

**WS Performance Summary**  
**July 2007 WS**  
**APG Customer Code: 999999**

**Watson**  
**Main Facility**  
**500 Laboratory Road**  
**Testville, OH 45714**

**\* CLTI D48878\***

## Water Supply (WS) Proficiency Testing Program Report

### **Introduction:**

The Analytical Products Group, Inc. Proficiency Testing Program has been designed to evaluate your laboratory's performance against other participating laboratories on the same set of standards. This report has been specifically prepared for your organization to assist you in ensuring that your procedures are in-control. Therefore, in most cases sample levels are not designed to challenge the detection limits of the method.

The Analytical Products Group Proficiency Testing Program is certified to meet all of the following requirements:

- This Proficiency Testing Program is accredited by A2LA for the design, preparation, and operation of PT schemes that meet the requirements of ISO Guide 43-1:1997, ILAC G13:2000, EPA National Standards for Water Proficiency Testing Studies Criteria Document, and relevant sections of ISO Guide 34:200, ISO/IEC 17025:2005 and 2003 NELAC Chapter 2 and Chapter 5 (Certification Code 2430.01).
- Analytical Products Group, Inc. Quality System is registered with DNV Certification to meet the ISO 9001 standard to design, manufacture, and distribute chemical reference materials and operate Proficiency Testing Programs (Certificate # 98-HOU-AQ-9513)
- For applicable analytes, this Proficiency Testing Program is certified to meet all requirements as specified in the US EPA National Standards for Water Proficiency Testing Program Criteria Document (NERL-Ci-0045).

All analytes in this report are covered by APG's A2LA accreditation. This report must not be used to claim product certification, approval, or endorsement by A2LA, or any agency of the federal government.

### **Report Layout**

This report contains the following sub-reports:

**Introduction** - This section is the general introduction to the Analytical Products Group, Inc. Proficiency Testing Program as well as all of the certifications that the organization maintains.

**Terms and Definitions** - Defines all of the terms used throughout the report. This is an excellent section to refer to first if you have any questions.

**Comment Report** - Contains comments submitted to Analytical Products Group by the program participants or comments by Analytical Products Group to program participants concerning unusual characteristics of the data set or problems with standards which could influence the interpretation of the data. Please review this section thoroughly before examining your data.

**Exception Report** - This report is a summary of all of the analytes that resulted in an Evaluation of "Not Acceptable" for your laboratory. The Exception Report is designed to very quickly identify for your laboratory the areas that may require your immediate attention.

**Performance Evaluation Summary Report** - Provides a summary of all of your data for each analyte. This summary is formatted similar to the US EPA DMR-QA Reports.

**Detail Report** - This report lists all the details of your data. Also included in this section are useful graphs indicating the APG Assigned Value, the Mean, the Acceptance Limits and your Reported Value. Another graph included in this section shows your Z score for the analyte of interest.

The goal of this report is to provide your laboratory with the information you need to monitor and improve your quality. If you have any questions or feedback, please give us a call (800-272-4442). Thank you again for choosing Analytical Products Group, Inc. as your Proficiency Testing Provider.

Sincerely,



Michael D. Haller  
Operations Manager

## Terms & Definitions

**Analyte** - Name of the analyte of interest as found in the US EPA National Standards for Water Proficiency Testing Program Criteria Document (NERL-Ci-0045) or NELAC Fields of Testing List.

**NELAC Analyte Code** - This value is the code given to the analyte by NELAC. These codes can be found in the US EPA National Standards for Water Proficiency Testing Program Criteria Document (NERL-Ci-0045) or the NELAC Fields of Testing List.

**APG Assigned Value** - This value is the calculated True Value of the standard based upon the actual composition of the standard in most cases.

**APG Certified Value** - This value is the result of the quality control testing performed on the sample by Analytical Products Group before the sample is shipped to the customer. Through this testing, the samples are traced against a NIST Standard Reference Material where available or an external standard if a NIST Standard Reference Material is not available. The reported Uncertainty of this value is expressed as two times the standard deviation (s) divided by the square root of the number of samples (n) tested (i.e.  $2s/\sqrt{n}$ ).

