/L	0.008	30	50-150	50-150
8081A	KEPONE	WATER	5.0		UG/L	3.5	30	50-150	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8081A TCL	4,4'-DDD	SOIL	3.3		UG/KG	0.19	30	65-106	65-106
8081A TCL	4,4'-DDE	SOIL	3.3		UG/KG	0.078	30	33-124	33-124
8081A TCL	4,4'-DDT	SOIL	3.3		UG/KG	0.17	30	45-159	45-159
8081A TCL	ALDRIN	SOIL	1.7		UG/KG	0.070	30	53-115	53-115
8081A TCL	ALPHA-BHC	SOIL	1.7		UG/KG	0.31	30	38-108	38-108
8081A TCL	ALPHA-CHLORDANE	SOIL	1.7		UG/KG	0.15	30	27-130	27-130
8081A TCL	ALPHA-ENDOSULFAN	SOIL	1.7		UG/KG	0.10	30	34-127	34-127
8081A TCL	BETA-BHC	SOIL	1.7		UG/KG	0.25	30	61-106	61-106
8081A TCL	BETA-ENDOSULFAN	SOIL	3.3		UG/KG	0.091	30	66-105	66-105
8081A TCL	DELTA-BHC	SOIL	1.7		UG/KG	0.089	30	44-119	44-119
8081A TCL	DIELDRIN	SOIL	3.3		UG/KG	0.26	30	26-174	26-174
8081A TCL	ENDOSULFAN SULFATE	SOIL	3.3		UG/KG	0.09	30	37-122	10-138
8081A TCL	ENDRIN	SOIL	3.3		UG/KG	0.11	30	45-143	45-143
8081A TCL	ENDRIN ALDEHYDE	SOIL	3.3		UG/KG	0.83	30	10-110	10-110
8081A TCL	ENDRIN KETONE	SOIL	3.3		UG/KG	0.12	30	70-130	50-150
8081A TCL	GAMMA-BHC (LINDANE)	SOIL	1.7		UG/KG	0.12	30	47-133	47-133
8081A TCL	GAMMA-CHLORDANE	SOIL	1.7		UG/KG	0.12	30	38-127	38-127
8081A TCL	HEPTACHLOR	SOIL	1.7		UG/KG	0.088	30	50-120	50-120
8081A TCL	HEPTACHLOR EPOXIDE	SOIL	1.7		UG/KG	0.11	30	77-106	77-106
8081A TCL	METHOXYCHLOR	SOIL	17		UG/KG	0.26	30	73-125	73-125
8081A TCL	TOXAPHENE	SOIL	33		UG/KG	9.7	30	46-130	46-130
8081A TCL	DECACHLOROBIPHENYL (DCB) -SURR	SOIL	NA		UG/KG	NA	NA	18-176	18-176
8081A TCL	TETRACHLORO-META-XYLENE (TCMX) -SU	SOIL	NA		UG/KG	NA	NA	24-136	24-136
8081A ADDITIONAL COMPOUNDS BY REQUEST									
8081A	CHLORDANE, TECHNICAL	SOIL	8.3		UG/KG	1.9	30	50-150	50-150
8081A	FAMPHUR	SOIL	33		UG/KG	6.8	30	50-150	50-150
8081A	HEXACHLOROBENZENE	SOIL	1.67		UG/KG	0.48	30	50-150	50-150
8081A	KEPONE	SOIL	167		UG/KG	57	30	50-150	50-150
8081A	MIREX	SOIL	1.67		UG/KG	0.27	30	70-130	31-134

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8082	PCB 1016	WATER	1.0	2.0	UG/L	0.39	30	53-118	53-118
8082	PCB 1221	WATER	2.0	3.0	UG/L	0.96	30	70-130	50-150
8082	PCB 1232	WATER	1.0	2.0	UG/L	0.58	30	70-130	50-150
8082	PCB 1242	WATER	1.0	2.0	UG/L	0.59	30	70-130	50-150
8082	PCB 1248	WATER	1.0	2.0	UG/L	0.41	30	56-119	56-119
8082	PCB 1254	WATER	1.0	2.0	UG/L	0.46	30	60-143	60-143
8082	PCB 1260	WATER	1.0	2.0	UG/L	0.44	30	57-129	42-132
8082	PCB 1268	WATER	1.0	2.0	UG/L	0.32	30	70-130	50-150
8082	DECACHLOROBIPHENYL -SURR	WATER	NA		UG/L	NA	NA	10-129	10-129
8082	TETRACHLORO-META-XYLENE -SURR	WATER	NA		UG/L	NA	NA	34-113	34-113
8082	PCB 1016	SOIL	33	67	UG/KG	9.1	30	34-130	33-132
8082	PCB 1221	SOIL	67	133	UG/KG	28	30	70-130	50-150
8082	PCB 1232	SOIL	33	67	UG/KG	11	30	70-130	50-150
8082	PCB 1242	SOIL	33	67	UG/KG	18	30	70-130	50-150
8082	PCB 1248	SOIL	33	67	UG/KG	19	30	49-140	49-140
8082	PCB 1254	SOIL	33	67	UG/KG	9.8	30	32-159	32-159
8082	PCB 1260	SOIL	33	67	UG/KG	8.6	30	57-141	24-178
8082	PCB 1268	SOIL	33	67	UG/KG	14	30	70-130	50-150
8082	DECACHLOROBIPHENYL -SURR	SOIL	NA		UG/KG	NA	NA	29-153	29-153
8082	TETRACHLORO-META-XYLENE -SURR	SOIL	NA		UG/KG	NA	NA	27-134	27-134
8082	PCB 1016	WIPES	33		UG/WIPE	9.1	30	70-130	50-150
8082	PCB 1221	WIPES	67		UG/WIPE	28	30	70-130	50-150
8082	PCB 1232	WIPES	33		UG/WIPE	11	30	70-130	50-150
8082	PCB 1242	WIPES	33		UG/WIPE	18	30	70-130	50-150
8082	PCB 1248	WIPES	33		UG/WIPE	19	30	70-130	50-150
8082	PCB 1254	WIPES	33		UG/WIPE	9.8	30	70-130	50-150
8082	PCB 1260	WIPES	33		UG/WIPE	8.6	30	70-130	50-150
8082	DECACHLOROBIPHENYL -SURR	WIPES	NA		UG/WIPE	NA	30	75-150	75-150
8082	TETRACHLORO-META-XYLENE -SURR	WIPES	NA		UG/WIPE	NA	30	73-139	73-139
8151A	2,4-D	WATER	0.5	1.0	UG/L	0.19	30	23-141	23-141
8151A	DICAMBA	WATER	0.5	1.0	UG/L	0.18	30	11-116	11-116
8151A	DINOSEB	WATER	0.5	1.0	UG/L	0.14	30	17-103	17-103
8151A	2,4,5-T	WATER	0.5	1.0	UG/L	0.24	30	18-140	18-140
8151A	2,4,5-TP (SILVEX)	WATER	0.5	1.0	UG/L	0.15	30	18-127	18-127
8151A	PENTACHLOROPHENOL	WATER	1.0		UG/L	0.14	30	40-115	40-115
8151A	DCAA -SURR	WATER	NA		UG/L	NA	NA	24-127	21-132
8151A	2,4-D	SOIL	100		UG/KG	26	30	45-134	45-134
8151A	DICAMBA	SOIL	100		UG/KG	20	30	50-150	50-150
8151A	2,4,5-T	SOIL	100		UG/KG	22	30	55-119	55-119
8151A	2,4,5-TP (SILVEX)	SOIL	100		UG/KG	22	30	45-112	45-112
8151A	PENTACHLOROPHENOL	SOIL	200		UG/KG	15	30	50-150	50-150
8151A	DCAA -SURR	SOIL	NA		UG/KG	NA	NA	20-150	20-150
METACIDS -HPLC	ACETIC ACID	WATER	1.0		MG/L	0.12	30	50-150	50-150
METACIDS -HPLC	BUTYRIC ACID	WATER	1.0		MG/L	0.25	30	50-150	50-150
METACIDS -HPLC	LACTIC ACID	WATER	1.0		MG/L	0.25	30	50-150	50-150
METACIDS -HPLC	PROPIONIC ACID	WATER	1.0		MG/L	0.23	30	50-150	50-150
METACIDS -HPLC	PYRUVIC ACID	WATER	0.1		MG/L	0.043	30	50-150	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8260B TCL	*	1,1,1-TRICHLOROETHANE	WATER	5.0		UG/L	0.67	30	70-130	70-130
8260B TCL		1,1,2,2-TETRACHLOROETHANE	WATER	5.0		UG/L	0.76	30	70-130	70-130
8260B TCL		1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	WATER	5.0		UG/L	0.71	30	70-130	70-130
8260B TCL		1,1,2-TRICHLOROETHANE	WATER	5.0		UG/L	0.77	30	70-130	70-130
8260B TCL	*	1,1-DICHLOROETHANE	WATER	5.0		UG/L	0.57	30	70-130	70-130
8260B TCL	*	1,1-DICHLOROETHENE	WATER	5.0		UG/L	0.65	30	70-130	70-130
8260B TCL		1,2,4-TRICHLOROBENZENE	WATER	5.0		UG/L	0.95	30	70-130	70-130
8260B TCL		1,2-DIBROMO-3-CHLOROPROPANE	WATER	5.0		UG/L	1.1	30	50-150	50-150
8260B TCL		1,2-DIBROMOETHANE	WATER	5.0		UG/L	0.77	30	70-130	70-130
8260B TCL	*	1,2-DICHLOROBENZENE	WATER	5.0		UG/L	0.69	30	70-130	70-130
8260B TCL	*	1,2-DICHLOROETHANE	WATER	5.0		UG/L	0.71	30	70-130	70-130
8260B TCL		1,2-DICHLOROPROPANE	WATER	5.0		UG/L	0.82	30	70-130	70-130
8260B TCL		1,3-DICHLOROBENZENE	WATER	5.0		UG/L	0.79	30	70-130	70-130
8260B TCL		1,4-DICHLOROBENZENE	WATER	5.0		UG/L	0.84	30	70-130	70-130
8260B TCL		2-BUTANONE (MEK)	WATER	10		UG/L	1.0	30	50-150	50-150
8260B TCL		2-HEXANONE	WATER	10		UG/L	0.80	30	70-130	70-130
8260B TCL		4-METHYL-2-PENTANONE (MIBK)	WATER	10		UG/L	0.66	30	70-130	70-130
8260B TCL		ACETONE	WATER	20		UG/L	2.0	30	50-150	50-150
8260B TCL	*	BENZENE	WATER	5.0		UG/L	0.69	30	70-130	70-130
8260B TCL		BROMODICHLOROMETHANE	WATER	5.0		UG/L	0.69	30	70-130	70-130
8260B TCL		BROMOFORM	WATER	5.0		UG/L	0.78	30	70-130	70-130
8260B TCL		BROMOMETHANE	WATER	5.0		UG/L	1.0	30	50-150	50-150
8260B TCL		CARBON DISULFIDE	WATER	10		UG/L	1.2	30	70-130	70-130
8260B TCL		CARBON TETRACHLORIDE	WATER	5.0		UG/L	0.66	30	70-130	70-130
8260B TCL	*	CHLOROBENZENE	WATER	5.0		UG/L	0.69	30	70-130	70-130
8260B TCL		CHLOROETHANE	WATER	5.0		UG/L	0.73	30	70-130	70-130
8260B TCL	*	CHLOROFORM	WATER	5.0		UG/L	0.60	30	70-130	70-130
8260B TCL		CHLOROMETHANE	WATER	5.0		UG/L	0.68	30	70-130	70-130
8260B TCL	*	CIS-1,2-DICHLOROETHENE	WATER	5.0		UG/L	0.76	30	70-130	70-130
8260B TCL		CIS-1,3-DICHLOROPROPENE	WATER	5.0		UG/L	0.52	30	70-130	70-130
8260B TCL		CYCLOHEXANE	WATER	10		UG/L	0.60	30	50-150	50-150
8260B TCL		DIBROMOCHLOROMETHANE	WATER	5.0		UG/L	0.67	30	70-130	70-130
8260B TCL		DICHLORODIFLUOROMETHANE (FREON 12)	WATER	5.0		UG/L	0.72	30	70-130	70-130
8260B TCL	*	ETHYLBENZENE	WATER	5.0		UG/L	0.81	30	70-130	70-130
8260B TCL		ISOPROPYLBENZENE	WATER	5.0		UG/L	0.74	30	70-130	70-130
8260B TCL		M+P-XYLENE	WATER	5.0		UG/L	1.4	30	70-130	70-130
8260B TCL		METHYL ACETATE	WATER	10		UG/L	0.79	30	50-150	50-150
8260B TCL		METHYLCYCLOHEXANE	WATER	10		UG/L	0.88	30	50-150	50-150
8260B TCL		METHYLENE CHLORIDE	WATER	5.0		UG/L	0.61	30	70-130	70-130
8260B TCL		METHYL-TERT-BUTYL ETHER (MTBE)	WATER	5.0		UG/L	0.82	30	70-130	70-130
8260B TCL	*	O-XYLENE	WATER	5.0		UG/L	0.75	30	70-130	70-130
8260B TCL		STYRENE	WATER	5.0		UG/L	0.75	30	70-130	70-130
8260B TCL	*	TETRACHLOROETHENE	WATER	5.0		UG/L	0.71	30	70-130	70-130
8260B TCL	*	TOLUENE	WATER	5.0		UG/L	0.72	30	70-130	70-130
8260B TCL	*	TRANS-1,2-DICHLOROETHENE	WATER	5.0		UG/L	0.51	30	70-130	70-130
8260B TCL		TRANS-1,3-DICHLOROPROPENE	WATER	5.0		UG/L	0.74	30	70-130	70-130
8260B TCL	*	TRICHLOROETHENE	WATER	5.0		UG/L	0.74	30	70-130	70-130
8260B TCL		TRICHLOROFLUOROMETHANE (FREON 11)	WATER	5.0		UG/L	0.94	30	70-130	70-130
8260B TCL	*	VINYL CHLORIDE	WATER	5.0		UG/L	0.64	30	70-130	70-130
8260B TCL		4-BROMOFLUOROBENZENE -SURR	WATER	NA		UG/L	NA	NA	80-123	80-123
8260B TCL		DIBROMOFLUOROMETHANE -SURR	WATER	NA		UG/L	NA	NA	89-115	89-115
8260B TCL		DICHLOROETHANE-D4 -SURR	WATER	NA		UG/L	NA	NA	80-120	80-120
8260B TCL		TOLUENE-D8 -SURR	WATER	NA		UG/L	NA	NA	88-124	88-124

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8260B ADDITIONAL COMPOUNDS BY REQUEST									
8260B	1,1,1,2-TETRACHLOROETHANE	WATER	5.0		UG/L	0.59	30	70-130	70-130
8260B	1,1-DICHLOROPROPENE	WATER	5.0		UG/L	0.76	30	70-130	70-130
8260B	1,2,3-TRICHLOROBENZENE	WATER	5.0		UG/L	0.92	30	70-130	70-130
8260B	1,2,3-TRICHLOROPROPANE	WATER	5.0		UG/L	1.70	30	70-130	70-130
8260B	1,2,4-TRIMETHYLBENZENE	WATER	5.0		UG/L	0.80	30	70-130	70-130
8260B	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (FREON 123A)	WATER	5.0		UG/L	0.77	30	70-130	70-130
8260B	1,3,5-TRIMETHYLBENZENE	WATER	5.0		UG/L	0.76	30	70-130	70-130
8260B	1,3-DICHLOROPROPANE	WATER	5.0		UG/L	0.61	30	70-130	70-130
8260B	1,4-DIOXANE	WATER	100		UG/L	28	30	50-150	50-150
8260B	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (FREON 123)	WATER	5.0		UG/L	0.45	30	70-130	70-130
8260B	2,2-DICHLOROPROPANE	WATER	5.0		UG/L	0.70	30	70-130	70-130
8260B	2-CHLORO-1,3-BUTADIENE	WATER	5.0		UG/L	0.75	30	70-130	70-130
8260B	2-CHLOROETHYLVINYL ETHER	WATER	5.0		UG/L	0.68	30	50-150	50-150
8260B	2-CHLOROTOLUENE	WATER	5.0		UG/L	0.75	30	70-130	70-130
8260B	2-NITROPROPANE	WATER	5.0		UG/L	1.8	30	50-150	50-150
8260B	2-PROPANOL	WATER	100		UG/L	12	30	70-130	70-130
8260B	3-CHLOROPROPENE (ALLYL CHLORIDE)	WATER	5.0		UG/L	1.1	30	70-130	70-130
8260B	4-CHLOROTOLUENE	WATER	5.0		UG/L	0.72	30	70-130	70-130
8260B	ACETONITRILE	WATER	100		UG/L	5.4	30	50-150	50-150
8260B	ACROLEIN	WATER	100		UG/L	13	30	50-150	50-150
8260B	ACRYLONITRILE	WATER	100		UG/L	8.1	30	50-150	50-150
8260B	ALLYL CHLORIDE	WATER	5.0		UG/L	1.1	30	70-130	70-130
8260B	BROMOBENZENE	WATER	5.0		UG/L	0.63	30	70-130	70-130
8260B	BROMOCHLOROMETHANE	WATER	5.0		UG/L	0.72	30	70-130	70-130
8260B	CYCLOHEXANONE	WATER	100		UG/L	10	30	50-150	50-150
8260B	DIBROMOMETHANE	WATER	5.0		UG/L	0.74	30	70-130	70-130
8260B	DICHLOROFLUOROMETHANE (FREON 21)	WATER	5.0		UG/L	0.74	30	50-150	50-150
8260B	DIETHYL ETHER	WATER	5.0		UG/L	0.74	30	70-130	70-130
8260B	ETHYL METHACRYLATE	WATER	10		UG/L	0.73	30	70-130	70-130
8260B	HEXACHLOROBUTADIENE	WATER	5.0		UG/L	1.5	30	70-130	70-130
8260B	IODOMETHANE	WATER	10		UG/L	0.73	30	50-150	50-150
8260B	ISOBUTYL ALCOHOL	WATER	100		UG/L	13	30	50-150	50-150
8260B	METHACRYLONITRILE	WATER	20		UG/L	0.52	30	50-150	50-150
8260B	METHYL METHACRYLATE	WATER	10		UG/L	0.71	30	70-130	70-130
8260B	NAPTHALENE	WATER	5.0		UG/L	0.66	30	50-150	50-150
8260B	N-BUTYLBENZENE	WATER	5.0		UG/L	0.82	30	70-130	70-130
8260B	N-HEPTANE	WATER	5.0		UG/L	1.4	30	70-130	70-130
8260B	N-PROPYLBENZENE	WATER	5.0		UG/L	0.79	30	70-130	70-130
8260B	P-ISOPROPYLTOLUENE	WATER	5.0		UG/L	0.84	30	70-130	70-130
8260B	PROPIONITRILE	WATER	100		UG/L	3.2	30	50-150	50-150
8260B	SEC-BUTYLBENZENE	WATER	5.0		UG/L	0.80	30	70-130	70-130
8260B	TERT-BUTYL ALCOHOL	WATER	100		UG/L	15	30	50-150	50-150
8260B	TERT-BUTYLBENZENE	WATER	5.0		UG/L	0.80	30	70-130	70-130
8260B	TETRA HYDROFURAN	WATER	5.0		UG/L	0.89	30	50-150	50-150
8260B	TRANS-1,4-DICHLORO-2-BUTENE	WATER	5.0		UG/L	0.54	30	50-150	50-150
8260B	VINYL ACETATE	WATER	10		UG/L	1.9	30	50-150	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8260B TCL	*	1,1,1-TRICHLOROETHANE	SOIL	5.0		UG/KG	0.60	30	70-130	70-130
8260B TCL		1,1,2,2-TETRACHLOROETHANE	SOIL	5.0		UG/KG	0.51	30	70-130	70-130
8260B TCL		1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	SOIL	5.0		UG/KG	0.39	30	70-130	70-130
8260B TCL		1,1,2-TRICHLOROETHANE	SOIL	5.0		UG/KG	0.22	30	70-130	70-130
8260B TCL	*	1,1-DICHLOROETHANE	SOIL	5.0		UG/KG	0.24	30	70-130	70-130
8260B TCL	*	1,1-DICHLOROETHENE	SOIL	5.0		UG/KG	0.48	30	70-130	70-130
8260B TCL		1,2,4-TRICHLOROBENZENE	SOIL	5.0		UG/KG	0.94	30	70-130	70-130
8260B TCL		1,2-DIBROMO-3-CHLOROPROPANE	SOIL	5.0		UG/KG	0.70	30	50-150	50-150
8260B TCL		1,2-DIBROMOETHANE	SOIL	5.0		UG/KG	0.40	30	70-130	70-130
8260B TCL	*	1,2-DICHLOROBENZENE	SOIL	5.0		UG/KG	0.23	30	70-130	70-130
8260B TCL	*	1,2-DICHLOROETHANE	SOIL	5.0		UG/KG	0.30	30	70-130	70-130
8260B TCL		1,2-DICHLOROPROPANE	SOIL	5.0		UG/KG	0.47	30	70-130	70-130
8260B TCL		1,3-DICHLOROBENZENE	SOIL	5.0		UG/KG	0.53	30	70-130	70-130
8260B TCL		1,4-DICHLOROBENZENE	SOIL	5.0		UG/KG	0.57	30	70-130	70-130
8260B TCL		2-BUTANONE (MEK)	SOIL	10		UG/KG	1.0	30	50-150	50-150
8260B TCL		2-HEXANONE	SOIL	10		UG/KG	0.72	30	70-130	70-130
8260B TCL		4-METHYL-2-PENTANONE (MIBK)	SOIL	10		UG/KG	0.95	30	70-130	70-130
8260B TCL		ACETONE	SOIL	20		UG/KG	1.5	30	50-150	50-150
8260B TCL	*	BENZENE	SOIL	5.0		UG/KG	0.19	30	70-130	70-130
8260B TCL		BROMODICHLOROMETHANE	SOIL	5.0		UG/KG	0.39	30	70-130	70-130
8260B TCL		BROMOFORM	SOIL	5.0		UG/KG	0.46	30	70-130	70-130
8260B TCL		BROMOMETHANE	SOIL	5.0		UG/KG	0.50	30	50-150	50-150
8260B TCL		CARBON DISULFIDE	SOIL	10		UG/KG	0.19	30	70-130	70-130
8260B TCL		CARBON TETRACHLORIDE	SOIL	5.0		UG/KG	0.35	30	70-130	70-130
8260B TCL	*	CHLOROBENZENE	SOIL	5.0		UG/KG	0.24	30	70-130	70-130
8260B TCL		CHLOROETHANE	SOIL	5.0		UG/KG	0.21	30	70-130	70-130
8260B TCL	*	CHLOROFORM	SOIL	5.0		UG/KG	0.15	30	70-130	70-130
8260B TCL		CHLOROMETHANE	SOIL	5.0		UG/KG	0.44	30	70-130	70-130
8260B TCL	*	CIS-1,2-DICHLOROETHENE	SOIL	5.0		UG/KG	0.55	30	70-130	70-130
8260B TCL		CIS-1,3-DICHLOROPROPENE	SOIL	5.0		UG/KG	0.20	30	70-130	70-130
8260B TCL		CYCLOHEXANE	SOIL	10		UG/KG	0.36	30	70-130	70-130
8260B TCL		DIBROMOCHLOROMETHANE	SOIL	5.0		UG/KG	0.32	30	70-130	70-130
8260B TCL		DICHLORODIFLUOROMETHANE (FREON 12)	SOIL	5.0		UG/KG	0.35	30	70-130	70-130
8260B TCL	*	ETHYLBENZENE	SOIL	5.0		UG/KG	0.37	30	70-130	70-130
8260B TCL		ISOPROPYLBENZENE	SOIL	5.0		UG/KG	0.40	30	70-130	70-130
8260B TCL		M+P-XYLENE	SOIL	5.0		UG/KG	0.78	30	70-130	70-130
8260B TCL		METHYLCYCLOHEXANE	SOIL	10		UG/KG	0.34	30	50-150	50-150
8260B TCL		METHYLENE CHLORIDE	SOIL	5.0		UG/KG	0.32	30	70-130	70-130
8260B TCL		METHYL-TERT-BUTYL ETHER (MTBE)	SOIL	5.0		UG/KG	0.19	30	70-130	70-130
8260B TCL	*	O-XYLENE	SOIL	5.0		UG/KG	0.31	30	70-130	70-130
8260B TCL		STYRENE	SOIL	5.0		UG/KG	0.16	30	70-130	70-130
8260B TCL	*	TETRACHLOROETHENE	SOIL	5.0		UG/KG	0.24	30	70-130	70-130
8260B TCL	*	TOLUENE	SOIL	5.0		UG/KG	0.30	30	70-130	70-130
8260B TCL	*	TRANS-1,2-DICHLOROETHENE	SOIL	5.0		UG/KG	0.30	30	70-130	70-130
8260B TCL		TRANS-1,3-DICHLOROPROPENE	SOIL	5.0		UG/KG	0.33	30	70-130	70-130
8260B TCL	*	TRICHLOROETHENE	SOIL	5.0		UG/KG	0.28	30	70-130	70-130
8260B TCL		TRICHLOROFLUOROMETHANE (FREON 11)	SOIL	5.0		UG/KG	0.32	30	70-130	70-130
8260B TCL	*	VINYL CHLORIDE	SOIL	5.0		UG/KG	0.68	30	70-130	70-130
8260B TCL		4-BROMOFLUOROBENZENE -SURR	SOIL	NA		UG/KG	NA	NA	50-135	50-135
8260B TCL		DIBROMOFLUOROMETHANE -SURR	SOIL	NA		UG/KG	NA	NA	58-133	58-133
8260B TCL		DICHLOROETHANE-D4	SOIL	NA		UG/KG	NA	NA	80-120	80-120
8260B TCL		TOLUENE-D8 -SURR	SOIL	NA		UG/KG	NA	NA	75-128	75-128

