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Golden, CO 80403

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April 13, 2015

Ms. Kelley Keenan  
Environmental Testing Solutions, Inc.  
351 Depot Street  
Asheville, NC 28801  
USA

Dear Kelley,

Thank you for participating in the WP0215 Water Pollution Proficiency Testing Study. Enclosed is your final report, which has been carefully reviewed by the PT specialists at Phenova. This report presents some additional sections and features which will give you more information on the study data for the standards that were reported by your laboratory and more information regarding the overall performance of your laboratory in relation to other study participants.

The enclosed report is in two sections, the "Evaluation Report" and the "Statistical Report". The "Evaluation Report" contains the evaluation of your reported data as well the reported method, analysis date and analyst. The "Evaluation Report" is an updated and enhanced version of the reports you previously received at the conclusion of our PT studies. The "Statistical Report" contains your passing percentage as well as statistics from the study for the analytes reported by your laboratory.

For any analyte falling outside the established acceptance limits, our PT management staff would like to assist you in determining the most appropriate course of corrective action for your facility. Please contact us at any time if we may be of service to you.

Thank you again for participating in the WP0215 Water Pollution Proficiency Testing Study. We appreciate working with you and look forward to our next study. If you have any questions, please call us at 866-942-2978.

**Report Definitions:**

**Assigned Value**

The Assigned Value is determined from the study mean, gravimetric and volumetric true concentration of an analyte to be analyzed, calculation and/or an appropriate reference value as stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Document (current version), the National Environmental Laboratory Accreditation Conference (NELAC) criteria (ref: NELAC FOT tables, NELAC PT Committee) and other documents distributed by accrediting agencies as applicable.

**Evaluation Limits**

Acceptance Limits are derived from fixed limits, coefficients, constants and calculations stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Documents (current version), the National Environmental Laboratory Accreditation Conference (NELAC) criteria (ref: NELAC PT FOT tables, NELAC PT Committee) and other documents distributed by accrediting agencies as applicable.

**Evaluation**

*Acceptable*

The reported value falls within the Acceptance Limits.

*Not Acceptable*

The reported value falls outside the Acceptance Limits.

*No Evaluation*

The reported value is non-numeric and can not be evaluated.

*NR*

As required by the NELAC standards and requested by state authorities, any analyte purchased but not reported by your facility is listed as NR (Not Reported).

**Study Mean and Standard Deviation**

The mean and standard deviation are calculated from the study data using robust statistical calculations when possible. Other statistical calculations may be used if robust statistical calculations are not possible. The displayed values are independent of any statistical calculations required for the calculation of the analyte evaluation limits.

This report must not be reproduced except in full, without the written approval of Phenova.

This report must not be used to claim product certification, approval, or endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the federal government.



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State Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your WP0215 final results to the following state agencies:  
KY, NC and SC

Other Regulatory Agency Request(s):

No requests were made to send a copy of your WP0215 final results to an agency.

Third Party Request(s):

No requests were made to send a copy of your WP0215 final results to a third party.

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## Final Report - Water Pollution Proficiency Testing

### Study: WP0215

Opening Date: February 9, 2015 - Closing Date: March 26, 2015

Laboratory: Environmental Testing Solutions, Inc.  
351 Depot Street  
Asheville, NC 28801  
USA

Contact: Ms. Kelley Keenan  
828-350-9364

EPA Lab ID: NC01230

### Demand (PT-DEM-WP) Lot #: 8153-07

| NELAC Code | Analyte | Analysis Date | Analyst | Method Code | Method Description        | Units | Assigned Value | Result | Acceptance Limits | Evaluation |
|------------|---------|---------------|---------|-------------|---------------------------|-------|----------------|--------|-------------------|------------|
| 1530       | BOD     | 2/18/2015     | KEK     | 20135017    | SM 5210 B-2001, Rev. 2011 | mg/L  | 106            | 66     | 35.2 - 116        | Acceptable |
| 1555       | CBOD    | 3/4/2015      | KEK     | 20135017    | SM 5210 B-2001, Rev. 2011 | mg/L  | 106            | 63     | 27.2 - 116        | Acceptable |
| 1565       | COD     | 2/18/2015     | KEK     | 60003001    | Hach 8000                 | mg/L  | 108            | 105    | 82.9 - 129        | Acceptable |
| 2040       | TOC     |               |         |             |                           | mg/L  | 42.6           |        | 35.4 - 49.6       | NR         |