**Acceptance Range** - For applicable analytes, this range is calculated based upon the US EPA National Standards for Water Proficiency Testing Program Criteria Document (NERL-Ci-0045). For the Water Supply Program (WS), Acceptance Limits are defined as  $\pm$  two (2) Standard Deviations from the estimated mean or based on the fixed percentage as specified in the Criteria Document.

**Mean** - This value is the Mean Value calculated per the US EPA National Standards for Water Proficiency Testing Program Criteria Document (NERL-Ci-0045).

**Standard Deviation** - This value is the Standard Deviation calculated per the US EPA National Standards for Water Proficiency Testing Program Criteria Document (NERL-Ci-0045).

**Evaluation** - This value is determined by the Acceptance Limits and the Reported Value. Evaluation may have one of following values:

Value	Description
Acceptable	The Reported Value was within the Acceptable Limits or a less than (<) value was reported AND zero (0) was included in the Acceptance Limit Range AND the numeric part of the Reported Value was less than the upper limit of the Acceptance Limit.
Not Acceptable	The Reported Value is outside of the Acceptance Limits or a less than (<) value was reported AND zero (0) is not included in the Acceptance Limits range or the numeric part of the Reported Value was greater than the upper limit of the Acceptance Limit or a greater than value (>) was reported.
Not Evaluated	The Reported Value was a text value which could not be evaluated.
Blank	No data was reported for this analyte [the analyte was not spiked].
Not Reported	The laboratory did not submit a result for this analyte.

**Inter-Laboratory Statistics** - This data is a summary of all of the data from all study participants for the analyte of interest. Inter-Laboratory Statistics are only reported if a minimum number of laboratories analyzed and reported data for the analyte of interest.

## Terms & Definitions (continued)

**Laboratory Pass Percentage** - This is the percentage of study participants that reported values within the EPA Acceptance Limits for the analyte of interest.

**Product Level** - Often referred to as 'Program'. This value indicates which program the analyte of interest is a part of.

**Product Type** - To the right of each analyte in the performance summary is a code that designates the scope of the APG's accreditation for that analyte. An analyte designated as "NE" is applicable to NELAC and EPA requirements and ranges. An analyte designated as "N" is applicable to NELAC requirements and ranges. An analyte designated as "E" is applicable to EPA requirements and ranges. An analyte designated as "X" or without a designation is not covered by APG's accreditations.

**Reported Value** - This value is the result that was reported by your organization for the particular analyte. Every effort has been made to ensure correct data entry. Should you find a data entry error, please notify Analytical Products Group, Inc. and we will correct the error and re-issue the report. If the Reported Value is reported as a less than (<) figure, then the only way that the Evaluation will result in an "Acceptable" value is if the numeric part of the Reported Value (i.e. 8 if the Report Value were <8) is less than the upper limit of the Acceptance Range AND zero (0) is included in the Acceptance Range. Any other non-numeric value (i.e. BDL, ND, >10, etc.) cannot be evaluated and will return an Evaluation result of "No Evaluation". This method of evaluation is consistent with the US EPA National Standards for Water Proficiency Testing Program Criteria Document (NERL-Ci-0045).

**Study Mean** - This value is calculated using all reported values after the removal of outliers, which are removed using standard statistical methods. The Study Mean is only reported if a statistically acceptable number of laboratories report numeric results for the analyte.

**Study Standard Deviation** - This value is calculated using all reported values after the removal of outliers, which are removed using standard statistical methods. The Study Standard Deviation is only reported if a statistically acceptable number of laboratories report numeric results for the analyte.

**Z-Score** - This figure corresponds to how far your Reported Value was from the EPA Mean, reported in terms of EPA Standard Deviation units.

**Solids Standards** - Solids standards are individually prepared, therefore, each standard has a unique APG Assigned Value.

# Comment Report

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There are no comments to report.

