REPORT REGARDING LEAD SAMPLING OF DRINKING WATER

Prepared For:

Rutherford Schools District
176 Park Avenue
Rutherford, New Jersey 07070

Report Presented To:

Mr. Anthony Paterno
Supervisor of Buildings and Grounds
Rutherford Schools District
176 Park Avenue
Rutherford, New Jersey 07070

Report Prepared By:

Garden State Environmental, Inc.
555 South Broad Street, Suite K
Glen Rock, New Jersey 07452

Date of Report:

June 27, 2016

I. INTRODUCTION

The subject of this report is a lead in drinking water assessment conducted by Garden State Environmental, Inc. (GSE). On May 11 and May 13, 2016 Lauren Adrion with GSE, collected water samples from several locations throughout six (6) schools of the Rutherford School District. The sample locations were selected by the District in the interest of sampling the most commonly used water fountains and sinks. The purpose of this assessment was to determine if the schools have lead contamination in their drinking water.

Our findings are summarized in the report that follows.

II. BACKGROUND

Health Effects of Lead Exposure

Exposure to lead is a significant public health concern, especially for young children and infants whose growing bodies tend to absorb more lead than the average adult. Pregnant women and fetuses are also vulnerable to lead in addition to middle-aged men and women. A June 2008 American Water Works Association (AWWA) article [(1)] states (Dr. Marc Edwards Virginia Tech), "the higher lead levels sampled in many US Schools exceed thresholds that would trigger fines and recalls by the Consumer Product Safety Commission". Any water sample greater than 700 Parts per Billion (PPB) is considered acutely toxic.

Drinking water represents one possible means of lead exposure. Some drinking water pipes, taps, and other outlets (i.e., an apparatus dispensing water) in homes, schools and other buildings may contain lead. The lead in such plumbing may leach into water and pose a health risk to those who drink the water.

The longer water remains in contact with lead containing plumbing, the more the opportunity exists for lead to leach into water. As a result, facilities with on again/off again water use patterns, such as schools and businesses may have elevated lead concentrations in the drinking water due to increased leaching time during periods of low to no use.

Even though water delivered from your community's public water supply must meet Federal and State standards for lead, the District may still end up with elevated levels of lead in the drinking water because of any lead containing plumbing in the facilities and because of the building's water use patterns. The only way to be certain that lead is not a problem in a particular home, school, or building is to test all drinking water outlets (i.e., taps, bubblers, coolers, etc.) for the substance. If lead problems are found, they can then be corrected.

Regulatory Information

In 1986 the Safe Drinking Water Act banned the use of lead in plumbing systems. This regulation required that buildings constructed after 1986 use only lead free materials in

the plumbing system. However, many buildings constructed prior to 1986 may still have plumbing system components which contain lead.

It is often too costly for public buildings or homeowners to replace all the original plumbing with newer pipes. In response, the EPA passed the Lead and Copper Rule in 1991 that, in the event of elevated lead, requires orthophosphates to be added to the water by the water supplier to prevent/reduce the amount of lead that leached into the water from the pipes.

Review of the Water Supplier's Records

The public water supplier that provides potable water to this area is United Water NJ (PWSID #NJ0238001). The records of water quality are publically published on New Jersey Water Watch. [(2)] A review of this report found that there have not been any recent (within the last five years) exceedances of lead in the drinking water.

A detailed report of the most recent data available for New Jersey United Water of lead contaminants found that from 2013 to 2015, a total of 51 samples were collected and analyzed. The lead 90th percentile for those samples was found to be 0.014 mg/l (14.0 PPB).

The New Jersey Department of Environmental Protection (NJDEP) safe drinking water standards for public water suppliers establish a 15 PPB Action Level in drinking water. If lead concentrations are above this Action Level, the water supplier may be required to take action to reduce lead concentrations.

III. SAMPLING METHODS:

This sampling event was designed to be a limited survey. Not all water taps in the schools were sampled. The District conducted its own plumbing survey and selected the specific taps to be tested. Most water fountains and nurses' sinks were sampled throughout the schools. No cafeteria sinks were sampled because the schools have all food delivered by an outside contractor.

Sampling procedures were guided by the Environmental Protection Agency's (EPA) *3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities: Training, Testing, and Telling*. Between eight (8) to eighteen (18) hours prior to GSE's sampling each tap was flushed by the District custodial staff for at least 30 minutes. After flushing, each tap was tagged by the Custodian using a plastic bag over the faucet and a sticker that stated "Do Not Use."