### Minerals 1 (PT-MIN1-WP) Lot #: 8153-08

| NELAC Code | Analyte                                 | Analysis Date | Analyst | Method Code | Method Description                                     | Units | Assigned Value | Result | Acceptance Limits | Evaluation |
|------------|---|---------------|---------|-------------|--|-------|----------------|--------|-------------------|------------|
| 1505       | Total Alkalinity(as CaCO <sub>3</sub> ) | 2/13/2015     | KEK     | 20045414    | SM 2320 B-1997, Rev. 2011                              | mg/L  | 353            | 343    | 300 - 406         | Acceptable |
| 1540       | Bromide                                 |               |         |             |  | mg/L  | 4.99           |        | 4.11 - 5.86       | NR         |
| 1575       | Chloride                                | 2/26/2015     | KEK     | 20079010    | SM 4500 Cl- C-1997, Rev. 2011                          | mg/L  | 50.1           | 50     | 43.4 - 56.9       | Acceptable |
| 1730       | Fluoride                                |               |         |             |  | mg/L  | 2.89           |        | 2.33 - 3.34       | NR         |
| 2000       | Sulfate                                 | 2/27/2015     | KEK     | 20132836    | SM 4500 SO <sub>4</sub> <sup>-</sup> E-1997, Rev. 2011 | mg/L  | 19.3           | 18.3   | 15.2 - 22.6       | Acceptable |

#### Additional State Specific Analytes

|      |                        |  |  |  |  |      |      |  |            |    |
|------|------------------------|--|--|--|--|------|------|--|------------|----|
| 1813 | Total Inorganic Carbon |  |  |  |  | mg/L | 84.3 |  | 67.4 - 101 | NR |
|------|------------------------|--|--|--|--|------|------|--|------------|----|

### Minerals 2 - Hardness (PT-MIN2-WP) Lot #: 8153-102

| NELAC Code | Analyte                                  | Analysis Date | Analyst | Method Code | Method Description        | Units | Assigned Value | Result | Acceptance Limits | Evaluation |
|------------|--|---------------|---------|-------------|---------------------------|-------|----------------|--------|-------------------|------------|
| 1035       | Calcium                                  |               |         |             |                           | mg/L  | 17.1           |        | 14.6 - 19.7       | NR         |
| 1550       | Calcium Hardness (as CaCO <sub>3</sub> ) |               |         |             |                           | mg/L  | 42.8           |        | 36.4 - 49.2       | NR         |
| 1755       | Total Hardness (as CaCO <sub>3</sub> )   | 2/13/2015     | KEK     | 20047410    | SM 2340 C-1997, Rev. 2011 | mg/L  | 94.6           | 93     | 80.4 - 109        | Acceptable |
| 1085       | Magnesium                                |               |         |             |                           | mg/L  | 12.6           |        | 10.7 - 14.5       | NR         |
| 1125       | Potassium                                |               |         |             |                           | mg/L  | 31.4           |        | 25.1 - 37.7       | NR         |
| 1155       | Sodium                                   |               |         |             |                           | mg/L  | 38.8           |        | 31.0 - 46.6       | NR         |

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## Final Report - Water Pollution Proficiency Testing

### Study: WP0215

Opening Date: February 9, 2015 - Closing Date: March 26, 2015

Laboratory: Environmental Testing Solutions, Inc.  
351 Depot Street  
Asheville, NC 28801  
USA

