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Volume III - Data Validation Procedures and Laboratory Certifications

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Validation Annexes

Validation Annex A

Data Validation Procedures for Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs)

Validation Annex A

Data Validation Procedures for Volatile Organic Compounds (VOCs) and Semi-Volatile Organic Compounds (SVOCs)

I. Introduction

This Standard Operating Procedure (SOP) describes the data validation procedures for a United States Environmental Protection Agency (EPA) Region I tiered review of the data for volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) conducted by EPA Methods 8260B and 8270C, respectively. Data review procedures presented in this SOP were developed from the applicable quality control criteria specified in the following documents:

- *Region I Tiered Organic and Inorganic Data Validation Guidelines*, USEPA Region I, July 1, 1993.
- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, USEPA Region I, Draft, December 1996.
- *CLP Organics Data Review and Preliminary Review*, USEPA SOP HW-6, Revision 10, October 1995.
- *USEPA Contract Laboratory Program, Statement of Work for the Organics Analysis, Revision OLM0.1.9*, July 1993.

II. EPA Region I Tiered Validation Procedures

All VOC and SVOC analytical data will be validated to a Tier I level following the procedures presented in the *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses* (July 1996, revised December 1996) and *the Region I Tiered Organic and Inorganic Data Validation Guidelines* (EPA guidelines). The basic Tier I review consists of a completeness evidence audit to ensure that all laboratory data and documentation are present. Additionally, for projects subject to this FSP/QAPP, the Tier I review will be modified and expanded to include a number of elements of Tier II review, including review of each sample delivery group (SDG) to identify data deficiencies that may potentially result in qualification of the data (e.g., systematic deviations such as low calibration response factors). Based on this modified Tier I review, a subset of the data will be identified for additional Tier II review. If QA/QC deviations are identified during the modified Tier I review, those deviations will be addressed in the Tier II review. Otherwise, a minimum of 25% of the data will be chosen at random to be subjected to a Tier II review, which will consist of the Tier I completeness evidence audit and review of all data package summary forms for identification of QA/QC parameter deviations. The Tier II data review will be used to identify and evaluate systematic QA/QC deficiencies that may affect any or all of the sample data presented in a specific data package. The Tier II data validation also includes an evaluation of field duplicate Relative Percent Difference (RPD) compliance. Additional Tier II review and Tier III (recalculation of sample results) review may also be performed for a larger portion of the data set, if required, to fully resolve data usability limitations identified during the modified Tier I data review and initial Tier II review for 25% of the data chosen at random.

The tiered data validation procedures consisting of modified Tier I review for all data, Tier II review of a minimum of 25% of the data, and additional Tier II and Tier III review, as required, will be used to evaluate compliance of each data set with the project-specific data quality objectives. The procedures presented in the following sections will be used to perform the Tier I, Tier II, and Tier III data validation reviews. Qualification of analytical data will also be performed, if required, as specified in the data validation protocols presented below.

III. Tier I Validation Procedures

Tier I validation of a data package consists of verifying that all raw data and forms are included and complete. An analytical data validation summary spreadsheet (in the form presented in Attachment A-2) is prepared to document the data review. The following steps are taken to complete a Tier I review:

Step 1 - Review the laboratory case narrative. During review, if there are any deviations that warrant a more extensive validation procedure, a Tier II review would be initiated to evaluate potential data use limitations.

Step 2 - Compare the chain-of-custody and the sample traffic reports. If there are any inconsistencies or if they are incomplete, then contact the laboratory for resolution.

Step 3 - Verify that all forms are present and complete. If any of the forms are not in the data package, contact the laboratory for a resubmission.

Note: If frequent or severe quality control deviations are present on the above-mentioned forms, a more extensive validation procedure may be warranted. Based on the reviewer's judgement, Tier II or Tier III review may be conducted to fully evaluate the usability of the data.

Step 4 - Verify that the following raw data is provided for each sample and associated QA/QC samples in the data package. Contact the laboratory to obtain missing data (if required):

- Case Narrative
- Chain-of-Custody Forms
- Traffic Reports
- QA Sample Summary Forms
- Instrument Calibration Summary Forms
- Instrument Run Logs
- Sample Preparation Logs
- Instrument/Method Detection Limits
- Standards Preparation Logs
- Supporting (raw) Data

Step 5 - With a blue ink pen, record on the first page of the data package: the validation level, date, and reviewer's initials.

In addition to the steps discussed above, the Tier I review of data packages for projects subject to this FSP/QAPP will be expanded to include some elements of Tier II review, including review of the data packages to identify QA/QC deficiencies that may require qualification of the data.

IV. Tier II Validation Procedures

Tier II validation of a data package consists of the steps mentioned above for a Tier I review, plus review of the data package summary forms for identification of QA/QC deviations. Tier II validation does not include review of the "raw data" or recalculation of sample results. Sample qualification is performed (if required) following EPA Region I Guidelines presented in Section I.

A. Data Qualifiers

All data qualified due to QA/QC deviations will be clearly recorded on the data summary package Form I, or laboratory equivalent, with a blue ink pen. The laboratory qualification is lined out and the reviewer's qualification placed next to it. The date and the initials of the reviewer will also be placed on Form I. Below is a list of qualifiers that may be used.

J The compound was positively identified, but the associated numerical value is an estimated concentration. This qualifier is used when the data evaluation procedure identifies a deficiency in the data generation process. This qualifier is also used when a compound or analyte is detected at estimated concentrations less than the practical quantitation limit (PQL). (When this qualifier is used in combination with the letter C -- i.e., JC -- that indicates that the sample result is an estimated concentration due to certain QC deficiencies and that a bias-corrected result is available, as discussed further below.)

U The compound was analyzed for, but was not detected. The sample quantitation limit is presented and adjusted for dilution and (for solid samples only) percent moisture. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL), as presented in Attachment A-1.

UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual level of quantitation. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL) J, as presented in Attachment A-1.

R Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data should not be used for any qualitative or quantitative purposes.

B. Holding Times

Criteria

1.0 Purgeables: Water samples are preserved to a pH of less than 2 with HCl, H_2SO_4, or solid $NaHSO_4$, and stored at 4° centigrade. Samples must be analyzed within 14 days. Soil samples are preserved per SW-846 Method 5035 and must be analyzed within 14 days.

1.1 Extractables (Includes Base/Neutrals and Acids): Samples (waters or soils) and extracts must be preserved at 4° centigrade. Soil and water samples must be extracted within seven days and the extract must be analyzed within 40 days.

Action

Specific holding times for each analysis and sample type are presented in Table 1 of the FSP/QAPP. The following steps are performed for the validation of data due to holding times:

Step 1 - Establish the holding time by comparing the sampling date on the chain-of-custody with the dates of analysis and/or extraction on Form I, or laboratory equivalent. The chain-of-custody is also reviewed to determine if the samples were properly preserved.

Step 2 - If the holding times are exceeded by less than 24 hours, then no qualification of data is needed.

Step 3 - If the holding times are exceeded by more than 24 hours but less than 14 days, then all positive results are qualified as estimated (J) and the non-detected compounds are qualified as estimated (UJ).

Step 4 - If the holding times are exceeded by more than twice the specified holding time, then all results are qualified as unusable (R).

C. Percent Moisture Content

Criteria

Soil/sediment/solid sample results must be adjusted for percent solids and must have percent solids greater than 30%.

Action

The following steps are performed by reviewing the sample result summary form during the validation of percent solids data:

Verify that the percent solids of soil/sediment/solid samples are greater than 30%.

a. Soil/sediment/solid sample results with a percent solid of less than 10% are qualified as unusable (R)

b. Positive and non-detected soil/sediment/solid sample results with percent solid results within the range of greater than 10% to less than 30% are qualified as estimated (J) and unusable (R), respectively.

D. GC/MS Tuning

Criteria

The following criteria must be met at all times:

1.0 Decafluorotriphenylphosphine (DFTPP)

m/z	Ion Abundance Criteria
51	30.0 - 60.0% of m/z 198
68	less than 2.0% of m/z 69
70	less than 2.0% of m/z 69
127	40.0 - 60.0% of m/z 198
197	less than 1.0% of m/z 198
198	base peak, 100% relative abundance
199	5.0 - 9.0% of m/z 198
275	10.0 - 30.0% of m/z 198
365	greater than 1.0% of m/z 198
441	present, but not less than m/z 443
442	greater than 40.0% of m/z 198
443	17.0 - 23.0% of m/z 442

1.1 Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria
50	15.0 - 40.0% of the base peak
75	30.0 - 60.0% of the base peak
95	base peak, 100% relative abundance
96	5.0 - 9.0% of the base peak
173	less than 2.0% of m/z 174
174	greater than 50.0% of the base peak
175	5.0 - 9.0% of m/z 174
176	greater than 95.0%, but <101.0% of m/z 174
177	5.0 - 9.0% of m/z 176

Action

Review Form V, or laboratory equivalent, to determine if a mass calibration is in error. If an error is identified, then all data associated with the evaluated spectra are qualified as unusable (R).

E. Calibration

Criteria

1.0 Initial Calibration for VOCs and SVOCs

1.0.1 All average Relative Response Factors (RRFs) for must be greater than or equal to 0.05.

1.0.2 All Percent Relative Standard Deviation (%RSD) values must be less than or equal to 30%.

1.1 Continuing Calibration VOCs and SVOCs

1.1.1 All daily RRFs must be greater than or equal to 0.05.

1.1.2 All Percent Difference (%D) values must be less than or equal to 25%.

Action

The following steps are performed by reviewing Forms VI and VII, or laboratory equivalents, during the validation of calibration data:

Step 1 - Verify that all the average RRFs for the initial calibration are greater than 0.05. If the average RRF is not in control, then:

a. All positive sample results for that compound are qualified as estimated (J).

b. All non-detected sample results for compounds that do not meet their analytical method defined RRF are qualified as unusable (R). Several of the organic compounds exhibit instrument RRFs that are below the USEPA Region I minimum value of 0.05, but meet the analytical method criterion, which does not specify minimum RRFs for these compounds. These compounds will be calibrated for by the laboratory at a higher concentration than the compounds that normally exhibit RRFs greater than the USEPA Region I minimum value of 0.05 in an effort to demonstrate acceptable response. USEPA Region I guidelines state that non-detected compound results associated with a RRFs less than the minimum value of 0.05 are to be rejected. In the case of these select organic compounds, where the RRFs are an inherent problem with the current analytical methodology; the non-detected samples results will be qualified as an estimate (J).

Step 2 - If use of data is critical, the average RRF will be calculated with the elimination of the low or high calibration standard. If the average RRF is in control with the elimination of the low calibration standard, then:

a. All non-detected sample results for that compound are adjusted to the lowest calibration standard used to calculate the acceptable average RRF.

b. All positive sample results for that compound which are below the lowest calibration standard used to calculate the acceptable average RRF are qualified as estimated (J).

If the average RRF is in control with the elimination of the high calibration standard, then:

a. All positive sample results for that compound which are above the highest calibration standard used to calculate the acceptable average RRF are qualified as estimated (J).

Step 3 - Verify that all %RSD values for the initial calibration are greater than 30%. If any %RSD is not in control, then all detected and non-detected sample results for that compound are qualified as estimated (J) and (UJ), respectively.

Qualification of VOC/SVOC Compounds Based on Initial Calibration Deviations

Sample Results	Avg. RRF $\geq$ 0.05 and %RSD $\leq$ 30.0%	Avg. RRF < 0.05 and %RSD $\leq$ 30.0%	Avg. RRF $\geq$ 0.05 and %RSD > 30.0%	Avg. RRF < 0.05 and %RSD > 30.0%
Detects	-	J	J	J
Non-Detects	-	R or ND(PQL)J	ND(PQL)J	R or ND(PQL)J

Step 4 - Verify that all RRF values for the continuing calibration are greater than 0.05. If any continuing calibration RRF is not in control, then:

a. All positive sample results for that compound are qualified as estimated (J).

b. All non-detected sample results for are qualified as unusable (R). Several of the organic compounds exhibit instrument RRFs that are below the USEPA Region I minimum value of 0.05, but meet the analytical method criterion, which does not specify minimum RRFs for these compounds. These compounds will be calibrated for by the laboratory at a higher concentration than the compounds that normally exhibit RRFs greater than the USEPA Region I minimum value of 0.05 in an effort to demonstrate acceptable response. USEPA Region I guidelines state that non-detected compound results associated with a RRFs less than the minimum value of 0.05 are to be rejected. In the case of these select organic compounds, where the RRFs are an inherent problem with the current analytical methodology; the non-detected samples results will be qualified as an estimate (J).

Step 5 - Verify that all %D values are greater than 25%. If any %D is not in control, then all detected and non-detected sample results for that compound are qualified as estimated (J) and (UJ), respectively.

Qualification of VOC/SVOC Compounds Based on Continuing Calibration Deviations

Sample Results	Avg. RRF $\geq$ 0.05 and %RSD $\leq$ 25.0%	Avg. RRF < 0.05 and %RSD $\leq$ 25.0%	Avg. RRF $\geq$ 0.05 and %RSD > 25.0%	Avg. RRF < 0.05 and %RSD > 25.0%
Detects	-	J	J	J
Non-Detects	-	R or ND(PQL)J	ND(PQL)J	R or ND(PQL)J

F. Blanks

Criteria

1.0 No contaminants should be present in the blank(s).

1.1 For each matrix and for each 12-hour window, a method blank must be analyzed for volatile analyses.

1.2 For each matrix and each extracted batch, a method blank must be analyzed for semi-volatile analyses.

Action

Qualification of sample results due to blank contamination is dependent on the conditions and origin of the blank. No sample results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in the blank for the compounds listed below, or five times the blank amount for all other compounds. No sample results are corrected by subtracting blank values. Specific qualifications of sample data are as follows:

Step 1 - Review Form IV, or laboratory equivalent, within the data package to ensure that criteria III.E.1.1 and III.E.1.2 are in compliance. If they are not, the laboratory will be contacted by the reviewer for a written explanation.

Step 2 - Review Form I, or laboratory equivalent, for all blanks within the data package.

Step 3 - If a compound is found in the blank but not in the sample, then the data are not qualified.

Step 4 - When any compound (other than the five listed below) is detected in the sample and the sample concentration is less than five times the concentration detected in the associated blank, the data are qualified. For the following five compounds, the sample results are qualified if the sample concentration is less than 10 times the concentration detected in the blank.

Common laboratory contaminants:

a. Methylene chloride
b. Acetone
c. Toluene
d. 2-Butanone
e. Common phthalate esters

Note: Any difference between the sample analyses and the related blank analyses which involve weights, volumes, or dilution factors, must be taken into account when the 5-times or 10-times criteria are applied.

The following are examples of how qualifications apply to blank data:

a. When the sample result is greater than the PQL but less than the action level (5-times or 10-times) from the blank result, the sample results are qualified as non-detects. As in the example below, the sample result for the 10-times rule is less than 70 (or 10 x 7), and for the 5-times rule the result is less than 35 (or 5 x 7); therefore, they are qualified as described.

Factor	10-times	5-times
Blank Result	7	7
PQL	5	5
Action Level	70	35
Sample Result	60	30
Qualified Sample Result	60 U	30 U

b. When the sample result is less than the PQL and also less than the action level (5-times or 10-times) from the blank result, the sample results are qualified as non-detects by using the PQL as the detection limit. As in the example below, the sample result is less than the PQL in both instances and the sample results are qualified as described.

Factor	10-times	5-times
Blank Result	6	6
PQL	5	5
Action Level	60	25
Sample Result	4 J	4 J
Qualified Sample Result	5 U	5 U

c. When the sample result is greater than the blank action level (5-times or 10-times), the sample results are not qualified. As in the example below, the sample results are greater than the blank action level and the sample results are not qualified.

Factor	10-times	5-times
Blank Result	10	10
PQL	5	5
Action Level	50	50
Sample Result	120	60
Qualified Sample Result	120	60

Step 5 - When excessive amounts of contamination exist (i.e., saturated peaks by GC/MS), all compounds affected are qualified as unusable (R).

Note: As mentioned above, similar consideration is given to Tentatively Identified Compounds (TICs) which are found in both the sample and the associated blank(s).

G. Surrogate Recovery

Criteria

Sample and blank surrogate recoveries for VOCs and SVOCs must be within the control limits listed in Table 5 of the FSP/QAPP.

Action

Qualification of the data due to surrogate recoveries being out of control is based on the evaluation of all data provided in the data package, especially considering the complexity of the effect of sample matrices. These qualifications are completed in the following steps:

Step 1 - Surrogate recoveries tabulated on Form II, or laboratory equivalent, for each fraction are evaluated against the control limits provided in Table 5.

Step 2 - No qualification of the data is needed if less than two surrogates are out of control for the base/neutral or acid fraction, or one in the volatile fraction, or unless any surrogate has a recovery less than 10%.

Step 3 - If at least two surrogates in a base/neutral or acid fraction or one surrogate in the volatile fraction are out of control, the following steps are taken:

a. All positive results for that associated fraction with surrogate recoveries above the upper control limit are qualified as estimated (J).

b. All positive results for that associated fraction with a surrogate recovery that is less than the lower control limit are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) re-analyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC) and the bias-corrected result will be presented in the "Notes" field of the Analytical Data Validation Summary (Attachment A-2).

c. All non-detected results associated with a surrogate recovery that is less than the lower control limit but greater than 10% are qualified as estimated (UJ).

Step 4 - If any surrogate recoveries in a fraction are less than 10%, all non-detected results for that fraction are qualified as unusable (R).

Step 5 - When the blank analysis involves surrogate recoveries out of control, the related sample data are reviewed and qualified in the following manner:

a. If the sample data does not contain any surrogate out of control, then the data are not qualified.

b. If the sample data does contain a surrogate out of control, then the sample data are qualified as mentioned above in Steps 2 through 4.

Note: In this special circumstance, the problem is considered to be within the laboratory control and is so noted in the validation report.

Qualification of VOC/SVOC Compounds Based on Surrogate Recovery Deviations

Sample Results	One or more surrogates < 10%	One VOC, two B/N, or two Acid surrogates 10% ≤ %Rec < LL	All VOC, one B/N, or one Acid surrogate LL ≤ %Rec ≤ UL	Avg. RRF < 0.05 and %RSD > 25.0%
Detects	JC	JC	-	J
Non-Detects	R	ND(PQL)J	-	-

LL- Lower limit of method QC acceptance criteria.
UL- Upper limit of method QC acceptance criteria.

H. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Criteria

1.0 Spike recoveries must be within the control limits in Table 5 of the FSP/QAPP.

1.1 RPD values between MS and MSD recoveries must be within the control limits in Table 5.

Action

If recovery results are not within the control limits, the following steps are taken to qualify the data:

Step 1 - If the recovery results are below the lower control limit presented in Table 5, the positive results for this compound are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the "Notes" field of the Analytical Data Validation Summary.

Step 2 - If the recovery result is less than 10%, the non-detects for that compound in the unspiked sample are qualified as rejected (R). This is the only instance that a non-detect is qualified due to recovery results being out of control.

Step 3 - If any of the RPD values are greater than the limits presented in Table 5, positive results for that compound are qualified as estimated (J) in the unspiked sample.

Qualification of VOC/SVOC Compounds Based on MS/MSD Recovery and MS/MSD RPD Deviations

Sample Results	Recovery < 10%	10% ≤ %Recovery < Lower QC Limit	Lower QC Limit ≤ Recovery ≤ Upper QC Limit	Recovery > Upper QC Limit	RPD > QC Limit
Detects	JC	JC	-	J	J
Non-Detects	R	-	-	-	ND(PQL)J

I. Field Duplicates

Criteria

1.0 For water matrices, each compound with a detectable concentration two times greater than the PQL must have an RPD value that is less than 30%.

1.1 For soil matrices, each compound with a detectable concentration two times greater than the PQL must have an RPD value that is less than 50%.

Action

Step 1 - Calculate all RPD values for positive results between the sample and the field duplicate.

$$\text{Calculation: } RPD = \frac{\text{Sample Result - Field Duplicate}}{\text{(Sample Result + Field Duplicate)/2}} \times 100$$

Step 2 - If the RPD value is greater than 30% in a water matrix and both sample results are greater than two times the PQL, the result for that compound in both samples is qualified as estimated (J).

Step 3 - If the RPD value is greater than 50% in a soil matrix and both sample results are greater than two times the PQL, the result for that compound in both samples is qualified as estimated (J).

Step 4 - If the both sample results are less than two times the PQL, qualification of the sample data is not required.

Step 5 - If the one sample result is less than two times the PQL and the other is greater than two times the PQL, the result for that compound in both samples is qualified as estimated (J).

Qualification of VOC/SVOC Compounds Based on Field Duplicate RPD Deviations

RPD	Aqueous > 30% Non-Aqueous > 50%	Aqueous > 30% Non-Aqueous > 50%	Aqueous > 30% Non-Aqueous > 50%
Sample Results	Both duplicate sample concs. $\geq$ 2 times PQL	PQL $\leq$ both duplicate samples concs. < 2 times PQL and $\geq$ PQL	One sample conc. $\geq$ 2 times PQL and other sample conc. < 2 times PQL
Detects	J	-	J
Non-Detects	-	-	-

J. Internal Standards Performance

Criteria

1.0 Internal standard (IS) area counts must not vary by more than a factor of two (-50 to +100%) from the associated continuing calibration standard.

1.1 The retention time of the internal standard must not vary by more than +/- 30 seconds from the associated continuing calibration standard.

Action

Step 1 - Review the tabulated results for the comparison of the IS areas of the samples and the related continuing calibration standard on Form VIII, or laboratory equivalent. If an IS area is outside the -50 to +100% limits, the positive sample results quantitated using that IS are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) re-analyzing the existing sample; (iii) bias-correcting the sample result to 100%; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC) and the bias-corrected result will be presented in the "Notes" field of the Analytical Data Validation Summary (Attachment A-2).

Step 2 - If the IS areas of a sample and the related continuing calibration standard on Form VIII, or laboratory equivalent, are less than the -50% criteria but greater than -20%, then non-detected sample results are qualified as estimated (UJ) for that sample fraction.

Step 3 - If the IS areas of a sample and the related continuing calibration standard on Form VIII, or laboratory equivalent, are less than -20%, then non-detected sample results are qualified as unusable (R) for that sample fraction.

Step 4 - If the IS areas of a sample and the related continuing calibration standard on Form VIII, or laboratory equivalent, are greater than the 100% criteria, then detected sample results are qualified as estimated (J) for that sample fraction.

Step 5 - Review the tabulated results for comparison of the IS Retention Time (RT) of the samples and the related continuing calibration standard on Form VIII, or laboratory equivalent. If an IS retention time varies by more than 30 seconds, the data are qualified as unusable (R).

Qualification of VOC/SVOC Compounds Based on Field Duplicate RPD Deviations

Sample Results	Area Counts < 20% of the associated calibration	20% ≤ Area Counts < LL	LL ≤ Area Counts ≤ LL	Area Counts > UL
Detects	JC	JC	-	J
Non-Detects	R	ND(PQL)J	-	-

LL- Lower limit of method QC acceptance criteria.
UL- Upper limit of method QC acceptance criteria.

V. Tier III Validation Procedures

Tier III validation of a data package consists of the steps mentioned above for a Tier I and Tier II validation plus review of the "raw data" and recalculation of approximately 10% of the sample results. The confirmation of detected compounds and tentatively identified compounds is also reviewed.

A. Compound Quantitation and Reported Quantitation Limits

Criteria

1.0 The quantitation of detected compounds and the adjustment of the PQL for dilutions and percent solids must be recalculated for 10% of the data.

1.1 The compound's RRF and sample result quantitation must be calculated based on the IS specified in Tables A-1 and A-2.

Action

If the criteria above have not been followed, the laboratory will be contacted by the reviewer and the laboratory will be responsible for a correction of the quantitation and resubmission of the reported data.

B. Detected Identification

Criteria

1.0 Compounds must be within +/- 0.06 Relative Retention Time (RRT) units of the continuing calibration standard RRT.

1.1 Mass spectra of the sample compound and of the current reference spectra must match the following criteria:

1.1.1 All ions present in the reference spectra must be at a relative intensity greater than 10% and must be present in the sample spectrum.

1.1.2 The relative intensities of the ions specified above must agree within +/- 20% (absolute) between the reference and sample spectrum (example: for an ion with an abundance of 50% in the reference spectrum, the corresponding sample ion abundance must be between 30% and 70%).

1.1.3 Ions greater than 10% in the sample spectrum but not present in the reference spectrum must be considered and accounted for.

1.1.4 If a compound cannot be verified by all of the above criteria, but in the technical judgment of the mass spectral interpretation specialist the identification is correct, the laboratory will report the identification and continue with the quantitation.

Action

Professional judgment is used for the qualitative criteria for GC/MS analysis of target compounds. If it is determined that the wrong identification was made, all such data are qualified as not detected (U).

C. Tentatively Identified Compounds (TICs)

Criteria

1.0 For each sample, the laboratory may conduct a mass spectral search of the NBS library. Report the possible identity of the 10 largest VOC fraction peaks and the 20 largest SVOC fraction peaks which are not surrogate, internal standard, or target compounds, but which have an area/height that is greater than 10% of the size of the nearest internal standard. TIC results, if reported by the laboratory, will be reported for each sample on Organic Analyses Data Sheet (Form I, TIC), or laboratory equivalent.

1.1 Requirements for the tentative identification are as follows:

1.1.1 Major ions (greater than 10% relative intensity) in the reference spectrum should be present in the sample spectrum.

1.1.2 Relative intensities of the major ions should agree within +/- 20% between the sample and the reference spectra.

1.1.3 Molecular ions present in the reference spectrum should be present in the sample spectrum.

1.1.4 Ions present in the sample spectrum but not in the reference spectrum should be reviewed for possible background contamination, interference, or coelution of additional TIC or target compounds.

1.2 When the above criteria are not met, but in the technical judgement of the data reviewer or the mass spectral interpretation specialist the identification is correct, the data reviewer may report the identification.

Action

The following steps are taken in qualifying the TICs if they are reported by the laboratory:

Step 1 - Review Form I, or laboratory equivalent, to verify that all TIC results are qualified as estimated concentrations (J).

Step 2 - If it is determined that the tentative identification of a compound is not acceptable, the tentative identification is changed to “unknown” or the correct compound identification.

Step 3 - If all of the required peaks are not searched, the laboratory is contacted to complete the library search of that sample.

Step 4 - Any TIC results that are not sufficiently above the level in the blank are not reported.

Note: Dilutions and sample size must be taken into account when comparing the amounts present in the blanks and samples.

Step 5 - When a compound is not found in the blanks but is a suspected artifact of a common laboratory contaminant, the sample result is qualified as unusable (R).

Step 6 - In the identification of TICs, professional judgment is used. In case there is more than one reasonable match, the result will be reported as "either compound X or compound Y." If the results lack isomer specificity, the TIC result is changed to a non-specific isomer result (e.g., 1,3,5-trimethyl benzene to trimethyl benzene isomer) or to the class of compound (e.g., 2-methyl-3-ethyl benzene to substituted aromatic).

Step 7 - If a sample's TIC match is poor but other samples from the data package have the same TIC with an acceptable match, that identification information may be used to identify the TIC result.

Table A-1
Volatile Internal Standards with Corresponding Target Compounds Assigned for Quantitation

TABLE A-1

VOLATILE INTERNAL STANDARDS WITH CORRESPONDING TARGET COMPOUNDS ASSIGNED FOR QUANTITATION

Option 1: Four Internals

1) Pentafluorobenzene

Acetone
Acetonitrile
Acrolein
Acrylonitrile
Allyl Chloride
Carbon Disulfide
Chloroethane
Chloroform
Chloroprene
Dichlorodifluoromethane
1,1-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
Isobutyl Alcohol
Methacrylonitrile
Methyl Bromide
Methyl Chloride
Methyl Ethyl Ketone
Methyl Iodide
Methylene Chloride
Propionitrile
1,1,1-Trichloroethane
Trichlorofluoromethane
Vinyl Acetate
Vinyl Chloride

2) 1,4-Difluorobenzene

Benzene
Bromodichloromethane
Carbon Tetrachloride
2-Chloroethylvinylether
1,2-Dibromoethane
1,2-Dichloroethane
1,2-Dichloropropane
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
1,4-Dioxane
Ethyl Methacrylate
Methyl Methacrylate
4-Methyl-2-pentanone
Methylene Bromide
Toluene
1,1,2-Trichloroethane
Trichloroethene

3) Chlorobenzene-d_5

Bromoform
Chlorobenzene
Dibromochloromethane
trans-1,4-Dichloro-2-butene
Ethylbenzene
2-Hexanone
Styrene
1,1,1,2-Tetrachloroethane
Tetrachloroethene
Xylene

4) 1,4-Dichlorobenzene-d_4

1,2-Dibromo-3-chloropropane
1,1,2,2-Tetrachloroethane
1,2,3-Trichloropropane

TABLE A-1

VOLATILE INTERNAL STANDARDS WITH CORRESPONDING TARGET COMPOUNDS ASSIGNED FOR QUANTITATION

Option 2: Three Internals

1) Fluorobenzene

Acetone
Acetonitrile
Acrolein
Acrylonitrile
Allyl Chloride
Benzene
Bromodichloromethane
Carbon Disulfide
Carbon Tetrachloride
Chloroethane
2-Chloroethylvinylether
Chloroform
Chloroprene
Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
trans-1,2-Dichloroethene
1,2-Dichloropropane
cis-1,3-Dichloropropene
Ethylbenzene
Isobutyl Alcohol
Methacrylonitrile
Methyl Bromide
Methyl Chloride
Methylene Bromide
Methylene Chloride
Methyl Ethyl Ketone
Methyl Iodide
Methyl Methacrylate
4-Methyl-2-pentanone
Propionitrile
1,1,1-Trichloroethane
Trichloroethene
Trichlorofluoromethane
Vinyl Acetate
Vinyl Chloride

2) Chlorobenzene-d_5

Bromoform
Chlorobenzene
1,4-Dioxane
Dibromochloromethane
1,2-Dibromoethane
trans-1,3-Dichloropropene
Ethyl Methacrylate
2-Hexanone
Styrene
1,1,1,2-Tetrachloroethane
Tetrachloroethene
Toluene
1,1,2-Trichloroethane
Xylene

3) 1,2-Dichlorobenzene-d4

trans-1,4-Dichloro-2-butene
1,1,2,2-Tetrachloroethane
1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane

Table A-2
Semi-Volatile Internal Standards with Corresponding Target Compounds Assigned for Quantitation

TABLE A-2

SEMIVOLATILE INTERNAL STANDARDS WITH CORRESPONDING TARGET COMPOUNDS ASSIGNED FOR QUANTITATION

1) 1,4-Dichlorobenzene-d_4

Aniline
Benzyl Alcohol
bis(2-chloro-1-methylethyl)ether
bis(2-chloroethyl)ether
2-Chlorophenol
m-Cresol
o-Cresol
p-Cresol
m-Dichlorobenzene
o-Dichlorobenzene
p-Dichlorobenzene
Ethyl Methanesulfonate
Hexachloroethane
Methyl methanesulfonate
N-Nitrosodi-n-propylamine
N-Nitrosodiethylamine
N-Nitrosodimethylamine
N-Nitrosomethylethylamine
N-Nitrosomorpholine
N-Nitrosopyrrolidine
Pentachloroethane
Phenol
2-Picoline
Pyridine
o-Toluidine
o,o,o-Triethyl phosphorothioate

2) Naphthalene-d_8

Acetophenone
bis(2-chloroethoxy)methane
p-Chloro-m-cresol
p-Chloroaniline
2,4-Dichlorophenol
2,6-Dichlorophenol
a,a-Dimethylphenethylamine
2,4-Dimethylphenol
Hexachlorobutadiene
Hexachlorophene
Hexachloropropene
Isophorone
Isosafrole
2-Methylnaphthalene
Naphthalene
Nitrobenzene
o-Nitrophenol
N-Nitrosodi-n-butylamine
N-Nitrosopiperidine
p-Phenylenediamine
1,2,4-Trichlorobenzene

3) Acenaphthene-d_{10}

Acenaphthene
Acenaphthylene
2-Chloronaphthalene
4-Chlorophenyl-phenylether
Dibenzofuran
Diethyl phthalate
Dimethyl phthalate
m-Dinitrobenzene
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Fluorene
Hexachlorocyclopentadiene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
5-Nitro-o-toluidine
m-Nitroaniline
o-Nitroaniline
p-Nitroaniline
p-Nitrophenol
Pentachlorobenzene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
2,4,5-Trichlorophenol
2,4,6-Trichlorophenol

4) Phenanthrene-d_{10}

4-Aminobiphenyl
Anthracene
4-Bromophenyl phenyl ether
Di-n-butylphthalate
Diallate
O,O-Diethyl-O-2-pyrazinyl phosphorothioate
4,6-Dinitro-o-cresol
Diphenylamine
1,2-Diphenylhydrazine
Fluoranthene
Hexachlorobenzene
4-Nitroquinoline-1-oxide
N-Nitrosodiphenylamine
Pentachloronitrobenzene
Pentachlorophenol
Phenacetin
Phenanthrene
Pronamide
sym-Trinitrobenzene

5) Chrysene-d_{12}

2-Acetylaminofluorene
Aramite
Benzidine
Benzo(a)anthracene
bis(2-ethylhexyl)phthalate
Butyl benzyl phthalate
Chlorobenzilate
Chrysene
3,3'-Dichlorobenzidine
p-(Dimethylamino)azobenzene
3,3'-Dimethylbenzidine
Isodrin
Methapyrilene
Pyrene

6) Perylene-d_{12}

Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(g,h,i)perylene
Benzo(k)fluoranthene
Di-n-octylphthalate
Dibenz(a,h)anthracene
7,12-Dimethylbenz(a)anthracene
Indeno(1,2,3-cd)pyrene
3-Methylcholanthrene

Attachment A-1
Laboratory Reporting Forms for Volatile and Semi-Volatile Organic Compounds

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) _____ Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Level: (low/med) _____ Date Received: _____

% Moisture: not dec._____ Date Analyzed: _____

GC Column: _____ ID: _____(mm) Dilution Factor: _____

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)_____	Q
74-87-3	Chloromethane		
74-83-9	Bromomethane		
75-01-4	Vinyl Chloride		
75-00-3	Chloroethane		
75-09-2	Methylene Chloride		
67-64-1	Acetone		
75-15-0	Carbon Disulfide		
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane		
540-59-0	1,2-Dichloroethene (total)		
67-66-3	Chloroform		
107-06-2	1,2-Dichloroethane		
78-93-3	2-Butanone		
71-55-6	1,1,1-Trichloroethane		
56-23-5	Carbon Tetrachloride		
75-27-4	Bromodichloromethane		
78-87-5	1,2-Dichloropropane		
10061-01-5	cis-1,3-Dichloropropene		
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane		
79-00-5	1,1,2-Trichloroethane		
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene		
75-25-2	Bromoform		
108-10-1	4-Methyl-2-Pentanone		
591-78-6	2-Hexanone		
127-18-4	Tetrachloroethene		
79-34-5	1,1,2,2-Tetrachloroethane		
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene		
100-42-5	Styrene		
1330-20-7	Xylene (total)		

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water)_____ Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Level: (low/med) _____ Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:_____

Concentrated Extract Volume: _____(uL) Date Analyzed: _____

Injection Volume: _____(uL) Dilution Factor: _____

GPC Cleanup: (Y/N)___ pH:____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)_____	Q
108-95-2	Phenol		
111-44-4	bis(2-Chloroethyl)ether		
95-57-8	2-Chlorophenol		
541-73-1	1,3-Dichlorobenzene		
106-46-7	1,4-Dichlorobenzene		
95-50-1	1,2-Dichlorobenzene		
95-48-7	2-Methylphenol		
108-60-1	2,2'-oxybis(1-Chloropropane)		
106-44-5	4-Methylphenol		
621-64-7	N-Nitroso-di-n-propylamine		
67-72-1	Hexachloroethane		
98-95-3	Nitrobenzene		
78-59-1	Isophorone		
88-75-5	2-Nitrophenol		
105-67-9	2,4-Dimethylphenol		
111-91-1	bis(2-Chloroethoxy)methane		
120-83-2	2,4-Dichlorophenol		
120-82-1	1,2,4-Trichlorobenzene		
91-20-3	Naphthalene		
106-47-8	4-Chloroaniline		
87-68-3	Hexachlorobutadiene		
59-50-7	4-Chloro-3-methylphenol		
91-57-6	2-Methylnaphthalene		
77-47-4	Hexachlorocyclopentadiene		
88-06-2	2,4,6-Trichlorophenol		
95-95-4	2,4,5-Trichlorophenol		
91-58-7	2-Chloronaphthalene		
88-74-4	2-Nitroaniline		
131-11-3	Dimethylphthalate		
208-96-8	Acenaphthylene		
606-20-2	2,6-Dinitrotoluene		
99-09-2	3-Nitroaniline		
83-32-9	Acenaphthene		

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water)_____ Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Level: (low/med) _____ Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:_____

Concentrated Extract Volume: _____(uL) Date Analyzed: _____

Injection Volume: _____(uL) Dilution Factor: _____

GPC Cleanup: (Y/N)___ pH:____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)_____	Q
51-28-5	2,4-Dinitrophenol		
100-02-7	4-Nitrophenol		
132-64-9	Dibenzofuran		
121-14-2	2,4-Dinitrotoluene		
84-66-2	Diethylphthalate		
7005-72-3	4-Chlorophenyl-phenylether		
86-73-7	Fluorene		
100-01-6	4-Nitroaniline		
534-52-1	4,6-Dinitro-2-methylphenol		
86-30-6	N-Nitrosodiphenylamine (1)		
101-55-3	4-Bromophenyl-phenylether		
118-74-1	Hexachlorobenzene		
87-86-5	Pentachlorophenol		
85-01-8	Phenanthrene		
120-12-7	Anthracene		
86-74-8	Carbazole		
84-74-2	Di-n-butylphthalate		
206-44-0	Fluoranthene		
129-00-0	Pyrene		
85-68-7	Butylbenzylphthalate		
91-94-1	3,3'-Dichlorobenzidine		
56-55-3	Benzo(a)anthracene		
218-01-9	Chrysene		
117-81-7	bis(2-Ethylhexyl)phthalate		
117-84-0	Di-n-octylphthalate		
205-99-2	Benzo(b)fluoranthene		
207-08-9	Benzo(k)fluoranthene		
50-32-8	Benzo(a)pyrene		
193-39-5	Indeno(1,2,3-cd)pyrene		
53-70-3	Dibenz(a,h)anthracene		
191-24-2	Benzo(g,h,i)perylene		

(1) - Cannot be separated from Diphenylamine

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water)_____ Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Level: (low/med) _____ Date Received: _____

% Moisture: not dec._____ Date Analyzed: _____

GC Column: _____ ID: _____(mm) Dilution Factor: _____

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: _____ CONCENTRATION UNITS: (ug/L or ug/Kg)_____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) _____ Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Level: (low/med) _____ Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: _____

Concentrated Extract Volume: _____(uL) Date Analyzed: _____

Injection Volume: _____(uL) Dilution Factor: _____

GPC Cleanup: (Y/N)___ pH:____

Number TICs found: _____ CONCENTRATION UNITS: (ug/L or ug/Kg)_____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
SMC1 (TOL) = Toluene-d8	(88-110)
SMC2 (BFB) = Bromofluorobenzene	(86-115)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01										
02										
03										
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S3 (TPH)	= Terphenyl-d14	(33-141)	
S4 (PHL)	= Phenol-d5	(10-110)	
S5 (2FP)	= 2-Fluorophenol	(21-110)	
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)	
S7 (2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Level: (low/med) _____

	EPA SAMPLE NO.	SMC1 (TOL) #	SMC2 (BFB) #	SMC3 (DCE) #	OTHER	TOT OUT
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
SMC1 (TOL) = Toluene-d8	(84-138)
SMC2 (BFB) = Bromofluorobenzene	(59-113)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01										
02										
03										
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
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16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(35-114)	
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)	
S3 (TPH)	= Terphenyl-d14	(33-141)	
S4 (PHL)	= Phenol-d5	(10-110)	
S5 (2FP)	= 2-Fluorophenol	(21-110)	
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)	
S7 (2CP)	= 2-Chlorophenol-d4	(33-110)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(16-110)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Level: (low/med) _____

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01										
02										
03										
04										
05										
06										
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S3 (TPH)	= Terphenyl-d14	(18-137)	
S4 (PHL)	= Phenol-d5	(24-113)	
S5 (2FP)	= 2-Fluorophenol	(25-121)	
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene					61-145
Trichloroethene					71-120
Benzene					76-127
Toluene					76-125
Chlorobenzene					75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene					14	61-145
Trichloroethene					14	71-120
Benzene					11	76-127
Toluene					13	76-125
Chlorobenzene					13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD:_____ out of _____ outside limits
Spike Recovery:_____ out of _____ outside limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____ Level:(low/med) _____

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene					59-172
Trichloroethene					62-137
Benzene					66-142
Toluene					59-139
Chlorobenzene					60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene					22	59-172
Trichloroethene					24	62-137
Benzene					21	66-142
Toluene					21	59-139
Chlorobenzene					21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD:_____ out of _____ outside limits
Spike Recovery:_____ out of _____ outside limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol					12-110
2-Chlorophenol					27-123
1,4-Dichlorobenzene					36- 97
N-Nitroso-di-n-prop.(1)					41-116
1,2,4-Trichlorobenzene					39- 98
4-Chloro-3-methylphenol					23- 97
Acenaphthene					46-118
4-Nitrophenol					10- 80
2,4-Dinitrotoluene					24- 96
Pentachlorophenol					9-103
Pyrene					26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol					42	12-110
2-Chlorophenol					40	27-123
1,4-Dichlorobenzene					28	36- 97
N-Nitroso-di-n-prop.(1)					38	41-116
1,2,4-Trichlorobenzene					28	39- 98
4-Chloro-3-methylphenol					42	23- 97
Acenaphthene					31	46-118
4-Nitrophenol					50	10- 80
2,4-Dinitrotoluene					38	24- 96
Pentachlorophenol					50	9-103
Pyrene					-31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: _____ out of _____ outside limits
Matrix Recovery: _____ out of _____ outside limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol					12-110
2-Chlorophenol					27-123
1,4-Dichlorobenzene					36- 97
N-Nitroso-di-n-prop.(1)					41-116
1,2,4-Trichlorobenzene					39- 98
4-Chloro-3-methylphenol					23- 97
Acenaphthene					46-118
4-Nitrophenol					10- 80
2,4-Dinitrotoluene					24- 96
Pentachlorophenol					9-103
Pyrene					26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol					42	12-110
2-Chlorophenol					40	27-123
1,4-Dichlorobenzene					28	36- 97
N-Nitroso-di-n-prop.(1)					38	41-116
1,2,4-Trichlorobenzene					28	39- 98
4-Chloro-3-methylphenol					42	23- 97
Acenaphthene					31	46-118
4-Nitrophenol					50	10- 80
2,4-Dinitrotoluene					38	24- 96
Pentachlorophenol					50	9-103
Pyrene					-31	26-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: _____ out of _____ outside limits

Matrix Recovery: _____ out of _____ outside limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____ Level:(low/med) _____

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol					26- 90
2-Chlorophenol					25-102
1,4-Dichlorobenzene					28-104
N-Nitroso-di-n-prop.(1)					41-126
1,2,4-Trichlorobenzene					38-107
4-Chloro-3-methylphenol					26-103
Acenaphthene					31-137
4-Nitrophenol					11-114
2,4-Dinitrotoluene					28- 89
Pentachlorophenol					17-109
Pyrene					35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol					35	26- 90
2-Chlorophenol					50	25-102
1,4-Dichlorobenzene					27	28-104
N-Nitroso-di-n-prop.(1)					38	41-126
1,2,4-Trichlorobenzene					23	38-107
4-Chloro-3-methylphenol					33	26-103
Acenaphthene					19	31-137
4-Nitrophenol					50	11-114
2,4-Dinitrotoluene					47	28- 89
Pentachlorophenol					47	17-109
Pyrene					36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: _____ out of _____ outside limits
Spike Recovery: _____ out of _____ outside limits

COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: _____ Lab Sample ID: _____

Date Analyzed: _____ Time Analyzed: _____

GC Column: _____ ID: _____(mm) Heated Purge: (Y/N) ___

Instrument ID: _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

_____

_____

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: _____ Lab Sample ID: _____

Instrument ID: _____ Date Extracted: _____

Matrix: (soil/water) _____ Date Analyzed: _____

Level: (low/med) _____ Time Analyzed: _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS:

_____

_____

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: _____ BFB Injection Date: _____

Instrument ID: _____ BFB Injection Time: _____

GC Column: _____ ID: _____(mm) Heated Purge: (Y/N) ___

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	
75	30.0 - 66.0% of mass 95	
95	Base peak, 100% relative abundance	
96	5.0 - 9.0% of mass 95	
173	Less than 2.0% of mass 174	( )1
174	50.0 - 120.0% of mass 95	
175	4.0 - 9.0 % of mass 174	( )1
176	93.0 - 101.0% of mass 174	( )1
177	5.0 - 9.0% of mass 176	( )2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID: _____ DFTPP Injection Date: _____

Instrument ID: _____ DFTPP Injection Time: _____

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	
68	Less than 2.0% of mass 69	_____( )1
69	Mass 69 relative abundance	
70	Less than 2.0% of mass 69	_____( )1
127	25.0 - 75.0% of mass 198	
197	Less than 1.0% of mass 198	
198	Base Peak, 100% relative abundance	
199	5.0 to 9.0% of mass 198	
275	10.0 - 30.0% of mass 198	
365	Greater than 0.75% of mass 198	
441	Present, but less than mass 443	
442	40.0 - 110.0% of mass 198	
443	15.0 - 24.0% of mass 442	_____( )2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Heated Purge: (Y/N) ___ Calibration Times: _____ _____

GC Column: _____ ID: _____(mm)

LAB FILE ID: RRF10 = _____ RRF20 = _____

RRF50 = _____ RRF100= _____ RRF200= _____

COMPOUND	RRF10	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Chloromethane							
Bromomethane *							*
Vinyl Chloride *							*
Chloroethane							
Methylene Chloride							
Acetone							
Carbon Disulfide							
1,1-Dichloroethene *							*
1,1-Dichloroethane *							*
1,2-Dichloroethene (total)							*
Chloroform *							*
1,2-Dichloroethane *							*
2-Butanone							
1,1,1-Trichloroethane *							*
Carbon Tetrachloride *							*
Bromodichloromethane *							*
1,2-Dichloropropane *							*
cis-1,3-Dichloropropene *							*
Trichloroethene *							*
Dibromochloromethane *							*
1,1,2-Trichloroethane *							*
Benzene *							*
trans-1,3-Dichloropropene *							*
Bromoform *							*
4-Methyl-2-Pentanone							
2-Hexanone							
Tetrachloroethene *							*
1,1,2,2-Tetrachloroethane *							*
Toluene *							*
Chlorobenzene *							*
Ethylbenzene *							*
Styrene *							*
Xylene (total) *							*
==========	======	======	======	======	======	======	=====
Toluene-d8							
Bromofluorobenzene *							*
1,2-Dichloroethane-d4							

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Calibration Times: _____ _____

LAB FILE ID: RRF20 = _____ RRF50 = _____

RRF80 = _____ RRF120= _____ RRF160= _____

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Phenol *							*
bis(2-Chloroethyl)ether *							*
2-Chlorophenol *							*
1,3-Dichlorobenzene *							*
1,4-Dichlorobenzene *							*
1,2-Dichlorobenzene *							*
2-Methylphenol *							*
2,2'-oxybis(1-Chloropropane)							*
4-Methylphenol *							*
N-Nitroso-di-n-propylamine *							*
Hexachloroethane *							*
Nitrobenzene *							*
Isophorone *							*
2-Nitrophenol *							*
2,4-Dimethylphenol *							*
bis(2-Chloroethoxy)methane *							*
2,4-Dichlorophenol *							*
1,2,4-Trichlorobenzene *							*
Naphthalene *							*
4-Chloroaniline							*
Hexachlorobutadiene							*
4-Chloro-3-methylphenol *							*
2-Methylnaphthalene *							*
Hexachlorocyclopentadiene							*
2,4,6-Trichlorophenol *							*
2,4,5-Trichlorophenol *							*
2-Chloronaphthalene *							*
2-Nitroaniline							*
Dimethylphthalate							*
Acenaphthylene *							*
2,6-Dinitrotoluene *							*
3-Nitroaniline							*
Acenaphthene *							*
2,4-Dinitrophenol							*
4-Nitrophenol							
Dibenzofuran *							
2,4-Dinitrotoluene *							*
							*

* Compounds with required minimum RRF and maximum %RSD values. All other compounds must meet a minimum RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date(s): _____ _____

Calibration Times: _____ _____

LAB FILE ID: RRF20 = _____ RRF50 = _____

RRF80 = _____ RRF120 = _____ RRF160 = _____

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Diethylphthalate							
4-Chlorophenyl-phenylether *							
Fluorene *							
4-Nitroaniline							
4,6-Dinitro-2-methylphenol							
N-Nitrosodiphenylamine (1)							
4-Bromophenyl-phenylether *							
Hexachlorobenzene *							
Pentachlorophenol *							
Phenanthrene *							
Anthracene *							
Carbazole							
Di-n-butylphthalate							
Fluoranthene *							
Pyrene *							
Butylbenzylphthalate							
3,3'-Dichlorobenzidine							
Benzo(a)anthracene *							
Chrysene *							
bis(2-Ethylhexyl)phthalate							
Di-n-octylphthalate							
Benzo(b)fluoranthene *							
Benzo(k)fluoranthene *							
Benzo(a)pyrene *							
Indeno(1,2,3-cd)pyrene *							
Dibenz(a,h)anthracene *							
Benzo(g,h,i)perylene *							
Nitrobenzene-d5							
2-Fluorobiphenyl *							
Terphenyl-d14 *							
Phenol-d5 *							
2-Fluorophenol *							
2,4,6-Tribromophenol							
p-Chlorophenol-d4 *							
1,2-Dichlorobenzene-d4 *							

(1) Cannot be separated from Diphenylamine

* Compounds with required minimum RRF and maximum %RSD values. All other compounds must meet a minimum RRF of 0.010.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date:_____ Time:_____

Lab File ID: _____ Init. Calib. Date(s):_____ _____

Heated Purge: (Y/N) ___ Init. Calib. Times: _____ _____

GC Column: _____ ID: _____(mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Chloromethane					
Bromomethane					
Vinyl Chloride			0.100		25.0
Chloroethane			0.100		25.0
Methylene Chloride					
Acetone					
Carbon Disulfide					
1,1-Dichloroethene					
1,1-Dichloroethane			0.100		25.0
1,2-Dichloroethene (total)			0.200		25.0
Chloroform					
1,2-Dichloroethane			0.200		25.0
2-Butanone			0.100		25.0
1,1,1-Trichloroethane					
Carbon Tetrachloride			0.100		25.0
Bromodichloromethane			0.100		25.0
1,2-Dichloropropane			0.200		25.0
cis-1,3-Dichloropropene					
Trichloroethene			0.200		25.0
Dibromochloromethane			0.300		25.0
1,1,2-Trichloroethane			0.100		25.0
Benzene			0.100		25.0
trans-1,3-Dichloropropene			0.500		25.0
Bromoform			0.100		25.0
4-Methyl-2-Pentanone			0.100		25.0
2-Hexanone					
Tetrachloroethene					
1,1,2,2-Tetrachloroethane			0.200		25.0
Toluene			0.500		25.0
Chlorobenzene			0.400		25.0
Ethylbenzene			0.500		25.0
Styrene			0.100		25.0
Xylene (total)			0.300		25.0
			0.300		25.0
Toluene-d8					
Bromofluorobenzene			0.200		25.0
1,2-Dichloroethane-d4					

All other compounds must meet a minimum RRF of 0.010.

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date: _____ Time: _____

Lab File ID: _____ Init. Calib. Date(s): _____ _____

Init. Calib. Times: _____ _____

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol			0.800		25.0
bis(2-Chloroethyl)ether			0.700		25.0
2-Chlorophenol			0.800		25.0
1,3-Dichlorobenzene			0.600		25.0
1,4-Dichlorobenzene			0.500		25.0
1,2-Dichlorobenzene			0.400		25.0
2-Methylphenol			0.700		25.0
2,2'-oxybis(1-Chloropropane)					
4-Methylphenol			0.600		25.0
N-Nitroso-di-n-propylamine			0.500		25.0
Hexachloroethane			0.300		25.0
Nitrobenzene			0.200		25.0
Isophorone			0.400		25.0
2-Nitrophenol			0.100		25.0
2,4-Dimethylphenol			0.200		25.0
bis(2-Chloroethoxy)methane			0.300		25.0
2,4-Dichlorophenol			0.200		25.0
1,2,4-Trichlorobenzene			0.200		25.0
Naphthalene			0.700		25.0
4-Chloroaniline					
Hexachlorobutadiene					
4-Chloro-3-methylphenol			0.200		25.0
2-Methylnaphthalene			0.400		25.0
Hexachlorocyclopentadiene					
2,4,6-Trichlorophenol			0.200		25.0
2,4,5-Trichlorophenol			0.200		25.0
2-Chloronaphthalene			0.800		25.0
2-Nitroaniline					
Dimethylphthalate					
Acenaphthylene			1.300		25.0
2,6-Dinitrotoluene			0.200		25.0
3-Nitroaniline					
Acenaphthene			0.800		25.0
2,4-Dinitrophenol					
4-Nitrophenol					
Dibenzofuran			0.800		25.0
2,4-Dinitrotoluene			0.200		25.0

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Calibration Date: _____ Time: _____

Lab File ID: _____ Init. Calib. Date(s): _____ _____

Init. Calib. Times: _____ _____

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate					
4-Chlorophenyl-phenylether			0.400		25.0
Fluorene			0.900		25.0
4-Nitroaniline					
4,6-Dinitro-2-methylphenol					
N-Nitrosodiphenylamine (1)					
4-Bromophenyl-phenylether			0.100		25.0
Hexachlorobenzene			0.100		25.0
Pentachlorophenol			0.050		25.0
Phenanthrene			0.700		25.0
Anthracene			0.700		25.0
Carbazole					
Di-n-butylphthalate					
Fluoranthene			0.600		25.0
Pyrene			0.600		25.0
Butylbenzylphthalate					
3,3'-Dichlorobenzidine					
Benzo(a)anthracene			0.800		25.0
Chrysene			0.700		25.0
bis(2-Ethylhexyl)phthalate					
Di-n-octylphthalate					
Benzo(b)fluoranthene			0.700		25.0
Benzo(k)fluoranthene			0.700		25.0
Benzo(a)pyrene			0.700		25.0
Indeno(1,2,3-cd)pyrene			0.500		25.0
Dibenz(a,h)anthracene			0.400		25.0
Benzo(g,h,i)perylene			0.500		25.0
Nitrobenzene-d5			0.200		25.0
2-Fluorobiphenyl			0.700		25.0
Terphenyl-d14			0.500		25.0
Phenol-d5			0.800		25.0
2-Fluorophenol			0.600		25.0
2,4,6-Tribromophenol					
2-Chlorophenol-d4			0.800		25.0
1,2-Dichlorobenzene-d4			0.400		25.0

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID (Standard): _____ Date Analyzed: _____

Instrument ID: _____ Time Analyzed: _____

GC Column: _____ ID: _____(mm) Heated Purge: (Y/N) ___

	IS1(BCM) AREA	#	RT	#	IS2(DFB) AREA	#	RT	#	IS3(CBZ) AREA	#	RT	#
12 HOUR STD												
UPPER LIMIT												
LOWER LIMIT												
EPA SAMPLE NO.												
01												
02												
03												
04												
05												
06												
07												
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits:

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID (Standard): _____ Date Analyzed: _____

Instrument ID: _____ Time Analyzed: _____

	EPA SAMPLE NO.	IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD						
	UPPER LIMIT						
	LOWER LIMIT						
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab File ID (Standard): _____ Date Analyzed:_____

Instrument ID: _____ Time Analyzed:_____

	IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
12 HOUR STD						
UPPER LIMIT						
LOWER LIMIT						
EPA SAMPLE NO.						
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = +0.50 minutes of internal standard RT
RT LOWER LIMIT = -0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

Attachment A-2
Analytical Data Validation Summary Table

TABLE 1

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

ANALYTICAL DATA VALIDATION SUMMARY
(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
PCBs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-DUP-1	1/1/97	Soil	Tier I	No						Duplicate of EXAMPLE-SS-5 (0.5 - 1)
Metals											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
VOCs											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
SVOCs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	59.0%	<25%	ND(3.6) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	85.3%	<25%	ND(3.6) J	
						Pentachlorophenol	CCAL %D	52.3%	<25%	ND(3.6) J	
PCDDs/PCDFs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	1,2,3,4,7,8-HxCDF	Internal Standard %R	188.0%	25% to 150%	0.00013 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	186.7%	25% to 150%	0.000066 J	
						Total TCDF	Result exceeded calibration range			0.00058 J	
						Total HxCDF	Result exceeded calibration range			0.0021 J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	1,2,3,4,6,7,8-HpCDD	Internal Standard %R	221.1%	25% to 150%	0.000020 J	
						OCDD	Internal Standard %R	235.2%	25% to 150%	0.00022 J	
						1,2,3,4,7,8-HxCDF	Internal Standard %R	422.3%	25% to 150%	0.0000038 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	365.2%	25% to 150%	0.0000020 J	
						2,3,4,6,7,8-HxCDF	Internal Standard %R	332.0%	25% to 150%	0.0000041 J	
						1,2,3,4,6,7,8-HpCDF	Internal Standard %R	222.6%	25% to 150%	0.000011 J	
Cyanide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
Sulfide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						

Validation Annex B

Data Validation Procedures for Analyses of Polychlorinated Biphenyls (PCBs)/ Pesticides and Herbicides in Solid and Liquid Matrices

Validation Annex B

Data Validation Procedures for Analyses of Polychlorinated Biphenyls (PCBs)/Pesticides, and Herbicides in Solid and Liquid Matrices

I. Introduction

This Standard Operating Procedure (SOP) describes the data validation procedures for a United States Environmental Protection Agency (EPA) Region I tiered review of the data for polychlorinated biphenyls (PCBs), pesticides, and herbicides analyzed by EPA Methods 8082, 8081A, and 8151A, respectively. Data review procedures presented in this SOP were developed from the applicable quality control criteria specified in the following documents:

- *Region I Tiered Organic and Inorganic Data Validation Guidelines*, USEPA Region I, July 1, 1993.
- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, USEPA Region I, Draft, December 1996.
- *CLP Organics Data Review and Preliminary Review*, USEPA SOP HW-6, Revision 10, October 1995.
- *USEPA Contract Laboratory Program, Statement of Work for the Organics Analysis, Revision OLM0.1.9*, July 1993.

This SOP will be utilized in the validation of analytical results from solid and liquid samples (e.g., soil, sediment, water, biota). A separate SOP for the validation of PCB data resulting from ambient air samples is provided in Validation Annex F.

II. EPA Region I Tiered Validation Procedures

All analytical data on PCBs, pesticides, and herbicides will be validated to a Tier I level following the procedures presented in the *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses* (July 1996, revised December 1996) and the *Region I Tiered Organic and Inorganic Data Validation Guidelines* (USEPA guidelines). The basic Tier I review consists of a completeness evidence audit to ensure that all laboratory data and documentation are present. Additionally, for projects subject to this FSP/QAPP, the Tier I review will be modified and expanded to include a number of elements of Tier II review, including review of each sample delivery group (SDG) to identify data deficiencies that may potentially result in qualification of the data (e.g., systematic deviations such as low calibration response factors.) Based on this modified Tier I review, a subset of the data will be identified for additional Tier II review. If QA/QC deviations are identified during the modified Tier I review, those deviations will be addressed in the Tier II review. Otherwise, a minimum of 25% of the data will be chosen at random to be subjected to a Tier II review, which will consist of the Tier I completeness evidence audit and review of all data package summary forms for identification of QA/QC parameter deviations. The Tier II data review will be used to identify and evaluate systematic QA/QC deficiencies that may affect any or all of the sample data presented in a specific data package. The Tier II data validation also includes an evaluation of field duplicate Relative Percent Difference (RPD) compliance. Additional Tier II review and Tier III (recalculation of sample results) review may also be performed for a larger portion of the data set, if required, to fully resolve data usability limitations identified during the modified Tier I data review and initial Tier II review for a minimum of 25% of the data chosen at random.

The tiered data validation procedures consisting of modified Tier I review for all data, Tier II review of 25% of the data, and additional Tier II and Tier III review, as required, will be used to evaluate compliance of each data set with the project-specific data quality objectives. The procedures presented in the following sections will be used to perform the Tier I, Tier II, and Tier III data validation reviews. Qualification of analytical data will also be performed, if required, as specified in the data validation protocols presented below.

III. Tier I Validation Procedures

Tier I validation of a data package consists of verifying that all raw data and forms are included and complete. An analytical data validation summary spreadsheet (in the form presented in Attachment B-2) is prepared to document the data review. The following steps are taken to complete a Tier I review:

Step 1 - Review the laboratory case narrative. During review, if there are any deviations that warrant a more extensive validation procedure, a Tier II review would be initiated to evaluate potential data use limitations.

Step 2 - Compare the chain-of-custody and the sample traffic reports. If there are any inconsistencies or if they are incomplete, then contact the laboratory for resolution.

Step 3 - Verify that all forms are present and complete. If any of the forms are not in the data package, contact the laboratory for a resubmission.

Note: If frequent or severe quality control deviations are present on the above-mentioned forms, a more extensive validation procedure may be warranted. Based on the reviewer's judgement, Tier II or Tier III review may be conducted to fully evaluate the usability of the data.

Step 4 - Verify that the following raw data is provided for each sample and associated QA/QC samples in the data package. Contact the laboratory to obtain missing data (if required):

- Case Narrative
- Chain-of-Custody Forms
- Traffic Reports
- QA Sample Summary Forms
- Instrument Calibration Summary Forms
- Instrument Run Logs
- Sample Preparation Logs
- Instrument/Method Detection Limits
- Standards Preparation Logs
- Supporting (raw) Data

Step 5 - With a blue ink pen, record on the first page of the data package: the validation level, date, and reviewer's initials.

In addition to the steps discussed above, the Tier I review of data packages for projects subject to this FSP/QAPP will be expanded to include some elements of Tier II review, including review of the data packages to identify QA/QC deficiencies that may require qualification of the data.

IV. Tier II Validation Procedures

Tier II validation of a data package consists of the steps mentioned above for a Tier I review, plus review of the data package summary forms for identification of QA/QC deviations. Tier II validation does not include review of the "raw data" or recalculation of sample results. Sample qualification is performed (if required) following EPA Region I Guidelines presented in Section I.

A. Data Qualifiers

All data qualified due to QA/QC deviations will be clearly recorded on the data summary package Form I, or laboratory equivalent, with a blue ink pen. The laboratory qualification is lined out and the reviewer's qualification placed next to it. The date and the initials of the reviewer will also be placed on Form I. Below is a list of qualifiers that may be used.

J The compound was positively identified, but the associated numerical value is an estimated concentration. This qualifier is used when the data evaluation procedure identifies a deficiency in the data generation process. This qualifier is also used when a compound or analyte is detected at estimated concentrations less than the practical quantitation limit (PQL). (When this qualifier is used in combination with the letter C -- i.e., JC -- that indicates that the sample result is an estimated concentration due to certain QC deficiencies and that a bias-corrected result is available, as discussed further below.)

U The compound was analyzed for, but was not detected. The sample quantitation limit is presented and adjusted for dilution and (for solid samples only) percent moisture. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL), as presented in Attachment B-1.

UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual level of quantitation. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL) J, as presented in Attachment B-1.

R Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data should not be used for any qualitative or quantitative purposes.

B. Holding Times

Criteria

Samples (waters or soils) and extracts must be preserved at 4° centigrade. Soil and water samples must be extracted within seven days and extracts must be analyzed within 40 days.

Action

Specific holding times for each analysis and sample type are presented in Table 1 of the FSP/QAPP. The following steps are performed for the validation of data due to holding times:

Step 1 - Establish the holding time by comparing the sampling date on the chain-of-custody with the dates of analysis and/or extraction on Form I, or laboratory equivalent. The chain-of-custody is also reviewed to determine if the samples were properly preserved.

Step 2 - If the holding times are exceeded by less than 24 hours, then no qualification of data is needed.

Step 3 - If the holding times are exceeded by more than 24 hours but less than 14 days, then all positive results are qualified as estimated (J) and the non-detected compounds are qualified as estimated (UJ).

Step 4 - If the holding times are exceeded by more than twice the specified holding time, then all results are qualified as unusable (R).

C. Percent Moisture Content

Criteria

Soil/sediment/solid sample results must be adjusted for percent solids and must have percent solids greater than 30%.

Action

The following steps are performed by reviewing the sample result summary form during the validation of percent solids data:

Verify that the percent solids of soil/sediment/solid samples are greater than 30%.

a. Positive and non-detected soil/sediment/solid sample results with a percent solid of less than 10% are qualified as estimated (J) and unusable (R), respectively.

b. Positive and non-detected soil/sediment/solid sample results with percent solid results within the range of greater than 10% to less than 30% are qualified as estimated (J).

Qualification of PCBs/Pesticides/Herbicides Compounds Based on Percent Solids Deviations

Sample Results	Percent Solids > 10.0%and <30.0%	Percent Solids < 10.0%
Detects	J	J
Non-Detects	J	R

D. Pesticides and PCBs Instrument Performance

Criteria

1.0 The laboratory must report retention time window data on the pesticide/PCBs Standards Summary (Form X Pest-1 or Form X Pest-2), or laboratory equivalent, for each GC column used to analyze samples. Compounds must be within these retention time windows.

1.1 The total percent breakdown for neither DDT nor endrin may exceed 20%. The percent breakdown is the amount of decomposition that endrin and 4,4'-DDT undergo when analyzed by the chromatograph.

1.2 The retention time of DCB and TCMX in each analysis of PCBs must be compared to the retention time of the DCB and TCMX in Evaluation Standard Mix A. The Percent Difference (%D) must not exceed 0.3% for narrow-bore capillary columns, and 1.5% if wide-bore capillary columns are used.

Action

Review Form V, or laboratory equivalent, to determine if a mass calibration is in error. If an error is identified, then all data associated with the evaluated spectra are qualified as unusable (R).

2.0 If any compound is outside the retention time window listed on Form X Pest-1, Form X Pest-2, or laboratory equivalent, a Tier III validation is warranted.