Each cold-water tap was located and noted by GSE in a field notebook, verifying that each tap was flushed and tagged. Two hundred and fifty milliliter (250 ml) sample bottles were used for this sampling event. A first draw sample was collected upon immediate opening of the tap. First draw is collected to isolate the fixture as a potential source of lead contamination. High concentrations in a first draw sample indicate the source of the lead is most likely coming from the immediate fixture or plumbing near the point of use.

Following the collection of this first draw sample, the taps were flushed for at least 30 seconds and a second draw (or flush sample) was taken. High concentrations in a second draw sample may indicate that the lead may be coming from sources further back in the plumbing system such as soldered joints and fittings or the water supply lines within the building.

Samples were labeled in the field with a unique sample number. A bottle blank was also collected from certified lead-free water supplied by the laboratory. The samples were then securely boxed with a signed chain of custody and submitted to the laboratory for analysis.

Laboratory analysis was provided by:

Precision Analytical Services, Inc. (PAS)
2161 Whitesville road
Toms River, New Jersey 08755
NJ Department of Environmental Protection Certification #15001

Results follow on the next page.

IV. RESULTS SUMMARY

Lead Analysis of Drinking Water					
School	**Sample Number**	**Location**	**Date/Time of 30 minute flush**	**Tagged (Y/N)**	**Results (ug/L) [1]**
Sylvan Kindergarten Center	5-11-LA-01A[2]	Water fountain on 1st floor	5/10/16 6:13-6:43PM	Y	0.834
	5-11-LA-02A	Water fountain on 2nd floor	5/10/16 5:35-6:05PM	Y	0.834
	5-11-LA-05A	Water fountain in basement	5/10/16 6:49-7:19PM	Y	0.712
	5-13-LA-59A	Sink in Nurse's kitchen	5/12/16 6:30-7:00PM	Y	3.61
	5-13-LA-60A	Sink in Nurse's office	5/12/16 6:35-7:05PM	Y	3.75
Pierrepont School	5-11-LA-06A	Sink in Nurse's office	5/10/16 8:00-8:30PM	Y	3.59
	5-11-LA-07A	Sink in Nurse's bathroom	5/10/16 8:00-8:30PM	Y	7.38
	5-11-LA-07B[3]				0.787
	5-11-LA-08A	Water fountain on 1st floor outside Nurse	5/10/16 8:00-8:30PM	Y	ND
	5-11-LA-09A	Water fountain in basement outside Buildings&Grounds	5/10/16 4:45-5:15PM	Y	8.49
	5-11-LA-09B				7.95
	5-11-LA-10A	Water fountain on 1st floor outside multipurpose room	5/10/16 7:55-8:25PM	Y	ND
	5-11-LA-11A	Water fountain on 1st floor across from room 118	5/10/16 8:05-8:35PM	Y	ND
	5-11-LA-12A	Water fountain on 1st floor across from room 119	5/10/16 8:05-8:35PM	Y	ND
	5-11-LA-13A	Water fountain outside gym	5/10/16 7:00-7:30PM	Y	1.02
	5-11-LA-14A	Water fountain on 2nd floor across from room 220	5/10/16 8:30-9:00PM	Y	ND
	5-11-LA-15A	Water fountain on 2nd floor across from staircase 4	5/10/16 8:30-9:00PM	Y	ND
	5-11-LA-16A	Water fountain on 2nd floor next to room 203	5/10/16 8:30-9:00PM	Y	ND
	5-11-LA-17A	Water fountain in *Portable*	5/10/16 4:15-4:45PM	Y	2.55