## Performance Summary

APG Customer 999999      Laboratory Address  
 EPA Lab Code OH99999      Watson  
 Primary AA CA12345      500 Laboratory Road  
 A2LA Certification: 2430.01      Testville, OH 45714

Nelac Point Of Contact  
 Watson

WS July 2007 WS #7107

Study Print Date 01/29/2008  
 Study Shipment Date 07/16/2007  
 Study Closing Date 08/29/2007

**Product: pH**      **Lot Number: 120779**

Analyte	Units	NELAC Code	Reported Value	Assigned Value	Acceptance Range	ZScore	Method Code Method Desc.	Technology Code Technology Desc.	Evaluation
pH	N Units	1900	5.25	5.21	5.01-5.41	0.400	SM4500H IONICPROBE		Acceptable

**Product: Nutrients**      **Lot Number: 120538-121863-120540**

Analyte	Units	NELAC Code	Reported Value	Assigned Value	Acceptance Range	ZScore	Method Code Method Desc.	Technology Code Technology Desc.	Evaluation
Fluoride	N mg/L	1730	6.82	6.77	6.09-7.45	0.148	SM4500F IONSELECTIVE		Acceptable
Nitrate Nitrogen as N	N mg/L	1810		5.81	5.23-6.39				Not Reported
Nitrite as N	N mg/L	1840		0.560	0.476-0.644				Not Reported
Orthophosphate as P	N mg/L	1870		5.20	4.61-5.83				Not Reported

**Product: Residual Chlorine**      **Lot Number: 120537**

Analyte	Units	NELAC Code	Reported Value	Assigned Value	Acceptance Range	ZScore	Method Code Method Desc.	Technology Code Technology Desc.	Evaluation
Residual Free Chlorine	N mg/L	1945	2.47	2.84	2.35-3.33	1.51	SM4500CLG SPECTROPHOTOME T		Acceptable
Total Residual Chlorine	N mg/L	1940	2.79	2.84	2.41-3.26	0.213	20018808 SM18th4500CIB	401010 COLOR	Acceptable

**Product: Turbidity**      **Lot Number: 120511**

Analyte	Units	NELAC Code	Reported Value	Assigned Value	Acceptance Range	ZScore	Method Code Method Desc.	Technology Code Technology Desc.	Evaluation
Turbidity	N NTU	2055	5.91	5.98	5.27-7.06	0.568	SM2130 Nephelometric		Acceptable

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**Product: WS Total Coliform - Total Fecal  
 (Presence / Absence)**

Analyte	Units	NELAC Code	Reported Value	Assigned Value	Method Code Method Desc.	Technology Code Technology Desc.	Evaluation
Fecal Coliform/E. Coli. - 01	N Pres/Abs	2530	Absent	Absent	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 02	N Pres/Abs	2530	Absent	Absent	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 03	N Pres/Abs	2530	Absent	Absent	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 04	N Pres/Abs	2530	Present	Present	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 05	N Pres/Abs	2530	Absent	Absent	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 06	N Pres/Abs	2530	Present	Present	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 07	N Pres/Abs	2530	Absent	Absent	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 08	N Pres/Abs	2530	Present	Present	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 09	N Pres/Abs	2530	Absent	Absent	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - 10	N Pres/Abs	2530	Absent	Absent	SM9223 ReadyCult		Acceptable
Fecal Coliform/E. Coli. - Overall	N Pres/Abs	2530			SM9223 ReadyCult		Acceptable
Total Coliform - 01	N Pres/Abs	2500	Absent	Absent	SM9223 ReadyCult		Acceptable

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Nelac Point Of Contact  
 Watson

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**Product: WS Total Coliform - Total Fecal  
 (Presence / Absence)**