2.1 DDT and Endrin degradation deviations are qualified in the following manner:

Step 1 - Review DDT breakdown data presented on Form X Pest-1, or laboratory equivalent, to determine if it is greater than 20%. Beginning with the sample following the last in-control standard qualify the data in the following manner:

a. All positive results for DDT are qualified as estimated (J).

b. If DDT was not detected but DDD and DDE are positive, the quantitation limit for DDT is qualified as unusable (R).

c. All positive results for DDD and/or DDE are qualified as estimated (J).

Step 2 - Review endrin breakdown data presented on Form X Pest-1, or laboratory equivalent, to determine if it is greater than 20%. Beginning with the sample following the last in-control standard and qualify the data in the following manner:

a. All positive results for endrin are qualified as estimated (J).

b. If endrin was not detected but endrin aldehyde and endrin ketone are positive, the quantitation limit for DDT is qualified as unusable (R).

c. All positive results for endrin ketone are qualified as estimated (J).

2.2 Review the retention time %D presented on Form X Pest-1, or laboratory equivalent. The following steps outline the qualification of data for retention time shifts of DCB and TCMX:

Step 1 - If the retention time shift for DCB and TCMX is greater than 0.3% for a narrow-bore capillary column, or 1.5% for a wide-bore capillary column, the data are qualified as unusable (R).

Step 2 - If DCB and TCMX are absent, then the retention time shift cannot be evaluated (i.e., if they are diluted out due to high concentration of a target compound or matrix interference). No qualification of the data is required.

E. Calibration

Criteria

1.0 Initial Calibration for Pesticides

The Percent Relative Standard Deviation (%RSD) of calibration factors for aldrin, endrin, DDT, and dibutylchlorendate must not be greater than 10%. When toxaphene is identified, a three-point calibration is required for quantification. If the calibration factor %RSD for DDT or toxaphene is greater than 10%, calibration curves must be used for the quantitation of DDT, DDE, DDD, or toxaphene.

Note: The %RSD linearity check is required only for columns that are used for quantitation of sample and surrogate results. Columns used only to provide qualitative verification are not required to meet this criterion.

1.1 Initial Calibration PCBs and Herbicides

The %RSD for each PCB or herbicide standard must not be greater than 20%.

1.2 Analytical Sequence

1.2.1 Primary Analysis

At the beginning of each 72-hour period, all standards must be analyzed.

1.2.2 Confirmation Analysis

1.2.3 Evaluation Standard Mix A, B, and C are required for the curve.

1.2.4 Only the standards containing the compounds to be confirmed are required. These standards must be repeated after every five samples.

1.2.5 Evaluation Mix B is required after every 10 samples.

1.3 Continuing Calibration

The calibration factor for each standard must be within 15% of the standard at the beginning of the analytical sequence on quantitation columns (20% on the confirmation columns).

Action

The following steps are performed during the validation of data due to calibration deviations:

Step 1 - Verify that the criterion for the initial calibration linearity have been met by reviewing Form VI Pest-2 and Form VI Pest-3 or laboratory equivalents. If the criteria in sections III.C.1.1 and III.C.1.2 are not met, then all associated positive results are qualified as estimated (J).

Step 2 - Verify by reviewing Form VII Pest-1 and Form VII Pest-2, or laboratory equivalents, that the %D between calibration factors is not greater than 15% for the compound(s) being quantitated (20% for compound(s) being confirmed). If the %D is greater than this criterion, then all associated positive results are qualified as estimated (J).

Qualification of PCBs/Pesticides/Herbicides Compounds Based on Initial Calibration Deviations

Sample Results	Initial Calibration %RSD > 20.0%	Continuing Calibration %D > 15%
Detects	J	J
Non-Detects	-	-

F. Blanks

Criteria

1.0 No contaminants should be present in the blank(s).

1.1 For each matrix and each extracted batch, a method blank must be analyzed.

Action

Qualification of sample results due to blank contamination is dependent on the conditions and origin of the blank. No positive sample results are reported unless the concentration of the compound in the sample exceeds five times the amount in the blank. No sample results are corrected by subtracting blank values. Specific qualifications of sample data are as follows:

Step 1 - Review Form IV, or laboratory equivalent, within the data package to ensure that criteria III.D.1.2 is in compliance. If they are not, the laboratory will be contacted by the reviewer for a written explanation.

Step 2 - Review Form I for all blanks within the data package.

Step 3 - When any compound is detected in the sample and the sample concentration is less than five times the concentration detected in the associated blank, the data are qualified as non-detect (U).

Step 4 - If a compound is found in the blank but not in the sample, then the data are not qualified.

Note: Any difference between the sample analyses and the related blank analyses which involve weights, volumes, or dilution factors, must be taken into account when the 5-times criteria is applied.

The following are examples of how qualifications apply to blank data:

Example 1 (Step 3): When the sample result is greater than the PQL but less than the action level, the sample results are qualified as non-detects. As in the example below, the sample result is less than the blank action level (or 5 x 1); therefore, the sample result is qualified as non-detect.

Factor	5-times
Blank Result	1.0
PQL	0.5
Action Level	5.0
Sample Result	4.0
Qualified Sample Result	4.0 U

Example 2 (Step 4): When the sample result is greater than the blank action level, the sample result is not qualified. As in the example below, the sample result is greater than the blank actin level and the sample result is not qualified.

Factor	5-times
Blank Result	1.0
PQL	0.5
Action Level	5.0
Sample Result	6.0
Qualified Sample Result	6.0

Step 5 - When excessive amounts of contamination exist (i.e., saturated peaks by ECD), all compounds affected are qualified as unusable (R).

G. Surrogate Recovery

Criteria

Sample and blank surrogate recoveries (TCMX and DCB for PCB/pesticides, or 2,4-DB and DCAA for herbicides) must be within the control limits listed in Table 5 of the FSP/QAPP.

Action

Qualification of the data due to surrogate recoveries being out of control is based on the evaluation of all data provided in the data package, especially considering the complexity of the effect of sample matrices. These qualifications are completed in the following steps:

Step 1 - Surrogate recoveries tabulated on Form II, or laboratory equivalent, for each fraction are evaluated against the control limits provided in Table 5 of the FSP/QAPP.

Note: Steps 2 through 5 apply to pesticides and PCBs only.

Step 2 - If both TCMX and DCB recoveries are less than the lower control limit, all positive results are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the "Notes" field of the Analytical Data Validation Summary (Attachment B-2).

Step 3 - If both TCMX and DCB recoveries are less than the lower control limit but greater than 10%, all non-detected results are qualified as estimated (UJ).

Step 4 - In both TCMX or DCB recoveries are less than 10%, the non-detected results are qualified as unusable (R).

Step 5 - If both TCMX and DCB recoveries are greater than the upper control limit, all positive results are qualified as estimated (J).

Step 6 - If the surrogate for herbicide analysis recovery is less than the lower limit, all positive results are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) re-analyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC) and the bias-corrected result will be presented in the "Notes" field of the Analytical Data Validation Summary (Attachment B-2).

Step 7 - If the surrogate for herbicide analysis recovery is less than the lower limit and greater than 10%, all non-detected results are qualified as estimated (UJ).

Step 8 - In the case where the herbicide surrogate is less than 10%, the data are qualified as unusable (R).

Step 9 - If the herbicide surrogate recovery is greater than the upper control limit all positive results are qualified as estimated (J).

Qualification of Compounds Based on Surrogate Recovery Deviations

Sample Results	Recovery < 10%	10% ≤ %Recovery < LL	Lower QC Limit ≤ Recovery ≤ UL	Recovery > UL
Detects	JC	JC	-	J
Non-Detects	R	ND()J	-	-

LL- Lower limit of method QC acceptance criteria.
UL- Upper limit of method QC acceptance criteria.

H. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Criteria

1.0 Spike recoveries must be within the control limits in Table 5 of the FSP/QAPP.

1.1 The RPD values between MS and MSD recoveries must be within the control limits specified in Table 5.

Action

If recovery results are not within the control limits, the following steps are taken to qualify the data:

Step 1 - If the recovery results are greater than the lower control limits presented in Table 5, the positive results for the compound are qualified as estimated (J)

Step 2 - If the recovery result is less than the lower control limit presented in Table 5, the positive results for the compound are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) re-analyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the "Notes" field of the Analytical Data Validation Summary.

Step 3 - If the recovery result is less than 10%, the non-detects for that compound in the unspiked sample are qualified as rejected (R). This is the only instance that a non-detect is qualified due to recovery results being out of control.

Step 4 - If any of the RPD values are greater than the limits presented in Table 5, positive results for that compound are qualified as estimated (J) in the unspiked sample.

Qualification of Compounds Based on MS/MSD Recovery and MS/MSD RPD Deviations

Sample Results	Recovery < 10%	10% ≤ %Recovery < Lower QC Limit	Lower QC Limit ≤ Recovery ≤ Upper QC Limit	Recovery > Upper QC Limit	RPD > QC Limit
Detects	JC	JC	-	J	J
Non-Detects	R	-	-	-	-

I. Field Duplicates

Criteria

1.0 For water matrices, each compound with a detectable concentration two times greater than the PQL must have an RPD value that is less than 30%.

1.1 For soil matrices, each compound with a detectable concentration two times greater than the PQL must have an RPD value that is less than 50%.

Action

Step 1 - Calculate all RPD values for positive results between the sample and the field duplicate.

$$\text{Calculation: RPD} = \frac{\text{Sample Result - Field Duplicate}}{(\text{Sample Result + Field Duplicate})/2} \times 100$$

Step 2 - If the RPD value is greater than 30% in a water matrix and both sample results are greater than two times the PQL, the result for that compound in both samples is qualified as estimated (J).

Step 3 - If the RPD value is greater than 50% in a soil matrix and both sample results are greater than two times the PQL, the result for that compound in both samples is qualified as estimated (J).

Step 4 - If the both sample results are less than two times the PQL, qualification of the sample data is not required.

Step 5 - If the one sample result is less than two times the PQL and the other is greater than two times the PQL, the result for that compound in both samples is qualified as estimated (J).

Qualification Data Based on Field Duplicate RPD Deviations

RPD	Aqueous > 30% Non-Aqueous > 50%	Aqueous > 30% Non-Aqueous > 50%	Aqueous > 30% Non-Aqueous > 50%
Sample Results	Both duplicate sample concs. $\geq$ 2 times PQL	PQL $\leq$ both duplicate samples concs. < 2 times PQL and $\geq$ PQL	One sample conc. $\geq$ 2 times PQL and other sample conc. < 2 times PQL
Detects	J	-	J
Non-Detects	-	-	-

V. Tier III Validation Procedures

Tier III validation of a data package consists of the steps mentioned above for a Tier I and Tier II validation plus review of the "raw data" and recalculation of approximately 10% of the sample results. The compound identification, instrument performance, quantitation, and detection limits are also evaluated.

A. Compound Quantitation and Reported Quantitation Limits

Criteria

The quantitation of detected compounds and the adjustment of the PQL for dilutions and percent solids, must be recalculated for 10% of the data.

Action

Step 1 - If the criteria above have not been followed, the laboratory will be contacted by the reviewer and the laboratory will be responsible for a correction of the quantitation and resubmission of the reported data.

Step 2 - Quantitation limits affected by large, off-scale peaks are qualified as unusable (R).

Step 3 - If the interference is on-scale, the quantitation limit is qualified as estimated (J).

B. Instrument Performance

Criteria

The laboratory must report retention time window data on the pesticide/PCBs standards summary (Form X Pest-1 or Form X Pest-2) or laboratory equivalent for each GC column used to analyze samples. Compounds must be within these retention time windows.

Action

Retention time windows are used in qualitative identification. If the sample results are not within the retention time windows, the following steps are taken to evaluate the data:

Step 1 - The chromatogram is reviewed to see if there are any peaks within an expanded window surrounding the expected retention time window of the compound of interest.

Step 2 - If there are no peaks present either within or close to the retention time window of the out of control targeted compound, then there is no qualification of the data. Non-detected results are considered valid.

Step 3 - If there are peaks present above or close to the PQL and either within or close to the retention time window of the out of control targeted compound, all positive data are qualified as unusable (R).

C. Compound Identification

Criteria

Reported compounds must be within calculated retention time windows for both chromatographic columns.

Action

The following steps are taken during the compound identification:

Step 1 - When the qualitative criteria for two-column confirmation are not met, all reported positive detects are reported as non-detects. The reviewer uses professional judgment and the following steps to report the appropriate quantitation limit:

a. If the misidentified peak was sufficiently outside the target compound retention time window, then the PQL is reported.

b. If the misidentified peak poses an interference with potential detection of a target peak, the reported value is qualified as the estimated (J) quantitation limit.

Step 2 - When PCBs or multi-peak pesticides exhibit marginal pattern-matching quality, the reviewer's professional judgment is used to confirm whether the differences are credited to environmental "weathering." If the presence of a PCB/multi-peak pesticide is strongly suggested, results are reported as being present.

Step 3 - When an observed pattern closely matches more than one Aroclor, professional judgment is used to decide whether the neighboring Aroclor is a better match, or if multiple Aroclors are present.

Attachment B-1
Laboratory Reporting Forms for Pesticides and Polychlorinated Biphenyls

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water)_____ Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) _____ Date Extracted:_____

Concentrated Extract Volume: _____(uL) Date Analyzed: _____

Injection Volume: _____(uL) Dilution Factor: _____

GPC Cleanup: (Y/N)___ pH:____ Sulfur Cleanup: (Y/N) ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)_____	Q
319-84-6	alpha-BHC		
319-85-7	beta-BHC		
319-86-8	delta-BHC		
58-89-9	gamma-BHC (Lindane)		
76-44-8	Heptachlor		
309-00-2	Aldrin		
1024-57-3	Heptachlor epoxide		
959-98-8	Endosulfan I		
60-57-1	Dieldrin		
72-55-9	4,4'-DDE		
72-20-8	Endrin		
33213-65-9	Endosulfan II		
72-54-8	4,4'-DDD		
1031-07-8	Endosulfan sulfate		
50-29-3	4,4'-DDT		
72-43-5	Methoxychlor		
53494-70-5	Endrin ketone		
7421-36-3	Endrin aldehyde		
5103-71-9	alpha-Chlordane		
5103-74-2	gamma-Chlordane		
8001-35-2	Toxaphene		
12674-11-2	Aroclor-1016		
11104-28-2	Aroclor-1221		
11141-16-5	Aroclor-1232		
53469-21-9	Aroclor-1242		
12672-29-6	Aroclor-1248		
11097-69-1	Aroclor-1254		
11096-82-5	Aroclor-1260		

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): _____ ID: _____(mm) GC Column(2): _____ ID: _____(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

2F

SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): _____ ID: _____(mm) GC Column(2): _____ ID: _____(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

3E

WATER PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)____					
Heptachlor_____					56-123
Aldrin_____					40-131
Dieldrin_____					40-120
Endrin_____					52-126
4,4'-DDT_____					56-121
					38-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)____						
Heptachlor_____					15	56-123
Aldrin_____					20	40-131
Dieldrin_____					22	40-120
Endrin_____					18	52-126
4,4'-DDT_____					21	56-121
					27	38-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD:_____ out of _____ outside limits
Spike Recovery:_____ out of _____ outside limits

COMMENTS: _____

SOIL PESTICIDE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
gamma-BHC (Lindane)					46-127
Heptachlor					35-130
Aldrin					34-132
Dieldrin					31-134
Endrin					42-139
4,4'-DDT					23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
gamma-BHC (Lindane)					50	46-127
Heptachlor					31	35-130
Aldrin					43	34-132
Dieldrin					38	31-134
Endrin					45	42-139
4,4'-DDT					50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: _____ out of _____ outside limits
Spike Recovery: _____ out of _____ outside limits

COMMENTS: _____

4C

PESTICIDE METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: _____ Lab File ID: _____

Matrix: (soil/water) _____ Extraction: (SepF/Cont/Sonc) _____

Sulfur Cleanup: (Y/N) __ Date Extracted: _____

Date Analyzed (1): _____ Date Analyzed (2): _____

Time Analyzed (1): _____ Time Analyzed (2): _____

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Level (x low): low _____ mid _____ high _____

GC Column: _____ ID: _____(mm) Date(s) Analyzed: _____ _____

COMPOUND	RT OF STANDARDS LOW	MID	HIGH	MEAN RT	RT WINDOW FROM	TO
alpha-BHC						
beta-BHC						
delta-BHC						
gamma-BHC (Lindane)						
Heptachlor						
Aldrin						
Heptachlor epoxide						
Endosulfan I						
Dieldrin						
4,4'-DDE						
Endrin						
Endosulfan II						
4,4'-DDD						
Endosulfan sulfate						
4,4'-DDT						
Methoxychlor						
Endrin ketone						
Endrin aldehyde						
alpha-Chlordane						
gamma-Chlordane						
Tetrachloro-m-xylene						
Decachlorobiphenyl						

* Surrogate retention times are measured from Standard Mix A analyses.

Retention time windows are ± 0.05 minutes for all compounds that elute before Heptachlor epoxide, ±0.07 minutes for all other compounds, except ±0.10 minutes for Decachlorobiphenyl.

6E

PESTICIDE INITIAL CALIBRATION OF SINGLE COMPONENT ANALYTES

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Level (x low): low _____ mid _____ high _____

GC Column: _____ ID: _____(mm) Date(s) Analyzed: _____ _____

COMPOUND	CALIBRATION FACTORS LOW	MID	HIGH	MEAN	%RSD
alpha-BHC					
beta-BHC					
delta-BHC					
gamma-BHC (Lindane)					
Heptachlor					
Aldrin					
Heptachlor epoxide					
Endosulfan I					
Dieldrin					
4,4'-DDE					
Endrin					
Endosulfan II					
4,4'-DDD					
Endosulfan sulfate					
4,4'-DDT					
Methoxychlor					
Endrin ketone					
Endrin aldehyde					
alpha-Chlordane					
gamma-Chlordane					
Tetrachloro-m-xylene					
Decachlorobiphenyl					

* Surrogate calibration factors are measured from Standard Mix A analyses.

%RSD must be less than or equal 20.0 % for all compounds except the surrogates, where %RSD must be less than or equal to 30.0%. Up to two target compounds, but not surrogates, may have %RSD greater than 20.0% but less than or equal to 30.0%.

6F

PESTICIDE INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Date(s) Analyzed: _____ _____

GC Column: _____ ID: _____(mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
Toxaphene		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1016		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1221		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1232		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1242		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1248		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1254		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1260		*1				
		*2				
		*3				
		4				
		5				

* Denotes required peaks

6G

PESTICIDE ANALYTE RESOLUTION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column (1): _____ ID: _____ (mm) Instrument ID (1): _____

EPA Sample No. (Standard 1): _____ Lab Sample ID (1): _____

Date Analyzed (1): _____ Time Analyzed (1): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
05			
06			
07			
08			
09			

GC Column (2): _____ ID: _____ (mm) Instrument ID (2): _____

EPA Sample No. (Standard 2): _____ Lab Sample ID (2): _____

Date Analyzed (2): _____ Time Analyzed (2): _____

	ANALYTE	RT	RESOLUTION (%)
01			
02			
03			
04			
05			
06			
07			
08			
09			

Resolution of two adjacent peaks must be calculated as a percentage of the height of the smaller peak, and must be greater than or equal to 80.0%.

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Init. Calib. Date(s):_____ _____

EPA Sample No.(PIBLK): _____ Date Analyzed :_____

Lab Sample ID (PIBLK):_____ Time Analyzed :_____

EPA Sample No.(PEM): _____ Date Analyzed :_____

Lab Sample ID (PEM):_____ Time Analyzed :_____

PEM COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	RPD
alpha-BHC						
beta-BHC						
gamma-BHC (Lindane)						
Endrin						
4,4'-DDT						
Methoxychlor						

4,4'-DDT % breakdown (1): _____ Endrin % breakdown (1): _____

Combined % breakdown (1): _____

QC LIMITS:

RPD of amounts in PEM must be less than or equal to 25.0%

4,4'-DDT breakdown must be less than or equal to 20.0%

Endrin breakdown must be less than or equal to 20.0%

Combined breakdown must be less than or equal to 30.0%

7E

PESTICIDE CALIBRATION VERIFICATION SUMMARY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Init. Calib. Date(s):_____ _____

EPA Sample No.(PIBLK): _____ Date Analyzed :_____

Lab Sample ID (PIBLK): _____ Time Analyzed :_____

EPA Sample No.(INDA): _____ Date Analyzed :_____

Lab Sample ID (INDA): _____ Time Analyzed :_____

INDIVIDUAL MIX A COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	RPD
alpha-BHC						
gamma-BHC (Lindane)						
Heptachlor						
Endosulfan I						
Dieldrin						
Endrin						
4,4'-DDD						
4,4'-DDT						
Methoxychlor						
Tetrachloro-m-xylene						
Decachlorobiphenyl						

EPA Sample No.(INDB): _____ Date Analyzed :_____

Lab Sample ID (INDB): _____ Time Analyzed :_____

INDIVIDUAL MIX B COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	RPD
beta-BHC						
delta-BHC						
Aldrin						
Heptachlor epoxide						
4,4'-DDE						
Endosulfan II						
Endosulfan sulfate						
Endrin ketone						
Endrin aldehyde						
alpha-Chlordane						
gamma-Chlordane						
Tetrachloro-m-xylene						
Decachlorobiphenyl						

QC LIMITS: RPD of amounts in the Individual Mixes must be less than or equal to 25.0%.

8D
PESTICIDE ANALYTICAL SEQUENCE

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Init. Calib. Date(s): _____ _____

Instrument ID: _____

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: _____ DCB: _____

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

	QC LIMITS
TCX = Tetrachloro-m-xylene	(± 0.05 MINUTES)
DCB = Decachlorobiphenyl	(± 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

9A

PESTICIDE FLORISIL CARTRIDGE CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Florisil Cartridge Lot Number: _____ Date of Analysis: _____

GC Column(1): _____ ID: _____(mm) GC Column(2): _____ ID: _____(mm)

COMPOUND	SPIKE ADDED (ng)	SPIKE RECOVERED (ng)	% REC #	QC LIMITS
alpha-BHC				80-120
gamma-BHC (Lindane)				80-120
Heptachlor				80-120
Endosulfan I				80-120
Dieldrin				80-120
Endrin				80-120
4,4'-DDD				80-120
4,4'-DDT				80-120
Methoxychlor				80-120
Tetrachloro-m-xylene				80-120
Decachlorobiphenyl				80-120

Column to be used to flag recovery with an asterisk.
* Values outside of QC limits.

THIS CARTRIDGE LOT APPLIES TO THE FOLLOWING SAMPLES, BLANKS, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

9B
PESTICIDE GPC CALIBRATION

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GPC Column: _____ Calibration Date: _____

GC Column(1): _____ ID: _____(mm) GC Column(2): _____ ID: _____(mm)

COMPOUND	SPIKE ADDED (ng)	SPIKE RECOVERED (ng)	% REC #	QC. LIMITS REC.
gamma-BHC (Lindane)				80-110
Heptachlor				80-110
Aldrin				80-110
Dieldrin				80-110
Endrin				80-110
4,4'-DDT				80-110

Column to be used to flag recovery values with an asterisk
* Values outside of QC limits

THIS GPC CALIBRATION APPLIES TO THE FOLLOWING SAMPLES, BLANKS, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

10A

PESTICIDE IDENTIFICATION SUMMARY FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID : _____ Date(s) Analyzed: _____ _____

Instrument ID (1): _____ Instrument ID (2): _____

GC Column(1): _____ ID: _____(mm) GC Column(2): _____ ID: _____(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

10B
PESTICIDE IDENTIFICATION SUMMARY FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

Lab Name: ______________ Contract: ______________

Lab Code: ________ Case No.: ________ SAS No.: ________ SDG No.: ________

Lab Sample ID : ______________ Date(s) Analyzed: ________ ________

Instrument ID (1): ______________ Instrument ID (2): ______________

GC Column(1): ____________ ID: ______(mm) GC Column(2): ____________ ID: ______(mm)

ANALYTE	PEAK	RT	RT WINDOW		CONCENTRATION	MEAN CONCENTRATION	%D
			FROM	TO			
________	1						
COLUMN 1	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
________	1						
COLUMN 1	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						
________	1						
COLUMN 1	2						
	3						
	4						
	5						
COLUMN 2	1						
	2						
	3						
	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes

page __ of __

Attachment B-2
Analytical Data Validation Summary

TABLE 1

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

ANALYTICAL DATA VALIDATION SUMMARY
(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
PCBs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-DUP-1	1/1/97	Soil	Tier I	No						Duplicate of EXAMPLE-SS-5 (0 5 - 1)
Metals											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5 62) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
VOCs											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
SVOCs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	59.0%	<25%	ND(3.6) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	85.3%	<25%	ND(3.6) J	
						Pentachrolophenol	CCAL %D	52.3%	<25%	ND(3.6) J	
PCDDs/PCDFs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	1,2,3,4,7,8-HxCDF	Internal Standard %R	188.0%	25% to 150%	0.00013 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	186.7%	25% to 150%	0.000066 J	
						Total TCDF	Result exceeded calibration range			0.00058 J	
						Total HxCDF	Result exceeded calibration range			0.0021 J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	1,2,3,4,6,7,8-HpCDD	Internal Standard %R	221.1%	25% to 150%	0.000020 J	
						OCDD	Internal Standard %R	235.2%	25% to 150%	0.00022 J	
						1,2,3,4,7,8-HxCDF	Internal Standard %R	422.3%	25% to 150%	0.0000038 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	365.2%	25% to 150%	0.0000020 J	
						2,3,4,6,7,8-HxCDF	Internal Standard %R	332.0%	25% to 150%	0.0000041 J	
						1,2,3,4,6,7,8-HpCDF	Internal Standard %R	222.6%	25% to 150%	0.000011 J	
Cyanide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
Sulfide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						

Validation Annex C

Data Validation Procedures for Inorganic Analytes

Validation Annex C

Data Validation Procedures for Inorganic Analytes

I. Introduction

This Standard Operating Procedure (SOP) describes the data validation procedures for a United States Environmental Protection Agency (EPA) Region I tiered review of the data for inorganic analytes by EPA Methods 5000, 6000, and 9000 series. Data review procedures presented in this SOP were developed from the applicable quality control criteria specified in the following documents:

- *Region I Tiered Organic and Inorganic Data Validation Guidelines,* USEPA Region I, July 1, 1993.
- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*, USEPA Region I, June 13, 1988 (Modified February 1989).
- *Evaluation of Metals Data for the Contract Laboratory Program,* USEPA SOP HW-2, Revision 11, January 1992.
- *USEPA Contract Laboratory Program, Statement of Work for the Inorganics Analysis, Revision OLM0.1.9,* July 1993.

II. EPA Region I Tiered Validation Procedures

All inorganic analytical data will be validated to a Tier I level following the procedures presented in the *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses* (July 1996, revised December 1996) and the *Region I Tiered Organic and Inorganic Data Validation Guidelines* (USEPA guidelines). The basic Tier I review consists of a completeness evidence audit to ensure that all laboratory data and documentation are present. Additionally, for projects subject to this FSP/QAPP, the Tier I review will be modified and expanded to include a number of elements of Tier II review, including review of each sample delivery group (SDG) to identify data deficiencies that may potentially result in qualification of the data (e.g., systematic deviations such as low calibration response factors.) Based on this modified Tier I review, a subset of the data will be identified for additional Tier II review. If QA/QC deviations are identified during the modified Tier I review, those deviations will be addressed in the Tier II review. Otherwise, a minimum of 25% of the data will be chosen at random to be subjected to a Tier II review, which will consist of the Tier I completeness evidence audit and review of all data package summary forms for identification of QA/QC parameter deviations. The Tier II data review will be used to identify and evaluate systematic QA/QC deficiencies that may affect any or all of the sample data presented in a specific data package. The Tier II data validation also includes an evaluation of field duplicate Relative Percent Difference (RPD) compliance. Additional Tier II review and Tier III (recalculation of sample results) review may also be performed for a larger portion of the data set, if required, to fully resolve data usability limitations identified during the modified Tier I data review and initial Tier II review for 25% of the data chosen at random.

The tiered data validation procedures consisting of modified Tier I review for all data, Tier II review of a minimum of 25% of the data, and additional Tier II and Tier III review, as required, will be used to evaluate compliance of each data set with the project-specific data quality objectives. The procedures presented in the following sections will be used to perform the Tier I, Tier II, and Tier III data validation reviews. Qualification of analytical data will also be performed, if required, as specified in the data validation protocols presented below.

III. Tier I Validation Procedures

Tier I validation of a data package consists of verifying that all raw data and forms are included and complete. A data validation summary spreadsheet (in the form presented in Attachment C-1) is prepared to document the data review. The following steps are taken to complete a Tier I validation:

Step 1 - Review the laboratory case narrative. During review, if there are any deviations that warrant a more extensive validation procedure, a Tier II review would be initiated to evaluate potential data use limitations.

Step 2 - Compare the chain-of-custody and the sample traffic reports. If there are any inconsistencies or if they are incomplete, then contact the laboratory for resolution.

Step 3 - Verify that all forms presented are present and complete. If any of the required forms are not in the data package, contact the laboratory for a resubmission.

Note: If frequent or severe quality control deviations are present on the above-mentioned forms, a more extensive validation procedure may be warranted. Based on the reviewer's judgement, Tier II or Tier III review may be conducted to fully evaluate the usability of the data.

Step 4 - Verify that the following raw data is provided for each sample and associated QA/QC samples in the data package. Contact the laboratory to obtain missing data (if required):

- Case Narrative
- Chain-of-Custody Forms
- Traffic Reports
- QA Sample Summary Forms
- Instrument Calibration Summary Forms
- Instrument Run Logs
- Sample Preparation Logs
- Instrument/Method Detection Limits
- Standards Preparation Logs
- Supporting (raw) Data

Step 5 - With a blue ink pen, record on the first page of the data package: the validation level, date, and reviewer's initials.

In addition to the steps discussed above, the Tier I review of data packages for projects subject to this FSP/QAPP will be expanded to include some elements of Tier II review, including review of the data packages to identify QA/QC deficiencies that may require qualification of the data.

IV. Tier II Validation Procedures

Tier II validation of a data package consists of the steps mentioned above for a Tier I review, plus review of the data package summary forms for identification of QA/QC deviations. Tier II validation does not include review of the "raw data" or recalculation of sample results. Sample qualification is performed (if required) following EPA Region I Guidelines presented in Section I.

A. Data Qualifiers

All data qualified due to QA/QC deviations will be clearly recorded on the data summary package Form I, or laboratory equivalent, with a blue ink pen. The laboratory qualification is lined out and the reviewer's qualification placed next to it. The date and the initials of the reviewer will also be placed on Form I. Below is a list of qualifiers that may be used.

J The compound was positively identified, but the associated numerical value is an estimated concentration. This qualifier is used when the data evaluation procedure identifies a deficiency in the data generation process. This qualifier is also used when a compound or analyte is detected at estimated concentrations less than the practical quantitation limit (PQL). (When this qualifier is used in combination with the letter C -- i.e., JC -- that indicates that the sample result is an estimated concentration due to certain QC deficiencies and that a bias-corrected result is available, as discussed further below.)

U The compound was analyzed for, but was not detected. The sample quantitation limit is presented and adjusted for dilution and (for solid samples only) percent moisture. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL), as presented in Attachment C-1.

UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual level of quantitation. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL) J, as presented in Attachment C-1.

R Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data should not be used for any qualitative or quantitative purposes.

B. Holding Times

Criteria

The holding times presented in Table 1 of the FSP/QAPP for the inorganic analysis must not be exceeded.

Action

The following steps are performed to review holding times for Tier II validation:

Step 1 - Establish the holding time by comparing the sampling date on the chain-of-custody with the dates of analysis and/or digestion on Form I. The chain-of-custody is also reviewed to determine if the samples were properly preserved.

Step 2 - If the holding times are exceeded by less than 24 hours, no qualification of data is needed.

Step 3 - If the holding times are exceeded by more than 24 hours but less than 14 days, all positive results are qualified as estimated (J) and the non-detected compounds are qualified as estimated (UJ).

Step 4 - If the holding times are exceeded by more than twice the specified holding time, all associated results are qualified as unusable (R).

C. Percent Moisture Content

Criteria

Soil/sediment/solid sample results must be adjusted for percent solids and must have percent solids greater than 30%.

Action

The following steps are performed by reviewing the sample result summary form during the validation of percent solids data:

Verify that the percent solids of soil/sediment/solid samples are greater than 30%.

a. Soil/sediment/solid sample results with a percent solid of less than 10% are qualified as unusable (R)

b. Positive and non-detected soil/sediment/solid sample results with percent solid results within the range of greater than 10% to less than 30% are qualified as estimated (J) and unusable (R), respectively.

D. Calibration

Criteria

1.0 Instruments must be calibrated daily and each time the instrument is set up for analysis.

1.1 Initial Calibration ICP

A blank and at least one standard must be used in establishing the analytical curve.

1.2 Initial Calibration Atomic Absorption Analysis

A blank and at least three standards must be used in establishing the analytical curve.

1.3 Initial Calibration-Mercury

A blank and at least four standards must be used in establishing the analytical curve.

1.4 Initial Calibration-Cyanide

1.4.1 A blank and at least three standards must be used in establishing the analytical curve.

1.4.2 At least one mid-point standard must be distilled before analysis.

1.5 Initial and Continuing Calibration Verification (ICV and CCV)

1.5.1 A certified standard must be used for the initial Calibration Verification (ICV) and must be analyzed for each wavelength used for analysis.

1.5.2 All percent recoveries of the ICVs and CCVs for all the analytes must be within 90 to 110%, except for mercury and cyanide.

1.5.3 All percent recoveries of all the ICVs and CCVs for mercury must be within 80 to 120%.

1.5.4 All percent recoveries of all the ICVs and CCVs for cyanide must be within 85 to 115%.

1.5.5 A CCV must be analyzed every 10 samples or every 2 hours, whichever is more frequent.

1.5.6 To verify linearity near the contract required detection limit (CRDL) for ICP analysis, a standard with a concentration that is two times the CRDL or two times the IDL (whichever is greater) must be analyzed. The recoveries for the CRDL standards must be within the limits of 80 to 120%.

Action

The following steps are performed to review inorganic calibration for Tier II validation:

Step 1 - Verify that the instrument was calibrated daily and every time it was set up by reviewing Form XIV, or laboratory equivalent. Also, verify that the correct number of standards were used for the initial calibration for each analyte reported. If any of these are not completed by the laboratory, the data are qualified as unusable (R).

Step 2 - Verify that a mid-range standard was distilled by reviewing Form XIII, or laboratory equivalent. If a mid-range standard for cyanide was not distilled or did not meet the 85 to 115% criteria, all positive and non-detected results are qualified as estimated (J) and (UJ), respectively.

Step 3 - Review Form II (Part 1), or laboratory equivalent, for the identification of the source of the ICV and CCV. If they are not from different sources, all positive and non-detected results are qualified as estimated (J) and (UJ), respectively.

Step 4 - ICV and CCV percent recovery Form II (Part 1), or laboratory equivalent, are reviewed against the above mentioned criteria. If the ICV or CCV percent recoveries are outside the acceptance criteria, the following steps are taken to qualify the data:

a. If the ICV and CCV percent recoveries are not within the control limits but are within the ranges of 75-89%, or 111-125% (CN, 70-84% or 116-130%; Hg, 65-79% or 121-135%), all results greater than the IDL are qualified as estimated (J).

b. If the ICV and CCV percent recoveries are not within the control limits but are within the ranges of 111-125 % (CN, 116-130%; Hg, (121-135%), all non-detected results are not qualified.

c. If the ICV and CCV percent recovery are not within the control limits, but are within the ranges of 75 to 89% (CN, 70 to 84%; Hg, 65 to 79%), all non-detected results are qualified as estimated (UJ).

d. If the ICV and CCV percent recoveries are not within the control limit ranges of 75 to 89% (CN, 70 to 84%; Hg, 65 to 79%), all non-detected results are qualified as unusable (R).

Step 5 - Form XIV, or laboratory equivalent, is reviewed to verify that the CCVs were analyzed in the required intervals. If they were not analyzed at the required intervals, all positive and non-detected results are qualified as estimated (J) and (UJ), respectively.

Step 6 - Form II (Part 2), or laboratory equivalent, is reviewed to verify that the CRDL standards are within the required control limits of +/-20% of the true value. If the CRDL standard for ICP is not within +/-20% of the true value, positive results less than 3 times the CRDL and non-detects are qualified as estimated (J) and (UJ), respectively.

E. Blanks

Criteria

1.0 No contaminants should be present in the blank(s).

1.1 For each matrix, for every 20 samples digested, or for each batch digested, a preparation blank must be analyzed.

1.2 A calibration blank must be analyzed after every 10 samples or every 2 hours, whichever is more frequent.

Action

Qualification of sample results due to blank contamination is dependent on the conditions and origin of the blank. No positive sample results are reported unless the concentration of the compound in the sample exceeds five times the amount in the blank. No sample results are corrected by subtracting blank values. Specific qualifications of sample data are as follows:

Step 1 - Review Form III, or laboratory equivalent, for all blanks within the data package.

Step 2 - If a blank result if greater than two times the negative IDL, all non-detects are qualified as estimated (UJ).

Step 3 - If an analyte is found in the blank but not in the sample, then the data are not qualified.

Step 4 - When an analyte is detected in the sample and the sample concentration is less than five times the concentration detected in the associated blank, the data are qualified as non-detected (U).

Step 5 - When a positive result is greater than the action level, the result is not qualified.

Note: Any difference between the sample analyses and the related blank analyses which involve weights, volumes, or dilution factors, must be taken into account when the 5-times criteria is applied.

The following are examples of how qualifications apply to blank data:

Example 1 (Step 4): When the sample result is less than the IDL but greater than the action level, positive results less than the action level are qualified as non-detect.

Factor	5-times
Blank Result	7
PQL	5
Action Level	35
Sample Result	22
Qualified Sample Result	22 U

Example 2 (Step 5): When the sample result is greater than the IDL and the action level, no qualification is used.

Factor	5-times
Blank Result	10
PQL	8
Action Level	50
Sample Result	70
Qualified Sample Result	70

F. ICP Interference Check Sample (ICS)

Criteria

1.0 The ICS must be analyzed at the beginning and the end of each sample analysis run or a minimum of twice per 8-hour working shift, whichever is more frequent.

1.1 The percent recovery for the ICS solution AB must be within the control limits of +/- 20% of the true value.

Note: Interferant Element Concentration Used for ICP Interference Check Sample

Element	Concentration (mg/L)
Al	500
Ca	500
Fe	200
Mg	500

Action

The following steps are performed to review the ICS for Tier II validation:

Step 1 - Review Form XIV, or laboratory equivalent, to ensure the ICS is analyzed at the proper frequency. If the ICS is not analyzed at the correct frequency, detect and non-detected sample results are qualified as estimated (J) and (UJ), respectively.

Step 2 - Verify on the ICS recovery Form IV, or laboratory equivalent, that the percent recovery results for the ICS solution AB are within the control limits of 80 to 120%. Also review Form I for concentrations of As, Ca, Mg, and Fe to confirm that they are a minimum of 50% of their respective levels in the ICS. The following steps are taken in reviewing the data:

a. If the ICS recovery for an element is greater than 120% and the reported sample results are non-detect, no qualification of the data is needed.

b. If the ICS recovery for an element is greater than 120% and the reported sample results are greater than the IDL, the affected data are qualified as an estimate (J).

c. If the ICS recovery for an element is between 50 and 79% and the reported results are greater than the IDL, the affected data are qualified as an estimate (J).

d. If the ICS recovery for an element is between 50 and 79% and the reported results are non-detected, the affected data are qualified as an estimate (UJ).

e. If the ICS recovery for an element is less than 50%, the sample results are qualified as unusable (R).

Step 3 - When sample results greater than the IDL are reported for elements which are not present in the ICS solution, there is the possibility of false positives. Sample results greater than two times the IDL with levels of interferents that are 50% or more of the levels found in the ICS solution are qualified as estimated (J).

Step 4 - When negative sample results with an absolute value greater than two times the IDL are reported for elements which are not present in the ICS solution, there is the possibility of false negatives. When the levels of interferents for these samples are 50% or more of the levels found in the ICS solution, the sample results are qualified as estimated (UJ).

G. Matrix Spike (MS) Sample Analysis

Criteria

1.0 Samples identified as field blanks cannot be used for spiked sample analysis.

1.1 Spike recoveries must be within the control limits of 75 to 125%. However, the control limits do not apply when the sample concentration surpasses the spike concentration by a factor of four or more.

1.2 If the MS recovery does not meet criteria, a post-digestion spike is required and reported on Form 5B, or laboratory equivalent, for ICP, Flame, Mercury, and Cyanide. Post-digestion spikes are also required for all furnace analyses, but recoveries are reported on the raw data and are reviewed in a Tier III evaluation.

Action

The following steps are performed to review inorganic MS analysis for Tier II validation:

Step 1 - MS recoveries are reviewed on Form V (Part 1), or laboratory equivalent. If they are out of the control limits of 75 to 125% the following steps are taken:

a. When the spike recovery is greater than 125% and the reported sample results are non-detected, no qualification of data is needed.

b. When the spike recovery is greater than 125% and the reported sample results are greater than the IDL, the data are qualified as estimated (J).

c. When the spike recovery is less than 75% and the reported sample results are greater than the IDL, detected results are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC) and the bias-corrected result will be presented in the "Notes" field of the Analytical Data Validation Summary (Attachment C-2).

d. If the spike recovery is within the range of 30 to 74% and the sample results are non-detected, the data are qualified as estimated (UJ).

e. If the spike recovery is less than 30% and the sample results are non-detected, the data are qualified as unusable (R).

H. Duplicate Sample Analysis

Criteria

1.0 Samples identified as field blanks cannot be used for duplicate sample analysis.

1.1 Control limit of $\leq$ 20% for waters and $\leq$ 35% for soils for the RPD are used for sample results greater than five times the PQL as presented in Table 5 of the FSP/QAPP.

1.2 Control limit of $\leq$ the PQL for waters and $\leq$ 2 times the PQL for soils are used for sample values less than five times the PQL, including when only one sample value is greater than five times the PQL or when one sample is above the IDL and one is non-detected.

1.3 Duplicate sample analysis must be prepared and analyzed for every 20 samples, for every batch digested, or for every matrix, which ever is more frequent.

Action

Verify on Form V (Part 2), or laboratory equivalent, that the RPD for the duplicate samples analysis is within the above mentioned criteria. If duplicate analysis results are outside the appropriate control windows, all sample results greater than the IDL for that analyte and the same matrix are qualified as estimated (J).

I. Field Duplicates

Criteria

1.0 For sample values greater than 5 times the PQL, control limits for the RPD for water matrices is $\leq$ 30% and $\leq$ 50% for soils matrices.

1.1 For sample values less than 5 times the PQL, the control limits of $\leq$ 2 times the PQL for waters and $\leq$ 4 times the PQL for soils will be used.

Action

Step 1 - Calculate all the RPD values for positive results between the sample and the field duplicate.

$$\text{Calculation: } RPD = \frac{\text{Sample Result - Field Duplicate}}{(\text{Sample Result + Field Duplicate})/2} \times 100$$

Step 2 - If duplicate analysis results are outside the appropriate control limits, all sample results greater than the IDL for that analyte and the same matrix are qualified as estimated (J).

J. Laboratory Control Sample Analysis (LCS)

Criteria

1.0 Aqueous LCS results must fall within the control limits of 80 to 120%. For validation of the data the +/-20% limit will also apply to both antimony and silver.

1.1 Solid LCS results must fall within the control limits established by the laboratory as presented on Form VII or the laboratory equivalent.

1.2 LCS must be prepared and analyzed for every 20 samples, for every batch digested, or for every matrix, whichever is more frequent.

Action

2.0 The following steps are taken to evaluate the aqueous LCS:

Step 1 - Review the Form VII or the laboratory equivalent for any analyte that is outside the control limits of 80 to 120%.

Step 2 - If the LCS recovery for any analyte is greater than 120%, results greater than the IDL are qualified as estimated (J).

Step 3 - If the LCS recovery for any analyte is less than the lower control limit of 80%, sample results greater than the IDL are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the notes field of the data validation summary table.

Step 4 - If the sample results are non-detects and the LCS recovery is greater than 120%, no qualification of the data is performed.

Step 5 - If the sample results are non-detected and the LCS recoveries are within the control limits of 50 to 79%, the data are qualified as estimated (UJ).

Step 6 - If the LCS recoveries for any analyte are less than 50%, the data for that analyte are qualified as unusable (R).

2.1 The following steps are taken to evaluate the soil LCS:

Step 1 - Review the Form VII, or laboratory equivalent, to identify any analyte that is outside the control limits established by the laboratory.

Step 2 - If any solid LCS recoveries for any analyte are greater than the upper control limit established by the laboratory, all results greater than the IDL are qualified as estimated (J).

Step 3 - If any solid LCS recoveries for any analyte are less than the lower laboratory established control limits, sample results greater than the IDL are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC) and the bias-corrected result will be presented in the "Notes" field of the Analytical Data Validation Summary (Attachment C-2).

Step 4 - If the LCS results are greater than the upper control limits and the sample results are non-detected, no qualification of the data is needed.

Step 5 - If the LCS results are less than the lower control limits and the sample results are non-detected, the data are qualified as estimated (UJ).

K. ICP Serial Dilution Analysis

Criteria

1.0 If the analyte concentration is sufficiently high (concentration in the original sample is at a minimum a factor of 50 times the IDL) the laboratory is required to report the results of a five-fold dilution. Results that do not agree within 10% of the original results are qualified with an "E" by the laboratory. For the purposes of validation the criterion is 15%.

1.1 A serial dilution is required for each matrix analyzed.

1.2 If the sample used for the serial dilution had to be diluted for any elements to bring the result within the linear range of the instrument, another five-fold dilution is required for the evaluation of matrix interferences for that specific element.

Action

The following steps are performed to review ICP serial dilution for Tier II validation:

Step 1 - Review the ICP serial dilution results on Form IX or the laboratory equivalent. If the percent difference between the results is greater than 15% and the serial dilution results are greater than the initial sample results, the detected and non-detected results are qualified as estimated (J) and (UJ), respectively.

Step 2 - If there is evidence of a negative interference, all positive sample results are qualified as estimated (J).

L. Detection Limits

Criteria

1.1 IDLs must be less than the PQL for all analytes.

1.2 ICP or other methods may be used that do not have IDLs that are less than the PQLs only if all the sample results are greater than 5 times the IDL for that instrument.

1.3 IDLs must be multiplied by the dilution factors and preparation factors before being reported on Form I, or laboratory equivalent.

Action

The following steps are taken when verifying detection limits for Tier II validation:

Step 1 - On the Form I, or laboratory equivalent, correct any sample results that are not reported to the IDL or do not use the correct dilution/preparation factors.

Step 2 - Any positive or non-detected results for As, Tl, Se, or Pb analyzed by ICP that are not greater than 5 times the IDL are qualified as estimated (J).

V. Tier III Validation Procedures

Tier III validation of a data package consists of the steps mentioned above for a Tier I and Tier II validation plus review of the "raw data" and recalculation of approximately 10% of the sample results. Furnace atomic absorption analysis and calibration raw data are also reviewed.

A. Calibration

Criteria

1.0 The initial calibration for atomic absorption analysis must contain three standards, one of which must be at the PQL.

1.1 The correlation coefficient must be greater than or equal to 0.995 for the calibration of atomic absorption, mercury, and cyanide or other photometric determinations.

Action

The following steps are taken when verifying inorganic calibration for Tier III validation:

Step 1 - Review the calibration raw data and Form XIII, or laboratory equivalent, to confirm that the curve for the analysis did include a standard at the PQL. If there is not a standard at the PQL, all positive sample results up to two times the PQL and non-detected results are qualified as estimated (J) and (UJ), respectively.

Step 2 - Evaluate the raw data of atomic absorption, mercury, and cyanide or other photometric determination and calculate the correlation coefficient. If the correlation coefficient is less than 0.995, then all results greater than the IDL and non-detects are qualified as estimated (J) and (UJ), respectively.

B. Furnace Atomic Absorption

Criteria

1.0 For sample concentrations greater than the PQL, duplicate injections must agree within +/- 20% RSD, or Coefficient of Variation (CV), otherwise the sample must be reanalyzed once (two additional injections).

1.1 Spike recoveries must be within the control limits of 85 to 115%.

1.2 If the post-digestion spike recovery is not within the control limits of 85 to 115% and the sample absorbance is greater than 50% of the spike absorbance, the Method of Standard Additions is required. The sample must be spiked at 50, 100, and 150% of the sample absorbance.

Action

The following steps are taken when reviewing the Furnace Atomic Absorption data:

Step 1 - Review the duplicate injection values for RSD or CV. If they are outside the required criteria specified in Section IV.A.1.0 and the sample was not reanalyzed once as required, all positive results are qualified as estimated (J).

Step 2 - Review the spike recoveries. If they are outside the required criteria mentioned in section IV.A.1.1, all positive results are qualified as estimated (J).

Step 3 - Review the sample absorbance of the post-digestion spike and if the spike absorbance is greater than 50% the data are qualified as follows:

a. If the furnace post-digestion spike recovery is not within 85 to 115% and the sample result is greater than the IDL, then the data are qualified as estimated (J).

b. If the sample result is non-detected and the furnace post-digestion spike recovery is greater than 10% but less than 85%, then the data are qualified as estimated (UJ).

c. If the furnace post-digestion spike recovery is less than 10%, then positive and non-detected results are qualified as unusable (R).

Step 4 - If the Method of Standard Additions (MSA) is required, but was not performed, then the positive sample results are qualified as estimated (J).

Step 5 - If any samples analyzed by MSA were not spiked at the correct levels, then the positive sample results are qualified as estimated (J).

Step 6 - If the MSA correlation coefficient is less than 0.995, then the positive sample results are qualified as estimated (J).

C. Sample Result Verification

Criteria

The quantitation of the analytes and the adjustment of the PQL for dilution and percent solids, must be recalculated for 10% of the data.

Action

If the criteria above have not been followed, then the laboratory will be contacted by the reviewer and the laboratory will be responsible for resolving any discrepancies and resubmission of results, if needed.

Attachment C-1
Laboratory Reporting Forms for Inorganic Analytes

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

SOW No.: _____

EPA Sample No.	Lab Sample ID.

Were ICP interelement corrections applied?
Yes/No ___

Were ICP background corrections applied?
Yes/No ___
If yes-were raw data generated before application of background corrections? Yes/No ___

Comments:

_____

_____

_____

_____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: _____

Date: _____ Title: _____

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): _____ Lab Sample ID: _____

Level (low/med): _____ Date Received: _____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): _____

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum				
7440-36-0	Antimony				
7440-38-2	Arsenic				
7440-39-3	Barium				
7440-41-7	Beryllium				
7440-43-9	Cadmium				
7440-70-2	Calcium				
7440-47-3	Chromium				
7440-48-4	Cobalt				
7440-50-8	Copper				
7439-89-6	Iron				
7439-92-1	Lead				
7439-95-4	Magnesium				
7439-96-5	Manganese				
7439-97-6	Mercury				
7440-02-0	Nickel				
7440-09-7	Potassium				
7782-49-2	Selenium				
7440-22-4	Silver				
7440-23-5	Sodium				
7440-28-0	Thallium				
7440-62-2	Vanadium				
7440-66-6	Zinc				
	Cyanide				

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Initial Calibration Source: _____

Continuing Calibration Source: _____

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

AA CRDL Standard Source: _____

ICP CRDL Standard Source: _____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
[illegible]romium								
[illegible]lt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

Control Limits: no limits have been established by EPA at this time

3
BLANKS

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Preparation Blank Matrix (soil/water): _____

Preparation Blank Concentration Units (ug/L or mg/kg): _____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ ICS Source: _____

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): _____ Level (low/med): _____

% Solids for Sample: _____

Concentration Units (ug/L or mg/kg dry weight): _____

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
alt									
per									
Iron									
Lead									
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

Comments:

6
DUPLICATES

EPA SAMPLE NO.

Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): _____ Level (low/med): _____

% Solids for Sample: _____ % Solids for Duplicate: _____

Concentration Units (ug/L or mg/kg dry weight): _____

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
per								
n								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

7

LABORATORY CONTROL SAMPLE

Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Solid LCS Source: _____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum									
Antimony									
Arsenic									
Barium									
Beryllium									
Cadmium									
Calcium									
Chromium									
Cobalt									
Copper									
[illegible]on									
[illegible]i									
[illegible]gnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium									
Silver									
Sodium									
Thallium									
Vanadium									
Zinc									
Cyanide									

8
STANDARD ADDITION RESULTS

Name: ______________________ Contract: __________

Lab Code: ______ Case No.: _____ SAS No.: ______ SDG No.: ______

Concentration Units: ug/L

EPA Sample No.	An	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q

9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix (soil/water): _____ Level (low/med): _____

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							
Antimony							
Arsenic							
Barium							
Beryllium							
Cadmium							
Calcium							
Chromium							
Cobalt							
Copper							
Iron							
Lead							
Magnesium							
Manganese							
Mercury							
Nickel							
Potassium							
Selenium							
Silver							
Sodium							
Thallium							
Vanadium							
Zinc							

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ Date: _____

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		
Antimony			60		
Arsenic			10		
Barium			200		
Beryllium			5		
Cadmium			5		
Calcium			5000		
Chromium			10		
Cobalt			50		
Copper			25		
Iron			100		
Lead			3		
Magnesium			5000		
Manganese			15		
Mercury			0.2		
Nickel			40		
Potassium			5000		
Selenium			5		
Silver			10		
Sodium			5000		
Thallium			10		
Vanadium			50		
Zinc			20		
Cyanide			10		

Comments:

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11A

ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ Date: _____

Analyte	Wavelength (nm)	Interelement Correction Factors for: Al	Ca	Fe	Mg	___
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium						
[illegible]balt						
[illegible]er						
Iron						
Lead						
Magnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

_____

_____

_____

_____

11B
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ Date: _____

Analyte	Wave-length (nm)	Interelement Correction Factors for: ___	___	___	___	___
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
[illegible]on						
[illegible]l						
[illegible]gnesium						
Manganese						
Mercury						
Nickel						
Potassium						
Selenium						
Silver						
Sodium						
Thallium						
Vanadium						
Zinc						

Comments:

_____

_____

_____

_____

12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

ICP ID Number: _____ Date: _____

Analyte	Integ. Time (Sec.)	Concentration (ug/L)	M
Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Magnesium			
Manganese			
Mercury			
Nickel			
Potassium			
Selenium			
Silver			
Sodium			
Thallium			
Vanadium			
Zinc			

Comments:

13
PREPARATION LOG

Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Method: ____

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)

14

ANALYSIS RUN LOG

Name: ______________________ Contract: ________

Lab Code: ______ Case No.: ______ SAS No.: ______ SDG No.: ______

Instrument ID Number: ____________ Method: __

Start Date: ________ End Date: ________

EPA Sample No.	D/F	Time	% R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN

Attachment C-2
Analytical Data Validation Summary

TABLE 1

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

ANALYTICAL DATA VALIDATION SUMMARY
(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
PCBs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-DUP-1	1/1/97	Soil	Tier I	No						
Metals											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	Duplicate of EXAMPLE-SS-5 (0.5 - 1)
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
VOCs											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
SVOCs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	59.0%	<25%	ND(3.6) J	
9700001	EXAMPLE-SS-1 (0 5 - 1)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	85.3%	<25%	ND(3.6) J	
						Pentachrolophenol	CCAL %D	52.3%	<25%	ND(3.6) J	
PCDDs/PCDFs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	1,2,3,4,7,8-HxCDF	Internal Standard %R	188.0%	25% to 150%	0.00013 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	186.7%	25% to 150%	0.000066 J	
						Total TCDF	Result exceeded calibration range			0.00058 J	
9700001	EXAMPLE-SS-1 (0 5 - 1)	1/1/97	Soil	Tier II	Yes	Total HxCDF	Result exceeded calibration range			0.0021 J	
						1,2,3,4,6,7,8-HpCDD	Internal Standard %R	221.1%	25% to 150%	0.000020 J	
						OCDD	Internal Standard %R	235.2%	25% to 150%	0.00022 J	
						1,2,3,4,7,8-HxCDF	Internal Standard %R	422.3%	25% to 150%	0.0000038 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	365.2%	25% to 150%	0.0000020 J	
						2,3,4,6,7,8-HxCDF	Internal Standard %R	332.0%	25% to 150%	0.0000041 J	
						1,2,3,4,6,7,8-HpCDF	Internal Standard %R	222.6%	25% to 150%	0.000011 J	
Cyanide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
Sulfide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						

Validation Annex D

Data Validation Procedures for Polychlorinated Dibenzo-p-Dioxins (PCDDs)/ Polychlorinated Dibenzofurans (PCDFs)

Validation Annex D

Data Validation Procedures for Polychlorinated Dibenzo-p-Dioxins (PCDDs)/Polychlorinated Dibenzofurans (PCDFs)

I. Introduction

This standard operating procedure (SOP) describes the data validation procedures for an EPA Region I tiered review of the data for polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs) analyzed by EPA Method 8280 or 8290. Data review procedures presented in this SOP are from the applicable quality control criteria specified in the following documents:

- *Region I Tiered Organic and Inorganic Data Validation Guidelines*, EPA Region I, July 1, 1993.
- *The Analysis of Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry (HRGC/HRMS),* EPA Method 8290.
- *National Functional Guidelines for Dioxin/Furans Data Validation, Draft Revision DFLM01.1*, January, 1996
- *EPA Contract Laboratory Program, Statement of Work for the Analysis of PCDDs/PCDFs, Revision DFLM01.1*, September 1991

II. EPA Region I Tiered Validation Procedures

All PCDD/PCDF analytical data will be validated to a Tier I level following the procedures presented in the *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses* (July 1996, revised December 1996) and the *Region I Tiered Organic and Inorganic Data Validation Guidelines* (EPA guidelines). The basic Tier I review consists of a completeness evidence audit to ensure that all laboratory data and documentation are present. Additionally, for projects subject to this QAPP, the Tier I review will be modified and expanded to include a number of elements of Tier II review, including review of each sample delivery group (SDG) to identify data deficiencies that may potentially result in qualification of the data (e.g., systematic deviations such as low calibration response factors.) Based on this modified Tier I review, a subset of the data will be identified for additional Tier II review. If QA/QC deviations are identified during the modified Tier I review, those deviations will be addressed in the Tier II review. Otherwise, a minimum of 25% of the data will be chosen at random to be subjected to a Tier II review, which will consist of the Tier I completeness evidence audit and review of all data package summary forms for identification of QA/QC parameter deviations. The Tier II data review will be used to identify and evaluate systematic QA/QC deficiencies that may affect any or all of the sample data presented in a specific data package. The Tier II data validation also includes an evaluation of field duplicate Relative Percent Difference (RPD) compliance. Additional Tier II review and Tier III (recalculation of sample results) review may also be performed for a larger portion of the data set, if required, to fully resolve data usability limitations identified during the modified Tier I data review and initial Tier II review for 25% of the data chosen at random.

The tiered data validation procedures consisting of modified Tier I review for all data, Tier II review of 25% of the data, and additional Tier II and Tier III review, as required, will be used to evaluate compliance of each data set with the project-specific data quality objectives. The procedures presented in the following sections will be used to perform the Tier I, Tier II, and Tier III data validation reviews. Qualification of analytical data will also be performed, if required, as specified in the data validation protocols presented below.

III. Tier I Validation Procedures

Tier I validation of a data package consists of verifying that all raw data and forms are included and complete. A data validation summary spreadsheet (in the form presented in Attachment D-1) is prepared to document the data review. The following steps are taken to complete a Tier I validation:

Step 1 - Review the laboratory case narrative. During review of the case narrative, if any deviations warrant a more extensive validation procedure, a Tier II review would be initiated to evaluate potential data use limitations.

Step 2 - Compare the chain-of-custody and the sample traffic reports. If there are any inconsistencies or if they are incomplete, then contact the laboratory for resolution.

Step 3 - Verify that all forms are present and complete. If any of the forms are not in the data package contact the laboratory for a resubmission.

Note: If frequent or severe quality control deviations are present on the above-mentioned forms, a more extensive validation procedure may be warranted. Based on the reviewer's judgement, Tier II or Tier III review may be warranted to fully evaluate the usability of the data.

Step 4 - Verify that the following raw data is provided for each sample and associated QA/QC samples in the data package. Contact the laboratory to obtain missing data:

- Case Narrative
- Chain-of-Custody Forms
- Traffic Reports
- QA Sample Summary Forms
- Instrument Calibration Summary Forms
- Instrument Run Logs
- Sample Preparation Logs
- Instrument/Method Detection Limits
- Standards Preparation Logs
- Supporting (raw) Data

Step 5 - With a blue ink pen, record on the first page of the data package: the validation level, date, and reviewer's initials.

In addition to these steps, as discussed above, the Tier I review of data packages for projects subject to this QAPP will be expanded to include some elements of Tier II review, including review of the data packages to identify QA/QC deficiencies that may require qualification of the data.

IV. Tier II Validation Procedures

Tier II validation of a data package consists of the steps mentioned above for a Tier I review plus review of the data package for identification of QA/QC deviations. Tier II validation does not include review of the "raw data" or recalculation of sample results. Sample qualification is performed (if required) following EPA Guidelines.

A. Data Qualifiers

All data qualified due to QA/QC deviations will be clearly marked on a copy of Form I's, or laboratory equivalent, with a blue ink pen. The laboratory qualification is lined out and the reviewer's qualification placed next to it. The date and the initials of the reviewer will also be placed on Form I. Below is a list of qualifiers to be used.

J The compound or analyte was positively identified, but the associated numerical value is an estimated concentration. This qualifier is used when the data evaluation procedure identifies a deficiency in the data generation process. This qualifier is also used when a compound or analyte is detected at estimated concentrations less than the practical quantitation limit (PQL). (When this qualifier is used in combination with the letter C -- i.e., JC -- that indicates that the sample result is an estimated concentration due to certain QC deficiencies and that a bias-corrected result is available, as discussed further below.)

U The compound or analyte was analyzed for, but was not detected. The sample quantitation limit is presented and adjusted for dilution and (for solid samples only) percent moisture. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL) as presented in Attachment D-1.

UJ The compound or analyte was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual level of quantitation. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL) J as presented in Attachment D-1.

R Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data should not be used for any qualitative or quantitative purposes.

B The compound or analyte was positively identified in the sample as well as in the associated blank sample. The detected sample concentration may be due in part or whole to contamination that occurred during sample handling and preparation.

B. Holding Times

Criteria

Samples (waters or soils) and extracts must be preserved at 4° centigrade. Specific holding times for each analysis and sample type are presented in Table 8-2 of the QAPP.

Action

The following steps are performed for the validation of data due to holding times:

Step 1 - Establish the holding time by comparing the sampling date on the chain-of-custody form with the dates of analysis and/or extraction on Form I. The chain-of-custody form is also reviewed to determine if the samples were properly preserved.

Step 2 - If the holding times are exceeded by less than 24 hours, then no qualification of data is needed.

Step 3 - If the holding times are exceeded by more than 24 hours but less than 14 days, all detected results are qualified as estimated (J) and the non-detected compounds are qualified as estimated (UJ).

Step 4 - If the holding times are exceeded by more than twice the specified holding time, then all the results are qualified as unusable (R).

C. Percent Moisture Content

Criteria

Soil/sediment/solid sample results must be adjusted for percent solids, and must have percent solids greater than 30%.

Action

The following steps are performed by reviewing the sample result summary form during the validation of percent solids data:

Verify that the percent solids of soil/sediment/solid samples are greater than 30%.

a. Soil/sediment/solid sample results with a percent solids of less than 10% are qualified as unusable (R).

b. Detected and non-detected soil/sediment/solid sample results with percent solids within the range of greater than 10% to less than 30% are qualified as estimated (J) and unusable (R), respectively.

D. Window Defining Mix (WDM)

Criteria

The WDM must be analyzed at the following frequency:

1.0 Before an initial calibration on each instrument and GC column used for analysis.

1.1 Each time adjustments or instrument maintenance activities are performed that may affect retention times.

1.2 Any time retention times of either the $^{13}C_{12}$-1234-TCDD or $^{13}C_{12}$-123789-HxCDD recovery standards in any analysis vary by more than 10 seconds from its retention time in the most recent continuing calibration standard.

Action

The following steps are performed to review WDM for Tier II validation:

Step 1 - Review Form V PCDD-3, or laboratory equivalent, and verify the WDM was analyzed at the correct frequency.

Step 2 - If the WDM was not analyzed at the mandated frequency, yet the calibration standards meet the specifications, the data are not qualified. If the initial and continuing calibration meet the specified criteria, it is assumed that this deviation has not affected the data.

E. Chromatographic Resolution

Criteria

The resolution criteria must be evaluated using measurements made on the Selected Ion Current Profile (SICP) for the appropriate ions for each isomer.

1.0 For analyses on a DB-5 (or equivalent) GC column, the chromatographic resolution is evaluated by the analysis of the CC3 standard during both the initial and the continuing calibration procedures.

1.1 The isomers $^{13}C_{12}$-2378-TCDD and $^{13}C_{12}$-1234-TCDD chromatographic peak separation must be resolved with a valley less than or equal to 25%.

1.2 The isomers 123478-HxCDD and 123678-HxCDD chromatographic peak separation must be resolved with a valley less than or equal to 50%.

1.3 For analyses on an SP-2331 (or equivalent) GC column, the chromatographic resolution is evaluated before the analysis of any calibration standards by the analysis of a commercially available standard.

1.4 The isomers 1478-TCDD and 2378-TCDD chromatographic peak separation must be resolved with a valley less than or equal to 25%.

1.5 The isomers 2378-TCDD and (1237/1238)-TCDD chromatographic peak separation must be resolved with a valley less than or equal to 25%.

Action

The following steps are performed in evaluating chromatographic resolution for Tier II validation:

Step 1 - Review Form V PCDD-2, or laboratory equivalent, to verify that the percent valley criterion has been met.

Step 2 - If the resolution criteria for TCDD are not met, all positive results for Tetras, Pentas, and Hexas (both dioxin and furan) are qualified as estimated (J). No qualification is needed for non-detected results.

Step 3 - If the resolution criteria for HxCDD are not met, all positive results for Hexas (both dioxin and furan) are qualified as estimated (J). No qualification is needed for non-detected results.

F. GC/MS Initial Calibration

Criteria

1.0 Before any sample analysis is conducted, a five-point calibration must be performed.

1.1 All PCDD/PCDF peaks, including the labeled internal and recovery standards, in all solutions must meet the +/- 15% theoretical abundance ratio criteria, listed on Form VI PCDD-2, or laboratory equivalent.