Lead Analysis of Drinking Water (continued)					
School	**Sample Number**	**Location**	**Date/Time of 30 minute flush**	**Tagged (Y/N)**	**Results (ug/L) [1]**
Lincoln School	5-11-LA-18A	Water fountain on 1st floor in staircase 2	5/10/16 1:30-2:30PM	Y	3.10
	5-11-LA-19A	Water fountain on 1st floor in staircase 1	5/10/16 1:30-2:30PM	Y	1.63
	5-11-LA-20A	Water fountain on 2nd floor outside staircase 1	5/10/16 1:30-2:30PM	Y	ND
	5-11-LA-21A	Sink in Nurse's office	5/10/16 1:30-2:30PM	Y	0.773
	5-11-LA-22A	Left water fountain on 2nd floor next to room 114	5/10/16 1:30-2:30PM	Y	ND
	5-11-LA-23A	Right water fountain on 2nd floor next to room 114	5/10/16 1:30-2:30PM	Y	ND
	5-11-LA-24A	Left water fountain on 1st floor outside gym	5/10/16 1:30-2:30PM	Y	ND
	5-11-LA-25A	Right water fountain on 1st floor outside gym	5/10/16 1:30-2:30PM	Y	ND
Washington School	5-11-LA-38A	Water fountain on 2nd floor across from room 203	5/10/16 6:15-6:45PM	Y	2.30
	5-11-LA-39A	Water fountain on 2nd floor across from room 205	5/10/16 6:15-6:45PM	Y	3.83
	5-11-LA-40A	Water fountain on 1st floor inside staircase by room 104	5/10/16 6:20-6:50PM	Y	ND
	5-11-LA-41A	Water fountain on 1st floor inside staircase by room 105	5/10/16 6:20-6:50PM	Y	ND
	5-11-LA-42A	Sink in Nurse's office	5/10/16 6:25-6:55PM	Y	ND
	5-11-LA-43A	Left water fountain on 1st floor near room 114	5/10/16 6:25-6:55PM	Y	ND
	5-11-LA-44A	Right water fountain on 1st floor near room 114	5/10/16 6:25-6:55PM	Y	ND
	5-11-LA-45A	Left water fountain on lower level by gym	5/10/16 6:30-7:30PM	Y	ND
	5-11-LA-46A	Right water fountain on lower level by gym	5/10/16 6:30-7:30PM	Y	ND
	5-11-LA-47A	Water fountain in room 007 (lower level kindergarten)	5/10/16 6:30-7:00PM	Y	ND
	5-11-LA-48A	Sink in room 007 (lower level kindergarten)	5/10/16 6:30-7:00PM	Y	ND
	5-11-LA-49A	Water fountain in room 005 (lower level kindergarten)	5/10/16 6:30-7:00PM	Y	0.528
	5-11-LA-50A	Sink in room 005 (lower level kindergarten)	5/10/16 6:30-7:00PM	Y	ND

Lead Analysis of Drinking Water (continued)					
School	**Sample Number**	**Location**	**Date/Time of 30 minute flush**	**Tagged (Y/N)**	**Results (ug/L) [1]**
Union School	5-11-LA-51A	Water fountain on 1st floor near room 106	5/10/16 7:15-8:15PM	Y	0.467
	5-11-LA-52A	Left water fountain on 1st floor across from room 116	5/10/16 7:15-8:15PM	Y	ND
	5-11-LA-53A	Right water fountain on 1st floor across from room 116	5/10/16 7:15-8:15PM	Y	ND
	5-11-LA-54A	Water fountain on 1st floor across from room 134	5/10/16 7:15-8:15PM	Y	ND
	5-11-LA-55A	Sink in Nurse's bathroom	5/10/16 7:15-8:15PM	Y	ND
	5-11-LA-56A	Water fountain on 2nd floor near room 230	5/10/16 7:15-8:15PM	Y	ND
	5-11-LA-57A	Water fountain on 2nd floor near 224	5/10/16 7:15-8:15PM	Y	ND
	5-11-LA-58A	Water fountain on 2nd floor across from room 205	5/10/16 7:15-8:15PM	Y	ND
Rutherford High School	5-13-LA-61A	Water fountain on 1st floor next to main office	5/12/16 3:50-4:20PM	Y	ND
	5-13-LA-62A	Water fountain on 1st floor next to room 229	5/12/16 4:00-4:30PM	Y	0.944
	5-13-LA-63A	Water fountain on 1st floor across from room 219	5/12/16 4:10-4:40PM	Y	0.896
	5-13-LA-64A	Sink in Nurse's office	5/12/16 5:00-5:30PM	Y	ND
	5-13-LA-65A	Water fountain on 1st floor next to staircase D	5/12/16 4:25-4:55PM	Y	ND
	5-13-LA-66A	Water fountain on 1st floor next to room 201	5/12/16 4:35-5:05PM	Y	1.91
	5-13-LA-67A	Water fountain on 2nd floor between Boy's/Girl's bathrooms	5/12/16 5:30-6:00PM	Y	ND
	5-13-LA-68A	Water fountain on 2nd floor next to room 321	5/12/16 5:30-6:00PM	Y	ND
	5-13-LA-69A	Water fountain on ground floor next to room 113	5/12/16 5:00-5:30PM	Y	1.82
	5-13-LA-70A	Water fountain on ground floor across from cafeteria	5/12/16 5:00-5:30PM	Y	ND
	5-13-LA-71A	Water fountain on ground floor next to room 103	5/12/16 5:00-5:30PM	Y	ND
N/A	5-11-LA-FB	Field Blank	N/A	N/A	ND
N/A	5-13-LA-FB	Field Blank	N/A	N/A	ND
N/A	5-11-LA-FB2	Field Blank	N/A	N/A	ND

[1] *ug/l = ppb*
[2] *Sample numbers ending in "A" were first draw samples.*
[3] *Sample numbers ending in "B" were second draw (flush) samples.*
[4] *ND = None Detected or below the detection limit of the analytical method used (<0.462).*

Laboratory Certificates may be found in Appendix I.