Analyte	Units	NELAC Code	Reported Value	Assigned Value	Method Code Method Desc.	Technology Code Technology Desc.	Evaluation
Total Coliform - 02	N Pres/Abs	2500	Absent	Absent	SM9223 ReadyCult		Acceptable
Total Coliform - 03	N Pres/Abs	2500	Absent	Absent	SM9223 ReadyCult		Acceptable
Total Coliform - 04	N Pres/Abs	2500	Present	Present	SM9223 ReadyCult		Acceptable
Total Coliform - 05	N Pres/Abs	2500	Present	Present	SM9223 ReadyCult		Acceptable
Total Coliform - 06	N Pres/Abs	2500	Present	Present	SM9223 ReadyCult		Acceptable
Total Coliform - 07	N Pres/Abs	2500	Absent	Absent	SM9223 ReadyCult		Acceptable
Total Coliform - 08	N Pres/Abs	2500	Present	Present	SM9223 ReadyCult		Acceptable
Total Coliform - 09	N Pres/Abs	2500	Present	Present	SM9223 ReadyCult		Acceptable
Total Coliform - 10	N Pres/Abs	2500	Present	Present	SM9223 ReadyCult		Acceptable
Total Coliform - Overall	N Pres/Abs	2500			SM9223 ReadyCult		Acceptable

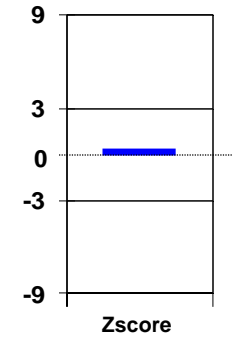
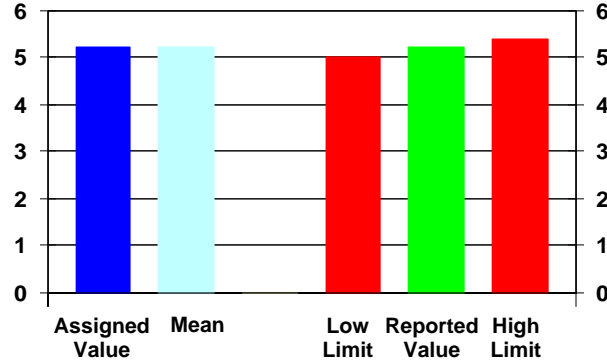
# Detail Report

APG Customer 999999 Laboratory Address  
 EPA Lab Code OH99999 Watson  
 Primary AA CA12345 500 Laboratory Road  
 A2LA Certification: 2430.01 Testville, OH 45714

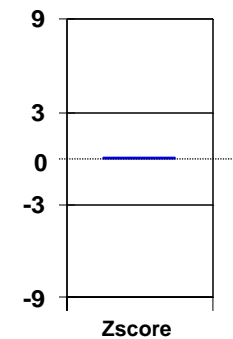
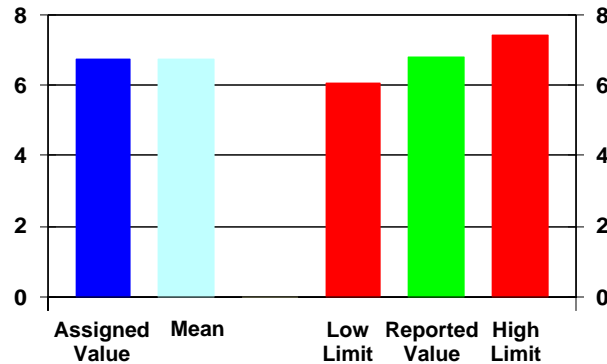
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pH		pH	Test Method	SM4500H	IONICPROBE
Reported Value	5.25				Lot Number: 120779
Assigned Value	5.21				
APG Certified Value	5.21 ± 0.00455				
Mean	5.21				
Standard Deviation	0.100				
Acceptance Range	5.01 - 5.41				
Z-Score	0.400				
Evaluation	Acceptable				
<b>Inter-Laboratory Statistics</b>					
Study Mean	5.22				
Study Standard Deviation	0.0476				
Number of Labs Reporting	47				
Laboratory Pass Percentage	89.40%				