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8260B ADDITIONAL COMPOUNDS BY REQUEST									
8260B	1,1,1,2-TETRACHLOROETHANE	SOIL	5.0		UG/KG	0.44	30	70-130	70-130
8260B	1,1-DICHLOROPROPENE	SOIL	5.0		UG/KG	0.43	30	70-130	70-130
8260B	1,2,3-TRICHLOROBENZENE	SOIL	5.0		UG/KG	1.1	30	70-130	70-130
8260B	1,2,3-TRICHLOROPROPANE	SOIL	5.0		UG/KG	0.95	30	70-130	70-130
8260B	1,2,4-TRIMETHYLBENZENE	SOIL	5.0		UG/KG	0.42	30	70-130	70-130
8260B	1,3,5-TRIMETHYLBENZENE	SOIL	5.0		UG/KG	0.51	30	70-130	70-130
8260B	1,3-DICHLOROPROPANE	SOIL	5.0		UG/KG	0.38	30	70-130	70-130
8260B	1,4-DIOXANE	SOIL	100		UG/KG	21	30	50-150	50-150
8260B	2,2-DICHLOROPROPANE	SOIL	5.0		UG/KG	0.21	30	70-130	70-130
8260B	2-CHLORO-1,3-BUTADIENE	SOIL	5.0		UG/KG	0.53	30	70-130	70-130
8260B	2-CHLOROETHYLVINYL ETHER	SOIL	5.0		UG/KG	2.7	30	50-150	50-150
8260B	2-CHLOROTOLUENE	SOIL	5.0		UG/KG	0.28	30	70-130	70-130
8260B	2-NITROPROPANE	SOIL	5.0		UG/KG	1.5	30	50-150	50-150
8260B	2-PROPANOL	SOIL	100		UG/KG	39	30	70-130	70-130
8260B	3-CHLOROPROPENE (ALLYL CHLORIDE)	SOIL	5.0		UG/KG	1.0	30	70-130	70-130
8260B	4-CHLOROTOLUENE	SOIL	5.0		UG/KG	0.37	30	70-130	70-130
8260B	ACETONITRILE	SOIL	100		UG/KG	13	30	50-150	50-150
8260B	ACROLEIN	SOIL	100		UG/KG	5.4	30	50-150	50-150
8260B	ACRYLONITRILE	SOIL	100		UG/KG	3.6	30	50-150	50-150
8260B	ALLYL CHLORIDE	SOIL	5.0		UG/KG	1.0	30	70-130	70-130
8260B	BROMOBENZENE	SOIL	5.0		UG/KG	0.42	30	70-130	70-130
8260B	BROMOCHLOROMETHANE	SOIL	5.0		UG/KG	0.34	30	70-130	70-130
8260B	DIBROMOMETHANE	SOIL	5.0		UG/KG	0.35	30	70-130	70-130
8260B	DIETHYL ETHER	SOIL	5.0		UG/KG	0.49	30	70-130	70-130
8260B	ETHYL METHACRYLATE	SOIL	10.0		UG/KG	0.26	30	70-130	70-130
8260B	HEXACHLOROBUTADIENE	SOIL	5.0		UG/KG	0.60	30	70-130	70-130
8260B	IODOMETHANE	SOIL	10		UG/KG	0.35	30	50-150	50-150
8260B	ISOBUTYL ALCOHOL	SOIL	100		UG/KG	14	30	50-150	50-150
8260B	METHACRYLONITRILE	SOIL	20		UG/KG	1.7	30	50-150	50-150
8260B	METHYL METHACRYLATE	SOIL	10		UG/KG	1.2	30	70-130	70-130
8260B	NAPTHALENE	SOIL	5.0		UG/KG	1.1	30	50-150	50-150
8260B	N-BUTYLBENZENE	SOIL	5.0		UG/KG	0.61	30	70-130	70-130
8260B	N-HEPTANE	SOIL	5.0		UG/KG	0.36	30	70-130	70-130
8260B	N-PROPYLBENZENE	SOIL	5.0		UG/KG	0.36	30	70-130	70-130
8260B	P-ISOPROPYLTOLUENE	SOIL	5.0		UG/KG	0.41	30	70-130	70-130
8260B	PROPIONITRILE	SOIL	100		UG/KG	8.9	30	50-150	50-150
8260B	SEC-BUTYLBENZENE	SOIL	5.0		UG/KG	0.32	30	70-130	70-130
8260B	TERT-BUTYL ALCOHOL	SOIL	100		UG/KG	10	30	50-150	50-150
8260B	TERT-BUTYLBENZENE	SOIL	5.0		UG/KG	0.29	30	70-130	70-130
8260B	TETRA HYDROFURAN	SOIL	5.0		UG/KG	1.1	30	50-150	50-150
8260B	TRANS-1,4-DICHLORO-2-BUTENE	SOIL	5.0		UG/KG	0.98	30	50-150	50-150
8260B	VINYL ACETATE	SOIL	10		UG/KG	1.2	30	50-150	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8270C TCL		1,1'-BIPHENYL	WATER	10		UG/L	0.55	30	40-150	40-150
8270C TCL		2,2'-OXYBIS(1-CHLOROPROPANE)	WATER	10		UG/L	0.78	30	10-140	10-140
8270C TCL	*	2,4,5-TRICHLOROPHENOL	WATER	10		UG/L	0.84	30	40-110	40-110
8270C TCL	*	2,4,6-TRICHLOROPHENOL	WATER	10		UG/L	0.59	30	40-110	40-110
8270C TCL		2,4-DICHLOROPHENOL	WATER	10		UG/L	0.37	30	66-104	66-104
8270C TCL		2,4-DIMETHYLPHENOL	WATER	10		UG/L	1.8	30	31-92	31-92
8270C TCL	*	2,4-DINITROPHENOL	WATER	50		UG/L	14	30	21-123	21-123
8270C TCL		2,4-DINITROTOLUENE	WATER	10		UG/L	0.53	30	68-113	58-114
8270C TCL		2,6-DINITROTOLUENE	WATER	10		UG/L	0.55	30	70-130	70-130
8270C TCL	*	2-CHLORONAPHTHALENE	WATER	10		UG/L	0.55	30	52-111	52-111
8270C TCL		2-CHLOROPHENOL	WATER	10		UG/L	0.69	30	16-116	37-105
8270C TCL	*	2-METHYLNAPHTHALENE	WATER	10		UG/L	0.45	30	42-107	42-107
8270C TCL		2-METHYLPHENOL	WATER	10		UG/L	0.79	30	16-102	16-102
8270C TCL		2-NITROANILINE	WATER	50		UG/L	0.59	30	63-130	63-130
8270C TCL		2-NITROPHENOL	WATER	10		UG/L	0.61	30	63-130	63-130
8270C TCL		3,3'-DICHLOROBENZIDINE	WATER	10		UG/L	0.73	30	48-119	48-119
8270C TCL		3-NITROANILINE	WATER	50		UG/L	0.43	30	56-111	56-111
8270C TCL	*	4,6-DINITRO-2-METHYLPHENOL	WATER	50		UG/L	0.51	30	47-130	47-130
8270C TCL	*	4-BROMOPHENYL-PHENYLETHER	WATER	10		UG/L	0.67	30	64-130	64-130
8270C TCL		4-CHLORO-3-METHYLPHENOL	WATER	10		UG/L	0.50	30	21-131	21-131
8270C TCL		4-CHLOROANILINE	WATER	10		UG/L	0.70	30	39-107	39-107
8270C TCL		4-CHLOROPHENYL-PHENYLETHER	WATER	10		UG/L	0.49	30	55-106	55-106
8270C TCL		4-METHYLPHENOL	WATER	10		UG/L	1.5	30	26-99	26-99
8270C TCL	*	4-NITROANILINE	WATER	50		UG/L	0.59	30	70-130	70-130
8270C TCL	*	4-NITROPHENOL	WATER	50		UG/L	6.7	30	11-130	10-130
8270C TCL	*	ACENAPHTHENE	WATER	10		UG/L	0.48	30	41-121	41-121
8270C TCL		ACENAPHTHYLENE	WATER	10		UG/L	0.33	30	36-125	36-125
8270C TCL		ACETOPHENONE	WATER	10		UG/L	1.4	30	40-150	40-150
8270C TCL		ANTHRACENE	WATER	10		UG/L	0.60	30	73-130	73-130
8270C TCL		ATRAZINE	WATER	10		UG/L	1.3	30	40-150	40-150
8270C TCL		BENZALDEHYDE	WATER	10		UG/L	1.3	30	40-150	40-150
8270C TCL		BENZO(A)ANTHRACENE	WATER	10		UG/L	0.54	30	71-130	40-130
8270C TCL		BENZO(A)PYRENE	WATER	10		UG/L	0.42	30	61-119	38-118
8270C TCL		BENZO(B)FLUORANTHENE	WATER	10		UG/L	0.54	30	68-130	39-130
8270C TCL		BENZO(G,H,I)PERYLENE	WATER	10		UG/L	0.62	30	50-125	50-125
8270C TCL		BENZO(K)FLUORANTHENE	WATER	10		UG/L	0.53	30	68-113	41-112
8270C TCL		BIS(-2-CHLOROETHOXY)METHANE	WATER	10		UG/L	0.86	30	61-130	61-130
8270C TCL		BIS(2-CHLOROETHYL)ETHER	WATER	10		UG/L	0.74	30	55-130	55-130
8270C TCL		BIS(2-ETHYLHEXYL)PHTHALATE	WATER	10		UG/L	0.48	30	70-130	70-130
8270C TCL		BUTYL BENZYL PHTHALATE	WATER	10		UG/L	0.59	30	22-141	22-141
8270C TCL		CAPROLACTAM	WATER	10		UG/L	1.0	30	8-100	8-100
8270C TCL		CARBAZOLE	WATER	10		UG/L	0.47	30	70-130	70-130
8270C TCL		CHRYSENE	WATER	10		UG/L	0.53	30	61-119	61-119
8270C TCL		DIBENZO(A,H)ANTHRACENE	WATER	10		UG/L	0.63	30	70-130	70-130
8270C TCL		DIBENZOFURAN	WATER	10		UG/L	0.41	30	70-130	70-130
8270C TCL		DIETHYLPHTHALATE	WATER	10		UG/L	0.31	30	31-124	31-124
8270C TCL		DIMETHYL PHTHALATE	WATER	10		UG/L	0.53	30	10-121	10-121
8270C TCL		DI-N-BUTYLPHTHALATE	WATER	10		UG/L	0.39	30	46-130	46-130
8270C TCL		DI-N-OCTYL PHTHALATE	WATER	10		UG/L	0.45	30	65-130	65-130
8270C TCL		FLUORANTHENE	WATER	10		UG/L	0.32	30	75-130	62-130
8270C TCL		FLUORENE	WATER	10		UG/L	0.47	30	60-111	27-113
8270C TCL	*	HEXACHLOROBENZENE	WATER	10		UG/L	0.43	30	58-130	58-130
8270C TCL		HEXACHLOROBUTADIENE	WATER	10		UG/L	0.69	30	13-130	13-130
8270C TCL		HEXACHLOROCYCLOPENTADIENE	WATER	10		UG/L	1.1	30	10-130	10-130
8270C TCL		HEXACHLOROETHANE	WATER	10		UG/L	0.48	30	11-130	11-130
8270C TCL		INDENO(1,2,3-CD)PYRENE	WATER	10		UG/L	0.49	30	70-130	70-130
8270C TCL		ISOPHORONE	WATER	10		UG/L	0.61	30	58-130	58-130
8270C TCL	*	NAPHTHALENE	WATER	10		UG/L	0.62	30	26-109	26-109
8270C TCL	*	NITROBENZENE	WATER	10		UG/L	0.78	30	49-130	49-130
8270C TCL	*	N-NITROSO-DI-N-PROPYLAMINE	WATER	10		UG/L	1.2	30	25-120	25-120
8270C TCL		N-NITROSODIPHENYLAMINE	WATER	10		UG/L	0.75	30	70-130	70-130
8270C TCL	*	PENTACHLOROPHENOL	WATER	50		UG/L	0.60	30	16-131	16-131
8270C TCL	*	PHENANTHRENE	WATER	10		UG/L	0.45	30	68-130	38-130
8270C TCL	*	PHENOL	WATER	10		UG/L	0.54	30	10-65	10-71
8270C TCL	*	PYRENE	WATER	10		UG/L	0.65	30	60-130	52-130

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8270C TCL		2,4,6-TRIBROMOPHENOL -SURR	WATER	NA		UG/L	NA	NA	41-135	41-135
8270C TCL		2-FLUOROBIPHENYL -SURR	WATER	NA		UG/L	NA	NA	38-100	38-100
8270C TCL		2-FLUOROPHENOL -SURR	WATER	NA		UG/L	NA	NA	17-74	17-74
8270C TCL		NITROBENZENE-d5 -SURR	WATER	NA		UG/L	NA	NA	38-105	38-105
8270C TCL		PHENOL-d6 -SURR	WATER	NA		UG/L	NA	NA	10-69	10-69
8270C TCL		TERPHENYL-d14 -SURR	WATER	NA		UG/L	NA	NA	40-137	40-137
8270C ADDITIONAL COMPOUNDS BY REQUEST										
8270C		1,2,4,5-TETRACHLOROBENZENE	WATER	10		UG/L	0.74	30	40-150	40-150
8270C	*	1,2,4-TRICHLOROBENZENE	WATER	10		UG/L	0.65	30	17-99	27-104
8270C		1,2-DICHLOROBENZENE	WATER	10		UG/L	0.67	30	23-130	23-130
8270C		1,2-DIPHENYLHYDRAZINE	WATER	10		UG/L	0.48	30	10-142	10-142
8270C		1,3,5-TRINITROBENZENE	WATER	10		UG/L	1.1	30	40-150	40-150
8270C		1,3-DICHLOROBENZENE	WATER	10		UG/L	0.50	30	17-130	17-130
8270C	*	1,4-DICHLOROBENZENE	WATER	10		UG/L	0.58	30	16-83	23-85
8270C		1,4-NAPHTHOQUINONE	WATER	50		UG/L	12	30	40-150	40-150
8270C		1-METHYLNAPHTHALENE	WATER	10		UG/L	0.62	30	40-150	40-150
8270C		1-NAPHTHYLAMINE	WATER	50		UG/L	4.5	30	40-150	40-150
8270C		2,3,4,6-TETRACHLOROPHENOL	WATER	10		UG/L	0.60	30	40-150	40-150
8270C		2,6-DICHLOROPHENOL	WATER	10		UG/L	0.82	30	40-150	40-150
8270C		2-ACETYLAMINOFLUORENE	WATER	10		UG/L	0.59	30	40-150	40-150
8270C		2-NAPHTHYLAMINE	WATER	50		UG/L	3.6	30	40-150	40-150
8270C		2-PICOLINE	WATER	10		UG/L	2.5	30	40-150	40-150
8270C		3,3'-DIMETHYLBENZIDINE	WATER	50		UG/L	24	30	40-150	40-150
8270C		3-METHYLCHOLANTHRENE	WATER	10		UG/L	2.2	30	40-150	40-150
8270C		4-AMINOBIPHENYL	WATER	50		UG/L	3.1	30	40-150	40-150
8270C		4-NITROQUINOLINE-1-OXIDE	WATER	50		UG/L	24	30	40-150	40-150
8270C		5-NITRO-O-TOLUIDINE	WATER	10		UG/L	1.4	30	40-150	40-150
8270C		7,12-DIMETHYLBENZ(a)ANTHRACENE	WATER	10		UG/L	2.4	30	40-150	40-150
8270C		aa-DIMETHYLPHENETHYLAMINE	WATER	50		UG/L	46	30	40-150	40-150
8270C		ANILINE	WATER	10		UG/L	0.78	30	13-123	13-123
8270C		ARAMITE	WATER	50		UG/L	6.3	30	40-150	40-150
8270C		BENZIDINE	WATER	100	200	UG/L	43	30	10-130	10-130
8270C		BENZOIC ACID	WATER	50	100	UG/L	15	30	30-130	30-130
8270C		BENZYL ALCOHOL	WATER	10		UG/L	1.1	30	31-109	31-109
8270C		CHLOROBENZILATE	WATER	10		UG/L	0.78	30	40-150	40-150
8270C		DIALLATE	WATER	10		UG/L	1.4	30	40-150	40-150
8270C		DIMETHOATE	WATER	50		UG/L	1.1	30	40-150	40-150
8270C		DINOSEB	WATER	50		UG/L	1.0	30	40-150	40-150
8270C		DIPHENYLAMINE	WATER	10		UG/L	0.64	30	40-150	40-150
8270C		DISULFOTON	WATER	10		UG/L	2.7	30	40-150	40-150
8270C		ETHYL METHANESULFONATE	WATER	10		UG/L	1.0	30	40-150	40-150
8270C		ETHYL PARATHION	WATER	10		UG/L	1.1	30	40-150	40-150
8270C		HEXACHLOROPHENE	WATER	500		UG/L	310	30	40-150	40-150
8270C		HEXACHLOROPROPENE	WATER	10		UG/L	1.4	30	40-150	40-150
8270C		ISODRIN	WATER	10		UG/L	1.1	30	40-150	40-150
8270C		ISOSAFROLE	WATER	10		UG/L	1.8	30	40-150	40-150
8270C		m-DINITROBENZENE	WATER	10		UG/L	0.69	30	40-150	40-150
8270C		METHAPYRILENE	WATER	50		UG/L	36	30	40-150	40-150
8270C		METHYL METHANESULFONATE	WATER	10		UG/L	1.1	30	40-150	40-150
8270C		METHYL PARATHION	WATER	10		UG/L	0.90	30	40-150	40-150
8270C		N-NITROSODIETHYLAMINE	WATER	10		UG/L	2.0	30	40-150	40-150
8270C		N-NITROSODIMETHYLAMINE	WATER	10		UG/L	0.79	30	27-130	27-130
8270C		N-NITROSODI-N-BUTYLAMINE	WATER	10		UG/L	2.7	30	40-150	40-150
8270C		N-NITROSOMETHYLETHYLAMINE	WATER	10		UG/L	1.8	30	40-150	40-150
8270C		N-NITROSOMORPHOLINE	WATER	10		UG/L	2.2	30	40-150	40-150
8270C		N-NITROSOPIPERIDINE	WATER	10		UG/L	2.6	30	40-150	40-150
8270C		N-NITROSOPYRROLIDINE	WATER	10		UG/L	2.2	30	40-150	40-150
8270C		ooo-TRIETHYL PHOSPHOROTHIOATE	WATER	10		UG/L	0.99	30	40-150	40-150
8270C		o-TOLUIDINE	WATER	10		UG/L	1.5	30	40-150	40-150
8270C		p-DIMETHYLAMINOAZOBENZENE	WATER	10		UG/L	1.0	30	40-150	40-150
8270C		PENTACHLOROBENZENE	WATER	10		UG/L	0.88	30	40-150	40-150
8270C		PENTACHLOROETHANE	WATER	10		UG/L	1.5	30	40-150	40-150
8270C		PENTACHLORONITROBENZENE	WATER	10		UG/L	0.89	30	40-150	40-150
8270C		PHENACETIN	WATER	10		UG/L	0.73	30	40-150	40-150
8270C		PHORATE	WATER	10		UG/L	1.2	30	40-150	40-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8270C	p-PHENYLENEDIAMINE	WATER	50		UG/L		30	40-150	40-150
8270C	PRONAMIDE	WATER	10		UG/L	1.0	30	40-150	40-150
8270C	PYRIDINE	WATER	50		UG/L	0.020	30	10-130	10-130
8270C	SAFROLE	WATER	10		UG/L	1.5	30	40-150	40-150
8270C	SULFOTEPP	WATER	10		UG/L	1.1	30	40-150	40-150
8270C	THIONAZIN	WATER	10		UG/L	0.98	30	40-150	40-150

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8270C TCL		1'1-BIPHENYL	SOIL	330		UG/KG	23	30	40-150	40-150
8270C TCL		2,2'-OXYBIS(1-CHLOROPROPANE)	SOIL	330		UG/KG	25	30	10-126	10-126
8270C TCL		2,4,5-TRICHLOROPHENOL	SOIL	330		UG/KG	24	30	34-121	34-121
8270C TCL	*	2,4,6-TRICHLOROPHENOL	SOIL	330		UG/KG	24	30	33-120	33-120
8270C TCL	*	2,4-DICHLOROPHENOL	SOIL	330		UG/KG	24	30	57-130	57-130
8270C TCL		2,4-DIMETHYLPHENOL	SOIL	330		UG/KG	19	30	45-130	45-130
8270C TCL		2,4-DINITROPHENOL	SOIL	1700		UG/KG	420	30	23-130	23-130
8270C TCL	*	2,4-DINITROTOLUENE	SOIL	330		UG/KG	32	30	46-124	46-124
8270C TCL		2,6-DINITROTOLUENE	SOIL	330		UG/KG	33	30	62-130	62-130
8270C TCL		2-CHLORONAPHTHALENE	SOIL	330		UG/KG	21	30	55-130	55-130
8270C TCL	*	2-CHLOROPHENOL	SOIL	330		UG/KG	18	30	36-116	18-126
8270C TCL		2-METHYLNAPHTHALENE	SOIL	330		UG/KG	22	30	52-130	13-130
8270C TCL	*	2-METHYLPHENOL	SOIL	330		UG/KG	27	30	26-105	26-105
8270C TCL		2-NITROANILINE	SOIL	1700		UG/KG	32	30	51-111	51-111
8270C TCL		2-NITROPHENOL	SOIL	330		UG/KG	26	30	55-130	55-130
8270C TCL		3,3'-DICHLOROBENZIDINE	SOIL	330		UG/KG	46	30	10-121	10-121
8270C TCL		3-NITROANILINE	SOIL	1700		UG/KG	25	30	10-130	10-130
8270C TCL		4,6-DINITRO-2-METHYLPHENOL	SOIL	1700		UG/KG	22	30	38-119	38-119
8270C TCL	*	4-BROMOPHENYL-PHENYLETHER	SOIL	330		UG/KG	36	30	61-113	61-113
8270C TCL	*	4-CHLORO-3-METHYLPHENOL	SOIL	330		UG/KG	26	30	40-125	28-130
8270C TCL		4-CHLOROANILINE	SOIL	330		UG/KG	33	30	10-130	10-130
8270C TCL		4-CHLOROPHENYL-PHENYLETHER	SOIL	330		UG/KG	27	30	60-130	60-130
8270C TCL		4-METHYLPHENOL	SOIL	330		UG/KG	52	30	22-108	22-108
8270C TCL		4-NITROANILINE	SOIL	1700		UG/KG	24	30	31-105	31-105
8270C TCL	*	4-NITROPHENOL	SOIL	1700	3300	UG/KG	710	30	25-132	12-128
8270C TCL	*	ACENAPHTHENE	SOIL	330		UG/KG	28	30	47-123	39-124
8270C TCL	*	ACENAPHTHYLENE	SOIL	330		UG/KG	22	30	44-124	31-124
8270C TCL		ACETOPHENONE	SOIL	330		UG/KG	60	30	40-150	40-150
8270C TCL		ANTHRACENE	SOIL	330		UG/KG	29	30	44-125	39-122
8270C TCL		ATRAZINE	SOIL	330		UG/KG	74	30	40-150	40-150
8270C TCL		BENZALDEHYDE	SOIL	330	670	UG/KG	130	30	40-150	40-150
8270C TCL		BENZO(A)ANTHRACENE	SOIL	330		UG/KG	28	30	48-122	35-129
8270C TCL		BENZO(A)PYRENE	SOIL	330		UG/KG	68	30	49-126	36-130
8270C TCL		BENZO(B)FLUORANTHENE	SOIL	330		UG/KG	32	30	42-128	37-124
8270C TCL		BENZO(G,H,I)PERYLENE	SOIL	330		UG/KG	35	30	42-126	34-129
8270C TCL		BENZO(K)FLUORANTHENE	SOIL	330		UG/KG	27	30	48-124	36-124
8270C TCL		BIS(-2-CHLOROETHOXY)METHANE	SOIL	330		UG/KG	43	30	48-130	48-130
8270C TCL		BIS(2-CHLOROETHYL)ETHER	SOIL	330		UG/KG	27	30	43-130	43-130
8270C TCL		BIS(2-ETHYLHEXYL)PHTHALATE	SOIL	330		UG/KG	38	30	60-130	60-130
8270C TCL		BUTYL BENZYL PHTHALATE	SOIL	330		UG/KG	30	30	56-130	56-130
8270C TCL		CAPROLACTAM	SOIL	330		UG/KG	26	30	40-150	40-150
8270C TCL		CARBAZOLE	SOIL	330		UG/KG	25	30	51-130	51-130
8270C TCL		CHRYSENE	SOIL	330		UG/KG	28	30	49-122	32-131
8270C TCL		DIBENZO(A,H)ANTHRACENE	SOIL	330		UG/KG	29	30	23-140	23-140
8270C TCL		DIBENZOFURAN	SOIL	330		UG/KG	27	30	42-130	42-130
8270C TCL		DIETHYLPHTHALATE	SOIL	330		UG/KG	29	30	62-130	62-130
8270C TCL		DIMETHYL PHTHALATE	SOIL	330		UG/KG	32	30	61-130	61-130
8270C TCL		DI-N-BUTYLPHTHALATE	SOIL	330		UG/KG	33	30	62-130	62-130
8270C TCL		DI-N-OCTYL PHTHALATE	SOIL	330		UG/KG	40	30	59-130	59-130
8270C TCL		FLUORANTHENE	SOIL	330		UG/KG	36	30	42-124	33-125
8270C TCL		FLUORENE	SOIL	330		UG/KG	34	30	36-128	33-121
8270C TCL	*	HEXACHLOROBENZENE	SOIL	330		UG/KG	21	30	56-116	56-116
8270C TCL		HEXACHLOROBUTADIENE	SOIL	330		UG/KG	23	30	10-104	10-104
8270C TCL		HEXACHLOROCYCLOPENTADIENE	SOIL	330		UG/KG	18	30	9-102	9-102
8270C TCL		HEXACHLOROETHANE	SOIL	330		UG/KG	28	30	10-107	10-107
8270C TCL		INDENO(1,2,3-CD)PYRENE	SOIL	330		UG/KG	28	30	41-127	35-129
8270C TCL		ISOPHORONE	SOIL	330		UG/KG	27	30	50-130	50-130
8270C TCL	*	NAPHTHALENE	SOIL	330		UG/KG	20	30	38-116	25-120
8270C TCL	*	NITROBENZENE	SOIL	330		UG/KG	21	30	32-130	32-130
8270C TCL	*	N-NITROSO-DI-N-PROPYLAMINE	SOIL	330		UG/KG	26	30	45-117	34-122
8270C TCL		N-NITROSODIPHENYLAMINE	SOIL	330		UG/KG	24	30	54-116	54-116
8270C TCL	*	PENTACHLOROPHENOL	SOIL	1700		UG/KG	340	30	21-131	13-128
8270C TCL	*	PHENANTHRENE	SOIL	330		UG/KG	43	30	48-130	28-130
8270C TCL	*	PHENOL	SOIL	330	670	UG/KG	160	30	34-118	26-122
8270C TCL	*	PYRENE	SOIL	330		UG/KG	41	30	53-130	34-130