Contact: Ms. Kelley Keenan  
828-350-9364

EPA Lab ID: NC01230

| Specific Conductance (PT-COND-WP)  |                                      |               |         |             |                               |          |                |        |                   | Lot #: 8153-72 |
|------------------------------------|--------------------------------------|---------------|---------|-------------|-------------------------------|----------|----------------|--------|-------------------|----------------|
| NELAC Code                         | Analyte                              | Analysis Date | Analyst | Method Code | Method Description            | Units    | Assigned Value | Result | Acceptance Limits | Evaluation     |
| 1610                               | Specific Conductance (25°C)          | 2/12/2015     | KEK     | 20048413    | SM 2510 B-1997, Rev. 2011     | µmhos/cm | 852            | 861    | 767 - 937         | Acceptable     |
| Solids (PT-SOL-WP)                 |                                      |               |         |             |                               |          |                |        |                   | Lot #: 8153-09 |
| NELAC Code                         | Analyte                              | Analysis Date | Analyst | Method Code | Method Description            | Units    | Assigned Value | Result | Acceptance Limits | Evaluation     |
| 1955                               | Total Dissolved Solids at 180° (TFR) | 2/13/2015     | KEK     | 20050424    | SM 2540 C-1997, Rev. 2011     | mg/L     | 543            | 530    | 489 - 597         | Acceptable     |
| 1960                               | Non-Filterable Residue (TSS)         | 2/27/2015     | KEK     | 20051018    | SM 2540 D-1997, Rev. 2011     | mg/L     | 68.6           | 66     | 55.2 - 77.0       | Acceptable     |
| 1950                               | Total Solids                         |               |         |             |                               | mg/L     | 612            |        | 551 - 673         | NR             |
| Nutrients 1 - Simple (PT-NUT1-WP)  |                                      |               |         |             |                               |          |                |        |                   | Lot #: 8153-10 |
| NELAC Code                         | Analyte                              | Analysis Date | Analyst | Method Code | Method Description            | Units    | Assigned Value | Result | Acceptance Limits | Evaluation     |
| 1515                               | Ammonia as N                         | 2/19/2015     | KEK     | 20109211    | SM 4500 NH3 D-1997, Rev. 2011 | mg/L     | 6.60           | 5.74   | 5.18 - 8.04       | Acceptable     |
| 1810                               | Nitrate as N                         |               |         |             |                               | mg/L     | 16.7           |        | 13.9 - 19.4       | NR             |
| 1820                               | Nitrate and Nitrite as N             |               |         |             |                               | mg/L     | 16.7           |        | 13.9 - 19.3       | NR             |
| 1870                               | Orthophosphate as P                  |               |         |             |                               | mg/L     | 3.20           |        | 2.72 - 3.68       | NR             |
| Additional State Specific Analytes |                                      |               |         |             |                               |          |                |        |                   |                |
| 1712                               | Total Dissolved Phosphorus           |               |         |             |                               | mg/L     | 3.20           |        | 2.72 - 3.68       | NR             |
| 1647                               | Dissolved Nitrogen                   |               |         |             |                               | mg/L     | 23.3           |        | 19.5 - 26.9       | NR             |
| 1827                               | Total Nitrogen                       |               |         |             |                               | mg/L     | 23.3           |        | 19.5 - 26.9       | NR             |
| pH (PT-PH-WP)                      |                                      |               |         |             |                               |          |                |        |                   | Lot #: 8153-15 |
| NELAC Code                         | Analyte                              | Analysis Date | Analyst | Method Code | Method Description            | Units    | Assigned Value | Result | Acceptance Limits | Evaluation     |
| 1900                               | pH                                   | 2/12/2015     | KEK     | 20105015    | SM 4500 H+ B-2000, Rev. 2011  | S.U.     | 8.49           | 8.3    | 8.29 - 8.69       | Acceptable     |

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Contact: Ms. Kelley Keenan  
828-350-9364