1.2 The percent Relative Standard deviation (%RSD) calculated from the five Relative Response Factors (RRFs) for the unlabeled and labeled PCDDs/PCDFs must not be greater than 15%.

Action

The following steps are performed in evaluating the initial calibration for Tier II validation:

Step 1 - Review Form VI PCDD-1 and Form VI PCDD-2, or laboratory equivalents, to verify that the initial calibration criteria mentioned above has been satisfied.

Step 2 - If there was no five-point calibration preceding sample analysis, then all the results are rejected (R).

Step 3 - Review Form VI PCDD-2, or laboratory equivalent, to determine if any labeled or unlabeled isomer is outside the ion abundance ratio, theoretical window.

a. If the ion ratio falls between 16 and 20%, all non-detected results associated with that initial calibration are qualified as estimated (UJ).

b. If the ion ratio is greater than +/- 20%, all non-detected results associated with that initial calibration are qualified as unusable (R).

Step 4 - Review Form VI PCDD-1, or laboratory equivalent, to determine if the %RSD criterion has not been met:

a. If the %RSD is greater than 20%, but less than 30%, detected and non-detected sample results are qualified as estimated (J) and (UJ), respectively.

b. If the %RSD is greater than 30%, detected and non-detected results are rejected (R).

G. GC/MS Continuing Calibration

Criteria

1.0 The continuing calibration standard should be analyzed at the beginning of each 12-hour period.

1.1 All PCDD/PCDF peaks, including the labeled internal and recovery standards, in all solutions must meet the +/- 15% theoretical abundance ratio criteria, listed on Form VII PCDD-1, or laboratory equivalent.

1.2 The measured RRF of each analyte and internal standard in the continuing calibration standard must be within +/- 30% of the mean RRF from the initial calibration.

Action

The following steps are performed in evaluating the initial calibration for Tier II validation:

Step 1 - Review Form VII PCDD-1 and Form VII PCDD-2, or laboratory equivalents, to verify that the continuing calibration criteria mentioned above has been satisfied.

Step 2 - Verify that continuing calibrations were analyzed at the required frequency by reviewing Form V PCDD-3, or laboratory equivalent.

Step 3 - If any analyte(s) failed the ion abundance ratio for the continuing calibration standard, all non-detected results are qualified as rejected (R) and all detected results are qualified as estimated (J).

Step 4 - Review Form VII PCDD-1, or laboratory equivalent, to determine if the percent difference (%D) criterion has not been met.

a. If the %D is between 30 and 50%, detected and non-detected sample results are qualified as estimated (J) and (UJ), respectively.

b. If the %D is greater than 50%, all detected and non-detected results are qualified as rejected (R).

H. Method Blank Analysis

Criteria

1.0 No contaminants should be present in the blank(s).

1.1 A method blank must be analyzed for each GC/MS system used to analyze that specific group or set of samples.

1.2 Internal standard recovery must be between 25 to 150%.

Action

The following steps are performed in evaluating the method blank analysis for Tier II validation:

Step 1 - Review Forms I and IV PCDD or laboratory equivalent and verify that blanks were analyzed at the appropriate frequency described above and that the blanks were free of contamination.

Step 2 - If a target compound is found in the blank, but not in the sample, no qualification of the data is performed.

Step 3 - Any compound that is detected in the sample (except OCDD and OCDF) and in the related method blank, is qualified with a “B” if the sample concentration is less than the five times the blank concentration. OCDD and OCDF are qualified with a “B” when the sample result is less than 10 times the blank concentration.

Step 4 - When the blank analysis involves internal standard recoveries out of control, the related sample data are reviewed and qualified in the following manner:

a. If the sample data do not contain any internal standards out of control, then the data are not qualified.

b. If the sample data contain internal standards out of control, then all detected and non-detected sample results for compounds quantitated using that internal standard are qualified as estimated (J) and (UJ), respectively.

I. Matrix Spike Analysis

Criteria

1.0 For each SDG, the laboratory must prepare a spiked sample for each matrix and concentration level that occur in the SDG.

1.1 The recovery of each spiked analyte must be between 50-150%.

Action

The following steps are performed in evaluating the matrix spike analysis for Tier II validation:

Step 1 - Review the extraction log and Form V PCDD-3, or laboratory equivalent, verify that matrix spike analysis was analyzed at the appropriate frequency described above. If the frequency was not in compliance, the laboratory will be contacted for a written explanation.

Step 2 - Evaluate Form III PCDD-1, or laboratory equivalent, if the recovery results are not within the control limits, the following steps are taken to qualify the data:

a. If the recovery results are greater than the upper control limit, the detected results for that class of compounds in the unspiked sample are qualified as estimated (J).

b. If the recovery results are below the lower control limit presented in Table 5, the detected results for this compound are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the notes field of the data validation summary table.

c. If the recovery is less than 25%, but greater than 10%, the non-detects for that class of compound in the unspiked sample are qualified as estimated (UJ)

d. If the recovery result is less than 10%, the non-detects for that class of compound in the unspiked sample are qualified as rejected (R).

J. Duplicate Analysis

Criteria

1.0 For each SDG, the laboratory must prepare a duplicate sample for each matrix in the SDG.

1.1 The RPD of any detected analyte must be less than or equal to 50%.

Action

The following steps are performed in evaluating the duplicate analysis for Tier II validation:

Step 1 - Review the extraction log and Form V PCDD-3, or laboratory equivalent, verify that duplicate analyses were extracted and analyzed at the appropriate frequency as described above. If the frequency was not in compliance, the laboratory will be contacted for a written explanation.

Step 2 - Evaluate Form IV PCDD-1, or laboratory equivalent, if RPD results are greater than 50%. Qualify all positive sample results for that compound in the SDG as estimated (J).

K. Internal Standard (IS) and Cleanup Standard Recoveries

Criteria

The percent recovery of any IS in the original sample, prior to any dilutions, must be within 25 to 150%. When the percent recovery is not within these control limits, re-extraction and re-analysis of the affected sample is required.

Action

The following steps are performed in evaluating the IS and cleanup standard recoveries analysis for Tier II validation:

Step 1 - Review the extraction log and Form I, or laboratory equivalent, verify that the IS recoveries are within the control limits of 25 to 150%.

Step 2 - If internal standard and/or cleanup standard recoveries are outside the control limits and re-analysis was not completed, the laboratory will be contacted for a written explanation.

Step 3 - If an IS recovery is greater than 150%, then all detected results associated with that internal standard are qualified as estimated (J).

Step 4 - If an internal standard recovery is less than 25%, the detected sample results quantitated using that IS are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the notes field of the data validation summary table.

Step 5 - If an internal standard recovery is less than 25%, non-detected sample results associated with that internal standard are qualified as estimated (UJ).

Step 6 - If an internal standard recovery is less than 10%, all non-detected sample results associated with that internal standard are qualified as unusable (R).

L. Sample Dilutions

Criteria

A dilution is required when the concentration of any PCDD/PCDF is greater than the calibration range.

Action

Review Form I PCDD-1, or laboratory equivalent, to determine if any of the sample results are greater than the calibration range, the sample results are qualified as estimated (J).

V. Tier III Validation Procedures

Tier III validation of a data package consists of the steps mentioned above for a Tier I and Tier II validation plus review of the "raw data" and recalculation of approximately 10% of the sample results. The Instrument Sensitivity, Initial and Continuing Calibration, Compound identification, Toxicity Equivalency Factor, Column Confirmation, Sample Dilution, Sample Reanalysis, Estimated Detection Limits, Estimated Maximum Possible Concentration, are also reviewed.

A. Instrument Sensitivity

Criteria

The CC1 solution analyzed at the end of the twelve-hour period must meet the following criteria:

1.0 The absolute retention time of the recovery standards, 13C12-1234-TCDD and 13C12-123678-HxCDD, must not change more than 10 seconds between the initial CC3 analysis and the analysis of the CC1 at the end of the sequence.

1.1 All the analytes in the CC1 solution must meet the ion abundance ratio criteria listed below:

Table BB-1

Analyte	Selected Ions	Theoretical Ion Abundance	Control Limits
TCDD	320/322	0.77	0.65 - 0.89
PeCDD	356/358	1.55	1.24 -1.86
HxCDD	390/392	1.24	1.05 - 1.43
HpCDD	424/426	1.04	0.88 - 1.20
OCDD	458/460	0.89	0.76 - 1.02
TCDF	304/306	0.77	0.65 - 0.89

Analyte	Selected Ions	Theoretical Ion Abundance	Control Limits
PeCDF	340/342	1.55	1.24 - 1.86
HxCDF	374/376	1.24	1.05 - 1.43
HpCDF	408/410	1.04	0.88 - 1.20
OCDF	442/444	0.89	0.76 - 1.02
Internal Standards			
$^{13}C_{12}$-1234-TCDD	332/334	0.77	0.65 - 0.89
$_{13}C_{12}$-123678-HxCDD	402/404	1.24	1.05 - 1.43
$^{13}C_{12}$-OCDD	470/472	0.89	0.76 - 1.01
$^{13}C_{12}$-2378-TCDF	316/318	0.77	0.65 - 0.89
$^{13}C_{12}$-1234678-HpCDF	420/422	1.04	0.88 - 1.20
Recovery Standards			
$^{13}C_{12}$-1234-TCDD	332/334	0.77	0.65 - 0.89
$^{13}C_{12}$-123789-HxCDD	402/404	1.24	1.05 - 1.43

1.2 The CC1 solution signal to noise (S/N) ratio of the chromatogram shall be greater than 2.5 for the unlabeled PCDD/PCDF and greater than 10.0 for the labeled internal and recovery standards. The percent recovery of the internal standards should be within the control limits of 25 to 150%.

Action

The following steps are performed in evaluating the instrument sensitivity for Tier III validation:

Step 1 - Compare the retention time (RT) of the recovery standards from the chromatographs and quantitation reports of CC3 and CC1. If the RT changes more than +/- 10 seconds, samples analyzed since the last acceptable CC3 standard will be re-analyzed, if the sample has not been destroyed. If the sample has been destroyed, the sample results are qualified as rejected (R).

Step 2 - If the standard's ion abundance ratios are not within the control limits presented in Table BB-1, then all non-detected sample results since the last acceptable CC3 are qualified as rejected (R).

Step 3 - If the S/N is less than 2.5 for the two quantitation ions, then all non-detected sample results analyzed since the last acceptable CC1 are qualified as rejected (R).

B. GC/MS Initial Calibration

Criteria

1.0 All calibration solution retention times for each isomer must fall within the appropriate retention time windows established by the window defining mix. The absolute retention time of the recovery standards, $^{13}C_{12}$-1234-TCDD and $^{13}C_{12}$-123678-HxCDD, must not change more than 10 seconds between the initial CC3 analysis and the analysis of the CC1 at the end of the sequence.

1.1 All calibration solution S/N ratios must be greater than 2.5 for the unlabeled PCDD/PCDF ions, and greater than 10 for the internal standard and recovery standard ions.

Action

The following steps are completed when evaluating the initial calibration by reviewing the raw data for each standard for Tier III validation:

Step 1 - If the recovery standards drift more than +/-10 seconds from the initial CC3 analysis, all detected and non-detected sample results are qualified as rejected (R).

Step 2 - If the quantitation ions and the confirmation ion do not maximize within +/-2 seconds for the labeled and unlabeled standards, non-detected sample results are qualified as rejected (R).

Step 3 - For instrument sensitivity evaluation, follow the steps in Section IV.A.

C. GC/MS Continuing Calibration

Criteria

1.0 Retention times of each isomer must fall within the appropriate retention time windows established by the window defining mix. The absolute retention time of the recovery standards, $^{13}C_{12}$-1234-TCDD and $^{13}C_{12}$-123678-HxCDD, must not change by more than 10 seconds between the initial CC3 analysis and the analysis of the CC1 at the end of the sequence.

1.1 For the CC3 calibration solution the S/N ratio must be greater than 2.5 for the unlabeled PCDD/PCDF ions, and greater than 10 for the internal standard and recovery standard ions.

1.2 The percent recovery of the internal standards should be within 25 to 150%.

Action

The following steps are done in evaluating the continuing calibration by reviewing all the raw data of the CC3 standard for Tier III validation:

Step 1 - If the recovery standards drift by more than +/-10 seconds from the CC3 analysis, all detected and non-detected sample results are qualified as rejected (R).

Step 2 - If the quantitation ions and the confirmation ion do not maximize within +/-2 seconds for the labeled and unlabeled standards, non-detected sample results are qualified as rejected (R).

Step 3 - For instrument sensitivity evaluation, follow the steps in Section IV.A.

Step 4 - If the percent recovery of the internal standards are not within the control limits of 25 to 150%, all detected and non-detected sample results are qualified as estimated (J) and (UJ), respectively.

D. Identification Criteria

Criteria

1.0 The absolute Retention Times (RTs) of the recovery standards must not shift by more than +/- 10 seconds from their retention times in the continuing calibration standard.

1.1 The absolute RT at the maximum peak height of the 2378-substituted isomer must be within -1 to +3 seconds of the RT of the corresponding labeled internal or recovery standard.

1.2 The relative retention time (RRT) of the 2378-substituted isomer must be within 0.05 RRT units of the RRT established during the continuing calibration.

1.3 The retention time of non-2378-substituted compounds (tetra - hepta), must be within the RT windows established by the window defining mix for the corresponding homologue, +/- 10 seconds.

1.4 The two quantitation ions and the confirmation ion for the analytes detected must maximize concurrently (+/- 2 seconds). This also is a requirement for the internal standards and recovery standards.

1.5. The sample peak areas for quantitation ions must meet the +/- 15% theoretical abundance ratio criteria listed in Table BB-1.

1.6 The integrated ion current for each analyte must be at least 2.5 times background noise and the detector must not be saturated. The internal standard ions must be at least 10 times the background noise and must not have saturated the detector. The percent recovery of the internal standards should be within 25 to 150%.

Action

The following steps are taken in evaluating the identification of the compounds by reviewing all the sample raw data for Tier III validation:

Step 1 - If the retention time criteria is not met and a detected result has been reported, then the result is lined out and a non-detected result will be recorded.

Step 2 - If the quantitation ions and confirmation ion do not maximize within +/- 2 seconds, then the result is lined out and a non-detected result will be recorded.

Step 3 - If the quantitation ions do not meet the signal-to-noise criteria, then the result is lined out and a non-detected result will be recorded.

Step 4 - If the ion abundance criteria are not met, but the abundances are within the +/- 15% to 25% ion ratio window, the sample results are qualified as estimated (J). Any sample result with an ion abundance greater than +/- 25% is qualified as rejected (R).

E. Toxicity Equivalency Factor (TEF) and Second Column Confirmation

Criteria

1.0 For each 2378-substituted isomer positively identified in the sample, the TEF from Form I PCDD-2 is multiplied by the concentration to give the TEF-adjusted concentration.

1.1 When the TEF is greater than 0.7 ppb in soil/sediment or 7 ppt in water, secondary column confirmation is required.

Action

The following steps are taken in evaluating the TEF and second Column Confirmation by reviewing Form I PCDD-2, Form II PCDD-3, or laboratory equivalent, and sample raw data for Tier III validation:

Step 1 - Review approximately 10% of the TEF calculations. If any discrepancies in the calculations are found, then the laboratory will be contacted and the sample results will be resubmitted.

Step 2 - Verify that secondary column confirmation has been performed when needed. If it has not been done, the laboratory will be contacted to conduct the secondary column confirmation if the sample has not been destroyed.

F. Sample Dilution

Criteria

1.0 When a sample is diluted, the sample results are quantified using the internal standard if the recovery is greater than or equal to 10%.

1.1 When a sample is diluted, the sample results are quantified using the recovery standards for target compounds associated with the internal standard, if the recovery is less than 10%.

Action

The following steps are taken in evaluating the sample dilution raw data for Tier III validation:

Step 1 - Review the diluted sample data. If the recovery of the internal standard is less than 10% but all the other internal standard criteria are met, then the sample results are recalculated using the internal standards.

G. Sample Re-analysis

Criteria

1.0 If any internal standard or the cleanup standard is outside the control limits of 25 to 150%, then re-extraction and re-analysis are required.

1.1 In instances where the internal standards and cleanup standard are not present with at least a 10:1 S/N ratio at their respective m/z, then re-extraction and re-analysis are required.

1.2 Samples with positive results that are associated with a contaminated method blank and any samples that contain peaks that do not meet all qualitative identification criteria related to the method blank should be re-extracted and re-analyzed.

Action

The following steps are taken in evaluating the sample re-analysis raw data for Tier III validation:

Step 1 - If sample re-analysis is required by the criteria above, the original sample analysis and re-analysis will be compared and the best analysis will be reported.

H. Estimated Detection Limit (EDL) and Estimated Maximum Possible Concentration (EMPC)

Criteria

For each non-detected sample result, an EDL is calculated. The EMPC is a value applied to a sample when the S/N ratio is at least 2.5 for both quantitation ions, but ion abundance criteria are not met. Approximately 10% of these sample results will be recalculated.

Action

If the EDL and EMPC are calculated incorrectly, the laboratory will be contacted and the laboratory will be responsible for resubmission of the reported sample results.

Attachment D-1
Laboratory Reporting Forms for Polychlorinated Dibenzo-p-Dioxins (PCDDs)/ Polychlorinated Dibenzofurans (PCDFs)

1DFA

PCDD/PCDF SAMPLE DATA SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: _____ (Soil/Water/Waste/Ash) Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Water Sample Prep.: _____ (Sepf/Cont) Date Received: _____

Concentrated Extract Volume: ____ (uL) Date Extracted: _____

Injection Volume: ___ (uL) % Solids: _____ Date Analyzed: _____

GC Column: _____ ID: _____(mm) Dilution Factor: _____

CONCENTRATION UNITS: (ng/L or ug/Kg) _____

ANALYTE	SELECTED IONS	PEAK RT	ION RATIO	#	CONCENTRATION	Q	EMPC/EDL
2378-TCDD	320/322						
2378-TCDF	304/306						
12378-PeCDF	340/342						
12378-PeCDD	356/358						
23478-PeCDF	340/342						
123478-HxCDF	374/376						
123678-HxCDF	374/376						
123478-HxCDD	390/392						
123678-HxCDD	390/392						
123789-HxCDD	390/392						
234678-HxCDF	374/376						
123789-HxCDF	374/376						
1234678-HpCDF	408/410						
1234678-HpCDD	424/426						
1234789-HpCDF	408/410						
OCDD	458/460						
OCDF	442/444						

NOTE: Concentrations, EMPCs, and EDLs are calculated on a wet weight basis.

INTERNAL STANDARD	SELECTED IONS	PEAK RT	ION RATIO	#	ION RATIO LIMITS	% REC	#	RECOVERY LIMITS
13C-2378-TCDF	316/318				0.65-0.89			25-150
13C-2378-TCDD	332/334				0.65-0.89			25-150
13C-123678-HxCDD	402/404				1.05-1.43			25-150
13C-1234678-HpCDF	420/422				0.88-1.20			25-150
13C-OCDD	470/472				0.76-1.01			25-150
37Cl-2378-TCDD	328/NA		NA		NA			25-150

Column to be used to flag values outside QC limits

1DFB

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: _____ (Soil/Water/Waste/Ash) Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Water Sample Prep.: _____ (Sepf/Cont) Date Received: _____

Concentrated Extract Volume: ____ (uL) Date Extracted: _____

Injection Volume: ___ (uL) % Solids: _____ Date Analyzed: _____

GC Column: _____ ID: _____(mm) Dilution Factor: _____

CONCENTRATION UNITS: (ng/L or ug/Kg) _____

ANALYTE	CONCENTRATION	TEF	TEF-ADJUSTED CONCENTRATION
2378-TCDD		x 1.0 =	
2378-TCDF		x 0.1 =	
12378-PeCDF		x 0.05 =	
12378-PeCDD		x 0.5 =	
23478-PeCDF		x 0.5 =	
123478-HxCDF		x 0.1 =	
123678-HxCDF		x 0.1 =	
123478-HxCDD		x 0.1 =	
123678-HxCDD		x 0.1 =	
123789-HxCDD		x 0.1 =	
234678-HxCDF		x 0.1 =	
123789-HxCDF		x 0.1 =	
1234678-HpCDF		x 0.01 =	
1234678-HpCDD		x 0.01 =	
1234789-HpCDF		x 0.01 =	
OCDD		x 0.001 =	
OCDF		x 0.001 =	
		Total =	

NOTE: Do <u>not</u> include EMPC or EDL values in the TEF-adjusted Concentration.

If the Total Toxic Equivalent Concentration of the sample is greater than 7 ng/L for an aqueous sample, greater than 0.7 ug/Kg for any solid matrix, or greater than 7 ug/Kg for a chemical waste sample, then second column confirmation of the results may be required.

1DFC

PCDD/PCDF SECOND COLUMN CONFIRMATION SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: _____ (Soil/Water/Waste/Ash) Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Water Sample Prep.: _____ (Sepf/Cont) Date Received: _____

Concentrated Extract Volume: ____ (uL) Date Extracted: _____

Injection Volume: ___ (uL) % Solids: _____ Date Analyzed: _____

GC Column: _____ ID: _____(mm) Dilution Factor: _____

CONCENTRATION UNITS: (ng/L or ug/Kg) _____

ANALYTE	SELECTED IONS	PEAK RT	ION RATIO	#	CONCENTRATION	Q	EMPC/EDL
2378-TCDD	320/322						
2378-TCDF	304/306						
12378-PeCDF	340/342						
12378-PeCDD	356/358						
23478-PeCDF	340/342						
123478-HxCDF	374/376						
123678-HxCDF	374/376						
123478-HxCDD	390/392						
123678-HxCDD	390/392						
123789-HxCDD	390/392						
234678-HxCDF	374/376						
123789-HxCDF	374/376						
1234678-HpCDF	408/410						
1234678-HpCDD	424/426						
1234789-HpCDF	408/410						
OCDD	458/460						
OCDF	442/444						

NOTE: Concentrations, EMPCs, and EDLs are calculated on a wet weight basis.

INTERNAL STANDARD	SELECTED IONS	PEAK RT	ION RATIO	#	ION RATIO LIMITS	% REC	#	RECOVERY LIMITS
13C-2378-TCDF	316/318				0.65-0.89			25-150
13C-2378-TCDD	332/334				0.65-0.89			25-150
13C-123678-HxCDD	402/404				1.05-1.43			25-150
13C-1234678-HpCDF	420/422				0.88-1.20			25-150
13C-OCDD	470/472				0.76-1.01			25-150
37Cl-2378-TCDD	328/NA		NA		NA			25-150

Column to be used to flag values outside QC limits

2DF

PCDD/PCDF TOTAL HOMOLOGUE CONCENTRATION SUMMARY

EPA SAMPLE NO.

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: _____ (Soil/Water/Waste/Ash) Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

Water Sample Prep.: _____ (Sepf/Cont) Date Received: _____

Concentrated Extract Volume: ____ (uL) Date Extracted:_____

Injection Volume: ___ (uL) % Solids: _____ Date Analyzed: _____

GC Column: _____ ID: _____(mm) Dilution Factor: _____

CONCENTRATION UNITS: (ng/L or ug/Kg) _____

HOMOLOGUE	PEAKS	CONCENTRATION	Q	EMPC/EDL
DIOXINS				
Total TCDD				
Total PeCDD				
Total HxCDD				
Total HpCDD				
FURANS				
Total TCDF				
Total PeCDF				
Total HxCDF				
Total HpCDF				

NOTE: Concentrations, EMPCs, and EDLs are calculated on a wet weight basis. The total congener concentrations do not affect the TEF calculations.

3DFA

PCDD/PCDF SPIKED SAMPLE SUMMARY

EPA SAMPLE NO.

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: _____ (Soil/Water/Waste/Ash)

CONCENTRATION UNITS: (ng/L or ug/Kg) _____

ANALYTE	SPIKE ADDED (PG)	SPIKED SAMPLE CONCENTRATION	SAMPLE CONCENTRATION	% REC #	QC LIMITS
2378-TCDD					50-150
2378-TCDF					50-150
12378-PeCDF					50-150
12378-PeCDD					50-150
123678-HxCDF					50-150
123678-HxCDD					50-150
1234678-HpCDF					50-150
1234678-HpCDD					50-150
OCDD					50-150
OCDF					50-150

If an analyte is not detected in the unspiked sample, enter 0 (zero) as th "SAMPLE CONCENTRATION."

Column to be used to flag values outside QC limits.

QC limits are advisory.

3DFB

PCDD/PCDF DUPLICATE SAMPLE SUMMARY

EPA SAMPLE NO.

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: _____ (Soil/Water/Waste/Ash)

CONCENTRATION UNITS: (ng/L or ug/Kg) _____

ANALYTE	SAMPLE CONCENTRATION	DUPLICATE CONCENTRATION	RPD	#	QC LIMITS
2378-TCDD					50
2378-TCDF					50
12378-PeCDF					50
12378-PeCDD					50
23478-PeCDF					50
123478-HxCDF					50
123678-HxCDF					50
123478-HxCDD					50
123678-HxCDD					50
123789-HxCDD					50
234678-HxCDF					50
123789-HxCDF					50
1234678-HpCDF					50
1234678-HpCDD					50
1234789-HpCDF					50
OCDD					50
OCDF					50

If an analyte is not detected in either analysis, enter 0 (zero) as the concentration.

Column to be used to flag values outside QC limits.

QC limits are advisory

4DF

PCDD/PCDF METHOD BLANK SUMMARY

EPA SAMPLE NO.

____

Lab Name: ______________________________ Contract: ______________

Lab Code: __________ Case No.: _______ SAS No.: ________ SDG No.: ________

Matrix: _______ (Soil/Water/Waste/Ash) Lab Sample ID: ________________

Sample wt/vol: ________(g/mL)_____ Lab File ID: ________________

Water Sample Prep.: _____ (Sepf/Cont) Date Extracted: ____________

Date Analyzed: ____________

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, SPIKES, AND DUPLICATES:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED

5DFA

PCDD/PCDF WINDOW DEFINING MIX SUMMARY

EPA SAMPLE NO.

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Lab File ID: _____

Instrument ID: _____ Date Analyzed: _____

Time Analyzed: _____

CONGENER	RT FIRST ELUTING	RT LAST ELUTING
TCDD		
TCDF		
PeCDD		
PeCDF		
HxCDD		
HxCDF		
HpCDD		
HpCDF		

5DFB

PCDD/PCDF CHROMATOGRAPHIC RESOLUTION SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Lab File ID: _____

Instrument ID: _____ Date Analyzed: _____

Time Analyzed: _____

Percent Valley determination for DB-5 (or equivalent) column -
For the CC3 standard beginning the 12-hour period:

13C-2378-TCDD/13C-1234-TCDD: _____

123478-HxCDD/123678-HxCDD: _____

QC LIMITS:

Percent Valley between the TCDD isomers must be less than or equal to 25%

Percent Valley between the HxCDD isomers must be less than or equal to 50%

Percent Valley Determination for SP-2331 (or equivalent) Column -
For the Column Performance Solution beginning the 12-hour period:

1478-TCDD/2378-TCDD: _____

2378-TCDD/(1237/1238)-TCDD: _____

QC LIMITS:

Percent Valley between the TCDD isomers must be less than or equal to 25%.

5DFC
PCDD/PCDF ANALYTICAL SEQUENCE SUMMARY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Instrument ID: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Times: _____ _____

THE ANALYTICAL SEQUENCE OF STANDARDS, SAMPLES, BLANKS, SPIKES, AND DUPLICATES IS AS FOLLOWS:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME-ANALYZED

6DFA

PCDD/PCDF INITIAL CALIBRATION RESPONSE FACTOR SUMMARY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Instrument ID: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Times: _____ _____

NATIVE ANALYTES VS. INTERNAL STDS.	RRF (N) CC1	CC2	CC3	CC4	CC5	MEAN RRF	%RSD
2378-TCDD							
* 2378-TCDF							
12378-PeCDF							
12378-PeCDD							
23478-PeCDF							
123478-HxCDF							
123678-HxCDF							
123478-HxCDD							
123678-HxCDD							
123789-HxCDD							
234678-HxCDF							
123789-HxCDF							
1234678-HpCDF							
1234678-HpCDD							
1234789-HpCDF							
OCDD							
OCDF							
INTERNAL STANDARDS VS. RECOVERY STDS.							
13C-2378-TCDD							
13C-2378-TCDF							
13C-123678-HxCDD							
13C-1234678-HpCDF							
13C-OCDD							
37Cl-2378-TCDD							

A single point calibration is performed for seven of the native analytes and the cleanup standard. Therefore, no %RSD is reported for these compounds.

QC Limits: %RSD must be less than or equal to 15.0%.

6DFB

PCDD/PCDF INITIAL CALIBRATION ION ABUNDANCE RATIO SUMMARY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Instrument ID: _____

Init. Calib. Date(s): _____ _____

Init. Calib. Times: _____ _____

NATIVE ANALYTES	SELECTED IONS	ION ABUNDANCE RATIO					FLAG	QC LIMITS
		CC1	CC2	CC3	CC4	CC5		
2378-TCDD	320/322							0.65-0.89
2378-TCDF	304/306							0.65-0.89
12378-PeCDF	340/342							1.24-1.86
12378-PeCDD	356/358							1.24-1.86
23478-PeCDF	340/342							1.24-1.86
123478-HxCDF	374/376							1.05-1.43
123678-HxCDF	374/376							1.05-1.43
123478-HxCDD	390/392							1.05-1.43
123678-HxCDD	390/392							1.05-1.43
123789-HxCDD	390/392							1.05-1.43
234678-HxCDF	374/376							1.05-1.43
123789-HxCDF	374/376							1.05-1.43
1234678-HpCDF	408/410							0.88-1.20
1234678-HpCDD	424/426							0.88-1.20
1234789-HpCDF	408/410							0.88-1.20
OCDD	458/460							0.76-1.02
OCDF	442/444							0.76-1.02
INTERNAL STANDARDS								
13C-2378-TCDD	332/334							0.65-0.89
13C-2378-TCDF	316/318							0.65-0.89
13C-123678-HxCDD	402/404							1.05-1.43
13C-1234678-HpCDF	420/422							0.88-1.20
13C-OCDD	470/472							0.76-1.02
RECOVERY STANDARDS								
13C-1234-TCDD	332/334							0.65-0.89
13C-123789-HxCDD	402/404							1.05-1.43

QC limits represent ± 15% window around the theoretical ion abundance ratio.

A single point calibration is performed for seven of the native analytes and the cleanup standard.

The laboratory must flag any analyte in any calibration solution which does not meet the ion abundance ratio QC limit by placing an asterisk in the fl column.

7DFA

PCDD/PCDF CONTINUING CALIBRATION SUMMARY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Instrument ID: _____

Date Analyzed: _____ Time Analyzed: _____

Lab File ID: _____ Init. Calib. Date(s): _____ _____

NATIVE ANALYTES	SELECTED IONS	RRF	MEAN RRF	%D	RRF FLAG	ION RATIO	ION FLAG	QC LIMITS
2378-TCDD	320/322							0.65-0.89
2378-TCDF	304/306							0.65-0.89
12378-PeCDF	340/342							1.24-1.86
12378-PeCDD	356/358							1.24-1.86
23478-PeCDF	340/342							1.24-1.86
123478-HxCDF	374/376							1.05-1.43
123678-HxCDF	374/376							1.05-1.43
123478-HxCDD	390/392							1.05-1.43
123678-HxCDD	390/392							1.05-1.43
123789-HxCDD	390/392							1.05-1.43
234678-HxCDF	374/376							1.05-1.43
123789-HxCDF	374/376							1.05-1.43
1234678-HpCDF	408/410							0.88-1.20
1234678-HpCDD	424/426							0.88-1.20
1234789-HpCDF	408/410							0.88-1.20
OCDD	458/460							0.76-1.02
OCDF	442/444							0.76-1.02
INTERNAL STANDARDS VS. RECOVERY STDS.								
13C-2378-TCDD	332/334							0.65-0.89
13C-2378-TCDF	316/318							0.65-0.89
13C-123678-HxCDD	402/404							1.05-1.43
13C-1234678-HpCDF	420/422							0.88-1.20
13C-OCDD	470/472							0.76-1.02
37Cl-2378-TCDD	328/NA					NA	NA	NA
RECOVERY STANDARDS								
13C-1234-TCDD	332/334	NA	NA	NA	NA			0.65-0.89
13C-123789-HxCDD	402/404	NA	NA	NA	NA			1.05-1.43

QC limits shown are for ion abundance ratios. Maximum %D for RRF is ± 30.0% The laboratory must flag any analyte which does not meet criteria for %D or ion abundance ratio by placing an asterisk in the appropriate flag column.

7DFB

PCDD/PCDF CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Instrument ID: _____

Date Analyzed: _____ Time Analyzed: _____

Lab File ID: _____ Init. Calib. Date(s): _____ _____

NATIVE ANALYTES	RRT	RT
2378-TCDD		
2378-TCDF		
12378-PeCDF		
12378-PeCDD		
23478-PeCDF		
123478-HxCDF		
123678-HxCDF		
123478-HxCDD		
123678-HxCDD		
123789-HxCDD		
234678-HxCDF		
123789-HxCDF		
1234678-HpCDF		
1234678-HpCDD		
1234789-HpCDF		
OCDD		
OCDF		
INTERNAL STANDARDS VS. RECOVERY STDS.		
13C-2378-TCDD	NA	
13C-2378-TCDF	NA	
13C-123678-HxCDD	NA	
13C-1234678-HpCDF	NA	
13C-OCDD	NA	
37Cl-2378-TCDD		
RECOVERY STANDARDS		
13C-1234-TCDD	NA	
13C-123789-HxCDD	NA	

RRT = (RT of analyte)/(RT of appropriate internal standard)

Attachment D-2
Analytical Data Validation Summary

TABLE 1

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

ANALYTICAL DATA VALIDATION SUMMARY

(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
PCBs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-DUP-1	1/1/97	Soil	Tier I	No						Duplicate of EXAMPLE-SS-5 (0.5 - 1)
Metals											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
VOCs											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
SVOCs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	59.0%	<25%	ND(3.6) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	85.3%	<25%	ND(3.6) J	
						Pentachrolophenol	CCAL %D	52.3%	<25%	ND(3.6) J	
PCDDs/PCDFs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	1,2,3,4,7,8-HxCDF	Internal Standard %R	188.0%	25% to 150%	0.00013 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	186.7%	25% to 150%	0.000066 J	
						Total TCDF	Result exceeded calibration range			0.00058 J	
						Total HxCDF	Result exceeded calibration range			0.0021 J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	1,2,3,4,6,7,8-HpCDD	Internal Standard %R	221.1%	25% to 150%	0.000020 J	
						OCDD	Internal Standard %R	235.2%	25% to 150%	0.00022 J	
						1,2,3,4,7,8-HxCDF	Internal Standard %R	422.3%	25% to 150%	0.0000038 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	365.2%	25% to 150%	0.0000020 J	
						2,3,4,6,7,8-HxCDF	Internal Standard %R	332.0%	25% to 150%	0.0000041 J	
						1,2,3,4,6,7,8-HpCDF	Internal Standard %R	222.6%	25% to 150%	0.000011 J	
Cyanide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
Sulfide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						

Validation Annex E

Data Validation Procedures for Conventional Parameters Analytes

Validation Annex E

Data Validation Procedures for Conventional Parameters Analytes

I. Introduction

This standard operating procedure (SOP) describes the data validation procedures for a USEPA Region I tiered review of data for conventional parameters (as defined in Section 4.2.2 of the FSP/QAPP) analyzed by Standard Methods for the Examination of Water and Wastewater and EPA Methods 100, 300, and 400 series. Data review procedures presented in this SOP were developed from the applicable quality control criteria specified in the following documents:

- *Region I Tiered Organic and Inorganic Data Validation Guidelines*, USEPA Region I, July 1, 1993.
- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Inorganics Analyses*, USEPA Region I, June 13, 1988 (Modified February 1989).
- *Standard Methods for the Examination of Water and Wastewater, 18th ed.*
- *USEPA Contract Laboratory Program, Statement of Work for the Inorganics Analysis, Revision OLM0.1.9*, July 1993
- *Test Methods for Evaluating Solid Waste*: Physical/Chemical Methods, SW-846, 3rd Edition, USEPA, September 1986 and subsequent revisions.
- *Methods for Chemical Analysis of Water and Wastes*, USEPA, EPA 600/4-79-020, March 1979 and subsequent revisions.

II. USEPA Region I Tiered Validation Procedures

All analytical data on conventional parameters will be validated to a Tier I level following the procedures presented in the Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses (July 1996, revised December 1996) and the Region I Tiered Organic and Inorganic Data Validation Guidelines (USEPA guidelines). The basic Tier I review consists of a completeness evidence audit to ensure that all laboratory data and documentation are present. Additionally, for projects subject to this FSP/QAPP, the Tier I review will be modified and expanded to include a number of elements of Tier II review, including review of each sample delivery group (SDG) to identify data deficiencies that may potentially result in qualification of the data (e.g., systematic deviations such as low calibration response factors.) Based on this modified Tier I review, a subset of the data will be identified for additional Tier II review. If QA/QC deviations are identified during the modified Tier I review, those deviations will be addressed in the Tier II review. Otherwise, a minimum of 25% of the data will be chosen at random to be subjected to a Tier II review, which will consist of the Tier I completeness evidence audit and review of all data package summary forms for identification of QA/QC parameter deviations. The Tier II data review will be used to identify and evaluate systematic QA/QC deficiencies that may affect any or all of the sample data presented in a specific data package. The Tier II data validation also includes an evaluation of field duplicate relative percent difference (RPD) compliance. Additional Tier II review and Tier III (recalculation of sample results) review may also be performed for a larger portion of the data set, if required, to fully resolve data usability limitations identified during the modified Tier I data review and initial Tier II review for 25% of the data chosen at random.

The tiered data validation procedures consisting of modified Tier I review for all data, Tier II review of a minimum of 25% of the data, and additional Tier II and Tier III review, as required, will be used to evaluate compliance of each data set with the project-specific data quality objectives. The procedures presented in the following sections will be used to perform the Tier I, Tier II, and Tier III data validation reviews. Qualification of analytical data will also be performed, if required, as specified in the data validation protocols presented below.

III. Tier I Validation Procedures

Tier I validation of a data package consists of verifying that all raw data and forms are included and complete. In the event that data packages are determined to be incomplete, missing information will be requested from the laboratory. A data validation summary spreadsheet (in the form presented in Attachment E-1) will be prepared to document the data review. The following steps are taken to complete a Tier I validation:

Step 1 - Review the laboratory case narrative. During review of the case narrative, if there are any deviations that warrant a more extensive validation procedure, a Tier II review would be initiated to evaluate potential data use limitations.

Step 2 - Compare the chain-of-custody and the sample traffic reports. If there are any inconsistencies or if they are incomplete, then contact the laboratory for resolution.

Step 3 - Verify that all sample result summary forms are present and complete. If any of the forms are not in the data package, contact the laboratory for a resubmission.

Note: If frequent or severe quality control deviations are present on the above-mentioned forms, a more extensive validation procedure may be warranted. Based on the reviewer's judgement, Tier II or Tier III review may be warranted to fully evaluate the usability of the data.

Step 4 - Verify that the following raw data is provided for each sample and any associated QA/QC samples in the data package. Contact the laboratory to obtain missing data (if required):

- Case Narrative;
- Chain-of-Custody Forms;
- Traffic Reports;
- QA Sample Summary Forms;
- Laboratory Bench sheets;
- Instrument Calibration Summary Forms;
- Instrument Run Logs;
- Sample Preparation Logs;
- Instrument/Method Detection Limits;
- Standards Preparation Logs; and
- Supporting (raw) Data.

Step 5 - With a blue ink pen, record on the first page of the data package: the validation level, date, and reviewer's initials.

In addition to these steps, as discussed above, the Tier I review of data packages for projects subject to this FSP/QAPP will be expanded to include some elements of Tier II review, including review of the data packages to identify QA/QC deficiencies that may require qualification of the data.

VI. Tier II Validation Procedures

Tier II validation of a data package consists of the steps mentioned above for a Tier I review plus review of the data package for identification of QA/QC deviations. Tier II validation does not include review of the "raw data" or recalculation of sample results. The QC sample data presented on the data package summary forms will be compared against the control limits presented in Tables 4 and 5 of the FSP/QAPP to determine QC sample compliance. Sample qualification, if required, will be performed following USEPA Region I Guidelines, as discussed in the following sections.

A. Data Qualifiers

All data qualified due to QA/QC deviations will be clearly marked on a copy of the sample result summary forms with a blue ink pen. The laboratory qualification is lined out and the reviewer's qualification placed next to it. The date and the initials of the reviewer will also be placed on the sample result summary forms. Below is a list of qualifiers to be used.

J The compound or analyte was positively identified, but the associated numerical value is an estimated concentration. This qualifier is used when the data evaluation procedure identifies a deficiency in the data generation process. This qualifier is also used when a compound or analyte is detected at estimated concentrations less than the practical quantitation limit (PQL). (When this qualifier is used in combination with the letter C -- i.e., JC -- that indicates that the sample result is an estimated concentration due to certain QC deficiencies and that a bias-corrected result is available, as discussed further below.)

U The compound or analyte was analyzed for, but was not detected. The sample quantitation limit is presented and adjusted for dilution and (for solid samples only) percent moisture. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL) as presented in Attachment E-1.

UJ The compound or analyte was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual level of quantitation. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL) J as presented in Attachment E-1.

R Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data should not be used for any qualitative or quantitative purposes.

B. Holding Times

Criteria

The holding times presented in Table 1 of the FSP/QAPP for conventional parameter analyses must not be exceeded.

Action

The following steps are performed to review holding times for Tier II validation:

Step 1 - Establish the holding time by comparing the sampling date on the chain-of-custody with the dates of analysis and/or digestion on the sample result summary form. The chain-of-custody is also reviewed to determine if the samples were properly preserved.

Step 2 - If the holding times are exceeded by less than 24 hours, no qualification of data is needed.

Step 3 - If the holding times are exceeded by more than 24 hours, but less than 14 days, all positive results are flagged as estimated (J) and the non-detected compounds are flagged as estimated (UJ).

Step 4 - If the holding times are exceeded by more than twice the specified holding time, all results are flagged as unusable (R).

C. Percent Moisture Content

Criteria

Soil/sediment/solid sample results must be adjusted for percent solids, and must have percent solids greater than 30%.

Action

The following steps are performed by reviewing the sample result summary form during the validation of percent solids data:

Verify that the percent solids of soil/sediment/solid samples are greater than 30%.

a. Soil/sediment/solid sample results with a percent solids of less than 10% are qualified as unusable (R).

b. Detected and non-detected soil/sediment/solid sample results with percent solids within the range of greater than 10% to less than 30% are qualified as estimated (J) and unusable (R), respectively.

D. Method Detection Limit (MDL) Study

Criteria

1.0 The MDL for each analyte of interest must be established in accordance with the specified method and Code of Federal Regulations (40CFR Part 136, App. B). A minimum of seven replicates must be analyzed for each matrix of interest.

2.0 The percent relative standard deviation (%RSD) for the seven replicates of the analytes must be less than or equal to 25% and the mean percent recovery must be between 80 and 120%.

Action

1.1 If the mean percent recovery of any analyte is greater than 120% all associated detected sample results are qualified as estimated (J).

1.2 If the mean percent recovery of any analyte is less than 80% but greater than 10% all associated detected and non-detected sample results are qualified as estimated (J).

1.3 If the mean percent recovery of any analyte is less than 10%, all associated detected and non-detected sample results are qualified as estimated (J) and unusable (R), respectively.

1.4 If the %RSD of any analyte is greater than 25%, all associated detected results less than 3 times the PQL and non-detected sample results are qualified as estimated (J) and (UJ), respectively.

E. Calibration

Criteria

1.0 Instruments must be calibrated daily and each time the instrument is set up for analysis.

1.1 Initial Calibration

1.1.1 A blank and at least three standards must be used in establishing the analytical curve.

1.1.2 The correlation coefficient must be greater than or equal to 0.995.

1.2 Initial and Continuing Calibration Verification (ICV and CCV)

1.2.1 A certified standard must be used for the initial Calibration Verification (ICV).

1.2.2 All percent recoveries of the ICVs and CCVs for all analytes must be within 85 to 115% except for cyanide.

1.2.3 A CCV must be analyzed every 10 samples.

Action

The following steps are performed to review instrument calibration for Tier II validation:

Step 1 - Verify that the instrument was calibrated daily and every time it was set up by reviewing the calibration result summary form or laboratory equivalent. Also, verify that the correct number of standards were used for the initial calibration for each analyte reported. If any of these tasks are not completed by the laboratory, the data are qualified as unusable (R).

Step 2 - Verify that the correlation coefficient is greater than or equal to 0.995. If this criterion is not meet, all detected and non-detected results are qualified as estimated (J) and (UJ), respectively.

Step 3 - Review the calibration result summary form or laboratory equivalent for the identification of the source of the ICV and CCV. If they are not from different sources, all detected and non-detected results are qualified as estimated (J) and (UJ), respectively.

Step 4 - ICV and CCV percent recovery calibration result summary form or laboratory equivalent are reviewed against the above mentioned criteria. If the ICV or CCV percent recovery are outside the acceptance criteria, the following steps are taken to qualify the data:

a. If the ICV or CCV percent recovery is not within control limits, but are within the range of 70 to 84% or 116 to 130% all detected results are qualified as estimated (J).

b. If the ICV or CCV percent recovery is not within control limits, but are within the ranges of 116 to 130% all non-detected results are not qualified.

c. If the ICV or CCV percent recovery is not within control limits, but are within the ranges of 70 to 84%, all non-detected results are qualified as estimated (UJ).

d. If the ICV or CCV percent recovery less than 70%, all non-detected results are qualified as unusable (R).

Step 5 - Laboratory bench sheets are reviewed to verify that the CCVs were analyzed in the required intervals. If they were not analyzed at the required intervals, all detected and non-detected results are qualified as estimated (J) and (UJ), respectively.

F. Blanks

Criteria

1.0 No contaminants should be present in the blank(s).

1.1 A preparation blank must be analyzed every 20 samples or for each batch digested, whichever is more frequent.

1.2 A calibration blank (CCB) must be analyzed after every 10 samples.

Action

Qualification of sample results due to blank contamination is dependent on the conditions and the origin of the blank. No sample results are reported unless the concentration of the analyte in the sample exceeds five times the amount detected in any blank. No sample results are corrected by subtracting blank values. Specific qualifications of sample data are as follows:

Step 1 - Review the blank result summary form or laboratory equivalent for all blanks within the data package.

Step 2 - If a blank result is greater than 2 times the negative IDL, all non-detects are qualified as estimated (UJ).

Step 3 - If an analyte is found in the blank, but not in the sample, the data are not qualified.

Step 4 - When an analyte is detected in the sample and the sample concentration is less than five times the concentration detected in the associated blank, the data are qualified as non-detected (U).

Step 5 - When a positive result is greater than the action level, the result is not qualified.

Note: Any difference between the sample analyses and the related blank analyses which involve weights, volumes or dilution factors must be taken into account when the 5-times criteria are required.

The following are examples of how qualifications apply to blank data:

Example 1 (Step 4): When the sample result is less than the PQL but greater than the action level. Positive results less than the action level are qualified as non-detects.

Factor	5-times
Blank Result	7
PQL	5
Action level	35
Sample Result	22
Qualified Sample Result	22 U

Example 2 (Step 5): When the sample result is greater than the PQL and the action level, no qualification is used.

Factor	5-times
Blank Result	10
PQL	8
Action level	50
Sample Result	70
Qualified Sample Result	70

H. Matrix Spike Sample Analysis

Criteria

1.0 Samples identified as field blanks cannot be used for spiked sample analysis.

1.1 Spike recoveries must be within the control limits of 75 to 125%. However, the control limits do not apply when the sample concentration surpasses the spike concentration by a factor of four or more.

Action

The following steps are performed to review inorganic matrix spike analysis for Tier II validation:

Step 1 - Matrix spike recoveries are reviewed on the matrix spike result summary form or laboratory equivalent. If they are out of the control limits of 75 to 125%, the following steps are taken:

a. When the spike recovery is greater than 125% and the reported sample results are non-detected, no qualification of data is needed.

b. When the spike recovery is greater than 125% and the reported sample results are greater than the PQL, the data are qualified as estimated (J).

c. When the spike recovery is less than 75% and the reported sample results are greater than the PQL, all positive results are qualified as estimated (J) and one of the following steps will be

taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the notes field of the data validation summary table.

d. If the spike recovery is within the range of 30 to 74% and the sample results are non-detected, the data are qualified as estimated (UJ).

e. If the spike recovery is less than 30% and the sample results are non-detected, the data are qualified as unusable (R).

I. Duplicate Analysis

Criteria

1.0 Samples identified as field blanks cannot be used for duplicate sample analyses.

1.1 A control limit of +/- 20% for waters and +/- 35% for soils for the Relative Percent Difference (RPD) are used for sample results greater than five times the PQL as presented in Table 5 of the FSP/QAPP.

1.2 A control limit of +/- the PQL for waters and +/- 2 times the PQL for soils are used for sample values less than five times the PQL, including when only one sample value is greater than 5 times the PQL or when one sample is above the method detection limit (MDL) and one is non-detected.

1.3 Duplicate sample analysis must be prepared and analyzed for every 20 samples, for every batch digested, or for every matrix, whichever is more frequent.

Action

Verify on the duplicate result summary form or laboratory equivalent that the RPD for the duplicate samples analysis is within the above mentioned criteria. If duplicate analysis results are outside the appropriate control windows, all sample results greater than the PQL for that analyte and the same matrix are qualified as estimated (J).

J. Field Duplicates

Criteria

1.0 For sample values greater than 5 times the PQL, the control limit for the RPD for water matrices is +/- 30% and +/- 50% for soil matrices.

1.1 For sample values less than 5 times the PQL, the control limit of +/-2 times the PQL for waters and +/- 4 times the PQL for soils will be used.

Action

Step 1 - Calculate all the RPD values for positive results between the sample and the field duplicate.

$$\text{Calculation:} \quad RPD = \frac{\text{Sample Result - Field Duplicate}}{(\text{Sample Result + Field Duplicate})/2} \times 100$$

Step 2 - If duplicate analysis results are outside the appropriate control limits, all sample results greater than the PQL for that analyte and the same matrix are qualified as estimated (J).

K. Laboratory Control Sample (LCS) Analysis Limits

Criteria

1.0 Aqueous LCS results must fall within the control limits of 80 to 120%.

1.1 Solid LCS results must fall within the control limits established by the laboratory as presented on LCS result summary form or the laboratory equivalent.

1.2 A LCS must be prepared and analyzed for every 20 samples, for every batch digested, or for every matrix, whichever is more frequent.

Action

2.0 The following steps are taken to evaluate the aqueous LCS:

Step 1 - Review the Form VII or the laboratory equivalent for any analyte that is outside the control limits of 80 to 120%.

Step 2 - If the LCS recovery for any analyte is greater than 120%, results greater than the PQL are qualified as estimated (J).

Step 3 - If the LCS recovery for any analyte is less than 80%, sample results greater than the PQL are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the notes field of the data validation summary table.

Step 4 - If the sample results are non-detects and the LCS recovery is greater than 120%, no qualification of the data is performed.

Step 5 - If the sample results are non-detects and the LCS recoveries are within the control limits of 50 to 79%, the data are qualified as estimated (UJ).

Step 6 - If the LCS recoveries for any analyte are less than 50%, the data for that analyte are qualified as unusable (R).

2.1 The following steps are taken to evaluate the soil LCS:

Step 1 - Review the Form VII or laboratory equivalent to identify any analyte that is outside the control limits established by the laboratory.

Step 2 -If any solid LCS recoveries for any analyte are greater than the upper laboratory established control limits, all results greater than the PQL are qualified as estimated (J).

Step 3 - If any solid LCS recoveries for any analyte are less than the lower laboratory established control limits, sample results greater than the PQL are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question; (ii) reanalyzing the existing sample; (iii) bias-correcting the sample result to 100% recovery; or (iv) if the result would have no significant effect on achieving the applicable Performance Standard, simply maintaining the qualifier in the database. In the event that the sample result is bias-corrected, the uncorrected result will be further qualified as estimated/bias-corrected result available (JC), and the bias-corrected result will be presented in the notes field of the data validation summary table.

Step 4 - If the LCS results are greater than the upper control limits and the sample results are non-detected, no qualification of the data is needed.

Step 5 - If the LCS results are less than the lower control limits and the sample results are non-detected, the data are qualified as estimated (UJ).

V. Tier III Validation Procedures

Tier III validation of a data package consists of the steps mentioned above for a Tier I and Tier II validation plus review of the "raw data" and recalculation of approximately 10% of the sample results.

A. Calibration

Criteria

1.0 The initial calibration for must contain three standards, one of which must be at the PQL.

1.1 The correlation coefficient must be greater than or equal to 0.995.

Action

The following steps are taken when verifying calibration for Tier III validation:

Step 1 - Review the calibration raw data and laboratory bench sheets to confirm that the curve for the analysis did include a standard at the PQL. If there is not a standard at the PQL, all positive sample results up to 2 times the PQL and non-detected results are qualified as estimated (J) and (UJ), respectively.

Step 2 - Evaluate the raw data and calculate the correlation coefficient. If the correlation coefficient is less than 0.995, all results greater than the PQL and non-detects are qualified as estimated (J) and (UJ), respectively.

C. Sample Result Verification

Criteria

The quantitation of the analytes and the adjustment of the PQL for dilution and percent solids must be recalculated for 10% of the data.

Action

If the criteria above have not been followed, then the laboratory will be contacted by the reviewer and the laboratory will be responsible for resolving any discrepancies and resubmission of results, if needed.

Attachment E-1
Analytical Data Validation Summary

TABLE 1

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

ANALYTICAL DATA VALIDATION SUMMARY
(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
PCBs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-DUP-1	1/1/97	Soil	Tier I	No						Duplicate of EXAMPLE-SS-5 (0.5 - 1)
Metals											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
VOCs											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
SVOCs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	59.0%	<25%	ND(3.6) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	85.3%	<25%	ND(3.6) J	
						Pentachrolophenol	CCAL %D	52.3%	<25%	ND(3.6) J	
PCDDs/PCDFs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	1,2,3,4,7,8-HxCDF	Internal Standard %R	188.0%	25% to 150%	0.00013 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	186.7%	25% to 150%	0.000066 J	
						Total TCDF	Result exceeded calibration range			0.00058 J	
						Total HxCDF	Result exceeded calibration range			0.0021 J	
9700001	EXAMPLE-SS-1 (0 5 - 1)	1/1/97	Soil	Tier II	Yes	1,2,3,4,6,7,8-HpCDD	Internal Standard %R	221.1%	25% to 150%	0.000020 J	
						OCDD	Internal Standard %R	235.2%	25% to 150%	0.00022 J	
						1,2,3,4,7,8-HxCDF	Internal Standard %R	422.3%	25% to 150%	0.0000038 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	365.2%	25% to 150%	0.0000020 J	
						2,3,4,6,7,8-HxCDF	Internal Standard %R	332.0%	25% to 150%	0.0000041 J	
						1,2,3,4,6,7,8-HpCDF	Internal Standard %R	222.6%	25% to 150%	0.000011 J	
Cyanide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
Sulfide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						

Validation Annex F

Data Validation Procedures for Air Analyses of Polychlorinated Biphenyls (PCBs)

Validation Annex F

Data Validation Procedures for Air Analyses of Polychlorinated Biphenyls (PCBs)

I. Introduction

This Standard Operating Procedure (SOP) describes the data validation procedures for a United States Environmental Protection Agency (EPA) Region I tiered review of data from ambient air samples analyzed for polychlorinated biphenyls (PCBs) by EPA Method T0-4A. Data review procedures presented in this SOP were developed from the applicable quality control criteria specified in the following documents:

- *Region I Tiered Organic and Inorganic Data Validation Guidelines*, USEPA Region I, July 1, 1993.
- *Region I Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses*, USEPA Region I, Draft, December 1996.
- *CLP Organics Data Review and Preliminary Review*, USEPA SOP HW-6, Revision 10, October 1995.
- *USEPA Compendium Methods TO-4A Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic/Multi-Detector Detection (GC/MD), January, 1999.*

This SOP is limited to the validation of PCB ambient air monitoring data. An SOP specifying the data validation procedures for data from samples of other matrices analyzed for PCBs (e.g., soil, sediment, water, and biota) is provided in Validation Annex B.

II. EPA Region I Tiered Validation Procedures

All analytical data on PCBs will be validated to a Tier I level following the procedures presented in the *Region I, EPA-New England Data Validation Functional Guidelines for Evaluating Environmental Analyses* (July 1996, revised December 1996) and the *Region I Tiered Organic and Inorganic Data Validation Guidelines* (USEPA guidelines). The basic Tier I review consists of a completeness evidence audit to ensure that all laboratory data and documentation are present. Additionally, for projects subject to this FSP/QAPP, the Tier I review will be modified and expanded to include a number of elements of Tier II review, including review of each sample delivery group (SDG) to identify data deficiencies that may potentially result in qualification of the data (e.g., systematic deviations such as low calibration response factors.)

For all analytical data for PCBs in ambient air samples, with the exception of the data collected from the ambient air monitors around GE's On-Plant Consolidation Areas (OPCAs) at the GE facility, a subset of the data will be identified for additional Tier II review. If QA/QC deviations are identified during the modified Tier I review, those deviations will be addressed in the Tier II review. Otherwise, a minimum of 25% of the data will be chosen at random to be subjected to a Tier II review, which will consist of the Tier I completeness evidence audit and review of all data package summary forms for identification of QA/QC parameter deviations. However, for the data collected from the OPCA air monitors, 100% of the data will be subject to full Tier II review. The Tier II data review will be used to identify and evaluate systematic QA/QC deficiencies that may affect any or all of the sample data presented in a specific data package. The Tier II data validation also includes an evaluation of field duplicate (co-located samples) Relative Percent Difference (RPD) compliance. Additional

Tier II review and Tier III (recalculation of sample results) review may also be performed for a larger portion of the data set, if required, to fully resolve data usability limitations identified during the modified Tier I data review and initial Tier II review for a minimum of 25% of the data chosen at random.

The tiered data validation procedures consisting of modified Tier I review for all data, Tier II review of 25% of the data (or 100% of the data from the OPCA air monitors), and additional Tier II and Tier III review, as required, will be used to evaluate compliance of each data set with the project-specific data quality objectives. The procedures presented in the following sections will be used to perform the Tier I, Tier II, and Tier III data validation reviews. Qualification of analytical data will also be performed, if required, as specified in the data validation protocols presented below.

III. Tier I Validation Procedures

Tier I validation of a data package consists of verifying that all raw data and forms are included and complete. An analytical data validation summary spreadsheet (in the form presented in Attachment F-2) is prepared to document the data review. The following steps are taken to complete a Tier I review:

Step 1 - Review the laboratory case narrative. During review, if there are any deviations that warrant a more extensive validation procedure, a Tier II review would be initiated to evaluate potential data use limitations.

Step 2 - Compare the chain-of-custody and the sample traffic reports. If there are any inconsistencies or if they are incomplete, then contact the laboratory for resolution.

Step 3 - Verify that all forms are present and complete. If any of the forms are not in the data package, contact the laboratory for a resubmission.

Note: If frequent or severe quality control deviations are present on the above-mentioned forms, a more extensive validation procedure may be warranted. Based on the reviewer's judgement, Tier II or Tier III review may be conducted to fully evaluate the usability of the data.

Step 4 - Verify that the following raw data are provided for each sample and associated QA/QC samples in the data package. Contact the laboratory to obtain missing data (if required):

- Case Narrative
- Chain-of-Custody Forms
- Traffic Reports
- QA Sample Summary Forms
- Instrument Calibration Summary Forms
- Instrument Run Logs
- Sample Preparation Logs
- Instrument/Method Detection Limits
- Standards Preparation Logs
- Supporting (raw) Data

Step 5 - With a blue ink pen, record on the first page of the data package: the validation level, date, and reviewer's initials.

In addition to the steps discussed above, the Tier I review of data packages for projects subject to this FSP/QAPP will be expanded to include some elements of Tier II review, including review of the data packages to identify QA/QC deficiencies that may require qualification of the data.

IV. Tier II Validation Procedures

Tier II validation of a data package consists of the steps mentioned above for a Tier I review, plus review of the data package summary forms for identification of QA/QC deviations. Tier II validation does not include review of the "raw data" or recalculation of sample results. Sample qualification is performed (if required) following EPA Region I Guidelines presented in Section I.

A. Data Qualifiers

All data qualified due to QA/QC deviations will be clearly recorded on the data summary package Form I, or laboratory equivalent, with a blue or red ink pen. The laboratory qualification is lined out and the reviewer's qualification placed next to it. The date and the initials of the reviewer will also be placed on Form I. Below is a list of qualifiers that may be used.

J — The compound was positively identified, but the associated numerical value is an estimated concentration. This qualifier is used when the data evaluation procedure identifies a deficiency in the data generation process. This qualifier is also used when a compound or analyte is detected at estimated concentrations less than the practical quantitation limit (PQL).

U — The compound was analyzed for, but was not detected. The sample quantitation limit is presented and adjusted for dilution. For consistency with the database and summary tables prepared from the data, non-detected sample results are displayed as ND(PQL), as presented in Attachment F-1.

UJ — The compound was not detected above the reported sample quantitation limit**.** However, the reported limit is approximate and may or may not represent the actual level of quantitation. For consistency with the database and summary tables prepared from the data, these non-detected sample results are displayed as ND(PQL) J, as presented in Attachment F-1.

R — Indicates that the previously reported detection limit or sample result has been rejected due to a major deficiency in the data generation procedure. The data should not be used for any qualitative or quantitative purposes.

B. Sample Collection and Holding Times

Criteria

Air samples must be collected over a time period of 24 hours (+/-60 minutes) at a sampling rate between 0.20 and 0.28 µg/m^3 with a sample volume no less than 276 standard cubic meters (scm) and no greater than 420 scm.

Air samples and extracts must be preserved at 4° centigrade. Air samples must be extracted within seven days and extracts must be analyzed within 40 days.

Action

Specific holding times for air samples to be analyzed for PCBs are included in Table 1 of the FSP/QAPP. The following steps are performed for the validation of data due to sample collection and holding times:

Step 1 - The sampling documentation is reviewed to determine the sampling period, sampling rate and total sample volume.

Step 2 - If the sampling period is less than 23 hours or greater than 25 hours, all positive results are qualified as estimated (J) and the non-detected compounds are qualified as estimated (UJ).

Step 3 - If the sampling rate is less than 0.20 $\mu g/m^3$ or greater than 0.28 $\mu g/m^3$, all positive results are qualified as estimated (J) and the non-detected compounds are qualified as estimated (UJ).

Step 4 - If the sample volume is less than 276 scm or greater than 420 scm, all positive results are qualified as estimated (J) and the non-detected compounds are qualified as estimated (UJ).

Step 5 - The holding time is established by comparing the sampling date on the chain-of-custody with the dates of analysis and/or extraction on Form I, or laboratory equivalent. The chain-of-custody is also reviewed to determine if the samples were properly preserved.

Step 6 - If the holding times are exceeded by less than 24 hours, then no qualification of data is needed.

Step 7 - If the holding times are exceeded by more than 24 hours but less than twice the holding time – i.e., 14 days for extraction and/or 80 days for analysis – all positive results are qualified as estimated (J) and the non-detected compounds are qualified as estimated (UJ).

Step 8 - If the holding times are exceeded by more than twice the specified holding time, then all results are qualified as unusable (R).

C. PCBs Instrument Performance

Criteria

1.0 The laboratory must report retention time window data on the PCBs Standards Summary (Form X), or laboratory equivalent, for each GC column used to analyze samples. Compounds must be within these retention time windows.

1.1 The retention time of DCB and TCMX in each analysis of PCBs must be compared to the retention time of the DCB and TCMX in Evaluation Standard Mix A. The Percent Difference (%D) must not exceed 0.3% for narrow-bore capillary columns and 1.5% if wide-bore capillary columns are used.

Action

Review the retention time %D presented on Form X or laboratory equivalent. The following steps outline the qualification of data for retention time shifts of DCB and TCMX:

Step 1 - If the retention time shift for DCB and TCMX is greater than 0.3% for a narrow-bore capillary column, or 1.5% for a wide-bore capillary column, the data are qualified as unusable (R).

Step 2 - If DCB and TCMX are absent, then the retention time shift cannot be evaluated (i.e., if they are diluted out due to high concentration of a target compound or matrix interference). No qualification of the data is required.

D. Calibration

Criteria

1.0 Initial Calibration for PCBs

At least a three-point calibration is required for quantification using a minimum of five peaks corresponding to the best matching Aroclor standard. The Percent Relative Standard Deviation (%RSD) of calibration factors must not be greater than 20%.

Note: The %RSD linearity check is required only for columns that are used for quantitation of sample and surrogate results. Columns used only to provide qualitative verification are not required to meet this criterion.

1.1 Initial Calibration Independent Verification for PCBs

The initial calibration should be verified by an independent calibration source yielding a percent recovery of 85% to 115%.

1.2 Analytical Sequence

1.2.1 Primary Analysis

At the beginning of each 24-hour period, continuing calibration verification (CCV) standard must be analyzed.

1.2.2 Confirmation Analysis

1.2.3 Only the standards containing the compounds to be confirmed are required. These standards must be repeated after every ten samples.

1.3 CCV Analysis

The calibration factor for each CCV standard analyzed at the midpoint must be within 15% of the initial calibration (20% on the confirmation columns). The CCV standard must be analyzed at the beginning of the analytical sequence and after very ten samples.

Action

The following steps are performed during the validation of data due to calibration deviations:

Step 1 - Verify that the criterion for the initial calibration linearity have been met by reviewing Form VI or laboratory equivalents. If the criteria in sections IV.D.1.0 through IV.D.1.3 are not met, then all associated positive results are qualified as estimated (J).

Step 2 - Verify by reviewing Form VII, or laboratory equivalents, that the associated CCV %D between calibration factors is not greater than 15% for the compound(s) being quantitated. If the %D is greater than this criterion, then all associated positive results are qualified as estimated (J).