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8270C TCL		2,4,6-TRIBROMOPHENOL -SURR	SOIL	NA		UG/KG	NA	NA	33-139	33-139
8270C TCL		2-FLUOROBIPHENYL -SURR	SOIL	NA		UG/KG	NA	NA	32-130	32-130
8270C TCL		2-FLUOROPHENOL -SURR	SOIL	NA		UG/KG	NA	NA	10-130	10-130
8270C TCL		NITROBENZENE-d5 -SURR	SOIL	NA		UG/KG	NA	NA	27-130	27-130
8270C TCL		PHENOL-d6 -SURR	SOIL	NA		UG/KG	NA	NA	10-133	10-133
8270C TCL		TERPHENYL-d14 -SURR	SOIL	NA		UG/KG	NA	NA	48-131	48-131
8270C ADDITIONAL COMPOUNDS BY REQUEST										
8270C		1,2,4,5-TETRACHLOROBENZENE	SOIL	330		UG/KG	35	30	40-150	40-150
8270C	*	1,2,4-TRICHLOROBENZENE	SOIL	330		UG/KG	22	30	42-130	34-130
8270C		1,2-DICHLOROBENZENE	SOIL	330		UG/KG	19	30	45-130	45-130
8270C		1,2-DIPHENYLHYDRAZINE	SOIL	330		UG/KG	34	30	10-136	10-136
8270C		1,3,5-TRINITROBENZENE	SOIL	330		UG/KG	62	30	40-150	40-150
8270C		1,3-DICHLOROBENZENE	SOIL	330		UG/KG	18	30	43-130	43-130
8270C	*	1,4-DICHLOROBENZENE	SOIL	330		UG/KG	16	30	20-112	18-107
8270C		1,4-NAPHTHOQUINONE	SOIL	1700		UG/KG	160	30	40-150	40-150
8270C		1-METHYLNAPHTHALENE	SOIL	330		UG/KG	26	30	40-150	40-150
8270C		1-NAPHTHYLAMINE	SOIL	1700		UG/KG	110	30	40-150	40-150
8270C		2,3,4,6-TETRACHLOROPHENOL	SOIL	330		UG/KG	38	30	40-150	40-150
8270C		2,6-DICHLOROPHENOL	SOIL	330		UG/KG	40	30	40-150	40-150
8270C		2-ACETYLAMINOFLUORENE	SOIL	330		UG/KG	60	30	40-150	40-150
8270C		2-NAPHTHYLAMINE	SOIL	1700		UG/KG	110	30	40-150	40-150
8270C		2-PICOLINE	SOIL	330		UG/KG	140	30	40-150	40-150
8270C		3,3'-DIMETHYLBENZINE	SOIL	1700		UG/KG	400	30	40-150	40-150
8270C		3-METHYLCHOLANTHRENE	SOIL	330		UG/KG	64	30	40-150	40-150
8270C		4-AMINOBIPHENYL	SOIL	1700		UG/KG	71	30	40-150	40-150
8270C		4-NITROQUINOLINE-1-OXIDE	SOIL	1700		UG/KG	590	30	40-150	40-150
8270C		5-NITRO-O-TOLUIDINE	SOIL	330		UG/KG	62	30	40-150	40-150
8270C		7,12-DIMETHYLBENZ(a)ANTHRACENE	SOIL	330		UG/KG	51	30	40-150	40-150
8270C		aa-DIMETHYLPHENETHYLAMINE	SOIL	1700		UG/KG	850	30	40-150	40-150
8270C		ANILINE	SOIL	330		UG/KG	42	30	10-130	10-130
8270C		ARAMITE	SOIL	1700		UG/KG	85	30	40-150	40-150
8270C		BENZIDINE	SOIL	3300	6700	UG/KG	1,200	30	30-130	30-130
8270C		BENZOIC ACID	SOIL	1700	3300	UG/KG	880	30	30-130	30-130
8270C		BENZYL ALCOHOL	SOIL	330		UG/KG	31	30	38-106	38-106
8270C		CHLOROBENZILATE	SOIL	330		UG/KG	52	30	40-150	40-150
8270C		DIALLATE	SOIL	330		UG/KG	55	30	40-150	40-150
8270C		DIMETHOATE	SOIL	1700		UG/KG	49	30	40-150	40-150
8270C		DINOSEB	SOIL	1700		UG/KG	44	30	40-150	40-150
8270C		DIPHENYLAMINE	SOIL	330		UG/KG	24	30	40-150	40-150
8270C		DISULFOTON	SOIL	330		UG/KG	190	30	40-150	40-150
8270C		ETHYL METHANESULFONATE	SOIL	330		UG/KG	46	30	40-150	40-150
8270C		ETHYL PARATHION	SOIL	330		UG/KG	49	30	40-150	40-150
8270C		HEXACHLOROPHENE	SOIL	17000		UG/KG	6,800	30	40-150	40-150
8270C		HEXACHLOROPROPENE	SOIL	330		UG/KG	36	30	40-150	40-150
8270C		ISODRIN	SOIL	330		UG/KG	50	30	40-150	40-150
8270C		ISOSAFROLE	SOIL	330		UG/KG	42	30	40-150	40-150
8270C		m-DINITROBENZINE	SOIL	330		UG/KG	37	30	40-150	40-150
8270C		METHAPYRILENE	SOIL	1700		UG/KG	680	30	40-150	40-150
8270C		METHYL METHANESULFONATE	SOIL	330		UG/KG	44	30	40-150	40-150
8270C		METHYL PARATHION	SOIL	330		UG/KG	47	30	40-150	40-150
8270C		N-NITROSODIETHYLAMINE	SOIL	330		UG/KG	37	30	40-150	40-150
8270C		N-NITROSODIMETHYLAMINE	SOIL	330		UG/KG	29	30	38-130	38-130
8270C		N-NITROSODI-N-BUTYLAMINE	SOIL	330		UG/KG	72	30	40-150	40-150
8270C		N-NITROSOMETHYLETHYLAMINE	SOIL	330		UG/KG	89	30	40-150	40-150
8270C		N-NITROSOMORPHOLINE	SOIL	330		UG/KG	56	30	40-150	40-150
8270C		N-NITROSOPIPERIDINE	SOIL	330		UG/KG	53	30	40-150	40-150
8270C		N-NITROSOPYRROLIDINE	SOIL	330		UG/KG	70	30	40-150	40-150
8270C		ooo-TRIETHYL PHOSPHOROTHIOATE	SOIL	330		UG/KG	57	30	40-150	40-150
8270C		o-TOLUIDINE	SOIL	330		UG/KG	76	30	40-150	40-150
8270C		p-DIMETHYLAMINOAZOBENZENE	SOIL	330		UG/KG	55	30	40-150	40-150
8270C		PENTACHLOROBENZENE	SOIL	330		UG/KG	48	30	40-150	40-150
8270C		PENTACHLOROETHANE	SOIL	330		UG/KG	26	30	40-150	40-150
8270C		PENTACHLORONITROBENZENE	SOIL	330		UG/KG	59	30	40-150	40-150
8270C		PHENACETIN	SOIL	330		UG/KG	45	30	40-150	40-150
8270C		PHORATE	SOIL	330		UG/KG	120	30	40-150	40-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8270C	p-PHENYLENEDIAMINE	SOIL	1700		UG/KG	590	30	40-150	40-150
8270C	PRONAMIDE	SOIL	330		UG/KG	51	30	40-150	40-150
8270C	PYRIDINE	SOIL	1700		UG/KG	50	30	28-130	28-130
8270C	SAFROLE	SOIL	330		UG/KG	40	30	40-150	40-150
8270C	SULFOTEPP	SOIL	330		UG/KG	73	30	40-150	40-150
8270C	THIONAZIN	SOIL	330		UG/KG	50	30	40-150	40-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8270C LVI	ACENAPHTHENE	WATER	0.20		UG/L	0.022	30	44-112	44-112
8270C LVI	ACENAPHTHYLENE	WATER	0.20		UG/L	0.025	30	51-115	51-115
8270C LVI	ANTHRACENE	WATER	0.20		UG/L	0.019	30	51-119	51-119
8270C LVI	BENZO(A)ANTHRACENE	WATER	0.10		UG/L	0.028	30	58-115	58-115
8270C LVI	BENZO(A)PYRENE	WATER	0.20		UG/L	0.016	30	36-119	36-119
8270C LVI	BENZO(B)FLUORANTHENE	WATER	0.20		UG/L	0.027	30	45-121	45-121
8270C LVI	BENZO(G,H,I)PERYLENE	WATER	0.20		UG/L	0.023	30	39-122	39-122
8270C LVI	BENZO(K)FLUORANTHENE	WATER	0.20		UG/L	0.019	30	47-119	47-119
8270C LVI	CHRYSENE	WATER	0.20		UG/L	0.022	30	55-113	55-113
8270C LVI	DIBENZO(A,H)ANTHRACENE	WATER	0.20		UG/L	0.025	30	47-116	47-116
8270C LVI	FLUORANTHENE	WATER	0.20		UG/L	0.035	30	59-117	59-117
8270C LVI	FLUORENE	WATER	0.20		UG/L	0.021	30	38-121	38-121
8270C LVI	INDENO(1,2,3-CD)PYRENE	WATER	0.20		UG/L	0.016	30	47-119	47-119
8270C LVI	NAPHTHALENE	WATER	0.20		UG/L	0.042	30	33-121	33-121
8270C LVI	PHENANTHRENE	WATER	0.20		UG/L	0.025	30	54-114	54-114
8270C LVI	PYRENE	WATER	0.20		UG/L	0.011	30	55-115	55-115
8270C LVI	2-FLUOROBIPHENYL -SURR	WATER	NA		UG/L	NA	NA	27-114	27-114
8270C LVI	NITROBENZENE-d5 -SURR	WATER	NA		UG/L	NA	NA	22-124	22-124
8270C LVI	TERPHENYL-d14 -SURR	WATER	NA		UG/L	NA	NA	23-139	23-139
8270C LVI ADDITIONAL COMPOUNDS BY REQUEST									
8270C LVI	1,4-DIOXANE	WATER	0.20		UG/L	0.075	30	31-80	31-80
8270C LVI	1-METHYLNAPHTHALENE	WATER	0.20		UG/L	0.031	30	62-102	50-150
8270C LVI	2-METHYLNAPHTHALENE	WATER	0.10		UG/L	0.023	30	42-130	42-130
8270C LVI	BIS(2-ETHYLHEXYL)PHTHALATE	WATER	2.0		UG/L	0.19	30	55-130	55-130
8270C LVI	CARBAZOLE	WATER	1.0		UG/L	0.032	30	40-150	40-150
8270C LVI	DIBENZOFURAN	WATER	0.20		UG/L	0.027	30	50-150	50-150
8270C LVI	HEXACHLOROBENZENE	WATER	0.20		UG/L	0.027	30	47-108	47-108
8270C LVI	NITROBENZENE	WATER	0.20		UG/L	0.032	30	50-150	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8270C LVI	2,6-DIMETHYLNAPHTHALENE	SOIL	6.6		UG/KG	0.78	30	50-150	50-150
8270C LVI	ACENAPHTHENE	SOIL	6.6		UG/KG	1.8	30	39-130	39-130
8270C LVI	ACENAPHTHYLENE	SOIL	6.6		UG/KG	2.0	30	44-130	44-130
8270C LVI	ANTHRACENE	SOIL	6.6		UG/KG	2.5	30	49-130	49-130
8270C LVI	BENZO(A)ANTHRACENE	SOIL	3.3		UG/KG	2.7	30	47-116	47-116
8270C LVI	BENZO(A)PYRENE	SOIL	6.6		UG/KG	2.5	30	27-124	27-124
8270C LVI	BENZO(B)FLUORANTHENE	SOIL	6.6		UG/KG	2.5	30	19-132	19-132
8270C LVI	BENZO(G,H,I)PERYLENE	SOIL	6.6		UG/KG	2.4	30	24-128	24-128
8270C LVI	BENZO(K)FLUORANTHENE	SOIL	6.6		UG/KG	2.9	30	41-123	41-123
8270C LVI	CHRYSENE	SOIL	6.6		UG/KG	2.1	30	45-117	45-117
8270C LVI	DIBENZO(A,H)ANTHRACENE	SOIL	6.6		UG/KG	1.9	30	29-129	29-129
8270C LVI	FLUORANTHENE	SOIL	6.6		UG/KG	4.0	30	51-124	51-124
8270C LVI	FLUORENE	SOIL	6.6		UG/KG	1.8	30	40-130	40-130
8270C LVI	INDENO(1,2,3-CD)PYRENE	SOIL	6.6		UG/KG	2.3	30	40-122	40-122
8270C LVI	NAPHTHALENE	SOIL	6.6		UG/KG	2.7	30	44-130	44-130
8270C LVI	PHENANTHRENE	SOIL	6.6		UG/KG	5.0	30	51-130	51-130
8270C LVI	PYRENE	SOIL	6.6		UG/KG	3.5	30	33-123	33-123
8270C LVI	2-FLUOROBIPHENYL -SURR	SOIL	NA		UG/KG	NA	NA	23-120	23-120
8270C LVI	NITROBENZENE-d5 -SURR	SOIL	NA		UG/KG	NA	NA	18-125	18-125
8270C LVI	TERPHENYL-d14 -SURR	SOIL	NA		UG/KG	NA	NA	19-145	19-145
8270C LVI ADDITIONAL COMPOUNDS BY REQUEST									
8270C LVI	1,4-DIOXANE	SOIL	67		UG/KG	1.4	30	31-80	31-80
8270C LVI	1-METHYLNAPHTHALENE	SOIL	6.6		UG/KG	2.0	30	50-150	50-150
8270C LVI	2-METHYLNAPHTHALENE	SOIL	3.3		UG/KG	2.8	30	42-130	50-150
8270C LVI	BIS(2-ETHYLHEXYL)PHTHALATE	SOIL	67		UG/KG	7.8	30	50-150	50-150
8270C LVI	CARBAZOLE	SOIL	33		UG/KG	1.8	30	40-150	40-150
8270C LVI	DIBENZOFURAN	SOIL	6.6		UG/KG	1.9	30	50-150	50-150
8270C LVI	HEXACHLOROBENZENE	SOIL	6.6		UG/KG	2.6	30	50-150	50-150
8270C LVI	NITROBENZENE	SOIL	6.6		UG/KG	1.8	30	50-150	50-150
8310	NAPHTHALENE	WATER	0.080		UG/L	0.020	30	50-150	50-150
8310	ACENAPHTHYLENE	WATER	0.080		UG/L	0.048	30	50-150	50-150
8310	FLUORENE	WATER	0.080		UG/L	0.013	30	50-150	50-150
8310	ACENAPHTHENE	WATER	0.080		UG/L	0.029	30	50-150	50-150
8310	PHENANTHRENE	WATER	0.080		UG/L	0.017	30	50-150	50-150
8310	ANTHRACENE	WATER	0.080		UG/L	0.016	30	50-150	50-150
8310	FLUORANTHENE	WATER	0.080		UG/L	0.015	30	50-150	50-150
8310	PYRENE	WATER	0.080		UG/L	0.016	30	50-150	50-150
8310	BENZO(A)ANTRACENE	WATER	0.080		UG/L	0.013	30	50-150	50-150
8310	CHRYSENE	WATER	0.080		UG/L	0.015	30	50-150	50-150
8310	BENZO(B)FLUORANTHENE	WATER	0.080		UG/L	0.016	30	50-150	50-150
8310	BENZO(K)FLUORANTHENE	WATER	0.080		UG/L	0.017	30	50-150	50-150
8310	BENZO(A)PYRENE	WATER	0.080		UG/L	0.024	30	50-150	50-150
8310	DIBENZO(A,H)ANTHRACENE	WATER	0.080		UG/L	0.019	30	50-150	50-150
8310	INDENO(1,2,3-CD)PYRENE	WATER	0.080		UG/L	0.011	30	50-150	50-150
8310	BENZO(G,H,I)PERYLENE	WATER	0.080		UG/L	0.022	30	50-150	50-150
8310	O-TERPHENYL -SURR	WATER	NA		UG/L	NA	NA	50-150	50-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
8315A	FORMALDEHYDE	WATER	8.0		UG/L	1.1	30	59-136	59-153
8315A	FORMALDEHYDE	SOIL	1600		UG/KG	230	30	70-130	50-150
8330	1,3,5-TRINITROBENZENE	SOIL	2000		UG/KG	160	30	70-130	70-130
8330	1,3-DINITROBENZENE	SOIL	2000		UG/KG	150	30	70-130	70-130
8330	2,4,6-TRINITROTOLUENE (TNT)	SOIL	2000		UG/KG	170	30	70-130	70-130
8330	2,4-DINITROTOLUENE	SOIL	2000		UG/KG	150	30	70-130	70-130
8330	2,6-DINITROTOLUENE	SOIL	2000		UG/KG	160	30	70-130	70-130
8330	2-AMINO-4,6-DINITROTOLUENE	SOIL	2000		UG/KG	180	30	70-130	70-130
8330	2-NITROTOLUENE	SOIL	2000		UG/KG	150	30	70-130	70-130
8330	3-NITROTOLUENE	SOIL	2000		UG/KG	150	30	70-130	70-130
8330	4-AMINO-2,6-DINITROTOLUENE	SOIL	2000		UG/KG	190	30	70-130	70-130
8330	4-NITROTOLUENE	SOIL	2000		UG/KG	160	30	70-130	70-130
8330	HMX (OCTAHYDRO-1,3,5,7-TETRANITRO-	SOIL	2000		UG/KG	180	30	70-130	70-130
8330	NITROBENZENE	SOIL	2000		UG/KG	150	30	70-130	70-130
8330	NITROGLYCERIN	SOIL	2000		UG/KG	860	30	70-130	70-130
8330	PETN	SOIL	2000		UG/KG	420	30	70-130	70-130
8330	RDX (HEXAHYDRO-1,3,5-TRINITRO-1,3,	SOIL	2000		UG/KG	170	30	70-130	70-130
8330	TETRYL (METHYL-2,4,6-TRINITROPHENY	SOIL	2000		UG/KG	530	30	70-130	70-130
8330	1,2-DINITROBENZENE - SURR	SOIL	NA		UG/KG	NA	NA	50-150	50-150
6850	PERCHLORATE	WATER	0.2		UG/L	0.051	15	80-120	80-120
6850	PERCHLORATE	SOIL	2.0		UG/KG	0.031	15	85-115	75-125

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
VOA OLM4.2/4.3		1,1,1-TRICHLOROETHANE	WATER	10		UG/L	0.35			
VOA OLM4.2/4.3		1,1,2,2-TETRACHLOROETHANE	WATER	10		UG/L	0.56			
VOA OLM4.2/4.3		1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	WATER	10		UG/L	0.79			
VOA OLM4.2/4.3		1,1,2-TRICHLOROETHANE	WATER	10		UG/L	0.31			
VOA OLM4.2/4.3		1,1-DICHLOROETHANE	WATER	10		UG/L	0.49			
VOA OLM4.2/4.3	*	1,1-DICHLOROETHENE	WATER	10		UG/L	0.80	14	61-145	61-145
VOA OLM4.2/4.3		1,2,4-TRICHLOROBENZENE	WATER	10		UG/L	0.41			
VOA OLM4.2/4.3		1,2-DIBROMO-3-CHLOROPROPANE	WATER	10		UG/L	0.40			
VOA OLM4.2/4.3		1,2-DIBROMOETHANE	WATER	10		UG/L	0.57			
VOA OLM4.2/4.3		1,2-DICHLOROBENZENE	WATER	10		UG/L	0.39			
VOA OLM4.2/4.3		1,2-DICHLOROETHANE	WATER	10		UG/L	0.32			
VOA OLM4.2/4.3		1,2-DICHLOROPROPANE	WATER	10		UG/L	0.58			
VOA OLM4.2/4.3		1,3-DICHLOROBENZENE	WATER	10		UG/L	0.35			
VOA OLM4.2/4.3		1,4-DICHLOROBENZENE	WATER	10		UG/L	0.41			
VOA OLM4.2/4.3		2-BUTANONE	WATER	10		UG/L	0.72			
VOA OLM4.2/4.3		2-HEXANONE	WATER	10		UG/L	1.4			
VOA OLM4.2/4.3		4-METHYL-2-PENTANONE	WATER	10		UG/L	1.2			
VOA OLM4.2/4.3		ACETONE	WATER	10		UG/L	2.3			
VOA OLM4.2/4.3	*	BENZENE	WATER	10		UG/L	0.45	11	76-127	76-127
VOA OLM4.2/4.3		BROMODICHLOROMETHANE	WATER	10		UG/L	0.36			
VOA OLM4.2/4.3		BROMOFORM	WATER	10		UG/L	0.44			
VOA OLM4.2/4.3		BROMOMETHANE	WATER	10		UG/L	0.53			
VOA OLM4.2/4.3		CARBON DISULFIDE	WATER	10		UG/L	0.34			
VOA OLM4.2/4.3		CARBON TETRACHLORIDE	WATER	10		UG/L	0.42			
VOA OLM4.2/4.3	*	CHLOROBENZENE	WATER	10		UG/L	0.36	13	75-130	75-130
VOA OLM4.2/4.3		CHLOROETHANE	WATER	10		UG/L	0.41			
VOA OLM4.2/4.3		CHLOROFORM	WATER	10		UG/L	0.37			
VOA OLM4.2/4.3		CHLOROMETHANE	WATER	10		UG/L	0.72			
VOA OLM4.2/4.3		CIS-1,2-DICHLOROETHENE	WATER	10		UG/L	0.59			
VOA OLM4.2/4.3		CIS-1,3-DICHLOROPROPENE	WATER	10		UG/L	0.50			
VOA OLM4.2/4.3		CYCLOHEXANE	WATER	10		UG/L	0.46			
VOA OLM4.2/4.3		DIBROMOCHLOROMETHANE	WATER	10		UG/L	0.56			
VOA OLM4.2/4.3		DICHLORODIFLUOROMETHANE	WATER	10		UG/L	0.43			
VOA OLM4.2/4.3		ETHYLBENZENE	WATER	10		UG/L	0.46			
VOA OLM4.2/4.3		ISOPROPYLBENZENE	WATER	10		UG/L	0.44			
VOA OLM4.2/4.3		M+P-XYLENE	WATER	10		UG/L	0.60			
VOA OLM4.2/4.3		METHYL ACETATE	WATER	10		UG/L	0.49			
VOA OLM4.2/4.3		METHYL TERT-BUTYL ETHER	WATER	10		UG/L	0.31			
VOA OLM4.2/4.3		METHYLCYCLOHEXANE	WATER	10		UG/L	0.71			
VOA OLM4.2/4.3		METHYLENE CHLORIDE	WATER	10		UG/L	0.48			
VOA OLM4.2/4.3		O-XYLENE	WATER	10		UG/L	0.37			
VOA OLM4.2/4.3		STYRENE	WATER	10		UG/L	0.27			
VOA OLM4.2/4.3		TETRACHLOROETHENE	WATER	10		UG/L	0.60			
VOA OLM4.2/4.3	*	TOLUENE	WATER	10		UG/L	0.54	13	76-125	76-125
VOA OLM4.2/4.3		TRANS-1,2-DICHLOROETHENE	WATER	10		UG/L	0.41			
VOA OLM4.2/4.3		TRANS-1,3-DICHLOROPROPENE	WATER	10		UG/L	0.26			
VOA OLM4.2/4.3	*	TRICHLOROETHENE	WATER	10		UG/L	0.57	14	71-120	71-120
VOA OLM4.2/4.3		TRICHLOROFLUOROMETHANE	WATER	10		UG/L	0.44			
VOA OLM4.2/4.3		VINYL CHLORIDE	WATER	10		UG/L	0.42			
VOA OLM4.2/4.3		BROMOFLUOROBENZENE -SURR	WATER	NA		UG/L	NA	NA	86-115	86-115
VOA OLM4.2/4.3		1,2-DICHLOROETHANE-D4 -SURR	WATER	NA		UG/L	NA	NA	76-114	76-114
VOA OLM4.2/4.3		TOLUENE-D8 -SURR	WATER	NA		UG/L	NA	NA	88-110	88-110