EPA Lab ID: NC01230

| Residual Chlorine Low Level (PT-CLLL-WP) |                         |               |         |             |                           |       |                |        |                   | Lot #: 8153-94 |
|--|-------------------------|---------------|---------|-------------|---------------------------|-------|----------------|--------|-------------------|----------------|
| NELAC Code                               | Analyte                 | Analysis Date | Analyst | Method Code | Method Description        | Units | Assigned Value | Result | Acceptance Limits | Evaluation     |
| 1940                                     | Total Residual Chlorine | 2/24/2015     | KW      | 60006522    | Orion Electrode, 1977     | µg/L  | 124            | 117    | 63.6 - 184        | Acceptable     |
| Settleable Solids (PT-SSOL-WP)           |                         |               |         |             |                           |       |                |        |                   | Lot #: 8153-17 |
| NELAC Code                               | Analyte                 | Analysis Date | Analyst | Method Code | Method Description        | Units | Assigned Value | Result | Acceptance Limits | Evaluation     |
| 1965                                     | Settleable Solids       | 2/12/2015     | KEK     | 20052011    | SM 2540 F-1997, Rev. 2011 | mL/L  | 8.43           | 9.0    | 5.91 - 11.7       | Acceptable     |
| Turbidity (PT-TURB-WP)                   |                         |               |         |             |                           |       |                |        |                   | Lot #: 8153-20 |
| NELAC Code                               | Analyte                 | Analysis Date | Analyst | Method Code | Method Description        | Units | Assigned Value | Result | Acceptance Limits | Evaluation     |
| 2055                                     | Turbidity               | 2/26/2015     | KEK     | 20042619    | SM 2130 B-2001, Rev. 2011 | NTU   | 19.7           | 17     | 16.5 - 23.0       | Acceptable     |



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## PT Study Score Report

EPA ID: NC01230  
 Laboratory: Environmental Testing Solutions, Inc.  
 351 Depot Street  
 Asheville, NC 28801  
 USA

| Study Number | Number of Reported Results | Number of Passing Results | Percent Passing |
|--------------|----------------------------|---------------------------|-----------------|
| WP0215       | 15                         | 15                        | 100%            |

### Report Definitions:

- Number of Reported Results**      The number of results reported which could be evaluated. Results receiving an evaluation of "NR" or "No Evaluation" are not included.
- Number of Passing Results**      The number of results reported receiving an evaluation of "Acceptable" or "Check for Error".
- Percent Passing**                      The percentage of results reported receiving an evaluation of "Acceptable" or "Check for Error".

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## Statistical Summary Report - Water Pollution Proficiency Testing

**Opening Date: February 9, 2015 - Closing Date: March 26, 2015**

Laboratory: Environmental Testing Solutions, Inc.  
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USA

Contact: Ms. Kelley Keenan  
828-350-9364

EPA Lab ID: NC01230

| Demand (PT-DEM-WP) Lot #: 8153-07                  |  |          |            |                          |                        |                         |
|--|--|----------|------------|--------------------------|------------------------|-------------------------|
| NELAC Code   | Analyte                                  | Units    | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1530   | BOD                                      | mg/L     | 68.2       | 12.2                     | 33.2                   | 109                     |
| 1555   | CBOD                                     | mg/L     | 63.4       | 9.38                     | 25.7                   | 109                     |
| 1565   | COD                                      | mg/L     | 107        | 7.99                     | 76.8                   | 119                     |
| 2040   | TOC                                      | mg/L     | 45.2       | 4.72                     | 83.1                   | 116                     |
| Minerals 1 (PT-MIN1-WP) Lot #: 8153-08             |  |          |            |                          |                        |                         |
| NELAC Code   | Analyte                                  | Units    | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1505   | Total Alkalinity(as CaCO <sub>3</sub> )  | mg/L     | 349        | 10.3                     | 85.0                   | 115                     |
| 1540   | Bromide                                  | mg/L     | 4.78       | 0.383                    | 82.4                   | 117                     |
| 1575   | Chloride                                 | mg/L     | 50.8       | 2.01                     | 86.6                   | 114                     |
| 1730   | Fluoride                                 | mg/L     | 2.89       | 0.0989                   | 80.6                   | 116                     |
| 2000   | Sulfate                                  | mg/L     | 18.8       | 0.926                    | 78.8                   | 117                     |
| Additional State Specific Analytes                 |  |          |            |                          |                        |                         |
| 1813   | Total Inorganic Carbon                   | mg/L     | 48.8       | 0.00                     | 80.0                   | 120                     |
| Minerals 2 - Hardness (PT-MIN2-WP) Lot #: 8153-102 |  |          |            |                          |                        |                         |
| NELAC Code   | Analyte                                  | Units    | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1035   | Calcium                                  | mg/L     | 17.4       | 1.21                     | 85.4                   | 115                     |
| 1550   | Calcium Hardness (as CaCO <sub>3</sub> ) | mg/L     | 41.4       | 1.31                     | 85.0                   | 115                     |
| 1755   | Total Hardness (as CaCO <sub>3</sub> )   | mg/L     | 90.8       | 4.83                     | 85.0                   | 115                     |
| 1085   | Magnesium                                | mg/L     | 11.7       | 0.486                    | 84.9                   | 115                     |
| 1125   | Potassium                                | mg/L     | 31.1       | 1.67                     | 79.9                   | 120                     |
| 1155   | Sodium                                   | mg/L     | 39.1       | 1.46                     | 79.9                   | 120                     |
| Specific Conductance (PT-COND-WP) Lot #: 8153-72   |  |          |            |                          |                        |                         |
| NELAC Code   | Analyte                                  | Units    | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1610   | Specific Conductance (25°C)              | µmhos/cm | 858        | 14.5                     | 90.0                   | 110                     |
| Solids (PT-SOL-WP) Lot #: 8153-09                  |  |          |            |                          |                        |                         |
| NELAC Code   | Analyte                                  | Units    | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1955   | Total Dissolved Solids at 180° (TFR)     | mg/L     | 530        | 11.6                     | 90.1                   | 110                     |
| 1960   | Non-Filterable Residue (TSS)             | mg/L     | 62.6       | 4.61                     | 80.5                   | 112                     |
| 1950   | Total Solids                             | mg/L     | 595        | 6.98                     | 90.0                   | 110                     |