V. DISCUSSION:

Criteria used to evaluate these results included the EPA's Action Level of 15 PPB (applicable to the water supplier). Additionally, according to the EPA's *3Ts for Reducing Lead in Drinking Water in Schools and Child Care Facilities: Training, Testing, and Telling*, the EPA strongly recommends that all water outlets in all schools that provide water for drinking or cooking meet a standard of 20 PPB lead or less.

Thirty-six (36) of the fifty-seven (57) (63%) first draw samples collected from the school taps resulted in no lead detected. The remaining first draw samples had detectable concentrations of lead ranging from 0.467 to 8.49 PPB. The highest two (2) samples (both above 5 PPB) had their respective second draw samples also analyzed. The second draw samples (sample numbers 5-11-LA-07B and 5-11-LA-09B) found low levels of lead ranging from 0.787 to 7.95 PPB respectively. These concentrations were below the acceptable criteria.

VI. CONCLUSIONS AND RECOMMENDATIONS:

Based on careful review of the results of our limited assessment, there does not appear to be a lead contamination problem in the drinking water from the taps that were sampled by GSE. While very low levels of lead were identified in approximately 37% of the taps tested, results were well below applicable criteria. It is important to note that not all taps in this school were sampled (only taps that are regularly used for drinking water were sampled). It is possible that the taps not sampled could have higher lead concentrations than those identified during this survey.

We recommend sampling of any remaining drinking water taps in older sections of the school building that have not been sampled, to confirm that there is no elevation of lead concentration in the water throughout the entire school. In addition, we also recommend that a representative number of taps be re-sampled in one year, to confirm our original findings.

VII. CONDITIONS AND LIMITATIONS:

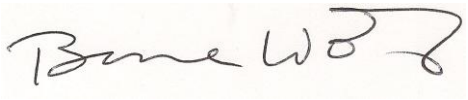
The findings described in this report are reflective of the conditions existent at the time(s) of inspection and testing. Our findings and conclusions must be considered probabilities based upon professional judgment concerning the significance of the data gathered during the course of investigation. The results and recommendations set forth by GSE in this report will be valid as of the date of the report and are limited to the site condition at the time of investigation.

Please feel free to call GSE with any questions about this report.

Thank you for the opportunity to assist you in this project and we look forward to continuing to assist you in the future.

Respectfully submitted,

Lauren C. Adrion, B.S.
Industrial Hygienist



Bruce D. Wolf, MPA, HO
Sr. Environmental Consultant
Sr. Vice President

LCA/la/bw

APPENDIX I

CERTIFICATE OF LABORATORY ANALYSIS

Specialists in Drinking Water Testing Technologies ■ Residential ■ Industrial ■ Municipal

PRECISION ANALYTICAL SERVICES, INC.

2161 WHITESVILLE ROAD TOMS RIVER, NJ 08755 PHONE 732-914-1515 FAX 732-914-1616

CERTIFICATE OF ANALYSIS

Customer : Garden State Environmental
555 South Broad Street, Suite K
Glen Rock, NJ