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
VOA OLM4.2/4.3		1,1,1-TRICHLOROETHANE	SOIL	10		UG/KG	0.53			
VOA OLM4.2/4.3		1,1,2,2-TETRACHLOROETHANE	SOIL	10		UG/KG	0.27			
VOA OLM4.2/4.3		1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (	SOIL	10		UG/KG	0.62			
VOA OLM4.2/4.3		1,1,2-TRICHLOROETHANE	SOIL	10		UG/KG	0.45			
VOA OLM4.2/4.3		1,1-DICHLOROETHANE	SOIL	10		UG/KG	0.41			
VOA OLM4.2/4.3	*	1,1-DICHLOROETHENE	SOIL	10		UG/KG	0.72	22	59-172	59-172
VOA OLM4.2/4.3		1,2,4-TRICHLOROBENZENE	SOIL	10		UG/KG	0.94			
VOA OLM4.2/4.3		1,2-DIBROMO-3-CHLOROPROPANE	SOIL	10		UG/KG	0.85			
VOA OLM4.2/4.3		1,2-DIBROMOETHANE	SOIL	10		UG/KG	0.45			
VOA OLM4.2/4.3		1,2-DICHLOROBENZENE	SOIL	10		UG/KG	0.52			
VOA OLM4.2/4.3		1,2-DICHLOROETHANE	SOIL	10		UG/KG	0.66			
VOA OLM4.2/4.3		1,2-DICHLOROPROPANE	SOIL	10		UG/KG	0.46			
VOA OLM4.2/4.3		1,3-DICHLOROBENZENE	SOIL	10		UG/KG	0.50			
VOA OLM4.2/4.3		1,4-DICHLOROBENZENE	SOIL	10		UG/KG	0.73			
VOA OLM4.2/4.3		2-BUTANONE	SOIL	10		UG/KG	2.2			
VOA OLM4.2/4.3		2-HEXANONE	SOIL	10		UG/KG	1.3			
VOA OLM4.2/4.3		4-METHYL-2-PENTANONE	SOIL	10		UG/KG	1.4			
VOA OLM4.2/4.3		ACETONE	SOIL	10		UG/KG	3.1			
VOA OLM4.2/4.3	*	BENZENE	SOIL	10		UG/KG	0.38	21	66-142	66-142
VOA OLM4.2/4.3		BROMODICHLOROMETHANE	SOIL	10		UG/KG	0.37			
VOA OLM4.2/4.3		BROMOFORM	SOIL	10		UG/KG	0.37			
VOA OLM4.2/4.3		BROMOMETHANE	SOIL	10		UG/KG	0.59			
VOA OLM4.2/4.3		CARBON DISULFIDE	SOIL	10		UG/KG	0.51			
VOA OLM4.2/4.3		CARBON TETRACHLORIDE	SOIL	10		UG/KG	0.33			
VOA OLM4.2/4.3	*	CHLOROBENZENE	SOIL	10		UG/KG	0.33	21	60-133	60-133
VOA OLM4.2/4.3		CHLOROETHANE	SOIL	10		UG/KG	0.23			
VOA OLM4.2/4.3		CHLOROFORM	SOIL	10		UG/KG	0.50			
VOA OLM4.2/4.3		CHLOROMETHANE	SOIL	10		UG/KG	0.55			
VOA OLM4.2/4.3		CIS-1,2-DICHLOROETHENE	SOIL	10		UG/KG	0.69			
VOA OLM4.2/4.3		CIS-1,3-DICHLOROPROPENE	SOIL	10		UG/KG	0.35			
VOA OLM4.2/4.3		CYCLOHEXANE	SOIL	10		UG/KG	0.91			
VOA OLM4.2/4.3		DIBROMOCHLOROMETHANE	SOIL	10		UG/KG	0.20			
VOA OLM4.2/4.3		DICHLORODIFLUOROMETHANE	SOIL	10		UG/KG	0.83			
VOA OLM4.2/4.3		ETHYLBENZENE	SOIL	10		UG/KG	1.7			
VOA OLM4.2/4.3		ISOPROPYLBENZENE	SOIL	10		UG/KG	0.77			
VOA OLM4.2/4.3		M+P-XYLENE	SOIL	10		UG/KG	1.6			
VOA OLM4.2/4.3		METHYL ACETATE	SOIL	10		UG/KG	0.81			
VOA OLM4.2/4.3		METHYL TERT-BUTYL ETHER	SOIL	10		UG/KG	0.44			
VOA OLM4.2/4.3		METHYLCYCLOHEXANE	SOIL	10		UG/KG	0.80			
VOA OLM4.2/4.3		METHYLENE CHLORIDE	SOIL	10		UG/KG	1.0			
VOA OLM4.2/4.3		O-XYLENE	SOIL	10		UG/KG	0.53			
VOA OLM4.2/4.3		STYRENE	SOIL	10		UG/KG	0.36			
VOA OLM4.2/4.3		TETRACHLOROETHENE	SOIL	10		UG/KG	0.62			
VOA OLM4.2/4.3	*	TOLUENE	SOIL	10		UG/KG	0.40	21	59-139	59-139
VOA OLM4.2/4.3		TRANS-1,2-DICHLOROETHENE	SOIL	10		UG/KG	0.42			
VOA OLM4.2/4.3		TRANS-1,3-DICHLOROPROPENE	SOIL	10		UG/KG	0.41			
VOA OLM4.2/4.3	*	TRICHLOROETHENE	SOIL	10		UG/KG	0.68	24	62-137	62-137
VOA OLM4.2/4.3		TRICHLOROFLUOROMETHANE	SOIL	10		UG/KG	0.53			
VOA OLM4.2/4.3		VINYL CHLORIDE	SOIL	10		UG/KG	0.65			
VOA OLM4.2/4.3		BROMOFLUOROBENZENE -SURR	SOIL	NA		UG/KG	NA	NA	59-113	59-113
VOA OLM4.2/4.3		1,2-DICHLOROETHANE-D4 -SURR	SOIL	NA		UG/KG	NA	NA	70-121	70-121
VOA OLM4.2/4.3		TOLUENE-D8 -SURR	SOIL	NA		UG/KG	NA	NA	84-138	84-138

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
BNA OLM4.2/4.3		1,1'-BIPHENYL	WATER	10		UG/L	0.28			
BNA OLM4.2/4.3		2,2'-OXYBIS(1-CHLOROPROPANE)	WATER	10		UG/L	1.2			
BNA OLM4.2/4.3		2,4,5-TRICHLOROPHENOL	WATER	25		UG/L	1.8			
BNA OLM4.2/4.3		2,4,6-TRICHLOROPHENOL	WATER	10		UG/L	1.2			
BNA OLM4.2/4.3		2,4-DICHLOROPHENOL	WATER	10		UG/L	0.73			
BNA OLM4.2/4.3		2,4-DIMETHYLPHENOL	WATER	10		UG/L	0.36			
BNA OLM4.2/4.3		2,4-DINITROPHENOL	WATER	25		UG/L	2.0			
BNA OLM4.2/4.3	*	2,4-DINITROTOLUENE	WATER	10		UG/L	1.8	38	24-96	24-96
BNA OLM4.2/4.3		2,6-DINITROTOLUENE	WATER	10		UG/L	1.3			
BNA OLM4.2/4.3		2-CHLORONAPHTHALENE	WATER	10		UG/L	0.18			
BNA OLM4.2/4.3	*	2-CHLOROPHENOL	WATER	10		UG/L	0.53	40	27-123	27-123
BNA OLM4.2/4.3		2-METHYLNAPHTHALENE	WATER	10		UG/L	0.33			
BNA OLM4.2/4.3		2-METHYLPHENOL	WATER	10		UG/L	2.2			
BNA OLM4.2/4.3		2-NITROANILINE	WATER	25		UG/L	1.5			
BNA OLM4.2/4.3		2-NITROPHENOL	WATER	10		UG/L	1.3			
BNA OLM4.2/4.3		3,3'-DICHLOROBENZIDINE	WATER	10		UG/L	0.86			
BNA OLM4.2/4.3		3-NITROANILINE	WATER	25		UG/L	0.78			
BNA OLM4.2/4.3		4,6-DINITRO-2-METHYLPHENOL	WATER	25		UG/L	1.4			
BNA OLM4.2/4.3		4-BROMOPHENYL-PHENYLETHER	WATER	10		UG/L	0.11			
BNA OLM4.2/4.3	*	4-CHLORO-3-METHYLPHENOL	WATER	10		UG/L	0.36	42	23-97	23-97
BNA OLM4.2/4.3		4-CHLOROANILINE	WATER	10		UG/L	0.46			
BNA OLM4.2/4.3		4-CHLOROPHENYL-PHENYLETHER	WATER	10		UG/L	0.75			
BNA OLM4.2/4.3		4-METHYLPHENOL	WATER	10		UG/L	0.85			
BNA OLM4.2/4.3		4-NITROANILINE	WATER	25		UG/L	0.94			
BNA OLM4.2/4.3	*	4-NITROPHENOL	WATER	25		UG/L	1.6	50	10-80	10-80
BNA OLM4.2/4.3	*	ACENAPHTHENE	WATER	10		UG/L	0.53	31	46-118	46-118
BNA OLM4.2/4.3		ACENAPHTHYLENE	WATER	10		UG/L	0.74			
BNA OLM4.2/4.3		ACETOPHENONE	WATER	10		UG/L	0.96			
BNA OLM4.2/4.3		ANTHRACENE	WATER	10		UG/L	0.46			
BNA OLM4.2/4.3		ATRAZINE	WATER	10		UG/L	1.3			
BNA OLM4.2/4.3		BENZALDEHYDE	WATER	10		UG/L	0.86			
BNA OLM4.2/4.3		BENZO(A)ANTHRACENE	WATER	10		UG/L	0.16			
BNA OLM4.2/4.3		BENZO(A)PYRENE	WATER	10		UG/L	0.53			
BNA OLM4.2/4.3		BENZO(B)FLUORANTHENE	WATER	10		UG/L	2.7			
BNA OLM4.2/4.3		BENZO(G,H,I)PERYLENE	WATER	10		UG/L	2.5			
BNA OLM4.2/4.3		BENZO(K)FLUORANTHENE	WATER	10		UG/L	0.66			
BNA OLM4.2/4.3		BIS(-2-CHLOROETHOXY)METHANE	WATER	10		UG/L	0.69			
BNA OLM4.2/4.3		BIS(-2-CHLOROETHYL)ETHER	WATER	10		UG/L	1.1			
BNA OLM4.2/4.3		BIS(2-ETHYLHEXYL)PHTHALATE	WATER	10		UG/L	0.40			
BNA OLM4.2/4.3		BUTYL BENZYL PHTHALATE	WATER	10		UG/L	1.4			
BNA OLM4.2/4.3		CAPROLACTAM	WATER	10		UG/L	0.91			
BNA OLM4.2/4.3		CARBAZOLE	WATER	10		UG/L	0.56			
BNA OLM4.2/4.3		CHRYSENE	WATER	10		UG/L	0.07			
BNA OLM4.2/4.3		DIBENZ(A,H)ANTHRACENE	WATER	10		UG/L	2.09			
BNA OLM4.2/4.3		DIBENZOFURAN	WATER	10		UG/L	0.21			
BNA OLM4.2/4.3		DIETHYLPHTHALATE	WATER	10		UG/L	0.38			
BNA OLM4.2/4.3		DIMETHYL PHTHALATE	WATER	10		UG/L	0.54			
BNA OLM4.2/4.3		DI-N-BUTYLPHTHALATE	WATER	10		UG/L	0.35			
BNA OLM4.2/4.3		DI-N-OCTYL PHTHALATE	WATER	10		UG/L	2.5			
BNA OLM4.2/4.3		FLUORANTHENE	WATER	10		UG/L	0.76			
BNA OLM4.2/4.3		FLUORENE	WATER	10		UG/L	0.63			
BNA OLM4.2/4.3		HEXACHLOROBENZENE	WATER	10		UG/L	1.4			
BNA OLM4.2/4.3		HEXACHLOROBUTADIENE	WATER	10		UG/L	0.48			
BNA OLM4.2/4.3		HEXACHLOROCYCLOPENTADIENE	WATER	10		UG/L	1.6			
BNA OLM4.2/4.3		HEXACHLOROETHANE	WATER	10		UG/L	0.74			
BNA OLM4.2/4.3		INDENO(1,2,3-CD)PYRENE	WATER	10		UG/L	2.5			
BNA OLM4.2/4.3		ISOPHORONE	WATER	10		UG/L	0.45			
BNA OLM4.2/4.3		NAPHTHALENE	WATER	10		UG/L	0.14			
BNA OLM4.2/4.3		NITROBENZENE	WATER	10		UG/L	0.90			
BNA OLM4.2/4.3	*	N-NITROSO-DI-N-PROPYLAMINE	WATER	10		UG/L	0.64	38	41-116	41-116
BNA OLM4.2/4.3		N-NITROSODIPHENYLAMINE	WATER	10		UG/L	1.1			
BNA OLM4.2/4.3	*	PENTACHLOROPHENOL	WATER	25		UG/L	3.0	50	9-103	9-103
BNA OLM4.2/4.3		PHENANTHRENE	WATER	10		UG/L	0.56			
BNA OLM4.2/4.3	*	PHENOL	WATER	10		UG/L	0.37	42	12-110	12-110
BNA OLM4.2/4.3	*	PYRENE	WATER	10		UG/L	1.6	31	26-127	26-127

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
BNA OLM4.2/4.3		TERPHENYL-D14 -SURR	WATER	NA		UG/L	NA	NA	33-141	33-141
BNA OLM4.2/4.3		2-CHLOROPHENOL-D4 -SURR (adviso	WATER	NA		UG/L	NA	NA	33-110	33-110
BNA OLM4.2/4.3		1,2-DICHLOROBENZENE-D4 -SURR (ad	WATER	NA		UG/L	NA	NA	16-110	16-110
BNA OLM4.2/4.3		NITROBENZENE-D5 -SURR	WATER	NA		UG/L	NA	NA	35-114	35-114
BNA OLM4.2/4.3		PHENOL-D6 -SURR	WATER	NA		UG/L	NA	NA	10-110	10-110
BNA OLM4.2/4.3		2-FLUOROBIPHENYL -SURR	WATER	NA		UG/L	NA	NA	43-116	43-116
BNA OLM4.2/4.3		2-FLUOROPHENOL -SURR	WATER	NA		UG/L	NA	NA	21-110	21-110
BNA OLM4.2/4.3		2,4,6-TRIBROMOPHENOL -SURR	WATER	NA		UG/L	NA	NA	10-123	10-123
BNA OLM4.2/4.3 additional compounds upon request										
BNA OLM4.2/4.3		1,3-DICHLOROBENZENE	WATER	10		UG/L	0.51			
BNA OLM4.2/4.3		1,2-DICHLOROBENZENE	WATER	10		UG/L	0.86			
BNA OLM4.2/4.3		1,4-DICHLOROBENZENE	WATER	10		UG/L	0.53			
BNA OLM4.2/4.3		1,1'-BIPHENYL	SOIL	330		UG/KG	9.3			
BNA OLM4.2/4.3		2,2'-OXYBIS(1-CHLOROPROPANE)	SOIL	330		UG/KG	41			
BNA OLM4.2/4.3		2,4,5-TRICHLOROPHENOL	SOIL	800		UG/KG	61			
BNA OLM4.2/4.3		2,4,6-TRICHLOROPHENOL	SOIL	330		UG/KG	41			
BNA OLM4.2/4.3		2,4-DICHLOROPHENOL	SOIL	330		UG/KG	24			
BNA OLM4.2/4.3		2,4-DIMETHYLPHENOL	SOIL	330		UG/KG	12			
BNA OLM4.2/4.3		2,4-DINITROPHENOL	SOIL	800		UG/KG	66			
BNA OLM4.2/4.3	*	2,4-DINITROTOLUENE	SOIL	330		UG/KG	59	47	28-89	28-89
BNA OLM4.2/4.3		2,6-DINITROTOLUENE	SOIL	330		UG/KG	44			
BNA OLM4.2/4.3		2-CHLORONAPHTHALENE	SOIL	330		UG/KG	6.0			
BNA OLM4.2/4.3	*	2-CHLOROPHENOL	SOIL	330		UG/KG	18	50	25-102	25-102
BNA OLM4.2/4.3		2-METHYLNAPHTHALENE	SOIL	330		UG/KG	11			
BNA OLM4.2/4.3		2-METHYLPHENOL	SOIL	330		UG/KG	73			
BNA OLM4.2/4.3		2-NITROANILINE	SOIL	800		UG/KG	50			
BNA OLM4.2/4.3		2-NITROPHENOL	SOIL	330		UG/KG	42			
BNA OLM4.2/4.3		3,3'-DICHLOROBENZIDINE	SOIL	330		UG/KG	29			
BNA OLM4.2/4.3		3-NITROANILINE	SOIL	800		UG/KG	26			
BNA OLM4.2/4.3		4,6-DINITRO-2-METHYLPHENOL	SOIL	800		UG/KG	47			
BNA OLM4.2/4.3		4-BROMOPHENYL-PHENYLETHER	SOIL	330		UG/KG	3.7			
BNA OLM4.2/4.3	*	4-CHLORO-3-METHYLPHENOL	SOIL	330		UG/KG	12	33	26-103	26-103
BNA OLM4.2/4.3		4-CHLOROANILINE	SOIL	330		UG/KG	15			
BNA OLM4.2/4.3		4-CHLOROPHENYL-PHENYLETHER	SOIL	330		UG/KG	25			
BNA OLM4.2/4.3		4-METHYLPHENOL	SOIL	330		UG/KG	28			
BNA OLM4.2/4.3		4-NITROANILINE	SOIL	800		UG/KG	31			
BNA OLM4.2/4.3	*	4-NITROPHENOL	SOIL	800		UG/KG	54	50	11-114	11-114
BNA OLM4.2/4.3	*	ACENAPHTHENE	SOIL	330		UG/KG	18	19	31-137	31-137
BNA OLM4.2/4.3		ACENAPHTHYLENE	SOIL	330		UG/KG	25			
BNA OLM4.2/4.3		ACETOPHENONE	SOIL	330		UG/KG	32			
BNA OLM4.2/4.3		ANTHRACENE	SOIL	330		UG/KG	15			
BNA OLM4.2/4.3		ATRAZINE	SOIL	330		UG/KG	42			
BNA OLM4.2/4.3		BENZALDEHYDE	SOIL	330		UG/KG	29			
BNA OLM4.2/4.3		BENZO(A)ANTHRACENE	SOIL	330		UG/KG	5.3			
BNA OLM4.2/4.3		BENZO(A)PYRENE	SOIL	330		UG/KG	18			
BNA OLM4.2/4.3		BENZO(B)FLUORANTHENE	SOIL	330		UG/KG	88			
BNA OLM4.2/4.3		BENZO(G,H,I)PERYLENE	SOIL	330		UG/KG	82			
BNA OLM4.2/4.3		BENZO(K)FLUORANTHENE	SOIL	330		UG/KG	22			
BNA OLM4.2/4.3		BIS(-2-CHLOROETHOXY)METHANE	SOIL	330		UG/KG	23			
BNA OLM4.2/4.3		BIS(-2-CHLOROETHYL)ETHER	SOIL	330		UG/KG	37			
BNA OLM4.2/4.3		BIS(2-ETHYLHEXYL)PHTHALATE	SOIL	330		UG/KG	13			
BNA OLM4.2/4.3		BUTYL BENZYL PHTHALATE	SOIL	330		UG/KG	46			
BNA OLM4.2/4.3		CAPROLACTAM	SOIL	330		UG/KG	30			
BNA OLM4.2/4.3		CARBAZOLE	SOIL	330		UG/KG	19			
BNA OLM4.2/4.3		CHRYSENE	SOIL	330		UG/KG	2.3			
BNA OLM4.2/4.3		DIBENZ(A,H)ANTHRACENE	SOIL	330		UG/KG	70			
BNA OLM4.2/4.3		DIBENZOFURAN	SOIL	330		UG/KG	7.0			
BNA OLM4.2/4.3		DIETHYLPHTHALATE	SOIL	330		UG/KG	13			
BNA OLM4.2/4.3		DIMETHYL PHTHALATE	SOIL	330		UG/KG	18			
BNA OLM4.2/4.3		DI-N-BUTYLPHTHALATE	SOIL	330		UG/KG	12			
BNA OLM4.2/4.3		DI-N-OCTYL PHTHALATE	SOIL	330		UG/KG	82			
BNA OLM4.2/4.3		FLUORANTHENE	SOIL	330		UG/KG	25			
BNA OLM4.2/4.3		FLUORENE	SOIL	330		UG/KG	21			
BNA OLM4.2/4.3		HEXACHLOROBENZENE	SOIL	330		UG/KG	45			
BNA OLM4.2/4.3		HEXACHLOROBUTADIENE	SOIL	330		UG/KG	16			

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
BNA OLM4.2/4.3		HEXACHLOROCYCLOPENTADIENE	SOIL	330		UG/KG	53			
BNA OLM4.2/4.3		HEXACHLOROETHANE	SOIL	330		UG/KG	25			
BNA OLM4.2/4.3		INDENO(1,2,3-CD)PYRENE	SOIL	330		UG/KG	82			
BNA OLM4.2/4.3		ISOPHORONE	SOIL	330		UG/KG	15			
BNA OLM4.2/4.3		NAPHTHALENE	SOIL	330		UG/KG	4.7			
BNA OLM4.2/4.3		NITROBENZENE	SOIL	330		UG/KG	30			
BNA OLM4.2/4.3	*	N-NITROSO-DI-N-PROPYLAMINE	SOIL	330		UG/KG	21	38	41-126	41-126
BNA OLM4.2/4.3		N-NITROSODIPHENYLAMINE	SOIL	330		UG/KG	35			
BNA OLM4.2/4.3	*	PENTACHLOROPHENOL	SOIL	800		UG/KG	99	47	17-109	17-109
BNA OLM4.2/4.3		PHENANTHRENE	SOIL	330		UG/KG	19			
BNA OLM4.2/4.3	*	PHENOL	SOIL	330		UG/KG	12	35	26-90	26-90
BNA OLM4.2/4.3	*	PYRENE	SOIL	330		UG/KG	53	36	35-142	35-142
BNA OLM4.2/4.3		TERPHENYL-D14 -SURR	SOIL	NA		UG/KG	NA	NA	18-137	18-137
BNA OLM4.2/4.3		2-CHLOROPHENOL-D4 -SURR (advisor	SOIL	NA		UG/KG	NA	NA	20-130	20-130
BNA OLM4.2/4.3		1,2-DICHLOROBENZENE-D4 -SURR (a	SOIL	NA		UG/KG	NA	NA	20-130	20-130
BNA OLM4.2/4.3		NITROBENZENE-D5 -SURR	SOIL	NA		UG/KG	NA	NA	23-120	23-120
BNA OLM4.2/4.3		PHENOL-D6 -SURR	SOIL	NA		UG/KG	NA	NA	24-113	24-113
BNA OLM4.2/4.3		2-FLUOROBIPHENYL -SURR	SOIL	NA		UG/KG	NA	NA	30-115	30-115
BNA OLM4.2/4.3		2-FLUOROPHENOL -SURR	SOIL	NA		UG/KG	NA	NA	25-121	25-121
BNA OLM4.2/4.3		2,4,6-TRIBROMOPHENOL -SURR	SOIL	NA		UG/KG	NA	NA	19-122	19-122
BNA OLM4.2/4.3 additional compounds by request										
BNA OLM4.2/4.3		1,3-DICHLOROBENZENE	SOIL	330		UG/KG	17			
BNA OLM4.2/4.3		1,2-DICHLOROBENZENE	SOIL	330		UG/KG	29			
BNA OLM4.2/4.3		1,4-DICHLOROBENZENE	SOIL	330		UG/KG	18			