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Contact: Ms. Kelley Keenan  
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EPA Lab ID: NC01230

| Nutrients 1 - Simple (PT-NUT1-WP) <span style="float: right;">Lot #: 8153-10</span>        |                            |       |            |                          |                        |                         |
|--|----------------------------|-------|------------|--------------------------|------------------------|-------------------------|
| NELAC Code   | Analyte                    | Units | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1515   | Ammonia as N               | mg/L  | 6.66       | 0.457                    | 78.5                   | 122                     |
| 1810   | Nitrate as N               | mg/L  | 16.4       | 0.764                    | 83.2                   | 116                     |
| 1820   | Nitrate and Nitrite as N   | mg/L  | 16.5       | 0.706                    | 83.2                   | 116                     |
| 1870   | Orthophosphate as P        | mg/L  | 3.20       | 0.110                    | 85.0                   | 115                     |
| Additional State Specific Analytes   |                            |       |            |                          |                        |                         |
| 1712   | Total Dissolved Phosphorus | mg/L  | 3.82       | 1.49                     | 85.0                   | 115                     |
| 1647   | Dissolved Nitrogen         | mg/L  | 21.7       | 0.497                    | 83.7                   | 115                     |
| 1827   | Total Nitrogen             | mg/L  | 22.7       | 1.31                     | 83.7                   | 115                     |
| pH (PT-PH-WP) <span style="float: right;">Lot #: 8153-15</span>                            |                            |       |            |                          |                        |                         |
| NELAC Code   | Analyte                    | Units | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1900   | pH                         | S.U.  | 8.39       | 0.104                    | 97.6                   | 102                     |
| Residual Chlorine Low Level (PT-CLLL-WP) <span style="float: right;">Lot #: 8153-94</span> |                            |       |            |                          |                        |                         |
| NELAC Code   | Analyte                    | Units | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1940   | Total Residual Chlorine    | µg/L  | 116        | 15.8                     | 51.3                   | 148                     |
| Settleable Solids (PT-SSOL-WP) <span style="float: right;">Lot #: 8153-17</span>           |                            |       |            |                          |                        |                         |
| NELAC Code   | Analyte                    | Units | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 1965   | Settleable Solids          | mL/L  | 7.99       | 0.947                    | 70.1                   | 139                     |
| Turbidity (PT-TURB-WP) <span style="float: right;">Lot #: 8153-20</span>                   |                            |       |            |                          |                        |                         |
| NELAC Code   | Analyte                    | Units | Study Mean | Study Standard Deviation | Low Acceptance Limit % | High Acceptance Limit % |
| 2055   | Turbidity                  | NTU   | 18.9       | 1.02                     | 83.8                   | 117                     |