Project ID : Rutherford BOE #6442

PAS Project ID : P16-2205

Matrix : Drinking Water

Report Date : 05/23/16

PAS Sample ID	Client ID	Analysis	Results	Units	DF	PQL	MDL	MCL	Method	Date Sampled	Date Analyzed
P16-2205-01	5-11-LA-01A	Lead	0.834 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 07:34	5/19/16 11:52
P16-2205-02	5-11-LA-02A	Lead	0.834 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 07:38	5/19/16 12:00
P16-2205-03	5-11-LA-05A	Lead	0.712 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 07:45	5/19/16 12:35
P16-2205-04	5-11-LA-06A	Lead	3.59	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:09	5/19/16 12:39
P16-2205-05	5-11-LA-07A	Lead	7.38	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:12	5/19/16 12:43
P16-2205-06	5-11-LA-08A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:14	5/19/16 12:47
P16-2205-07	5-11-LA-09A	Lead	8.49	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:18	5/19/16 12:51
P16-2205-08	5-11-LA-10A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:22	5/19/16 12:56
P16-2205-09	5-11-LA-11A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:25	5/19/16 13:00
P16-2205-10	5-11-LA-12A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:27	5/19/16 13:04
P16-2205-11	5-11-LA-13A	Lead	1.02 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:32	5/19/16 13:47
P16-2205-12	5-11-LA-14A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:36	5/19/16 13:52
P16-2205-13	5-11-LA-15A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:40	5/19/16 13:56
P16-2205-14	5-11-LA-16A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:44	5/19/16 14:00
P16-2205-15	5-11-LA-17A	Lead	2.55	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:48	5/19/16 14:05
P16-2205-16	5-11-LA-18A	Lead	3.10	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 09:23	5/19/16 14:09
P16-2205-17	5-11-LA-19A	Lead	1.63 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 09:27	5/19/16 14:13
P16-2205-18	5-11-LA-20A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 09:29	5/19/16 14:08
P16-2205-19	5-11-LA-21A	Lead	0.773 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 09:35	5/19/16 14:36
P16-2205-20	5-11-LA-22A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 09:38	5/19/16 14:40
P16-2205-21	5-11-LA-23A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 09:41	5/19/16 14:45
P16-2205-22	5-11-LA-24A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 09:44	5/19/16 14:53
P16-2205-23	5-11-LA-25A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 09:46	5/19/16 15:06
P16-2205-24	5-11-LA-38A	Lead	2.30	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 11:56	5/19/16 15:10
P16-2205-25	5-11-LA-39A	Lead	3.83	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 11:59	5/19/16 15:14
P16-2205-26	5-11-LA-40A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:02	5/19/16 15:38
P16-2205-27	5-11-LA-41A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:05	5/19/16 15:42
P16-2205-28	5-11-LA-42A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:07	5/19/16 15:47
P16-2205-29	5-11-LA-43A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:13	5/19/16 15:51
P16-2205-30	5-11-LA-44A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:16	5/19/16 15:55
P16-2205-31	5-11-LA-45A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:18	5/19/16 15:59
P16-2205-32	5-11-LA-46A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:20	5/19/16 16:03
P16-2205-33	5-11-LA-47A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:23	5/19/16 16:07
P16-2205-34	5-11-LA-48A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:25	5/19/16 16:11
P16-2205-35	5-11-LA-49A	Lead	0.528 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:28	5/19/16 16:16
P16-2205-36	5-11-LA-50A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 12:30	5/19/16 16:36
P16-2205-37	5-11-LA-51A	Lead	0.467 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 13:21	5/19/16 16:40
P16-2205-38	5-11-LA-52A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 13:24	5/19/16 16:44
P16-2205-39	5-11-LA-53A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 13:26	5/19/16 16:48
P16-2205-40	5-11-LA-54A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 13:29	5/19/16 16:53
P16-2205-41	5-11-LA-55A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 13:31	5/18/16 14:38
P16-2205-42	5-11-LA-56A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 13:34	5/18/16 14:47
P16-2205-43	5-11-LA-57A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 13:37	5/18/16 15:30
P16-2205-44	5-11-LA-58A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 13:41	5/18/16 15:34
P16-2205-45	5-13-LA-59A	Lead	3.61	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:12	5/18/16 15:38
P16-2205-46	5-13-LA-60A	Lead	3.75	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:14	5/18/16 15:43
P16-2205-47	5-13-LA-61A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:29	5/18/16 15:47

Except for the parameters tested, PAS makes no representation as to the fitness or quality of the water sample taken.

PQL = Practical Quantitation Limit
MDL = Minimum Detection Limit
MCL = Maximum Contaminant Level
DF = Dilution Factor
ND = Analyzed for but not detected
B = Compound found in blank and samples
E = Concentration exceeds calibration range
J = Estimated result
* Federal Action Level / EPA 3T's guidence 20 ug/L

All samples are analyzed in accordance with New Jersey Department of Environmental Protection Protocol

Mark D. Feitelson, Lab. Director

Specialists in Drinking Water Testing Technologies ■ Residential ■ Industrial ■ Municipal

PRECISION ANALYTICAL SERVICES, INC.

2161 WHITESVILLE ROAD TOMS RIVER, NJ 08755 PHONE 732-914-1515 FAX 732-914-1616

CERTIFICATE OF ANALYSIS

Customer : Garden State Environmental
555 South Broad Street, Suite K
Glen Rock, NJ