ROCHESTER ORGANIC QC LIMITS

METHOD		ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
P/PCB OLM4.2/4.3		AROCLOR-1016	WATER	1.0		UG/L	0.48			
P/PCB OLM4.2/4.3		AROCLOR-1221	WATER	2.0		UG/L	0.68			
P/PCB OLM4.2/4.3		AROCLOR-1232	WATER	1.0		UG/L	0.79			
P/PCB OLM4.2/4.3		AROCLOR-1242	WATER	1.0		UG/L	0.36			
P/PCB OLM4.2/4.3		AROCLOR-1248	WATER	1.0		UG/L	0.27			
P/PCB OLM4.2/4.3		AROCLOR-1254	WATER	1.0		UG/L	0.073			
P/PCB OLM4.2/4.3		AROCLOR-1260	WATER	1.0		UG/L	0.19			
P/PCB OLM4.2/4.3	*	ALDRIN	WATER	0.050		UG/L	0.0026	22	40-120	40-120
P/PCB OLM4.2/4.3		ALPHA-BHC	WATER	0.050		UG/L	0.0084			
P/PCB OLM4.2/4.3		BETA-BHC	WATER	0.050		UG/L	0.0041			
P/PCB OLM4.2/4.3		DELTA-BHC	WATER	0.050		UG/L	0.0035			
P/PCB OLM4.2/4.3	*	GAMMA-BHC (LINDANE)	WATER	0.050		UG/L	0.0076	15	56-123	56-123
P/PCB OLM4.2/4.3		ALPHA-CHLORDANE	WATER	0.050		UG/L	0.0057			
P/PCB OLM4.2/4.3		GAMMA-CHLORDANE	WATER	0.050		UG/L	0.0025			
P/PCB OLM4.2/4.3		4,4'-DDD	WATER	0.10		UG/L	0.0091			
P/PCB OLM4.2/4.3		4,4'-DDE	WATER	0.10		UG/L	0.0049			
P/PCB OLM4.2/4.3	*	4,4'-DDT	WATER	0.10		UG/L	0.0034	27	38-127	38-127
P/PCB OLM4.2/4.3	*	DIELDRIN	WATER	0.10		UG/L	0.014	18	52-126	52-126
P/PCB OLM4.2/4.3		ENDOSULFAN I	WATER	0.050		UG/L	0.0056			
P/PCB OLM4.2/4.3		ENDOSULFAN II	WATER	0.10		UG/L	0.011			
P/PCB OLM4.2/4.3		ENDOSULFAN SULFATE	WATER	0.10		UG/L	0.0074			
P/PCB OLM4.2/4.3	*	ENDRIN	WATER	0.10		UG/L	0.014	21	56-121	56-121
P/PCB OLM4.2/4.3		ENDRIN ALDEHYDE	WATER	0.10		UG/L	0.006			
P/PCB OLM4.2/4.3		ENDRIN KETONE	WATER	0.10		UG/L	0.009			
P/PCB OLM4.2/4.3	*	HEPTACHLOR	WATER	0.050		UG/L	0.0081	20	40-131	40-131
P/PCB OLM4.2/4.3		HEPTACHLOR EPOXIDE	WATER	0.050		UG/L	0.0024			
P/PCB OLM4.2/4.3		METHOXYCHLOR	WATER	0.50		UG/L	0.031			
P/PCB OLM4.2/4.3		TOXAPHENE	WATER	5.0		UG/L	1.0			
P/PCB OLM4.2/4.3		DECACHLOROBIPHENYL (DCB) -SURR	WATER	NA		UG/L	NA	NA	30-150	30-150
P/PCB OLM4.2/4.3		TETRACHLORO-META-XYLENE (TCMX) -SU	WATER	NA		UG/L	NA	NA	30-150	30-150
P/PCB OLM4.2/4.3		AROCLOR-1016	SOIL	33		UG/KG	16			
P/PCB OLM4.2/4.3		AROCLOR-1221	SOIL	67		UG/KG	23			
P/PCB OLM4.2/4.3		AROCLOR-1232	SOIL	33		UG/KG	26			
P/PCB OLM4.2/4.3		AROCLOR-1242	SOIL	33		UG/KG	12			
P/PCB OLM4.2/4.3		AROCLOR-1248	SOIL	33		UG/KG	9.2			
P/PCB OLM4.2/4.3		AROCLOR-1254	SOIL	33		UG/KG	2.4			
P/PCB OLM4.2/4.3		AROCLOR-1260	SOIL	33		UG/KG	6.3			
P/PCB OLM4.2/4.3	*	ALDRIN	SOIL	1.7		UG/KG	0.10	43	40-120	34-132
P/PCB OLM4.2/4.3		ALPHA-BHC	SOIL	1.7		UG/KG	0.27			
P/PCB OLM4.2/4.3		BETA-BHC	SOIL	1.7		UG/KG	0.13			
P/PCB OLM4.2/4.3		DELTA-BHC	SOIL	1.7		UG/KG	0.13			
P/PCB OLM4.2/4.3	*	GAMMA-BHC (LINDANE)	SOIL	1.7		UG/KG	0.27	50	56-123	46-127
P/PCB OLM4.2/4.3		ALPHA-CHLORDANE	SOIL	1.7		UG/KG	0.20			
P/PCB OLM4.2/4.3		GAMMA-CHLORDANE	SOIL	1.7		UG/KG	0.10			
P/PCB OLM4.2/4.3		4,4'-DDD	SOIL	3.3		UG/KG	0.30			
P/PCB OLM4.2/4.3		4,4'-DDE	SOIL	3.3		UG/KG	0.17			
P/PCB OLM4.2/4.3	*	4,4'-DDT	SOIL	3.3		UG/KG	0.10	50	38-127	23-134
P/PCB OLM4.2/4.3	*	DIELDRIN	SOIL	3.3		UG/KG	0.47	38	52-126	31-134
P/PCB OLM4.2/4.3		ENDOSULFAN I	SOIL	1.7		UG/KG	0.20			
P/PCB OLM4.2/4.3		ENDOSULFAN II	SOIL	3.3		UG/KG	0.37			
P/PCB OLM4.2/4.3		ENDOSULFAN SULFATE	SOIL	3.3		UG/KG	0.23			
P/PCB OLM4.2/4.3	*	ENDRIN	SOIL	3.3		UG/KG	0.47	45	56-121	42-139
P/PCB OLM4.2/4.3		ENDRIN ALDEHYDE	SOIL	3.3		UG/KG	0.20			
P/PCB OLM4.2/4.3		ENDRIN KETONE	SOIL	3.3		UG/KG	0.30			
P/PCB OLM4.2/4.3	*	HEPTACHLOR	SOIL	1.7		UG/KG	0.27	31	40-131	35-130
P/PCB OLM4.2/4.3		HEPTACHLOR EPOXIDE	SOIL	1.7		UG/KG	0.070			
P/PCB OLM4.2/4.3		METHOXYCHLOR	SOIL	17		UG/KG	1.0			
P/PCB OLM4.2/4.3		TOXAPHENE	SOIL	170		UG/KG	34			
P/PCB OLM4.2/4.3		DECACHLOROBIPHENYL (DCB) -SURR	SOIL	NA		UG/KG	NA	NA	30-150	30-150
P/PCB OLM4.2/4.3		TETRACHLORO-META-XYLENE (TCMX) -SU	SOIL	NA		UG/KG	NA	NA	30-150	30-150

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
MAVPH	BENZENE	WATER	0.5		UG/L	0.17	50	70-130	70-130
MAVPH	METHYL-TERT-BUTYL ETHER	WATER	5.0		UG/L	0.64	50	70-130	70-130
MAVPH	C9-C10 AROMATICS	WATER	10		UG/L	1.7	50	70-130	70-130
MAVPH	C9-C12 ALIPHATICS	WATER	20		UG/L	4.8	50	70-130	70-130
MAVPH	C5-C8 ALIPHATICS	WATER	15		UG/L	8.8	50	70-130	70-130
MAVPH	ETHYLBENZENE	WATER	1.0		UG/L	0.19	50	70-130	70-130
MAVPH	NAPHTHALENE	WATER	5.0		UG/L	0.51	50	70-130	70-130
MAVPH	TOLUENE	WATER	1.0		UG/L	0.46	50	70-130	70-130
MAVPH	M+P-XYLENE	WATER	1.0		UG/L	0.70	50	70-130	70-130
MAVPH	O-XYLENE	WATER	1.0		UG/L	0.50	50	70-130	70-130
MAVPH	1,4-DIFLUOROBENZENE (FID) -SURR	WATER	NA		UG/L	NA	NA	70-130	70-130
MAVPH	1,4-DIFLUOROBENZENE (PID) -SURR	WATER	NA		UG/L	NA	NA	70-130	70-130
MAVPH	BENZENE	SOIL	25		UG/KG	8.6	50	70-130	70-130
MAVPH	METHYL-TERT-BUTYL ETHER	SOIL	250		UG/KG	32	50	70-130	70-130
MAVPH	C9-C10 AROMATICS	SOIL	500		UG/KG	85	50	70-130	70-130
MAVPH	C9-C12 ALIPHATICS	SOIL	1000		UG/KG	240	50	70-130	70-130
MAVPH	C5-C8 ALIPHATICS	SOIL	750		UG/KG	440	50	70-130	70-130
MAVPH	ETHYLBENZENE	SOIL	50		UG/KG	9.7	50	70-130	70-130
MAVPH	NAPHTHALENE	SOIL	250		UG/KG	26	50	70-130	70-130
MAVPH	TOLUENE	SOIL	50		UG/KG	23	50	70-130	70-130
MAVPH	M+P-XYLENE	SOIL	50		UG/KG	35	50	70-130	70-130
MAVPH	O-XYLENE	SOIL	50		UG/KG	25	50	70-130	70-130
MAVPH	1,4-DIFLUOROBENZENE (FID) -SURR	SOIL	NA		UG/KG	NA	NA	70-130	70-130
MAVPH	1,4-DIFLUOROBENZENE (PID) -SURR	SOIL	NA		UG/KG	NA	NA	70-130	70-130
MAEPH	ACENAPHTHENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	ACENAPHTHYLENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	ANTHRACENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	BENZO(A)ANTHRACENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	BENZO(A)PYRENE	WATER	0.20		UG/L		50	40-140	40-140
MAEPH	BENZO(B)FLUORANTHENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	BENZO(G,H,I)PERYLENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	BENZO(K)FLUORANTHENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	C9-C18 ALIPHATIC HYDROCARBONS	WATER	100		UG/L	NA	50	40-140	40-140
MAEPH	UNADJUSTED C11-C22 AROMATIC HYDROC	WATER	100		UG/L	NA	50	40-140	40-140
MAEPH	C11-C22 AROMATICS	WATER	100		UG/L	NA	50	40-140	40-140
MAEPH	C19-C36 ALIPHATIC HYDROCARBONS	WATER	100		UG/L	NA	50	40-140	40-140
MAEPH	INDENO(1,2,3-CD)PYRENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	CHRYSENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	DIBENZ(A,H)ANTHRACENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	FLUORANTHENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	FLUORENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	2-METHYLNAPHTHALENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	NAPHTHALENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	PHENANTHRENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	PYRENE	WATER	0.50		UG/L		50	40-140	40-140
MAEPH	2-BROMONAPHTHALENE -SURR	WATER	NA		UG/L	NA	NA	40-140	40-140
MAEPH	2-FLUOROBIPHENYL -SURR	WATER	NA		UG/L	NA	NA	40-140	40-140
MAEPH	1-CHLORO-OCTADECANE -SURR	WATER	NA		UG/L	NA	NA	40-140	40-140
MAEPH	O-TERPHENYL -SURR	WATER	NA		UG/L	NA	NA	40-140	40-140

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
MAEPH	ACENAPHTHENE	SOIL	330		UG/KG	29	50	40-140	40-140
MAEPH	ACENAPHTHYLENE	SOIL	330		UG/KG	28	50	40-140	40-140
MAEPH	ANTHRACENE	SOIL	330		UG/KG	195	50	40-140	40-140
MAEPH	BENZO(A)ANTHRACENE	SOIL	330		UG/KG	43	50	40-140	40-140
MAEPH	BENZO(A)PYRENE	SOIL	330		UG/KG	79	50	40-140	40-140
MAEPH	BENZO(B)FLUORANTHENE	SOIL	330		UG/KG	44	50	40-140	40-140
MAEPH	BENZO(G,H,I)PERYLENE	SOIL	330		UG/KG	39	50	40-140	40-140
MAEPH	BENZO(K)FLUORANTHENE	SOIL	330		UG/KG	67	50	40-140	40-140
MAEPH	C9-C18 ALIPHATIC HYDROCARBONS	SOIL	660		UG/KG	NA	50	40-140	40-140
MAEPH	UNADJUSTED C11-C22 AROMATIC HYDROC	SOIL	660		UG/KG	NA	50	40-140	40-140
MAEPH	C11-C22 AROMATICS	SOIL	660		UG/KG	NA	50	40-140	40-140
MAEPH	C19-C36 ALIPHATIC HYDROCARBONS	SOIL	660		UG/KG	NA	50	40-140	40-140
MAEPH	INDENO(1,2,3-CD)PYRENE	SOIL	330		UG/KG	54	50	40-140	40-140
MAEPH	CHRYSENE	SOIL	330		UG/KG	93	50	40-140	40-140
MAEPH	DIBENZ(A,H)ANTHRACENE	SOIL	330		UG/KG	81	50	40-140	40-140
MAEPH	FLUORANTHENE	SOIL	330		UG/KG	83	50	40-140	40-140
MAEPH	FLUORENE	SOIL	330		UG/KG	28	50	40-140	40-140
MAEPH	2-METHYLNAPHTHALENE	SOIL	660		UG/KG	33	50	40-140	40-140
MAEPH	NAPHTHALENE	SOIL	330		UG/KG	41	50	40-140	40-140
MAEPH	PHENANTHRENE	SOIL	330		UG/KG	162	50	40-140	40-140
MAEPH	PYRENE	SOIL	330		UG/KG	50	50	40-140	40-140
MAEPH	2-BROMONAPHTHALENE -SURR	SOIL	NA		UG/KG	NA	NA	40-140	40-140
MAEPH	2-FLUOROBIPHENYL -SURR	SOIL	NA		UG/KG	NA	NA	40-140	40-140
MAEPH	1-CHLORO-OCTADECANE -SURR	SOIL	NA		UG/KG	NA	NA	40-140	40-140
MAEPH	O-TERPHENYL -SURR	SOIL	NA		UG/KG	NA	NA	40-140	40-140
TO-15	1,1,1-TRICHLOROETHANE	AIR	0.50		ppbv	0.013	25	70-130	NA
TO-15	1,1,2,2-TETRACHLOROETHANE	AIR	0.50		ppbv	0.023	25	70-130	NA
TO-15	FREON-113	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	1,1,2-TRICHLOROETHANE	AIR	0.50		ppbv	0.017	25	70-130	NA
TO-15	1,1-DICHLOROETHANE	AIR	0.50		ppbv	0.026	25	70-130	NA
TO-15	1,1-DICHLOROETHENE	AIR	0.50		ppbv	0.028	25	70-130	NA
TO-15	1,2,4-TRICHLOROBENZENE	AIR	0.50		ppbv	0.046	25	70-130	NA
TO-15	1,2,4-TRIMETHYLBENZENE	AIR	0.50		ppbv	0.013	25	70-130	NA
TO-15	1,2-DIBROMOETHANE	AIR	0.50		ppbv	0.024	25	70-130	NA
TO-15	1,2-DICHLOROBENZENE	AIR	0.50		ppbv	0.025	25	70-130	NA
TO-15	DICHLORODIFLUOROMETHANE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	1,2-DICHLOROETHANE	AIR	0.50		ppbv	0.021	25	70-130	NA
TO-15	1,2-DICHLOROPROPANE	AIR	0.50		ppbv	0.019	25	70-130	NA
TO-15	1,3,5-TRIMETHYLBENZENE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	1,3-BUTADIENE	AIR	0.50		ppbv	0.029	25	70-130	NA
TO-15	1,3-DICHLOROBENZENE	AIR	0.50		ppbv	0.026	25	70-130	NA
TO-15	1,4-DICHLOROBENZENE	AIR	0.50		ppbv	0.024	25	70-130	NA
TO-15	4-ETHYLTOLUENE	AIR	0.50		ppbv	0.021	25	70-130	NA
TO-15	ACETONE	AIR	1.00		ppbv	0.45	25	70-130	NA
TO-15	BENZENE	AIR	0.50		ppbv	0.013	25	70-130	NA
TO-15	BENZYL CHLORIDE	AIR	0.50		ppbv	0.031	25	70-130	NA
TO-15	BROMODICHLOROMETHANE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	BROMOFORM	AIR	0.50		ppbv	0.021	25	70-130	NA
TO-15	BROMOMETHANE	AIR	0.50		ppbv	0.025	25	70-130	NA
TO-15	CARBON DISULFIDE	AIR	0.50		ppbv	0.010	25	70-130	NA
TO-15	CARBON TETRACHLORIDE	AIR	0.50		ppbv	0.017	25	70-130	NA
TO-15	CHLOROBENZENE	AIR	0.50		ppbv	0.013	25	70-130	NA
TO-15	CHLOROETHANE	AIR	0.50		ppbv	0.032	25	70-130	NA
TO-15	CHLOROFORM	AIR	0.50		ppbv	0.025	25	70-130	NA
TO-15	CHLOROMETHANE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	CIS-1,2-DICHLOROETHENE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	CIS-1,3-DICHLOROPROPENE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	CYCLOHEXANE	AIR	0.50		ppbv	0.028	25	70-130	NA
TO-15	DIBROMOCHLOROMETHANE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	FREON-114	AIR	0.50		ppbv	0.013	25	70-130	NA
TO-15	ETHYL ACETATE	AIR	0.50		ppbv	0.057	25	70-130	NA
TO-15	ETHYLBENZENE	AIR	0.50		ppbv	0.017	25	70-130	NA
TO-15	HEPTANE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	HEXACHLOROBUTADIENE	AIR	0.50		ppbv	0.029	25	70-130	NA
TO-15	HEXANE	AIR	0.50		ppbv	0.021	25	70-130	NA

ROCHESTER ORGANIC QC LIMITS

METHOD	ANALYTE	MATRIX	MRL	DOD LOQ**	UNITS	MDL/ LOD	DUP (RPD)	LCS (% REC)	MS (% REC)
TO-15	M+P-XYLENE	AIR	1.0		ppbv	0.010	25	70-130	NA
TO-15	2-HEXANONE	AIR	0.50		ppbv	0.061	25	70-130	NA
TO-15	2-BUTANONE	AIR	0.50		ppbv	0.060	25	70-130	NA
TO-15	4-METHYL-2-PENTANONE	AIR	0.50		ppbv	0.056	25	70-130	NA
TO-15	METHYL TERT-BUTYL ETHER	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	METHYLENE CHLORIDE	AIR	0.50		ppbv	0.024	25	70-130	NA
TO-15	O-XYLENE	AIR	0.50		ppbv	0.010	25	70-130	NA
TO-15	PROPYLENE	AIR	0.50		ppbv	0.027	25	70-130	NA
TO-15	STYRENE	AIR	0.50		ppbv	0.017	25	70-130	NA
TO-15	TETRACHLOROETHENE	AIR	0.50		ppbv	0.019	25	70-130	NA
TO-15	TETRAHYDROFURAN	AIR	0.50		ppbv	0.033	25	70-130	NA
TO-15	TOLUENE	AIR	0.50		ppbv	0.010	25	70-130	NA
TO-15	TRANS-1,2-DICHLOROETHENE	AIR	0.50		ppbv	0.010	25	70-130	NA
TO-15	TRANS-1,3-DICHLOROPROPENE	AIR	0.50		ppbv	0.015	25	70-130	NA
TO-15	TRICHLOROETHENE	AIR	0.50		ppbv	0.028	25	70-130	NA
TO-15	TRICHLOROFLUOROMETHANE	AIR	0.50		ppbv	0.010	25	70-130	NA
TO-15	VINYL ACETATE	AIR	0.50		ppbv	0.15	25	70-130	NA
TO-15	VINYL CHLORIDE	AIR	0.50		ppbv	0.030	25	70-130	NA
TO-15	BROMOFLUOROBENZENE-SURR	AIR	NA		ppbv	NA	NA	70-140	NA

Method Reporting Limits for isomers reported as "total,"
are a summation of each isomer's MRL.

* Subset of compounds used to control the acceptablitily of the QC sample for the batch.
All targets are monitored against the limits provided, however outlying compounds
outside of this subset may not stop analysis based upon the judgement of the analyst.

** The DOD LoQ is the same as the MRL unless there is a value in the DoD LoQ column.
DoD LoQ is required to be at least 3 times the MDL. Only populated for DoD Scope of
Work. DoD requires use of DoD LCS and MS limits where available. See SOPs or DoD QSM.

EPA SOW OLM 04.3 does not require LCS analysis, limits are guidance for EPA
and required for NYS ASP .

Limits for TCLP extracts are the same as the determinative method for the water matrix.