Qualification of PCB Compounds Based on Initial Calibration Deviations

Sample Results	Initial Calibration %RSD > 20.0%	Continuing Calibration %D > 15%
Detects	J	J
Non-Detects	J	J

E. Blanks

Criteria

1.0 No contaminants should be present in the blank(s).

1.1 For each extracted batch, a method blank must be analyzed.

Action

Qualification of sample results due to blank contamination is dependent on the conditions and origin of the blank. No positive sample results are reported unless the concentration of the compound in the sample exceeds five times the amount in the blank. No sample results are corrected by subtracting blank values. Specific qualifications of sample data are as follows:

Step 1 - Review Form IV, or laboratory equivalent, within the data package to ensure that criteria IV.D.1.2 is in compliance. If they are not, the laboratory will be contacted by the reviewer for a written explanation.

Step 2 - Review Form I for all blanks within the data package.

Step 3 - When any compound is detected in the sample and the sample concentration is less than five times the concentration detected in the associated blank, the data are qualified as non-detect (U).

Step 4 - If a compound is found in the blank but not in the sample, then the data are not qualified.

Note: Any difference between the sample analyses and the related blank analyses which involve weights, volumes, or dilution factors, must be taken into account when the 5-times criteria is applied.

The following are examples of how qualifications apply to blank data:

Example 1 (Step 3): When the sample result is greater than the PQL but less than the action level, the sample results are qualified as non-detects. As in the example below, the sample result is less than the blank action level (or 5 x 1); therefore, the sample result is qualified as non-detect.

Factor	5-times
Blank Result	1.0
PQL	0.5
Action Level	5.0
Sample Result	4.0
Qualified Sample Result	4.0 U

Example 2 (Step 4): When the sample result is greater than the blank action level, the sample result is not qualified. As in the example below, the sample result is greater than the blank action level and the sample result is not qualified.

Factor	5-times
Blank Result	1.0
PQL	0.5
Action Level	5.0
Sample Result	6.0
Qualified Sample Result	6.0

Step 5 - When excessive amounts of contamination exist (i.e., saturated peaks by ECD), all compounds affected are qualified as unusable (R).

F. Surrogate Recovery

Criteria

Sample and blank surrogate recoveries (TCMX and DCB for PCBs) must be within the control limits listed in Table 5 of the FSP/QAPP.

Action

Qualification of the data due to surrogate recoveries being out of control is based on the evaluation of all data provided in the data package, especially considering the complexity of the effect of sample matrices. These qualifications are completed in the following steps:

Step 1 - Surrogate recoveries tabulated on Form II, or laboratory equivalent, for each fraction are evaluated against the control limits provided in Table 5 of the FSP/QAPP.

Step 2 - If both TCMX and DCB recoveries are less than the lower control limit, all positive results are qualified as estimated (J) and one of the following steps will be taken: (i) collecting and analyzing a new sample from the location in question or (ii) reanalyzing the existing sample.

Step 3 - If both TCMX and DCB recoveries are less than the lower control limit but greater than 10%, all non-detected results are qualified as estimated (UJ) and detected results are qualified as estimated (J).

Step 4 - If either TCMX or DCB recoveries are less than 10%, the non-detected results are qualified as unusable (R) and detected results are qualified as estimated (J).

Step 5 - If both TCMX and DCB recoveries are greater than the upper control limit, all positive results are qualified as estimated (J).

Qualification of Compounds Based on Surrogate Recovery Deviations

Sample Results	Recovery < 10%	10% ≤ %Recovery < LL	Lower QC Limit ≤ Recovery ≤ UL	Recovery > UL
Detects	J	J	-	J
Non-Detects	R	ND()J	-	-

LL- Lower limit of method QC acceptance criteria.
UL- Upper limit of method QC acceptance criteria.

G. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)

Criteria

1.0 Spike recoveries must be within the control limits in Table 5 of the FSP/QAPP.

1.1 The RPD value between MS and MSD recoveries must be within the control limits specified in Table 5.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on sample locations where the compound's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Action

If recovery results are not within the control limits, the following steps are taken to qualify the data:

Step 1 - If the recovery results are greater than the lower control limits presented in Table 5, the positive results for the compound are qualified as estimated (J)

Step 2 - If the recovery result is less than the lower control limit presented in Table 5, detect and/or non-detect sample results for the compound are qualified as estimated (J).

Step 3 - If the recovery result is less than 10%, the non-detects for that compound in the unspiked sample are qualified as rejected (R) and detects for that compound are qualified as estimated (J). This is the only instance that a non-detect is qualified due to recovery results being out of control.

Step 4 - If any of the RPD values are greater than the limits presented in Table 5, Detect and/or non-detect sample results for that compound are qualified as estimated (J) in the unspiked sample.

Qualification of Compounds Based on MS/MSD Recovery and MS/MSD RPD Deviations

Sample Results	Recovery < 10%	10% ≤ %Recovery < Lower QC Limit	Lower QC Limit ≤ Recovery ≤ Upper QC Limit	Recovery > Upper QC Limit	RPD > QC Limit
Detects	J	J	-	J	J
Non-Detects	R	J	-	-	J

H. Field Duplicates

Criteria

1.0 For air matrices, each compound with a detectable concentration two times greater than the PQL must have an RPD value that is less than 50%.

Action

Step 1 - Calculate all RPD values for positive results between the sample and the field duplicate.

$$\text{Calculation: } RPD = \frac{\text{Sample Result - Field Duplicate}}{\text{(Sample Result + Field Duplicate)/2}} \times 100$$

Step 2 - If the RPD value is greater than 50% in an air matrix and both sample results are greater than two times the PQL, the result for that compound in both samples is qualified as estimated (J).

Step 3 - If both sample results are less than two times the PQL, qualification of the sample data is not required.

Step 4 - If one sample result is less than two times the PQL and the other is greater than two times the PQL, the result for that compound in both samples is qualified as estimated (J).

Qualification of Air Data Based on Field Duplicate RPD Deviations

RPD	> 50%	> 50%	>50%
Sample Results	Both duplicate sample concs. ≥ 2 times PQL	PQL ≤ both duplicate samples concs. < 2 times PQL and ≥ PQL	One sample conc. ≥ 2 times PQL and other sample conc. < 2 times PQL
Detects	J	-	J
Non-Detects	-	-	-

V. Tier III Validation Procedures

Tier III validation of a data package consists of the steps mentioned above for a Tier I and Tier II validation plus review of the "raw data" and recalculation of approximately 10% of the sample results. The compound identification, instrument performance, quantitation, and detection limits are also evaluated.

A. Compound Quantitation and Reported Quantitation Limits

Criteria

The quantitation of detected compounds and the adjustment of the PQL for dilutions must be recalculated for 10% of the data.

Action

Step 1 - If the criteria above have not been followed, the laboratory will be contacted by the reviewer and the laboratory will be responsible for a correction of the quantitation and resubmission of the reported data.

Step 2 - Quantitation limits affected by large, off-scale peaks are qualified as unusable (R).

Step 3 - If the interference is on-scale, the quantitation limit is qualified as estimated (J).

B. Instrument Performance

Criteria

The laboratory must report retention time window data on the PCB standards summary (Form X or laboratory equivalent) for each GC column used to analyze samples. Compounds must be within these retention time windows.

Action

Retention time windows are used in qualitative identification. If the sample results are not within the retention time windows, the following steps are taken to evaluate the data:

Step 1 - The chromatogram is reviewed to see if there are any peaks within an expanded window surrounding the expected retention time window of the compound of interest.

Step 2 - If there are no peaks present either within or close to the retention time window of the out of control targeted compound, then there is no qualification of the data. Non-detected results are considered valid.

Step 3 - If there are peaks present above or close to the PQL and either within or close to the retention time window of the out of control targeted compound, all positive data are qualified as unusable (R).

C. Compound Identification

Criteria

Reported compounds must be within calculated retention time windows for both chromatographic columns.

Action

The following steps are taken during the compound identification:

Step 1 - When the qualitative criteria for two-column confirmation are not met, all reported positive detects are reported as non-detects. The reviewer uses professional judgment and the following steps to report the appropriate quantitation limit:

a. If the misidentified peak was sufficiently outside the target compound retention time window, then the PQL is reported.

b. If the misidentified peak poses an interference with potential detection of a target peak, the reported value is qualified as the estimated (J) quantitation limit.

Step 2 - When PCBs exhibit marginal pattern-matching quality, the reviewer's professional judgment is used to confirm whether the differences are credited to environmental "weathering." If the presence of a PCB is strongly suggested, results are reported as being present.

Step 3 - When an observed pattern closely matches more than one Aroclor, professional judgment is used to decide whether the neighboring Aroclor is a better match, or if multiple Aroclors are present.

Attachment F-1
Laboratory Reporting Forms
Polychlorinated Biphenyls

1D

ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) _____ Lab Sample ID: _____

Sample wt/vol: _____(g/mL)____ Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) _____ Date Extracted: _____

Concentrated Extract Volume: _____(uL) Date Analyzed: _____

Injection Volume: _____(uL) Dilution Factor: _____

GPC Cleanup: (Y/N)___ pH:____ Sulfur Cleanup: (Y/N) ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)_____	Q
12674-11-2	Aroclor-1016		
11104-28-2	Aroclor-1221		
11141-16-5	Aroclor-1232		
53469-21-9	Aroclor-1242		
12672-29-6	Aroclor-1248		
11097-69-1	Aroclor-1254		
11096-82-5	Aroclor-1260		

WATER SURROGATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): _____ ID: _____(mm) GC Column(2): _____ ID: _____(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

2F

SOIL

SURROGATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column(1): _____ ID: _____(mm) GC Column(2): _____ ID: _____(mm)

	EPA SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

	ADVISORY QC LIMITS
TCX = Tetrachloro-m-xylene	(60-150)
DCB = Decachlorobiphenyl	(60-150)

\# Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

3E

WATER MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
					56-123
					40-131
					40-120
					52-126
					56-121
					38-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
					15	56-123
					20	40-131
					22	40-120
					18	52-126
					21	56-121
					27	38-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD:_____ out of _____ outside limits
Spike Recovery:_____ out of _____ outside limits

COMMENTS: _____

_____

3F

SOIL

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: _____

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
					46-127
					35-130
					34-132
					31-134
					42-139
					23-134

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
					50	46-127
					31	35-130
					43	34-132
					38	31-134
					45	42-139
					50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: _____ out of _____ outside limits
Spike Recovery: _____ out of _____ outside limits

COMMENTS: _____

_____

4C

METHOD BLANK SUMMARY

EPA SAMPLE NO.

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID: _____ Lab File ID: _____

Matrix: (soil/water) _____ Extraction: (SepF/Cont/Sonc) _____

Sulfur Cleanup: (Y/N) __ Date Extracted: _____

Date Analyzed (1): _____ Date Analyzed (2): _____

Time Analyzed (1): _____ Time Analyzed (2): _____

Instrument ID (1): _____ Instrument ID (2): _____

GC Column (1): _____ ID: _____ (mm) GC Column (2): _____ ID: _____ (mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

6F

INITIAL CALIBRATION OF MULTICOMPONENT ANALYTES

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Instrument ID: _____ Date(s) Analyzed: _____ _____

GC Column: _____ ID: _____(mm)

COMPOUND	AMOUNT (ng)	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR
		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1016		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1221		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1232		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1242		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1248		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1254		*1				
		*2				
		*3				
		4				
		5				
Aroclor 1260		*1				
		*2				
		*3				
		4				
		5				

* Denotes required peaks

7E

CALIBRATION VERIFICATION SUMMARY

Lab Name:_____ Contract:_____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Init. Calib. Date(s):_____ _____

EPA Sample No.(PIBLK): _____ Date Analyzed :_____

Lab Sample ID (PIBLK): _____ Time Analyzed :_____

EPA Sample No.(INDA): _____ Date Analyzed :_____

Lab Sample ID (INDA): _____ Time Analyzed :_____

INDIVIDUAL MIX A COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	RPD

EPA Sample No.(INDB): _____ Date Analyzed :_____

Lab Sample ID (INDB): _____ Time Analyzed :_____

INDIVIDUAL MIX B COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALC AMOUNT (ng)	NOM AMOUNT (ng)	RPD
Tetrachloro-m-xylene						
Decachlorobiphenyl						

QC LIMITS: RPD of amounts in the Individual Mixes must be less than or equal to 25.0%.

8D
ANALYTICAL SEQUENCE

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

GC Column: _____ ID: _____(mm) Init. Calib. Date(s): _____ _____

Instrument ID: _____

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: _____ DCB: _____

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01						
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (± 0.05 MINUTES)
DCB = Decachlorobiphenyl (± 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

9A

FLORISIL CARTRIDGE CHECK

Lab Name: _____ Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Florisil Cartridge Lot Number: _____ Date of Analysis: _____

GC Column(1): _____ ID: _____(mm) GC Column(2): _____ ID: _____(mm)

COMPOUND	SPIKE ADDED (ng)	SPIKE RECOVERED (ng)	% REC #	QC LIMITS
				80-120
				80-120
				80-120
				80-120
				80-120
				80-120
				80-120
				80-120
Tetrachloro-m-xylene				80-120
Decachlorobiphenyl				80-120

Column to be used to flag recovery with an asterisk.
* Values outside of QC limits.

THIS CARTRIDGE LOT APPLIES TO THE FOLLOWING SAMPLES, BLANKS, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				

10B
IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

EPA SAMPLE NO.

Lab Name: ____________ Contract: ________

Lab Code: ______ Case No.: _____ SAS No.: _____ SDG No.: _____

Lab Sample ID : ________ Date(s) Analyzed: ______ ______

Instrument ID (1): ________ Instrument ID (2): ________

GC Column(1): ______ ID: ____(mm) GC Column(2): ______ ID: ____(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes

page __ of __

Attachment F-2
Analytical Data Validation Summary

TABLE 1

GENERAL ELECTRIC COMPANY - PITTSFIELD, MASSACHUSETTS

ANALYTICAL DATA VALIDATION SUMMARY

(Results are presented in parts per million, ppm)

Sample Delivery Group No.	Sample ID	Date Collected	Matrix	Validation Level	Qualification	Compound	QA/QC Parameter	Value	Control Limits	Qualified Result	Notes
PCBs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-2 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9700001	EXAMPLE-SS-3 (0.5 - 1)	1/1/97	Soil	Tier II	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-5 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-6 (0.5 - 1)	1/1/97	Soil	Tier I	No						
9700002	EXAMPLE-SS-DUP-1	1/1/97	Soil	Tier I	No						Duplicate of EXAMPLE-SS-5 (0.5 - 1)
Metals											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	Copper	Matrix Spike %R	54.0%	75% to 125%	ND(5.62) J	
VOCs											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
SVOCs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	59.0%	<25%	ND(1.6) J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	2,6-Dinitrophenol	CCAL %D	85.3%	<25%	ND(1.6) J	
						Pentachlorophenol	CCAL %D	52.3%	<25%	ND(1.6) J	
PCDDs/PCDFs											
9700001	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	Yes	1,2,3,4,7,8-HxCDF	Internal Standard %R	188.0%	25% to 150%	0.00013 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	186.7%	25% to 150%	0.000066 J	
						Total TCDF	Result exceeded calibration range			0.00058 J	
						Total HxCDF	Result exceeded calibration range			0.0021 J	
9700001	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	Yes	1,2,3,4,6,7,8-HpCDD	Internal Standard %R	221.1%	25% to 150%	0.000020 J	
						OCDD	Internal Standard %R	235.2%	25% to 150%	0.00022 J	
						1,2,3,4,7,8-HxCDF	Internal Standard %R	422.3%	25% to 150%	0.0000038 J	
						1,2,3,6,7,8-HxCDF	Internal Standard %R	365.2%	25% to 150%	0.0000020 J	
						2,3,4,6,7,8-HxCDF	Internal Standard %R	332.0%	25% to 150%	0.0000041 J	
						1,2,3,4,6,7,8-HpCDF	Internal Standard %R	222.6%	25% to 150%	0.000011 J	
Cyanide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						
Sulfide											
9801047	EXAMPLE-SS-1 (0 - 0.5)	1/1/97	Soil	Tier II	No						
9801047	EXAMPLE-SS-1 (0.5 - 1)	1/1/97	Soil	Tier II	No						

Attachments

Attachment A

Laboratory Qualifications for Northeast Analytical Services, Inc.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised March 05, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ROBERT E. WAGNER
NORTHEAST ANALYTICAL INC
2190 TECHNOLOGY DRIVE
SCHENECTADY, NY 12308

NY Lab Id No: 11078
EPA Lab Code: NY00906

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Amines	
Pyridine	EPA 8270
Benzidines	
3,3' -Dichlorobenzidine	EPA 625
	EPA 8270
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 608
	EPA 8081A
4,4'-DDE	EPA 608
	EPA 8081A
4,4'-DDT	EPA 608
	EPA 8081A
Aldrin	EPA 608
	EPA 8081A
alpha-BHC	EPA 608
	EPA 8081A
beta-BHC	EPA 608
	EPA 8081A
Chlordane Total	EPA 608
	EPA 8081A
delta-BHC	EPA 608
	EPA 8081A
Dieldrin	EPA 608

Chlorinated Hydrocarbon Pesticides	
Dieldrin	EPA 8081A
Endosulfan I	EPA 608
	EPA 8081A
Endosulfan II	EPA 608
	EPA 8081A
Endosulfan sulfate	EPA 608
	EPA 8081A
Endrin	EPA 608
	EPA 8081A
Endrin aldehyde	EPA 608
	EPA 8081A
Heptachlor	EPA 608
	EPA 8081A
Heptachlor epoxide	EPA 608
	EPA 8081A
Lindane	EPA 608
	EPA 8081A
Methoxychlor	EPA 608
	EPA 8081A
Toxaphene	EPA 608
	EPA 8081A

Serial No.: 31932

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised March 05, 2007

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EPA Lab Code: NY00906

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA 625
	EPA 8270
2-Chloronaphthalene	EPA 625
	EPA 8270
Hexachlorobenzene	EPA 625
	EPA 8270
Hexachlorobutadiene	EPA 625
	EPA 8270
Hexachlorocyclopentadiene	EPA 625
	EPA 8270
Hexachloroethane	EPA 625
	EPA 8270
Chlorophenoxy Acid Pesticides	
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Fuel Oxygenates	
Methyl tert-butyl ether	EPA 8260B
t-Butyl alcohol	EPA 8260B
Haloethers	
4-Bromophenylphenyl ether	EPA 625
	EPA 8270

Haloethers	
4-Chlorophenylphenyl ether	EPA 625
	EPA 8270
Bis (2-chloroisopropyl) ether	EPA 625
	EPA 8270
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270
Bis(2-chloroethyl)ether	EPA 625
	EPA 8270
Mineral	
Calcium Hardness	EPA 200.7
Hardness, Total	EPA 200.7
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 625
	EPA 8270
2,6-Dinitrotoluene	EPA 625
	EPA 8270
Isophorone	EPA 625
	EPA 8270
Nitrobenzene	EPA 625
	EPA 8270

Serial No.: 31932

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised March 05, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ROBERT E. WAGNER
NORTHEAST ANALYTICAL INC
2190 TECHNOLOGY DRIVE
SCHENECTADY, NY 12308

NY Lab Id No: 11078
EPA Lab Code: NY00906

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Nitrosoamines	
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270
N-Nitrosodiphenylamine	EPA 625
	EPA 8270
Phthalate Esters	
Benzyl butyl phthalate	EPA 625
	EPA 8270
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270
Diethyl phthalate	EPA 625
	EPA 8270
Dimethyl phthalate	EPA 625
	EPA 8270
Di-n-butyl phthalate	EPA 625
	EPA 8270
Di-n-octyl phthalate	EPA 625
	EPA 8270
Polychlorinated Biphenyls	
PCB-1016	EPA 608
	EPA 8082
PCB-1221	EPA 608
	EPA 8082
Polychlorinated Biphenyls	
PCB-1232	EPA 608
	EPA 8082
PCB-1242	EPA 608
	EPA 8082
PCB-1248	EPA 608
	EPA 8082
PCB-1254	EPA 608
	EPA 8082
PCB-1260	EPA 608
	EPA 8082
Polynuclear Aromatics	
Acenaphthene	EPA 625
	EPA 8270
Acenaphthylene	EPA 625
	EPA 8270
Anthracene	EPA 625
	EPA 8270
Benzo(a)anthracene	EPA 625
	EPA 8270
Benzo(a)pyrene	EPA 625
	EPA 8270
Benzo(b)fluoranthene	EPA 625

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Polynuclear Aromatics	
Benzo(b)fluoranthene	EPA 8270
Benzo(ghi)perylene	EPA 625
	EPA 8270
Benzo(k)fluoranthene	EPA 625
	EPA 8270
Chrysene	EPA 625
	EPA 8270
Dibenzo(a,h)anthracene	EPA 625
	EPA 8270
Fluoranthene	EPA 625
	EPA 8270
Fluorene	EPA 625
	EPA 8270
Indeno(1,2,3-cd)pyrene	EPA 625
	EPA 8270
Naphthalene	EPA 625
	EPA 8270
Phenanthrene	EPA 625
	EPA 8270
Pyrene	EPA 625
	EPA 8270

Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 625
	EPA 8270
2,4,6-Trichlorophenol	EPA 625
	EPA 8270
2,4-Dichlorophenol	EPA 625
	EPA 8270
2,4-Dimethylphenol	EPA 625
	EPA 8270
2,4-Dinitrophenol	EPA 625
	EPA 8270
2-Chlorophenol	EPA 625
	EPA 8270
2-Methyl-4,6-dinitrophenol	EPA 625
	EPA 8270
2-Nitrophenol	EPA 625
	EPA 8270
4-Chloro-3-methylphenol	EPA 625
	EPA 8270
4-Nitrophenol	EPA 625
	EPA 8270
Cresols, Total	EPA 8270
Pentachlorophenol	EPA 625
	EPA 8270

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Priority Pollutant Phenols	
Phenol	EPA 625
	EPA 8270
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270
1,3-Dichlorobenzene	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270
1,4-Dichlorobenzene	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270
Benzene	EPA 602

Purgeable Aromatics	
Benzene	EPA 624
	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 624
	EPA 8260B
Ethyl benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Toluene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Purgeable Halocarbons	
1,1,1-Trichloroethane	EPA 624
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 624
	EPA 8260B

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All approved analytes are listed below:

Purgeable Halocarbons	
1,1,2-Trichloroethane	EPA 624
	EPA 8260B
1,1-Dichloroethane	EPA 624
	EPA 8260B
1,1-Dichloroethene	EPA 624
	EPA 8260B
1,2-Dichloroethane	EPA 624
	EPA 8260B
1,2-Dichloropropane	EPA 624
	EPA 8260B
2-Chloroethylvinyl ether	EPA 624
	EPA 8260B
Bromodichloromethane	EPA 624
	EPA 8260B
Bromoform	EPA 624
	EPA 8260B
Bromomethane	EPA 624
	EPA 8260B
Carbon tetrachloride	EPA 624
	EPA 8260B
Chloroethane	EPA 624
	EPA 8260B
Chloroform	EPA 624

Purgeable Halocarbons	
Chloroform	EPA 8260B
Chloromethane	EPA 624
	EPA 8260B
cis-1,2-Dichloroethene	EPA 624
	EPA 8260B
cis-1,3-Dichloropropene	EPA 624
	EPA 8260B
Dibromochloromethane	EPA 624
	EPA 8260B
Dichlorodifluoromethane	EPA 624
	EPA 8260B
Methylene chloride	EPA 624
	EPA 8260B
Tetrachloroethene	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,2-Dichloroethene	EPA 624
	EPA 8260B
trans-1,3-Dichloropropene	EPA 624
	EPA 8260B
Trichloroethene	EPA 624
	EPA 8021B
	EPA 8260B

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Purgeable Halocarbons	
Trichlorofluoromethane	EPA 624
	EPA 8260B
Vinyl chloride	EPA 624
	EPA 8260B
Purgeable Organics	
2-Butanone (Methylethyl ketone)	EPA 8260B
Residue	
Solids, Total	EPA 160.3
Solids, Total Dissolved	EPA 160.1
Solids, Total Suspended	EPA 160.2
Wastewater Metals I	
Barium, Total	EPA 200.7
	EPA 6010B
Cadmium, Total	EPA 200.7
	EPA 213.2
	EPA 6010B
Calcium, Total	EPA 200.7
	EPA 6010B
Chromium, Total	EPA 200.7
	EPA 6010B
Copper, Total	EPA 200.7

Wastewater Metals I	
Copper, Total	EPA 6010B
Iron, Total	EPA 200.7
	EPA 6010B
Lead, Total	EPA 200.7
	EPA 200.9
	EPA 239.2
	EPA 6010B
	EPA 7421
Magnesium, Total	EPA 200.7
	EPA 6010B
Manganese, Total	EPA 200.7
	EPA 6010B
Nickel, Total	EPA 200.7
	EPA 6010B
Potassium, Total	EPA 200.7
	EPA 6010B
Silver, Total	EPA 200.7
	EPA 6010B
Sodium, Total	EPA 200.7
	EPA 6010B
Strontium, Total	EPA 200.7
	EPA 6010B

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All approved analytes are listed below:

Wastewater Metals II

Aluminum, Total	EPA 200.7
	EPA 6010B
Antimony, Total	EPA 200.7
	EPA 6010B
Arsenic, Total	EPA 200.7
	EPA 200.9
	EPA 6010B
Beryllium, Total	EPA 200.7
Chromium VI	EPA 7196A
	SM 18-19 3500-Cr D
	SM 20 3500-Cr B
Mercury, Total	EPA 245.2
	EPA 7470A
Selenium, Total	EPA 200.7
	EPA 270.2
	EPA 6010B
	EPA 7740
Vanadium, Total	EPA 200.7
	EPA 6010B
Zinc, Total	EPA 200.7
	EPA 6010B

Wastewater Metals III

Cobalt, Total	EPA 200.7
	EPA 6010B
Molybdenum, Total	EPA 200.7
	EPA 6010B
Thallium, Total	EPA 200.7
	EPA 200.9
	EPA 6010B
Tin, Total	EPA 200.7
	EPA 6010B
Titanium, Total	EPA 200.7
	EPA 6010B

Wastewater Miscellaneous

Boron, Total	EPA 200.7
	EPA 6010B
Hydrogen Ion (pH)	EPA 150.1
	EPA 9040B
Oil & Grease Total Recoverable	EPA 1664A
Organic Carbon, Total	EPA 415.1

Sample Preparation Methods

EPA 3010A EPA 3005A EPA 3020A

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All approved analytes are listed below:

Characteristic Testing	
Ignitability	EPA 1010
	EPA 1030
Reactivity	SW-846 Ch7, Sec. 7.3
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
delta-BHC	EPA 8081A
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Chlorinated Hydrocarbon Pesticides	
Toxaphene	EPA 8081A
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA 8270
2-Chloronaphthalene	EPA 8270
Hexachlorobenzene	EPA 8270
Hexachlorobutadiene	EPA 8270
Hexachlorocyclopentadiene	EPA 8270
Hexachloroethane	EPA 8270
Haloethers	
4-Bromophenylphenyl ether	EPA 8270
4-Chlorophenylphenyl ether	EPA 8270
Bis (2-chloroisopropyl) ether	EPA 8270
Bis(2-chloroethoxy)methane	EPA 8270
Metals I	
Barium, Total	EPA 6010B
Cadmium, Total	EPA 6010B
Calcium, Total	EPA 6010B
Chromium, Total	EPA 6010B
Copper, Total	EPA 6010B
Iron, Total	EPA 6010B
Lead, Total	EPA 6010B

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Metals I	
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
Nickel, Total	EPA 6010B
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
Sodium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
Antimony, Total	EPA 6010B
Arsenic, Total	EPA 6010B
Beryllium, Total	EPA 6010B
Chromium VI	EPA 7196A
Mercury, Total	EPA 7471A
Selenium, Total	EPA 6010B
Vanadium, Total	EPA 6010B
Zinc, Total	EPA 6010B
Metals III	
Cobalt, Total	EPA 6010B
Molybdenum, Total	EPA 6010B
Thallium, Total	EPA 6010B
Tin, Total	EPA 6010B

Miscellaneous	
Hydrogen Ion (pH)	EPA 9040B
	EPA 9045C
Lead in Paint	EPA 6010B
Oil & Grease Total Recoverable	EPA 9070
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8270
2,6-Dinitrotoluene	EPA 8270
Isophorone	EPA 8270
Nitrobenzene	EPA 8270
Nitrosoamines	
N-Nitrosodi-n-propylamine	EPA 8270
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270
Bis(2-ethylhexyl) phthalate	EPA 8270
Diethyl phthalate	EPA 8270
Dimethyl phthalate	EPA 8270
Di-n-butyl phthalate	EPA 8270
Di-n-octyl phthalate	EPA 8270
Polychlorinated Biphenyls	
PCB-1016	EPA 8082

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Polychlorinated Biphenyls	
PCB-1221	EPA 8082
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082
Polynuclear Aromatic Hydrocarbons	
Acenaphthene	EPA 8270
Acenaphthylene	EPA 8270
Anthracene	EPA 8270
Benzo(a)anthracene	EPA 8270
Benzo(a)pyrene	EPA 8270
Benzo(b)fluoranthene	EPA 8270
Benzo(ghi)perylene	EPA 8270
Benzo(k)fluoranthene	EPA 8270
Chrysene	EPA 8270
Dibenzo(a,h)anthracene	EPA 8270
Fluoranthene	EPA 8270
Fluorene	EPA 8270
Indeno(1,2,3-cd)pyrene	EPA 8270
Naphthalene	EPA 8270
Phenanthrene	EPA 8270
Polynuclear Aromatic Hydrocarbons	
Pyrene	EPA 8270
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 8270
2,4,6-Trichlorophenol	EPA 8270
2,4-Dichlorophenol	EPA 8270
2,4-Dimethylphenol	EPA 8270
2,4-Dinitrophenol	EPA 8270
2-Chlorophenol	EPA 8270
2-Methyl-4,6-dinitrophenol	EPA 8270
2-Methylphenol	EPA 8270
2-Nitrophenol	EPA 8270
4-Chloro-3-methylphenol	EPA 8270
4-Nitrophenol	EPA 8270
Pentachlorophenol	EPA 8270
Phenol	EPA 8270
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,2-Dichlorobenzene	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B

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Purgeable Aromatics	
1,4-Dichlorobenzene	EPA 8260B
Benzene	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8021B
	EPA 8260B
n-Butylbenzene	EPA 8021B
	EPA 8260B
n-Propylbenzene	EPA 8021B
	EPA 8260B
p-Isopropyltoluene (P-Cymene)	EPA 8021B
	EPA 8260B
sec-Butylbenzene	EPA 8021B
	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8021B
	EPA 8260B
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B
	EPA 8260B

Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
1,1-Dichloroethane	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B
2-Chloroethylvinyl ether	EPA 8260B
Bromodichloromethane	EPA 8260B
Bromoform	EPA 8260B
Bromomethane	EPA 8260B
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B
Chloroform	EPA 8260B
Chloromethane	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
Dibromochloromethane	EPA 8260B
Dichlorodifluoromethane	EPA 8260B
Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B
Trichloroethene	EPA 8260B

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Purgeable Halocarbons	
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B
Purgeable Organics	
4-Methyl-2-Pentanone	EPA 8260B
Methyl tert-butyl ether	EPA 8021B
	EPA 8260B
Semi-Volatile Organics	
Dibenzofuran	EPA 8270

Sample Preparation Methods

EPA 1310 EPA 1311

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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All approved analytes are listed below:

Drinking Water Metals I	
Arsenic, Total	EPA 200.9
Barium, Total	EPA 200.7
Cadmium, Total	EPA 200.7
Chromium, Total	EPA 200.7
Copper, Total	EPA 200.7
Iron, Total	EPA 200.7
Lead, Total	EPA 200.9
Manganese, Total	EPA 200.7
Mercury, Total	EPA 245.2
Selenium, Total	EPA 200.9
Silver, Total	EPA 200.7
Zinc, Total	EPA 200.7
Drinking Water Metals II	
Antimony, Total	EPA 200.9
Nickel, Total	EPA 200.7
Thallium, Total	EPA 200.9
Drinking Water Metals III	
Sodium, Total	EPA 200.7
Drinking Water Non-Metals	
Hydrogen Ion (pH)	EPA 150.1

Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 502.2
1,2,4-Trichlorobenzene	EPA 502.2
1,2,4-Trimethylbenzene	EPA 502.2
1,2-Dichlorobenzene	EPA 502.2
1,3,5-Trimethylbenzene	EPA 502.2
1,3-Dichlorobenzene	EPA 502.2
1,4-Dichlorobenzene	EPA 502.2
2-Chlorotoluene	EPA 502.2
4-Chlorotoluene	EPA 502.2
Benzene	EPA 502.2
Bromobenzene	EPA 502.2
Chlorobenzene	EPA 502.2
Ethyl benzene	EPA 502.2
Hexachlorobutadiene	EPA 502.2
Isopropylbenzene	EPA 502.2
n-Butylbenzene	EPA 502.2
n-Propylbenzene	EPA 502.2
p-Isopropyltoluene (P-Cymene)	EPA 502.2
sec-Butylbenzene	EPA 502.2
Styrene	EPA 502.2
tert-Butylbenzene	EPA 502.2
Toluene	EPA 502.2
Total Xylenes	EPA 502.2

Serial No.: 31050

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised October 23, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ROBERT E. WAGNER
NORTHEAST ANALYTICAL INC
2190 TECHNOLOGY DRIVE
SCHENECTADY, NY 12308

NY Lab Id No: 11078
EPA Lab Code: NY00906

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons

Tetrachloroethene	EPA 502.2
Trichloroethene	EPA 502.2

Serial No.: 31050

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised January 29, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ROBERT E. WAGNER
NORTHEAST ANALYTICAL INC
2190 TECHNOLOGY DRIVE
SCHENECTADY, NY 12308

NY Lab Id No: 11078
EPA Lab Code: NY00906

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Polychlorinated Biphenyls

PCB-1016	EPA TO-10A
PCB-1221	EPA TO-10A
PCB-1232	EPA TO-10A
PCB-1242	EPA TO-10A
PCB-1248	EPA TO-10A
PCB-1254	EPA TO-10A
PCB-1260	EPA TO-10A

Serial No.: 31743

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

Attachment B

Laboratory Qualifications for SGS Environmental Services, Inc.

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Senator William X. Wall Experiment Station

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ROBERT W. GOLLEDGE, Jr.
Secretary

ARLEEN O"DONNELL
Commissioner

October 11, 2006

Certified Mail # 7004 2510 0001 6607 1020

Mr. Mike Larkins
SGS-Paradigm Analytical Laboratories, Inc.
5500 Business Dr
Wilmington NC 28405

RE: Final Action on Certification Application for Initial Certification of Chemical Laboratory

AT: SGS-Paradigm Analytical Laboratories, Inc.
5500 Business Dr
Wilmington NC 28405

Transmittal Number: W075862

Dear Mr. Larkins:

Enclosed is your Massachusetts certification as an environmental analysis laboratory. This certificate is in effect through June 30, 2007, and is subject to revision throughout the year to reflect your laboratory's performance on proficiency tests and the status of your certification in your resident state. Please examine the certificate and certified parameter list carefully to ensure that the categories and analytes for which your laboratory is approved appear correct. In addition, please verify the accuracy of your laboratory name, address, telephone number, and director.

Certification is not possible for aluminum in non-potable water and polychlorinated biphenyls in oil because the laboratory did not achieve a sufficient number of acceptable results in proficiency test studies.

Please display the certified parameter list with your certificate. Your certificate is valid only when accompanied by the latest dated certified parameter list, as issued by the Massachusetts DEP.

Renewal of this certificate is contingent upon timely receipt of the results of your participation in NIST-approved water supply and water pollution proficiency test studies. Satisfactory results must be achieved in the analyte categories and methods for which certification is requested. In addition, you are required to submit to this office current copies of your resident state certificate and resident state on-site audit report as renewals occur. Any change in the status of your resident state certification must be reported immediately to this office.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 10 OCT 2006

M-NC919 **SGS-PARADIGM ANALYTICAL LABORATORIES INC**
WILMINGTON NC

NON POTABLE WATER (CHEMISTRY) **Effective Date** **10 OCT 2006** **Expiration Date** **30 JUN 2007**

Analytes	Methods
ANTIMONY	EPA 200.7
ARSENIC	EPA 200.7
BERYLLIUM	EPA 200.7
CADMIUM	EPA 200.7
CHROMIUM	EPA 200.7
COBALT	EPA 200.7
COPPER	EPA 200.7
IRON	EPA 200.7
LEAD	EPA 200.7
MANGANESE	EPA 200.7
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
NICKEL	EPA 200.7
SELENIUM	EPA 200.7
SILVER	EPA 200.7
STRONTIUM	EPA 200.7
THALLIUM	EPA 200.7
TITANIUM	EPA 200.7
VANADIUM	EPA 200.7
ZINC	EPA 200.7
PH	EPA 150.1
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624
CHLORDANE	EPA 608
ALDRIN	EPA 608
DIELDRIN	EPA 608
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
HEPTACHLOR	EPA 608
HEPTACHLOR EPOXIDE	EPA 608
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

The Commonwealth of Massachusetts

Department of Environmental Protection

Division of Environmental Analysis
Senator William X. Wall Experiment Station

certifies

M-NC919

SGS-PARADIGM ANALYTICAL LABORATORIES INC
5500 BUSINESS DR
WILMINGTON, NC 28405-0000

Laboratory Director: **MIKE LARKINS**

for the analysis of **NON POTABLE WATER (CHEMISTRY)**

pursuant to 310 CMR 42.00

This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.

This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.

Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.

Oscar C. Parcarbo

Director, Division of Environmental Analysis

Issued: **10 OCT 2006**

Expires: **30 JUN 2007**

DOH STATE OF NEW YORK
DEPARTMENT OF HEALTH

Wadsworth Center The Governor Nelson A. Rockefeller Empire State Plaza P.O. BOX 509 Albany, New York 12201-0509

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

LAB ID: 11685

April 03, 2006

MR. W MICHAEL LARKINS
PARADIGM ANALYTICAL LABORATORIES
5500 BUSINESS DRIVE
WILMINGTON, NC 28405

Certificate Expiration Date: April 01, 2007

Dear Mr. Larkins,

Enclosed are the ELAP and/or NELAP Certificate(s) of Approval issued to your environmental laboratory for the current permit year. The Certificate(s) supersede any previously issued and is(are) in effect through the expiration date listed above. Please carefully examine the Certificate(s) to insure that the categories, subcategories, analytes and methods for which your laboratory is approved are listed correctly, as well as verifying your laboratory's name, address, lead technical director and identification number.

Pursuant to regulation (Part 55-2 NYCRR), original certificates must be posted conspicuously in the laboratory and shall, upon request, be made available to any client of the laboratory. Certificates remain the property of the New York State Department of Health and must be surrendered promptly on demand.

Please note, pursuant to Section 55-2.5(a) NYCRR, any misrepresentation of the Fields of Accreditation (Matrix - Method - Analyte) for which your laboratory is approved may result in denial, suspension, or revocation of your certification. Any use of the ELAP or NELAP name, reference to the laboratory's approval status and/or using the NELAC/NELAP logo in any catalogs, advertising, business solicitations, proposals, quotations, laboratory analytical reports or other materials must include the laboratory's ELAP identification number, and must distinguish between proposed testing for which the laboratory is approved and the proposed testing for which the laboratory is not approved.

Please notify the ELAP office of any changes you feel need to be made to your Certificate(s). We may be reached via email to elap@health.state.ny.us or by calling (518) 485-5570.

Sincerely,

Joyce Reilly

Program Administrator
Environmental Laboratory
Approval Program

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 1, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. W MICHAEL LARKINS
PARADIGM ANALYTICAL LABORATORIES
5500 BUSINESS DRIVE
WILMINGTON, NC 28405

NY Lab Id No: 11685
EPA Lab Code: NC00919

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Drinking Water Miscellaneous

2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 1613

Serial No.: 29715

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 1, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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PARADIGM ANALYTICAL LABORATORIES
5500 BUSINESS DRIVE
WILMINGTON, NC 28405

NY Lab Id No: 11685
EPA Lab Code: NC00919

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Amines	
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
Pyridine	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 8270C
Benzidine	EPA 8270C
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
delta-BHC	EPA 8081A
Dieldrin	EPA 8081A

Chlorinated Hydrocarbon Pesticides	
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Toxaphene	EPA 8081A
Chlorinated Hydrocarbons	
Hexachlorobenzene	EPA 8270C
Hexachlorobutadiene	EPA 8270C
Hexachlorocyclopentadiene	EPA 8270C
Hexachloroethane	EPA 8270C
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A

Serial No.: 29716

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 1, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. W MICHAEL LARKINS
PARADIGM ANALYTICAL LABORATORIES
5500 BUSINESS DRIVE
WILMINGTON, NC 28405

NY Lab Id No: 11685
EPA Lab Code: NC00919

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Chlorophenoxy Acid Pesticides	
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
Dioxins	
2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 1613
Fuel Oxygenates	
Methyl tert-butyl ether	EPA 8260B
t-Butyl alcohol	EPA 8260B
Haloethers	
4-Chlorophenylphenyl ether	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 8270C
Bis(2-chloroethyl)ether	EPA 8270C
Microextractables	
1,2-Dibromoethane	EPA 8011
Mineral	
Chloride	EPA 300.0
Fluoride, Total	EPA 300.0
Sulfate (as SO4)	EPA 300.0
Nitroaromatics and Isophorone	
Isophorone	EPA 8270C
Nitrobenzene	EPA 8270C
Nitrosoamines	
N-Nitrosodimethylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C
Nutrient	
Nitrate (as N)	EPA 300.0
Nitrite (as N)	EPA 300.0
Orthophosphate (as P)	EPA 300.0
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 8270C
Diethyl phthalate	EPA 8270C
Dimethyl phthalate	EPA 8270C
Di-n-butyl phthalate	EPA 8270C
Di-n-octyl phthalate	EPA 8270C
Polychlorinated Biphenyls	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668 A
2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668 A
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668 A
2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668 A
2,2',3,4,4',5,5'-Heptachlorobiphenyl	EPA 1668 A
2,2',3,4,4',5',6-Heptachlorobiphenyl	EPA 1668 A
2,2',3,4,4',5'-Hexachlorobiphenyl	EPA 1668 A

Serial No.: 29716

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 1, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. W MICHAEL LARKINS
PARADIGM ANALYTICAL LABORATORIES
5500 BUSINESS DRIVE
WILMINGTON, NC 28405

NY Lab Id No: 11685
EPA Lab Code: NC00919

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Polychlorinated Biphenyls	
2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668 A
2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668 A
2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668 A
2,2',3,4,5'-Pentachlorobiphenyl	EPA 1668 A
2,2',3,5,5',6-Hexachlorobiphenyl	EPA 1668 A
2,2',3,5'-Tetrachlorobiphenyl	EPA 1668 A
2,2',4,4',5,5-Hexachlorobiphenyl	EPA 1668 A
2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668 A
2,2',4,5,5'-Pentachlorobiphenyl	EPA 1668 A
2,2',4,6,6'-Pentachlorobiphenyl	EPA 1668 A
2,2',5,5'-Tetrachlorobiphenyl	EPA 1668 A
2,2',5-Trichlorobiphenyl	EPA 1668 A
2,2',6,6'-Tetrachlorobiphenyl	EPA 1668 A
2,2',6-Trichlorobiphenyl	EPA 1668 A
2,2'-dichlorobiphenyl	EPA 1668 A
2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668 A
2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668 A
2,3,3',4,4',5'-Hexachlorobiphenyl	EPA 1668 A
2,3,3',4,4',5-Hexachlorobiphenyl	EPA 1668 A
2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668 A
2,3,3',4,6-Pentachlorobiphenyl	EPA 1668 A
2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668 A
2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668 A

Polychlorinated Biphenyls	
2,3,4,4',5-Pentachlorobiphenyl	EPA 1668 A
2,3',4,4',5-Pentachlorobiphenyl	EPA 1668 A
2,3',4,4'-Tetrachlorobiphenyl	EPA 1668 A
2,3-Dichlorobiphenyl	EPA 1668 A
2,4',5-Trichlorobiphenyl	EPA 1668 A
2-Chlorobiphenyl	EPA 1668 A
3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668 A
3,3',4,4',5-Pentachlorobiphenyl	EPA 1668 A
3,3',4,4'-Tetrachlorobiphenyl	EPA 1668 A
3,4,4',5-Tetrachlorobiphenyl	EPA 1668 A
3,4,4'-Trchlorobiphenyl	EPA 1668 A
4,4'-Dichlorobiphenyl	EPA 1668 A
4-Chlorobiphenyl	EPA 1668 A
Decachlorobiphenyl	EPA 1668 A
PCB-1016	EPA 8082
PCB-1221	EPA 8270C
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082
Polynuclear Aromatics	
Acenaphthene	EPA 8270C

Serial No.: 29716

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
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5500 BUSINESS DRIVE
WILMINGTON, NC 28405

NY Lab Id No: 11685
EPA Lab Code: NC00919

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Polynuclear Aromatics	
Acenaphthylene	EPA 8270C
Anthracene	EPA 8270C
Benzo(a)anthracene	EPA 8270C
Benzo(a)pyrene	EPA 8270C
Benzo(b)fluoranthene	EPA 8270C
Benzo(ghi)perylene	EPA 8270C
Benzo(k)fluoranthene	EPA 8270C
Chrysene	EPA 8270C
Dibenzo(a,h)anthracene	EPA 8270C
Fluoranthene	EPA 8270C
Fluorene	EPA 8270C
Indeno(1,2,3-cd)pyrene	EPA 8270C
Naphthalene	EPA 8270C
Phenanthrene	EPA 8270C
Pyrene	EPA 8270C
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 8270C
2,4-Dichlorophenol	EPA 8270C
2,4-Dimethylphenol	EPA 8270C
2,4-Dinitrophenol	EPA 8270C
2-Chlorophenol	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 8270C

Priority Pollutant Phenols	
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 8270C
Pentachlorophenol	EPA 8270C
Phenol	EPA 8270C
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B
1,4-Dichlorobenzene	EPA 8260B
Benzene	EPA 8260B
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8260B
Styrene	EPA 8260B
Toluene	EPA 8260B
Total Xylenes	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B

Serial No.: 29716

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 1, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. W MICHAEL LARKINS
PARADIGM ANALYTICAL LABORATORIES
5500 BUSINESS DRIVE
WILMINGTON, NC 28405

NY Lab Id No: 11685
EPA Lab Code: NC00919

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Purgeable Halocarbons	
1,1-Dichloroethane	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8260B
Bromoform	EPA 8260B
Bromomethane	EPA 8260B
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B
Chloroform	EPA 8260B
Chloromethane	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
Dibromochloromethane	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 8260B
Methylene chloride	EPA 8260B
Purgeable Halocarbons	
Tetrachloroethene	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B
Trichloroethene	EPA 8260B
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B
Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8260B
Methyl iodide	EPA 8260B
Semi-Volatile Organics	
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Wastewater Metals I	
Barium, Total	EPA 6010B

Serial No.: 29716

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 1, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. W MICHAEL LARKINS
PARADIGM ANALYTICAL LABORATORIES
5500 BUSINESS DRIVE
WILMINGTON, NC 28405

NY Lab Id No: 11685
EPA Lab Code: NC00919

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Wastewater Metals I	
Cadmium, Total	EPA 6010B
Calcium, Total	EPA 6010B
Chromium, Total	EPA 6010B
Copper, Total	EPA 6010B
Iron, Total	EPA 6010B
Lead, Total	EPA 6010B
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
Nickel, Total	EPA 6010B
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
Sodium, Total	EPA 6010B
Wastewater Metals II	
Aluminum, Total	EPA 6010B
Antimony, Total	EPA 6010B
Arsenic, Total	EPA 6010B
Beryllium, Total	EPA 6010B
Chromium VI	EPA 7196A
Mercury, Total	EPA 7470A
Selenium, Total	EPA 6010B
Vanadium, Total	EPA 6010B
Zinc, Total	EPA 6010B
Wastewater Metals III	
Cobalt, Total	EPA 6010B
Molybdenum, Total	EPA 6010B
Thallium, Total	EPA 6010B
Tin, Total	EPA 6010B
Titanium, Total	EPA 6010B
Wastewater Miscellaneous	
Hydrogen Ion (pH)	EPA 150.1

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All approved analytes are listed below:

Amines	
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 8270C
Benzidine	EPA 8270C
Characteristic Testing	
Ignitability	EPA 1030
TCLP	EPA 1311
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8270C
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8270C
delta-BHC	EPA 8081A
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Chlorinated Hydrocarbon Pesticides	
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Toxaphene	EPA 8081A
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA 8270C
Hexachlorobenzene	EPA 8270C
Hexachlorobutadiene	EPA 8270C
Hexachlorocyclopentadiene	EPA 8270C
Haloethers	
4-Chlorophenylphenyl ether	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 8270C
Bis(2-chloroethyl)ether	EPA 8270C

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Metals I	
Barium, Total	EPA 6010B
Cadmium, Total	EPA 6010B
Calcium, Total	EPA 6010B
Copper, Total	EPA 6010B
Iron, Total	EPA 6010B
Lead, Total	EPA 6010B
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
Nickel, Total	EPA 6010B
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
Sodium, Total	EPA 6010B
Strontium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
Antimony, Total	EPA 6010B
Arsenic, Total	EPA 6010B
Beryllium, Total	EPA 6010B
Mercury, Total	EPA 7471A
Selenium, Total	EPA 6010B
Vanadium, Total	EPA 6010B
Zinc, Total	EPA 6010B
Metals III	
Cobalt, Total	EPA 6010B
Molybdenum, Total	EPA 6010B
Thallium, Total	EPA 6010B
Tin, Total	EPA 6010B
Titanium, Total	EPA 6010B
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C
Nitrobenzene	EPA 8270C
Pyridine	EPA 8270C
Nitrosoamines	
N-Nitrosodimethylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270C
Polychlorinated Biphenyls	
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl	EPA 1668 A
2,2',3,3',4,4',5-Heptachlorobiphenyl	EPA 1668 A
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl	EPA 1668 A
2,2',3,3',5,5',6,6'-Octachlorobiphenyl	EPA 1668 A

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Polychlorinated Biphenyls	
2,2',3,4,4',5,5'-Heptachlorobiphenyl	EPA 1668 A
2,2',3,4,4',5',6-Heptachlorobiphenyl	EPA 1668 A
2,2',3,4,4',5'-Hexachlorobiphenyl	EPA 1668 A
2,2',3,4',5,5',6-Heptachlorobiphenyl	EPA 1668 A
2,2',3,4,5,5'-Hexachlorobiphenyl	EPA 1668 A
2,2',3,4',5,6,6'-Heptachlorobiphenyl	EPA 1668 A
2,2',3,4,5'-Pentachlorobiphenyl	EPA 1668 A
2,2',3,5,5',6-Hexachlorobiphenyl	EPA 1668 A
2,2',3,5'-Tetrachlorobiphenyl	EPA 1668 A
2,2',4,4',5,5-Hexachlorobiphenyl	EPA 1668 A
2,2',4,4',6,6'-Hexachlorobiphenyl	EPA 1668 A
2,2',4,5,5'-Pentachlorobiphenyl	EPA 1668 A
2,2',5,5'-Tetrachlorobiphenyl	EPA 1668 A
2,2',5-Trichlorobiphenyl	EPA 1668 A
2,2',6,6'-Tetrachlorobiphenyl	EPA 1668 A
2,2',6-Trichlorobiphenyl	EPA 1668 A
2,2'-dichlorobiphenyl	EPA 1668 A
2,3,3',4,4',5,5',6-Octachlorobiphenyl	EPA 1668 A
2,3,3',4,4',5,5'-Heptachlorobiphenyl	EPA 1668 A
2,3,3',4,4',5'-Hexachlorobiphenyl	EPA 1668 A
2,3,3',4,4',5-Hexachlorobiphenyl	EPA 1668 A
2,3,3',4,4'-Pentachlorobiphenyl	EPA 1668 A
2,3,3',4,6-Pentachlorobiphenyl	EPA 1668 A

Polychlorinated Biphenyls	
2,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668 A
2,3',4,4',5'-Pentachlorobiphenyl	EPA 1668 A
2,3,4,4',5-Pentachlorobiphenyl	EPA 1668 A
2,3',4,4',5-Pentachlorobiphenyl	EPA 1668 A
2,3',4,4'-Tetrachlorobiphenyl	EPA 1668 A
2,3-Dichlorobiphenyl	EPA 1668 A
2,4',5-Trichlorobiphenyl	EPA 1668 A
2-Chlorobiphenyl	EPA 1668 A
3,3',4,4',5,5'-Hexachlorobiphenyl	EPA 1668 A
3,3',4,4',5-Pentachlorobiphenyl	EPA 1668 A
3,3',4,4'-Tetrachlorobiphenyl	EPA 1668 A
3,4,4',5-Tetrachlorobiphenyl	EPA 1668 A
3,4,4'-Trchlorobiphenyl	EPA 1668 A
4,4'-Dichlorobiphenyl	EPA 1668 A
4-Chlorobiphenyl	EPA 1668 A
Decachlorobiphenyl	EPA 1668 A
PCB-1016	EPA 8082
PCB-1221	EPA 8082
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082

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All approved analytes are listed below:

Polynuclear Aromatic Hydrocarbons	
Acenaphthene	EPA 8270C
Acenaphthylene	EPA 8270C
Anthracene	EPA 8270C
Benzo(a)anthracene	EPA 8270C
Benzo(a)pyrene	EPA 8270C
Benzo(b)fluoranthene	EPA 8270C
Benzo(ghi)perylene	EPA 8270C
Benzo(k)fluoranthene	EPA 8270C
Chrysene	EPA 8270C
Dibenzo(a,h)anthracene	EPA 8270C
Fluoranthene	EPA 8270C
Fluorene	EPA 8270C
Indeno(1,2,3-cd)pyrene	EPA 8270C
Naphthalene	EPA 8270C
Phenanthrene	EPA 8270C
Pyrene	EPA 8270C
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 8270C
2,4-Dichlorophenol	EPA 8270C
2,4-Dimethylphenol	EPA 8270C
2,4-Dinitrophenol	EPA 8270C
2-Chlorophenol	EPA 8270C

Priority Pollutant Phenols	
2-Methyl-4,6-dinitrophenol	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 8270C
Pentachlorophenol	EPA 8270C
Phenol	EPA 8270C
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA 8260B
1,2-Dichlorobenzene	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B
1,4-Dichlorobenzene	EPA 8260B
2-Chlorotoluene	EPA 8260B
4-Chlorotoluene	EPA 8260B
Benzene	EPA 8260B
Bromobenzene	EPA 8260B
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8260B
Isopropylbenzene	EPA 8260B
n-Butylbenzene	EPA 8260B
n-Propylbenzene	EPA 8260B

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Purgeable Aromatics	
p-Isopropyltoluene (P-Cymene)	EPA 8260B
sec-Butylbenzene	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8260B
Toluene	EPA 8260B
Total Xylenes	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
1,1-Dichloroethane	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8260B

Purgeable Halocarbons	
Bromoform	EPA 8260B
Bromomethane	EPA 8260B
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B
Chloroform	EPA 8260B
Chloromethane	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 8260B
Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B
Trichloroethene	EPA 8260B
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B
Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B

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All approved analytes are listed below:

Purgeable Organics	
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8260B
Methyl tert-butyl ether	EPA 8260B
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Metals I	
Chromium, Total	EPA 6010B
Phthalate Esters	
Bis(2-ethylhexyl) phthalate	EPA 8270C
Diethyl phthalate	EPA 8270C
Dimethyl phthalate	EPA 8270C
Di-n-butyl phthalate	EPA 8270C
Di-n-octyl phthalate	EPA 8270C

Serial No.: 29718

Attachment C

Laboratory Qualifications for Columbia Analytical Services

The Commonwealth of Massachusetts

Department of Environmental Protection

Division of Environmental Analysis
Senator William X. Wall Experiment Station

certifies

M-NY032

COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST
SUITE 250
ROCHESTER, NY 14609-0000

Laboratory Director: Michael K. Perry

for the analysis of NON POTABLE WATER (CHEMISTRY)
POTABLE WATER (CHEMISTRY)

pursuant to 310 CMR 42.00

This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.

This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.

Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.

Issued: 01 JUL 2006

Expires: 30 JUN 2007

Oscar C. Jacobs

Director, Division of Environmental Analysis

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 22 SEP 2006

M-NY032 **COLUMBIA ANALYTICAL SERVICES**
ROCHESTER NY

NON POTABLE WATER (CHEMISTRY) **Effective Date** **22 SEP 2006** **Expiration Date** **30 JUN 2007**

Analytes and Methods

ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ARSENIC	EPA 200.7
BERYLLIUM	EPA 200.7
CADMIUM	EPA 200.7
CHROMIUM	EPA 200.7
COBALT	EPA 200.7
COPPER	EPA 200.7
IRON	EPA 200.7
LEAD	EPA 200.7
MANGANESE	EPA 200.7
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
NICKEL	EPA 200.7
SELENIUM	EPA 200.7
SILVER	EPA 200.7
THALLIUM	EPA 200.7
VANADIUM	EPA 200.7
ZINC	EPA 200.7
PH	EPA 150.1
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	EPA 160.1
HARDNESS (CACO3), TOTAL	EPA 130.2
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	EPA 310.1
CHLORIDE	EPA 325.2
CHLORIDE	EPA 300.0
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.1
PHOSPHORUS, TOTAL	EPA 365.1
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	EPA 405.1
TOTAL ORGANIC CARBON	EPA 415.1
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	EPA 160.2
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.2
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 602
VOLATILE AROMATICS	EPA 624

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 22 SEP 2006

M-NY032 **COLUMBIA ANALYTICAL SERVICES**
ROCHESTER NY

POTABLE WATER (CHEMISTRY) **Effective Date** **01 JUL 2006** **Expiration Date** **30 JUN 2007**

Analytes	Methods
BARIUM	EPA 200.7
BERYLLIUM	EPA 200.7
CADMIUM	EPA 200.7
CHROMIUM	EPA 200.7
COPPER	EPA 200.7
MERCURY	EPA 245.1
NICKEL	EPA 200.7

NEW YORK STATE DEPARTMENT OF HEALTH
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Revised December 15, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. MICHAEL PERRY
COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST - STE 250
ROCHESTER, NY 14609

NY Lab Id No: 10145
EPA Lab Code: NY00032

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES POTABLE WATER All approved analytes are listed below:

Drinking Water Bacteriology	
Coliform, Total	SM 18-20 9223
Drinking Water Metals I	
Arsenic, Total	EPA 200.7
	EPA 200.8
	SM 18-19 3113B
Barium, Total	EPA 200.7
	EPA 200.8
Cadmium, Total	EPA 200.7
	EPA 200.8
Chromium, Total	EPA 200.7
	EPA 200.8
Copper, Total	EPA 200.7
	EPA 200.8
Iron, Total	EPA 200.7
Lead, Total	EPA 200.8
	SM 18-19 3113B
Manganese, Total	EPA 200.7
	EPA 200.8
Mercury, Total	EPA 245.1
Selenium, Total	EPA 200.8
	SM 18-19 3113B
Silver, Total	EPA 200.7
	EPA 200.8
Drinking Water Metals I	
Zinc, Total	EPA 200.7
	EPA 200.8
Drinking Water Metals II	
Antimony, Total	EPA 200.8
Beryllium, Total	EPA 200.7
	EPA 200.8
Nickel, Total	EPA 200.7
	EPA 200.8
Thallium, Total	EPA 200.8
	SM 18-19 3113B
Drinking Water Metals III	
Sodium, Total	EPA 200.7
Drinking Water Miscellaneous	
Methyl tert-butyl ether	EPA 524.2
Temperature	EPA 170.1
Drinking Water Non-Metals	
Alkalinity	EPA 310.1
Calcium Hardness	EPA 200.7
Chloride	EPA 300.0
	EPA 325.2
Color	EPA 110.2

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised December 15, 2006

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Drinking Water Non-Metals	
Cyanide, Free	EPA 335.2
	EPA 335.4
Cyanide, Total	EPA 335.4
Fluoride, Total	EPA 300.0
Hydrogen Ion (pH)	EPA 150.1
Nitrate (as N)	EPA 300.0
	EPA 353.2
Nitrite (as N)	EPA 300.0
	EPA 353.2
Orthophosphate (as P)	EPA 300.0
	EPA 365.1
Silica, Dissolved	SM 18-19 4500-Si F
Solids, Total Dissolved	EPA 160.1
	SM 18-20 2540C
Specific Conductance	EPA 120.1
Sulfate (as SO4)	EPA 300.0
Drinking Water Trihalomethanes	
Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2

Microextractibles	
1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2

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Volatile Aromatics	
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Volatile Halocarbons	
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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Acrylates	
Acrolein (Propenal)	EPA 624
	EPA 8260B
Acrylonitrile	EPA 624
	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B
Amines	
1,4-Phenylenediamine	EPA 8270
1-Naphthylamine	EPA 8270
2-Nitroaniline	EPA 8270
3-Nitroaniline	EPA 8270
4-Chloroaniline	EPA 8270
4-Nitroaniline	EPA 8270
5-Nitro-o-toluidine	EPA 8270
Aniline	EPA 8270
Carbazole	EPA 8270
Diphenylamine	EPA 8270
Methapyriline	EPA 8270
Pronamide	EPA 8270
Propionitrile	EPA 8260B
Pyridine	EPA 625
Amines	
Pyridine	EPA 8270
Benzidines	
3,3' -Dichlorobenzidine	EPA 625
	EPA 8270
3,3'-Dimethylbenzidene	EPA 8270
Benzidine	EPA 625
	EPA 8270
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
Chlorobenzilate	EPA 8270
delta-BHC	EPA 8081A
Diallate	EPA 8270
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A

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Chlorinated Hydrocarbon Pesticides	
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Isodrin	EPA 8270
Kepone	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
PCNB	EPA 8270
Toxaphene	EPA 8081A
Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260B
1,2,4,5-Tetrachlorobenzene	EPA 8270
1,2,4-Trichlorobenzene	EPA 625
	EPA 8260B
	EPA 8270
2-Chloronaphthalene	EPA 625
	EPA 8270
Hexachlorobenzene	EPA 625

Chlorinated Hydrocarbons	
Hexachlorobenzene	EPA 8270
Hexachlorobutadiene	EPA 625
	EPA 8260B
	EPA 8270
Hexachlorocyclopentadiene	EPA 625
	EPA 8270
Hexachloroethane	EPA 625
	EPA 8270
Hexachloropropene	EPA 8270
Pentachlorobenzene	EPA 8270
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 1978, p.115
	EPA 8151A
2,4,5-TP (Silvex)	EPA 1978, p.115
	EPA 8151A
2,4-D	EPA 1978, p.115
	EPA 8151A
Dicamba	EPA 1978, p.115
	EPA 8151A
Dinoseb	EPA 8151A
	EPA 8270

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Demand	
Biochemical Oxygen Demand	EPA 405.1
Chemical Oxygen Demand	EPA 410.4
Fuel Oxygenates	
Ethanol	EPA 8015 B
Methyl tert-butyl ether	EPA 8021B
	EPA 8260B
t-Butyl alcohol	EPA 8260B
Haloethers	
4-Bromophenylphenyl ether	EPA 625
	EPA 8270
4-Chlorophenylphenyl ether	EPA 625
	EPA 8270
Bis (2-chloroisopropyl) ether	EPA 625
	EPA 8270
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270
Bis(2-chloroethyl)ether	EPA 625
	EPA 8270
Microextractables	
1,2-Dibromo-3-chloropropane	EPA 8011
	EPA 8260B
Microextractables	
1,2-Dibromoethane	EPA 8011
	EPA 8260B
Mineral	
Acidity	EPA 305.1
Alkalinity	EPA 310.1
Calcium Hardness	EPA 200.7
Chloride	EPA 300.0
	EPA 325.2
	EPA 9056
Fluoride, Total	EPA 300.0
	EPA 9056
Hardness, Total	EPA 130.2
	EPA 200.7
Sulfate (as SO4)	EPA 300.0
	EPA 375.4
	EPA 9056
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270
1,3-Dinitrobenzene	EPA 8270
1,4-Naphthoquinone	EPA 8270
2,4-Dinitrotoluene	EPA 625
	EPA 8270

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Nitroaromatics and Isophorone	
2,6-Dinitrotoluene	EPA 625
	EPA 8270
Isophorone	EPA 625
	EPA 8270
Nitrobenzene	EPA 625
	EPA 8270
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270
N-Nitrosodimethylamine	EPA 625
	EPA 8270
N-Nitrosodi-n-butylamine	EPA 8270
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270
N-Nitrosodiphenylamine	EPA 625
	EPA 8270
N-nitrosopiperidine	EPA 8270
N-Nitrosopyrrolidine	EPA 8270
Nutrient	
Ammonia (as N)	EPA 350.1
Kjeldahl Nitrogen, Total	EPA 351.2
Nitrate (as N)	EPA 300.0
	EPA 353.2
Nutrient	
Nitrite (as N)	EPA 300.0
	EPA 353.2
Orthophosphate (as P)	EPA 300.0
	EPA 365.1
Phosphorus, Total	EPA 365.1
Organophosphate Pesticides	
Dimethoate	EPA 8270
Disulfoton	EPA 8270
Parathion ethyl	EPA 8270
Parathion methyl	EPA 8270
Phorate	EPA 8270
Phthalate Esters	
Benzyl butyl phthalate	EPA 625
	EPA 8270
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270
Diethyl phthalate	EPA 625
	EPA 8270
Dimethyl phthalate	EPA 625
	EPA 8270
Di-n-butyl phthalate	EPA 625
	EPA 8270

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Phthalate Esters	
Di-n-octyl phthalate	EPA 625
	EPA 8270
Polychlorinated Biphenyls	
PCB-1016	EPA 8082
PCB-1221	EPA 8082
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082
Polynuclear Aromatics	
3-Methylcholanthrene	EPA 8270
7,12-Dimethylbenzyl (a) anthracene	EPA 8270
Acenaphthene	EPA 625
	EPA 8270
	EPA 8310
Acenaphthylene	EPA 625
	EPA 8270
	EPA 8310
Anthracene	EPA 625
	EPA 8270
	EPA 8310

Polynuclear Aromatics	
Benzo(a)anthracene	EPA 625
	EPA 8270
	EPA 8310
Benzo(a)pyrene	EPA 625
	EPA 8270
	EPA 8310
Benzo(b)fluoranthene	EPA 625
	EPA 8270
	EPA 8310
Benzo(ghi)perylene	EPA 625
	EPA 8270
	EPA 8310
Benzo(k)fluoranthene	EPA 625
	EPA 8270
	EPA 8310
Chrysene	EPA 625
	EPA 8270
	EPA 8310
Dibenzo(a,h)anthracene	EPA 625
	EPA 8270
	EPA 8310
Fluoranthene	EPA 625
	EPA 8270