Project ID : Rutherford BOE #6442

PAS Project ID : P16-2205

Matrix : Drinking Water

Report Date : 05/23/16

PAS Sample ID	Client ID	Analysis	Results	Units	DF	PQL	MDL	MCL	Method	Date Sampled	Date Analyzed
P16-2205-48	5-13-LA-62A	Lead	0.944 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:31	5/18/16 15:51
P16-2205-49	5-13-LA-63A	Lead	0.896 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:34	5/18/16 15:59
P16-2205-50	5-13-LA-64A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:36	5/18/16 16:20
P16-2205-51	5-13-LA-65A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:41	5/18/16 16:24
P16-2205-52	5-13-LA-66A	Lead	1.91 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:43	5/18/16 16:29
P16-2205-53	5-13-LA-67A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:46	5/18/16 16:33
P16-2205-54	5-13-LA-68A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:50	5/18/16 16:37
P16-2205-55	5-13-LA-69A	Lead	1.82 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 08:57	5/18/16 16:42
P16-2205-56	5-13-LA-70A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 09:00	5/18/16 16:46
P16-2205-57	5-13-LA-71A	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 09:04	5/18/16 15:50
P16-2205-58	5-11-LA-FB	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 14:00	5/18/16 17:09
P16-2205-59	5-13-LA-FB	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/13/16 10:00	5/18/16 17:14

Except for the parameters tested, PAS makes no representation as to the fitness or quality of the water sample taken.

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2161 WHITESVILLE ROAD TOMS RIVER, NJ 08755 PHONE 732-914-1515 FAX 732-914-1616

NJ Lab Cert. # 15001

CERTIFICATE OF ANALYSIS

Customer : Garden State Environmental
555 South Broad Street, Suite K
Glen Rock, NJ

Project ID : Rutherford BOE #6442

PAS Project ID : P16-2765

Matrix : Drinking Water

Report Date : 06/13/16

PAS Sample ID	Client ID	Analysis	Results	Units	DF	PQL	MDL	MCL	Method	Date Sampled	Date Analyzed
P16-2765-01	5-11-LA-07B	Lead	0.787 J	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:13	6/9/16 14:52
P16-2765-02	5-11-LA-09B	Lead	7.95	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	5/11/16 08:19	6/9/16 14:56
P16-2765-03	5-11-LA-FB2	Lead	ND	ug/L	1	2.00	0.462	15.0 *	SM 3113 B	6/3/16 13:03	6/9/16 15:00

Except for the parameters tested, PAS makes no representation as to the fitness or quality of the water sample taken.

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* Federal Action Level / EPA 3T's guidence 20 ug/L

All samples are analyzed in accordance with New Jersey Department of Environmental Protection Protocol

Mark D. Feitelson, Lab. Director

APPENDIX II

REFERENCES

(1) Edwards, Marc Dr.; Current sampling misses the worst of lead; AWWW E-MainStream posted 6/10/08; from the AWWA Annual Conference in Atlanta, GA

(2) New Jersey Water Watch.

https://www9.state.nj.us/DEP_WaterWatch_public/JSP/WSDetail.jsp?tinwsys=42

APPENDIX III

NEW JERSEY SAFE DRINKING WATER STANDARDS

Drinking Water Standards by Constituent

constituents name	casrn	standard *μ g/l or ppb* (unless otherwise specified)	type	comment
Adipates (Di(ethylhexyl)adipate) (DEHA)	103-23-1	400	Primary	FEDERAL MCL
Alachlor	15972-60-8	2	Primary	FEDERAL MCL - No monitoring required
Aldicarb	116-06-3	3	Primary	FEDERAL MCL - No monitoring required
Aldicarb sulfone	1646-88-4	2	Primary	FEDERAL MCL - No monitoring required
Aldicarb sulfoxide	1646-87-3	4	Primary	FEDERAL MCL
Aluminum	7429-90-5	200	Secondary	STATE RUL - Recommended upper limit
Antimony (Total)	7440-36-0	6	Primary	FEDERAL MCL
Arsenic (Total)	7440-38-2	5	Primary	STATE MCL
Asbestos	1332-21-4	$7x10^{6}$ fibers/l >10 um	Primary	FEDERAL MCL
Atrazine	1912-24-9	3	Primary	FEDERAL MCL
Barium	7440-39-3	2000	Primary	FEDERAL MCL
Benzene	71-43-2	1	Primary	STATE MCL
Beta particle /Photon radioactivity	Beta/Photon	4 mrem/yr.	Primary	FEDERAL MCL
Benzo(a)pyrene(BaP)	50-32-8	0.2	Primary	FEDERAL MCL
Beryllium	7440-41-7	4	Primary	FEDERAL MCL
BHC (gamma-HCH/Lindane)	58-89-9	0.2	Primary	FEDERAL MCL
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	6	Primary	FEDERAL MCL
Bromate	15541-45-4	10	Primary	FEDERAL MCL
Bromoacetic Acid	79-08-3	See Haloacetic Acids	Primary	FEDERAL MCL
Bromodichloromethane(Dichlorobromo methane)	75-27-4	See Trihalomethanes	Primary	FEDERAL MCL
Bromoform	75-25-2	See Trihalomethanes	Primary	FEDERAL MCL
Cadmium	7440-43-9	5	Primary	FEDERAL MCL
Carbofuran	1563-66-2	40	Primary	FEDERAL MCL
Carbon Tetrachloride	56-23-5	2	Primary	STATE MCL
Chloramines	10599-90-3	4000 (as Cl_2)	Primary	FEDERAL -Maximum residential disinfectant level (MRDL)
Chlordane	57-74-9	0.5	Primary	STATE MCL
Chloride	16887-00-6	250,000	Secondary	STATE -RUL - Recommended upper limit
Chlorine dioxide	10049-04-4	800 (as ClO_2)	Primary	FEDERAL -Maximum residential disinfectant level (MRDL)
Chlorine	7782-50-5	4000 (as Cl_2)	Primary	FEDERAL -Maximum residential disinfectant level (MRDL)
Chlorite	7758-19-2	1,000	Primary	FEDERAL MCL
Chlorobenzene	108-90-7	50	Primary	STATE MCL