Nutrients		Fluoride	Test Method	SM4500F	IONSELECTIVE
Reported Value	6.82				Lot Number: 120538-121863-120540
Assigned Value	6.77				
APG Certified Value	6.71 ± 0.169				
Mean	6.77				
Standard Deviation	0.338				
Acceptance Range	6.09 - 7.45				
Z-Score	0.148				
Evaluation	Acceptable				
<b>Inter-Laboratory Statistics</b>					
Study Mean	6.75				
Study Standard Deviation	0.364				
Number of Labs Reporting	52				
Laboratory Pass Percentage	90.40%				



# Detail Report

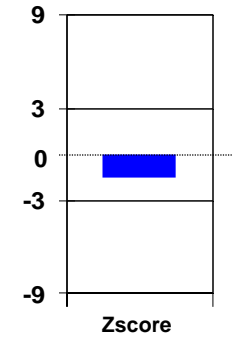
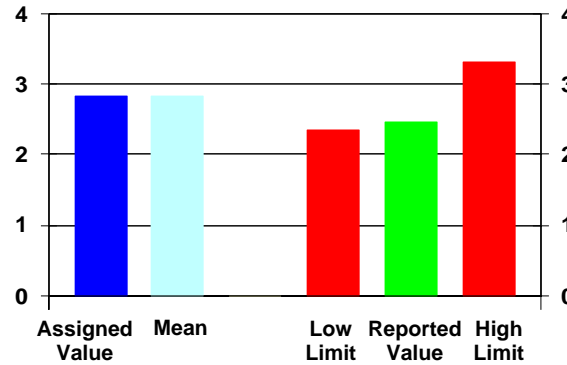
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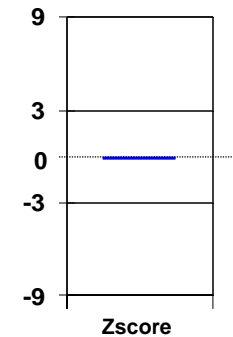
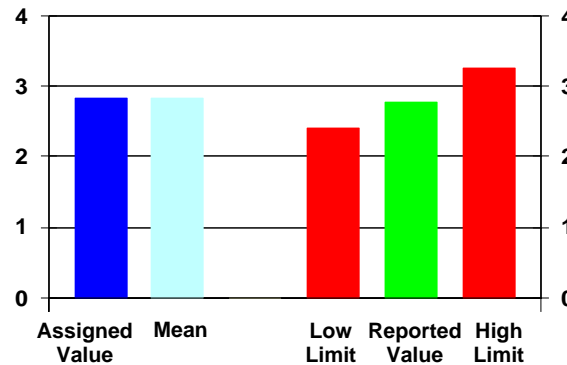
Residual Chlorine	Residual Free Chlorine	Test Method	SM4500CLG	SPECTROPHOTOMET
Reported Value	2.47			
Assigned Value	2.84			
APG Certified Value	2.86 ± 0.0177			
Mean	2.84			
Standard Deviation	0.245			
Acceptance Range	2.35 - 3.33			
Z-Score	-1.51			
Evaluation	Acceptable			

Lot Number: 120537



Residual Chlorine	Total Residual Chlorine	Test Method	20018808	SM18th4500CIB
Reported Value	2.79			
Assigned Value	2.84			
APG Certified Value	2.86 ± 0.0177			
Mean	2.84			
Standard Deviation	0.212			
Acceptance Range	2.41 - 3.26			
Z-Score	-0.213			
Evaluation	Acceptable			

Lot Number: 120537



Laboratory Pass Percentage 86.40%

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Turbidity	Turbidity	Test Method	SM2130	Nephelometric
Reported Value	5.91			
Assigned Value	5.98			
APG Certified Value	6.12 ± 0.0260			
Mean	6.16			
Standard Deviation	0.449			
Acceptance Range	5.27 - 7.06			
Z-Score	-0.568			
Evaluation	Acceptable			
<b>Inter-Laboratory Statistics</b>				
Study Mean	5.86			
Study Standard Deviation	0.351			
Number of Labs Reporting	33			
Laboratory Pass Percentage	93.90%			

Lot Number: 120511