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Polynuclear Aromatics	
Fluoranthene	EPA 8310
Fluorene	EPA 625
	EPA 8270
	EPA 8310
Indeno(1,2,3-cd)pyrene	EPA 625
	EPA 8270
	EPA 8310
Naphthalene	EPA 625
	EPA 8270
	EPA 8310
Phenanthrene	EPA 625
	EPA 8270
	EPA 8310
Pyrene	EPA 625
	EPA 8270
	EPA 8310

Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270
2,4,5-Trichlorophenol	EPA 625
	EPA 8270
2,4,6-Trichlorophenol	EPA 625
	EPA 8270

Priority Pollutant Phenols	
2,4-Dichlorophenol	EPA 625
	EPA 8270
2,4-Dimethylphenol	EPA 625
	EPA 8270
2,4-Dinitrophenol	EPA 625
	EPA 8270
2,6-Dichlorophenol	EPA 8270
2-Chlorophenol	EPA 625
	EPA 8270
2-Methyl-4,6-dinitrophenol	EPA 625
	EPA 8270
2-Methylphenol	EPA 8270
2-Nitrophenol	EPA 625
	EPA 8270
3-Methylphenol	EPA 8270
4-Chloro-3-methylphenol	EPA 625
	EPA 8270
4-Methylphenol	EPA 8270
4-Nitrophenol	EPA 625
	EPA 8270
Cresols, Total	EPA 8270
Pentachlorophenol	EPA 625
	EPA 8151A

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Priority Pollutant Phenols	
Pentachlorophenol	EPA 8270
Phenol	EPA 625
	EPA 8270
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270
1,3-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270
1,4-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
Purgeable Aromatics	
1,4-Dichlorobenzene	EPA 8021B
	EPA 8260B
	EPA 8270
Benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Ethyl benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Styrene	EPA 624
	EPA 8260B
Toluene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 602

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Purgeable Aromatics	
Total Xylenes	EPA 624
	EPA 8021B
	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1,2-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloroethene	EPA 601

Purgeable Halocarbons	
1,1-Dichloroethene	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,2-Dichloropropane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 601

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All approved analytes are listed below:

Purgeable Halocarbons	
Bromodichloromethane	EPA 624
	EPA 8021B
	EPA 8260B
Bromoform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromomethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Carbon tetrachloride	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloroform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B

Purgeable Halocarbons	
Chloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,2-Dichloroethene	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Dibromochloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 601
	EPA 624
	EPA 8021B

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MR. MICHAEL PERRY
COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST - STE 250
ROCHESTER, NY 14609

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Purgeable Halocarbons	
Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,2-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Trichlorofluoromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Vinyl chloride	EPA 601
Purgeable Halocarbons	
Vinyl chloride	EPA 624
	EPA 8021B
	EPA 8260B
Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8260B
Methyl iodide	EPA 8260B
o-Toluidine	EPA 8260B
	EPA 8270
Vinyl acetate	EPA 8260B
Residue	
Solids, Total	EPA 160.3
	SM 18-20 2540B
Solids, Total Dissolved	EPA 160.1
	SM 18-20 2540C
Solids, Total Suspended	EPA 160.2

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Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270
4-Amino biphenyl	EPA 8270
Acetophenone	EPA 8270
Benzoic Acid	EPA 8270
Benzyl alcohol	EPA 8270
Dibenzofuran	EPA 8270
Ethyl methanesulfonate	EPA 8270
Isosafrole	EPA 8270
Methyl methanesulfonate	EPA 8270
O,O,O-Triethyl phosphorothioate	EPA 8270
p-Dimethylaminoazobenzene	EPA 8270
Phenacetin	EPA 8270
Safrole	EPA 8270
Wastewater Metals I	
Barium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Cadmium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Wastewater Metals I	
Calcium, Total	EPA 200.7
	EPA 6010B
Chromium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Copper, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Iron, Total	EPA 200.7
	EPA 6010B
Lead, Total	EPA 200.7
	EPA 200.8
	EPA 239.2
	EPA 6010B
	EPA 6020
	EPA 7421
Magnesium, Total	EPA 200.7
	EPA 6010B
Manganese, Total	EPA 200.7
	EPA 200.8
	EPA 6010B

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Wastewater Metals I	
Manganese, Total	EPA 6020
Nickel, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Potassium, Total	EPA 200.7
	EPA 6010B
Silver, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Sodium, Total	EPA 200.7
	EPA 6010B
Strontium, Total	EPA 200.7
	EPA 6010B
Wastewater Metals II	
Aluminum, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Antimony, Total	EPA 200.7
	EPA 200.8

Wastewater Metals II	
Antimony, Total	EPA 6010B
	EPA 6020
Arsenic, Total	EPA 200.7
	EPA 200.8
	EPA 206.2
	EPA 6010B
	EPA 6020
	EPA 7060A
Beryllium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Chromium VI	EPA 7196A
	EPA 7199
	LACHAT 10-124-13-1-A
Mercury, Total	EPA 1631E
	EPA 245.1
	EPA 245.2
	EPA 7470A
Selenium, Total	EPA 200.7
	EPA 200.8
	EPA 270.2
	EPA 6010B

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Wastewater Metals II	
Selenium, Total	EPA 6020
	EPA 7740
Vanadium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Zinc, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Wastewater Metals III	
Cobalt, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Molybdenum, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Thallium, Total	EPA 200.7
	EPA 200.8
	EPA 279.2

Wastewater Metals III	
Thallium, Total	EPA 6010B
	EPA 6020
	EPA 7841
Tin, Total	EPA 200.7
	EPA 6010B
Titanium, Total	EPA 200.7
	EPA 6010B
Wastewater Miscellaneous	
Boron, Total	EPA 200.7
	EPA 6010B
Bromide	EPA 300.0
Color	EPA 110.2
Cyanide, Total	EPA 335.1
	EPA 335.2
	EPA 335.4
	EPA 9012A
Hydrogen Ion (pH)	EPA 150.1
	EPA 9040B
Oil & Grease Total Recoverable	EPA 1664A
	EPA 413.1
Organic Carbon, Total	EPA 415.1
Phenols	EPA 420.2

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Wastewater Miscellaneous

Phenols	EPA 9066
Silica, Dissolved	EPA 370.1
Specific Conductance	EPA 120.1
Sulfide (as S)	EPA 376.1
	EPA 9034
Surfactant (MBAS)	EPA 425.1
Temperature	EPA 170.1
Total Recoverable Petroleum Hydrocarb	EPA 1664A
	EPA 418.1

Sample Preparation Methods

SM 18-20 2340B	EPA 9030B	EPA 3010A	EPA 3005A
EPA 3510C	EPA 3520C	EPA 5030B	EPA 3020A

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EPA 3510C EPA 3520C EPA 5030B EPA 3020A

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B
Amines	
1,2-Diphenylhydrazine	EPA 8270
1,4-Phenylenediamine	EPA 8270
1-Naphthylamine	EPA 8270
2-Naphthylamine	EPA 8270
2-Nitroaniline	EPA 8270
3-Nitroaniline	EPA 8270
4-Chloroaniline	EPA 8270
4-Nitroaniline	EPA 8270
5-Chloro-2-methylaniline	EPA 8270
5-Nitro-o-toluidine	EPA 8270
Aniline	EPA 8270
Carbazole	EPA 8270
Diphenylamine	EPA 8270
Methapyriline	EPA 8270
Pronamide	EPA 8270

Benzidines	
3,3' -Dichlorobenzidine	EPA 8270
3,3'-Dimethylbenzidene	EPA 8270
Benzidine	EPA 8270
Characteristic Testing	
Corrosivity	EPA 9045C
Ignitability	EPA 1010
Reactivity	SW-846 Ch7, Sec. 7.3
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
Chlorobenzilate	EPA 8270
delta-BHC	EPA 8081A
Diallate	EPA 8270
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A

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Chlorinated Hydrocarbon Pesticides	
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Kepone	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Pentachloronitrobenzene	EPA 8270
Toxaphene	EPA 8081A
Chlorinated Hydrocarbons	
1,2,4,5-Tetrachlorobenzene	EPA 8270
1,2,4-Trichlorobenzene	EPA 8260B
	EPA 8270
1-Chloronaphthalene	EPA 8270
2-Chloronaphthalene	EPA 8270
Hexachlorobenzene	EPA 8270
Hexachlorobutadiene	EPA 8260B
	EPA 8270
Hexachlorocyclopentadiene	EPA 8270
Chlorinated Hydrocarbons	
Hexachloroethane	EPA 8270
Hexachlorophene	EPA 8270
Hexachloropropene	EPA 8270
Pentachlorobenzene	EPA 8270
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
Haloethers	
4-Bromophenylphenyl ether	EPA 8270
4-Chlorophenylphenyl ether	EPA 8270
Bis (2-chloroisopropyl) ether	EPA 8270
Bis(2-chloroethoxy)methane	EPA 8270
Bis(2-chloroethyl)ether	EPA 8270
Metals I	
Barium, Total	EPA 6010B
	EPA 6020
Cadmium, Total	EPA 6010B
	EPA 6020

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Metals I	
Calcium, Total	EPA 6010B
Chromium, Total	EPA 6010B
	EPA 6020
Copper, Total	EPA 6010B
	EPA 6020
Iron, Total	EPA 6010B
Lead, Total	EPA 6010B
	EPA 6020
	EPA 7421
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
	EPA 6020
Nickel, Total	EPA 6010B
	EPA 6020
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
	EPA 6020
Sodium, Total	EPA 6010B
Strontium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
Antimony, Total	EPA 6010B

Metals II	
Antimony, Total	EPA 6020
Arsenic, Total	EPA 6010B
	EPA 6020
	EPA 7060A
Beryllium, Total	EPA 6010B
	EPA 6020
Chromium VI	EPA 7196A
	EPA 7199
Lithium, Total	EPA 6010B
Mercury, Total	EPA 7471A
Selenium, Total	EPA 6010B
	EPA 6020
	EPA 7740
Vanadium, Total	EPA 6010B
	EPA 6020
Zinc, Total	EPA 6010B
	EPA 6020
Metals III	
Cobalt, Total	EPA 6010B
	EPA 6020
Molybdenum, Total	EPA 6010B
	EPA 6020

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Metals III	
Silica, Dissolved	EPA 6010B
Thallium, Total	EPA 6010B
	EPA 6020
	EPA 7841
Tin, Total	EPA 6010B
Minerals	
Bromide	EPA 9056
Chloride	EPA 9056
Fluoride, Total	EPA 9056
Sulfate (as SO4)	EPA 9056
Miscellaneous	
Boron, Total	EPA 6010B
Cyanide, Total	EPA 9012A
Hydrogen Ion (pH)	EPA 9040B
	EPA 9045C
Oil & Grease Total Recoverable	EPA 9071
Phenols	EPA 9066
Sulfide (as S)	EPA 9034
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8330
1,3-Dinitrobenzene	EPA 8330
Nitroaromatics and Isophorone	
1,4-Naphthquinone	EPA 8270
2,4,6-Trinitrotoluene	EPA 8330
2,4-Dinitrotoluene	EPA 8270
	EPA 8330
2,6-Dinitrotoluene	EPA 8270
	EPA 8330
2-Amino-4,6-dinitrotoluene	EPA 8330
2-Nitrotoluene	EPA 8330
3-Nitrotoluene	EPA 8330
4-Amino-2,6-dinitrotoluene	EPA 8330
4-Dimethylaminoazobenzene	EPA 8270
4-Nitrotoluene	EPA 8330
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330
Isophorone	EPA 8270
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330
Nitrobenzene	EPA 8270
	EPA 8330
Nitroquinoline-1-oxide	EPA 8270
Octahydro-tetranitro-tetrazocine	EPA 8330
Pyridine	EPA 8270
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270

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Nitrosoamines	
N-Nitrosodimethylamine	EPA 8270
N-Nitrosodi-n-butylamine	EPA 8270
N-Nitrosodi-n-propylamine	EPA 8270
N-Nitrosodiphenylamine	EPA 8270
N-nitrosomethylethylamine	EPA 8270
N-nitrosomorpholine	EPA 8270
N-nitrosopiperidine	EPA 8270
N-Nitrosopyrrolidine	EPA 8270
Nutrients	
Nitrate (as N)	EPA 9056
Nitrite (as N)	EPA 9056
Orthophosphate (as P)	EPA 9056
Organophosphate Pesticides	
Dimethoate	EPA 8270
Disulfoton	EPA 8270
Parathion ethyl	EPA 8270
Parathion methyl	EPA 8270
Phorate	EPA 8270
Sulfotepp	EPA 8270
Thionazin	EPA 8270
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270
Bis(2-ethylhexyl) phthalate	EPA 8270
Diethyl phthalate	EPA 8270
Dimethyl phthalate	EPA 8270
Di-n-butyl phthalate	EPA 8270
Di-n-octyl phthalate	EPA 8270
Polychlorinated Biphenyls	
PCB-1016	EPA 8082
PCB-1221	EPA 8082
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082
Polynuclear Aromatic Hydrocarbons	
3-Methylcholanthrene	EPA 8270
7,12-Dimethylbenzyl (a) anthracene	EPA 8270
Acenaphthene	EPA 8270
Acenaphthylene	EPA 8270
Anthracene	EPA 8270
Benzo(a)anthracene	EPA 8270
Benzo(a)pyrene	EPA 8270

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Polynuclear Aromatic Hydrocarbons	
Benzo(b)fluoranthene	EPA 8270
Benzo(ghi)perylene	EPA 8270
Benzo(k)fluoranthene	EPA 8270
Chrysene	EPA 8270
Dibenzo(a,h)anthracene	EPA 8270
Fluoranthene	EPA 8270
Fluorene	EPA 8270
	EPA 8310
Indeno(1,2,3-cd)pyrene	EPA 8270
Naphthalene	EPA 8260B
	EPA 8270
Phenanthrene	EPA 8270
Pyrene	EPA 8270
Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270
2,4,5-Trichlorophenol	EPA 8270
2,4,6-Trichlorophenol	EPA 8270
2,4-Dichlorophenol	EPA 8270
2,4-Dimethylphenol	EPA 8270
2,4-Dinitrophenol	EPA 8270
2,6-Dichlorophenol	EPA 8270
2-Chlorophenol	EPA 8270

Priority Pollutant Phenols	
2-Methyl-4,6-dinitrophenol	EPA 8270
2-Methylphenol	EPA 8270
2-Nitrophenol	EPA 8270
3-Methylphenol	EPA 8270
4-Chloro-3-methylphenol	EPA 8270
4-Methylphenol	EPA 8270
4-Nitrophenol	EPA 8270
Pentachlorophenol	EPA 8151A
	EPA 8270
Phenol	EPA 8270
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,2-Dichlorobenzene	EPA 8021B
	EPA 8260B
	EPA 8270
1,3,5-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,3-Dichlorobenzene	EPA 8021B
	EPA 8260B
	EPA 8270
1,4-Dichlorobenzene	EPA 8021B

Serial No.: 31926

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised March 05, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. MICHAEL PERRY
COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST - STE 250
ROCHESTER, NY 14609

NY Lab Id No: 10145
EPA Lab Code: NY00032

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Purgeable Aromatics	
1,4-Dichlorobenzene	EPA 8260B
	EPA 8270
2-Chlorotoluene	EPA 8260B
4-Chlorotoluene	EPA 8260B
Benzene	EPA 8021B
	EPA 8260B
Bromobenzene	EPA 8260B
Chlorobenzene	EPA 8021B
	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8021B
	EPA 8260B
n-Butylbenzene	EPA 8021B
	EPA 8260B
n-Propylbenzene	EPA 8021B
	EPA 8260B
p-Isopropyltoluene (P-Cymene)	EPA 8021B
	EPA 8260B
sec-Butylbenzene	EPA 8021B
	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8021B

Purgeable Aromatics	
tert-Butylbenzene	EPA 8260B
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B
	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8021B
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8021B
	EPA 8260B
1,1,2-Trichloroethane	EPA 8021B
	EPA 8260B
1,1-Dichloroethane	EPA 8021B
	EPA 8260B
1,1-Dichloroethene	EPA 8021B
	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dichloroethane	EPA 8021B
	EPA 8260B

Serial No.: 31926

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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Issued April 01, 2006
Revised March 05, 2007

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MR. MICHAEL PERRY
COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST - STE 250
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EPA Lab Code: NY00032

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All approved analytes are listed below:

Purgeable Halocarbons	
1,2-Dichloropropane	EPA 8021B
	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 8021B
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8021B
	EPA 8260B
Bromoform	EPA 8021B
	EPA 8260B
Bromomethane	EPA 8021B
	EPA 8260B
Carbon tetrachloride	EPA 8021B
	EPA 8260B
Chloroethane	EPA 8021B
	EPA 8260B
Chloroform	EPA 8021B
	EPA 8260B
Chloromethane	EPA 8021B
	EPA 8260B

Purgeable Halocarbons	
cis-1,2-Dichloroethene	EPA 8021B
	EPA 8260B
cis-1,3-Dichloropropene	EPA 8021B
	EPA 8260B
Dibromochloromethane	EPA 8021B
	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 8021B
	EPA 8260B
Tetrachloroethene	EPA 8021B
	EPA 8260B
trans-1,2-Dichloroethene	EPA 8021B
	EPA 8260B
trans-1,3-Dichloropropene	EPA 8021B
	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 8021B
	EPA 8260B
Trichlorofluoromethane	EPA 8021B
	EPA 8260B
Vinyl chloride	EPA 8021B

Serial No.: 31926

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised March 05, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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COLUMBIA ANALYTICAL SERVICES
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ROCHESTER, NY 14609

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EPA Lab Code: NY00032

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All approved analytes are listed below:

Purgeable Halocarbons

Vinyl chloride	EPA 8260B

Purgeable Organics

1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Ethyl Acetate	EPA 8260B
Isobutyl alcohol	EPA 8260B
Methyl tert-butyl ether	EPA 8021B
	EPA 8260B
o-Toluidine	EPA 8260B
	EPA 8270
Propionitrile	EPA 8260B
Vinyl acetate	EPA 8260B

Semi-Volatile Organics

2-Methylnaphthalene	EPA 8270
4-Amino biphenyl	EPA 8270
Acetophenone	EPA 8270
Aramite	EPA 8270

Semi-Volatile Organics

Benzoic Acid	EPA 8270
Benzyl alcohol	EPA 8270
Dibenzofuran	EPA 8270
Ethyl methanesulfonate	EPA 8270
Isosafrole	EPA 8270
Methyl methanesulfonate	EPA 8270
O,O,O-Triethyl phosphorothioate	EPA 8270
Phenacetin	EPA 8270
Safrole	EPA 8270

Sample Preparation Methods

EPA 1311	EPA 9030B	EPA 3050B	EPA 3540C
EPA 3550B	EPA 5030B	EPA 5035	EPA 3060A

Serial No.: 31926

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

EPA 3550B EPA 5030B EPA 5035

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised February 27, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. MICHAEL PERRY
COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST - STE 250
ROCHESTER, NY 14609

NY Lab Id No: 10145
EPA Lab Code: NY00032

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Lead in Paint	EPA 6010B

EPA 3550B	EPA 5030B	EPA 5035	EPA 3060A

Sample Preparation Methods

EPA 1311	EPA 9030B	EPA 3050B	EPA 3540C
EPA 3550B	EPA 5030B	EPA 5035	EPA 3060A

Serial No.: 31874

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised November 16, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. MICHAEL PERRY
COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST - STE 250
ROCHESTER, NY 14609

NY Lab Id No: 10145
EPA Lab Code: NY00032

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES ANALYTICAL SERVICES PROTOCOL
All approved subcategories and/or analytes are listed below:

CLP PCB/Pesticides
CLP Semi-Volatile Organics
CLP Volatile Organics
CLP Inorganics

Serial No.: 31298

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised October 20, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. MICHAEL PERRY
COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST - STE 250
ROCHESTER, NY 14609

NY Lab Id No: 10145
EPA Lab Code: NY00032

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Acrylates	
Acrylonitrile	EPA TO-15
Ethyl acrylate	EPA TO-15
Methyl methacrylate	EPA TO-15
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA TO-15
Hexachlorobutadiene	EPA TO-15
Miscellaneous Air	
Formaldehyde	EPA TO-15
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA TO-15
1,2-Dichlorobenzene	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-15
1,3-Dichlorobenzene	EPA TO-15
1,4-Dichlorobenzene	EPA TO-15
Benzene	EPA TO-15
Chlorobenzene	EPA TO-15
Ethyl benzene	EPA TO-15
Styrene	EPA TO-15
Toluene	EPA TO-15
Total Xylenes	EPA TO-15

Purgeable Halocarbons	
1,1,1-Trichloroethane	EPA TO-15
1,1,2,2-Tetrachloroethane	EPA TO-15
1,1,2-Trichloroethane	EPA TO-15
1,1,2-Trifluoro-1,2,2-Trichloroethane	EPA TO-15
1,1-Dichloroethane	EPA TO-15
1,1-Dichloroethene	EPA TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	EPA TO-15
1,2-Dichloroethane	EPA TO-15
1,2-Dichloropropane	EPA TO-15
Bromodichloromethane	EPA TO-15
Bromoform	EPA TO-15
Bromomethane	EPA TO-15
Carbon tetrachloride	EPA TO-15
Chloroethane	EPA TO-15
Chloroform	EPA TO-15
Chloromethane	EPA TO-15
cis-1,2-Dichloroethene	EPA TO-15
cis-1,3-Dichloropropene	EPA TO-15
Dichlorodifluoromethane	EPA TO-15
Methylene chloride	EPA TO-15
Tetrachloroethene	EPA TO-15
trans-1,2-Dichloroethene	EPA TO-15
trans-1,3-Dichloropropene	EPA TO-15

Serial No.: 31001

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised October 20, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. MICHAEL PERRY
COLUMBIA ANALYTICAL SERVICES
1 MUSTARD ST - STE 250
ROCHESTER, NY 14609

NY Lab Id No: 10145
EPA Lab Code: NY00032

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Purgeable Halocarbons	
Trichloroethene	EPA TO-15
Trichlorofluoromethane	EPA TO-15
Vinyl chloride	EPA TO-15
Volatile Chlorinated Organics	
Benzyl chloride	EPA TO-15
Volatile Organics	
1,3-Butadiene	EPA TO-15
2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methylethyl ketone)	EPA TO-15
4-Methyl-2-Pentanone	EPA TO-15
Hexane	EPA TO-15
Methyl iodide	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
Vinyl acetate	EPA TO-15

Serial No.: 31001

Attachment D

Laboratory Qualifications for Severn Trent Laboratories, Inc.

The Commonwealth of Massachusetts

Department of Environmental Protection

Division of Environmental Analysis
Senator William X. Wall Experiment Station

certifies

M-NY044

STL BUFFALO
10 HAZELWOOD DR
AMHERST, NY 14228-2298

Laboratory Director: **CHRISTOPHER SPENCER**

for the analysis of **POTABLE WATER (CHEMISTRY)**
NON POTABLE WATER (CHEMISTRY)

pursuant to 310 CMR 42.00

This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.

This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.

Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.

Issued: **01 JUL 2006**

Expires: **30 JUN 2007**

Oscar C. Jacobs

Director, Division of Environmental Analysis

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 28 DEC 2006

M-NY044 STL BUFFALO
AMHERST NY

NON POTABLE WATER (CHEMISTRY) **Effective Date** **01 JUL 2006** **Expiration Date** **30 JUN 2007**

Analytes and Methods

ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
TITANIUM	EPA 200.7
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
PH	EPA 150.1
TOTAL DISSOLVED SOLIDS	EPA 160.1
HARDNESS (CACO3), TOTAL	EPA 130.2
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	EPA 310.1
ALKALINITY, TOTAL	EPA 310.2
CHLORIDE	EPA 325.2
CHLORIDE	EPA 300.0
FLUORIDE	EPA 340.2
FLUORIDE	EPA 300.0
SULFATE	EPA 375.4
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
ORTHOPHOSPHATE	EPA 365.2
PHOSPHORUS, TOTAL	EPA 365.2
CHEMICAL OXYGEN DEMAND	EPA 410.4
BIOCHEMICAL OXYGEN DEMAND	EPA 405.1
TOTAL ORGANIC CARBON	EPA 415.1
CYANIDE, TOTAL	EPA 335.2
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	EPA 160.2
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.2
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 624
CHLORDANE	EPA 608
ALDRIN	EPA 608
DIELDRIN	EPA 608
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
HEPTACHLOR	EPA 608
HEPTACHLOR EPOXIDE	EPA 608
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 28 DEC 2006

M-NY044 STL BUFFALO
AMHERST NY

POTABLE WATER (CHEMISTRY) **Effective Date 28 DEC 2006** **Expiration Date 30 JUN 2007**

Analytes	Methods
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.8
BARIUM	EPA 200.7
BARIUM	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
LEAD	EPA 200.8
MERCURY	EPA 245.1
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.8
THALLIUM	EPA 200.8
FLUORIDE	EPA 300.0
CYANIDE, TOTAL	EPA 335.4
CALCIUM	EPA 200.7
PH	EPA 150.1
VOLATILE ORGANIC COMPOUNDS	EPA 524.2

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised February 22, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER SPENCER
STL BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026
EPA Lab Code: NY00044

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B
Amines	
1,2-Diphenylhydrazine	EPA 8270
1,4-Phenylenediamine	EPA 8270
1-Naphthylamine	EPA 8270
2-Naphthylamine	EPA 8270
2-Nitroaniline	EPA 8270
3-Nitroaniline	EPA 8270
4-Chloroaniline	EPA 8270
4-Nitroaniline	EPA 8270
5-Nitro-o-toluidine	EPA 8270
Aniline	EPA 8270
Carbazole	EPA 8270
Diphenylamine	EPA 8270
Methapyriline	EPA 8270
Pronamide	EPA 8270
Benzidines	
3,3' -Dichlorobenzidine	EPA 8270

Benzidines	
3,3'-Dimethylbenzidene	EPA 8270
Benzidine	EPA 8270
Characteristic Testing	
Corrosivity	EPA 9040B
	EPA 9045C
Ignitability	EPA 1010
Reactivity	SW-846 Ch7, Sec. 7.3
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
Chlorobenzilate	EPA 8270
delta-BHC	EPA 8081A
Diallate	EPA 8270
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A

Serial No.: 31844

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
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Revised February 22, 2007

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All approved analytes are listed below:

Chlorinated Hydrocarbon Pesticides	
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Kepone	EPA 8270
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Pentachloronitrobenzene	EPA 8270
Toxaphene	EPA 8081A
Chlorinated Hydrocarbons	
1,2,4,5-Tetrachlorobenzene	EPA 8270
1,2,4-Trichlorobenzene	EPA 8270
2-Chloronaphthalene	EPA 8270
Hexachlorobenzene	EPA 8270
Hexachlorobutadiene	EPA 8260B
	EPA 8270
Hexachlorocyclopentadiene	EPA 8270
Hexachloroethane	EPA 8270
Hexachlorophene	EPA 8270

Chlorinated Hydrocarbons	
Hexachloropropene	EPA 8270
Pentachlorobenzene	EPA 8270
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dinoseb	EPA 8151A
Haloethers	
4-Bromophenylphenyl ether	EPA 8270
4-Chlorophenylphenyl ether	EPA 8270
Bis (2-chloroisopropyl) ether	EPA 8270
Bis(2-chloroethoxy)methane	EPA 8270
Bis(2-chloroethyl)ether	EPA 8270
Metals I	
Barium, Total	EPA 6010B
	EPA 6020
Cadmium, Total	EPA 6010B
	EPA 6020
Calcium, Total	EPA 6010B
Chromium, Total	EPA 6010B

Serial No.: 31844

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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Revised February 22, 2007

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Metals I	
Chromium, Total	EPA 6020
Copper, Total	EPA 6010B
	EPA 6020
Iron, Total	EPA 6010B
Lead, Total	EPA 6010B
	EPA 6020
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
	EPA 6020
Nickel, Total	EPA 6010B
	EPA 6020
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
	EPA 6020
Sodium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
Antimony, Total	EPA 6010B
	EPA 6020
Arsenic, Total	EPA 6010B
	EPA 6020
Beryllium, Total	EPA 6010B

Metals II	
Beryllium, Total	EPA 6020
Chromium VI	EPA 7196A
Lithium, Total	EPA 6010B
Mercury, Total	EPA 7471A
Selenium, Total	EPA 6010B
	EPA 6020
Vanadium, Total	EPA 6010B
Zinc, Total	EPA 6010B
	EPA 6020
Metals III	
Cobalt, Total	EPA 6010B
	EPA 6020
Molybdenum, Total	EPA 6010B
	EPA 6020
Thallium, Total	EPA 6010B
	EPA 6020
Tin, Total	EPA 6010B
Titanium, Total	EPA 6010B
Minerals	
Bromide	EPA 9056
Chloride	EPA 9056
	EPA 9251

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WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
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Revised February 22, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER SPENCER
STL BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026
EPA Lab Code: NY00044

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Minerals	
Fluoride, Total	EPA 9056
Sulfate (as SO4)	EPA 9038
	EPA 9056
Miscellaneous	
Boron, Total	EPA 6010B
Cyanide, Total	EPA 9012A
Hydrogen Ion (pH)	EPA 9040B
	EPA 9045C
Oil & Grease Total Recoverable	EPA 9070
	EPA 9071
Phenols	EPA 9066
Specific Conductance	EPA 9050
Nitroaromatics and Isophorone	
1,4-Dinitrobenzene	EPA 8270
1,4-Naphthquinone	EPA 8270
2,4-Dinitrotoluene	EPA 8270
2,6-Dinitrotoluene	EPA 8270
4-Dimethylaminoazobenzene	EPA 8270
Hydroquinone	EPA 8270
Isophorone	EPA 8270
Nitrobenzene	EPA 8270
Pyridine	EPA 8270
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270
N-Nitrosodimethylamine	EPA 8270
N-Nitrosodi-n-butylamine	EPA 8270
N-Nitrosodi-n-propylamine	EPA 8270
N-Nitrosodiphenylamine	EPA 8270
	OLM 4.2 BNA
N-nitrosomethylethylamine	EPA 8270
N-nitrosomorpholine	EPA 8270
N-nitrosopiperidine	EPA 8270
N-Nitrosopyrrolidine	EPA 8270
Nutrients	
Nitrate (as N)	EPA 9056
Organophosphate Pesticides	
Dimethoate	EPA 8270
Disulfoton	EPA 8270
Famphur	EPA 8270
Parathion ethyl	EPA 8270
Parathion methyl	EPA 8270
Phorate	EPA 8270
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270

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Phthalate Esters	
Bis(2-ethylhexyl) phthalate	EPA 8270
Diethyl phthalate	EPA 8270
Dimethyl phthalate	EPA 8270
Di-n-butyl phthalate	EPA 8270
Di-n-octyl phthalate	EPA 8270
Polychlorinated Biphenyls	
PCB-1016	EPA 8082
PCB-1221	EPA 8082
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082
Polynuclear Aromatic Hydrocarbons	
3-Methylcholanthrene	EPA 8270
7,12-Dimethylbenzyl (a) anthracene	EPA 8270
Acenaphthene	EPA 8270
Acenaphthylene	EPA 8270
Anthracene	EPA 8270
Benzo(a)anthracene	EPA 8270
Benzo(a)pyrene	EPA 8270
Benzo(b)fluoranthene	EPA 8270

Polynuclear Aromatic Hydrocarbons	
Benzo(ghi)perylene	EPA 8270
Benzo(k)fluoranthene	EPA 8270
Chrysene	EPA 8270
Dibenzo(a,e)pyrene	EPA 8270
Dibenzo(a,h)anthracene	EPA 8270
Fluoranthene	EPA 8270
Fluorene	EPA 8270
Indeno(1,2,3-cd)pyrene	EPA 8270
Naphthalene	EPA 8270
Phenanthrene	EPA 8270
Pyrene	EPA 8270
Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270
2,4,5-Trichlorophenol	EPA 8270
2,4,6-Trichlorophenol	EPA 8270
2,4-Dichlorophenol	EPA 8270
2,4-Dimethylphenol	EPA 8270
2,4-Dinitrophenol	EPA 8270
2,6-Dichlorophenol	EPA 8270
2-Chlorophenol	EPA 8270
2-Methyl-4,6-dinitrophenol	EPA 8270
2-Methylphenol	EPA 8270

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Priority Pollutant Phenols	
2-Nitrophenol	EPA 8270
3-Methylphenol	EPA 8270
4-Chloro-3-methylphenol	EPA 8270
4-Methylphenol	EPA 8270
4-Nitrophenol	EPA 8270
Pentachlorophenol	EPA 8270
Phenol	EPA 8270
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,2-Dichlorobenzene	EPA 8260B
	EPA 8270
1,3,5-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B
	EPA 8270
1,4-Dichlorobenzene	EPA 8260B
	EPA 8270
2-Chlorotoluene	EPA 8021B
	EPA 8260B
4-Chlorotoluene	EPA 8021B
	EPA 8260B

Purgeable Aromatics	
Benzene	EPA 8021B
	EPA 8260B
Bromobenzene	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8021B
	EPA 8260B
n-Butylbenzene	EPA 8021B
	EPA 8260B
n-Propylbenzene	EPA 8021B
	EPA 8260B
p-Isopropyltoluene (P-Cymene)	EPA 8021B
	EPA 8260B
sec-Butylbenzene	EPA 8021B
	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8021B
	EPA 8260B
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B

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Purgeable Aromatics	
Total Xylenes	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
1,1-Dichloroethane	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8260B
Bromoform	EPA 8260B
Bromomethane	EPA 8260B

Purgeable Halocarbons	
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B
Chloroform	EPA 8260B
Chloromethane	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 8260B
Dibromomethane	EPA 8021B
	EPA 8260B
Dichlorodifluoromethane	EPA 8260B
Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 8260B
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B
Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B

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Purgeable Organics

2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Ethyl Acetate	EPA 8260B
Ethylene Glycol	EPA 8015 B
Isobutyl alcohol	EPA 8015 B
	EPA 8260B
Methyl tert-butyl ether	EPA 8260B
o-Toluidine	EPA 8260B
Propionitrile	EPA 8260B
Vinyl acetate	EPA 8260B

Semi-Volatile Organics

2-Methylnaphthalene	EPA 8270
4-Amino biphenyl	EPA 8270
Acetophenone	EPA 8270
Benzoic Acid	EPA 8270
Benzyl alcohol	EPA 8270
Dibenzofuran	EPA 8270
Ethyl methanesulfonate	EPA 8270
Isosafrole	EPA 8270

Semi-Volatile Organics

Methyl methanesulfonate	EPA 8270
O,O,O-Triethyl phosphorothioate	EPA 8270
Phenacetin	EPA 8270

Volatile Chlorinated Organics

Epichlorohydrin	EPA 8260B

Sample Preparation Methods

EPA 1311	EPA 3010A	EPA 3005A	EPA 3050B	
EPA 3580	EPA 3550B	EPA 5030B	EPA 3020A	
EPA 5035	EPA 3060A	EPA 5035	EPA 3060A	
		EPA 3580	EPA 3550B	EPA 5030B

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D. W. Methylcarbamate Pesticides	
3-Hydroxy Carbofuran	EPA 531.1
Aldicarb	EPA 531.1
Aldicarb Sulfone	EPA 531.1
Aldicarb Sulfoxide	EPA 531.1
Carbaryl	EPA 531.1
Carbofuran	EPA 531.1
Methomyl	EPA 531.1
Oxamyl	EPA 531.1
Drinking Water Metals I	
Arsenic, Total	EPA 200.7
	EPA 200.8
Barium, Total	EPA 200.7
	EPA 200.8
Cadmium, Total	EPA 200.7
	EPA 200.8
Chromium, Total	EPA 200.7
	EPA 200.8
Copper, Total	EPA 200.7
	EPA 200.8
Iron, Total	EPA 200.7
Lead, Total	EPA 200.7
	EPA 200.8
Drinking Water Metals I	
Manganese, Total	EPA 200.7
	EPA 200.8
Mercury, Total	EPA 245.1
Selenium, Total	EPA 200.8
Silver, Total	EPA 200.7
	EPA 200.8
Zinc, Total	EPA 200.7
	EPA 200.8
Drinking Water Metals II	
Aluminum, Total	EPA 200.7
Antimony, Total	EPA 200.7
	EPA 200.8
Beryllium, Total	EPA 200.7
	EPA 200.8
Molybdenum, Total	EPA 200.7
	EPA 200.8
Nickel, Total	EPA 200.7
	EPA 200.8
Thallium, Total	EPA 200.8
Vanadium, Total	EPA 200.7
	EPA 200.8

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Drinking Water Metals III	
Boron, Total	EPA 200.7
Calcium, Total	EPA 200.7
Magnesium, Total	EPA 200.7
Potassium, Total	EPA 200.7
Sodium, Total	EPA 200.7
Drinking Water Miscellaneous	
Endothall	EPA 548.1
Methyl tert-butyl ether	EPA 524.2
Drinking Water Non-Metals	
Alkalinity	EPA 310.1
	EPA 310.2
	SM 18-20 2320B
Calcium Hardness	EPA 200.7
Chloride	EPA 300.0
	EPA 325.2
Color	EPA 110.2
Cyanide, Free	EPA 335.4
Cyanide, Total	EPA 335.2
	EPA 335.4
Fluoride, Total	EPA 300.0
Hydrogen Ion (pH)	EPA 150.1
Nitrate (as N)	EPA 300.0

Drinking Water Non-Metals	
Nitrite (as N)	EPA 353.2
Orthophosphate (as P)	EPA 365.2
Solids, Total Dissolved	EPA 160.1
	SM 18-20 2540C
Specific Conductance	EPA 120.1
Sulfate (as SO4)	EPA 300.0
	EPA 375.4
Drinking Water Trihalomethanes	
Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2
Microextractibles	
1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2

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Volatile Aromatics

1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2

Volatile Halocarbons

1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2

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Volatile Halocarbons

Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

Sample Preparation Methods
SM 18-20 2340B

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 624
	EPA 8260B
Acrylonitrile	EPA 624
	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B
Amines	
1,4-Phenylenediamine	EPA 8270
1-Naphthylamine	EPA 8270
2-Naphthylamine	EPA 8270
2-Nitroaniline	EPA 8270
3-Nitroaniline	EPA 8270
4-Chloroaniline	EPA 8270
4-Nitroaniline	EPA 8270
5-Nitro-o-toluidine	EPA 8270
Aniline	EPA 8270
Carbazole	EPA 8270
Diphenylamine	EPA 8270
Methapyriline	EPA 8270
Pronamide	EPA 8270
Propionitrile	EPA 8260B

Amines	
Pyridine	EPA 625
	EPA 8270
Benzidines	
3,3' -Dichlorobenzidine	EPA 625
	EPA 8270
3,3'-Dimethylbenzidene	EPA 8270
Benzidine	EPA 625
	EPA 8270
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 608
	EPA 8081A
4,4'-DDE	EPA 608
	EPA 8081A
4,4'-DDT	EPA 608
	EPA 8081A
Aldrin	EPA 608
	EPA 8081A
alpha-BHC	EPA 608
	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 608
	EPA 8081A

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Chlorinated Hydrocarbon Pesticides	
Chlordane Total	EPA 608
	EPA 8081A
Chlorobenzilate	EPA 8270
delta-BHC	EPA 608
	EPA 8081A
Diallate	EPA 8270
Dieldrin	EPA 608
	EPA 8081A
Endosulfan I	EPA 608
	EPA 8081A
Endosulfan II	EPA 608
	EPA 8081A
Endosulfan sulfate	EPA 608
	EPA 8081A
Endrin	EPA 608
	EPA 8081A
Endrin aldehyde	EPA 608
	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 608
	EPA 8081A
Heptachlor epoxide	EPA 608

Chlorinated Hydrocarbon Pesticides	
Heptachlor epoxide	EPA 8081A
Isodrin	EPA 8270
Kepone	EPA 8270
Lindane	EPA 608
	EPA 8081A
Methoxychlor	EPA 608
	EPA 8081A
Mirex	SM 18-20 6630C
PCNB	EPA 8270
Toxaphene	EPA 608
	EPA 8081A

Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260B
1,2,4,5-Tetrachlorobenzene	EPA 8270
1,2,4-Trichlorobenzene	EPA 625
	EPA 8260B
	EPA 8270
2-Chloronaphthalene	EPA 625
	EPA 8270
Hexachlorobenzene	EPA 625
	EPA 8270
Hexachlorobutadiene	EPA 625

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Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER SPENCER
STL BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026
EPA Lab Code: NY00044

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All approved analytes are listed below:

Chlorinated Hydrocarbons	
Hexachlorobutadiene	EPA 8260B
	EPA 8270
Hexachlorocyclopentadiene	EPA 625
	EPA 8270
Hexachloroethane	EPA 625
	EPA 8270
Hexachloropropene	EPA 8270
Pentachlorobenzene	EPA 8270
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 1978, p.115
	EPA 8151A
2,4,5-TP (Silvex)	EPA 1978, p.115
	EPA 8151A
2,4-D	EPA 1978, p.115
	EPA 8151A
Dalapon	EPA 8151A
Dinoseb	EPA 8151A
Demand	
Biochemical Oxygen Demand	EPA 405.1
	SM 18-20 5210B
Carbonaceous BOD	SM 18-20 5210B
Chemical Oxygen Demand	EPA 410.4
Demand	
Chemical Oxygen Demand	HACH 8000
Fuel Oxygenates	
Ethanol	EPA 8260B
Methyl tert-butyl ether	EPA 8260B
t-Butyl alcohol	EPA 8260B
Haloethers	
4-Bromophenylphenyl ether	EPA 625
	EPA 8270
4-Chlorophenylphenyl ether	EPA 625
	EPA 8270
Bis (2-chloroisopropyl) ether	EPA 625
	EPA 8270
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270
Bis(2-chloroethyl)ether	EPA 625
	EPA 8270
Microextractables	
1,2-Dibromo-3-chloropropane	EPA 8011
	EPA 8260B
1,2-Dibromoethane	EPA 8011
	EPA 8260B

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Mineral	
Acidity	EPA 305.1
	SM 18-20 2310B(4a)
Alkalinity	EPA 310.1
	EPA 310.2
	SM 18-20 2320B
Calcium Hardness	EPA 200.7
Chloride	EPA 300.0
	EPA 325.2
	EPA 9056
	SM 18-20 4110B
	SM 18-20 4500-Cl E
Fluoride, Total	EPA 300.0
	EPA 340.2
	EPA 9056
	SM 18-20 4110B
	SM 18-20 4500-F C
Hardness, Total	EPA 130.2
Sulfate (as SO4)	EPA 300.0
	EPA 375.4
	EPA 9056
	SM 18-20 4110B

Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270
1,3-Dinitrobenzene	EPA 8270
1,4-Naphthoquinone	EPA 8270
2,4-Dinitrotoluene	EPA 625
	EPA 8270
2,6-Dinitrotoluene	EPA 625
	EPA 8270
Isophorone	EPA 625
	EPA 8270
Nitrobenzene	EPA 625
	EPA 8270

Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270
N-Nitrosodimethylamine	EPA 625
	EPA 8270
N-Nitrosodi-n-butylamine	EPA 8270
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270
N-Nitrosodiphenylamine	EPA 625
	EPA 8270
N-nitrosopiperidine	EPA 8270
N-Nitrosopyrrolidine	EPA 8270

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Nutrient	
Ammonia (as N)	EPA 350.1
Kjeldahl Nitrogen, Total	EPA 351.2
Nitrate (as N)	EPA 300.0
	EPA 353.2
	EPA 9056
	SM 18-20 4110B
	SM 18-20 4500-NO3 F
Nitrite (as N)	EPA 353.2
	SM 18-20 4500-NO3 F
Orthophosphate (as P)	EPA 365.2
	SM 18-20 4500-P E
Phosphorus, Total	EPA 365.2
	SM 18-20 4500-P E
Organophosphate Pesticides	
Dimethoate	EPA 8270
Disulfoton	EPA 8270
Famphur	EPA 8270
Parathion ethyl	EPA 8270
Parathion methyl	EPA 8270
Phorate	EPA 8270
Phthalate Esters	
Benzyl butyl phthalate	EPA 625

Phthalate Esters	
Benzyl butyl phthalate	EPA 8270
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270
Diethyl phthalate	EPA 625
	EPA 8270
Dimethyl phthalate	EPA 625
	EPA 8270
Di-n-butyl phthalate	EPA 625
	EPA 8270
Di-n-octyl phthalate	EPA 625
	EPA 8270
Polychlorinated Biphenyls	
PCB-1016	EPA 608
	EPA 8082
PCB-1221	EPA 608
	EPA 8082
PCB-1232	EPA 608
	EPA 8082
PCB-1242	EPA 608
	EPA 8082
PCB-1248	EPA 608
	EPA 8082

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Polychlorinated Biphenyls	
PCB-1254	EPA 608
	EPA 8082
PCB-1260	EPA 608
	EPA 8082
Polynuclear Aromatics	
3-Methylcholanthrene	EPA 8270
7,12-Dimethylbenzyl (a) anthracene	EPA 8270
Acenaphthene	EPA 625
	EPA 8270
Acenaphthylene	EPA 625
	EPA 8270
Anthracene	EPA 625
	EPA 8270
Benzo(a)anthracene	EPA 625
	EPA 8270
Benzo(a)pyrene	EPA 625
	EPA 8270
Benzo(b)fluoranthene	EPA 625
	EPA 8270
Benzo(ghi)perylene	EPA 625
	EPA 8270
Benzo(k)fluoranthene	EPA 625

Polynuclear Aromatics	
Benzo(k)fluoranthene	EPA 8270
Chrysene	EPA 625
	EPA 8270
Dibenzo(a,h)anthracene	EPA 625
	EPA 8270
Fluoranthene	EPA 625
	EPA 8270
Fluorene	EPA 625
	EPA 8270
Indeno(1,2,3-cd)pyrene	EPA 625
	EPA 8270
Naphthalene	EPA 625
	EPA 8260B
	EPA 8270
Phenanthrene	EPA 625
	EPA 8270
Pyrene	EPA 625
	EPA 8270
Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270
2,4,5-Trichlorophenol	EPA 625
	EPA 8270

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Priority Pollutant Phenols	
2,4,6-Trichlorophenol	EPA 625
	EPA 8270
2,4-Dichlorophenol	EPA 625
	EPA 8270
2,4-Dimethylphenol	EPA 625
	EPA 8270
2,4-Dinitrophenol	EPA 625
	EPA 8270
2,6-Dichlorophenol	EPA 8270
2-Chlorophenol	EPA 625
	EPA 8270
2-Methyl-4,6-dinitrophenol	EPA 625
	EPA 8270
2-Methylphenol	EPA 8270
2-Nitrophenol	EPA 625
	EPA 8270
3-Methylphenol	EPA 8270
4-Chloro-3-methylphenol	EPA 625
	EPA 8270
4-Methylphenol	EPA 8270
4-Nitrophenol	EPA 625
	EPA 8270
Cresols, Total	EPA 625

Priority Pollutant Phenols	
Cresols, Total	EPA 8270
Pentachlorophenol	EPA 625
	EPA 8270
Phenol	EPA 625
	EPA 8270
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8260B
	EPA 8270
1,3-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8260B
	EPA 8270
1,4-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625

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Purgeable Aromatics	
1,4-Dichlorobenzene	EPA 8260B
	EPA 8270
Benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 8260B
Ethyl benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Styrene	EPA 624
	EPA 8260B
Toluene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 602
	EPA 624
	EPA 8021B
Purgeable Aromatics	
Total Xylenes	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 601
	EPA 624
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 601
	EPA 624
	EPA 8260B
1,1,2-Trichloroethane	EPA 601
	EPA 624
	EPA 8260B
1,1-Dichloroethane	EPA 601
	EPA 624
	EPA 8260B
1,1-Dichloroethene	EPA 601
	EPA 624
	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dichloroethane	EPA 601
	EPA 624

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Purgeable Halocarbons	
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 601
	EPA 624
	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 601
	EPA 624
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 601
	EPA 624
	EPA 8260B
Bromoform	EPA 601
	EPA 624
	EPA 8260B
Bromomethane	EPA 601
	EPA 624
	EPA 8260B
Carbon tetrachloride	EPA 601
	EPA 624

Purgeable Halocarbons	
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 601
	EPA 624
	EPA 8260B
Chloroform	EPA 601
	EPA 624
	EPA 8260B
Chloromethane	EPA 601
	EPA 624
	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 601
	EPA 624
	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 601
	EPA 624
	EPA 8260B
Methylene chloride	EPA 601

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Purgeable Halocarbons	
Methylene chloride	EPA 624
	EPA 8260B
Tetrachloroethene	EPA 601
	EPA 624
	EPA 8260B
trans-1,2-Dichloroethene	EPA 601
	EPA 624
	EPA 8260B
trans-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 601
	EPA 624
	EPA 8260B
Trichlorofluoromethane	EPA 601
	EPA 624
	EPA 8260B
Vinyl chloride	EPA 601
	EPA 624
	EPA 8260B

Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8015 B
	EPA 8260B
Methyl iodide	EPA 8260B
o-Toluidine	EPA 8270
Vinyl acetate	EPA 8260B
Residue	
Solids, Total	EPA 160.3
	SM 18-20 2540B
Solids, Total Dissolved	EPA 160.1
	SM 18-20 2540C
Solids, Total Suspended	EPA 160.2
	SM 18-20 2540D
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270
4-Amino biphenyl	EPA 8270

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Semi-Volatile Organics	
Acetophenone	EPA 8270
Benzoic Acid	EPA 8270
Benzyl alcohol	EPA 8270
Dibenzofuran	EPA 8270
Ethyl methanesulfonate	EPA 8270
Isosafrole	EPA 8270
Methyl methanesulfonate	EPA 8270
O,O,O-Triethyl phosphorothioate	EPA 8270
p-Dimethylaminoazobenzene	EPA 8270
Phenacetin	EPA 8270
Safrole	EPA 8270
Volatile Chlorinated Organics	
Epichlorohydrin	EPA 8260B
Wastewater Metals I	
Barium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Cadmium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Wastewater Metals I	
Calcium, Total	EPA 200.7
	EPA 6010B
Chromium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Copper, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Iron, Total	EPA 200.7
	EPA 6010B
Lead, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Magnesium, Total	EPA 200.7
	EPA 6010B
Manganese, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Nickel, Total	EPA 200.7

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Wastewater Metals I	
Nickel, Total	EPA 200.8
	EPA 6010B
	EPA 6020
Potassium, Total	EPA 200.7
	EPA 6010B
Silver, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Sodium, Total	EPA 200.7
	EPA 6010B
Strontium, Total	EPA 200.8
	EPA 6020
Wastewater Metals II	
Aluminum, Total	EPA 200.7
	EPA 6010B
Antimony, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Arsenic, Total	EPA 200.7
	EPA 200.8

Wastewater Metals II	
Arsenic, Total	EPA 6010B
	EPA 6020
Beryllium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Chromium VI	EPA 7196A
	SM 18-19 3500-Cr D
Mercury, Total	EPA 245.1
	EPA 7470A
Selenium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Vanadium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Zinc, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020

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Wastewater Metals III	
Cobalt, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Molybdenum, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Thallium, Total	EPA 200.7
	EPA 200.8
	EPA 6010B
	EPA 6020
Tin, Total	EPA 200.7
	EPA 6010B
Titanium, Total	EPA 200.7
	EPA 6010B
Wastewater Miscellaneous	
Boron, Total	EPA 200.7
	EPA 6010B
Bromide	EPA 300.0
	EPA 9056
Color	EPA 110.2

Wastewater Miscellaneous	
Color	SM 18-20 2120B
Cyanide, Total	EPA 335.2
	EPA 335.4
	EPA 9012A
	LACHAT 10-204-00-1-A
	SM 18-20 4500-CN E
	SM 18-20 4500-CN G
Hydrogen Ion (pH)	EPA 150.1
	EPA 9040B
	SM 18-20 4500-H B
Oil & Grease Total Recoverable	EPA 1664A
Organic Carbon, Total	EPA 415.1
	SM 18-20 5310B
Phenols	EPA 420.2
	EPA 9065
Silica, Dissolved	EPA 370.1
	SM 20 4500 SiO2-C
Specific Conductance	EPA 120.1
	EPA 9050
	SM 18-20 2510B
Sulfide (as S)	EPA 376.1
	EPA 376.2
	SM 18-20 4500-S D

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STL BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026
EPA Lab Code: NY00044

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Wastewater Miscellaneous

Sulfide (as S)	SM 19-20 4500-S F
Surfactant (MBAS)	EPA 425.1
	SM 18-20 5540C
Temperature	EPA 170.1
	SM 18-20 2550B

Sample Preparation Methods

SM 18-20 2340B	EPA 200.2	EPA 9010B	EPA 3010A
EPA 3005A	EPA 3510C	EPA 3520C	EPA 5030B
EPA 3020A			
EPA 3020A			
Serial No.: 31843		EPA 3520C	EPA 5030B

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised February 27, 2007

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER SPENCER
STL BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026
EPA Lab Code: NY00044

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:

Fuel Oxygenates

Ethanol	EPA 8015 B
t-Butyl alcohol	EPA 8015 B

Sample Preparation Methods

EPA 3005A	EPA 3510C	EPA 3520C	EPA 5030B
SM 18-20 2340B	EPA 200.2	EPA 9010B	EPA 3010A
EPA 3005A	EPA 3510C	EPA 3520C	EPA 5030B
EPA 3020A			

EPA 3020A

Serial No.: 31871

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised November 07, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. CHRISTOPHER SPENCER
STL BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026
EPA Lab Code: NY00044

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Metals I

Lead, Total	EPA 200.7

Serial No.: 31250

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised October 23, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. CHRISTOPHER SPENCER
STL BUFFALO
10 HAZELWOOD DRIVE - SUITE 106
AMHERST, NY 14228

NY Lab Id No: 10026
EPA Lab Code: NY00044

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES ANALYTICAL SERVICES PROTOCOL
All approved subcategories and/or analytes are listed below:

CLP PCB/Pesticides

CLP Semi-Volatile Organics

CLP Volatile Organics

CLP Inorganics

Serial No.: 31054

State of New Jersey
Department of Environmental Protection

Certifies That

STL Buffalo

Laboratory Certification ID#: NY455

having duly met the requirements of the

Regulations Governing The Certification Of
Laboratories And Environmental Measurements N.J.A.C. 7:18 et. seq.

and

having been found compliant with the standard approved by the

National Environmental Laboratory Accreditation Conference

is hereby approved as a

Nationally Accredited Environmental Laboratory

to perform the analyses as indicated on the Annual Certified Parameter List
which must accompany this certificate to be valid

Expiration Date June 30, 2007

Joseph F. Aiello, Chief
Office of Quality Assurance

NJDEP is a NELAP Recognized Accrediting Authority

THIS CERTIFICATE IS TO BE CONSPICUOUSLY DISPLAYED AT THE LABORATORY WITH THE ANNUAL CERTIFIED PARAMETER LIST IN A LOCATION ON THE PREMISES VISIBLE TO THE PUBLIC

New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: SDW02 -- Inorganic Parameters Including Na + Ca

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SDW02.02000	DW	Automated Cadmium Reduction	[EPA 353.2]	Nitrate
Certified	Yes	NY	SDW02.04000	DW	Ion Chromatography	[EPA 300.0]	Nitrate
Certified	Yes	NY	SDW02.06000	DW	Automated Cadmium Reduction	[EPA 353.2]	Nitrite
Certified	Yes	NY	SDW02.14000	DW	Ion Chromatography	[EPA 300.0]	Fluoride
Certified	Yes	NY	SDW02.15200	DW	Spectrophotometric, Distill, Semi Automated	[EPA 335.4]	Cyanide
Certified	No	NJ	SDW02.17000	DW	Colorimetric (Automated)	[USER DEFINED EPA 375.4]	Sulfate
Certified	Yes	NY	SDW02.19000	DW	Ion Chromatography	[EPA 300.0]	Sulfate
Certified	Yes	NY	SDW02.20000	DW	ICP	[EPA 200.7]	Sodium
Certified	Yes	NY	SDW02.24000	DW	Gravimetric At 180	[SM 2540 C] [EPA 160.1]	Total dissolved solids (TDS)
Certified	Yes	IL	SDW02.27000	DW	ICP	[EPA 200.7]	Calcium
Certified	Yes	NJ	SDW02.27200	DW	Ca as Carbonate	[EPA 200.7]	Calcium-hardness
Certified	Yes	NJ	SDW02.27300	DW	Hardness By Calculation	[EPA 200.7]	Total hardness
Certified	Yes	NY	SDW02.28000	DW	Titrimetric Indicator	[SM 2320 B]	Alkalinity
Applied	No	NJ	SDW02.29310	DW	Automated Phenate	[EPA 350.1]	Ammonia
Certified	Yes	NY	SDW02.31000	DW	Ion Chromatography	[EPA 300.0]	Chloride
Certified	Yes	NY	SDW02.32000	DW	Platinum-Cobalt	[EPA 110.2]	Color
Applied	No	NY	SDW02.37000	DW	Colorimetric	[SM 4500-P E]	Orthophosphate

Category: SDW03 -- Analyze-Immediately Inorganic Parameter

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SDW03.08000	DW	Electrometric	[EPA 150.1]	pH

Category: SDW04 -- Inorganic Parameters, Metals

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Applied	No	NJ	SDW04.03000	DW	ICP	[EPA 200.7]	Aluminum
Certified	Yes	NY	SDW04.07000	DW	ICP/MS	[EPA 200.8]	Antimony
Certified	Yes	NY	SDW04.12000	DW	ICP/MS	[EPA 200.8]	Arsenic

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: SDW04 -- Inorganic Parameters, Metals

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SDW04.16000	DW	ICP	[EPA 200.7]	Barium
Certified	Yes	NY	SDW04.17000	DW	ICP/MS	[EPA 200.8]	Barium
Certified	Yes	NY	SDW04.20000	DW	ICP	[EPA 200.7]	Beryllium
Certified	Yes	NY	SDW04.21000	DW	ICP/MS	[EPA 200.8]	Beryllium
Certified	Yes	NY	SDW04.24000	DW	ICP	[EPA 200.7]	Cadmium
Certified	Yes	NY	SDW04.25000	DW	ICP/MS	[EPA 200.8]	Cadmium
Certified	Yes	NY	SDW04.28000	DW	ICP	[EPA 200.7]	Chromium
Certified	Yes	NY	SDW04.29000	DW	ICP/MS	[EPA 200.8]	Chromium
Certified	Yes	NY	SDW04.33000	DW	ICP	[EPA 200.7]	Copper
Certified	Yes	NY	SDW04.34000	DW	ICP/MS	[EPA 200.8]	Copper
Certified	Yes	NY	SDW04.37000	DW	ICP	[EPA 200.7]	Iron
Certified	Yes	NY	SDW04.40000	DW	ICP/MS	[EPA 200.8]	Lead
Certified	Yes	IL	SDW04.41100	DW	ICP	[EPA 200.7]	Magnesium
Certified	Yes	NY	SDW04.44000	DW	ICP	[EPA 200.7]	Manganese
Certified	Yes	NY	SDW04.45000	DW	ICP/MS	[EPA 200.8]	Manganese
Certified	Yes	NY	SDW04.46000	DW	Manual Cold Vapor	[EPA 245.1]	Mercury
Certified	Yes	NY	SDW04.52000	DW	ICP	[EPA 200.7]	Nickel
Certified	Yes	NY	SDW04.53000	DW	ICP/MS	[EPA 200.8]	Nickel
Certified	Yes	NY	SDW04.57000	DW	ICP/MS	[EPA 200.8]	Selenium
Certified	Yes	NY	SDW04.62000	DW	ICP	[EPA 200.7]	Silver
Certified	Yes	NY	SDW04.63000	DW	ICP/MS	[EPA 200.8]	Silver
Certified	Yes	NY	SDW04.65000	DW	ICP/MS	[EPA 200.8]	Thallium
Certified	Yes	NY	SDW04.67000	DW	ICP	[EPA 200.7]	Zinc
Certified	Yes	NY	SDW04.68000	DW	ICP/MS	[EPA 200.8]	Zinc

Category: SDW05 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SDW05.01010	DW	HPLC	[EPA 531.1]	Carbofuran (furadan)
Certified	Yes	NY	SDW05.01020	DW	HPLC	[EPA 531.1]	Oxamyl

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: SDW05 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SDW05.01040	DW	HPLC	[EPA 531.1]	Aldicarb
Certified	Yes	NY	SDW05.01050	DW	HPLC	[EPA 531.1]	Aldicarb sulfone
Certified	Yes	NY	SDW05.01060	DW	HPLC	[EPA 531.1]	Aldicarb sulfoxide
Certified	Yes	NY	SDW05.01070	DW	HPLC	[EPA 531.1]	Carbaryl
Certified	Yes	NY	SDW05.01080	DW	HPLC	[EPA 531.1]	Hydroxy carbofuran (3-)
Certified	Yes	NY	SDW05.01090	DW	HPLC	[EPA 531.1]	Methomyl (Lannate)
Certified	Yes	IL	SDW05.12010	DW	Solvent Extract, GC	[EPA 504.1]	Dibromoethane (1,2-) (EDB)
Certified	Yes	NY	SDW05.12020	DW	Solvent Extract, GC	[EPA 504.1]	Dibromo-3-chloropropane (1,2-)

Category: SDW06 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SDW06.01010	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Bromoform
Certified	Yes	NY	SDW06.01020	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Chloroform
Certified	Yes	NY	SDW06.01030	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dibromochloromethane
Certified	Yes	NY	SDW06.01040	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Bromodichloromethane
Certified	Yes	NY	SDW06.02010	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Benzene
Certified	Yes	NY	SDW06.02020	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Carbon tetrachloride
Certified	Yes	NY	SDW06.02030	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Chlorobenzene
Certified	Yes	NY	SDW06.02040	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichlorobenzene (1,2-)
Certified	Yes	NY	SDW06.02050	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichlorobenzene (1,3-)
Certified	Yes	NY	SDW06.02060	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichlorobenzene (1,4-)
Certified	No	NY	SDW06.02070	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloroethane (1,1-)
Certified	Yes	NY	SDW06.02080	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloroethane (1,2-)
Certified	Yes	NY	SDW06.02090	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloroethene (cis-1,2-)
Certified	Yes	NY	SDW06.02100	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloroethene (trans-1,2-)
Certified	Yes	NY	SDW06.02110	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Methylene chloride (Dichloromethane)
Certified	Yes	NY	SDW06.02120	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloropropane (1,2-)
Certified	Yes	NY	SDW06.02130	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Ethylbenzene
Certified	No	NY	SDW06.02140	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Methyl tert-butyl ether

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: SDW06 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	IL	SDW06.02150	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Naphthalene
Certified	Yes	NY	SDW06.02160	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Styrene
Certified	Yes	NY	SDW06.02170	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Tetrachloroethane (1,1,2,2-)
Certified	Yes	NY	SDW06.02180	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Tetrachloroethene
Certified	Yes	NY	SDW06.02190	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Trichloroethane (1,1,1-)
Certified	Yes	NY	SDW06.02200	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Trichloroethene
Certified	Yes	NY	SDW06.02210	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Toluene
Certified	Yes	NY	SDW06.02220	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Trichlorobenzene (1,2,4-)
Certified	Yes	NY	SDW06.02230	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloroethene (1,1-)
Certified	Yes	NY	SDW06.02240	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Trichloroethane (1,1,2-)
Certified	Yes	NY	SDW06.02250	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Vinyl chloride
Certified	Yes	NY	SDW06.02260	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Xylenes (total)
Certified	Yes	NY	SDW06.03010	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Bromobenzene
Certified	Yes	NY	SDW06.03020	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Bromochloromethane
Certified	Yes	NY	SDW06.03030	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Bromomethane
Certified	Yes	NY	SDW06.03040	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Butyl benzene (n-)
Certified	Yes	NY	SDW06.03050	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Sec-butylbenzene
Certified	Yes	NY	SDW06.03060	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Tert-butylbenzene
Certified	Yes	NY	SDW06.03070	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Chloroethane
Certified	Yes	NY	SDW06.03080	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Chloromethane
Certified	Yes	NY	SDW06.03090	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Chlorotoluene (2-)
Certified	Yes	NY	SDW06.03100	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Chlorotoluene (4-)
Applied	No	NJ	SDW06.03110	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dibromo-3-chloropropane (1,2-)
Applied	No	NJ	SDW06.03120	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dibromoethane (1,2-) (EDB)
Certified	Yes	NY	SDW06.03130	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dibromomethane
Certified	Yes	NY	SDW06.03140	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichlorodifluoromethane
Certified	Yes	NY	SDW06.03150	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloropropane (1,3-)
Certified	Yes	NY	SDW06.03160	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloropropane (2,2-)
Certified	Yes	NY	SDW06.03170	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloropropene (1,1-)
Certified	Yes	NY	SDW06.03180	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloropropene (cis-1,3-)
Certified	Yes	NY	SDW06.03190	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Dichloropropene (trans-1,3-)
Certified	Yes	NY	SDW06.03200	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Hexachlorobutadiene (1,3-)

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: SDW06 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SDW06.03210	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Isopropylbenzene
Certified	Yes	NY	SDW06.03220	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Isopropyltoluene (4-)
Certified	Yes	NY	SDW06.03230	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Propylbenzene (n-)
Certified	Yes	NY	SDW06.03240	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Tetrachloroethane (1,1,1,2-)
Certified	Yes	NY	SDW06.03250	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Trichlorobenzene (1,2,3-)
Certified	Yes	NY	SDW06.03260	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Trichlorofluoromethane
Certified	Yes	NY	SDW06.03280	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Trimethylbenzene (1,2,4-)
Certified	Yes	NY	SDW06.03300	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Trimethylbenzene (1,3,5-)
Certified	Yes	IL	SDW06.03310	DW	GC/MS, P & T or Direct Injection, Capillary	[EPA 524.2]	Nitrobenzene

Category: SHW04 -- Inorganic Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NJ	SHW04.01000	NPW	Acid Digestion/Surface and Groundwater, ICP, FLAA	[SW-846 3005A, Rev. 1, 7/92]	Metals, Total Rec and Dissolved
Certified	Yes	NJ	SHW04.01500	NPW	Acid Digestion/Aqueous Samples, ICP, FLAA	[SW-846 3010A, Rev. 1, 7/92]	Metals, Total
Certified	Yes	NJ	SHW04.02000	NPW	Acid Digestion For GFAA, Aqueous	[SW-846 3020A, Rev. 1, 7/92]	Metals