constituents name	casrn	standard *μ g/l or ppb* (unless otherwise specified)	type	comment
Chloroform	67-66-3	See Trihalomethanes	Primary	FEDERAL MCL
Chromium (Total)	7440-47-3	100	Primary	FEDERAL MCL
Coliform bacteria	Coliform bacteria	Presence or absence	Primary	FEDERAL MCL
Color (measure by "Color Unit")	color	10 color units	Secondary	STATE RUL
Copper	7440-50-8	1300	Primary	FEDERAL Action Level
Cyanide (free cyanide)	57-12-5	200	Primary	FEDERAL MCL
Dalapon (2,2-Dichloropropionic acid)	75-99-0	200	Primary	FEDERAL MCL
Dibromoacetic Acid	631-64-1	See Haloacetic Acids	Primary	FEDERAL MCL
Dibromochloromethane (Chlorodibromomethane)	124-48-1	See Trihalomethanes	Primary	FEDERAL MCL
1,2-Dibromo-3-chloropropane (DBCP)	96-12-8	0.2	Primary	FEDERAL MCL
Dichloroacetic acid	79-43-6	See Haloacetic Acids	Primary	FEDERAL MCL
1,2-Dichlorobenzene (ortho)	95-50-1	600	Primary	FEDERAL MCL
1,3-Dichlorobenzene (meta)	541-73-1	600	Primary	STATE MCL
1,4-Dichlorobenzene (para)	106-46-7	75	Primary	FEDERAL MCL
1,1-Dichloroethane (1,1-DCA)	75-34-3	50	Primary	STATE MCL
1,2-Dichloroethane	107-06-2	2	Primary	STATE MCL
cis-1,2-Dichloroethylene	156-59-2	70	Primary	FEDERAL MCL
trans-1,2-Dichloroethylene	156-60-5	100	Primary	FEDERAL MCL
1,1-Dichloroethylene (1,1-DCE)	75-35-4	2	Primary	STATE MCL
2,4-Dichlorophenoxyacetic acid (2,4-D)	94-75-7	70	Primary	FEDERAL MCL
1,2-Dichloropropane	78-87-5	5	Primary	FEDERAL MCL
Dinoseb	88-85-7	7	Primary	FEDERAL MCL
Diquat	85-00-7	20	Primary	FEDERAL MCL
E. Coli	ecoli	0	Primary	FEDERAL MCL
Endothall	145-73-3	100	Primary	FEDERAL MCL
Endrin	72-20-8	2	Primary	FEDERAL MCL
Ethylbenzene	100-41-4	700	Primary	FEDERAL MCL
Ethylene dibromide (EDB) (1,2-Dibromoethane)	106-93-4	0.05	Primary	FEDERAL MCL
Fecal Coliform	fecal	0	Primary	FEDERAL MCL
Fluoride	16984-48-8	4,000	Primary	FEDERAL MCL
Fluoride	16984-48-8	2,000	Secondary	STATE RUL - Recommended upper limit
Foaming Agents (ABS/LAS)	foaming	500	Secondary	STATE RUL - Recommended upper limit
Glyphosate	1071-83-6	700	Primary	FEDERAL MCL
Gross Alpha	grossalpha	15 (pCi/l)	Primary	FEDERAL MCL
Haloacetic Acids	haloacids	60 (Total of 5 individual HAAs)	Primary	FEDERAL MCL