MDL = Method Detection Limit.
LOD = Limit of Detection
TCL = Target Compound List
LVI = Large Volume Injector
-SURR = Surrogate Compound

WETCHEM QC LIMITS

Columbia Analytical Services Rochester, NY

METHOD			ANALYTE	MATRIX	UNITS	MRL	MDL	DUP		MS		LCS		ICV/CCV
EPA	SM	Other						(RPD)	Freq	(% REC)	Freq	(% Rec)	Frequency	
305.1	2310B		Acidity	Water	mg/L	10.0	2.86	20	1/10	61-136	1/10	61-136	1/10	90-110
310.1	2320B		Alkalinity, Total, Carbonate, Bicarb	Water	mg/L	2.00	0.689	20	1/10	80-121	0.1	93-111	1/20	90-110
350.1			Ammonia	Water	mg/L	0.050	0.00955	20	1/10	59-129	0.1	90-110	1/20	90-110
350.1			Ammonia - Low Level	Water	mg/L	0.010	0.00955	20	1/10	59-129	0.1	90-110	1/20	90-110
350.1 M			Ammonia	Soil	mg/Kg	5.00	0.339	30	1/10	48-149	0.1	90-110	1/20	90-110
		D482	Ash, Percent	Non-Aq	%	0.10	NA	10	1/10	NA	NA	61-134	1/20	NA
405.1	5210B		BOD/CBOD	Water	mg/L	2.00	NA	20	1/20	47-141	1/20	85-115	1/20	NA
300.0/9056			Bromide by IC	Water	mg/L	0.10	0.0020	20	1/10	71-122	0.1	90-110	1/20	90-110
300.0M/9056			Bromide by IC	Soil	mg/Kg	10.0	0.385	30	1/10	71-127	0.1	90-110	1/20	90-110
5050/9056			Bromide for total halogens	NonAq/Soil	mg/kg	30.0		20	1/20	NA	NA	50-150	1/20	90-110
		D4809	BTU	Non-Aq	BTU	500	NA	20	1/20	NA	1/20	90-110	1/20	NA
9081			Cation Exchange Capacity	Soil	meqNa/100g	1.0	NA	30	1/20	NA	NA	NA	NA	NA
410.4			Chemical Oxygen Demand - LL	Water	mg/L	5.00	3.31	20	1/10	41-142	1/10	75-116	1/20	85-115
410.4 M			Chemical Oxygen Demand	Soil	mg/Kg	100	49.9	30	1/10	10-170	1/10	10-170	1/20	85-115
325.2	4500-Cl⁻ E		Chloride - Colorimetric	Water	mg/L	1.00	0.567	20	1/10	65-125	1/10	90-112	1/20	90-110
300.0/9056			Chloride by IC	Water	mg/L	0.200	0.029	20	1/10	72-118	1/10	90-110	1/20	90-110
300.0M/9056			Chloride by IC	Soil	mg/Kg	30.0	4.69	30	1/10	72-119	1/10	90-110	1/20	90-110
5050/9056			Chlorine, Percent	Non-Aq	%	0.01	NA	20	1/10	33-141	NA	33-141	1/20	NA
5050/9056			Chloride - for total halogens	NonAq/Soil	mg/kg	60.0		20	1/20	NA	NA	50-150	1/20	90-110
	409A		Chlorine Demand	Water	mg/L	5.00	NA	20	1/20	NA	NA	NA	NA	NA
330.4	4500-Cl F		Chlorine Residual (Free)	Water	mg/L	0.100	NA	20	1/10	50-150	1/20	50-150	1/20	NA
330.4	4500-Cl F		Chlorine Residual (Total)	Water	mg/L	0.100	0.0446	20	1/10	66-129	1/20	87-113	1/20	NA
110.2	2120B		Color (True)	Water	CU	5.0	NA	+/-5units	1/10	NA	NA	NA	NA	NA
120.1			Conductivity	Water	umhos/cm	NA	NA	20	1/20	NA	NA	90-110	1/10	NA
7196A	3500-Cr B		CR+6 Hexavalent Chromium	Water	mg/L	0.010	0.0011	20	1/10	85-115	1/10	90-109	1/20	90-110
218.6			CR+6 Hexavalent Chromium	Water	mg/L	0.010	0.0031	20	1/20	90-110	1/10	90-110	1/20	95-105
7199			CR+6 Hexavalent Chromium	Water	mg/L	0.010	0.0031	20	1/20	70-130	1/20	80-120	1/20	90-110
3060/7196A			CR+6 Hexavalent Chromium	Soil	mg/Kg	4.00	2.00	20	1/20	75-125	1/10	80-120	1/20	90-110
3060/7199			CR+6 Hexavalent Chromium	Soil	mg/Kg	0.40	0.101	20	1/20	75-125	1/20	80-120	1/20	90-110
		ILM05.3	Cyanide, Total	Water	mg/L	0.010		20	1/20	75-125	1/20	85-115	1/20	85-115
		ILM05.3	Cyanide, Total	Soil	mg/Kg	1.00		20	1/20	30-162	1/20	85-115	1/20	85-115
335.2/335.4			Cyanide, Total	Water	mg/L	0.010	0.0031	20	1/10	10-171	1/10	90-110	HL & LL 1/2	90-110
9012A			Cyanide, Total	Water	mg/L	0.010	0.0031	20	1/10	27-153	1/10	85-115	HL & LL 1/2	85-115
9012A			Cyanide, Total	Soil	mg/Kg	1.00	0.218	30	1/10	30-162	1/10	85-115	HL & LL 1/2	85-115
S. 7.3 SW846			Cyanide, Reactivity	Water	mg/Kg	20.0	0.082	20	1/20	1-100	1/20	1-100	1/20	85-115
S. 7.3 SW846			Cyanide, Reactivity	Soil	mg/Kg	20.0	0.082	30	1/20	1-100	1/20	1-100	1/20	85-115
D1298			Density / Specific Gravity	non-aq	kg/m3	NA	NA	10	1/10	NA	NA	0.002units	20/hydromet	NA
NYSDEC 89-9			Ethylene Glycol	Water	mg/L	1.0	0.0526	20	1/20	70-130	1/20	80-120	1/20	90-110
3500-FE D			Ferrous Iron	Water	mg/L	0.10	0.0417	20	1/10	82-123	1/10	86-114	1/20	90-110
3500-FE D			Ferrous Iron	Soil	mg/kg	10.0	2.5	30	1/10	30-161	1/10	81-120	1/20	90-110
340.2			Fluoride by ISE	Water	mg/L	0.100	0.0115	20	1/20	82-116	1/20	82-116	1/20	90-110
300.0/9056			Fluoride by IC	Water	mg/L	0.100	0.0060	20	1/10	85-129	1/10	90-110	1/20	90-110

WETCHEM QC LIMITS

Columbia Analytical Services Rochester, NY

METHOD			ANALYTE	MATRIX	UNITS	MRL	MDL	DUP		MS		LCS		ICV/CCV
EPA	SM	Other						(RPD)	Freq	(% REC)	Freq	(% Rec)	Frequency	
300.0M/9056			Fluoride by IC	Soil	mg/Kg	20.0	0.609	30	1/10	70-130	1/10	90-110	1/20	90-110
5050/9056			Fluoride for total halogens	NonAq/Soil	mg/kg	30.0		20	1/20	NA	NA	50-150	1/20	90-110
130.2	2340C		Hardness, Total	Water	mg/L	2.00	0.311	20	1/10	84-113	1/10	93-107	1/10	NA
1010			IGN- Pensky Martens Closed Cup	Water	degree C	NA	NA	10	1/20	NA	NA	24.3-29.7 C	1/20	NA
D92/ 1010.CC			IGN - Cleveland Open Cup	Soil	degree C	NA	NA	30	1/20	NA	NA	NA	NA	NA
300.0/9056			Iodide	Water	mg/L	0.20	0.041	20	1/10	70-130	1/10	90-110	1/20	90-110
5050/9056			Iodide - for total Halogens	NonAq/Soil	mg/kg	60		20	1/20	NA	NA	30-150	1/20	90-110
300.0/9056			Nitrate as N by IC	Water	mg/L	0.050	0.008	20	1/10	79-111	1/10	90-110	1/20	90-110
300.0M/9056			Nitrate as N by IC	Soil	mg/Kg	5.00	0.359	30	1/10	79-113	1/10	90-110	1/20	90-110
353.2			Nitrate/Nitrite as N	Water	mg/L	0.050	0.00284	20	1/10	69-123	1/10	90-110	1/20	90-110
300.0/9056			Nitrite as N by IC	Water	mg/L	0.050	0.001	20	1/10	70-130	1/10	90-110	1/20	90-110
353.2			Nitrite as N	Water	mg/L	0.010	0.00776	20	1/10	73-126	1/10	90-110	1/20	90-110
351.2			Nitrogen, Total Kjeldahl	Water	mg/L	0.200	0.075	20	1/10	70-117	1/10	72-108	1/20	-110(I)85-115(
351.2-M			Nitrogen, Total Kjeldahl	Soil	mg/Kg	20.0	12.1	30	1/10	13-162	1/10	13-162	1/20	-110(I)85-115(
351.2 LL			Nitrogen, Total Kjeldahl-LL	Water	mg/L	0.080	0.075	20	1/10	70-117	1/10	76-124	1/20	-110(I)85-115(
1664A			Oil and Grease by 1664A	Water	mg/L	5.00	0.84	20	1/20	78-114	1/20	78-114	1/20	NA
365.1			Othophosphate -LL	Water	mg/L	0.0020	0.0018	20	1/10	33-150	1/10	90-110	1/20	90-110
365.1			Orthophosphate	Water	mg/L	0.010	0.0026	20	1/10	33-150	1/10	90-110	1/20	90-110
9095			Paint Filter test	Sludge	mg/Kg	NA	NA	30	1/20	NA	NA	NA	NA	NA
E203			Percent Water	Waste	%	0.1	0.0112	20	1/20	NA	NA	(MeOH)86-132	1/10	NA
150.1	4500-H^+ B		pH	Water	SU	NA	NA	±0.10	1/10	NA	NA	NA	NA	±0.05
9040/9045.			pH / Corrosivity	Water	SU	NA	NA	±0.10	1/20	NA	NA	NA	NA	±0.05
9040/9045.			pH / Corrosivity	Soil	SU	NA	NA	±0.10	1/20	NA	NA	NA	NA	±0.05
420.4			Phenolics, Total LL	Water	mg/L	0.002	0.00044	20	1/10	70-123	1/10	85-113	1/20	85-115
420.4			Phenolics, Total	Water	mg/L	0.005	0.00044	20	1/10	70-123	1/10	85-113	1/20	85-115
420.4			Phenolics, Manual Distillation	Water	mg/L	0.005		20	1/10	68-118	1/10	68-118	1/20	85-115
9066			Phenolics, Total	Water	mg/L	0.005	0.00044	20	1/10	70-123	1/10	85-113	1/20	85-115
9066			Phenolics, Total	Soil	mg/Kg	0.100	0.0177	30	1/10	66-108	1/10	75-112	1/20	85-115

WETCHEM QC LIMITS

Columbia Analytical Services Rochester, NY

METHOD			ANALYTE	MATRIX	UNITS	MRL	MDL	DUP		MS		LCS		ICV/CCV
EPA	SM	Other						(RPD)	Freq	(% REC)	Freq	(% Rec)	Frequency	
365.1 M			Phosphorus, Total - LL	Water	mg/L	0.003	0.0009	20	1/10	51-148	1/10	84-114	1/20	90-110
365.1			Phosphorus, Total	Water	mg/L	0.050	0.0158	20	1/10	51-148	1/10	90-110	1/20	90-110
365.1-M			Phosphorus, Total	Soil	mg/Kg	5.00	1.02	30	1/20	16-184	1/10	16-184	1/20	90-110
GEN-SILICON			Silicon, Percent	Soil/nonAq	%	0.0467		10	1/10	NA	NA	80-120	1/20	NA
370.1		I-2700-85	Silica, Dissolved	Water	mg/L	0.010	0.0031	20	1/10	80-117	1/10	90-117	1/20	90-110
160.3M			Solids, Dry Weight Percent (DWPS)	Soil	mg/Kg	1.0	NA	30	1/10	NA	NA	NA	NA	NA
160.5			Solids, Settleable	Water	mg/L	0.100	NA	20	1/20	NA	NA	NA	NA	NA
160.3	2540B		Solids, Total (TS)	Water	mg/L	10.0	NA	20	1/10	NA	NA	80-120	1/20	NA
160.1	2540C		Solids, Total Dissolved (TDS)	Water	mg/L	10.0	3.6	20	1/10	NA	NA	80-120	1/20	NA
160.2	2540D		Solids, Total Suspended (TSS)	Water	mg/L	1.00	NA	20	1/10	NA	NA	80-120	1/20	NA
160.4			Solids, Total Volatile (TVS)	Water	mg/L	10.0	NA	20	1/10	NA	NA	80-120	NA	NA
160.4D			Solids, Volatile Dissolved (VDS)	Water	mg/L	10.0	NA	20	1/10	NA	NA	NA	NA	NA
160.4S			Solids, Volatile Suspended (VSS)	Water	mg/L	1.00	NA	20	1/10	NA	NA	NA	NA	NA
	2540G		Solids, Percent Volatile	Soil	%	NA	NA	20	1/10	NA	NA	NA	NA	NA
375.4	426C		Sulfate, Turbidimetric	Water	mg/L	5.00	0.528	20	1/10	72-129	1/10	72-129	1/20	NA
300.0/9056			Sulfate by IC	Water	mg/L	0.200	0.007	20	1/10	61-128	1/10	90-110	1/20	90-110
300.0M/0956			Sulfate by IC	Soil	mg/Kg	30.0	0.518	30	1/10	25-151	1/10	90-110	1/20	90-110
AVS			Sulfide, Acid Volatile (AVS)	Soil	umoles/g	1.00	0.614	30	1/20	56-196	1/20	56-196	1/20	NA
S. 7.3 SW846			Sulfide Reactivity	Water	mg/Kg	100	65.2	20	1/20	0-235	NA	84-224	1/20	NA
S. 7.3 SW846			Sulfide Reactivity	Soil	mg/Kg	100	65.2	30	1/20	14-235	NA	14-235	1/20	NA
9030B			Sulfide, Acid Soluble	Water	mg/L	1.00	0.981	20	1/20	26-122	1/20	61-111	1/20	NA
9030B			Sulfide, Acid Soluble	Soil	mg/Kg	20.0	17.9	30	1/20	10-153	1/20	53-116	1/20	NA
376.1	4500-S F		Sulfide, Total	Water	mg/L	1.00	0.146	20	1/10	61-140	1/20	61-140	1/20	NA
300M			Sulfur- Alkaline Digestion	Soil	mg/kg	6.68	2.75	30	1/20	62-124	1/20	62-124	1/20	NA
425.1	5540C		Surfactants	Water	mg/L	0.02	0.00813	20	1/20	58-139	NA	58-139	1/20 HL	NA
415.1			TIC	Water	mg/L	1.00	0.0573	20	1/10	82-127	1/10	82-127	1/20	85-115
415.1	5310C		TOC - LL	Water	mg/L	0.05	0.0457	20	1/10	56-139	1/10	87-120	1/20	85-115
9060			TOC - LL	Water	mg/L	0.10	0.0457	20	1/10	56-139	1/10	87-120	1/20	85-115
415.1M/9060	5310C		TOC - RL	Water	mg/L	1.00	0.306	20	1/10	56-139	1/10	87-120	1/20	85-115
TOCLK			TOC - Lloyd Kahn	Soil	mg/Kg	300	39.8	30	1/20	29-163	1/20	55-133	1/20	85-115
TOCWB			TOC - Walkley-Black	Soil	mg/Kg	0.10	0.0262	30	1/20	69-105	1/20	83-98	1/10	NA
1664A			TPH by 1664A	Water	mg/L	5.00	1.43	20	1/20	64-132	1/20	64-132	1/20	NA
180.1			Turbidity	Water	NTU	0.10	0.035	10	1/20	NA	NA	90-110	3@run start	90-110

METALS ANALYSES QC LIMITS 2005									
Method	**Analyte**	**Matrix**	**Method Reporting Limit (MRL)**	**Method Detection Limit (MDL)**	**Precision (RPD)**	**Matrix Spike Accuracy (%REC)**	**LCS Accuracy (%REC)**	**ICV (%REC)**	**CCV (%REC)**
200.7 (ICP)	Aluminum	Water	100	20.4	20	70-130	85-115	95-105	90-110
(ug/L)	Antimony		60 (LL 10)	32.6 (3.23)	20	70-130	85-115	95-105	90-110
	Arsenic		10	3.56	20	70-130	85-115	95-105	90-110
	Barium		20	3.41	20	70-130	85-115	95-105	90-110
	Beryllium		5.0	0.238	20	70-130	85-115	95-105	90-110
	Boron		200	19.5	20	70-130	85-115	95-105	90-110
	Cadmium		5.0	3.36	20	70-130	85-115	95-105	90-110
	Calcium		1000	15.4	20	70-130	85-115	95-105	90-110
	Chromium		10	1.87	20	70-130	85-115	95-105	90-110
	Cobalt		50	2.43	20	70-130	85-115	95-105	90-110
	Copper		20	10.0	20	70-130	85-115	95-105	90-110
	Iron		100	10.95	20	70-130	85-115	95-105	90-110
	Lead		100 (LL 5.0)	27.9 (1.39)	20	70-130	85-115	95-105	90-110
	Lithium		100	28.39	20	70-130	85-115	95-105	90-110
	Magnesium		1000	18.13	20	70-130	85-115	95-105	90-110
	Manganese		10	0.382	20	70-130	85-115	95-105	90-110
	Molybdenum		25	7.79	20	70-130	85-115	95-105	90-110
	Nickel		40	4.25	20	70-130	85-115	95-105	90-110
	Potassium		2000	48.8	20	70-130	85-115	95-105	90-110
	Selenium		10	4.23	20	70-130	85-115	95-105	90-110
	Silicon		1000	17.39	20	70-130	85-115	95-105	90-110
	Silver		10	0.915	20	70-130	85-115	95-105	90-110
	Sodium		1000	452	20	70-130	85-115	95-105	90-110
	Strontium		100	1.06	20	70-130	85-115	95-105	90-110
	Thallium		10	4.39	20	70-130	85-115	95-105	90-110
	Tin		500	19.5	20	70-130	85-115	95-105	90-110
	Titanium		50	0.336	20	70-130	85-115	95-105	90-110
	Vanadium		50	6.52	20	70-130	85-115	95-105	90-110
	Zinc		20	5.24	20	70-130	85-115	95-105	90-110
1631 (CVAF) ng/L	Mercury	Water	1.00	0.084	20	70-130	80-120	80-120	80-120
245.1 (CVAA) ug/L	Mercury	Water	0.300	0.008	20	70-130	85-115	95-105	90-110
206.2/SM3113B (GFAA) ug/L	Arsenic	Water	10.0	1.711	20	75-125	85-115	90-110	90-110
239.2/SM3113B (GFAA) ug/L	Lead	Water	5.00	0.814	20	75-125	85-115	90-110	90-110
239.2/SM3113B (GFAA) ug/L	Lead - DW	Water	1.00	0.384	20	75-125	85-115	90-110	90-110
270.2/SM3113B (GFAA) ug/L	Selenium	Water	5.00	1.504	20	75-125	85-115	90-110	90-110
279.2/SM3113B (GFAA) ug/L	Thallium	Water	10.0	2.975	20	75-125	85-115	90-110	90-110
6010B (ICP)	Aluminum	Water	100	20.4	20	75-125	80-120	90-110	90-110
(ug/L)	Antimony		60 (LL 10)	32.6 (3.23)	20	75-125	80-120	90-110	90-110
	Arsenic		10	3.56	20	75-125	80-120	90-110	90-110
	Barium		20	3.41	20	75-125	80-120	90-110	90-110
	Beryllium		5.0	0.238	20	75-125	80-120	90-110	90-110
	Boron		200	19.5	20	75-125	80-120	90-110	90-110
	Cadmium		5.0	3.36	20	75-125	80-120	90-110	90-110
	Calcium		1000	15.4	20	75-125	80-120	90-110	90-110
	Chromium		10	1.87	20	75-125	80-120	90-110	90-110
	Cobalt		50	2.43	20	75-125	80-120	90-110	90-110
	Copper		20	10.0	20	75-125	80-120	90-110	90-110
	Iron		100	10.95	20	75-125	80-120	90-110	90-110
	Lead		50 (LL 5.0)	27.9 (1.39)	20	75-125	80-120	90-110	90-110
	Lithium		100	28.39	20	75-125	80-120	90-110	90-110
	Magnesium		1000	18.13	20	75-125	80-120	90-110	90-110
	Manganese		10	0.382	20	75-125	80-120	90-110	90-110
	Molybdenum		25	7.79	20	75-125	80-120	90-110	90-110

METALS ANALYSES QC LIMITS 2005									
Method	**Analyte**	**Matrix**	**Method Reporting Limit (MRL)**	**Method Detection Limit (MDL)**	**Precision (RPD)**	**Matrix Spike Accuracy (%REC)**	**LCS Accuracy (%REC)**	**ICV (%REC)**	**CCV (%REC)**
	Nickel		40	4.25	20	75-125	80-120	90-110	90-110
	Potassium		2000	48.8	20	75-125	80-120	90-110	90-110
	Selenium		10	4.23	20	75-125	80-120	90-110	90-110
	Silicon		1000	17.39	20	75-125	80-120	90-110	90-110
	Silver		10	0.915	20	75-125	80-120	90-110	90-110
	Sodium		1000	452	20	75-125	80-120	90-110	90-110
	Strontium		100	1.06	20	75-125	80-120	90-110	90-110
	Thallium		10	4.39	20	75-125	80-120	90-110	90-110
	Tin		500	19.5	20	75-125	80-120	90-110	90-110
	Titanium		50	0.336	20	75-125	80-120	90-110	90-110
	Vanadium		50	6.52	20	75-125	80-120	90-110	90-110
	Zinc		20	5.24	20	75-125	80-120	90-110	90-110
7470A (CVAA) ug/L	Mercury	Water	0.300	0.00806	20	75-125	80-120	90-110	80-120
7000A/7060A (GFAA) ug/L	Arsenic	Water	10	1.711	20	75-125	80-120	90-110	80-120
7000A/7421 (GFAA) ug/L	Lead	Water	5.0	0.814	20	75-125	80-120	90-110	80-120
7000A/7740 (GFAA) ug/L	Selenium	Water	5.0	1.504	20	75-125	80-120	90-110	80-120
7000A/7841 (GFAA) ug/L	Thallium	Water	10	2.975	20	75-125	80-120	90-110	80-120
6010B (ICP)	Aluminum	Soil	10	6.72	20	75-125	C of A	90-110	90-110
(mg/Kg)	Antimony		6.0 (1.0 LL)	2.61 (0.28 LL)	20	75-125	C of A	90-110	90-110
	Arsenic		1	0.2	20	75-125	C of A	90-110	90-110
	Barium		2.00	0.262	20	75-125	C of A	90-110	90-110
	Beryllium		0.5	0.0356	20	75-125	C of A	90-110	90-110
	Boron		20	0.988	20	75-125	C of A	90-110	90-110
	Cadmium		0.5	0.303	20	75-125	C of A	90-110	90-110
	Calcium		100	11.1	20	75-125	C of A	90-110	90-110
	Chromium		1.00	0.122	20	75-125	C of A	90-110	90-110
	Cobalt		5.0	0.249	20	75-125	C of A	90-110	90-110
	Copper		2.0	0.568	20	75-125	C of A	90-110	90-110
	Iron		10	2.11	20	75-125	C of A	90-110	90-110
	Lead		5.0 (0.5 LL)	1.66 (0.097 LL)	20	75-125	C of A	90-110	90-110
	Lithium		10	3.22	20	75-125	C of A	90-110	90-110
	Magnesium		100	1.31	20	75-125	C of A	90-110	90-110
	Manganese		1.00	0.0247	20	75-125	C of A	90-110	90-110
	Molybdenum		2.5	0.837	20	75-125	C of A	90-110	90-110
	Nickel		4.00	0.473	20	75-125	C of A	90-110	90-110
	Potassium		200	3.43	20	75-125	C of A	90-110	90-110
	Selenium		1	0.31	20	75-125	C of A	90-110	90-110
	Silicon		100	2.33	20	75-125	C of A	90-110	90-110
	Silver		1.00	0.078	20	75-125	C of A	90-110	90-110
	Sodium		100	34.9	20	75-125	C of A	90-110	90-110
	Strontium		10	1.64	20	75-125	C of A	90-110	90-110
	Thallium		1.00	0.397	20	75-125	C of A	90-110	90-110
	Tin		50	1.93	20	75-125	C of A	90-110	90-110
	Titanium		5.0	0.066	20	75-125	C of A	90-110	90-110
	Vanadium		5.0	0.801	20	75-125	C of A	90-110	90-110
	Zinc		2.0	0.844	20	75-125	C of A	90-110	90-110
7471A (CVAA) mg/Kg	Mercury	Soil	0.05	0.0017	35	75-125	C of A	90-110	80-120
7000A/7060A (GFAA) mg/Kg	Arsenic	Soil	1.0	0.120	35	75-125	C of A	90-110	80-120
7000A/7421 (GFAA) mg/Kg	Lead	Soil	0.5	0.043	35	75-125	C of A	90-110	80-120
7000A/7740 (GFAA) mg/Kg	Selenium	Soil	0.5	0.156	35	75-125	C of A	90-110	80-120
7000A/7841 (GFAA) mg/Kg	Thallium	Soil	1.0	0.192	35	75-125	C of A	90-110	80-120