Category: SHW05 -- Organic Parameters, Prep. / Screening

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NJ	SHW05.01000	NPW	Separatory Funnel Extraction	[SW-846 3510C, Rev. 3, 12/96]	Semivolatile organics
Certified	Yes	NJ	SHW05.02000	NPW	Continuous Liquid-Liquid Extraction	[SW-846 3520C, Rev. 3, 12/96]	Semivolatile organics
Certified	Yes	NJ	SHW05.07000	NPW	Purge & Trap Aqueous	[SW-846 5030B, Rev. 2, 12/96]	Volatile organics

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

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Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: SHW07 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW07.04081	NPW	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Xylene (m-)
Certified	Yes	NY	SHW07.04082	NPW	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Xylene (o-)
Certified	Yes	NY	SHW07.04083	NPW	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Xylene (p-)

Category: SHW09 -- Miscellaneous Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	IL	SHW09.17000	NPW	Wheatstone Bridge	[SW-846 9050A, Rev. 1, 12/96]	Specific conductance
Certified	Yes	NY	SHW09.24100	NPW	Extraction & Gravimetric - LL or SPE	[SW-846 1664A, Rev. 1, 2/99]	Oil & grease - hem

Category: WPP02 -- Inorganic Parameters, Nutrients and Dema

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	WPP02.01000	NPW	Electrometric or Phenolphthalein	[EPA 305.1]	Acidity as CaCO3
Certified	Yes	NY	WPP02.01500	NPW	Electrometric or Color Titration	[EPA 310.1]	Alkalinity as CaCO3
Certified	Yes	NY	WPP02.02000	NPW	Automated Titration	[EPA 310.2]	Alkalinity as CaCO3
Certified	Yes	NY	WPP02.04000	NPW	Distillation, Automated Phenate	[EPA 350.2 + .1]	Ammonia
Certified	Yes	NY	WPP02.05000	NPW	Dissolved Oxygen Depletion	[EPA 405.1] [SM 5210 B]	Biochemical oxygen demand
Certified	Yes	NY	WPP02.06000	NPW	ICP	[EPA 200.7]	Boron
Certified	Yes	NY	WPP02.07100	NPW	Ion Chromatography	[EPA 300.0]	Bromide
Certified	Yes	NY	WPP02.08000	NPW	Digestion, ICP	[EPA 200.7]	Calcium
Certified	Yes	NY	WPP02.09500	NPW	Dissolved Oxygen Depletion, Nitrification Inhibition	[SM 5210 B]	Carbonaceous BOD (CBOD)
Certified	Yes	NY	WPP02.10500	NPW	Spectrophotometric Manual/Auto	[EPA 410.4] [OTHER Hach 8000]	Chemical oxygen demand
Certified	Yes	NY	WPP02.12500	NPW	Colorimetric, Automated (Ferricyanide)	[EPA 325.1 OR .2]	Chloride
Certified	Yes	NY	WPP02.12600	NPW	Ion Chromatography	[EPA 300.0]	Chloride
Certified	Yes	NY	WPP02.13500	NPW	Colorimetric (Platinum-Cobalt)	[EPA 110.2]	Color
Certified	Yes	NY	WPP02.15000	NPW	Distillation, Spectrophotometric (Manual)	[EPA 335.2]	Cyanide
Certified	Yes	NY	WPP02.15500	NPW	Distillation, Spectrophotometric (Auto)	[EPA 335.4]	Cyanide
Certified	Yes	NY	WPP02.16000	NPW	Manual Distillation, Titrimetr/Spectro	[EPA 335.1]	Cyanide - amenable to Cl2

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New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: WPP02 -- Inorganic Parameters, Nutrients and Dema

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	WPP02.16500	NPW	Distillation + Electrode, Manual	[EPA 340.2]	Fluoride
Certified	Yes	NY	WPP02.18100	NPW	Ion Chromatography	[EPA 300.0]	Fluoride
Certified	Yes	NY	WPP02.19000	NPW	Titrimetric, EDTA	[EPA 130.2]	Hardness - total as CaCO3
Certified	Yes	IL	WPP02.20100	NPW	Ca + Mg Carbonates, ICP	[EPA 200.7]	Hardness - total as CaCO3
Certified	Yes	NY	WPP02.22500	NPW	Digestion, Distillation, Semiautomated Digestor	[EPA 351.2]	Kjeldahl nitrogen - total
Certified	Yes	NY	WPP02.24000	NPW	Digestion, ICP	[EPA 200.7]	Magnesium
Certified	Yes	NY	WPP02.26100	NPW	Ion Chromatography	[EPA 300.0]	Nitrate
Certified	Yes	IL	WPP02.27000	NPW	Cadmium Reduction, Automated	[EPA 353.2]	Nitrate - nitrite
Dropped	No	NY	WPP02.28600	NPW	Ion Chromatography	[EPA 300.0]	Nitrite
Certified	No	NY	WPP02.29150	NPW	Gravimetric, Hexane Extractable Material-SPE	[EPA 1664A]	Oil & grease - hem-SPE
Certified	Yes	NY	WPP02.29200	NPW	Gravimetric, Silica Gel Treated-Hem	[EPA 1664A]	Oil & grease - sgt-non polar
Certified	Yes	NY	WPP02.29250	NPW	Gravimetric, Silica Gel Treated-Hem-SPE	[EPA 1664A]	Oil & grease - non polar
Certified	Yes	NY	WPP02.30000	NPW	Combustion or Oxidation	[EPA 415.1]	Total organic carbon (TOC)
Certified	Yes	NY	WPP02.30500	NPW	Total Kjeldahl-N Minus Ammonia-N	[EPA 351.1,.2, .3,.4 - 350.1 .2 .3]	Organic nitrogen
Certified	Yes	NY	WPP02.31500	NPW	Ascorbic Acid, Manual Single Reagent	[EPA 365.2]	Orthophosphate
Certified	Yes	NY	WPP02.33000	NPW	Manual Distillation, Colorimetric Auto	[EPA 420.1 + .2]	Phenols
Certified	Yes	NY	WPP02.35000	NPW	Auto Ascorbic Acid Reduction	[EPA 365.2 + .1]	Phosphorus (total)
Certified	Yes	NY	WPP02.36500	NPW	Digestion, ICP	[EPA 200.7]	Potassium
Certified	Yes	NY	WPP02.38000	NPW	Gravimetric, 103-105 Degrees C	[EPA 160.3]	Residue - total
Certified	Yes	NY	WPP02.38500	NPW	Gravimetric, 180 Degrees C	[EPA 160.1]	Residue - filterable (TDS)
Certified	Yes	NY	WPP02.39000	NPW	Gravimetric, 103-105 Degrees C, Post Washing	[EPA 160.2]	Residue - nonfilterable (TSS)
Certified	Yes	IL	WPP02.39500	NPW	Volumetric (Imhoff Cone) or Gravimetric	[EPA 160.5]	Residue - settleable
Certified	Yes	IL	WPP02.40000	NPW	Gravimetric, 550 Degrees C	[EPA 160.4]	Residue - volatile
Certified	Yes	NY	WPP02.41500	NPW	0.45u Filtration + Colorimetric (Manual)	[EPA 370.1]	Silica - dissolved
Certified	Yes	NY	WPP02.44000	NPW	Digestion, ICP	[EPA 200.7]	Sodium
Certified	Yes	NY	WPP02.45500	NPW	Wheatstone Bridge	[EPA 120.1] [SM 2510 B]	Specific conductance
Certified	Yes	NY	WPP02.46500	NPW	Turbidimetric	[EPA 375.4]	Sulfate
Certified	Yes	NY	WPP02.47100	NPW	Ion Chromatography	[EPA 300.0]	Sulfate
Certified	Yes	NY	WPP02.47500	NPW	Titrimetric, Iodine	[EPA 376.1]	Sulfides
Certified	Yes	NY	WPP02.48000	NPW	Colorimetric (Methylene Blue)	[EPA 376.2]	Sulfides
Certified	Yes	NY	WPP02.48500	NPW	Colorimetric (Methylene Blue)	[EPA 425.1]	Surfactants

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

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Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: WPP02 -- Inorganic Parameters, Nutrients and Dema

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Applied	No	IL	WPP02.50000	NPW	Nephelometric	[EPA 180.1]	Turbidity

Category: WPP03 -- Analyze-Immediately Inorganic Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	IL	WPP03.04000	NPW	DPD-FAS	[EPA 330.4]	Chlorine
Certified	Yes	IL	WPP03.07000	NPW	Winkler, Azide Modification	[EPA 360.2]	Oxygen (dissolved)
Certified	Yes	NJ	WPP03.08000	NPW	Electrode	[EPA 360.1]	Oxygen (dissolved)
Certified	Yes	NY	WPP03.09000	NPW	Electrometric	[EPA 150.1]	pH
Certified	Yes	NY	WPP03.14000	NPW	Thermometric	[EPA 170.1]	Temperature

Category: WPP04 -- Inorganic Parameters, Metals

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	WPP04.02000	NPW	Digestion, ICP	[EPA 200.7]	Aluminum
Applied	No	IL	WPP04.02100	NPW	ICP/MS	[EPA 200.8]	Aluminum
Certified	Yes	NY	WPP04.04500	NPW	Digestion, ICP	[EPA 200.7]	Antimony
Certified	Yes	NY	WPP04.04600	NPW	ICP/MS	[EPA 200.8]	Antimony
Certified	Yes	NY	WPP04.05600	NPW	Digestion, ICP	[EPA 200.7]	Arsenic
Certified	Yes	NY	WPP04.05700	NPW	ICP/MS	[EPA 200.8]	Arsenic
Certified	Yes	NY	WPP04.08000	NPW	Digestion, ICP	[EPA 200.7]	Barium
Certified	Yes	NY	WPP04.08200	NPW	ICP/MS	[EPA 200.8]	Barium
Certified	Yes	NY	WPP04.11000	NPW	Digestion, ICP	[EPA 200.7]	Beryllium
Certified	Yes	NY	WPP04.11100	NPW	ICP/MS	[EPA 200.8]	Beryllium
Certified	Yes	NY	WPP04.13500	NPW	Digestion, ICP	[EPA 200.7]	Cadmium
Certified	Yes	NY	WPP04.13600	NPW	ICP/MS	[EPA 200.8]	Cadmium
Certified	Yes	NY	WPP04.15000	NPW	0.45u Filter, Colorimetric DPC	[SM 3500-Cr D]	Chromium (VI)
Certified	Yes	NY	WPP04.18000	NPW	Digestion, ICP	[EPA 200.7]	Chromium
Certified	Yes	NY	WPP04.18100	NPW	ICP/MS	[EPA 200.8]	Chromium

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New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: WPP04 -- Inorganic Parameters, Metals

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	WPP04.19500	NPW	Digestion, ICP	[EPA 200.7]	Cobalt
Certified	Yes	NY	WPP04.19600	NPW	ICP/MS	[EPA 200.8]	Cobalt
Certified	Yes	NY	WPP04.21500	NPW	Digestion, ICP	[EPA 200.7]	Copper
Certified	Yes	NY	WPP04.21600	NPW	ICP/MS	[EPA 200.8]	Copper
Certified	Yes	NY	WPP04.26500	NPW	Digestion, ICP	[EPA 200.7]	Iron
Certified	Yes	NY	WPP04.28000	NPW	Digestion, ICP	[EPA 200.7]	Lead
Certified	Yes	NY	WPP04.28100	NPW	ICP/MS	[EPA 200.8]	Lead
Certified	Yes	NY	WPP04.31000	NPW	Digestion, ICP	[EPA 200.7]	Manganese
Certified	Yes	NY	WPP04.31100	NPW	ICP/MS	[EPA 200.8]	Manganese
Certified	Yes	NY	WPP04.33000	NPW	Manual Cold Vapor	[EPA 245.1]	Mercury
Certified	Yes	NY	WPP04.35000	NPW	Digestion, ICP	[EPA 200.7]	Molybdenum
Certified	Yes	NY	WPP04.35200	NPW	ICP/MS	[EPA 200.8]	Molybdenum
Certified	Yes	NY	WPP04.37500	NPW	Digestion, ICP	[EPA 200.7]	Nickel
Certified	Yes	NY	WPP04.37600	NPW	ICP/MS	[EPA 200.8]	Nickel
Certified	Yes	NY	WPP04.45500	NPW	Digestion, ICP	[EPA 200.7]	Selenium
Certified	Yes	NY	WPP04.45600	NPW	ICP/MS	[EPA 200.8]	Selenium
Certified	Yes	NY	WPP04.48000	NPW	Digestion, ICP	[EPA 200.7]	Silver
Certified	Yes	NY	WPP04.48200	NPW	ICP/MS	[EPA 200.8]	Silver
Certified	Yes	NY	WPP04.50000	NPW	Digestion, ICP	[EPA 200.7]	Thallium
Certified	Yes	NY	WPP04.50100	NPW	ICP/MS	[EPA 200.8]	Thallium
Certified	Yes	NY	WPP04.51100	NPW	Digestion, ICP	[EPA 200.7]	Tin
Certified	Yes	NY	WPP04.52050	NPW	Digestion, ICP	[EPA 200.7]	Titanium
Certified	Yes	NY	WPP04.54000	NPW	Digestion, ICP	[EPA 200.7]	Vanadium
Certified	Yes	NY	WPP04.54100	NPW	ICP/MS	[EPA 200.8]	Vanadium
Certified	Yes	NY	WPP04.56500	NPW	Digestion, ICP	[EPA 200.7]	Zinc
Certified	Yes	NY	WPP04.56600	NPW	ICP/MS	[EPA 200.8]	Zinc

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New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: WPP05 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	WPP05.01010	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Bromodichloromethane
Certified	Yes	NY	WPP05.01020	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Bromoform
Certified	Yes	NY	WPP05.01030	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Bromomethane
Certified	Yes	NY	WPP05.01040	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Carbon tetrachloride
Certified	Yes	NY	WPP05.01050	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Chlorobenzene
Certified	Yes	NY	WPP05.01060	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Chloroethane
Certified	Yes	NY	WPP05.01070	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Chloroethyl vinyl ether (2-)
Certified	Yes	NY	WPP05.01080	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Chloroform
Certified	Yes	NY	WPP05.01090	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Chloromethane
Certified	Yes	NY	WPP05.01100	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dibromochloromethane
Applied	No	NJ	WPP05.01105	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dibromoethane (1,2-) (EDB)
Certified	Yes	NY	WPP05.01110	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichlorobenzene (1,2-)
Certified	Yes	NY	WPP05.01120	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichlorobenzene (1,3-)
Certified	Yes	NY	WPP05.01130	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichlorobenzene (1,4-)
Certified	Yes	NY	WPP05.01140	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichlorodifluoromethane
Certified	Yes	NY	WPP05.01150	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichloroethane (1,1-)
Certified	Yes	NY	WPP05.01160	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichloroethane (1,2-)
Certified	Yes	NY	WPP05.01170	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichloroethene (1,1-)
Certified	Yes	NY	WPP05.01180	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichloroethene (trans-1,2-)
Certified	Yes	NY	WPP05.01190	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichloropropane (1,2-)
Certified	Yes	NY	WPP05.01200	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichloropropene (cis-1,3-)
Certified	Yes	NY	WPP05.01210	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Dichloropropene (trans-1,3-)
Certified	Yes	NY	WPP05.01220	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Methylene chloride (Dichloromethane)
Certified	Yes	NY	WPP05.01230	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Tetrachloroethane (1,1,2,2-)
Certified	Yes	NY	WPP05.01240	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Tetrachloroethene
Certified	Yes	NY	WPP05.01250	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Trichloroethane (1,1,1-)
Certified	Yes	NY	WPP05.01260	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Trichloroethane (1,1,2-)
Certified	Yes	NY	WPP05.01270	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Trichloroethene
Certified	Yes	NY	WPP05.01280	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Trichlorofluoromethane
Certified	Yes	NY	WPP05.01290	NPW	Purge & Trap, GC (HECD)	[EPA 601]	Vinyl chloride
Certified	Yes	NY	WPP05.02010	NPW	Purge & Trap, GC (PID)	[EPA 602]	Benzene
Certified	Yes	NY	WPP05.02020	NPW	Purge & Trap, GC (PID)	[EPA 602]	Chlorobenzene

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: WPP05 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	WPP05.02030	NPW	Purge & Trap, GC (PID)	[EPA 602]	Dichlorobenzene (1,2-)
Certified	Yes	NY	WPP05.02040	NPW	Purge & Trap, GC (PID)	[EPA 602]	Dichlorobenzene (1,3-)
Certified	Yes	NY	WPP05.02050	NPW	Purge & Trap, GC (PID)	[EPA 602]	Dichlorobenzene (1,4-)
Certified	Yes	NY	WPP05.02060	NPW	Purge & Trap, GC (PID)	[EPA 602]	Ethylbenzene
Applied	No	NY	WPP05.02062	NPW	Purge & Trap, GC (PID)	[EPA 602]	Methyl tert-butyl ether
Certified	Yes	NY	WPP05.02070	NPW	Purge & Trap, GC (PID)	[EPA 602]	Toluene
Certified	Yes	NY	WPP05.02080	NPW	Purge & Trap, GC (PID)	[EPA 602]	Xylenes (total)
Certified	Yes	NY	WPP05.09010	NPW	Extract/GC (ECD)	[EPA 608]	Aldrin
Certified	Yes	NY	WPP05.09020	NPW	Extract/GC (ECD)	[EPA 608]	Alpha BHC
Certified	Yes	NY	WPP05.09030	NPW	Extract/GC (ECD)	[EPA 608]	Beta BHC
Certified	Yes	NY	WPP05.09040	NPW	Extract/GC (ECD)	[EPA 608]	Delta BHC
Certified	Yes	NY	WPP05.09050	NPW	Extract/GC (ECD)	[EPA 608]	Lindane (gamma BHC)
Certified	Yes	NY	WPP05.09060	NPW	Extract/GC (ECD)	[EPA 608]	Chlordane
Applied	No	NJ	WPP05.09062	NPW	Extract/GC (ECD)	[EPA 608]	Chlordane (alpha)
Applied	No	NJ	WPP05.09063	NPW	Extract/GC (ECD)	[EPA 608]	Chlordane (gamma)
Certified	Yes	NY	WPP05.09070	NPW	Extract/GC (ECD)	[EPA 608]	DDD (4,4'-)
Certified	Yes	NY	WPP05.09080	NPW	Extract/GC (ECD)	[EPA 608]	DDE (4,4'-)
Certified	Yes	NY	WPP05.09090	NPW	Extract/GC (ECD)	[EPA 608]	DDT (4,4'-)
Certified	Yes	NY	WPP05.09100	NPW	Extract/GC (ECD)	[EPA 608]	Dieldrin
Certified	Yes	NY	WPP05.09110	NPW	Extract/GC (ECD)	[EPA 608]	Endosulfan I
Certified	Yes	NY	WPP05.09120	NPW	Extract/GC (ECD)	[EPA 608]	Endosulfan II
Certified	Yes	NY	WPP05.09130	NPW	Extract/GC (ECD)	[EPA 608]	Endosulfan sulfate
Certified	Yes	NY	WPP05.09140	NPW	Extract/GC (ECD)	[EPA 608]	Endrin
Certified	Yes	NY	WPP05.09150	NPW	Extract/GC (ECD)	[EPA 608]	Endrin aldehyde
Applied	No	NJ	WPP05.09160	NPW	Extract/GC (ECD)	[EPA 608]	Endrin ketone
Certified	Yes	NY	WPP05.09170	NPW	Extract/GC (ECD)	[EPA 608]	Heptachlor
Certified	Yes	NY	WPP05.09180	NPW	Extract/GC (ECD)	[EPA 608]	Heptachlor epoxide
Certified	Yes	NY	WPP05.09190	NPW	Extract/GC (ECD)	[EPA 608]	Methoxychlor
Certified	Yes	NY	WPP05.09200	NPW	Extract/GC (ECD)	[EPA 608]	Toxaphene
Certified	Yes	NY	WPP05.11010	NPW	Extract/GC (ECD)	[EPA 608]	PCB 1016
Certified	Yes	NY	WPP05.11020	NPW	Extract/GC (ECD)	[EPA 608]	PCB 1221
Certified	Yes	NY	WPP05.11030	NPW	Extract/GC (ECD)	[EPA 608]	PCB 1232

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Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: WPP05 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	WPP05.11040	NPW	Extract/GC (ECD)	[EPA 608]	PCB 1242
Certified	Yes	NY	WPP05.11050	NPW	Extract/GC (ECD)	[EPA 608]	PCB 1248
Certified	Yes	NY	WPP05.11060	NPW	Extract/GC (ECD)	[EPA 608]	PCB 1254
Certified	Yes	NY	WPP05.11070	NPW	Extract/GC (ECD)	[EPA 608]	PCB 1260

Category: WPP06 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Applied	No	NJ	WPP06.02002	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Amyl alcohol (n-)
Certified	Yes	NJ	WPP06.02003	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Acetone
Certified	Yes	NY	WPP06.02007	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Acrolein
Certified	Yes	NY	WPP06.02009	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Acrylonitrile
Certified	Yes	NY	WPP06.02010	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Benzene
Applied	No	NJ	WPP06.02015	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Bromobenzene
Applied	No	NJ	WPP06.02017	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Bromochloromethane
Certified	Yes	NY	WPP06.02020	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Bromodichloromethane
Certified	Yes	NY	WPP06.02025	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Bromoethane
Certified	Yes	NY	WPP06.02030	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Bromoform
Certified	Yes	NY	WPP06.02040	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Bromomethane
Applied	No	NJ	WPP06.02041	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Butanone (2-)
Applied	No	NJ	WPP06.02045	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Carbon disulfide
Certified	Yes	NY	WPP06.02050	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Carbon tetrachloride
Certified	Yes	NY	WPP06.02060	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Chlorobenzene
Certified	Yes	NY	WPP06.02070	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Chloroethane
Certified	No	NY	WPP06.02080	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Chloroethyl vinyl ether (2-)
Certified	Yes	NY	WPP06.02090	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Chloroform
Certified	Yes	NY	WPP06.02100	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Chloromethane
Applied	No	NJ	WPP06.02107	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dibromo-3-chloropropane (1,2-)
Certified	Yes	NY	WPP06.02110	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dibromochloromethane
Applied	No	NJ	WPP06.02115	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dibromoethane (1,2-) (EDB)

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New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: WPP06 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Applied	No	NJ	WPP06.02116	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dibromomethane
Certified	Yes	NY	WPP06.02120	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichlorobenzene (1,2-)
Certified	Yes	NY	WPP06.02130	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichlorobenzene (1,3-)
Certified	Yes	NY	WPP06.02140	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichlorobenzene (1,4-)
Applied	No	NY	WPP06.02145	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichlorodifluoromethane
Certified	Yes	NY	WPP06.02150	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloroethane (1,1-)
Certified	Yes	NY	WPP06.02160	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloroethane (1,2-)
Certified	Yes	NY	WPP06.02170	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloroethene (1,1-)
Applied	No	NJ	WPP06.02175	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloroethene (cis-1,2-)
Certified	Yes	NY	WPP06.02180	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloroethene (trans-1,2-)
Certified	Yes	NY	WPP06.02190	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloropropane (1,2-)
Applied	No	NJ	WPP06.02192	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloropropane (1,3-)
Applied	No	NJ	WPP06.02194	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloropropane (2,2-)
Applied	No	NJ	WPP06.02195	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloropropene (1,1-)
Certified	Yes	NY	WPP06.02200	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloropropene (cis-1,3-)
Certified	Yes	NY	WPP06.02210	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Dichloropropene (trans-1,3-)
Certified	Yes	NY	WPP06.02220	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Ethylbenzene
Applied	No	NJ	WPP06.02227	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Isopropylether
Certified	Yes	NY	WPP06.02230	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Methylene chloride (Dichloromethane)
Certified	No	NJ	WPP06.02232	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Methyl tert-butyl ether
Applied	No	NJ	WPP06.02233	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Methyl isobutyl ketone
Applied	No	NJ	WPP06.02234	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Tert-butyl alcohol
Certified	Yes	NJ	WPP06.02238	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Styrene
Certified	Yes	NY	WPP06.02240	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Tetrachloroethane (1,1,2,2-)
Applied	No	NJ	WPP06.02245	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Tetrachloroethane (1,1,1,2-)
Certified	Yes	NY	WPP06.02250	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Tetrachloroethene
Certified	Yes	NY	WPP06.02260	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Toluene
Certified	Yes	NY	WPP06.02270	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Trichloroethane (1,1,1-)
Certified	Yes	NY	WPP06.02280	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Trichloroethane (1,1,2-)
Certified	Yes	NY	WPP06.02290	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Trichloroethene
Certified	Yes	IL	WPP06.02300	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Trichlorofluoromethane
Applied	No	NJ	WPP06.02305	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Trichloro (1,1,2-) trifluoroethane (1,2,2-)

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1O HAZELWOOD DR
AMHERST, NY 14228

Category: WPP06 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Applied	No	NJ	WPP06.02307	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Vinyl acetate
Certified	Yes	NY	WPP06.02310	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Vinyl chloride
Certified	Yes	IL	WPP06.02312	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Xylenes (total)
Applied	No	NJ	WPP06.02314	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Xylene (m-)
Applied	No	NJ	WPP06.02315	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Xylene (o-)
Applied	No	NJ	WPP06.02316	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Xylene (p-)
Applied	No	NJ	WPP06.02317	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Xylene (m- + p-)
Applied	No	NJ	WPP06.02325	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Hexanone (2-)
Applied	No	NJ	WPP06.02460	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Isopropylbenzene
Applied	No	NJ	WPP06.02610	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Trichlorobenzene (1,2,3-)
Applied	No	NJ	WPP06.02620	NPW	GC/MS, P & T, Capillary Column	[EPA 624]	Trichlorobenzene (1,2,4-)
Certified	Yes	NY	WPP06.03010	NPW	Extract, GC/MS	[EPA 625]	Acenaphthene
Certified	Yes	NY	WPP06.03020	NPW	Extract, GC/MS	[EPA 625]	Acenaphthylene
Certified	Yes	NY	WPP06.03030	NPW	Extract, GC/MS	[EPA 625]	Anthracene
Certified	Yes	NY	WPP06.03040	NPW	Extract, GC/MS	[EPA 625]	Benzo(a)anthracene
Certified	Yes	NY	WPP06.03050	NPW	Extract, GC/MS	[EPA 625]	Benzo(b)fluoranthene
Certified	Yes	NY	WPP06.03060	NPW	Extract, GC/MS	[EPA 625]	Benzo(k)fluoranthene
Certified	Yes	NY	WPP06.03070	NPW	Extract, GC/MS	[EPA 625]	Benzo(a)pyrene
Certified	Yes	NY	WPP06.03080	NPW	Extract, GC/MS	[EPA 625]	Benzo(ghi)perylene
Certified	Yes	NY	WPP06.03090	NPW	Extract, GC/MS	[EPA 625]	Butyl benzyl phthalate
Certified	Yes	NY	WPP06.03100	NPW	Extract, GC/MS	[EPA 625]	Bis (2-chloroethyl) ether
Certified	Yes	NY	WPP06.03110	NPW	Extract, GC/MS	[EPA 625]	Bis (2-chloroethoxy) methane
Certified	Yes	NY	WPP06.03120	NPW	Extract, GC/MS	[EPA 625]	Bis (2-ethylhexyl) phthalate
Certified	Yes	NY	WPP06.03130	NPW	Extract, GC/MS	[EPA 625]	Bis (2-chloroisopropyl) ether
Certified	Yes	NY	WPP06.03140	NPW	Extract, GC/MS	[EPA 625]	Bromophenyl-phenyl ether (4-)
Certified	Yes	NY	WPP06.03150	NPW	Extract, GC/MS	[EPA 625]	Chloronaphthalene (2-)
Certified	Yes	NY	WPP06.03160	NPW	Extract, GC/MS	[EPA 625]	Chlorophenyl-phenyl ether (4-)
Certified	Yes	NY	WPP06.03170	NPW	Extract, GC/MS	[EPA 625]	Chrysene
Certified	Yes	NY	WPP06.03180	NPW	Extract, GC/MS	[EPA 625]	Dibenzo(a,h)anthracene
Certified	Yes	NJ	WPP06.03186	NPW	Extract, GC/MS	[EPA 625]	Dibenzofuran
Certified	Yes	NY	WPP06.03190	NPW	Extract, GC/MS	[EPA 625]	Di-n-butyl phthalate
Certified	Yes	NY	WPP06.03200	NPW	Extract, GC/MS	[EPA 625]	Dichlorobenzene (1,3-)

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1O HAZELWOOD DR
AMHERST, NY 14228

Category: WPP06 -- Organic Parameters, Chromatography/MS

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Certified	Yes	NY	WPP06.03210	NPW	Extract, GC/MS	[EPA 625]	Dichlorobenzene (1,2-)
Certified	Yes	NY	WPP06.03220	NPW	Extract, GC/MS	[EPA 625]	Dichlorobenzene (1,4-)
Certified	Yes	NY	WPP06.03230	NPW	Extract, GC/MS	[EPA 625]	Dichlorobenzidine (3,3'-)
Certified	Yes	NY	WPP06.03240	NPW	Extract, GC/MS	[EPA 625]	Diethyl phthalate
Certified	Yes	NY	WPP06.03250	NPW	Extract, GC/MS	[EPA 625]	Dimethyl phthalate
Certified	Yes	NY	WPP06.03260	NPW	Extract, GC/MS	[EPA 625]	Dinitrotoluene (2,4-)
Certified	Yes	NY	WPP06.03270	NPW	Extract, GC/MS	[EPA 625]	Dinitrotoluene (2,6-)
Certified	Yes	NY	WPP06.03280	NPW	Extract, GC/MS	[EPA 625]	Di-n-octyl phthalate
Certified	Yes	NY	WPP06.03290	NPW	Extract, GC/MS	[EPA 625]	Fluoranthene
Certified	Yes	NY	WPP06.03300	NPW	Extract, GC/MS	[EPA 625]	Fluorene
Certified	Yes	NY	WPP06.03310	NPW	Extract, GC/MS	[EPA 625]	Hexachlorobenzene
Certified	Yes	NY	WPP06.03320	NPW	Extract, GC/MS	[EPA 625]	Hexachlorobutadiene (1,3-)
Certified	Yes	NY	WPP06.03330	NPW	Extract, GC/MS	[EPA 625]	Hexachloroethane
Certified	Yes	NY	WPP06.03340	NPW	Extract, GC/MS	[EPA 625]	Indeno(1,2,3-cd)pyrene
Certified	Yes	NY	WPP06.03350	NPW	Extract, GC/MS	[EPA 625]	Isophorone
Certified	Yes	NJ	WPP06.03358	NPW	Extract, GC/MS	[EPA 625]	Methylnaphthalene (2-)
Certified	Yes	NY	WPP06.03360	NPW	Extract, GC/MS	[EPA 625]	Naphthalene
Certified	Yes	NJ	WPP06.03366	NPW	Extract, GC/MS	[EPA 625]	Chloroaniline (4-)
Certified	Yes	NJ	WPP06.03367	NPW	Extract, GC/MS	[EPA 625]	Nitroaniline (2-)
Certified	Yes	NJ	WPP06.03368	NPW	Extract, GC/MS	[EPA 625]	Nitroaniline (3-)
Certified	Yes	NJ	WPP06.03369	NPW	Extract, GC/MS	[EPA 625]	Nitroaniline (4-)
Certified	Yes	NY	WPP06.03370	NPW	Extract, GC/MS	[EPA 625]	Nitrobenzene
Certified	Yes	NY	WPP06.03380	NPW	Extract, GC/MS	[EPA 625]	N-Nitroso-di-n-propylamine
Certified	Yes	NY	WPP06.03390	NPW	Extract, GC/MS	[EPA 625]	Phenanthrene
Certified	Yes	NY	WPP06.03400	NPW	Extract, GC/MS	[EPA 625]	Pyrene
Applied	No	NJ	WPP06.03405	NPW	Extract, GC/MS	[EPA 625]	Tetrachlorobenzene (1,2,4,5-)
Certified	Yes	NY	WPP06.03410	NPW	Extract, GC/MS	[EPA 625]	Trichlorobenzene (1,2,4-)
Certified	Yes	NJ	WPP06.03417	NPW	Extract, GC/MS	[EPA 625]	Methylphenol (2-)
Certified	Yes	NJ	WPP06.03418	NPW	Extract, GC/MS	[EPA 625]	Methylphenol (4-)
Certified	Yes	NY	WPP06.03420	NPW	Extract, GC/MS	[EPA 625]	Methyl phenol (4-chloro-3-)
Certified	Yes	NY	WPP06.03430	NPW	Extract, GC/MS	[EPA 625]	Chlorophenol (2-)
Certified	Yes	NY	WPP06.03440	NPW	Extract, GC/MS	[EPA 625]	Dichlorophenol (2,4-)

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1O HAZELWOOD DR
AMHERST, NY 14228

Category: WPP06 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	WPP06.03450	NPW	Extract, GC/MS	[EPA 625]	Dimethylphenol (2,4-)
Certified	Yes	NY	WPP06.03460	NPW	Extract, GC/MS	[EPA 625]	Dinitrophenol (2,4-)
Certified	Yes	NY	WPP06.03470	NPW	Extract, GC/MS	[EPA 625]	Dinitrophenol (2-methyl-4,6-)
Certified	Yes	NY	WPP06.03480	NPW	Extract, GC/MS	[EPA 625]	Nitrophenol (2-)
Certified	Yes	NY	WPP06.03490	NPW	Extract, GC/MS	[EPA 625]	Nitrophenol (4-)
Certified	Yes	NY	WPP06.03500	NPW	Extract, GC/MS	[EPA 625]	Pentachlorophenol
Certified	Yes	NY	WPP06.03510	NPW	Extract, GC/MS	[EPA 625]	Phenol
Certified	Yes	NY	WPP06.03518	NPW	Extract, GC/MS	[EPA 625]	Trichlorophenol (2,4,5-)
Certified	Yes	NY	WPP06.03520	NPW	Extract, GC/MS	[EPA 625]	Trichlorophenol (2,4,6-)
Applied	No	NJ	WPP06.03550	NPW	Extract, GC/MS	[EPA 625]	Acetophenone
Certified	Yes	NY	WPP06.03580	NPW	Extract, GC/MS	[EPA 625]	Benzidine
Certified	Yes	NJ	WPP06.03605	NPW	Extract, GC/MS	[EPA 625]	Diphenylhydrazine (1,2-)
Certified	Yes	NJ	WPP06.03610	NPW	Extract, GC/MS	[EPA 625]	Methylphenol (2-)
Certified	Yes	NJ	WPP06.03620	NPW	Extract, GC/MS	[EPA 625]	Decane (n-)
Certified	Yes	NY	WPP06.03660	NPW	Extract, GC/MS	[EPA 625]	Hexachlorocyclopentadiene
Certified	Yes	NY	WPP06.03680	NPW	Extract, GC/MS	[EPA 625]	N-Nitrosodimethylamine
Certified	Yes	NY	WPP06.03690	NPW	Extract, GC/MS	[EPA 625]	N-Nitrosodiphenylamine
Certified	Yes	NJ	WPP06.03700	NPW	Extract, GC/MS	[EPA 625]	Octadecane (n-)

Category: SHW02 -- Characteristics of Hazardous Waste

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW02.01000	NPW, SCM	Pensky Martens	[SW-846 1010, Rev. 0, 9/86]	Ignitability

Category: SHW04 -- Inorganic Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW04.05000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2, 12/96]	Aluminum
Certified	Yes	NY	SHW04.06500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2, 12/96]	Antimony

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10 HAZELWOOD DR
AMHERST, NY 14228

Category: SHW04 -- Inorganic Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW04.07000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Antimony
Certified	Yes	NY	SHW04.09000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Arsenic
Certified	Yes	NY	SHW04.09500	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Arsenic
Certified	Yes	NY	SHW04.11500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Barium
Certified	Yes	NY	SHW04.12000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Barium
Certified	Yes	NY	SHW04.13500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Beryllium
Certified	Yes	NY	SHW04.14000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Beryllium
Certified	Yes	IL	SHW04.15100	NPW, SCM	ICP	[SW-846 6010B, Rev. 2, 12/96]	Boron
Certified	Yes	NY	SHW04.15500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Cadmium
Certified	Yes	NY	SHW04.16000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Cadmium
Certified	Yes	NY	SHW04.17500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Calcium
Certified	Yes	NY	SHW04.18500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Chromium
Certified	Yes	NY	SHW04.19000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Chromium
Certified	Yes	NY	SHW04.21000	NPW, SCM	Colorimetric	[SW-846 7196A, Rev. 1, 7/92]	Chromium (VI)
Certified	Yes	NY	SHW04.22500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Cobalt
Certified	Yes	IL	SHW04.23000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Cobalt
Certified	Yes	NY	SHW04.24500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Copper
Certified	Yes	IL	SHW04.25000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Copper
Certified	Yes	NY	SHW04.26000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Iron
Certified	Yes	NY	SHW04.27500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Lead
Certified	Yes	NY	SHW04.28000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Lead
Applied	No	IL	SHW04.29500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2, 12/96]	Lithium
Certified	Yes	NY	SHW04.30500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2, 12/96]	Magnesium
Certified	Yes	NY	SHW04.31500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2, 12/96]	Manganese
Certified	Yes	IL	SHW04.31600	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Manganese
Certified	No	IL	SHW04.33000	NPW, SCM	AA, Manual Cold Vapor	[SW-846 7470A, Rev. 1, 9/94]	Mercury - liquid waste
Certified	Yes	NY	SHW04.34000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Molybdenum
Certified	Yes	NY	SHW04.34005	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Molybdenum
Certified	Yes	NY	SHW04.35500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2, 12/96]	Nickel
Certified	Yes	NY	SHW04.36000	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 7/92]	Nickel
Certified	Yes	NY	SHW04.38000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Potassium
Certified	Yes	NY	SHW04.39000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Selenium

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10 HAZELWOOD DR
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Certified	Yes	NY	SHW04.40600	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Selenium
Certified	Yes	NY	SHW04.41000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Silver
Certified	Yes	NY	SHW04.41500	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Silver
Certified	Yes	NY	SHW04.43000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Sodium
Certified	Yes	IL	SHW04.44000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Strontium
Applied	No	NJ	SHW04.44001	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Strontium
Certified	Yes	NY	SHW04.45000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Thallium
Certified	Yes	IL	SHW04.45500	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Thallium
Certified	Yes	NY	SHW04.47100	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Tin
Certified	Yes	NY	SHW04.47500	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Vanadium
Certified	Yes	IL	SHW04.47505	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Vanadium
Certified	Yes	NY	SHW04.49000	NPW, SCM	ICP	[SW-846 6010B, Rev. 2 12/96]	Zinc
Certified	Yes	NY	SHW04.49500	NPW, SCM	ICP/MS	[SW-846 6020, Rev. 0, 9/94]	Zinc

Category: SHW06 – Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Dropped	No	NY	SHW06.05020	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Chlorobenzene
Dropped	No	NY	SHW06.05030	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichlorobenzene (1,2-)
Dropped	No	NY	SHW06.05040	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichlorobenzene (1,3-)
Dropped	No	NY	SHW06.05050	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichlorobenzene (1,4-)
Certified	Yes	NY	SHW06.05060	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Ethylbenzene
Certified	Yes	NY	SHW06.05070	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Toluene
Dropped	No	NY	SHW06.05110	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Bromodichloromethane
Dropped	No	NY	SHW06.05120	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Bromoform
Dropped	No	NY	SHW06.05130	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Bromomethane
Dropped	No	NY	SHW06.05140	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Carbon tetrachloride
Dropped	No	NY	SHW06.05150	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Chloroethane
Dropped	No	NY	SHW06.05160	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Chloroform
Dropped	No	NY	SHW06.05170	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Chloromethane

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: SHW06 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Dropped	No	NY	SHW06.05180	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichloropropene (trans-1,3-)
Dropped	No	NY	SHW06.05190	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dibromochloromethane
Dropped	No	NY	SHW06.05200	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichlorodifluoromethane
Dropped	No	NY	SHW06.05210	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichloroethane (1,1-)
Dropped	No	NY	SHW06.05220	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichloroethane (1,2-)
Dropped	No	NY	SHW06.05230	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichloroethene (1,1-)
Dropped	No	NY	SHW06.05260	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichloropropane (1,2-)
Dropped	No	NY	SHW06.05270	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichloropropene (cis-1,3-)
Dropped	No	NY	SHW06.05280	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Methylene chloride (Dichloromethane)
Dropped	No	NY	SHW06.05290	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Tetrachloroethane (1,1,2,2-)
Dropped	No	NY	SHW06.05300	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Tetrachloroethene
Dropped	No	NY	SHW06.05310	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Trichloroethane (1,1,1-)
Dropped	No	NY	SHW06.05320	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Trichloroethane (1,1,2-)
Dropped	No	NY	SHW06.05330	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Trichloroethene
Dropped	No	NY	SHW06.05340	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Trichlorofluoromethane
Dropped	No	NY	SHW06.05350	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Vinyl chloride
Dropped	No	NY	SHW06.05370	NPW, SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Chloroethyl vinyl ether (2-)
Certified	Yes	NY	SHW06.12010	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Aldrin
Certified	Yes	NY	SHW06.12020	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Alpha BHC
Certified	Yes	NY	SHW06.12030	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Beta BHC
Certified	Yes	NY	SHW06.12040	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Delta BHC
Certified	Yes	NY	SHW06.12050	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Lindane (gamma BHC)
Certified	Yes	NY	SHW06.12060	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Chlordane (technical)
Certified	Yes	NY	SHW06.12070	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Chlordane (alpha)
Certified	Yes	NY	SHW06.12080	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Chlordane (gamma)
Certified	Yes	NY	SHW06.12090	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	DDD (4,4'-)
Certified	Yes	NY	SHW06.12100	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	DDE (4,4'-)
Certified	Yes	NY	SHW06.12110	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	DDT (4,4'-)
Certified	Yes	NY	SHW06.12120	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Dieldrin
Certified	Yes	NY	SHW06.12130	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Endosulfan I
Certified	Yes	NY	SHW06.12140	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Endosulfan II
Certified	Yes	NY	SHW06.12150	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Endosulfan sulfate

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: SHW06 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW06.12160	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Endrin
Certified	Yes	NY	SHW06.12170	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Endrin aldehyde
Certified	Yes	NY	SHW06.12180	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Endrin ketone
Certified	Yes	NY	SHW06.12190	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Heptachlor
Certified	Yes	NY	SHW06.12200	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Heptachlor epoxide
Certified	Yes	NY	SHW06.12210	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Methoxychlor
Certified	Yes	NY	SHW06.12220	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Toxaphene
Certified	Yes	NY	SHW06.13110	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8082, Rev. 0, 12/96]	PCB 1016
Certified	Yes	NY	SHW06.13120	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8082, Rev. 0, 12/96]	PCB 1221
Certified	Yes	NY	SHW06.13130	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8082, Rev. 0, 12/96]	PCB 1232
Certified	Yes	NY	SHW06.13140	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8082, Rev. 0, 12/96]	PCB 1242
Certified	Yes	NY	SHW06.13150	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8082, Rev. 0, 12/96]	PCB 1248
Certified	Yes	NY	SHW06.13160	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8082, Rev. 0, 12/96]	PCB 1254
Certified	Yes	NY	SHW06.13170	NPW, SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8082, Rev. 0, 12/96]	PCB 1260
Certified	Yes	NY	SHW06.23020	NPW, SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev 1, 9/96]	Dicamba
Certified	Yes	NY	SHW06.23040	NPW, SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev 1, 9/96]	D (2,4-)
Certified	Yes	NY	SHW06.23050	NPW, SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev 1, 9/96]	T (2,4,5-)
Certified	Yes	NY	SHW06.23060	NPW, SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev 1, 9/96]	TP (2,4,5-) (Silvex)

Category: SHW07 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW07.04010	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Benzene
Certified	Yes	NY	SHW07.04020	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Chlorobenzene
Certified	Yes	NY	SHW07.04030	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichlorobenzene (1,2-)
Certified	Yes	NY	SHW07.04040	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichlorobenzene (1,3-)
Certified	Yes	NY	SHW07.04050	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichlorobenzene (1,4-)
Certified	Yes	NY	SHW07.04060	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Ethylbenzene
Certified	Yes	NY	SHW07.04070	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Toluene
Certified	Yes	NY	SHW07.04080	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Xylenes (total)

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: SHW07 – Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW07.04090	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Bromodichloromethane
Certified	Yes	NY	SHW07.04100	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Bromoform
Certified	Yes	NY	SHW07.04110	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Bromomethane
Certified	Yes	NY	SHW07.04120	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Carbon tetrachloride
Certified	Yes	NY	SHW07.04130	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Chloroethane
Certified	Yes	NY	SHW07.04140	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Chloroethyl vinyl ether (2-)
Certified	Yes	NY	SHW07.04150	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Chloroform
Certified	Yes	NY	SHW07.04160	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Chloromethane
Certified	Yes	NY	SHW07.04170	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloropropene (trans-1,3-)
Certified	Yes	NY	SHW07.04180	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dibromochloromethane
Certified	Yes	NY	SHW07.04190	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichlorodifluoromethane
Certified	Yes	NY	SHW07.04200	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloroethane (1,1-)
Certified	Yes	NY	SHW07.04210	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloroethane (1,2-)
Certified	Yes	NY	SHW07.04220	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloroethene (1,1-)
Certified	Yes	IL	SHW07.04230	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloroethene (trans-1,2-)
Certified	Yes	NY	SHW07.04240	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloropropane (1,2-)
Certified	Yes	NY	SHW07.04250	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloropropene (cis-1,3-)
Certified	Yes	NY	SHW07.04260	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Methylene chloride (Dichloromethane)
Certified	Yes	NY	SHW07.04270	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Tetrachloroethane (1,1,2,2-)
Certified	Yes	NY	SHW07.04280	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Tetrachloroethene
Certified	Yes	NY	SHW07.04290	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trichloroethane (1,1,1-)
Certified	Yes	NY	SHW07.04300	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trichloroethane (1,1,2-)
Certified	Yes	NY	SHW07.04310	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trichloroethene
Certified	Yes	NY	SHW07.04320	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trichlorofluoromethane
Applied	No	NJ	SHW07.04322	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trichloro (1,1,2-) trifluoroethane (1,2,2-)
Certified	Yes	NY	SHW07.04327	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Vinyl acetate
Certified	Yes	NY	SHW07.04330	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Vinyl chloride
Certified	Yes	NY	SHW07.04340	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Acetone
Certified	Yes	NY	SHW07.04350	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Carbon disulfide
Certified	Yes	NY	SHW07.04360	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Butanone (2-)
Certified	Yes	NY	SHW07.04370	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Hexanone (2-)
Certified	Yes	NY	SHW07.04380	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Pentanone (4-methyl-2-)

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: SHW07 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW07.04400	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Acrolein
Certified	Yes	NY	SHW07.04410	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Acrylonitrile
Certified	Yes	NY	SHW07.04550	NPW, SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Styrene
Certified	Yes	IL	SHW07.04895	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Pentachlorobenzene
Certified	Yes	IL	SHW07.05005	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	N-Nitrosodimethylamine
Certified	Yes	NY	SHW07.05006	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	N-Nitroso-di-n-propylamine
Certified	Yes	IL	SHW07.05010	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	N-Nitrosodiphenylamine
Certified	Yes	IL	SHW07.05038	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Benzidine
Certified	Yes	NY	SHW07.05040	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dichlorobenzidine (3,3'-)
Certified	Yes	NY	SHW07.05050	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Chloraniline (4-)
Certified	Yes	NY	SHW07.05060	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Nitroaniline (2-)
Certified	Yes	NY	SHW07.05062	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Nitroaniline (3-)
Certified	Yes	NY	SHW07.05063	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Nitroaniline (4-)
Certified	Yes	NY	SHW07.05070	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Chloronaphthalene (2-)
Certified	Yes	NY	SHW07.05080	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Hexachlorobenzene
Certified	Yes	NY	SHW07.05090	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Hexachlorobutadiene (1,3-)
Certified	Yes	NY	SHW07.05100	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Hexachlorocyclopentadiene
Certified	Yes	NY	SHW07.05110	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Hexachloroethane
Certified	Yes	NY	SHW07.05120	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Trichlorobenzene (1,2,4-)
Certified	Yes	NY	SHW07.05130	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Bis (2-chloroethoxy) methane
Certified	Yes	NY	SHW07.05132	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Bis (2-chloroethyl) ether
Certified	Yes	NY	SHW07.05140	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Bis (2-chloroisopropyl) ether
Certified	Yes	NY	SHW07.05150	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Chlorophenyl-phenyl ether (4-)
Certified	Yes	NY	SHW07.05170	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dinitrotoluene (2,4-)
Certified	Yes	NY	SHW07.05180	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dinitrotoluene (2,6-)
Certified	Yes	NY	SHW07.05190	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Isophorone
Certified	Yes	NY	SHW07.05200	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Nitrobenzene
Certified	Yes	NY	SHW07.05210	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Butyl benzyl phthalate
Certified	Yes	NY	SHW07.05220	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Bis (2-ethylhexyl) phthalate
Certified	Yes	NY	SHW07.05230	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Diethyl phthalate
Certified	Yes	NY	SHW07.05240	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dimethyl phthalate
Certified	Yes	NY	SHW07.05250	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Di-n-butyl phthalate

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New Jersey Department of Environmental Protection

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ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: SHW07 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW07.05260	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Di-n-octyl phthalate
Certified	Yes	NY	SHW07.05270	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Acenaphthene
Certified	Yes	NY	SHW07.05280	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Anthracene
Certified	Yes	NY	SHW07.05290	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Acenaphthylene
Certified	Yes	NY	SHW07.05300	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Benzo(a)anthracene
Certified	Yes	NY	SHW07.05310	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Benzo(a)pyrene
Certified	Yes	NY	SHW07.05320	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Benzo(b)fluoranthene
Certified	Yes	NY	SHW07.05330	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Benzo(ghi)perylene
Certified	Yes	NY	SHW07.05350	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Chrysene
Certified	Yes	NY	SHW07.05360	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dibenzo(a,h)anthracene
Certified	Yes	NY	SHW07.05370	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Fluoranthene
Certified	Yes	NY	SHW07.05380	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Fluorene
Certified	Yes	NY	SHW07.05390	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Indeno(1,2,3-cd)pyrene
Certified	Yes	NY	SHW07.05400	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Methylnaphthalene (2-)
Certified	Yes	NY	SHW07.05410	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Naphthalene
Certified	Yes	NY	SHW07.05420	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Phenanthrene
Certified	Yes	NY	SHW07.05430	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Pyrene
Certified	Yes	NY	SHW07.05440	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Methyl phenol (4-chloro-3-)
Certified	Yes	NY	SHW07.05450	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Chlorophenol (2-)
Certified	Yes	NY	SHW07.05460	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dichlorophenol (2,4-)
Certified	Yes	NY	SHW07.05470	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dimethylphenol (2,4-)
Certified	Yes	NY	SHW07.05480	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dinitrophenol (2,4-)
Certified	Yes	NY	SHW07.05490	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dinitrophenol (2-methyl-4,6-)
Certified	Yes	NY	SHW07.05500	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Methylphenol (2-)
Certified	Yes	NY	SHW07.05510	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Methylphenol (4-)
Certified	Yes	NY	SHW07.05520	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Nitrophenol (2-)
Certified	Yes	NY	SHW07.05530	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Nitrophenol (4-)
Certified	Yes	NY	SHW07.05540	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Pentachlorophenol
Certified	Yes	NY	SHW07.05550	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Phenol
Certified	Yes	NY	SHW07.05560	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Trichlorophenol (2,4,5-)
Certified	Yes	NY	SHW07.05570	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Trichlorophenol (2,4,6-)
Certified	Yes	NY	SHW07.05691	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dichlorobenzene (1,2-)

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Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: SHW07 – Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW07.05692	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dichlorobenzene (1,3-)
Certified	Yes	NY	SHW07.05700	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dichlorobenzene (1,4-)
Certified	Yes	NY	SHW07.05710	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Benzoic acid
Certified	Yes	IL	SHW07.05750	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Pyridine
Certified	No	NY	SHW07.05770	NPW, SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Aldrin

Category: SHW09 – Miscellaneous Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	No	NY	SHW09.02000	NPW, SCM	Distillation	[SW-846 9010B, Rev. 2, 12/96]	Cyanide
Certified	Yes	NY	SHW09.03000	NPW, SCM	Distillation	[SW-846 9010B, Rev. 2, 12/96]	Cyanide - amenable to Cl2
Certified	Yes	NY	SHW09.05000	NPW, SCM	Colorimetric, Automated	[SW-846 9012A, Rev. 1, 12/96]	Cyanide
Certified	Yes	NY	SHW09.14000	NPW, SCM	Electrometric	[SW-846 9040B, Rev. 2, 1/95]	pH - waste, >20% water
Applied	No	NJ	SHW09.28350	NPW, SCM	Bomb Calorimeter	[ASTM D-240]	Heat of combustion (BTU)

Category: SHW02 – Characteristics of Hazardous Waste

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	IL	SHW02.02100	SCM	Burn Rate	[SW-846 1030, Rev. 0, 12/96]	Ignitability of solids
Certified	Yes	NY	SHW02.03000	SCM	Aqueous Waste, Potentiometric	[SW-846 9040B, Rev. 2, 1/95]	Corrosivity - pH waste, >20% water
Certified	Yes	NY	SHW02.06900	SCM	TCLP, Toxicity Procedure, ZHE	[SW-846 1311, Rev. 0, 7/92]	Volatile organics
Certified	No	NY	SHW02.07000	SCM	TCLP, Toxicity Procedure, Shaker	[SW-846 1311, Rev. 0, 7/92]	Metals - semi volatile organics
Certified	Yes	NY	SHW02.07100	SCM	EP Toxicity Test	[SW-846 1310A, Rev. 1, 7/92]	Metals - organics
Certified	Yes	IL	SHW02.08000	SCM	Synthetic PPT Leachate Procedure	[SW-846 1312, Rev. 0, 9/94]	Metals - organics

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10 HAZELWOOD DR
AMHERST, NY 14228

Category: SHW03 -- Analyze-Immediately Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NY	SHW03.01000	SCM	Aqueous, Electrometric	[SW-846 9040B, Rev. 2, 1/95]	pH

Category: SHW04 -- Inorganic Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NJ	SHW04.03000	SCM	Acid Digestion, Soil Sediment & Sludge	[SW-846 3050B, Rev. 2, 12/96]	Metals
Certified	Yes	NJ	SHW04.03700	SCM	Chromium VI Digestion	[SW-846 3060A, Rev. 1, 12/96]	Metals
Certified	Yes	NY	SHW04.33500	SCM	AA, Manual Cold Vapor	[SW-846 7471A, Rev. 1, 9/94]	Mercury - solid waste
Certified	Yes	NY	SHW04.47145	SCM	ICP	[SW-846 6010B, Rev. 2, 12/96]	Titanium

Category: SHW05 -- Organic Parameters, Prep. / Screening

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NJ	SHW05.05000	SCM	Ultrasonic Extraction	[SW-846 3550B, Rev. 2, 12/96]	Semivolatile organics
Certified	Yes	NJ	SHW05.06000	SCM	Waste Dilution	[SW-846 3580A, Rev. 1, 7/92]	Organics
Certified	Yes	NJ	SHW05.07300	SCM	Closed System Purge & Trap	[SW-846 5035L, Rev. 0, 12/96]	Volatile organics - low conc.
Certified	Yes	NJ	SHW05.07310	SCM	Methanol Extract, Closed System P & T	[SW-846 5035H, Rev. 0, 12/96]	Volatile organics - high conc.
Certified	Yes	NJ	SHW05.12000	SCM	Cleanup-Florisil	[SW-846 3620B, Rev. 2, 12/96]	Semivolatile organics
Certified	Yes	NJ	SHW05.14000	SCM	Cleanup-Gel Permeation	[SW-846 3640A, Rev. 1, 9/94]	Semivolatile organics
Certified	Yes	NJ	SHW05.16000	SCM	Cleanup-Sulfur Removal	[SW-846 3660B, Rev. 2, 12/96]	Semivolatile organics
Certified	Yes	NJ	SHW05.17000	SCM	Cleanup-Sulfuric Acid/KMnO4	[SW-846 3665A, Rev. 1, 12/96]	Semivolatile organics

Category: SHW06 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Applied	No	IL	SHW06.02010	SCM	Microextraction, GC, ECD	[SW-846 8011, Rev. 0, 7/92]	Dibromoethane (1,2-) (EDB)
Applied	No	IL	SHW06.02020	SCM	Microextraction, GC, ECD	[SW-846 8011, Rev. 0, 7/92]	Dibromo-3-chloropropane (1,2-)
Certified	No	IL	SHW06.03010	SCM	GC, Direct Injection or P & T, FID	[SW-846 8015B, Rev. 2, 12/96]	Acetone

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Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: SHW06 -- Organic Parameters, Chromatography

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	No	IL	SHW06.03050	SCM	GC, Direct Injection or P & T, FID	[SW-846 8015B, Rev. 2, 12/96]	Tert-butyl alcohol
Certified	No	IL	SHW06.03090	SCM	GC, Direct Injection or P & T, FID	[SW-846 8015B, Rev. 2, 12/96]	Iso-butyl alcohol
Certified	Yes	IL	SHW06.03145	SCM	GC, Direct Injection or P & T, FID	[SW-846 8015B, Rev. 2, 12/96]	Isopropyl alcohol
Certified	Yes	IL	SHW06.03170	SCM	GC, Direct Injection, FID	[SW-846 8015B, Rev. 2, 12/96]	Ethylene glycol
Certified	Yes	IL	SHW06.03180	SCM	GC, Direct Injection or P & T, FID	[SW-846 8015B, Rev. 2, 12/96]	Methyl alcohol (Methanol)
Certified	Yes	IL	SHW06.03778	SCM	GC, Direct Injection or P & T, FID	[SW-846 8015B, Rev. 2, 12/96]	Ethyl alcohol
Certified	Yes	IL	SHW06.04010	SCM	GC P&T, FID	[SW-846 8015B, Rev. 2, 12/96]	Gasoline range organic
Certified	Yes	IL	SHW06.04500	SCM	Extraction, GC, FID	[SW-846 8015B, Rev. 2, 12/96]	Diesel range organic
Certified	Yes	NY	SHW06.05010	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Benzene
Dropped	No	IL	SHW06.05066	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Naphthalene
Dropped	No	IL	SHW06.05068	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Styrene
Dropped	No	IL	SHW06.05080	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Xylene (o-)
Dropped	No	IL	SHW06.05090	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Xylene (m-)
Dropped	No	IL	SHW06.05100	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Xylene (p-)
Dropped	No	IL	SHW06.05240	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichloroethene (cis-1,2-)
Dropped	No	IL	SHW06.05250	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Dichloroethene (trans-1,2-)
Certified	Yes	IL	SHW06.05360	SCM	GC, Direct Injection or P & T, PID-HECD	[SW-846 8021B, Rev. 2, 12/96]	Methyl tert-butyl ether
Certified	Yes	IL	SHW06.12212	SCM	GC, Extraction, ECD or HECD, Capillary	[SW-846 8081A, Rev. 1, 12/96]	Mirex
Certified	Yes	IL	SHW06.23001	SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev. 1, 9/96]	Acifluorfen
Certified	Yes	IL	SHW06.23010	SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev 1, 9/96]	Dalapon
Certified	Yes	IL	SHW06.23011	SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev. 1, 9/96]	DCPA
Certified	Yes	IL	SHW06.23021	SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev. 1, 9/96]	Dichlorprop
Certified	Yes	IL	SHW06.23030	SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev 1, 9/96]	Dinoseb
Certified	Yes	IL	SHW06.23066	SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev. 1, 9/96]	Pentachlorophenol
Certified	Yes	IL	SHW06.23070	SCM	GC, Extraction, ECD, Capillary	[SW-846 8151A, Rev 1, 9/96]	Picloram

Category: SHW07 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	IL	SHW07.04011	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Bromobenzene

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Certified	Yes	IL	SHW07.04012	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Butyl benzene (n-)
Certified	Yes	IL	SHW07.04013	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Sec-butylbenzene
Certified	Yes	IL	SHW07.04014	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Tert-butylbenzene
Certified	Yes	IL	SHW07.04065	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Isopropylbenzene
Certified	Yes	IL	SHW07.04067	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Propylbenzene (n-)
Certified	Yes	IL	SHW07.04071	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Isopropyltoluene (4-)
Certified	Yes	IL	SHW07.04072	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trichlorobenzene (1,2,3-)
Certified	Yes	IL	SHW07.04073	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trimethylbenzene (1,2,4-)
Certified	Yes	IL	SHW07.04089	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Bromochloromethane
Certified	Yes	IL	SHW07.04185	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dibromoethane (1,2-) (EDB)
Certified	Yes	IL	SHW07.04186	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dibromomethane
Certified	Yes	IL	SHW07.04187	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dibromo-3-chloropropane (1,2-)
Certified	Yes	IL	SHW07.04235	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloroethene (cis-1,2-)
Certified	Yes	IL	SHW07.04255	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dichloro-2-butene (trans-1,4-)
Certified	Yes	IL	SHW07.04259	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Ethanol
Certified	Yes	IL	SHW07.04325	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trichloropropane (1,2,3-)
Certified	Yes	IL	SHW07.04375	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Methyl iodide
Certified	Yes	IL	SHW07.04376	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Iso-butyl alcohol
Certified	Yes	IL	SHW07.04377	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Isopropanol
Certified	Yes	IL	SHW07.04390	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Methyl tert-butyl ether
Certified	Yes	IL	SHW07.04395	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Tert-butyl alcohol
Certified	Yes	IL	SHW07.04398	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Acetonitrile
Certified	Yes	IL	SHW07.04500	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Hexachlorobutadiene (1,3-)
Certified	Yes	IL	SHW07.04540	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260C, Rev. 2, 12/96]	Naphthalene
Certified	Yes	IL	SHW07.04560	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Tetrachloroethane (1,1,1,2-)
Certified	Yes	IL	SHW07.04570	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Trichlorobenzene (1,2,4-)
Certified	Yes	IL	SHW07.04590	SCM	GC/MS, P & T or Direct Injection, Capillary	[SW-846 8260B, Rev. 2, 12/96]	Dioxane (1,4-)
Certified	Yes	IL	SHW07.04665	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Acetophenone
Certified	Yes	NY	SHW07.04885	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Parathion
Certified	Yes	NY	SHW07.04890	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Parathion methyl
Certified	Yes	IL	SHW07.04975	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Tetrachlorobenzene (1,2,4,5-)
Certified	Yes	IL	SHW07.04980	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Tetrachlorophenol (2,3,4,6-)

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Category: SHW07 -- Organic Parameters, Chromatography/MS

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	IL	SHW07.05004	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	N-Nitrosodiethylamine
Certified	Yes	IL	SHW07.05012	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	N-Nitrosopyrrolidine
Certified	Yes	IL	SHW07.05020	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Diphenylamine
Certified	Yes	NY	SHW07.05030	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Carbazole
Certified	Yes	IL	SHW07.05048	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Aniline
Certified	Yes	IL	SHW07.05160	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Bromophenyl-phenyl ether (4-)
Certified	Yes	IL	SHW07.05340	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Benzo(k)fluoranthene
Certified	Yes	IL	SHW07.05590	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Methylphenol (3-)
Certified	Yes	NY	SHW07.05600	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Dibenzofuran
Certified	Yes	NY	SHW07.05720	SCM	GC/MS, Extract or Dir Inj, Capillary	[SW-846 8270C, Rev. 3, 12/96]	Benzyl alcohol

Category: SHW09 -- Miscellaneous Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	No	IL	SHW09.06000	SCM	Combustion, Titration	[SW-846 9020B, Rev. 2, 9/94]	Total organic halides (TOX)
Dropped	No	IL	SHW09.08100	SCM	Extraction	[SW-846 9023, Rev. 0, 12/96]	Extractable organic halides (EOX)
Applied	No	IL	SHW09.10100	SCM	Titration	[SW-846 9034, Rev. 0, 12/96]	Sulfides, acid sol. & insol.
Certified	No	IL	SHW09.13000	SCM	Turbidimetric	[SW-846 9038, Rev. 0, 9/86]	Sulfate
Certified	Yes	IL	SHW09.13050	SCM	Ion Chromatography	[SW-846 9056, Rev. 0, 9/94]	Sulfate
Certified	Yes	NY	SHW09.16000	SCM	Mix with Water or Calcium Chloride	[SW-846 9045C, Rev. 3, 1/95]	pH - soil and waste
Applied	No	IL	SHW09.19000	SCM	Infrared Spectrometry or FID	[SW-846 9060, Rev. 0, 9/86]	Total organic carbon (TOC)
Certified	Yes	IL	SHW09.22000	SCM	Colorimetric, Auto, 4AAP Distillation	[SW-846 9066, Rev. 0, 9/86]	Phenols
Certified	Yes	IL	SHW09.29000	SCM	Flow-Through Paint Filter, Observation	[SW-846 9095, Rev. 0, 9/86]	Free liquid
Certified	Yes	IL	SHW09.30150	SCM	Ion Chromatography	[SW-846 9056, Rev. 0, 12/94]	Nitrate
Certified	Yes	IL	SHW09.30250	SCM	Ion Chromatography	[SW-846 9056, Rev. 0, 12/96]	Bromide
Certified	Yes	IL	SHW09.32000	SCM	Colorimetric, Automated (Ferri-CN AAII)	[SW-846 9251, Rev. 0, 9/86]	Chloride
Certified	Yes	IL	SHW09.33100	SCM	Ion Chromatography	[SW-846 9056, Rev. 0, 12/96]	Chloride
Certified	Yes	IL	SHW09.34150	SCM	Ion Chromatography	[SW-846 9056, Rev. 0, 12/96]	Fluoride

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

New Jersey Department of Environmental Protection

National Environmental Laboratory Accreditation Program

ANNUAL CERTIFIED PARAMETER LIST AND CURRENT STATUS

Effective as of 07/01/2006 until 06/30/2007

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
10 HAZELWOOD DR
AMHERST, NY 14228

Category: SHW10 – Facility-Specific Parameters

Status	Eligible to Report NJ Data	State	Code	Matrix	Technique Description	Approved Method	Parameter Description
Certified	Yes	NJ	SHW10.20010	SCM	Ion Chromatography	[USER DEFINED KODAK-CQS-ETCM-QOD-0161]	Acetic acid
Certified	Yes	NJ	SHW10.20020	SCM	Ion Chromatography	[USER DEFINED KODAK-CQS-ETCM-QOD-0161]	Salicylic acid

Joseph F. Aiello, Chief

KEY: AE = Air and Emissions, BT = Biological Tissues, DW = Drinking Water, NPW = Non-Potable Water, SCM = Solid and Chemical Materials

New Jersey Department of Environmental Protection
Environmental Laboratory Certification Program

LABORATORY PERSONNEL LIST

Effective as of: 07/01/2006

Laboratory Name: STL BUFFALO Laboratory Number: NY455 Activity ID: NLC060001
1O HAZELWOOD DR
AMHERST, NY 14228

Position: Laboratory Manager

Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments
JOHN SCHOVE		7/1/2006		Complete/Qualified		

Position: Lead Tech. Director

Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments
CHRISTOPHER SPENCER		4/1/2005		Complete/Qualified		

Position: Operator

Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments
JIM LIS	GC/MS	7/1/2006		Complete/Qualified		
PAUL MC NAMARA	GC/MS	7/1/2000		Complete/Qualified		
JENNIFER PIERCE	ICP/MS	7/1/2002		Complete/Qualified		

Position: QA Officer

Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments
VERL PRESTON		7/1/2000		Complete/Qualified		

Position: Supervisor

Employee	Category/Instrument	Start Date	End Date	Documentation Status	Complete Date	Comments
PEGGY GRAY-ERDMANN	SDW02, WPP02, CAP01 or CAP04	7/1/2004		Complete/Qualified		
PEGGY GRAY-ERDMANN	SDW03, WPP03 or SHW03	7/1/2004		Complete/Qualified		
JENNIFER PIERCE	SDW04, WPP04, SHW04, 09, 10 or CAP02	7/1/2002		Complete/Qualified		
KATHLEEN ALDRICH	SDW05, 06, WPP05-07, SHW05-12 or CAP03	7/1/2000		Complete/Qualified		
JIM LIS	SDW05, 06, WPP05-07, SHW05-12 or CAP03	7/1/2006		Complete/Qualified		
PAUL MC NAMARA	SDW05, 06, WPP05-07, SHW05-12 or CAP03	7/1/2000		Complete/Qualified		
GARY RUDZ	SDW05, 06, WPP05-07, SHW05-12 or CAP03	7/1/2003		Complete/Qualified		

The Commonwealth of Massachusetts

Department of Environmental Protection

Division of Environmental Analysis
Senator William X. Wall Experiment Station

certifies

M-GA006

STL SAVANNAH
5102 LAROCHE AVE
SAVANNAH, GA 31404-0000

Laboratory Director: **MYRON YOUNG**

for the analysis of **POTABLE WATER (CHEMISTRY)**
NON POTABLE WATER (CHEMISTRY)

pursuant to 310 CMR 42.00

This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.