constituents name	casrn	standard *μ g/l or ppb* (unless otherwise specified)	type	comment
Hardness (as CaCO3)	hardness	250,000	Secondary	STATE RUL - Recommended upper limit
Heptachlor	76-44-8	0.4	Primary	FEDERAL MCL
Heptachlor epoxide	1024-57-3	0.2	Primary	FEDERAL MCL
Hexachlorobenzene	118-74-1	1	Primary	FEDERAL MCL
Hexachlorocyclopentadiene	77-47-4	50	Primary	FEDERAL MCL
Iron	7439-89-6	300	Secondary	STATE RUL - Recommended upper limit
Lead (Total)	7439-92-1	15	Primary	FEDERAL Action Level
Manganese	7439-96-5	50	Secondary	STATE RUL - Recommended upper limit
Mercury (Inorganic)	7439-97-6	2	Primary	FEDERAL MCL
Methoxychlor	72-43-5	40	Primary	FEDERAL MCL
Methyl tert butyl ether (MTBE)	1634-04-4	70	Primary	STATE MCL
Methylene chloride	75-09-2	3	Primary	STATE MCL
Monochloroacetic acid	79-11-8	See Haloacetic Acids	Primary	FEDERAL MCL
Naphthalene	91-20-3	300	Primary	STATE MCL
Nickel (Soluble salts)	7440-02-0		Primary	FEDERAL - No MCL - Monitoring Required
Nitrate	84145-82-4	10,000	Primary	FEDERAL MCL
Nitrite	14797-65-0	1,000	Primary	FEDERAL MCL
Odor (measure by Threshold Odor Number)	odor	3	Secondary	STATE RUL - Recommended upper limit
Oxamyl	23135-22-0	200	Primary	FEDERAL MCL
Pentachlorophenol	87-86-5	1	Primary	FEDERAL MCL
pH	pH	6.5-8.5	Secondary	STATE - Optimum range
Picloram	1918-02-1	500	Primary	FEDERAL MCL
PCBs (Polychlorinated biphenyls)	1336-36-3	0.5	Primary	FEDERAL MCL
Radium-226 & Radium-228 combined	r&r	5 (pCi/l)	Primary	FEDERAL MCL
Selenium (Total)	7782-49-2	50	Primary	FEDERAL MCL
Silver	7440-22-4	100	Secondary	STATE RUL - Recommended upper limit
Simazine	122-34-9	4	Primary	FEDERAL MCL
Sodium	7440-23-5	50,000	Secondary	STATE RUL - Recommended upper limit
Styrene	100-42-5	100	Primary	FEDERAL MCL
Sulfate	14808-79-8	250,000	Secondary	STATE RUL - Recommended upper limit
Taste	taste	No objectionable taste	Secondary	STATE RUL Recommended upper limit
TDS (Total Dissolved Solids)	TDS	500,000	Secondary	STATE RUL Recommended upper limit
2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)	1746-01-6	3 x 10-5	Primary	FEDERAL MCL

constituents name	casrn	standard *μ g/l or ppb* (unless otherwise specified)	type	comment
1,1,2,2-Tetrachloroethane	79-34-5	1	Primary	STATE MCL
Tetrachloroethylene (PCE)	127-18-4	1	Primary	STATE MCL
Thallium	7440-28-0	2	Primary	FEDERAL MCL
Toluene	108-88-3	1,000	Primary	FEDERAL MCL
Toxaphene	8001-35-2	3	Primary	FEDERAL MCL
Trichloroacetic acid	76-03-9	See Haloacetic Acids	Primary	FEDERAL MCL
1,2,4-Trichlorobenzene	120-82-1	9	Primary	STATE MCL
1,1,1-Trichloroethane (TCA)	71-55-6	30	Primary	STATE MCL
1,1,2-Trichloroethane	79-00-5	3	Primary	STATE MCL
Trichloroethene (TCE) (Trichloroethylene)	79-01-6	1	Primary	STATE MCL
2-(2,4,5-Trichlorophenoxy)propionic acid (Silvex) (2,4,5-TP)	93-72-1	50	Primary	FEDERAL MCL
Trihalomethanes	trihalom	80 (total of four individual THMs)	Primary	FEDERAL MCL
Uranium	7440-61-1	30	Primary	FEDERAL MCL
Vinyl chloride	75-01-4	2	Primary	FEDERAL MCL
Xylenes (Total)	1330-20-7	1000	Primary	STATE MCL
Zinc	7440-66-6	5,000	Secondary	STATE RUL - Recommended upper limit

Drinking Water Explanation of Terms

**** Coliform bacteria standards are based on the presence or absence of coliforms in a sample. The number of samples collected by a public water system is determined by the size of the population served. A system collecting at least 40 samples/month can have coliform in no more than 5% of the samples. A system collecting fewer than 40 samples/month can have no more than one coliform positive. Any number exceeding these amounts triggers an MCL exceedance.***

For more information of Drinking Water Standards contact the Division of Water Supply, Safe Drinking Water Technical Assistance at (609) 292-5550