METALS ANALYSES QC LIMITS 2005									
Method	**Analyte**	**Matrix**	**Method Reporting Limit (MRL)**	**Method Detection Limit (MDL)**	**Precision (RPD)**	**Matrix Spike Accuracy (%REC)**	**LCS Accuracy (%REC)**	**ICV (%REC)**	**CCV (%REC)**
ILM05.3 (ICP-AES) (ug/L)	Aluminum	Water	200	17	20	75-125	85-115	90-110	90-110
	Antimony		60	3.09	20	75-125	85-115	90-110	90-110
	Arsenic		10	6.06	20	75-125	85-115	90-110	90-110
	Barium		200	1.44	20	75-125	85-115	90-110	90-110
	Beryllium		5	0.168	20	75-125	85-115	90-110	90-110
	Cadmium		5	0.168	20	75-125	85-115	90-110	90-110
	Calcium		5000	24.1	20	75-125	85-115	90-110	90-110
	Chromium		10	0.938	20	75-125	85-115	90-110	90-110
	Cobalt		50	0.625	20	75-125	85-115	90-110	90-110
	Copper		25	3.23	20	75-125	85-115	90-110	90-110
	Iron		100	21.4	20	75-125	85-115	90-110	90-110
	Lead		10	1.53	20	75-125	85-115	90-110	90-110
	Magnesium		5000	3.69	20	75-125	85-115	90-110	90-110
	Manganese		15	0.283	20	75-125	85-115	90-110	90-110
	Nickel		40	0.574	20	75-125	85-115	90-110	90-110
	Potassium		5000	13.7	20	75-125	85-115	90-110	90-110
	Selenium		35		20	75-125	85-115	90-110	90-110
	Silver		10	0.536	20	75-125	85-115	90-110	90-110
	Sodium		5000	329	20	75-125	85-115	90-110	90-110
	Thallium		25	2.35	20	75-125	85-115	90-110	90-110
	Vanadium		50	0.119	20	75-125	85-115	90-110	90-110
	Zinc		60	3.81	20	75-125	85-115	90-110	90-110
AES CLP additional analytes upon request									
(ug/L)	Boron	Water	200	15.6	20	75-125	85-115	90-110	90-110
	Molybdenum		25	0.54	20	75-125	85-115	90-110	90-110
	Titanium		50	0.238	20	75-125	85-115	90-110	90-110
	Tin		500	18.8	20	75-125	85-115	90-110	90-110
ILM05.3(CVAA) ug/L	Mercury	Water	0.2	0.0086	20	75-125	80-120	90-110	80-120
ILM05.3 (ICP-AES) (mg/Kg)	Aluminum	Soils	20	7.73	20	75-125	C of A	90-110	90-110
	Antimony		6	0.504	20	75-125	C of A	90-110	90-110
	Arsenic		1.0	0.371	20	75-125	C of A	90-110	90-110
	Barium		20	0.0788	20	75-125	C of A	90-110	90-110
	Beryllium		0.5	0.0307	20	75-125	C of A	90-110	90-110
	Cadmium		0.5	0.0495	20	75-125	C of A	90-110	90-110
	Calcium		500	14.5	20	75-125	C of A	90-110	90-110
	Chromium		1.0	0.147	20	75-125	C of A	90-110	90-110
	Cobalt		5	0.099	20	75-125	C of A	90-110	90-110
	Copper		2.5	0.541	20	75-125	C of A	90-110	90-110
	Iron		10	2.85	20	75-125	C of A	90-110	90-110
	Lead		1	0.261	20	75-125	C of A	90-110	90-110
	Magnesium		500	0.906	20	75-125	C of A	90-110	90-110
	Manganese		1.5	0.057	20	75-125	C of A	90-110	90-110
	Nickel		4.0	0.153	20	75-125	C of A	90-110	90-110
	Potassium		500	3.43	20	75-125	C of A	90-110	90-110
	Selenium		3.5	0.863	20	75-125	C of A	90-110	90-110
	Silver		1.0	0.12	20	75-125	C of A	90-110	90-110
	Sodium		500	52.7	20	75-125	C of A	90-110	90-110
	Thallium		2.5	0.855	20	75-125	C of A	90-110	90-110
	Vanadium		5	0.14	20	75-125	C of A	90-110	90-110
	Zinc		6.0	0.918	20	75-125	C of A	90-110	90-110
AES CLP additional analytes upon request									
(mg/Kg)	Boron	Soil	40	2.17	20	75-125	85-115	90-110	90-110
	Molybdenum		5	0.133	20	75-125	85-115	90-110	90-110
	Titanium		5	0.031	20	75-125	85-115	90-110	90-110
	Tin		100	1.67	20	75-125	85-115	90-110	90-110
ILM05.3 (CVAA) mg/Kg	Mercury	Soil	0.1	0.0017	20	75-125	C of A	80-120	80-120

METALS ANALYSES QC LIMITS 2005									
Method	**Analyte**	**Matrix**	**Method Reporting Limit (MRL)**	**Method Detection Limit (MDL)**	**Precision (RPD)**	**Matrix Spike Accuracy (%REC)**	**LCS Accuracy (%REC)**	**ICV (%REC)**	**CCV (%REC)**
200.8 (ICP-MS) ug/L	Arsenic	Water	1.0	0.19	20	70-130	85-115	90-110	90-110
	Antimony		1.0	0.0757	20	70-130	85-115	90-110	90-110
	Barium		1.0	0.0478	20	70-130	85-115	90-110	90-110
	Beryllium		1.0	0.072	20	70-130	85-115	90-110	90-110
	Cadmium		1.0	0.0368	20	70-130	85-115	90-110	90-110
	Chromium		1.0	0.203	20	70-130	85-115	90-110	90-110
	Cobalt		1.0	0.0857	20	70-130	85-115	90-110	90-110
	Copper		1.0	0.77	20	70-130	85-115	90-110	90-110
	Lead		1.0	0.0521	20	70-130	85-115	90-110	90-110
	Manganese		1.0	0.123	20	70-130	85-115	90-110	90-110
	Molybdenum		1.0	0.067	20	70-130	85-115	90-110	90-110
	Nickel		1.0	0.281	20	70-130	85-115	90-110	90-110
	Selenium		2.0	0.307	20	70-130	85-115	90-110	90-110
	Silver		1.0	0.0452	20	70-130	85-115	90-110	90-110
	Thallium		1.0	0.0424	20	70-130	85-115	90-110	90-110
	Vanadium		1.0	0.0996	20	70-130	85-115	90-110	90-110
	Zinc		5.0	0.63	20	70-130	85-115	90-110	90-110
6020 (ICP-MS) ug/L	Arsenic	Water	1.0	0.19	20	75-125	80-120	90-110	90-110
	Antimony		1.0	0.0757	20	75-125	80-120	90-110	90-110
	Barium		1.0	0.0478	20	75-125	80-120	90-110	90-110
	Beryllium		1.0	0.072	20	75-125	80-120	90-110	90-110
	Cadmium		1.0	0.0368	20	75-125	80-120	90-110	90-110
	Chromium		1.0	0.203	20	75-125	80-120	90-110	90-110
	Cobalt		1.0	0.0857	20	75-125	80-120	90-110	90-110
	Copper		1.0	0.77	20	75-125	80-120	90-110	90-110
	Lead		1.0	0.0521	20	75-125	80-120	90-110	90-110
	Manganese		1.0	0.123	20	75-125	80-120	90-110	90-110
	Molybdenum		1.0	0.067	20	75-125	80-120	90-110	90-110
	Nickel		1.0	0.281	20	75-125	80-120	90-110	90-110
	Selenium		2.0	0.307	20	75-125	80-120	90-110	90-110
	Silver		1.0	0.0452	20	75-125	80-120	90-110	90-110
	Thallium		1.0	0.0424	20	75-125	80-120	90-110	90-110
	Vanadium		1.0	0.0996	20	75-125	80-120	90-110	90-110
	Zinc		5.0	0.63	20	75-125	80-120	90-110	90-110
6020 (ICP-MS) ug/g	Arsenic	Soil	0.1	0.0225	20	75-125	C of A	90-110	90-110
	Antimony		0.1	0.044	20	75-125	C of A	90-110	90-110
	Barium		0.1	0.0855	20	75-125	C of A	90-110	90-110
	Beryllium		0.1	0.0085	20	75-125	C of A	90-110	90-110
	Cadmium		0.1	0.005	20	75-125	C of A	90-110	90-110
	Chromium		0.1	0.0315	20	75-125	C of A	90-110	90-110
	Cobalt		0.1	0.0044	20	75-125	C of A	90-110	90-110
	Copper		0.1	0.062	20	75-125	C of A	90-110	90-110
	Lead		0.1	0.0845	20	75-125	C of A	90-110	90-110
	Manganese		0.1	0.025	20	75-125	C of A	90-110	90-110
	Molybdenum		0.1	0.0145	20	75-125	C of A	90-110	90-110
	Nickel		0.1	0.034	20	75-125	C of A	90-110	90-110
	Selenium		0.2	0.084	20	75-125	C of A	90-110	90-110
	Silver		0.1	0.0114	20	75-125	C of A	90-110	90-110
	Thallium		0.1	0.07	20	75-125	C of A	90-110	90-110
	Vanadium		0.1	0.015	20	75-125	C of A	90-110	90-110
	Zinc		0.1	3.08	20	75-125	C of A	90-110	90-110

METALS ANALYSES QC LIMITS 2005									
Method	**Analyte**	**Matrix**	**Method Reporting Limit (MRL)**	**Method Detection Limit (MDL)**	**Precision (RPD)**	**Matrix Spike Accuracy (%REC)**	**LCS Accuracy (%REC)**	**ICV (%REC)**	**CCV (%REC)**
ILM05.3 (ICP-MS) (ug/L)	Arsenic	Water	1.0	0.19	20	70-130	85-115	90-110	90-110
	Antimony		2.0	0.0757	20	70-130	85-115	90-110	90-110
	Barium		10.0	0.0478	20	70-130	85-115	90-110	90-110
	Beryllium		1.0	0.072	20	70-130	85-115	90-110	90-110
	Cadmium		1.0	0.0368	20	70-130	85-115	90-110	90-110
	Chromium		2.0	0.203	20	70-130	85-115	90-110	90-110
	Cobalt		1.0	0.0857	20	70-130	85-115	90-110	90-110
	Copper		2.0	0.77	20	70-130	85-115	90-110	90-110
	Lead		1.0	0.0521	20	70-130	85-115	90-110	90-110
	Manganese		1.0	0.123	20	70-130	85-115	90-110	90-110
	Molybdenum		--	0.067	20	70-130	85-115	90-110	90-110
	Nickel		1.0	0.281	20	70-130	85-115	90-110	90-110
	Selenium		5.0	0.307	20	70-130	85-115	90-110	90-110
	Silver		1.0	0.0452	20	70-130	85-115	90-110	90-110
	Thallium		1.0	0.0424	20	70-130	85-115	90-110	90-110
	Vanadium		1.0	0.0996	20	70-130	85-115	90-110	90-110
	Zinc		2.0	0.63	20	70-130	85-115	90-110	90-110

LL Low Level Analysis
C of A Certificate of Analysis QC Limits Provided per manufacturer.

APPENDIX D

DATA QUALIFIERS

March 29, 2006

REPORT QUALIFIERS

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. The flag is used either when estimating a concentration for tentatively identified compounds, or when the concentration is less than the reporting limit and greater than the MDL (concentrations are not verified within the initial calibration range).

For DoD reports, the J-flag may also be used to indicate that the concentration between two columns for pesticides/Aroclors is greater than 40% difference.

B - Indicates this compound was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E - Indicates that the sample concentration had exceeded the calibration range for that specific analysis.

D - Indicates the sample concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range.

* - Indicates that a quality control parameter has exceeded laboratory limits.

X - See Case Narrative for discussion.

P - This flag is used for a pesticide/Aroclor target concentration when there is a greater than 40% (25% for CLP) difference for detected concentrations between the two GC columns.

For DoD reports, the J-flag is used instead of "P".

N - Indicates presumptive evidence of a compound (reported as a tentatively identified compound) based on the mass spectral library search.

CAS/Rochester Lab ID # for State Certifications[1]

NELAP Accredited
Delaware Accredited
Connecticut ID # PH0556
Florida ID # E87674
Illinois ID #200047
Maine ID #NY0032
Nebraska Accredited
Navy Facilities Engineering Service Center Approved
Nevada ID # NY-00032
New Jersey ID # NY004
New York ID # 10145
New Hampshire ID # 294100 A/B
Pennsylvania ID# 68-786
Rhode Island ID # 158
West Virginia ID # 292

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable, except as noted in the laboratory case narrative provided. For a specific list of accredited analytes, refer to the certifications section at www.caslab.com.

Columbia Analytical Services INC

ORGANIC QUALIFIERS

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture.

J - Indicates an estimated value. The flag is used either when estimating a concentration for tentatively identified compounds, or when the data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit and greater than the MDL. This flag is also used for DoD instead of "P" as indicated below.

N - Indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds, where the identification is based on a mass spectral library search.

P - This flag is used for a pesticide/Aroclor target analyte when there is a greater than 40% (25% for CLP) difference for detected concentrations between the two GC columns. The concentration is reported on the Form I and flagged with a "P" ("J" for DoD).

Q - for DoD only – indicates a pesticide/Aroclor target is not confirmed. This flag is used when there is ≥ 100% difference for the detected concentrations between the two GC columns.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample.

E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

D - This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and ALL concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

X - As specified in Case Narrative.

* - This flag identifies compounds associated with a quality control parameter which exceeds laboratory limits.

ACCREDITED IN ACCORDANCE WITH nelac

CAS/Rochester Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

INORGANIC QUALIFIERS

C (Concentration) qualifier –

- B - if the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL) but was greater than or equal to the Instrument Detection Limit (IDL). This qualifier may also be used to indicate that there was contamination above the reporting limit in the associated blank. See Narrative for details.
- U - if the analyte was analyzed for, but not detected

Q qualifier - Specified entries and their meanings are as follows:

- D - Spike was diluted out
- E - The reported value is estimated because the serial dilution did not meet criteria.
- J - Estimated Value
- M - Duplicate injection precision not met.
- N - Spiked sample recovery not within control limits.
- S - The reported value was determined by the Method of Standard Additions (MSA).
- W - Post-digestion spike for Furnace AA Analysis is out of control limits (85-115), while sample absorbance is less than 50% of spike absorbance.
- * - Duplicate analysis not within control limits.
- + - Correlation coefficient for the MSA is less than 0.995.

M (Method) qualifier:

- "P" for ICP
- "A" for Flame AA
- "F" for Furnace AA
- "PM" for ICP when Microwave Digestion is used
- "AM" for Flame AA when Microwave Digestion is used
- "FM" for Furnace M when Microwave Digestion is used
- "CV" for Manual Cold Vapor AA
- "AV" for Automated Cold Vapor AA
- "AF" for Automated Cold Vapor Atomic Fluorescence Spectrometry
- "CA" for Midi-Distillation Spectrophotometric
- "AS" for Semi-Automated Spectrophotometric
- "C" for Manual Spectrophotometric
- "T" for Titrimetric
- " " where no data has been entered
- "NR" if the analyte is not required to be analyzed.

CAS/Rochester Lab ID # for Massachusetts Certification

M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

APPENDIX E

PREVENTIVE MAINTENANCE PROCEDURES

March 29, 2006

Preventive Maintenance Procedures

Instrument	Activity	Frequency
Refrigerators and Coolers	Record temperatures	Daily
	Clean coils	As needed
	Check coolant	As needed or if temperature outside limit
Fume Hoods	Face velocity measured	Quarterly
	Sash operation	As needed
Ovens	Clean	As needed or if temperature outside limit
Incubators	Record temperatures	Daily, morning and evening
Water Baths	Wash with disinfectant solution	When water is murky, dirty, or growth appears
Autoclave	Check temperature	Every month
	Clean	When mold or growth appears
Top Loading Balances	Check calibration	Before every use
Analytical Balances	Check alignment	Before every use
	Check calibration	Before every use
	Clean pans and compartment	After every use
Dissolved Oxygen Meter	Change membrane	When fluctuations occur
pH probes	Condition probe	When fluctuations occur
UV-visible Spectrophotometer	Wavelength check	Annually
Total Organic Carbon Analyzers	Check IR zero	Weekly
	Check digestion/condensation vessels	Each use
	Clean digestion chamber	Every 2000 hours, or as needed
	Clean permeation tube	Every 2000 hours, or as needed
	Clean six-port valves	Every 200 - 2000 hours, or as needed
	Clean sample pump	Every 200 - 2000 hours, or as needed
	Clean carbon scrubber	Every 200 - 2000 hours, or as needed
	Clean IR cell	Every 2000 - 4000 hours, or as needed
Total Organic Halogen Analyzers	Change cell electrolyte	Daily, or as needed
	Change electrode fluids	Daily, or as needed
	Change pyrolysis tube	As needed
	Change inlet and outlet tubes	As needed
	Change electrodes	As needed
Flow Injection Analyzer	Check valve flares	Monthly
	Check valve ports	Monthly
	Check pump tubing	Daily
	Check flow cell flares	Quarterly
	Change bulb	Every six months
	Check manifold tubing	Every six months
	Check T's and connectors	Every six months

Preventive Maintenance Procedures

Instrument	Activity	Frequency
Ion Chromatograph	Change column bed supports	Monthly or as needed
	Clean column	Monthly or as needed
	Change column	Every six months or as needed
	Change valve port face & hex nut	Every six months or as needed
	Clean valve slider	Every six months or as needed
	Change tubing	Annually or as needed
	Eluent pump	Annually
Atomic Absorption Spectro-photometers - FAA and CVAA	Check gases	Daily
	Clean burner head	Daily
	Check aspiration tubing	Daily
	Clean optics	Every three months
	Empty waste container	Weekly
Atomic Absorption Spectro-photometers - GFAA	Check gases	Daily
	Check argon dewar	Daily, or as needed
	Change graphite tube	Daily, or as needed
	Clean furnace windows	Monthly
ICP-AES	Check argon dewar	Daily
	Replace peristaltic pump tubing	Daily, or as needed
	Empty waste container	Daily, or as needed
	Clean nebulizer, spray chamber, and torch	Every two weeks, or as needed
	Replace water filter	Quarterly
	Replace vacuum air filters	Monthly
ICP-MS	Check argon dewar	Daily
	Replace peristaltic pump tubing	Daily, or as needed
	Empty waste container	Daily, or as needed
	Clean nebulizer, spray chamber, and torch	Every two weeks, or as needed
	Clean Cone	As needed
	Check air filters	Annually or as needed
	Check rotary pump oil	Quarterly
	Clean extraction lens	Annually or as needed
	Clean ion lens stack	Annually or as needed
Infrared Spectrophotometer, Fourier Transform	Clean sample cells	Daily, or as needed
Gel-Permeation Chromatographs	Clean and repack column	As needed
	Backflush valves	As needed

Preventive Maintenance Procedures

Instrument	Activity	Frequency
Gas Chromatographs, Semivolatiles	Check gas supplies	Daily, replace when pressure reaches 250 psi
	Change in-line filters	Quarterly or after 30 tanks of gas
	Change injection port liner	Daily or as needed
	Clip first foot of capillary column	As needed
	Change guard column	As needed
	Replace analytical column	As needed when peak resolution fails
	Check system for gas leaks	After changing columns
	Clean FID	As needed
	Leak test ECD	Annually
Gas Chromatograph/Mass Spectrometers, Semivolatiles	Check gas supplies	Daily, replace when pressure reaches 50 psi
	Change in-line filters	Quarterly or after 30 tanks of gas
	Change septum	Daily
	Change injection port liner	Weekly or as needed
	Clip first foot of capillary column	As needed
	Change guard column	As needed
	Replace analytical column	As needed when peak resolution fails
	Clean jet separator	As needed
	Clean source	As needed when tuning problems
	Change pump oil	Every six months
	Oil wick	Every six months
Purge and Trap Concentrators	Change trap	As needed
	Change transfer lines	As needed
	Clean purge vessel	Daily
Gas Chromatographs, Volatiles	Check gas supplies	Daily, replace when pressure reaches 200 psi
	Change in-line filters	Quarterly or after 30 tanks of gas
	Change septum	As needed
	Clip first foot of capillary column	As needed
	Change guard column	As needed
	Replace analytical column	As needed when peak resolution fails
	Check system for gas leaks	After changing columns or as needed
	Replenish ELCD solvents	Weekly
	Clean PID lamp	As needed
	Clean FID	As needed
	Change ion exchange resin	Quarterly
	Replace nickel tubing	Quarterly or as needed

Preventive Maintenance Procedures

Instrument	Activity	Frequency
Gas Chromatograph/Mass Spectrometers, Volatiles	Check gas supplies	Weekly, replace when pressure reaches 200 psi
	Change in-line filters	Quarterly or after 30 tanks of gas
	Change septum	Daily
	Clip first foot of capillary column	As needed
	Change guard column	As needed
	Replace analytical column	As needed when peak resolution fails
	Clean jet separator	As needed
	Clean source	As needed when tuning problems
	Change pump oil	Every six months per HP
	Oil wick	Every six months per HP
HPLC	Check gas supplies	Daily, replace when pressure reaches 200 psi
	Change guard column	As needed
	Change analytical column	As needed
	Change inlet filters	As needed
TCLP/SPLP Extractors	Monitor Room Temperature	Daily
	Monitor RPM of Rotators	Bi-weekly
	Grease fittings	As needed
	O-ring replacement	As needed

APPENDIX F

CERTIFICATIONS/ACCREDITATIONS/CONTRACTS

March 29, 2006

CAS/Rochester Certifications/Accreditations/Contracts

Federal and National Programs

- NELAP Accreditation, since January 2001.
  Primary Accreditation with New York and Florida (see below).
  Secondary Accreditation with Florida, New Jersey, New Hampshire, Pennsylvania and Illinois (see below).

- Naval Facilities Engineering Service Center (NFESC), Approved. Expires 11/27/2009.

State and Local Programs

- State of Connecticut, Department of Health Services, Approved Public Health Laboratory.
  Certified Laboratory for Potable Water, Waste Water, Solid Waste and Soil.
  Examination for Inorganic Chemicals and Organic Chemicals. Registration No. PH-0556.
  Exp. 06/30/2010.

- State of Delaware, Department of Natural Resources and Environmental Control. Approved for Delaware Hazardous Substance Cleanup Act.

- State of Florida, Department of Health.
  Drinking water, Wastewater, Solid Hazardous Waste, CLP. Certification No. E87674. Expires 06/30/2009.

- State of Illinois, Environmental Protection Agency.
  Inorganic and Organic Hazardous and Solid Waste. Certification No. 200047. Expires 11/17/2009.

- State of Maine, Department of Health and Human Services.
  Drinking Water and Wastewater. Certification No.NY0032. Expires 11/12/2010.

- The Commonwealth of Massachusetts, Department of Environmental Protection.
  Non-Potable Water. Certification No. M-NY032. Exp. 06/30/2009.

- State of Nevada, Department of Conservation and Natural Resources, Division of Environmental Protection.
  Non-Potable Water, Soil. Lab ID number NY-00032. Expires 7/31/09.

- State of New Jersey, Department of Environmental Protection
  State Certified Environmental Laboratory for Drinking Water and Water Pollution.
  Certification No. NY004. Exp. 06/30/2009.

- State of New York, Department of Health, Environmental Laboratory Approval Program.
  Potable Water, Non-Potable Water, Solid and Hazardous Waste, and NYSDEC ASP Certification.
  Certification No. 10145. Exp. 04/01/2009.

- State of New Hampshire, Department of Environmental Services
  Full Certification for Non-Potable Water. Certification No. 294102. Exp. 10/14/2009.

- Pennsylvania Department of Environmental Protection.
  Non-Potable Water. Lab ID No. 68-00786. Expires 6/30/2009.

- State of Rhode Island, Department of Health
  Approved for Surface Water, WasteWater, and Sewage. License No. 158. Exp. 12/30/2008.

- West Virginia Division of Environmental Protection
  Certification for TCL/TAL, GRO, DRO, and TPH parameters in WasteWater and Solid Hazardous Waste.
  Certification No.292 Exp. 04/30/2009.

CAS/Rochester Certifications/Accreditations/Contracts

Unregulated State Programs

- State of Minnesota
  Reciprocal Certification for all parameters certified under New York State.

- State of Georgia Environmental Protection Division
  Reciprocal Approval for Non-Potable/Environmental Waters and Wastes.

- State of Indiana Hazardous Waste Division
  Reciprocal Approval for Non-Potable/Environmental Waters and Wastes.

- State of Michigan - Reciprocal Approval for Non-Potable/Environmental Waters and Wastes.

- Commonwealth of Virginia, Department of General Services
  Reciprocal Approval for Non-Potable/Environmental Waters and Wastes.

- State of Mississippi - Reciprocal Approval for Non-Potable/Environmental Waters and Wastes.

- State of Maryland - Reciprocal Approval for Non-Potable/Environmental Waters and Wastes.