This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.

Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.

Oscar C. Parcells

Director, Division of Environmental Analysis

Issued: **01 JUL 2006**

Expires: **30 JUN 2007**

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2006

M-GA006 **STL SAVANNAH**
SAVANNAH GA

NON POTABLE WATER (CHEMISTRY) **Effective Date** **01 JUL 2006** **Expiration Date** **30 JUN 2007**

Analytes and Methods

ALUMINUM	EPA 200.7
ALUMINUM	EPA 200.8
ANTIMONY	EPA 200.8
ARSENIC	EPA 200.7
ARSENIC	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COBALT	EPA 200.7
COBALT	EPA 200.8
COPPER	EPA 200.7
IRON	EPA 200.7
LEAD	EPA 200.7
LEAD	EPA 200.8
MANGANESE	EPA 200.7
MANGANESE	EPA 200.8
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
MOLYBDENUM	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.7
SELENIUM	EPA 200.8
SILVER	EPA 200.7
SILVER	EPA 200.8
STRONTIUM	EPA 200.7
THALLIUM	EPA 200.7
THALLIUM	EPA 200.8
TITANIUM	EPA 200.7
VANADIUM	EPA 200.7
VANADIUM	EPA 200.8
ZINC	EPA 200.7
ZINC	EPA 200.8
PH	EPA 150.1
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	EPA 160.1
HARDNESS (CACO3), TOTAL	SM 2340B
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B
ALKALINITY, TOTAL	EPA 310.1
CHLORIDE	EPA 325.2
CHLORIDE	EPA 300.0
FLUORIDE	EPA 340.2
FLUORIDE	EPA 300.0
SULFATE	EPA 300.0
AMMONIA-N	EPA 350.1
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
KJELDAHL-N	EPA 351.2
PHOSPHORUS, TOTAL	EPA 365.4
CHEMICAL OXYGEN DEMAND	EPA 410.1
BIOCHEMICAL OXYGEN DEMAND	EPA 405.1
TOTAL ORGANIC CARBON	EPA 415.1
NON-FILTERABLE RESIDUE	EPA 160.2
OIL AND GREASE	EPA 1664
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 624
CHLORDANE	EPA 608
ALDRIN	EPA 608
DIELDRIN	EPA 608
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
HEPTACHLOR	EPA 608
HEPTACHLOR EPOXIDE	EPA 608
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 01 JUL 2006

M-GA006 STL SAVANNAH
SAVANNAH GA

POTABLE WATER (CHEMISTRY) **Effective Date** **01 JUL 2006** **Expiration Date** **30 JUN 2007**

Analytes and Methods

ARSENIC	EPA 200.8
BARIUM	EPA 200.7
BARIUM	EPA 200.8
BERYLLIUM	EPA 200.7
BERYLLIUM	EPA 200.8
CADMIUM	EPA 200.7
CADMIUM	EPA 200.8
CHROMIUM	EPA 200.7
CHROMIUM	EPA 200.8
COPPER	EPA 200.7
COPPER	EPA 200.8
LEAD	EPA 200.8
MERCURY	EPA 245.1
MERCURY	EPA 200.8
NICKEL	EPA 200.7
NICKEL	EPA 200.8
SELENIUM	EPA 200.8
THALLIUM	EPA 200.8
NITRATE-N	EPA 300.0
NITRATE-N	EPA 353.2
NITRITE-N	EPA 300.0
NITRITE-N	EPA 353.2
FLUORIDE	EPA 300.0
SODIUM	EPA 200.7
SULFATE	EPA 300.0
CYANIDE, TOTAL	EPA 335.4
TURBIDITY	EPA 180.1
CALCIUM	EPA 200.7
ALKALINITY, TOTAL	SM 2320B
TOTAL DISSOLVED SOLIDS	SM 2540C
PH	EPA 150.1
2,4-D	EPA 515.1
2,4,5-TP	EPA 515.1
DALAPON	EPA 515.1
DINOSEB	EPA 515.1
PENTACHLOROPHENOL	EPA 515.1
PICLORAM	EPA 515.1
ALACHLOR	EPA 525.2
ATRAZINE	EPA 525.2
CHLORDANE	EPA 508
ENDRIN	EPA 508
HEPTACHLOR	EPA 508
HEPTACHLOR	EPA 525.2
HEPTACHLOR EPOXIDE	EPA 508
HEPTACHLOR EPOXIDE	EPA 525.2
HEXACHLOROBENZENE	EPA 525.2
HEXACHLOROCYCLOPENTADIENE	EPA 525.2
LINDANE	EPA 508
LINDANE	EPA 525.2
METHOXYCHLOR	EPA 508
METHOXYCHLOR	EPA 525.2
SIMAZINE	EPA 525.2
TOXAPHENE	EPA 508
ALDICARB SULFONE	EPA 531.1
CARBOFURAN	EPA 531.1
POLYNUCLEAR AROMATIC HYDROCARB	EPA 525.2
ADIPATES/PHTHALATES	EPA 525.2
TRIHALOMETHANES	EPA 524.2
VOLATILE ORGANIC COMPOUNDS	EPA 524.2
1,2-DIBROMOETHANE	EPA 504.1
1,2-DIBROMO-3-CHLOROPROPANE	EPA 504.1
HALOACETIC ACIDS	EPA 552.2
BROMATE	EPA 300.1
CHLORITE	EPA 300.1

STATE OF NEW YORK
DEPARTMENT OF HEALTH

Wadsworth Center The Governor Nelson A. Rockefeller Empire State Plaza P.O. BOX 509 Albany, New York 12201-0509

Antonia C. Novello, M.D., M.P.H., Dr.P.H.
Commissioner

Dennis P. Whalen
Executive Deputy Commissioner

LAB ID: 11182

November 02, 2006

MR. ALBERT VICINIE
SEVERN TRENT LABORATORIES, INC./STL PITTSBURGH
301 ALPHA DRIVE
RIDC PARK
PITTSBURGH, PA 15238

Certificate Expiration Date: April 01, 2007

Dear Mr. Vicinie,

Enclosed are revised ELAP and/or NELAP Certificate(s) of Approval issued to your environmental laboratory for the current permit year. The Certificate(s) supersede any previously issued and are in effect through the expiration date listed above. Please carefully examine the Certificate(s) to insure that the categories, subcategories, analytes and methods for which your laboratory is approved are listed correctly, as well as verifying your laboratory's name, address, lead technical director and identification number.

Pursuant to regulation (Part 55-2 NYCRR), original certificates must be posted conspicuously in the laboratory and shall, upon request, be made available to any client of the laboratory. Certificates remain the property of the New York State Department of Health and must be surrendered promptly on demand.

You must now return the certificate(s) listed below within ten days of the date of this letter. Please check the serial number(s) carefully and return only those certificates with their serial numbers listed. Please be advised that the certificate(s) listed are the property of the New York State Department of Health and MUST be returned to the ELAP office at this time.

Please note, pursuant to Section 55-2.5(a) NYCRR, any misrepresentation of the Fields of Accreditation (Matrix - Method - Analyte) for which your laboratory is approved may result in denial, suspension, or revocation of your certification. Any use of the ELAP or NELAP name, reference to the laboratory's approval status and/or using the NELAC/NELAP logo in any catalogs, advertising, business solicitations, proposals, quotations, laboratory analytical reports or other materials must include the laboratory's ELAP identification number, and must distinguish between proposed testing for which the laboratory is approved and the proposed testing for which the laboratory is not approved.

Please notify the ELAP office of any changes you feel need to be made to your Certificate(s). We may be reached via email to elap@health.state.ny.us or by calling (518) 485-5570.

Please return the following Certificates:
30257 NW NELAC
30258 CLP ELAP

Sincerely,

Joyce Reilly
Program Administrator
Environmental Laboratory
Approval Program

Rec'd 11/11/06

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised May 15, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ALBERT VICINIE
SEVERN TRENT LABORATORIES, INC./STL PITTSBURGH
301 ALPHA DRIVE RIDC PARK
PITTSBURGH, PA 15238

NY Lab Id No: 11182
EPA Lab Code: PA00146

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl methacrylate	EPA 8260B
Amines	
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Diphenylamine	EPA 8270C
Pronamide	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 8270C
3,3'-Dimethylbenzidene	EPA 8270C
Benzidine	EPA 8270C
Characteristic Testing	
E.P. Toxicity	EPA 1310
Ignitability	EPA 1010
	EPA 1020
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
Chlorobenzilate	EPA 8270C
delta-BHC	EPA 8081A
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Toxaphene	EPA 8081A

Serial No.: 30217

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
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SEVERN TRENT LABORATORIES, INC./STL PITTSBURGH
301 ALPHA DRIVE RIDC PARK
PITTSBURGH, PA 15238

NY Lab Id No: 11182
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is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Chlorinated Hydrocarbons	
1,2,4,5-Tetrachlorobenzene	EPA 8270C
1,2,4-Trichlorobenzene	EPA 8260B
	EPA 8270C
2-Chloronaphthalene	EPA 8270C
Hexachlorobenzene	EPA 8270C
Hexachlorobutadiene	EPA 8260B
	EPA 8270C
Hexachlorocyclopentadiene	EPA 8270C
Hexachloroethane	EPA 8270C
Hexachloropropene	EPA 8270C
Pentachlorobenzene	EPA 8270C
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
MCPA	EPA 8151A
MCPP	EPA 8151A

Haloethers	
4-Bromophenylphenyl ether	EPA 8270C
4-Chlorophenylphenyl ether	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 8270C
Bis(2-chloroethyl)ether	EPA 8270C
Metals I	
Barium, Total	EPA 3005A
	EPA 3010A
	EPA 3050B
	EPA 6010B
	EPA 6020
Cadmium, Total	EPA 3005A
	EPA 3010A
	EPA 3050B
	EPA 6010B
	EPA 6020
Calcium, Total	EPA 6010B
Chromium, Total	EPA 3005A
	EPA 3010A
	EPA 3050B
	EPA 6010B
	EPA 6020
Copper, Total	EPA 6010B

Serial No.: 30217

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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Issued April 01, 2006
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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. ALBERT VICINIE
SEVERN TRENT LABORATORIES, INC./STL PITTSBURGH
301 ALPHA DRIVE RIDC PARK
PITTSBURGH, PA 15238

NY Lab Id No: 11182
EPA Lab Code: PA00146

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Metals I	
Iron, Total	EPA 6010B
Lead, Total	EPA 3005A
	EPA 3010A
	EPA 3050B
	EPA 6010B
	EPA 6020
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
Nickel, Total	EPA 3005A
	EPA 3010A
	EPA 3050B
	EPA 6010B
	EPA 6020
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
	EPA 6020
Sodium, Total	EPA 6010B
Strontium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
Antimony, Total	EPA 3005A
	EPA 3050B
	EPA 6010B

Metals II	
Antimony, Total	EPA 6020
Arsenic, Total	EPA 3005A
	EPA 3010A
	EPA 3050B
	EPA 6010B
	EPA 6020
Beryllium, Total	EPA 6010B
Chromium VI	EPA 7196A
Mercury, Total	EPA 7471A
Selenium, Total	EPA 3005A
	EPA 3010A
	EPA 3050B
	EPA 6010B
	EPA 6020
Vanadium, Total	EPA 6010B
Zinc, Total	EPA 6010B
Metals III	
Cobalt, Total	EPA 6010B
Silica, Dissolved	EPA 6010B
Thallium, Total	EPA 6010B
Minerals	
Chloride	EPA 9056

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised May 15, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ALBERT VICINIE
SEVERN TRENT LABORATORIES, INC./STL PITTSBURGH
301 ALPHA DRIVE RIDC PARK
PITTSBURGH, PA 15238

NY Lab Id No: 11182
EPA Lab Code: PA00146

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Minerals	
Fluoride, Total	EPA 9056
Sulfate (as SO4)	EPA 9056
Miscellaneous	
Boron, Total	EPA 6010B
Cyanide, Total	EPA 9012A
Hydrogen Ion (pH)	EPA 9040B
	EPA 9045C
Phenols	EPA 9066
Sulfide (as S)	EPA 9030B
	EPA 9034
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C
Isophorone	EPA 8270C
Nitrobenzene	EPA 8270C
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270C
N-Nitrosodimethylamine	EPA 8270C
N-Nitrosodi-n-butylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C
N-nitrosomethylethylamine	EPA 8270C
Nitrosoamines	
N-Nitrosopyrrolidine	EPA 8270C
Nutrients	
Nitrate (as N)	EPA 9056
Nitrite (as N)	EPA 9056
Orthophosphate (as P)	EPA 9056
Organophosphate Pesticides	
Azinphos methyl	EPA 8141A
Coumaphos	EPA 8141A
Demeton-O	EPA 8141A
Demeton-S	EPA 8141A
Diazinon	EPA 8141A
Dimethoate	EPA 8141A
EPN	EPA 8141A
Ethoprop	EPA 8141A
Famphur	EPA 8141A
Fensulfothion	EPA 8141A
Fenthion	EPA 8141A
Malathion	EPA 8141A
Mevinphos	EPA 8141A
Parathion ethyl	EPA 8141A
Parathion methyl	EPA 8141A
	EPA 8270C

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Organophosphate Pesticides	
Phorate	EPA 8141A
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 8270C
Diethyl phthalate	EPA 8270C
Dimethyl phthalate	EPA 8270C
Di-n-butyl phthalate	EPA 8270C
Di-n-octyl phthalate	EPA 8270C
Polychlorinated Biphenyls	
PCB-1016	EPA 8082
PCB-1221	EPA 8082
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082
Polynuclear Aromatic Hydrocarbons	
Acenaphthene	EPA 8270C
	EPA 8310
Acenaphthylene	EPA 8270C
	EPA 8310
Anthracene	EPA 8270C

Polynuclear Aromatic Hydrocarbons	
Anthracene	EPA 8310
Benzo(a)anthracene	EPA 8270C
	EPA 8310
Benzo(a)pyrene	EPA 8270C
	EPA 8310
Benzo(b)fluoranthene	EPA 8270C
	EPA 8310
Benzo(ghi)perylene	EPA 8270C
	EPA 8310
Benzo(k)fluoranthene	EPA 8270C
	EPA 8310
Chrysene	EPA 8270C
	EPA 8310
Dibenzo(a,h)anthracene	EPA 8270C
	EPA 8310
Fluoranthene	EPA 8270C
	EPA 8310
Fluorene	EPA 8270C
	EPA 8310
Indeno(1,2,3-cd)pyrene	EPA 8270C
	EPA 8310
Naphthalene	EPA 8270C
	EPA 8310

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Polynuclear Aromatic Hydrocarbons	
Phenanthrene	EPA 8270C
	EPA 8310
Pyrene	EPA 8270C
	EPA 8310
Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8041
	EPA 8270C
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 8041
	EPA 8270C
2,4-Dichlorophenol	EPA 8041
	EPA 8270C
2,4-Dimethylphenol	EPA 8041
	EPA 8270C
2,4-Dinitrophenol	EPA 8270C
2,6-Dichlorophenol	EPA 8041
	EPA 8270C
2-Chlorophenol	EPA 8041
	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 8041
	EPA 8270C
2-Methylphenol	EPA 8041
	EPA 8270C

Priority Pollutant Phenols	
2-Nitrophenol	EPA 8270C
3-Methylphenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 8041
	EPA 8270C
4-Methylphenol	EPA 8041
	EPA 8270C
4-Nitrophenol	EPA 8041
	EPA 8270C
Pentachlorophenol	EPA 8041
	EPA 8270C
Phenol	EPA 8041
	EPA 8270C
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B
1,4-Dichlorobenzene	EPA 8260B
2-Chlorotoluene	EPA 8260B
4-Chlorotoluene	EPA 8260B
Benzene	EPA 8260B
Bromobenzene	EPA 8260B
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8260B
Isopropylbenzene	EPA 8260B

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Purgeable Aromatics	
n-Butylbenzene	EPA 8260B
sec-Butylbenzene	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8260B
Toluene	EPA 8260B
Total Xylenes	EPA 8260B
Purgeable Halocarbons	
1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
1,1-Dichloroethane	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B
2-Chloroethylvinyl ether	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8260B
Bromoform	EPA 8260B
Bromomethane	EPA 8260B
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B

Purgeable Halocarbons	
Chloroform	EPA 8260B
Chloromethane	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
Dibromochloromethane	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 8260B
Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B
Trichloroethene	EPA 8260B
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B
Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Propionitrile	EPA 8260B

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Purgeable Organics	
Vinyl acetate	EPA 8260B
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
Aramite	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C

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Amines	
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
Carbazole	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 625
Benzidine	EPA 625
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 608
4,4'-DDE	EPA 608
4,4'-DDT	EPA 608
Aldrin	EPA 608
alpha-BHC	EPA 608
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 608
Chlordane Total	EPA 608
delta-BHC	EPA 608
Diallate	EPA 8270C
Dieldrin	EPA 608
Endosulfan I	EPA 608
Endosulfan II	EPA 608
Chlorinated Hydrocarbon Pesticides	
Endosulfan sulfate	EPA 608
Endrin	EPA 608
Endrin aldehyde	EPA 608
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 608
Heptachlor epoxide	EPA 608
Lindane	EPA 608
Methoxychlor	EPA 8081A
Toxaphene	EPA 608
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA 625
2-Chloronaphthalene	EPA 625
Hexachlorobenzene	EPA 625
Hexachlorobutadiene	EPA 625
Hexachlorocyclopentadiene	EPA 625
Hexachloroethane	EPA 625
Demand	
Biochemical Oxygen Demand	EPA 405.1
	SM 18-20 5210B
Chemical Oxygen Demand	EPA 410.4

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Haloethers	
4-Bromophenylphenyl ether	EPA 625
4-Chlorophenylphenyl ether	EPA 625
Bis (2-chloroisopropyl) ether	EPA 625
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270C
Bis(2-chloroethyl)ether	EPA 625
Mineral	
Acidity	EPA 305.1
Alkalinity	EPA 310.1
Chloride	EPA 300.0
	EPA 325.2
Fluoride, Total	EPA 300.0
Hardness, Total	EPA 130.2
	EPA 200.7
Sulfate (as SO4)	EPA 300.0
	EPA 375.4
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 625
2,6-Dinitrotoluene	EPA 625
Isophorone	EPA 625
Nitrobenzene	EPA 625
Nitrosoamines	
N-Nitrosodimethylamine	EPA 625
N-Nitrosodi-n-butylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 625
N-Nitrosodiphenylamine	EPA 625
Nutrient	
Ammonia (as N)	EPA 350.1
Nitrate (as N)	EPA 300.0
	EPA 353.2
Nitrite (as N)	EPA 300.0
Orthophosphate (as P)	EPA 300.0
Phthalate Esters	
Benzyl butyl phthalate	EPA 625
Bis(2-ethylhexyl) phthalate	EPA 625
Diethyl phthalate	EPA 625
Dimethyl phthalate	EPA 625
Di-n-butyl phthalate	EPA 625
Di-n-octyl phthalate	EPA 625
Polychlorinated Biphenyls	
PCB-1016	EPA 608
PCB-1221	EPA 608
PCB-1232	EPA 608
PCB-1242	EPA 608

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Polychlorinated Biphenyls	
PCB-1248	EPA 608
PCB-1254	EPA 608
PCB-1260	EPA 608
Polynuclear Aromatics	
Acenaphthene	EPA 610
	EPA 625
Acenaphthylene	EPA 610
	EPA 625
Anthracene	EPA 610
	EPA 625
Benzo(a)anthracene	EPA 610
	EPA 625
Benzo(a)pyrene	EPA 610
	EPA 625
Benzo(b)fluoranthene	EPA 610
	EPA 625
Benzo(ghi)perylene	EPA 610
	EPA 625
Benzo(k)fluoranthene	EPA 610
	EPA 625
Chrysene	EPA 610
	EPA 625
Dibenzo(a,h)anthracene	EPA 610
Dibenzo(a,h)anthracene	EPA 625
Fluoranthene	EPA 610
	EPA 625
Fluorene	EPA 610
	EPA 625
Indeno(1,2,3-cd)pyrene	EPA 610
	EPA 625
Naphthalene	EPA 610
	EPA 625
Phenanthrene	EPA 610
	EPA 625
Pyrene	EPA 610
	EPA 625
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 625
2,4,6-Trichlorophenol	EPA 604
	EPA 625
2,4-Dichlorophenol	EPA 604
	EPA 625
2,4-Dimethylphenol	EPA 604
	EPA 625
2,4-Dinitrophenol	EPA 604
	EPA 625

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Priority Pollutant Phenols	
2-Chlorophenol	EPA 604
	EPA 625
2-Methyl-4,6-dinitrophenol	EPA 604
	EPA 625
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 604
	EPA 625
4-Chloro-3-methylphenol	EPA 604
	EPA 625
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 604
	EPA 625
Pentachlorophenol	EPA 604
	EPA 625
Phenol	EPA 604
	EPA 625
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 624
	EPA 625
1,3-Dichlorobenzene	EPA 625
1,4-Dichlorobenzene	EPA 624
	EPA 625
Benzene	EPA 624

Purgeable Aromatics	
Chlorobenzene	EPA 624
Ethyl benzene	EPA 624
Styrene	EPA 8260B
Toluene	EPA 624
Total Xylenes	EPA 624
Purgeable Halocarbons	
1,1,1-Trichloroethane	EPA 624
1,1,2,2-Tetrachloroethane	EPA 624
1,1,2-Trichloroethane	EPA 624
1,1-Dichloroethane	EPA 624
1,1-Dichloroethene	EPA 624
1,2-Dichloroethane	EPA 624
1,2-Dichloropropane	EPA 624
2-Chloroethylvinyl ether	EPA 624
Bromodichloromethane	EPA 624
Bromoform	EPA 624
Bromomethane	EPA 624
Carbon tetrachloride	EPA 624
Chloroethane	EPA 624
Chloroform	EPA 624
Chloromethane	EPA 624
cis-1,3-Dichloropropene	EPA 624
Dibromochloromethane	EPA 624

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Purgeable Halocarbons	
Dibromochloromethane	EPA 8260B
Dichlorodifluoromethane	EPA 624
Methylene chloride	EPA 624
Tetrachloroethene	EPA 624
trans-1,2-Dichloroethene	EPA 624
trans-1,3-Dichloropropene	EPA 624
Trichloroethene	EPA 624
Trichlorofluoromethane	EPA 624
Vinyl chloride	EPA 624
Purgeable Organics	
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Carbon Disulfide	EPA 8260B
Vinyl acetate	EPA 8260B
Residue	
Solids, Total	EPA 160.3
Solids, Total Dissolved	EPA 160.1
Solids, Total Suspended	EPA 160.2
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
Semi-Volatile Organics	
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Wastewater Metals I	
Barium, Total	EPA 200.7
	EPA 200.8
Cadmium, Total	EPA 200.7
	EPA 200.8
Calcium, Total	EPA 200.7
Chromium, Total	EPA 200.7
	EPA 200.8
Copper, Total	EPA 200.7
	EPA 200.8
Iron, Total	EPA 200.7
Lead, Total	EPA 200.7
	EPA 200.8
Magnesium, Total	EPA 200.7
Manganese, Total	EPA 200.7
	EPA 200.8
Nickel, Total	EPA 200.7
	EPA 200.8
Potassium, Total	EPA 200.7
Silver, Total	EPA 200.7

Serial No.: 31188

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised November 02, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ALBERT VICINIE
SEVERN TRENT LABORATORIES, INC./STL PITTSBURGH
301 ALPHA DRIVE RIDC PARK
PITTSBURGH, PA 15238

NY Lab Id No: 11182
EPA Lab Code: PA00146

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Wastewater Metals I	
Silver, Total	EPA 200.8
Sodium, Total	EPA 200.7
Wastewater Metals II	
Aluminum, Total	EPA 200.7
	EPA 200.8
Antimony, Total	EPA 200.7
	EPA 200.8
Arsenic, Total	EPA 200.7
	EPA 200.8
Beryllium, Total	EPA 200.7
	EPA 200.8
Chromium VI	SM 18-19 3500-Cr D
Mercury, Total	EPA 245.1
Selenium, Total	EPA 200.7
	EPA 200.8
Vanadium, Total	EPA 200.7
	EPA 200.8
Zinc, Total	EPA 200.7
	EPA 200.8
Wastewater Metals III	
Cobalt, Total	EPA 200.7
	EPA 200.8
Wastewater Metals III	
Molybdenum, Total	EPA 200.7
	EPA 200.8
Thallium, Total	EPA 200.7
	EPA 200.8
Tin, Total	EPA 200.7
Titanium, Total	EPA 200.7
Wastewater Miscellaneous	
Boron, Total	EPA 200.7
Bromide	EPA 300.0
Color	EPA 110.2
Cyanide, Total	EPA 335.4
	OIA-1677
Hydrogen Ion (pH)	EPA 150.1
Oil & Grease Total Recoverable	EPA 1664A
Organic Carbon, Total	EPA 415.1
Phenols	EPA 420.2
Silica, Dissolved	EPA 200.7
Specific Conductance	EPA 120.1
Sulfide (as S)	EPA 376.1

Serial No.: 31188

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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301 ALPHA DRIVE RIDC PARK
PITTSBURGH, PA 15238

NY Lab Id No: 11182
EPA Lab Code: PA00146

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES ANALYTICAL SERVICES PROTOCOL
All approved subcategories and/or analytes are listed below:

CLP PCB/Pesticides
CLP Semi-Volatile Organics
CLP Volatile Organics
CLP Inorganics

Serial No.: 31189

Attachment E

Laboratory Qualifications for Adirondack Environmental Services, Inc.

The Commonwealth of Massachusetts

Department of Environmental Protection

Division of Environmental Analysis
Senator William X. Wall Experiment Station

certifies

M-NY063

ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL ST
ALBANY, NY 12207-0000

Laboratory Director: **Paul A. Batista**

for the analysis of **NON POTABLE WATER (CHEMISTRY)**

pursuant to 310 CMR 42.00

This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.

This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.

Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.

Issued: **01 JUL 2006**

Expires: **30 JUN 2007**

Oscar C. Jacobs

Director, Division of Environmental Analysis

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 18 FEB 2007

M-NY063 ADIRONDACK ENVIRONMENTAL SERVICES INC
ALBANY NY

NON POTABLE WATER (CHEMISTRY) **Effective Date** **18 FEB 2007** **Expiration Date** **30 JUN 2007**

Analytes and Methods

ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ARSENIC	EPA 200.7
BERYLLIUM	EPA 200.7
CADMIUM	EPA 200.7
CHROMIUM	EPA 200.7
COBALT	EPA 200.7
COPPER	EPA 200.7
IRON	EPA 200.7
LEAD	EPA 200.7
MANGANESE	EPA 200.7
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
NICKEL	EPA 200.7
SELENIUM	EPA 200.7
SILVER	EPA 200.7
THALLIUM	EPA 200.7
TITANIUM	EPA 200.7
VANADIUM	EPA 200.7
ZINC	EPA 200.7
PH	EPA 150.1
SPECIFIC CONDUCTIVITY	EPA 120.1
TOTAL DISSOLVED SOLIDS	EPA 160.1
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
ALKALINITY, TOTAL	EPA 310.1
CHLORIDE	EPA 325.3
FLUORIDE	EPA 340.2
SULFATE	EPA 375.4
AMMONIA-N	EPA 350.1
PHOSPHORUS, TOTAL	EPA 365.2
BIOCHEMICAL OXYGEN DEMAND	EPA 405.1
TOTAL ORGANIC CARBON	SM 5310C
CYANIDE, TOTAL	EPA 335.3
NON-FILTERABLE RESIDUE	EPA 160.2
OIL AND GREASE	EPA 1664
PHENOLICS, TOTAL	EPA 420.1
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 624
CHLORDANE	EPA 608
ALDRIN	EPA 608
DIELDRIN	EPA 608
DDE	EPA 608
DDT	EPA 608
HEPTACHLOR EPOXIDE	EPA 608
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

The American Industrial Hygiene Association

CELEBRATING 30 Thirty Years of AIHA Accrediting Labs
SOUND DATA SMART DECISIONS
1974 – 2004

acknowledges that

Adirondack Environmental Services, Inc.

314 North Pearl Street, Albany, NY 12207-1322
Laboratory ID: 100307

has fulfilled the requirements of the AIHA Laboratory Quality Assurance Programs (LQAP), thereby, conforming to the ISO/IEC 17025 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories*.
The above named laboratory has been accredited by AIHA in the following:

ACCREDITATION PROGRAMS

✓	**INDUSTRIAL HYGIENE**	Accreditation Expires: 04/01/2008
☐	**ENVIRONMENTAL LEAD**	Accreditation Expires:
☐	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires:
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPE**	Accreditation Expires:

Specific categories of testing, within each Accreditation Program, for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with LQAP requirements. This certificate is not valid without the attached **Scope of Accreditation**.

Kimberly Ruthe

Kimberly A. Ruthe, CIH
Chairperson, Analytical Accreditation Board

Donna M. Doganiero

Donna M. Doganiero, CIH
President, AIHA

Date Issued: 12/15/2004

CELEBRATING 30 Thirty Years of AIHA Accrediting Labs
SOUND DATA SMART DECISIONS 1974 - 2004

LABORATORY QUALITY ASSURANCE PROGRAMS

SOUND DATA SMART DECISIONS

AIHA
Your Essential Connection: Advancing Occupational and Environmental Health and Safety Globally
2700 Prosperity Ave., Suite 250, Fairfax, VA 22031 U.S.A.
(703) 849-8888; Fax (703) 207-3561; www.aiha.org

AIHA Laboratory Quality Assurance Programs
SCOPE OF ACCREDITATION

Adirondack Environmental Services, Inc.
314 North Pearl Street, Albany, NY 12207-1322

Laboratory ID: 100307
Issue Date: 12/15/2004

Clients are urged to verify the laboratory's accreditation status for particular categories of testing. A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA website at http://www.aiha.org/LaboratoryServices/html/lists.htm

The "✓" symbol indicates that the laboratory is approved for that specific field(s) of testing within the Scope Category. A list of current analytical methods covering the scopes for which the laboratory is accredited shall be available to customers and the accreditation body from the laboratory upon request.

✓ **IHLAP** Initial Accreditation Date: 04/01/1993

Inorganics
- ✓ Ion Chromatography
- ✓ Atomic Absorption & Emission
- ✓ ICP, DCP, ICP-MS
- ☐ Infra-Red (IR)
- ✓ UV/VIS
- ✓ Gravimetric
- ☐ Titrimetric
- ☐ Ion-Selective Electrode (ISE)
- ☐ XRD

Organics
- ✓ GC
- ☐ IR
- ✓ LC
- ✓ GC/MS
- ☐ UV/VIS
- ☐ Gravimetric

Asbestos
Air
- ✓ Optical Microscopy
- ✓ Electron Microscopy

Bulk
- ✓ Optical Microscopy
- ✓ Electron Microscopy

Compressed Air
- ☐ GC
- ☐ GC/MS
- ☐ Gravimetric
- ☐ UV/VIS
- ☐ IR

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:1999

NVLAP LAB CODE: 200552-0

Adirondack Environmental Services Inc.

Albany, NY

is recognized by the National Voluntary Laboratory Accreditation Program for conformance with criteria set forth in NIST Handbook 150:2001 and all requirements of ISO/IEC 17025:1999.
Accreditation is granted for specific services, listed on the Scope of Accreditation, for:

BULK ASBESTOS FIBER ANALYSIS

2006-01-01 through 2006-12-31

Effective dates

For the National Institute of Standards and Technology

National Voluntary
Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:1999

Adirondack Environmental Services Inc.
314 North Pearl Street
Albany, NY 12207-1322
Mr. Thomas K. Hare
Phone: 518-785-0128 Fax: 518-785-5042
URL: http://www.adirondackenvironmental.com

BULK ASBESTOS FIBER ANALYSIS (PLM) **NVLAP LAB CODE 200552-0**

NVLAP Code	*Designation / Description*
18/A01	EPA-600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples

2006-01-01 through 2006-12-31
Effective dates

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:1999

NVLAP LAB CODE: 200552-0

Adirondack Environmental Services Inc.

Albany, NY

is recognized by the National Voluntary Laboratory Accreditation Program for conformance with criteria set forth in NIST Handbook 150:2001 and all requirements of ISO/IEC 17025:1999.
Accreditation is granted for specific services, listed on the Scope of Accreditation, for:

AIRBORNE ASBESTOS FIBER ANALYSIS

2006-01-01 through 2006-12-31

Effective dates

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2005-05-19)

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:1999

Adirondack Environmental Services Inc.
314 North Pearl Street
Albany, NY 12207-1322
Mr. Thomas K. Hare
Phone: 518-785-0128 Fax: 518-785-5042
URL: http://www.adirondackenvironmental.com

AIRBORNE ASBESTOS FIBER ANALYSIS (TEM) **NVLAP LAB CODE 200552-0**

NVLAP Code	*Designation / Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

2006-01-01 through 2006-12-31

Effective dates

For the National Institute of Standards and Technology

State of Connecticut, Department of Public Health

Approved Environmental Laboratory

THIS IS TO CERTIFY THAT THE LABORATORY DESCRIBED BELOW HAS BEEN APPROVED BY THE STATE DEPARTMENT OF PUBLIC HEALTH PURSUANT TO APPLICABLE PROVISIONS OF THE PUBLIC HEALTH CODE AND GENERAL STATUTES OF CONNECTICUT, FOR MAKING THE EXAMINATIONS, DETERMINATIONS OR TESTS SPECIFIED BELOW WHICH HAVE BEEN AUTHORIZED IN WRITING BY THAT DEPARTMENT.

ADIRONDACK ENVIRONMENTAL SERVICES, INC.

LOCATED AT 314 North Pearl Street IN Albany, NY 12207

AND REGISTERED IN THE NAME OF Paul A. Batista

THIS CERTIFICATE IS ISSUED IN THE NAME OF Paul A. Batista WHO HAS BEEN DESIGNATED BY THE REGISTERED OWNER/AUTHORIZED AGENT TO BE IN CHARGE OF THE LABORATORY WORK COVERED BY THIS CERTIFICATE OF APPROVAL AS FOLLOWS:

DRINKING WATER,NON-POTABLE WATER/WASTEWATER SOLID WASTE/SOIL

Examination For:
INORGANIC CHEMICALS
ORGANIC CHEMICALS

PAINT CHIPS, SOIL

Examination For:
LEAD

SEE COMPUTER PRINT-OUT FOR SPECIFIC TESTS APPROVED

THIS CERTIFICATE EXPIRES September 30, 2007 AND IS REVOCABLE FOR CAUSE BY THE STATE DEPARTMENT OF PUBLIC HEALTH

DATED AT HARTFORD, CONNECTICUT, THIS 3RD DAY OF October 2005

Registration No.

PH- 0583

Ellen J Blaschinski

CHIEF, REGULATORY SERVICES BRANCH

STATE OF CONNECTICUT

DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SECTION

ENVIRONMENTAL LABORATORY CERTIFICATION PROGRAM

APPROVED ANALYTES REPORT
FOR ALL MATRICES

Adirondack Environmental Svs, Inc.

CT-APP-NUM PH-0583

LOCATION

314 North Pearl Street

Albany NY 12207-

PHONE (518)-434-4546

REGISTERED OWNER/
AUTHORIZED AGENT Paul A. Batista

DIRECTOR Paul A. Batista

CO DIRECTOR(S)

APPROVED BY JEFFREY C. CURRAN

DATE 10/03/2005 9:39:37 AM

LABORATORY APPROVAL EXPIRATION DATE 09/30/2007

LABORATORY STATUS **APPROVED**

ANY QUESTIONS CONCERNING THIS DOCUMENT SHOULD BE ADDRESSED TO
THE ENVIRONMENTAL LABORATORY CERTIFICATION PROGRAM AT (860) 509-7389

DRINKING WATER (SDWA)

STATUS REPORTED ON 10/03/2005

SOC: REGULATED SYNTHETIC ORGANIC CHEMICAL
WITH MINIMUM MDL REQUIREMENTS

ANALYTE NAME

PHYSICALS

COLOR

ODOR

PH

TEMPERATURE

CONDUCTIVITY

MINERALS

ALKALINITY

CHLORIDE

FLUORIDE

HARDNESS, TOTAL

HARDNESS, CALCIUM

SULFATE

NUTRIENTS

NITRATE

NITRITE

O-PHOSPHATE

METALS

ANTIMONY

ARSENIC

BARIUM

BERYLLIUM

CADMIUM

CALCIUM

CHROMIUM

COPPER

IRON

LEAD

MAGNESIUM

MANGANESE

MERCURY

NICKEL

SELENIUM

SILVER

SODIUM

THALLIUM

ZINC

RESIDUE

TOTAL DISSOLVED SOLIDS

MISCELLANEOUS

CYANIDE (TOTAL)

CORROSIVITY

NON-POTABLE WATER/ WASTEWATER

STATUS REPORTED ON 10/03/2005

ANALYTE NAME

PHYSICALS

COLOR
PH
TEMPERATURE
CONDUCTIVITY

MINERALS

ACIDITY
ALKALINITY
CHLORIDE
FLUORIDE
HARDNESS, TOTAL
HARDNESS, CALCIUM
SULFATE
SULFIDE

NUTRIENTS

AMMONIA
KJELDAHL NITROGEN
NITRATE
NITRITE
O-PHOSPHATE
TOTAL PHOSPHOROUS

METALS

ALUMINUM
ANTIMONY
ARSENIC
BARIUM
BERYLLIUM
BORON
CADMIUM
CALCIUM
CHROMIUM
CHROMIUM - Hexavalent
COBALT
COPPER
IRON
LEAD
MAGNESIUM
MANGANESE
MERCURY
MOLYBDENUM
NICKEL
POTASSIUM
SELENIUM
SILVER
SODIUM
THALLIUM
TIN
TITANIUM
VANADIUM
ZINC

RESIDUE

TOTAL RESIDUE (SOLIDS)
TOTAL DISSOLVED SOLIDS
TOTAL SUSPENDED SOLIDS (non-filterable)

DEMANDS

BOD
COD
TOTAL ORGANIC CARBON

MISCELLANEOUS

CYANIDE (TOTAL)
PHENOLICS
FOAMING AGENTS (MBAS)

INORGANIC DISINFECTION BY-PRODUCTS

BROMIDE

SOLVENTS

OIL AND GREASE

PCBs

AROCLOR 1016/1242
AROCLOR 1221
AROCLOR 1232
AROCLOR 1248
AROCLOR 1254
AROCLOR 1260

HERBICIDES

DICAMBA

DINOSEB

2,4-D

2,4,5-T

2,4,5- TP (SILVEX)

NON-POTABLE WATER\WASTEWATER ORG.

ACID EXTRACTABLES (PHENOLS)

BENZIDINES

PHTHALATE ESTERS

NITROSAMINES

ORGANOCHLORINE PESTICIDES

NITROAROMATICS & ISOPHORONE

POLYNUCLEAR AROMATIC HYDROCARBONS

HALOETHERS

CHLORINATED HYDROCARBONS

VOLATILE ORGANICS

CARBAZOLE*

DIBENZOFURAN*

SOLID WASTE/SOIL

STATUS REPORTED ON 10/03/2005

ANALYTE NAME

ENVIRONMENTAL HEALTH & HOUSING

LEAD IN PAINT

LEAD IN SOIL

PHYSICALS

PH

MINERALS

SULFIDE

METALS

ALUMINUM

ANTIMONY

ARSENIC

BARIUM

BERYLLIUM

CADMIUM

CALCIUM

CHROMIUM

CHROMIUM - Hexavalent

COBALT

COPPER

IRON

LEAD

MAGNESIUM

MANGANESE

MERCURY

NICKEL

POTASSIUM

SELENIUM

SILVER

SODIUM

THALLIUM

VANADIUM

ZINC

MISCELLANEOUS

CYANIDE (TOTAL)

IGNITABILITY

CORROSIVITY

TCLP LEACH (1311)

REACTIVITY

PCBs

AROCLOR 1016/1242

AROCLOR 1221

AROCLOR 1232

AROCLOR 1248

AROCLOR 1254

AROCLOR 1260

HERBICIDES

DALAPON

DICAMBA

DINOSEB

2,4-D

2,4-DB

2,4,5-T

2,4,5- TP (SILVEX)

SOLID WASTE ORGANICS

VOLATILE ORGANICS (SW)

ACID EXTRACTABLES (PHENOLS) (SW)

3,3'-DICHLOROBENZIDINE (SW)

PHTHALATES (SW)

NITROSOAMINES (SW)

ORGANOCHLORINE PESTICIDES (SW)

NITROAROMATICS & CYCLIC KETONES (SW)

PAH's (SW)

HALOETHERS (SW)

CHLORINATED HYDROCARBONS (SW)

END OF SECTION FOR Adirondack Environmental Svs, Inc.

REPORT PROFILE

Report Printed on: 10/03/2005 9:39:37 AM
Report Name: APPROVED TESTS_ALT_NEW
Printed by: jeff
Report published from: CERTIFICATION REPORTS screen #3

lab code = ID1176P
test code = *
matrix code = *
matrix selection = ALL OR SOME MATRICES SELECTED
certifications approved or provisional on 10/03/2005

THIS IS THE LAST PAGE OF THE REPORT

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised July 17, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PAUL BATISTA
ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709
EPA Lab Code: NY00063

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Disinfection By-products	
Bromochloroacetic acid	EPA 552.2
Dibromoacetic acid	EPA 552.2
Dichloroacetic acid	EPA 552.2
Monobromoacetic acid	EPA 552.2
Monochloroacetic acid	EPA 552.2
Trichloroacetic acid	EPA 552.2
Drinking Water Metals I	
Arsenic, Total	EPA 200.7
Barium, Total	EPA 200.7
Cadmium, Total	EPA 200.7
Chromium, Total	EPA 200.7
Copper, Total	EPA 200.7
Iron, Total	EPA 200.7
Lead, Total	EPA 200.9
Manganese, Total	EPA 200.7
Mercury, Total	EPA 245.1
Selenium, Total	EPA 200.9
Silver, Total	EPA 200.7
Zinc, Total	EPA 200.7
Drinking Water Metals II	
Aluminum, Total	EPA 200.7
Antimony, Total	EPA 200.9
Drinking Water Metals II	
Beryllium, Total	EPA 200.7
Nickel, Total	EPA 200.7
Thallium, Total	EPA 200.9
Drinking Water Metals III	
Calcium, Total	EPA 200.7
Magnesium, Total	EPA 200.7
Potassium, Total	EPA 200.7
Sodium, Total	EPA 200.7
Drinking Water Miscellaneous	
Butachlor	EPA 507
Methyl tert-butyl ether	EPA 502.2/ SEE ITEM 198.5
	EPA 524.2
Propachlor	EPA 508
Drinking Water Non-Metals	
Alkalinity	SM 18-20 2320B
Calcium Hardness	EPA 200.7
Chloride	EPA 300.0
Color	SM 18-20 2120B
Corrosivity	SM 18-19 2330
Cyanide, Free	EPA 335.4
Fluoride, Total	EPA 300.0
Hydrogen Ion (pH)	EPA 150.1

Serial No.: 30517

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709
EPA Lab Code: NY00063

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Drinking Water Non-Metals	
Nitrate (as N)	EPA 300.0
	SM 18-20 4500-NO3 F
Nitrite (as N)	EPA 300.0
	SM 18-20 4500-NO2 B
Orthophosphate (as P)	EPA 300.0
Solids, Total Dissolved	SM 18-20 2540C
Specific Conductance	SM 18-20 2510B
Sulfate (as SO4)	EPA 300.0
Drinking Water Organohalide Pesticides	
Alachlor	EPA 507
Aldrin	EPA 508
Atrazine	EPA 507
Chlordane Total	EPA 508
Dieldrin	EPA 508
Endrin	EPA 508
Heptachlor	EPA 508
Heptachlor epoxide	EPA 508
Lindane	EPA 508
Methoxychlor	EPA 508
Metolachlor	EPA 507
Metribuzin	EPA 507
Simazine	EPA 507
Toxaphene	EPA 508
Drinking Water Trihalomethanes	
Bromodichloromethane	EPA 502.2
	EPA 524.2
Bromoform	EPA 502.2
	EPA 524.2
Chloroform	EPA 502.2
	EPA 524.2
Dibromochloromethane	EPA 502.2
	EPA 524.2
Microextractibles	
1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Polychlorinated Biphenyls	
PCB Screen	EPA 508
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 502.2
	EPA 524.2
1,2,4-Trichlorobenzene	EPA 502.2
	EPA 524.2
1,2,4-Trimethylbenzene	EPA 502.2
	EPA 524.2
1,2-Dichlorobenzene	EPA 502.2
	EPA 524.2

Serial No.: 30517

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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EPA Lab Code: NY00063

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All approved analytes are listed below:

Volatile Aromatics	
1,3,5-Trimethylbenzene	EPA 502.2
	EPA 524.2
1,4-Dichlorobenzene	EPA 502.2
	EPA 524.2
2-Chlorotoluene	EPA 502.2
	EPA 524.2
4-Chlorotoluene	EPA 502.2
	EPA 524.2
Benzene	EPA 502.2
	EPA 524.2
Bromobenzene	EPA 502.2
	EPA 524.2
Chlorobenzene	EPA 502.2
	EPA 524.2
Ethyl benzene	EPA 502.2
	EPA 524.2
Hexachlorobutadiene	EPA 502.2
	EPA 524.2
Isopropylbenzene	EPA 502.2
	EPA 524.2
n-Butylbenzene	EPA 502.2
	EPA 524.2
n-Propylbenzene	EPA 502.2

Volatile Aromatics	
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 502.2
	EPA 524.2
sec-Butylbenzene	EPA 502.2
	EPA 524.2
Styrene	EPA 502.2
	EPA 524.2
tert-Butylbenzene	EPA 502.2
	EPA 524.2
Toluene	EPA 502.2
	EPA 524.2
Total Xylenes	EPA 502.2
	EPA 524.2
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 502.2
	EPA 524.2
1,1,1-Trichloroethane	EPA 502.2
	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 502.2
	EPA 524.2
1,1,2-Trichloroethane	EPA 502.2
	EPA 524.2
1,1-Dichloroethane	EPA 502.2

Serial No.: 30517

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 01, 2006
Revised July 17, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PAUL BATISTA
ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709
EPA Lab Code: NY00063

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons	
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 502.2
	EPA 524.2
1,1-Dichloropropene	EPA 502.2
	EPA 524.2
1,2,3-Trichloropropane	EPA 502.2
	EPA 524.2
1,2-Dichloroethane	EPA 502.2
	EPA 524.2
1,2-Dichloropropane	EPA 502.2
	EPA 524.2
1,3-Dichloropropane	EPA 502.2
	EPA 524.2
2,2-Dichloropropane	EPA 502.2
	EPA 524.2
Bromochloromethane	EPA 502.2
	EPA 524.2
Bromomethane	EPA 502.2
	EPA 524.2
Carbon tetrachloride	EPA 502.2
	EPA 524.2
Chloroethane	EPA 502.2
	EPA 524.2

Volatile Halocarbons	
Chloromethane	EPA 502.2
	EPA 524.2
cis-1,2-Dichloroethene	EPA 502.2
	EPA 524.2
cis-1,3-Dichloropropene	EPA 502.2
	EPA 524.2
Dibromomethane	EPA 502.2
	EPA 524.2
Dichlorodifluoromethane	EPA 502.2
	EPA 524.2
Methylene chloride	EPA 502.2
	EPA 524.2
Tetrachloroethene	EPA 502.2
	EPA 524.2
trans-1,2-Dichloroethene	EPA 502.2
	EPA 524.2
trans-1,3-Dichloropropene	EPA 502.2
	EPA 524.2
Trichloroethene	EPA 502.2
	EPA 524.2
Trichlorofluoromethane	EPA 502.2
	EPA 524.2
Vinyl chloride	EPA 502.2

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Volatile Halocarbons

Vinyl chloride	EPA 524.2

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ENVIRONMENTAL ANALYSES POTABLE WATER
All approved subcategories and/or analytes are listed below:

Drinking Water Miscellaneous

Odor	EPA 140.1
Organic Carbon, Total	SM 18-20 5310C
Surfactant (MBAS)	EPA 425.1
UV 254	SM 18-20 5910B

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 624
	EPA 8260B
Acrylonitrile	EPA 624
	EPA 8260B
Amines	
1,4-Phenylenediamine	EPA 8270C
1-Naphthylamine	EPA 8270C
2-Naphthylamine	EPA 8270C
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
5-Nitro-o-toluidine	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Diphenylamine	EPA 8270C
Methapyriline	EPA 8270C
Pronamide	EPA 8270C
Propionitrile	EPA 8260B
Pyridine	EPA 8260B
	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 625
	EPA 8270C
Benzidine	EPA 625
	EPA 8270C
Carbamate Pesticides	
Carbaryl	EPA 1978, p.94
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 608
	EPA 8081A
4,4'-DDE	EPA 608
	EPA 8081A
4,4'-DDT	EPA 608
	EPA 8081A
Aldrin	EPA 608
	EPA 8081A
alpha-BHC	EPA 608
	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 608
	EPA 8081A
Captan	SM 18-20 6630B
Chlordane Total	EPA 608

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Chlorinated Hydrocarbon Pesticides	
Chlordane Total	EPA 8081A
Chlorobenzilate	EPA 8270C
delta-BHC	EPA 608
	EPA 8081A
Diallate	EPA 8270C
Dichloran	SM 18-20 6630B
Dieldrin	EPA 608
	EPA 8081A
Endosulfan I	EPA 608
	EPA 8081A
Endosulfan II	EPA 608
	EPA 8081A
Endosulfan sulfate	EPA 608
	EPA 8081A
Endrin	EPA 608
	EPA 8081A
Endrin aldehyde	EPA 608
	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 608
	EPA 8081A
Heptachlor epoxide	EPA 608
Heptachlor epoxide	EPA 8081A
Isodrin	EPA 8081A
	SM 15, p. S73
Kepone	EPA 8270C
Lindane	EPA 608
	EPA 8081A
Methoxychlor	EPA 8081A
	SM 18-20 6630C
Mirex	SM 18-20 6630C
PCNB	SM 18-20 6630C
Strobane	SM 18-20 6630C
Toxaphene	EPA 608
	EPA 8081A
Trifluralin	SM 18-20 6630B
Chlorinated Hydrocarbons	
1,2,4,5-Tetrachlorobenzene	EPA 8270C
1,2,4-Trichlorobenzene	EPA 625
	EPA 8270C
1-Chloronaphthalene	EPA 8270C
2-Chloronaphthalene	EPA 625
	EPA 8270C
Hexachlorobenzene	EPA 625
	EPA 8270C

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Chlorinated Hydrocarbons	
Hexachlorobutadiene	EPA 625
	EPA 8270C
Hexachlorocyclopentadiene	EPA 625
	EPA 8270C
Hexachloroethane	EPA 625
	EPA 8270C
Hexachloropropene	EPA 8270C
Pentachlorobenzene	EPA 8270C
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
	SM 18-20 6640B
2,4,5-TP (Silvex)	EPA 8151A
	SM 18-20 6640B
2,4-D	EPA 8151A
	SM 18-20 6640B
Dicamba	EPA 1978, p.115
	EPA 8151A
Dinoseb	EPA 8151A
Demand	
Biochemical Oxygen Demand	EPA 405.1
Carbonaceous BOD	SM 18-20 5210B
Chemical Oxygen Demand	EPA 410.4
Haloethers	
4-Bromophenylphenyl ether	EPA 625
	EPA 8270C
4-Chlorophenylphenyl ether	EPA 625
	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 625
	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270C
Bis(2-chloroethyl)ether	EPA 625
	EPA 8270C
Mineral	
Alkalinity	EPA 310.1
Calcium Hardness	EPA 200.7
Chloride	EPA 300.0
	EPA 325.3
Fluoride, Total	EPA 300.0
	EPA 340.2
Hardness, Total	EPA 200.7
Sulfate (as SO4)	EPA 300.0
	EPA 375.4
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270C

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Nitroaromatics and Isophorone	
1,3-Dinitrobenzene	EPA 8270C
1,4-Naphthoquinone	EPA 8270C
2,4-Dinitrotoluene	EPA 625
	EPA 8270C
2,6-Dinitrotoluene	EPA 625
	EPA 8270C
Isophorone	EPA 625
	EPA 8270C
Nitrobenzene	EPA 625
	EPA 8270C
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270C
N-Nitrosodimethylamine	EPA 625
	EPA 8270C
N-Nitrosodi-n-butylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270C
N-Nitrosodiphenylamine	EPA 625
	EPA 8270C
N-nitrosopiperidine	EPA 8270C
N-Nitrosopyrrolidine	EPA 8270C

Nutrient	
Ammonia (as N)	EPA 350.1
Kjeldahl Nitrogen, Total	EPA 351.3
Nitrate (as N)	EPA 300.0
	EPA 353.1
Nitrite (as N)	EPA 300.0
	EPA 354.1
Orthophosphate (as P)	EPA 300.0
	EPA 365.2
Phosphorus, Total	EPA 365.2
Organophosphate Pesticides	
Atrazine	EPA 1978,p.25
	EPA 8141A
Azinphos methyl	EPA 1978,p.25
	EPA 8141A
Demeton-O	EPA 1978,p.25
	EPA 8141A
Demeton-S	EPA 8141A
	SM 15, p.S51
Diazinon	EPA 1978,p.25
	EPA 8141A
Dimethoate	EPA 8141A
Disulfoton	EPA 1978,p.25
	EPA 8141A

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Organophosphate Pesticides	
Famphur	EPA 8141A
	EPA 8270C
Malathion	EPA 1978,p.25
	EPA 8141A
Parathion ethyl	EPA 1978,p.25
	EPA 8141A
Parathion methyl	EPA 1978,p.25
	EPA 8141A
Phorate	EPA 8141A
Simazine	EPA 8141A
Phthalate Esters	
Benzyl butyl phthalate	EPA 606
	EPA 625
	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 606
	EPA 625
	EPA 8270C
Diethyl phthalate	EPA 606
	EPA 625
	EPA 8270C
Dimethyl phthalate	EPA 606
	EPA 625
	EPA 8270C
Phthalate Esters	
Di-n-butyl phthalate	EPA 606
	EPA 625
	EPA 8270C
Di-n-octyl phthalate	EPA 606
	EPA 625
	EPA 8270C
Polychlorinated Biphenyls	
PCB-1016	EPA 608
	EPA 8082
PCB-1221	EPA 608
	EPA 8082
PCB-1232	EPA 608
	EPA 8082
PCB-1242	EPA 608
	EPA 8082
PCB-1248	EPA 608
	EPA 8082
PCB-1254	EPA 608
	EPA 8082
PCB-1260	EPA 608
	EPA 8082

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Polynuclear Aromatics	
3-Methylcholanthrene	EPA 8270C
7,12-Dimethylbenzyl (a) anthracene	EPA 8270C
Acenaphthene	EPA 625
	EPA 8270C
Acenaphthylene	EPA 625
	EPA 8270C
Anthracene	EPA 625
	EPA 8270C
Benzo(a)anthracene	EPA 625
	EPA 8270C
Benzo(a)pyrene	EPA 625
	EPA 8270C
Benzo(b)fluoranthene	EPA 625
	EPA 8270C
Benzo(ghi)perylene	EPA 625
	EPA 8270C
Benzo(k)fluoranthene	EPA 625
	EPA 8270C
Chrysene	EPA 625
	EPA 8270C
Dibenzo(a,h)anthracene	EPA 625
	EPA 8270C
Fluoranthene	EPA 625

Polynuclear Aromatics	
Fluoranthene	EPA 8270C
Fluorene	EPA 625
	EPA 8270C
Indeno(1,2,3-cd)pyrene	EPA 625
	EPA 8270C
Naphthalene	EPA 625
	EPA 8270C
Phenanthrene	EPA 625
	EPA 8270C
Pyrene	EPA 625
	EPA 8270C
Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270C
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 604
	EPA 625
	EPA 8270C
2,4-Dichlorophenol	EPA 604
	EPA 625
	EPA 8270C
2,4-Dimethylphenol	EPA 604
	EPA 625
	EPA 8270C

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Priority Pollutant Phenols	
2,4-Dinitrophenol	EPA 604
	EPA 625
	EPA 8270C
2,6-Dichlorophenol	EPA 8270C
2-Chlorophenol	EPA 604
	EPA 625
	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 604
	EPA 625
	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 604
	EPA 625
	EPA 8270C
3-Methylphenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 604
	EPA 625
	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 604
	EPA 625
	EPA 8270C
Cresols, Total	EPA 8270C
Priority Pollutant Phenols	
Pentachlorophenol	EPA 604
	EPA 625
	EPA 8270C
Phenol	EPA 604
	EPA 625
	EPA 8270C
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
1,3-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
1,4-Dichlorobenzene	EPA 601
	EPA 602

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Purgeable Aromatics	
1,4-Dichlorobenzene	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
Benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Ethyl benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Styrene	EPA 8260B
Toluene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Purgeable Aromatics	
Total Xylenes	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8021B
	EPA 8260B
1,1,1-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1,2-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PAUL BATISTA
ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709
EPA Lab Code: NY00063

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Purgeable Halocarbons	
1,1-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloropropene	EPA 8021B
	EPA 8260B
1,2,3-Trichloropropane	EPA 8021B
	EPA 8260B
1,2-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,2-Dichloropropane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,3-Dichloropropane	EPA 8021B
	EPA 8260B
2,2-Dichloropropane	EPA 8021B
	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 601
	EPA 624

Purgeable Halocarbons	
2-Chloroethylvinyl ether	EPA 8021B
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromodichloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromoform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromomethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Carbon tetrachloride	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B

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WADSWORTH CENTER
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Purgeable Halocarbons	
Chloroform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,2-Dichloroethene	EPA 8021B
	EPA 8260B
cis-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Dibromomethane	EPA 8021B
	EPA 8260B
Dichlorodifluoromethane	EPA 601
	EPA 624

Purgeable Halocarbons	
Dichlorodifluoromethane	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Tetrachloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,2-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B

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Purgeable Halocarbons	
Trichlorofluoromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Vinyl chloride	EPA 601
	EPA 624
	EPA 8260B
Purgeable Organics	
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8260B
o-Toluidine	EPA 8260B
Vinyl acetate	EPA 8260B
Residue	
Solids, Total	EPA 160.3
Solids, Total Dissolved	EPA 160.1
Solids, Total Suspended	EPA 160.2
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
4-Amino biphenyl	EPA 8270C
Acetophenone	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Ethyl methanesulfonate	EPA 8270C
Methyl methanesulfonate	EPA 8270C
O,O,O-Triethyl phosphorothioate	EPA 8270C
p-Dimethylaminoazobenzene	EPA 8270C
Safrole	EPA 8270C
Volatile Chlorinated Organics	
Benzyl chloride	EPA 8260B
Epichlorohydrin	EPA 8260B
Wastewater Metals I	
Barium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Cadmium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A

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Wastewater Metals I		**Wastewater Metals I**	
Cadmium, Total	EPA 6010B	Magnesium, Total	EPA 3005A
Calcium, Total	EPA 200.7		EPA 3010A
	EPA 3005A		EPA 6010B
	EPA 3010A	Manganese, Total	EPA 200.7
	EPA 6010B		EPA 3005A
Chromium, Total	EPA 200.7		EPA 3010A
	EPA 3005A		EPA 6010B
	EPA 3010A	Nickel, Total	EPA 200.7
	EPA 6010B		EPA 3005A
Copper, Total	EPA 200.7		EPA 3010A
	EPA 3005A		EPA 6010B
	EPA 3010A	Potassium, Total	EPA 200.7
	EPA 6010B		EPA 3005A
Iron, Total	EPA 200.7		EPA 3010A
	EPA 3005A		EPA 6010B
	EPA 3010A	Silver, Total	EPA 200.7
	EPA 6010B		EPA 3005A
Lead, Total	EPA 200.7		EPA 6010B
	EPA 200.9	Sodium, Total	EPA 200.7
	EPA 3005A		EPA 3005A
	EPA 3010A		EPA 3010A
	EPA 6010B		EPA 6010B
Magnesium, Total	EPA 200.7	Strontium, Total	EPA 200.7

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Wastewater Metals I	
Strontium, Total	EPA 6010B
Wastewater Metals II	
Aluminum, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Antimony, Total	EPA 200.7
	EPA 3005A
	EPA 6010B
Arsenic, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
	SM 18-19 3113B
Beryllium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Chromium VI	EPA 7196A
	SM 18-19 3500-Cr D
Mercury, Total	EPA 245.1
	EPA 7470A
Selenium, Total	EPA 200.7

Wastewater Metals II	
Selenium, Total	EPA 3005A
	EPA 3010A
	EPA 6010B
Vanadium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Zinc, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Wastewater Metals III	
Cobalt, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Gold, Total	EPA 231.1
Molybdenum, Total	EPA 200.7
	EPA 3005A
	EPA 6010B
Palladium, Total	EPA 253.1
Platinum, Total	EPA 255.1
Thallium, Total	EPA 200.7

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All approved analytes are listed below:

Wastewater Metals III	
Thallium, Total	EPA 200.9
	EPA 3005A
	EPA 3010A
	EPA 6010B
Tin, Total	EPA 200.7
	EPA 6010B
Titanium, Total	EPA 200.7
	EPA 6010B
Wastewater Miscellaneous	
Boron, Total	EPA 200.7
	EPA 6010B
Bromide	EPA 300.0
	EPA 320.1
Color	EPA 110.2
Cyanide, Total	EPA 335.3
	EPA 9012A
Hydrogen Ion (pH)	EPA 150.1
	EPA 9040B
Oil & Grease Total Recoverable	EPA 1664A
Organic Carbon, Total	SM 18-20 5310C
Phenols	EPA 420.1
Specific Conductance	EPA 120.1
Sulfide (as S)	EPA 376.1

Wastewater Miscellaneous	
Sulfide (as S)	EPA 376.2
	EPA 9030B
	EPA 9034
Surfactant (MBAS)	EPA 425.1
Temperature	EPA 170.1

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:

Fuel Oxygenates	
Ethanol	EPA 8015 B
Mineral	
Acidity	EPA 305.1
Purgeable Halocarbons	
Vinyl chloride	EPA 8021B

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Amines	
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
Carbazole	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 8270C
Characteristic Testing	
Corrosivity	EPA 1110
Ignitability	EPA 1010
Reactivity	SW-846 Ch7, Sec. 7.3
TCLP	EPA 1311
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A

Chlorinated Hydrocarbon Pesticides	
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
delta-BHC	EPA 8081A
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Toxaphene	EPA 8081A
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA 8270C
2-Chloronaphthalene	EPA 8270C
Hexachlorobenzene	EPA 8270C
Hexachlorobutadiene	EPA 8270C
Hexachlorocyclopentadiene	EPA 8270C

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Chlorinated Hydrocarbons	
Hexachloroethane	EPA 8270C
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
Haloethers	
4-Bromophenylphenyl ether	EPA 8270C
4-Chlorophenylphenyl ether	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 8270C
Bis(2-chloroethyl)ether	EPA 8270C
Metals I	
Barium, Total	EPA 6010B
Cadmium, Total	EPA 6010B
Calcium, Total	EPA 6010B
Chromium, Total	EPA 6010B
Copper, Total	EPA 6010B
Iron, Total	EPA 6010B

Metals I	
Lead, Total	EPA 6010B
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
Nickel, Total	EPA 6010B
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
Sodium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
Antimony, Total	EPA 6010B
Arsenic, Total	EPA 6010B
Beryllium, Total	EPA 6010B
Chromium VI	EPA 7196A
Mercury, Total	EPA 7471A
Selenium, Total	EPA 6010B
Vanadium, Total	EPA 6010B
Zinc, Total	EPA 6010B
Metals III	
Cobalt, Total	EPA 6010B
Molybdenum, Total	EPA 6010B
Thallium, Total	EPA 6010B
Tin, Total	EPA 6010B

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Miscellaneous	
Cyanide, Total	EPA 9012A
Hydrogen Ion (pH)	EPA 9040B
	EPA 9045C
Lead in Paint	EPA 6010B
Sulfide (as S)	EPA 9030B
	EPA 9034
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C
Isophorone	EPA 8270C
Nitrobenzene	EPA 8270C
Nitrosoamines	
N-Nitrosodi-n-propylamine	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C
Organophosphate Pesticides	
Azinphos methyl	EPA 8141A
Demeton-O	EPA 8141A
Demeton-S	EPA 8141A
Diazinon	EPA 8141A
Disulfoton	EPA 8141A
Malathion	EPA 8141A
Parathion ethyl	EPA 8141A
Organophosphate Pesticides	
Parathion methyl	EPA 8141A
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 8270C
Diethyl phthalate	EPA 8270C
Dimethyl phthalate	EPA 8270C
Di-n-butyl phthalate	EPA 8270C
Di-n-octyl phthalate	EPA 8270C
Polychlorinated Biphenyls	
PCB-1016	EPA 8082
PCB-1221	EPA 8082
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082
Polynuclear Aromatic Hydrocarbons	
Acenaphthene	EPA 8270C
Acenaphthylene	EPA 8270C
Anthracene	EPA 8270C
Benzo(a)anthracene	EPA 8270C
Benzo(a)pyrene	EPA 8270C

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Polynuclear Aromatic Hydrocarbons	
Benzo(b)fluoranthene	EPA 8270C
Benzo(ghi)perylene	EPA 8270C
Benzo(k)fluoranthene	EPA 8270C
Chrysene	EPA 8270C
Dibenzo(a,h)anthracene	EPA 8270C
Fluoranthene	EPA 8270C
Fluorene	EPA 8270C
Indeno(1,2,3-cd)pyrene	EPA 8270C
Naphthalene	EPA 8270C
Phenanthrene	EPA 8270C
Pyrene	EPA 8270C
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 8270C
2,4-Dichlorophenol	EPA 8270C
2,4-Dimethylphenol	EPA 8270C
2,4-Dinitrophenol	EPA 8270C
2-Chlorophenol	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 8270C
4-Methylphenol	EPA 8270C
Priority Pollutant Phenols	
4-Nitrophenol	EPA 8270C
Pentachlorophenol	EPA 8270C
Phenol	EPA 8270C
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 8021B
	EPA 8260B
1,3-Dichlorobenzene	EPA 8021B
	EPA 8260B
1,4-Dichlorobenzene	EPA 8021B
	EPA 8260B
Benzene	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 8021B
	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Styrene	EPA 8260B
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B
	EPA 8260B

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Issued April 1, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. PAUL BATISTA
ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709
EPA Lab Code: NY00063

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Purgeable Halocarbons	
1,1,1-Trichloroethane	EPA 8021B
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8021B
	EPA 8260B
1,1,2-Trichloroethane	EPA 8021B
	EPA 8260B
1,1-Dichloroethane	EPA 8021B
	EPA 8260B
1,1-Dichloroethene	EPA 8021B
	EPA 8260B
1,2-Dichloroethane	EPA 8021B
	EPA 8260B
1,2-Dichloropropane	EPA 8021B
	EPA 8260B
2-Chloroethylvinyl ether	EPA 8021B
	EPA 8260B
Bromodichloromethane	EPA 8021B
	EPA 8260B
Bromoform	EPA 8021B
	EPA 8260B
Bromomethane	EPA 8021B
	EPA 8260B
Carbon tetrachloride	EPA 8021B

Purgeable Halocarbons	
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8021B
	EPA 8260B
Chloroform	EPA 8021B
	EPA 8260B
Chloromethane	EPA 8021B
	EPA 8260B
cis-1,3-Dichloropropene	EPA 8021B
	EPA 8260B
Dibromochloromethane	EPA 8021B
	EPA 8260B
Dichlorodifluoromethane	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 8021B
	EPA 8260B
Tetrachloroethene	EPA 8021B
	EPA 8260B
trans-1,3-Dichloropropene	EPA 8021B
	EPA 8260B
Trichloroethene	EPA 8021B
	EPA 8260B
Trichlorofluoromethane	EPA 8021B
	EPA 8260B

Serial No.: 29066

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All approved analytes are listed below:

Purgeable Halocarbons	
Vinyl chloride	EPA 8021B
	EPA 8260B
Purgeable Organics	
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Carbon Disulfide	EPA 8260B
Vinyl acetate	EPA 8260B
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Volatile Chlorinated Organics	
Benzyl chloride	EPA 8121

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Chlorinated Hydrocarbon Pesticides	
Dieldrin	NYS DOH APC-34
Heptachlor	NIOSH 2, VOL. 5 S287
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	40 CFR PART 60 1984 Method 18
Hexachlorobutadiene	40 CFR PART 60 1984 Method 18
Hexachloroethane	40 CFR PART 60 1984 Method 18
Fuels	
B.T.U.	ASTM D2015-77
Percent Sulfur	ASTM D4294-98
Metals I	
Lead, Total	40 CFR PART 50 1984 APP B
	EPA 200.7
	NIOSH 7300
Metals II	
Beryllium, Total	40 CFR 61 1984 Method 104
	NIOSH 7300
Mercury, Total	40 CFR 61 Method 101
	NIOSH 6009
Metals III	
Chromium, Total	40 CFR PART 63 APP.A 306,A,B
	NIOSH 7300
Mineral	
Fluoride, Total	40 CFR 60 APP A METH 13 B
	EPA 300.0
	EPA 340.2
Nitrate (as N)	EPA 300.0
Sulfate (as SO4)	EPA 300.0
	EPA 375.4
Miscellaneous Air	
Nitrogen Oxide	40 CFR 60 Method 7
Particulates	40 CFR 60 APP A Method 5
Sulfur Dioxide	40 CFR 60 METH 6
Polychlorinated Biphenyls	
PCB-1016	EPA, 1980
PCB-1221	EPA, 1980
PCB-1232	EPA, 1980
PCB-1242	EPA, 1980
PCB-1248	EPA, 1980
PCB-1254	EPA, 1980
PCB-1260	EPA, 1980
Purgeable Aromatics	
1,2-Dichlorobenzene	40 CFR PART 60 1984 Method 18
1,4-Dichlorobenzene	40 CFR PART 60 1984 Method 18
Benzene	40 CFR PART 60 1984 Method 18

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All approved analytes are listed below:

Purgeable Aromatics	
Chlorobenzene	40 CFR PART 60 1984 Method 18
Ethyl benzene	40 CFR PART 60 1984 Method 18
Toluene	40 CFR PART 60 1984 Method 18
Total Xylenes	40 CFR PART 60 1984 Method 18
Purgeable Halocarbons	
1,1,2,2-Tetrachloroethane	40 CFR PART 60 1984 Method 18
1,1-Dichloroethane	40 CFR PART 60 1984 Method 18
1,1-Dichloroethene	40 CFR PART 60 1984 Method 18
1,2-Dichloroethane	40 CFR PART 60 1984 Method 18
1,2-Dichloropropane	40 CFR PART 60 1984 Method 18
Carbon tetrachloride	40 CFR PART 60 1984 Method 18
Chloroform	40 CFR PART 60 1984 Method 18
Tetrachloroethene	40 CFR PART 60 1984 Method 18
Surface Coating	
Density	ASTM D1475-60
Percent Solids	ASTM D2697-86
Percent Water	40 CFR 60 METH 24
Volatile Content	40 CFR 60 METH 24
	ASTM D2369-81
Volatile Chlorinated Organics	
Benzyl chloride	40 CFR PART 60 1984 Method 18
Epichlorohydrin	40 CFR PART 60 1984 Method 18

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is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES ANALYTICAL SERVICES PROTOCOL
All approved subcategories and/or analytes are listed below:

CLP PCB/Pesticides

CLP Semi-Volatile Organics

CLP Volatile Organics

CLP Inorganics

Serial No.: 29068

Attachment F

Laboratory Qualifications for Lancaster Laboratories, Inc.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 16 JAN 2007

M-PA009 LANCASTER LABORATORIES INC
LANCASTER PA

NON POTABLE WATER (CHEMISTRY)

Effective Date 16 JAN 2007 **Expiration Date** 30 JUN 2007

Analytes	Methods
ANTIMONY	EPA 200.7
ARSENIC	EPA 200.7
BERYLLIUM	EPA 200.7
CADMIUM	EPA 200.7
CHROMIUM	EPA 200.7
COPPER	EPA 200.7
IRON	EPA 200.7
LEAD	EPA 200.7
MANGANESE	EPA 200.7
MERCURY	EPA 245.1
NICKEL	EPA 200.7
SELENIUM	EPA 200.7
SELENIUM	EPA 270.2
SILVER	EPA 200.7
THALLIUM	EPA 200.7
ZINC	EPA 200.7
PH	EPA 150.1
TOTAL DISSOLVED SOLIDS	EPA 160.1
CALCIUM	EPA 200.7
SODIUM	EPA 200.7
ALKALINITY, TOTAL	EPA 310.1
SULFATE	EPA 375.4
NITRATE-N	EPA 353.2
CYANIDE, TOTAL	EPA 335.4
NON-FILTERABLE RESIDUE	EPA 160.2
CHLORINE, TOTAL RESIDUAL	EPA 330.4
VOLATILE HALOCARBONS	EPA 601
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 624
CHLORDANE	EPA 608

POTABLE WATER (CHEMISTRY)

Effective Date 01 JUL 2006 **Expiration Date** 30 JUN 2007

Analytes	Methods	Analytes	Methods
BARIUM	EPA 200.7	NITRITE-N	EPA 300.0
BERYLLIUM	EPA 200.7	NITRITE-N	EPA 353.2
CADMIUM	EPA 200.7	FLUORIDE	EPA 300.0
CHROMIUM	EPA 200.7	SODIUM	EPA 200.7
COPPER	EPA 200.7	SULFATE	EPA 300.0
MERCURY	EPA 245.1	CYANIDE, TOTAL	EPA 335.4
NICKEL	EPA 200.7	CALCIUM	EPA 200.7
NITRATE-N	EPA 300.0	ALKALINITY, TOTAL	SM 2320B

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 16 JAN 2007

M-PA009 LANCASTER LABORATORIES INC
LANCASTER PA

POTABLE WATER (CHEMISTRY) **Effective Date** **01 JUL 2006** **Expiration Date** **30 JUN 2007**

Analytes and Methods

TOTAL DISSOLVED SOLIDS	SM 2540C
PH	EPA 150.1
2,4-D	EPA 515.1
2,4,5-TP	EPA 515.1
DALAPON	EPA 515.1
DINOSEB	EPA 515.1
PENTACHLOROPHENOL	EPA 515.1
PICLORAM	EPA 515.1
ALACHLOR	EPA 525.2
ATRAZINE	EPA 525.2
ENDRIN	EPA 525.2
HEPTACHLOR	EPA 525.2
HEPTACHLOR EPOXIDE	EPA 525.2
HEXACHLOROBENZENE	EPA 508
HEXACHLOROBENZENE	EPA 525.2
HEXACHLOROCYCLOPENTADIENE	EPA 525.2
LINDANE	EPA 525.2
METHOXYCHLOR	EPA 525.2
SIMAZINE	EPA 525.2
ALDICARB	EPA 531.1
ALDICARB SULFONE	EPA 531.1
ALDICARB SULFOXIDE	EPA 531.1
CARBOFURAN	EPA 531.1
VYDATE	EPA 531.1
POLYNUCLEAR AROMATIC HYDROCARB	EPA 525.2
ADIPATES/PHTHALATES	EPA 525.2
TRIHALOMETHANES	EPA 524.2
VOLATILE ORGANIC COMPOUNDS	EPA 524.2
1,2-DIBROMOETHANE	EPA 504.1
1,2-DIBROMO-3-CHLOROPROPANE	EPA 504.1

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DR. TIMOTHY S. OOSTDYK
LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670
EPA Lab Code: PA00009

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

D. W. Methylcarbamate Pesticides	
3-Hydroxy Carbofuran	EPA 531.1
Aldicarb	EPA 531.1
Aldicarb Sulfone	EPA 531.1
Aldicarb Sulfoxide	EPA 531.1
Carbaryl	EPA 531.1
Carbofuran	EPA 531.1
Methomyl	EPA 531.1
Oxamyl	EPA 531.1
Drinking Water Chlorinated Acids	
2,4,5-TP (Silvex)	EPA 515.1
2,4-D	EPA 515.1
Dalapon	EPA 515.1
Dicamba	EPA 515.1
Dinoseb	EPA 515.1
Pentachlorophenol	EPA 515.1
Picloram	EPA 515.1
Drinking Water Metals I	
Arsenic, Total	EPA 200.7
	EPA 200.8
Barium, Total	EPA 200.7
	EPA 200.8
Cadmium, Total	EPA 200.7
Drinking Water Metals I	
Cadmium, Total	EPA 200.8
Chromium, Total	EPA 200.7
Copper, Total	EPA 200.7
	EPA 200.8
Iron, Total	EPA 200.7
Lead, Total	EPA 200.9
Manganese, Total	EPA 200.7
Mercury, Total	EPA 245.1
Selenium, Total	EPA 200.9
Silver, Total	EPA 200.7
Zinc, Total	EPA 200.7
	EPA 200.8
Drinking Water Metals II	
Aluminum, Total	EPA 200.7
Antimony, Total	EPA 200.8
Beryllium, Total	EPA 200.7
	EPA 200.8
Nickel, Total	EPA 200.7
	EPA 200.8
Thallium, Total	EPA 200.9
Drinking Water Metals III	
Calcium, Total	EPA 200.7

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All approved analytes are listed below:

Drinking Water Metals III	
Sodium, Total	EPA 200.7
Drinking Water Miscellaneous	
Benzo(a)pyrene	EPA 525.2
Bis(2-ethylhexyl) phthalate	EPA 525.2
Butachlor	EPA 525.2
Hexachlorobenzene	EPA 508
	EPA 525.2
Hexachlorocyclopentadiene	EPA 508
	EPA 525.2
Methyl tert-butyl ether	EPA 524.2
Propachlor	EPA 525.2
Temperature	SM 18-20 2550B
Drinking Water Non-Metals	
Alkalinity	SM 18-20 2320B
Calcium Hardness	EPA 200.7
Color	EPA 110.2
Cyanide, Total	EPA 335.4
Fluoride, Total	EPA 300.0
	SM 18-20 4500-F C
Hydrogen Ion (pH)	EPA 150.1
Nitrate (as N)	EPA 300.0
	EPA 353.2

Drinking Water Non-Metals	
Nitrite (as N)	EPA 300.0
	EPA 353.2
Solids, Total Dissolved	SM 18-20 2540C
Specific Conductance	SM 18-20 2510B
Drinking Water Organohalide Pesticides	
Alachlor	EPA 507
	EPA 525.2
Aldrin	EPA 508
	EPA 525.2
Atrazine	EPA 507
	EPA 525.2
Chlordane Total	EPA 508
Dieldrin	EPA 508
	EPA 525.2
Endrin	EPA 508
	EPA 525.2
Heptachlor	EPA 508
	EPA 525.2
Heptachlor epoxide	EPA 508
	EPA 525.2
Lindane	EPA 508
	EPA 525.2
Methoxychlor	EPA 508

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All approved analytes are listed below:

Drinking Water Organohalide Pesticides	
Methoxychlor	EPA 525.2
Metolachlor	EPA 525.2
Metribuzin	EPA 525.2
Simazine	EPA 507
	EPA 525.2
Toxaphene	EPA 508
Drinking Water Trihalomethanes	
Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2
Microextractibles	
1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
Volatile Aromatics	
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2

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Volatile Halocarbons

1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 603
	EPA 624
	EPA 8260B
Acrylonitrile	EPA 603
	EPA 624
	EPA 8260B
Amines	
1,4-Phenylenediamine	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Diphenylamine	EPA 8270C
Methapyriline	EPA 8270C
Pronamide	EPA 8270C
Propionitrile	EPA 8260B
Pyridine	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 625
	EPA 8270C
3,3'-Dimethylbenzidene	EPA 8270C
Benzidine	EPA 625

Benzidines	
Benzidine	EPA 8270C
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 608
	EPA 8081A
4,4'-DDE	EPA 608
	EPA 8081A
4,4'-DDT	EPA 608
	EPA 8081A
Aldrin	EPA 608
	EPA 8081A
alpha-BHC	EPA 608
	EPA 8081A
beta-BHC	EPA 608
	EPA 8081A
Chlordane Total	EPA 608
	EPA 8081A
delta-BHC	EPA 608
	EPA 8081A
Dieldrin	EPA 608
	EPA 8081A
Endosulfan I	EPA 608
	EPA 8081A
Endosulfan II	EPA 608

Serial No.: 29046

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All approved analytes are listed below:

Chlorinated Hydrocarbon Pesticides	
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 608
	EPA 8081A
Endrin	EPA 608
	EPA 8081A
Endrin aldehyde	EPA 608
	EPA 8081A
Endrin Ketone	EPA 8081A
Heptachlor	EPA 608
	EPA 8081A
Heptachlor epoxide	EPA 608
	EPA 8081A
Lindane	EPA 608
	EPA 8081A
Methoxychlor	EPA 8081A
Toxaphene	EPA 608
	EPA 8081A
Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260B
1,2,4,5-Tetrachlorobenzene	EPA 8270C
1,2,4-Trichlorobenzene	EPA 625
	EPA 8260B
	EPA 8270C

Chlorinated Hydrocarbons	
2-Chloronaphthalene	EPA 625
	EPA 8270C
Hexachlorobenzene	EPA 625
	EPA 8270C
Hexachlorobutadiene	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
Hexachlorocyclopentadiene	EPA 625
	EPA 8270C
Hexachloroethane	EPA 625
	EPA 8270C
Hexachloropropene	EPA 8270C
Pentachlorobenzene	EPA 8270C
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

DR. TIMOTHY S. OOSTDYK
LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

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Demand	
Biochemical Oxygen Demand	EPA 405.1
Carbonaceous BOD	SM 18-20 5210B
Chemical Oxygen Demand	EPA 410.4
Fuel Oxygenates	
Ethanol	EPA 8015 B
Methyl tert-butyl ether	EPA 8260B
t-Butyl alcohol	EPA 8015 B
	EPA 8260B
Haloethers	
4-Bromophenylphenyl ether	EPA 625
	EPA 8270C
4-Chlorophenylphenyl ether	EPA 625
	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 625
	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270C
Bis(2-chloroethyl)ether	EPA 625
	EPA 8270C
Microextractables	
1,2-Dibromo-3-chloropropane	EPA 8011
1,2-Dibromoethane	EPA 8011

Mineral	
Acidity	EPA 305.1
Alkalinity	EPA 310.1
Chloride	EPA 300.0
	EPA 325.3
Fluoride, Total	EPA 300.0
	EPA 340.2
	SM 18-20 4500-F C
Hardness, Total	EPA 130.2
Sulfate (as SO4)	EPA 300.0
	EPA 375.4
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270C
	EPA 8330
1,3-Dinitrobenzene	EPA 8270C
	EPA 8330
1,4-Naphthoquinone	EPA 8270C
2,4,6-Trinitrotoluene	EPA 8330
2,4-Dinitrotoluene	EPA 625
	EPA 8270C
	EPA 8330
2,6-Dinitrotoluene	EPA 625
	EPA 8270C
	EPA 8330

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Nitroaromatics and Isophorone	
2-Amino-4,6-dinitrotoluene	EPA 8330
2-Nitrotoluene	EPA 8330
3-Nitrotoluene	EPA 8330
4-Amino-2,6-dinitrotoluene	EPA 8330
4-Nitrotoluene	EPA 8330
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330
Isophorone	EPA 625
	EPA 8270C
Nitrobenzene	EPA 625
	EPA 8270C
	EPA 8330
Octahydro-tetranitro-tetrazocine	EPA 8330
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270C
N-Nitrosodimethylamine	EPA 625
	EPA 8270C
N-Nitrosodi-n-butylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270C
N-Nitrosodiphenylamine	EPA 625
	EPA 8270C
N-nitrosopiperidine	EPA 8270C
N-Nitrosopyrrolidine	EPA 8270C

Nutrient	
Ammonia (as N)	EPA 350.2
Kjeldahl Nitrogen, Total	EPA 351.2
Nitrate (as N)	EPA 300.0
	EPA 353.2
Nitrite (as N)	EPA 300.0
	EPA 353.2
Orthophosphate (as P)	EPA 365.3
Phosphorus, Total	EPA 365.1
Organophosphate Pesticides	
Atrazine	EPA 8141A
Azinphos methyl	EPA 8141A
Demeton-S	EPA 8141A
Diazinon	EPA 8141A
Disulfoton	EPA 8141A
Famphur	EPA 8141A
Malathion	EPA 8141A
Parathion ethyl	EPA 8141A
Parathion methyl	EPA 8141A
Phorate	EPA 8141A
Simazine	EPA 8141A
Phthalate Esters	
Benzyl butyl phthalate	EPA 625

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Phthalate Esters	
Benzyl butyl phthalate	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270C
Diethyl phthalate	EPA 625
	EPA 8270C
Dimethyl phthalate	EPA 625
	EPA 8270C
Di-n-butyl phthalate	EPA 625
	EPA 8270C
Di-n-octyl phthalate	EPA 625
	EPA 8270C
Polychlorinated Biphenyls	
PCB-1016	EPA 608
	EPA 8082
PCB-1221	EPA 608
	EPA 8082
PCB-1232	EPA 608
	EPA 8082
PCB-1242	EPA 608
	EPA 8082
PCB-1248	EPA 608
	EPA 8082
PCB-1254	EPA 608

Polychlorinated Biphenyls	
PCB-1254	EPA 8082
PCB-1260	EPA 608
	EPA 8082
Polynuclear Aromatics	
3-Methylcholanthrene	EPA 8270C
7,12-Dimethylbenzyl (a) anthracene	EPA 8270C
Acenaphthene	EPA 625
	EPA 8270C
	EPA 8310
Acenaphthylene	EPA 625
	EPA 8270C
	EPA 8310
Anthracene	EPA 625
	EPA 8270C
	EPA 8310
Benzo(a)anthracene	EPA 625
	EPA 8270C
	EPA 8310
Benzo(a)pyrene	EPA 625
	EPA 8270C
	EPA 8310
Benzo(b)fluoranthene	EPA 625
	EPA 8270C

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Polynuclear Aromatics	
Benzo(b)fluoranthene	EPA 8310
Benzo(ghi)perylene	EPA 625
	EPA 8270C
	EPA 8310
Benzo(k)fluoranthene	EPA 625
	EPA 8270C
	EPA 8310
Chrysene	EPA 625
	EPA 8270C
	EPA 8310
Dibenzo(a,h)anthracene	EPA 625
	EPA 8270C
	EPA 8310
Fluoranthene	EPA 625
	EPA 8270C
	EPA 8310
Fluorene	EPA 625
	EPA 8270C
	EPA 8310
Indeno(1,2,3-cd)pyrene	EPA 625
	EPA 8270C
	EPA 8310
Naphthalene	EPA 625

Polynuclear Aromatics	
Naphthalene	EPA 8270C
	EPA 8310
Phenanthrene	EPA 625
	EPA 8270C
	EPA 8310
Pyrene	EPA 625
	EPA 8270C
	EPA 8310
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 625
	EPA 8270C
2,4-Dichlorophenol	EPA 625
	EPA 8270C
2,4-Dimethylphenol	EPA 625
	EPA 8270C
2,4-Dinitrophenol	EPA 625
	EPA 8270C
2,6-Dichlorophenol	EPA 8270C
2-Chlorophenol	EPA 625
	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 625
2-Methylphenol	EPA 8270C

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Priority Pollutant Phenols	
2-Nitrophenol	EPA 625
	EPA 8270C
4-Chloro-3-methylphenol	EPA 625
	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 625
	EPA 8270C
Pentachlorophenol	EPA 625
	EPA 8151A
	EPA 8270C
Phenol	EPA 625
	EPA 8270C
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
1,3-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
Purgeable Aromatics	
1,3-Dichlorobenzene	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
1,4-Dichlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 625
	EPA 8021B
	EPA 8260B
	EPA 8270C
Benzene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 601
	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Ethyl benzene	EPA 602
	EPA 624
	EPA 8021B

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Purgeable Aromatics	
Ethyl benzene	EPA 8260B
Styrene	EPA 8021B
	EPA 8260B
Toluene	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 602
	EPA 624
	EPA 8021B
	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1,2-Trichloroethane	EPA 601
	EPA 624
Purgeable Halocarbons	
1,1,2-Trichloroethane	EPA 8021B
	EPA 8260B
1,1-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dichloroethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
1,2-Dichloropropane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
2-Chloroethylvinyl ether	EPA 601
	EPA 624
	EPA 8021B

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Purgeable Halocarbons	
2-Chloroethylvinyl ether	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8021B
	EPA 8260B
Bromodichloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromoform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Bromomethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Carbon tetrachloride	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloroethane	EPA 601
	EPA 624
	EPA 8021B

Purgeable Halocarbons	
Chloroethane	EPA 8260B
Chloroform	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Chloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Dibromochloromethane	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 601
	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 601

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Purgeable Halocarbons	
Methylene chloride	EPA 624
	EPA 8021B
	EPA 8260B
Tetrachloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,2-Dichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
trans-1,3-Dichloropropene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Trichloroethene	EPA 601
	EPA 624
	EPA 8021B
	EPA 8260B
Trichlorofluoromethane	EPA 601
	EPA 624
	EPA 8260B
Vinyl chloride	EPA 601
Purgeable Halocarbons	
Vinyl chloride	EPA 624
	EPA 8021B
	EPA 8260B
Purgeable Organics	
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8260B
o-Toluidine	EPA 8270C
Vinyl acetate	EPA 8260B
Residue	
Solids, Total	EPA 160.3
Solids, Total Dissolved	EPA 160.1
Solids, Total Suspended	EPA 160.2
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
4-Amino biphenyl	EPA 8270C
Acetophenone	EPA 8270C
Benzoic Acid	EPA 8270C

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Semi-Volatile Organics	
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Ethyl methanesulfonate	EPA 8270C
Isosafrole	EPA 8270C
Methyl methanesulfonate	EPA 8270C
O,O,O-Triethyl phosphorothioate	EPA 8270C
Phenacetin	EPA 8270C
Safrole	EPA 8270C
Wastewater Metals I	
Barium, Total	EPA 200.7
	EPA 200.8
	EPA 3005A
	EPA 3010A
	EPA 6010B
	EPA 6020
Cadmium, Total	EPA 200.7
	EPA 200.8
	EPA 213.2
	EPA 3005A
	EPA 3010A
	EPA 3020A
	EPA 6010B
	EPA 6020

Wastewater Metals I	
Cadmium, Total	EPA 7131A
Calcium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Chromium, Total	EPA 200.7
	EPA 200.8
	EPA 3005A
	EPA 3010A
	EPA 3020A
	EPA 6010B
	EPA 6020
Copper, Total	EPA 200.7
	EPA 200.8
	EPA 3005A
	EPA 3010A
	EPA 6010B
Iron, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Lead, Total	EPA 200.7
	EPA 200.8

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Wastewater Metals I	
Lead, Total	EPA 239.2
	EPA 3005A
	EPA 3010A
	EPA 3020A
	EPA 6010B
	EPA 6020
	EPA 7421
Magnesium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Manganese, Total	EPA 200.7
	EPA 200.8
	EPA 3005A
	EPA 3010A
	EPA 6010B
	EPA 6020
Nickel, Total	EPA 200.7
	EPA 200.8
	EPA 3005A
	EPA 3010A
	EPA 3020A
	EPA 6010B
Wastewater Metals I	
Potassium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Silver, Total	EPA 200.7
	EPA 272.2
	EPA 3005A
	EPA 6010B
Sodium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Strontium, Total	EPA 6010B
Wastewater Metals II	
Aluminum, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Antimony, Total	EPA 200.7
	EPA 200.8
	EPA 204.2
	EPA 3005A
	EPA 6010B

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Wastewater Metals II	
Antimony, Total	EPA 6020
	EPA 7041
Arsenic, Total	EPA 200.7
	EPA 200.8
	EPA 206.2
	EPA 3005A
	EPA 3010A
	EPA 6010B
	EPA 6020
	EPA 7060A
Beryllium, Total	EPA 200.7
	EPA 200.8
	EPA 3005A
	EPA 3010A
	EPA 3020A
	EPA 6010B
	EPA 6020
Chromium VI	EPA 218.6
	EPA 7196A
Mercury, Total	EPA 245.1
	EPA 7470A
Selenium, Total	EPA 200.7
	EPA 270.2

Wastewater Metals II	
Selenium, Total	EPA 3005A
	EPA 3010A
	EPA 6010B
	EPA 7740
Vanadium, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Zinc, Total	EPA 200.7
	EPA 200.8
	EPA 3005A
	EPA 3010A
	EPA 6010B
	EPA 6020
Wastewater Metals III	
Cobalt, Total	EPA 200.7
	EPA 3005A
	EPA 3010A
	EPA 6010B
Molybdenum, Total	EPA 200.7
	EPA 200.8
	EPA 3005A
	EPA 6010B

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

DR. TIMOTHY S. OOSTDYK
LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670
EPA Lab Code: PA00009

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Wastewater Metals III	
Thallium, Total	EPA 200.7
	EPA 200.8
	EPA 279.2
	EPA 3005A
	EPA 3010A
	EPA 3020A
	EPA 6010B
	EPA 6020
Tin, Total	EPA 200.7
	EPA 6010B
Titanium, Total	EPA 200.7
	EPA 6010B
Wastewater Miscellaneous	
Boron, Total	EPA 200.7
	EPA 6010B
Bromide	EPA 300.0
Color	EPA 110.2
Cyanide, Total	EPA 335.3
	EPA 335.4
	EPA 9012A
Hydrogen Ion (pH)	EPA 150.1
	EPA 9040B
Oil & Grease Total Recoverable	EPA 1664A

Wastewater Miscellaneous	
Oil & Grease Total Recoverable	EPA 413.1
Organic Carbon, Total	EPA 415.1
Phenols	EPA 420.2
Silica, Dissolved	EPA 370.1
Specific Conductance	EPA 120.1
Sulfide (as S)	EPA 376.1
	EPA 376.2
Surfactant (MBAS)	EPA 425.1

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:

Amines	
2-Nitroaniline	Method Not Specified
3-Nitroaniline	Method Not Specified
4-Chloroaniline	Method Not Specified
4-Nitroaniline	Method Not Specified
Carbazole	Method Not Specified
Carbamate Pesticides	
Aldicarb	EPA 8318
Aldicarb Sulfone	EPA 8318
Carbofuran	EPA 8318
Chlorinated Hydrocarbon Pesticides	
alpha-Chlordane	Method Not Specified
gamma-Chlordane	Method Not Specified
Nitroaromatics and Isophorone	
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330
Organophosphate Pesticides	
Demeton-O	EPA 8141A
Priority Pollutant Phenols	
2-Methylphenol	Method Not Specified
4-Methylphenol	Method Not Specified
Purgeable Aromatics	
Styrene	Method Not Specified
Purgeable Organics	
Carbon Disulfide	Method Not Specified
Semi-Volatile Organics	
Benzoic Acid	Method Not Specified

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Acrylates	
Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Amines	
1,2-Diphenylhydrazine	EPA 8270C
1,4-Phenylenediamine	EPA 8270C
1-Naphthylamine	EPA 8270C
2-Naphthylamine	EPA 8270C
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
5-Nitro-o-toluidine	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Methapyriline	EPA 8270C
Pronamide	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 8270C
3,3'-Dimethylbenzidene	EPA 8270C
Carbamate Pesticides	
Aldicarb	EPA 8318
Aldicarb Sulfone	EPA 8318
Carbamate Pesticides	
Carbofuran	EPA 8318
Characteristic Testing	
Ignitability	EPA 1010
Reactivity	SW-846 Ch7, Sec. 7.3
TCLP	EPA 1311
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
alpha-Chlordane	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
delta-BHC	EPA 8081A
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A
Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Endrin Ketone	EPA 8081A

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Chlorinated Hydrocarbon Pesticides	
gamma-Chlordane	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A
Pentachloronitrobenzene	EPA 8270C
Toxaphene	EPA 8081A
Chlorinated Hydrocarbons	
1,2,4,5-Tetrachlorobenzene	EPA 8270C
1,2,4-Trichlorobenzene	EPA 8270C
2-Chloronaphthalene	EPA 8270C
Hexachlorobenzene	EPA 8270C
Hexachlorobutadiene	EPA 8270C
Hexachlorocyclopentadiene	EPA 8270C
Hexachloroethane	EPA 8270C
Hexachloropropene	EPA 8270C
Pentachlorobenzene	EPA 8270C
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dalapon	EPA 8151A
Chlorophenoxy Acid Pesticides	
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
MCPA	EPA 8151A
MCPP	EPA 8151A
Haloethers	
4-Bromophenylphenyl ether	EPA 8270C
4-Chlorophenylphenyl ether	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 8270C
Bis(2-chloroethyl)ether	EPA 8270C
Metals I	
Barium, Total	EPA 6010B
Cadmium, Total	EPA 6010B
	EPA 6020
Calcium, Total	EPA 6010B
Chromium, Total	EPA 6010B
	EPA 6020
Copper, Total	EPA 6010B
	EPA 6020
Iron, Total	EPA 6010B
Lead, Total	EPA 6010B
	EPA 6020

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Metals I	
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
Nickel, Total	EPA 6010B
	EPA 6020
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
Sodium, Total	EPA 6010B
Strontium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
Antimony, Total	EPA 6010B
	EPA 6020
	EPA 7041
Arsenic, Total	EPA 6010B
	EPA 6020
	EPA 7060A
Beryllium, Total	EPA 6010B
	EPA 6020
Chromium VI	EPA 7196A
Mercury, Total	EPA 7471A
Selenium, Total	EPA 6010B
	EPA 7740
Vanadium, Total	EPA 6010B
Metals II	
Zinc, Total	EPA 6010B
	EPA 6020
Metals III	
Cobalt, Total	EPA 6010B
Molybdenum, Total	EPA 6010B
Thallium, Total	EPA 6010B
Tin, Total	EPA 6010B
Titanium, Total	EPA 6010B
Miscellaneous	
Boron, Total	EPA 6010B
Cyanide, Total	EPA 9012A
Hydrogen Ion (pH)	EPA 9040B
	EPA 9045C
Oil & Grease Total Recoverable	EPA 9071
Phenols	EPA 9066
Specific Conductance	EPA 9050
Sulfide (as S)	EPA 9030B
	EPA 9034
Nitroaromatics and Isophorone	
1,2-Dinitrobenzene	EPA 8270C
1,3,5-Trinitrobenzene	EPA 8330
1,3-Dinitrobenzene	EPA 8330

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Nitroaromatics and Isophorone	
1,4-Dinitrobenzene	EPA 8270C
1,4-Naphthquinone	EPA 8270C
2,4,6-Trinitrotoluene	EPA 8330
2,4-Dinitrotoluene	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C
2-Amino-4,6-dinitrotoluene	EPA 8330
4-Amino-2,6-dinitrotoluene	EPA 8330
Isophorone	EPA 8270C
Nitrobenzene	EPA 8270C
	EPA 8330
Nitroquinoline-1-oxide	EPA 8270C
Octahydro-tetranitro-tetrazocine	EPA 8330
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270C
N-Nitrosodimethylamine	EPA 8270C
N-Nitrosodi-n-butylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C
N-nitrosomethylethylamine	EPA 8270C
N-nitrosomorpholine	EPA 8270C
N-nitrosopiperidine	EPA 8270C
N-Nitrosopyrrolidine	EPA 8270C

Nutrients	
Nitrate (as N)	EPA 9056
Nitrite (as N)	EPA 9056
Orthophosphate (as P)	EPA 9056
Organophosphate Pesticides	
Azinphos methyl	EPA 8141A
Bolstar	EPA 8141A
Chlorpyriphos	EPA 8141A
Coumaphos	EPA 8141A
Demeton-O	EPA 8141A
Demeton-S	EPA 8141A
Diazinon	EPA 8141A
Dichlorvos	EPA 8141A
Disulfoton	EPA 8141A
EPN	EPA 8141A
Ethion	EPA 8141A
Ethoprop	EPA 8141A
Famphur	EPA 8141A
Fensulfothion	EPA 8141A
Fenthion	EPA 8141A
Malathion	EPA 8141A
Mevinphos	EPA 8141A
NALED	EPA 8141A
Parathion ethyl	EPA 8141A

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Organophosphate Pesticides	
Phorate	EPA 8141A
Ronnel	EPA 8141A
Tokuthion	EPA 8141A
Trichlorfon	EPA 8141A
Trichloronate	EPA 8141A
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 8270C
Diethyl phthalate	EPA 8270C
Dimethyl phthalate	EPA 8270C
Di-n-butyl phthalate	EPA 8270C
Di-n-octyl phthalate	EPA 8270C
Polychlorinated Biphenyls	
PCB-1016	EPA 8082
PCB-1221	EPA 8082
PCB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082
Polynuclear Aromatic Hydrocarbons	
7,12-Dimethylbenzyl (a) anthracene	EPA 8270C

Polynuclear Aromatic Hydrocarbons	
Acenaphthene	EPA 8270C
	EPA 8310
Acenaphthylene	EPA 8270C
	EPA 8310
Anthracene	EPA 8270C
	EPA 8310
Benzo(a)anthracene	EPA 8270C
	EPA 8310
Benzo(a)pyrene	EPA 8270C
	EPA 8310
Benzo(b)fluoranthene	EPA 8270C
	EPA 8310
Benzo(ghi)perylene	EPA 8270C
	EPA 8310
Benzo(k)fluoranthene	EPA 8270C
Chrysene	EPA 8270C
	EPA 8310
Dibenzo(a,h)anthracene	EPA 8270C
	EPA 8310
Fluoranthene	EPA 8270C
	EPA 8310
Fluorene	EPA 8270C
	EPA 8310

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Polynuclear Aromatic Hydrocarbons	
Indeno(1,2,3-cd)pyrene	EPA 8270C
	EPA 8310
Naphthalene	EPA 8260B
	EPA 8270C
	EPA 8310
Phenanthrene	EPA 8270C
	EPA 8310
Pyrene	EPA 8270C
	EPA 8310
Priority Pollutant Phenols	
2,4,6-Trichlorophenol	EPA 8270C
2,4-Dichlorophenol	EPA 8270C
2,4-Dimethylphenol	EPA 8270C
2,4-Dinitrophenol	EPA 8270C
2-Chlorophenol	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 8270C
Pentachlorophenol	EPA 8270C
Phenol	EPA 8270C

Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,2-Dichlorobenzene	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B
1,4-Dichlorobenzene	EPA 8260B
2-Chlorotoluene	EPA 8260B
4-Chlorotoluene	EPA 8260B
Benzene	EPA 8021B
	EPA 8260B
Bromobenzene	EPA 8260B
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8021B
n-Butylbenzene	EPA 8260B
sec-Butylbenzene	EPA 8021B
	EPA 8260B
Styrene	EPA 8021B
	EPA 8260B
tert-Butylbenzene	EPA 8021B
	EPA 8260B

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Purgeable Aromatics	
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B
	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
1,1-Dichloroethane	EPA 8021B
	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloroethylvinyl ether	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8260B

Purgeable Halocarbons	
Bromoform	EPA 8260B
Bromomethane	EPA 8021B
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B
Chloroform	EPA 8021B
	EPA 8260B
Chloromethane	EPA 8021B
	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
Dibromochloromethane	EPA 8021B
	EPA 8260B
Dichlorodifluoromethane	EPA 8021B
	EPA 8260B
Methylene chloride	EPA 8021B
	EPA 8260B
Tetrachloroethene	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B
Trichloroethene	EPA 8260B
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B

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Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Isobutyl alcohol	EPA 8260B
Methyl tert-butyl ether	EPA 8260B
o-Toluidine	EPA 8270C
Propionitrile	EPA 8260B
Vinyl acetate	EPA 8260B
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
4-Amino biphenyl	EPA 8270C
Acetophenone	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Ethyl methanesulfonate	EPA 8270C
Isosafrole	EPA 8270C
Methyl methanesulfonate	EPA 8270C
O,O,O-Triethyl phosphorothioate	EPA 8270C

Semi-Volatile Organics	
Phenacetin	EPA 8270C
Safrole	EPA 8270C

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LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670
EPA Lab Code: PA00009

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Amines	
Diphenylamine	EPA 8270C
Organophosphate Pesticides	
Parathion methyl	EPA 8141A
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 8270C
Purgeable Organics	
Ethylene Glycol	EPA 8260B
Semi-Volatile Organics	
Aramite	EPA 8270C

Serial No.: 29049

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued April 1, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

DR. TIMOTHY S. OOSTDYK
LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670
EPA Lab Code: PA00009

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Acrylates	
Acrylonitrile	EPA TO-15
Methyl methacrylate	EPA TO-15
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA TO-14A
1,2-Dichlorobenzene	EPA TO-14A
	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-14A
1,3-Dichlorobenzene	EPA TO-14A
1,4-Dichlorobenzene	EPA TO-14A
	EPA TO-15
Benzene	EPA TO-14A
	EPA TO-15
Chlorobenzene	EPA TO-14A
	EPA TO-15
Ethyl benzene	EPA TO-14A
	EPA TO-15
Styrene	EPA TO-14A
	EPA TO-15
Toluene	EPA TO-14A
	EPA TO-15
Total Xylenes	EPA TO-14A
	EPA TO-15

Purgeable Halocarbons	
1,1,1-Trichloroethane	EPA TO-14A
1,1,2,2-Tetrachloroethane	EPA TO-15
1,1,2-Trichloroethane	EPA TO-14A
	EPA TO-15
1,1,2-Trifluoro-1,2,2-Trichloroethane	EPA TO-14A
1,1-Dichloroethane	EPA TO-14A
	EPA TO-15
1,1-Dichloroethene	EPA TO-14A
	EPA TO-15
1,2-Dichloro-1,1,2,2-tetrafluoroethane	EPA TO-14A
1,2-Dichloroethane	EPA TO-14A
	EPA TO-15
1,2-Dichloropropane	EPA TO-14A
	EPA TO-15
Bromoform	EPA TO-15
Bromomethane	EPA TO-15
Carbon tetrachloride	EPA TO-14A
	EPA TO-15
Chloroethane	EPA TO-14A
	EPA TO-15
Chloroform	EPA TO-14A
	EPA TO-15
Chloromethane	EPA TO-14A

Serial No.: 29050

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
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All approved analytes are listed below:

Purgeable Halocarbons	
Chloromethane	EPA TO-15
cis-1,2-Dichloroethene	EPA TO-14A
	EPA TO-15
cis-1,3-Dichloropropene	EPA TO-15
Dichlorodifluoromethane	EPA TO-14A
Methylene chloride	EPA TO-14A
	EPA TO-15
Tetrachloroethene	EPA TO-14A
	EPA TO-15
trans-1,2-Dichloroethene	EPA TO-15
trans-1,3-Dichloropropene	EPA TO-15
Trichloroethene	EPA TO-14A
	EPA TO-15
Trichlorofluoromethane	EPA TO-14A
Vinyl chloride	EPA TO-14A
	EPA TO-15
Volatile Chlorinated Organics	
Benzyl chloride	EPA TO-14A
	EPA TO-15
Volatile Organics	
2-Butanone (Methylethyl ketone)	EPA TO-15
Vinyl acetate	EPA TO-15

Serial No.: 29050

Property of the New York State Department of Health. Valid only at the address shown. Must be conspicuously posted. Valid certificates have a raised seal. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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LANCASTER LABORATORIES INC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670
EPA Lab Code: PA00009

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES ANALYTICAL SERVICES PROTOCOL
All approved subcategories and/or analytes are listed below:

CLP PCB/Pesticides
CLP Semi-Volatile Organics
CLP Volatile Organics
CLP Inorganics

Serial No.: 29051

Attachment G

Laboratory Qualifications for Pace Analytical Services, Inc.

The Commonwealth of Massachusetts

Department of Environmental Protection

Division of Environmental Analysis
Senator William X. Wall Experiment Station

certifies

M-PA1457 **PACE ANALYTICAL SERVICES INC**
5203 TRIANGLE LN
EXPORT, PA 15632-0000

Laboratory Director: **JAMES H. DODSWORTH**

for the analysis of **NON POTABLE WATER (CHEMISTRY)**

pursuant to 310 CMR 42.00

This certificate supersedes all previous Massachusetts certificates issued to this laboratory. The laboratory is regulated by and shall be responsible for being in compliance with Massachusetts regulations at 310 CMR 42.00.

This certificate is valid only when accompanied by the latest dated Certified Parameter List as issued by the Massachusetts D.E.P. Contact the Division of Environmental Analysis to verify the current certification status of the laboratory.

Certification is no guarantee of the validity of the data. This certification is subject to unannounced laboratory inspections.

Issued: **20 NOV 2006**

Expires: **30 JUN 2007**

Oscar C. Parcaba

Director, Division of Environmental Analysis

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Certified Parameter List as of: 20 NOV 2006

M-PA1457 **PACE ANALYTICAL SERVICES INC**
EXPORT PA

NON POTABLE WATER (CHEMISTRY) **Effective Date** **06 OCT 2006** **Expiration Date** **30 JUN 2007**

Analytes	Methods
ALUMINUM	EPA 200.7
ANTIMONY	EPA 200.7
ARSENIC	EPA 200.7
BERYLLIUM	EPA 200.7
CADMIUM	EPA 200.7
CHROMIUM	EPA 200.7
COBALT	EPA 200.7
COPPER	EPA 200.7
IRON	EPA 200.7
LEAD	EPA 200.7
MANGANESE	EPA 200.7
MERCURY	EPA 245.1
MOLYBDENUM	EPA 200.7
NICKEL	EPA 200.7
SELENIUM	EPA 200.7
SILVER	EPA 200.7
THALLIUM	EPA 200.7
TITANIUM	EPA 200.7
VANADIUM	EPA 200.7
ZINC	EPA 200.7
PH	EPA 150.1
TOTAL DISSOLVED SOLIDS	EPA 160.1
HARDNESS (CACO3), TOTAL	EPA 200.7
CALCIUM	EPA 200.7
MAGNESIUM	EPA 200.7
SODIUM	EPA 200.7
POTASSIUM	EPA 200.7
CYANIDE, TOTAL	EPA 335.2
NON-FILTERABLE RESIDUE	EPA 160.2
VOLATILE HALOCARBONS	EPA 624
VOLATILE AROMATICS	EPA 624
CHLORDANE	EPA 608
ALDRIN	EPA 608
DIELDRIN	EPA 608
DDD	EPA 608
DDE	EPA 608
DDT	EPA 608
HEPTACHLOR	EPA 608
HEPTACHLOR EPOXIDE	EPA 608
POLYCHLORINATED BIPHENYLS (WATEF	EPA 608

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Senator William X. Wall Experiment Station

MITT ROMNEY
Governor

KERRY HEALEY
Lieutenant Governor

ROBERT W. GOLLEDGE, Jr.
Secretary

ARLEEN O"DONNELL
Commissioner

November 30, 2006

M-PA1457
Mr. James H. Dodsworth
Pace Analytical Services, Inc.
5203 Triangle Lane
Export, Pennsylvania 15632

Dear Mr. Dodsworth:

Enclosed are a revised Massachusetts environmental laboratory certificate and list of certified parameters for your laboratory. The certificate and certified parameter list reflect the changes in scope of certification that were requested by Ms. Adrinnia Washington in her letter to us that we received on November 22, 2006.

If you have any questions regarding the Massachusetts Laboratory Certification Program, please contact this office.

Sincerely,

Ann Marie Allen
Director, Laboratory Certification Office

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

Expires 12:01 AM April 01, 2007
Issued September 15, 2006

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. NILS K. MELBERG
PACE ANALYTICAL SERVICES, INC - GREEN BAY # 2
1795 INDUSTRIAL DRIVE
GREEN BAY, WI 54302

NY Lab Id No: 11887
EPA Lab Code: W101104

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 624
	EPA 8260B
Acrylonitrile	EPA 624
	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B
Chlorinated Hydrocarbons	
1,2,3-Trichlorobenzene	EPA 8260B
1,2,4-Trichlorobenzene	EPA 8260B
Hexachlorobutadiene	EPA 8260B
Fuel Oxygenates	
Methyl tert-butyl ether	EPA 8021B
	EPA 8260B
Microextractables	
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dibromoethane	EPA 8260B
Polynuclear Aromatics	
Naphthalene	EPA 8260B
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 624
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 8260B
1,3-Dichlorobenzene	EPA 624
	EPA 8260B
1,4-Dichlorobenzene	EPA 624
	EPA 8260B
Benzene	EPA 624
	EPA 8021B
	EPA 8260B
Chlorobenzene	EPA 624
	EPA 8260B
Ethyl benzene	EPA 624
	EPA 8021B
	EPA 8260B
Styrene	EPA 8260B
Toluene	EPA 624
	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 624
	EPA 8021B
	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B

Serial No.: 30870

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
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All approved analytes are listed below:

Purgeable Halocarbons	
1,1,1-Trichloroethane	EPA 624
	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 624
	EPA 8260B
1,1,2-Trichloroethane	EPA 624
	EPA 8260B
1,1-Dichloroethane	EPA 624
	EPA 8260B
1,1-Dichloroethene	EPA 624
	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B
1,2-Dichloroethane	EPA 624
	EPA 8260B
1,2-Dichloropropane	EPA 624
	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 624
	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B

Purgeable Halocarbons	
Bromodichloromethane	EPA 624
	EPA 8260B
Bromoform	EPA 624
	EPA 8260B
Bromomethane	EPA 624
	EPA 8260B
Carbon tetrachloride	EPA 624
	EPA 8260B
Chloroethane	EPA 624
	EPA 8260B
Chloroform	EPA 624
	EPA 8260B
Chloromethane	EPA 624
	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 624
	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 624
	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 8260B
Methylene chloride	EPA 624

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All approved analytes are listed below:

Purgeable Halocarbons	
Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 624
	EPA 8260B
trans-1,2-Dichloroethene	EPA 624
	EPA 8260B
trans-1,3-Dichloropropene	EPA 624
	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 624
	EPA 8260B
Trichlorofluoromethane	EPA 624
	EPA 8260B
Vinyl chloride	EPA 624
	EPA 8260B
Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B

Purgeable Organics	
Isobutyl alcohol	EPA 8260B
Methyl iodide	EPA 8260B
Vinyl acetate	EPA 8260B

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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Revised September 25, 2006

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260B
Acrylonitrile	EPA 8260B
Ethyl methacrylate	EPA 8260B
Methyl acrylonitrile	EPA 8260B
Methyl methacrylate	EPA 8260B
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA 8260B
Hexachlorobutadiene	EPA 8260B
Polynuclear Aromatic Hydrocarbons	
Naphthalene	EPA 8260B
Purgeable Aromatics	
1,2,4-Trimethylbenzene	EPA 8021B
	EPA 8260B
1,2-Dichlorobenzene	EPA 8260B
1,3,5-Trimethylbenzene	EPA 8260B
1,3-Dichlorobenzene	EPA 8260B
1,4-Dichlorobenzene	EPA 8260B
2-Chlorotoluene	EPA 8260B
4-Chlorotoluene	EPA 8260B
Benzene	EPA 8021B
	EPA 8260B
Bromobenzene	EPA 8260B

Purgeable Aromatics	
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8021B
	EPA 8260B
Isopropylbenzene	EPA 8260B
n-Butylbenzene	EPA 8260B
n-Propylbenzene	EPA 8260B
p-Isopropyltoluene (P-Cymene)	EPA 8260B
sec-Butylbenzene	EPA 8260B
Styrene	EPA 8260B
tert-Butylbenzene	EPA 8260B
Toluene	EPA 8021B
	EPA 8260B
Total Xylenes	EPA 8021B
	EPA 8260B
Purgeable Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260B
1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
1,1-Dichloroethane	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,1-Dichloropropene	EPA 8260B
1,2,3-Trichloropropane	EPA 8260B

Serial No.: 30900

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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Revised September 25, 2006

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1795 INDUSTRIAL DRIVE
GREEN BAY, WI 54302

NY Lab Id No: 11887
EPA Lab Code: W101104

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All approved analytes are listed below:

Purgeable Halocarbons	
1,2-Dibromo-3-chloropropane	EPA 8260B
1,2-Dichloroethane	EPA 8260B
1,2-Dichloropropane	EPA 8260B
1,3-Dichloro-2-propanol	EPA 8260B
1,3-Dichloropropane	EPA 8260B
2,2-Dichloropropane	EPA 8260B
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260B
2-Chloroethylvinyl ether	EPA 8260B
3-Chloropropene (Allyl chloride)	EPA 8260B
Bromochloromethane	EPA 8260B
Bromodichloromethane	EPA 8260B
Bromoform	EPA 8260B
Bromomethane	EPA 8260B
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B
Chloroform	EPA 8260B
Chloromethane	EPA 8260B
cis-1,2-Dichloroethene	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
cis-1,4-Dichloro-2-butene	EPA 8260B
Dibromochloromethane	EPA 8260B
Dibromomethane	EPA 8260B
Dichlorodifluoromethane	EPA 8260B

Purgeable Halocarbons	
Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 8260B
trans-1,2-Dichloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B
trans-1,4-Dichloro-2-butene	EPA 8260B
Trichloroethene	EPA 8260B
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B
Purgeable Organics	
1,4-Dioxane	EPA 8260B
2-Butanone (Methylethyl ketone)	EPA 8260B
2-Hexanone	EPA 8260B
4-Methyl-2-Pentanone	EPA 8260B
Acetone	EPA 8260B
Acetonitrile	EPA 8260B
Carbon Disulfide	EPA 8260B
Ethyl Acetate	EPA 8260B
Isobutyl alcohol	EPA 8260B
Methyl tert-butyl ether	EPA 8021B
	EPA 8260B
Propionitrile	EPA 8260B
Vinyl acetate	EPA 8260B

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MR. NILS K. MELBERG
PACE ANALYTICAL SERVICES, INC. - GREEN BAY #1
1241 BELLEVUE STREET
GREEN BAY, WI 54302

NY Lab Id No: 11888
EPA Lab Code: WI01103

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Amines	
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Pyridine	EPA 625
	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 625
	EPA 8270C
Benzidine	EPA 625
	EPA 8270C
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA 625
	EPA 8270C
2-Chloronaphthalene	EPA 625
	EPA 8270C
Hexachlorobenzene	EPA 625
	EPA 8270C
Hexachlorobutadiene	EPA 625
	EPA 8270C
Chlorinated Hydrocarbons	
Hexachlorocyclopentadiene	EPA 625
	EPA 8270C
Hexachloroethane	EPA 625
	EPA 8270C
Demand	
Biochemical Oxygen Demand	SM 18-20 5210B
Carbonaceous BOD	SM 18-20 5210B
Chemical Oxygen Demand	EPA 410.4
Haloethers	
4-Bromophenylphenyl ether	EPA 625
	EPA 8270C
4-Chlorophenylphenyl ether	EPA 625
	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 625
	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 625
	EPA 8270C
Bis(2-chloroethyl)ether	EPA 625
	EPA 8270C
Mineral	
Acidity	EPA 305.1
Alkalinity	EPA 310.2

Serial No.: 30872

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER
Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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1241 BELLEVUE STREET
GREEN BAY, WI 54302

NY Lab Id No: 11888
EPA Lab Code: WI01103

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Mineral	
Chloride	EPA 300.0
	EPA 9056
Fluoride, Total	EPA 300.0
	EPA 9056
Hardness, Total	SM 18-20 2340B
Sulfate (as SO4)	EPA 300.0
	EPA 9056
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 625
	EPA 8270C
2,6-Dinitrotoluene	EPA 625
	EPA 8270C
Isophorone	EPA 625
	EPA 8270C
Nitrobenzene	EPA 625
	EPA 8270C
Nitrosoamines	
N-Nitrosodimethylamine	EPA 625
	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270C
N-Nitrosodiphenylamine	EPA 625
Nitrosoamines	
N-Nitrosodiphenylamine	EPA 8270C
Nutrient	
Ammonia (as N)	EPA 350.1
Kjeldahl Nitrogen, Total	EPA 351.2
Nitrate (as N)	EPA 300.0
	EPA 353.2
	EPA 9056
Nitrite (as N)	EPA 300.0
	EPA 353.2
	EPA 9056
Phosphorus, Total	EPA 365.4
Phthalate Esters	
Benzyl butyl phthalate	EPA 625
	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270C
Diethyl phthalate	EPA 625
	EPA 8270C
Dimethyl phthalate	EPA 625
	EPA 8270C
Di-n-butyl phthalate	EPA 625
	EPA 8270C

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Antonia C. Novello, M.D., M.P.H., Dr.P.H.

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. NILS K. MELBERG
PACE ANALYTICAL SERVICES, INC. - GREEN BAY #1
1241 BELLEVUE STREET
GREEN BAY, WI 54302

NY Lab Id No: 11888
EPA Lab Code: WI01103

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All approved analytes are listed below:

Phthalate Esters	
Di-n-octyl phthalate	EPA 625
	EPA 8270C
Polynuclear Aromatics	
Acenaphthene	EPA 625
	EPA 8270C
Acenaphthylene	EPA 625
	EPA 8270C
Anthracene	EPA 625
	EPA 8270C
Benzo(a)anthracene	EPA 625
	EPA 8270C
Benzo(a)pyrene	EPA 625
	EPA 8270C
Benzo(b)fluoranthene	EPA 625
	EPA 8270C
Benzo(ghi)perylene	EPA 625
	EPA 8270C
Benzo(k)fluoranthene	EPA 625
	EPA 8270C
Chrysene	EPA 625
	EPA 8270C
Dibenzo(a,h)anthracene	EPA 625
Dibenzo(a,h)anthracene	EPA 8270C
Fluoranthene	EPA 625
	EPA 8270C
Fluorene	EPA 625
	EPA 8270C
Indeno(1,2,3-cd)pyrene	EPA 625
	EPA 8270C
Naphthalene	EPA 625
	EPA 8270C
Phenanthrene	EPA 625
	EPA 8270C
Pyrene	EPA 625
	EPA 8270C
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 625
	EPA 8270C
2,4-Dichlorophenol	EPA 625
	EPA 8270C
2,4-Dimethylphenol	EPA 625
	EPA 8270C
2,4-Dinitrophenol	EPA 625

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Priority Pollutant Phenols	
2,4-Dinitrophenol	EPA 8270C
2,6-Dichlorophenol	EPA 8270C
2-Chlorophenol	EPA 625
	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 625
	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 625
	EPA 8270C
3-Methylphenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 625
	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 625
	EPA 8270C
Pentachlorophenol	EPA 625
	EPA 8270C
Phenol	EPA 625
	EPA 8270C
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 625
	EPA 8270C
Purgeable Aromatics	
1,3-Dichlorobenzene	EPA 625
	EPA 8270C
1,4-Dichlorobenzene	EPA 625
	EPA 8270C
Residue	
Solids, Total	EPA 160.3
Solids, Total Dissolved	EPA 160.1
Solids, Total Suspended	EPA 160.2
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
Acetophenone	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C
Wastewater Metals I	
Barium, Total	EPA 6010B
	EPA 6020
Cadmium, Total	EPA 6010B
	EPA 6020
Calcium, Total	EPA 6010B
Chromium, Total	EPA 6010B
	EPA 6020

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Wastewater Metals I	
Copper, Total	EPA 6010B
	EPA 6020
Iron, Total	EPA 6010B
Lead, Total	EPA 6010B
	EPA 6020
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
	EPA 6020
Nickel, Total	EPA 6010B
	EPA 6020
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
	EPA 6020
Sodium, Total	EPA 6010B
Wastewater Metals II	
Aluminum, Total	EPA 6010B
	EPA 6020
Antimony, Total	EPA 6010B
	EPA 6020
Arsenic, Total	EPA 6010B
	EPA 6020
Beryllium, Total	EPA 6010B

Wastewater Metals II	
Beryllium, Total	EPA 6020
Chromium VI	EPA 7196A
	SM 18-19 3500-Cr D
Mercury, Total	EPA 7470A
Selenium, Total	EPA 6010B
	EPA 6020
Vanadium, Total	EPA 6010B
	EPA 6020
Zinc, Total	EPA 6010B
	EPA 6020
Wastewater Metals III	
Cobalt, Total	EPA 6010B
	EPA 6020
Molybdenum, Total	EPA 6010B
	EPA 6020
Thallium, Total	EPA 6010B
	EPA 6020
Tin, Total	EPA 6010B
Titanium, Total	EPA 6010B
Wastewater Miscellaneous	
Boron, Total	EPA 6010B
Bromide	EPA 300.0

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Wastewater Miscellaneous

Bromide	EPA 9056
Color	EPA 110.2
Cyanide, Total	EPA 335.4
	EPA 9012A
Hydrogen Ion (pH)	EPA 150.1
	EPA 9040B
Phenols	EPA 420.2
	EPA 9065
Specific Conductance	EPA 120.1
	EPA 9050
Sulfide (as S)	EPA 376.1
	EPA 9034

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All approved analytes are listed below:

Amines	
1,2-Diphenylhydrazine	EPA 8270C
2-Nitroaniline	EPA 8270C
3-Nitroaniline	EPA 8270C
4-Chloroaniline	EPA 8270C
4-Nitroaniline	EPA 8270C
Aniline	EPA 8270C
Carbazole	EPA 8270C
Benzidines	
3,3' -Dichlorobenzidine	EPA 8270C
Benzidine	EPA 8270C
Characteristic Testing	
Corrosivity	EPA 9040B
Ignitability	EPA 1010
TCLP	EPA 1311
Chlorinated Hydrocarbons	
1,2,4-Trichlorobenzene	EPA 8270C
2-Chloronaphthalene	EPA 8270C
Hexachlorobenzene	EPA 8270C
Hexachlorobutadiene	EPA 8270C
Hexachlorocyclopentadiene	EPA 8270C
Hexachloroethane	EPA 8270C
Haloethers	
4-Bromophenylphenyl ether	EPA 8270C
4-Chlorophenylphenyl ether	EPA 8270C
Bis (2-chloroisopropyl) ether	EPA 8270C
Bis(2-chloroethoxy)methane	EPA 8270C
Bis(2-chloroethyl)ether	EPA 8270C
Metals I	
Barium, Total	EPA 6010B
	EPA 6020
Cadmium, Total	EPA 6010B
	EPA 6020
Calcium, Total	EPA 6010B
Chromium, Total	EPA 6010B
	EPA 6020
Copper, Total	EPA 6010B
	EPA 6020
Iron, Total	EPA 6010B
Lead, Total	EPA 6010B
	EPA 6020
Magnesium, Total	EPA 6010B
Manganese, Total	EPA 6010B
	EPA 6020
Nickel, Total	EPA 6010B
	EPA 6020

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Metals I	
Potassium, Total	EPA 6010B
Silver, Total	EPA 6010B
	EPA 6020
Sodium, Total	EPA 6010B
Metals II	
Aluminum, Total	EPA 6010B
	EPA 6020
Antimony, Total	EPA 6010B
	EPA 6020
Arsenic, Total	EPA 6010B
	EPA 6020
Beryllium, Total	EPA 6010B
	EPA 6020
Mercury, Total	EPA 7471A
Selenium, Total	EPA 6010B
	EPA 6020
Vanadium, Total	EPA 6010B
	EPA 6020
Zinc, Total	EPA 6010B
	EPA 6020
Metals III	
Cobalt, Total	EPA 6010B

Metals III	
Cobalt, Total	EPA 6020
Molybdenum, Total	EPA 6010B
	EPA 6020
Thallium, Total	EPA 6010B
	EPA 6020
Tin, Total	EPA 6010B
Titanium, Total	EPA 6010B
Minerals	
Bromide	EPA 9056
Miscellaneous	
Boron, Total	EPA 6010B
Cyanide, Total	EPA 9012A
Hydrogen Ion (pH)	EPA 9040B
	EPA 9045C
Phenols	EPA 9065
Specific Conductance	EPA 9050
Sulfide (as S)	EPA 9030B
	EPA 9034
Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8270C
2,6-Dinitrotoluene	EPA 8270C
Isophorone	EPA 8270C

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Nitroaromatics and Isophorone	
Nitrobenzene	EPA 8270C
Pyridine	EPA 8270C
Nitrosoamines	
N-Nitrosodimethylamine	EPA 8270C
N-Nitrosodi-n-propylamine	EPA 8270C
N-Nitrosodiphenylamine	EPA 8270C
Nutrients	
Nitrate (as N)	EPA 9056
Nitrite (as N)	EPA 9056
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270C
Bis(2-ethylhexyl) phthalate	EPA 8270C
Diethyl phthalate	EPA 8270C
Dimethyl phthalate	EPA 8270C
Di-n-butyl phthalate	EPA 8270C
Di-n-octyl phthalate	EPA 8270C
Polynuclear Aromatic Hydrocarbons	
Acenaphthene	EPA 8270C
Acenaphthylene	EPA 8270C
Anthracene	EPA 8270C
Benzo(a)anthracene	EPA 8270C
Polynuclear Aromatic Hydrocarbons	
Benzo(a)pyrene	EPA 8270C
Benzo(b)fluoranthene	EPA 8270C
Benzo(ghi)perylene	EPA 8270C
Benzo(k)fluoranthene	EPA 8270C
Chrysene	EPA 8270C
Dibenzo(a,h)anthracene	EPA 8270C
Fluoranthene	EPA 8270C
Fluorene	EPA 8270C
Indeno(1,2,3-cd)pyrene	EPA 8270C
Naphthalene	EPA 8270C
Phenanthrene	EPA 8270C
Pyrene	EPA 8270C
Priority Pollutant Phenols	
2,4,5-Trichlorophenol	EPA 8270C
2,4,6-Trichlorophenol	EPA 8270C
2,4-Dichlorophenol	EPA 8270C
2,4-Dimethylphenol	EPA 8270C
2,4-Dinitrophenol	EPA 8270C
2,6-Dichlorophenol	EPA 8270C
2-Chlorophenol	EPA 8270C
2-Methyl-4,6-dinitrophenol	EPA 8270C
2-Methylphenol	EPA 8270C
2-Nitrophenol	EPA 8270C

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Priority Pollutant Phenols	
3-Methylphenol	EPA 8270C
4-Chloro-3-methylphenol	EPA 8270C
4-Methylphenol	EPA 8270C
4-Nitrophenol	EPA 8270C
Pentachlorophenol	EPA 8270C
Phenol	EPA 8270C
Purgeable Aromatics	
1,2-Dichlorobenzene	EPA 8270C
1,3-Dichlorobenzene	EPA 8270C
1,4-Dichlorobenzene	EPA 8270C
Semi-Volatile Organics	
2-Methylnaphthalene	EPA 8270C
Acetophenone	EPA 8270C
Benzoic Acid	EPA 8270C
Benzyl alcohol	EPA 8270C
Dibenzofuran	EPA 8270C

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