APPENDIX G

LIST OF STANDARD OPERATING PROCEDURES

STANDARD OPERATING PROCEDURES AND CONTROLLED DOCUMENTS

SOP NAME	FILE NAME	REV	DATE OF SOP	DATE OF LAST REVIEW
QUALITY ASSURANCE MANUAL	QAM	16	1/24/2008	1/24/2008
ANALYTICAL BATCHES AND SEQUENCES	ADM-BATCH	7	11/2/2005	6/23/2008
CHECKING NEW LOTS OF CHEM. FOR CONTAMINATION	ADM-CTMN	3	11/7/2007	11/7/2007
CONFIRMATION OF ORGANIC ANALYTE IDENTIFICATION AND QUANTITATION	ADM-CONFIRM	2	3/23/2004	6/23/2008
DETM. OF STATISICAL CONTROL LIMITS	ADM-CTRL_LIM	6	9/28/2007	9/28/2007
DOC. OF TECHNICAL PERSONNEL TRAINING	ADM-TRANDOC	10	12/6/2007	12/6/2007
DOCUMENT CONTROL	ADM-DOCCTRL	6	11/7/2007	11/7/2007
MAKING ENTRIES INTO LOGS AND BENCH SHEETS	ADM-DATANTRY	7	11/7/2007	11/7/2007
HANDLING CUSTOMER FEEDBACK	ADM-FDBK	4	12/10/2007	12/10/2007
NONCONFORMITY AND CORRECTIVE ACTION	ADM-NCAR	4	3/26/2004	6/22/2008
MANUAL INTEGRATION OF CHROMATOGRAPHY PEAKS	ADM-INT	3	8/28/2007	8/28/2007
PREPARATION OF SOPs	ADM-SOP	7	10/19/2007	10/19/2007
PREP OF ELECTRONIC-DATA FOR ORGANIC ANALYSES FOR E-DATA AUDITS	ADM-E_DATA	3	8/29/2007	8/29/2007
QUALIFYING SUBCONTRACT LABS	ADM-SUBLAB	2	1/29/2002	6/22/2008
SIGNIFICANT FIGURES	ADM-SIG.FIG	7	12/7/2007	12/7/2007
DETERMINATION OF METHOD DETECTION LIMIT	ADM-MDL	8	9/28/2007	9/28/2007
MANAGEMENT REVIEW	ADM-MGMTRVW	2	11/7/2007	11/7/2007
PROFICIENCY TESTING SAMPLE ANALYSIS	ADM-PTS	1	9/28/2007	9/28/2007
AUTOPIPET CALIBRATION	ADM-PCAL	4	10/5/2006	10/30/2007
INITIAL CALIBRATION	ADM-ICAL	0	3/15/2006	6/23/2008
PREPARING SAMPLE DILUTIONS	ADM-DIL	0	8/18/2000	6/23/2008
GENERATION OF ELECTRONIC DATA DELIVERABLES USING EDDGE	ADM-EDD	0	1/8/2008	1/8/2008
LABORATORY DATA REVIEW PROCESS	ADM-DREV	3	6/2/2003	4/4/2008
PROJECT CHEMIST DUTIES AND REPORT REVIEW	ADM-PCR	2	12/5/2006	6/24/2008
REPORT GENERATION	ADM-RG	1	3/18/2002	4/1/2008
DATA ARCHIVING	ADM-ARCH	0	3/21/2001	10/30/2007
ELECTRONIC DATA ARCHIVING	ADM-BACKUP	2	12/29/2003	10/30/2007
INTERNAL QUALITY ASSURANCE AUDITS	ADM-IAUD	3	12/4/2006	6/23/2008
DAILY BALANCE CALIB. AND TEMP. CHECKS	ADM-DALYCK	1	1/18/2002	6/23/2008
PH MEASUREMENTS FOR SUPPORT OF OTHER METHODS - CALIBRATION, USE, AND DOCUMENTATION	ADM-PhSUPPORT	0	6/10/2008	6/10/2008
DETERMINATION OF FREE CARBON DIOXIDE USING NOMOGRAPHS	PC-CO2	0	7/12/2000	6/23/2008
TOTAL HARDNESS BY CALCULATION	GEN-2340B	0	1/19/2005	6/22/2008

STANDARD OPERATING PROCEDURES AND CONTROLLED DOCUMENTS

SOP NAME	FILE NAME	REV	DATE OF SOP	DATE OF LAST REVIEW
FIELD SAMPLING	FLD-SAMPLE	1	11/2/2006	3/7/2008
TEMPERATURE - FIELD	FLD-170.1	0	11/1/2001	7/14/2008
BOTTLE PREPARATION, PACKING, AND SHIPPING	SMO-BPS	1	12/21/2001	4/1/2007
SAMPLE RECEIVING	SMO-GEN	4	1/22/2008	4/19/2008
SAMPLE PREPARATION, COMPOSITING, AND SUBSAMPLINC	SMO-SPLPREP	0	2/7/2002	4/22/2008
INTERNAL CHAINS OF CUSTODY	SMO-ICOC	1	2/15/2005	4/19/2008
SAMPLE DISPOSAL	SMO-SPLDIS	3	6/30/2005	4/19/2008
pH IN WATER AND AQUEOUS WASTE	GEN-150.1/9040B	3	3/25/2008	3/25/2008
TURBIDITY	SMO-180.1	3	6/12/2008	6/12/2008
SETTEABLE SOLIDS	GEN-160.5	2	6/13/2008	6/13/2008
CONDUCTIVITY IN WATER	GEN-120.1	2	6/13/2008	6/13/2008
CORROSIVITY	GEN-9045C	2	6/11/2008	6/11/2008
COLOR	GEN-110.2	2	6/12/2008	6/12/2008
DENSITY OR SPECIFIC GRAVITY BY WEIGHT PER GALLON	GEN-D1475Cup	2	6/13/2008	6/13/2008
REDOX	GEN-REDOX	3	6/13/2008	6/13/2008
PAINT FILTER TEST	SMO-9095	2	6/13/2008	6/13/2008
PASSIVE DIFFUSION BAGS	SMO-BAG	1	3/14/2006	4/19/2008

STANDARD OPERATING PROCEDURES AND CONTROLLED DOCUMENTS

SOP NAME	FILE NAME	REV	DATE OF SOP	DATE OF LAST REVIEW
ALKALINITY, TOTAL	GEN-310.1	4	2/14/2008	2/14/2008
ALKALINITY FOR PHOTOPROCESSING SAMPLES	GEN-ALK-CARE	0	9/3/2008	9/3/2008
AMMONIA	GEN-350.1	4	9/6/2005	11/1/2007
ASH, DETERMINATION OF	GEN-ASH	3	6/10/2008	6/10/2008
BIOCHEMICAL OXYGEN DEMAND	GEN-405.1	6	2/20/2007	2/22/2008
BOMB CALORIMETRY PREP AND HEAT OF COMBUSTION	GEN-BOMB	2	6/10/2008	6/10/2008
BROMIDE BY AUTOMATED TITRATOR	GEN-BROMIDE-CA	0	9/18/2008	9/18/2008
CATION EXCHANGE CAPACITY OF SOILS USING SODIUM ACETATE	GEN-9081	0	11/4/2005	1/28/2008
CHEMICAL OXYGEN DEMAND-Soils	GEN-CODS	1	7/2/2001	11/7/2007
CHEMICAL OXYGEN DEMAND-Waters	GEN-410.4	1	4/30/2001	2/14/2008
CHLORIDE	GEN-325.2	2	8/26/2005	11/1/2007
CHLORINE DEMAND	GEN-409A	0	5/21/2001	2/14/2008
CHLORINE RESIDUAL	GEN-330	2	1/18/2002	2/15/2008
CHLOROPHYLL A	GEN-10200	0	7/16/2001	1/28/2008
COLILERT AND VERIFICATION OF E.COLI IN MUG	GEN-BACTI	1	1/27/2003	4/25/2008
CYANIDE, AMENABLE TO CHLORINE	GEN-335.1	0	7/2/2001	1/25/2008
CYANIDE, WEAK ACID DISSOCIABLE	GEN-4500	0	7/9/2001	2/22/2008
CYANIDE, MIDI DISTILLATION	GEN-9012A	4	2/8/2007	2/22/2008
CYANIDE, ILM05.3	GEN-ILM5.3CN	0	2/8/2007	2/22/2008
DENSITY OR SPECIFIC GRAVITY BY WEIGHT PER GALLON	GEN-D1475Cup	1	6/8/2006	1/29/2008
DENSITY BY OSCILLATING CELL METER	GEN-D4052	0	1/2/2008	1/2/2008
DISSOLVED OXYGEN	GEN-360.1	0	5/14/2001	1/24/2008
FERROUS IRON	GEN-3500Fe	2	11/11/2004	2/19/2008
FIXER TITRATION OF PHOTOPROCESSING SAMPLES FOR HYPO INDEX AND THIOSULFATE	GEN-FIXER-TITR-C	0	9/18/2008	9/18/2008
FLUORIDE ANALYSIS, ISE	GEN-340.2	1	7/2/2001	11/29/2007
HARDNESS, TOTAL	GEN-130.2	1	5/4/2001	11/29/2007
ALKALINE DIGESTION FOR HEXAVALENT CHROMIUM IN SOIL	GEN-3060A	1	9/20/2005	11/1/2007
COLORIMETRIC DETERMINATION OF HEXAVALENT CHROMIUM IN SOIL	GEN-7196A	1	9/20/2005	11/1/2007
HEXAVALENT CHROMIUM BY IC	GEN-7199	2	9/30/2005	1/23/2008
HEXAVALENT CHROMIUM - WATERS	GEN-CR+6	2	3/10/2006	4/24/2008
HYDROGEN PEROXIDE IN WATER BY IODOMETRIC	GEN-Hperoxide	0	9/15/2008	9/15/2008
HYPO (FIXER) CONTAMINATION IN PHOTOPROCESSING SAMPLES	GEN-HYPO-CARE	0	9/5/2008	9/5/2008
IGNITABILITY - CLOSED CUP	GEN-CCIGN	1	3/6/2001	6/25/2008
IGNITABILITY - OPEN CUP	GEN-OCIGN	1	3/6/2001	6/25/2008
IN-LAB FILTRATION	GEN-FILTER	0	7/3/2003	1/23/2008
IODIDE BY ION CHROMATOGRAPHY	GEN-IODIDE	0	9/18/2008	9/18/2008
ION CHROMATOGRAPHY	GEN-300.0	6	8/8/2006	11/1/2007
NITRATE AND NITRITE	GEN-353.2	2	3/17/2006	2/14/2008
NITROGEN, TOTAL KJELDAHL	GEN-351.2	3	2/26/2008	2/26/2008
ODOR	GEN-140.1	1	6/18/2001	1/23/2008
OIL AND GREASE HEXANE EXTRACTION	GEN-1664A	4	8/26/2004	10/24/2007

STANDARD OPERATING PROCEDURES AND CONTROLLED DOCUMENTS

SOP NAME	FILE NAME	REV	DATE OF SOP	DATE OF LAST REVIEW
PERCENT WATER BY KARL FISCHER	GEN-%W	2	3/17/2004	2/19/2008
PHENOLICS, TOTAL	GEN-420.2/9066	3	5/5/2008	5/5/2008
PHOSPHORUS, ORTHC	GEN- OPO4	2	3/17/2006	10/24/2007
PHOSPHORUS, TOTAL	GEN-365.1	6	4/20/2007	4/28/2008
REACTIVITY, SULFIDE AND CYANIDE	GEN-RS/RCN	1	7/2/2001	11/1/2007
SILICA	GEN-370.1	1	6/12/2001	11/29/2007
SILICON, GRAVIMETRIC	GEN-SILICON	1	6/5/2008	6/5/2008
SOLIDS, PERCENT	GEN-DWPS	1	4/19/2004	2/15/2008
SOLIDS, TOTAL	GEN-160.3	4	6/4/2008	6/4/2008
SOLIDS, TOTAL DISSOLVED	GEN-160.1	3	6/3/2008	6/3/2008
SOLIDS, TOTAL SUSPENDED	GEN-160.2	4	6/4/2008	6/4/2008
SOLIDS, TOTAL VOLATILE	GEN-160.4	2	11/11/2005	2/15/2008
SOLIDS, PERCENT VOLATILE	GEN-2540G	0	3/6/2001	1/23/2008
SULFATE, TOTAL	GEN-375.4	0	5/21/2001	2/14/2008
SULFIDE, ACID SOLUBLE	GEN-9030B/9034	1	5/21/2001	1/28/2008
SULFIDE, ACID VOLATILE	GEN-AVS/SEM	4	11/13/2008	11/13/2008
SULFIDE, TOTAL AND DISSOLVED IN WATERS	GEN-376.1	1	5/21/2001	1/28/2008
SULFITE	GEN-377.1	0	5/14/2001	2/13/2008
SURFACTANTS (MBAS)	GEN-425.1	3	1/11/2005	2/15/2008
TOTAL ORGANIC CARBON OR TIC B Y LLOYD KAHN/906(	GEN-TOCLK/9060	2	1/17/2005	1/17/2008
TOTAL ORGANIC CARBON-WATERS	GEN-415.1	5	8/16/2004	1/23/2008
TOTAL INORGANIC CARBON - WATERS	GEN-TICW	0	1/17/2005	1/23/2008
WET CHEMISTRY GLASSWARE CLEANING	GEN-GC	0	6/23/2000	10/31/2007

STANDARD OPERATING PROCEDURES AND CONTROLLED DOCUMENTS

SOP NAME	FILE NAME	REV	DATE OF SOP	DATE OF LAST REVIEW
DETERMINATION OF METALS AND TRACE ELEMENTS BY	MET-200.7/6010B	10	1/24/2008	1/24/2008
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP-MS	MET-6020	3	7/24/2006	7/7/2008
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP-MS	MET-200.8	0	5/8/2003	2/13/2008
DETERMINATION OF METALS ANG TRACE ELEMENTS BY ICP-MS BY ILM05.3	MET-ILM05.3MS	0	1/20/2006	1/22/2008
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP BY ILM05.3	MET-ILM5.3AES	0	1/20/2006	1/22/2008
DETERMINATION OF TRACE METALS BY GFAA	MET-GFAA	4	3/14/2006	1/25/2008
MERCURY IN WATER BY COLD VAPOR ATOMIC ABSORPTION SPEC.	MET-7470A/245.1	5	12/9/2005	1/25/2008
MERCURY IN SOLID OR SEMISOLID BY COLD VAPOR ATOMIC ABSORPTION SPEC.	MET-7471A/245.5	4	12/9/2005	1/25/2008
MERCURY IN WATER BY OXIDATION, P&T, AND CVAFS	MET-1631	1	1/29/2007	2/14/2008
MERCURY IN WATER BY COLD VAPOR ATOMIC ABSORPTION SPEC.CLP	MET-HgILM-W	1	2/19/2007	1/25/2008
MERCURY IN SOLID OR SEMISOLID BY COLD VAPOR ATOMIC ABSORPTION SPEC.	MET-HgILM-S	1	1/11/2006	1/25/2008
METALS DIGESTION, WATERS, TOTAL RECOVERABLE AND DISSOLVED FOR ICP	MET-3005A	3	4/4/2002	6/4/2008
METALS DIGESTION, WATERS FOR ICP	MET-3010A	4	4/4/2002	6/4/2008
METALS DIGESTION, WATERS FOR GFAA ANALYSIS	MET-3020A	3	4/4/2002	7/8/2008
METALS DIGESTION, SOIL, SEDIMENT, SLUDGE FOR ICP AND GFAA ANALYSIS	MET-3050B	3	1/15/2003	6/4/2008
INDUSTRIAL HYGIENE FILTER DIGESTION	MET-NIOSH	3	5/3/2001	7/20/2007
SPLP EXTRACTION FOR METALS AND SEMIVOLATILES	MET-SPLP	2	3/8/2002	7/19/2007
SPLP ZHE EXTRACTION	MET-SPLPZHE	1	2/14/2001	1/28/2008
SULFUR FOR ION CHROMATOGRAPHY	MET-ICS	0	7/30/2004	7/23/2007
ACID DIGESTION FOR SULFATE	MET-SO4	0	8/2/2005	7/23/2007
METALS AND SEMIVOLATILES TCLP EXTRACTION (METHOD 1311)	MET-TCLP	1	10/4/2000	1/28/2008
ZERO HEADSPACE EXTRACTION (EPA METHOD 1311)	MET-TZHE	2	12/3/2001	1/28/2008
SAMPLE PREPARATION OF BIOLOGICAL TISSUE FOR METALS ANALYSIS	MET-TDIG	0	11/11/2008	11/11/2008
CLP DIGESTION TECHNIQUES FOR WATERS AND SOILS	MET-CLPDIG	1	1/20/2006	1/28/2008
METALS GLASSWARE CLEANING	MET-GC	0	9/22/2000	7/23/2007

STANDARD OPERATING PROCEDURES AND CONTROLLED DOCUMENTS

SOP NAME	FILE NAME	REV	DATE OF SOP	DATE OF LAST REVIEW
SAMPLE RECEIPT, HANDLING, STORAGE, AND SCREENING	VOC-SAMPL	1	6/28/2002	10/31/2007
VOA STORAGE BLANKS	VOC-BLAN	1	8/7/2008	8/7/2008
PURGEABLE VOLATILES BY GC	VOC-601/602	3	6/17/2005	1/4/2008
MINERIAL SPIRITS	VOC-8015MS	0	3/29/2002	5/28/2008
ANALYSIS OF WATER, SOLIDS, AND SOLUBLE WASTES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS	VOC-8015GRO	5	4/23/2002	1/28/2008
AROMATIC AND HALOGENATED VOCS BY GC	VOC-8021B	5	9/30/2002	12/12/2007
MIXED GASES BY RSK-175M	VOC-8015/RSK175	1	12/20/2002	4/25/2008
GC ANALYSIS OF SINGLE RESPONSE ANALYTES BY FID	VOC-8015 GEN	0	11/26/2002	4/28/2008
CLOSED SYSTEM PURGE AND TRAP	VOC-5035	1	5/28/2002	10/31/2007
DRINKING WATER VOLATILES BY GC/MS	VOC-524.2	2	2/7/2008	2/7/2008
PURGEABLE VOLATILES BY GC/MS	VOC-624	2	11/8/2005	3/27/2007
VOLATILE ORGANIC COMPOUNDS BY GC/MS	VOC-8260B	8	8/22/2006	12/12/2007
CLP VOLATILE ORGANICS COMPOUNDS BY GC/MS SOW OLM04.2/95.1	VOC-CLP4.2	2	1/22/2002	5/14/2007
CLP VOLATILE ORGANICS COMPOUNDS BY GC/MS SOW OLM04.3/95.1	VOC-CLP4.3	3	6/13/2005	5/14/2007
LOW CONC WATER FOR VOCS BY OLC02.1 AND OLC03.2	VOC-OLC	1	10/29/2008	10/29/2008
VOCs IN AIR COLLECTED IN CANs AND GAS COLLECTION BAGS BY GC/MS	VOC-TO-15	1	2/8/2008	2/8/2008

STANDARD OPERATING PROCEDURES AND CONTROLLED DOCUMENTS

SOP NAME	FILE NAME	REV	DATE OF SOP	DATE OF LAST REVIEW
DETERMINATION OF POLYAROMATIC HYDROCARBONS BY HPLC	HPLC-8310	0	12/18/2006	4/15/2008
DETERMINATION OF CARBONYL COMPOUNDS BY HPLC	HPLC-8315A	0	6/14/2004	6/24/2005
ANALYSIS OF WATER SAMPLES FOR METABOLIC ACIDS	HPLC-METACIDS	2	6/25/2008	6/25/2008
PERCHLORATE IN WATER, SOIL, SOLID WASTE USING HPLC/ESI/MS	HPLC-6850	3	6/12/2007	6/12/2007
DETERMINATION OF HYDROQUINONE BY HPLC/ECD FOR "Client"	HPLC-"Client"Hyd	0	4/3/2007	4/3/2007
MISCELLANEOUS ANALYTES BY ULTRAVIOLET DETECTOR	HPLC-UV-MISC	0	8/18/2008	8/18/2008
SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION	EXT-3510C	3	11/9/2005	1/24/2008
CONTINUOUS LIQUID LIQUID EXTRATION	EXT-3520C	1	4/2/2002	1/24/2008
AUTOMATED SOXHLET EXTRACTION	EXT-3541	0	8/11/2008	8/11/2008
ULTRASONIC EXTRACTION	EXT-3550B	2	4/3/2002	7/3/2008
WASTE DILUTION	EXT-3580A	0	10/9/2000	1/22/2008
ADDITION OF SPIKES AND SURROGATES	EXT-SAS	0	8/11/1999	1/24/2008
PREPARATION OF ANHYDROUS SODIUM SULFATE	EXT-SUL	0	8/11/1999	1/22/2008
FLORISIL CLEANUP	EXT-3620B	0	10/9/2000	1/22/2008
GEL PERMEATION CLEANUP	EXT-3640A	0	1/26/2000	1/22/2008
SULFUR CLEANUP	EXT-3660B	1	11/11/2004	1/22/2008
ACID CLEANUP	EXT-3665A	0	1/26/2000	1/22/2008
ORGANIC EXTRACTIONS GLASSWARE CLEANING	EXT-GC	2	2/28/2006	1/22/2008
PETROLEUM PRODUCTS IN WATER (HYDROCARBON SCAN) NYSDOH Mtd	SOC-310-13	1	6/24/2005	1/8/2008
ORGANOCHLORINE PESTICIDES AND PCBs IN WATERS AND SOILS	SOC-608	9	2/7/2008	2/7/2008
BASE NEUTRALS AND ACIDS	SOC-625	3	7/18/2005	7/4/2008
PCBs BY GC/MS	SOC-680	2	4/6/2004	6/27/2007
1,2 DIBROMO-3-CHLOROPROPANE & 1,2-DIBROMOETHANE IN WATER	SOC-504/8011	1	4/8/2004	10/31/2007
NONHALOGENATED ORGANICS BY GC/FID USING EXTERNAL CALIBRATION	SOC-8015B-ExtS	0	2/16/2007	2/16/2008
NONHALOGENATED ORGANICS BY GC/FID USING INTERNAL STANDARD CALIBRATION	SOC-8015B-IS	0	2/14/2008	2/14/2008
ORGANOCHLORINE PESTICIDES AND PCBs IN WATERS AND SOILS	SOC-8081A	6	5/22/2002	6/9/2008
PCBs IN WATERS and SOILS	SOC-8082	4	11/3/2004	6/9/2008
PCBs IN WIPES	SOC-8082WIPES	1	11/4/2004	6/9/2008
PETROLEUM HYDROCARBONS AS DIESEL IN WATERS, SOILS, AND WASTE INCLUDING MODS FOR MAINE AND CONNECTICUT	SOC-8015B DRO	5	4/20/2006	10/31/2007
CHLORINATED HERBICIDES	SOC-8151A	5	1/7/2008	1/7/2008
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	SOC-8270C	6	3/31/2006	7/4/2008
CLP SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS SOW OLM04.2/4.3/95.2	SOC-CLP	3	5/14/2007	7/7/2008
CLP PESTICIDES AND PCBs IN WATERS AND SOILS SOW OLM04.2/95.3	SOC-CLPPEST	3	5/14/2007	7/8/2008
"Client" COMMON SOLVENTS AND FOOTNOTE LIST BY 8015B SVOA	SOC-8015TKP	0	2/16/2007	2/16/2008

APPENDIX H

CAS QUALITY AND ETHICS POLICY STATEMENT

CAS Quality and Ethics Policy Statement

Columbia Analytical Services (CAS) vision is simple. Let's strive to be the best in everything we do. This includes ethics and business conduct where CAS is committed to the highest standards of ethical behavior.

Unethical behavior carries a heavy price – one that we do not want to bear. This includes loss of reputation, loss of business, civil and criminal penalties, and government and customer sanctions.

CAS is committed to excellence and superior performance in everything we do. We will not sacrifice our ethical principles in order to achieve business success. This means we will always strive to conduct business honestly and with integrity. We will always follow and obey the law of the land in which we are operating our business. We will always follow, to the best of our ability, standard operating procedures, rules and regulations that apply to our industry and specifically to our laboratory operations. Our customers, employees, suppliers and communities that we serve expect and deserve nothing less than the highest standards of conduct and compliance.

The following are the critical elements of the Quality and Ethics program at CAS.

- The Executive Management and Board of Directors of CAS sponsor and support the Quality and Ethics program through their personal commitment and by providing the necessary resources to promote this program throughout the organization.
- Chief Quality and Ethics Officer. The position is responsible for the quality and ethics program, ensures that appropriate resources are provided, reviews and recommends changes in the program, and resolves ethical and quality issues brought to management attention. This Officer reports directly to the Board of Directors Audit Committee on quality and ethics.
- Core Values. The CAS Statement of Core Values was developed internally with input from the entire company. We are committed to ensuring the integrity and quality of data, and meeting the needs of our clients, while conducting business with high ethical standards. We hold strong to the core values of Honor, Truth, and Fairness. We are committed to these values and rely on them when confronted by difficult choices.
- Ethical Code of Conduct. As a member of the American Council of Independent Laboratories (ACIL) and part of the laboratory industry, CAS subscribes to and supports the core values and ethical codes established by this industry organization.
- CAS Code of Conduct. CAS requires its employees to be introduced to and to sign the "CAS Commitment to Excellence in Data Quality" statement and to comply with standards outlined in Section 6, Employee Conduct, of our Employee Handbook. This includes Section 6.2, Business Ethics, and 6.2.2, Data Quality and Ethics.

- ACIL Seal of Excellence Program. CAS participates in the Seal of Excellence program which requires each laboratory to sign and submit the "Data Integrity Statement".
- Open Door Policy. Employees have the right and obligation for open communications to ask questions, seek guidance, and report incorrect practices and wrong doing without fear of retribution. As described in the CAS Open Door Policy, CAS believes in using the chain-of-command channels for this dialogue. However, if there is fear or a concern that using this approach is not appropriate, employees are free to take their concerns to the President, the Director of Human Resources, the Chief Administrative Officer, the Chief Quality Officer, or the company Ombudsman. Employees may do so without fear of retribution.
- Ombudsman Program. CAS has implemented an external ombudsman/hotline program through EthicsPoint, a phone and internet-based reporting system, to enhance communication and empower employees to promote safety, security, and ethical behavior. Employees can file a report anonymously to address issues in the workplace and to cultivate a positive work environment.
- Internal Audits. Internal systems and data audits are conducted periodically in addition to external agency and client audits. The data audits include a detailed in-depth review of hardcopy data and electronic data to ensure compliance with the CAS Quality program.
- NELAP Accreditation. CAS maintains NELAP accreditation and as such includes quality systems documented in QA Manuals, documented procedures in Standard Operating Procedures (SOPs) and policies, and documented training for demonstration of capabilities.
- Ethics Training. CAS has the obligation to provide training to its employees with respect to company policies concerning business conduct. This not only includes introductory training at the time of hire, but also on-going training on a periodic basis.

The CAS Quality and Ethics Program has been in place for several years. However, this is a "living" program that will change and improve as the company grows and changes.

Steve Vincent

Steve Vincent, President/CEO

11/14/05

Date

Gary Ward

Gary Ward, Chief Quality/Ethics Officer

11/11/05

Date