9399 West Higgins Rd Ste 1100
Rosemont, IL, 60018

Phone: 877-889-8195
Web: www.culligan.com

Report Date: 2/10/2020

CERTIFICATE OF ANALYSIS

Analysis Number: **2001141**

Culligan Water Conditioning of Greater
Philadelphia, Pennsylvania
915 Madison Avenue

Customer: **(KEYSTONE ACADEMY CHARTER S(**
4521 LONG SHORE AVE
PHILADELPHIA PA, 19135

Control Number:

Account Number: 10004926
Collected By: LARRY F

Misc: LEAD
cc: Lfranchi@sharpwaterculligan.com

SAMPLE INFORMATION:

Analysis Type Requested: Silver/Realtor Well Test

Sampled:	2/4/2020 at 10:15 AM	**Supply/Source:**	Municipal	**Condition:**	
Received:	2/5/2020 at 11:57 AM	**Sampling Point:**		**Application:**	

This Certificate of Analysis compares the actual test result to national standards as defined in the EPA 's Primary and Secondary Drinking Water Regulations.

Primary Standards: Are expressed as the maximum contaminant level (MCL) which is the highest level of contaminant that is allowed in drinking water. MCLs are enforceable standards.

Secondary Standards: Are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. Some states may choose to adopt that as enforceable standards.

mg/L (ppm): Unless otherwise indicated, results and standards are expressed as an amount in milligrams per liter or parts per million.

ug/L (ppb): Unless otherwise indicated, results and standards are expressed as an amount in micrograms per liter or parts per billion.

CFU/ml: colony-forming units per milliliter

Reporting Detection Level (RDL): The lowest concentration level that the laboratory can detect a contaminant.

ND: The contaminant was not detected above the minimun detection level.

NA: The contaminant was not analyzed.

***** - NELAP accredited parameter.

Status

The contaminant was not detected in the sample above the minimum detection level.

The contaminant was detected below National Standard limit.

The contaminant was detected above National Standard limit.

Status	Contaminant	Results	RDL	Units	Method	EPA Limit	Analysis Date/Time
	Total Arsenic*	<1.000	1.000	ug/L	200.8 R5.4	10.00	2/10/2020 at 9:40
	Lead (Pb)*	<1.000	1.000	ug/L	200.8 R5.4	15.00	2/10/2020 at 9:40
	Nitrate as N*	1.10	0.200	mg/L	300.0 R2.1	10.00	2/6/2020 at 8:47
	Nitrite as N*	<0.100	0.100	mg/L	300.0 R2.1	1.00	2/6/2020 at 8:47
	E. Coli*	Non-detected			SM9223B Coli-18		2/6/2020 at 7:35
	Total Coliform*	Non-detected			SM9223B Coli-18		2/6/2020 at 7:35

This report can only be reproduced in its entirety. The results reported here are representative of the sample as received in the laboratory. Unless noted holding times and temperature requirements for method 300 are not followed. pH results are out of hold time.

This analysis will not determine whether a water is safe for human consumption.

NELAP Certifications: IL-100213; PA-68-04623; NY-11756; TX-TX269-2007A
State Certifications: IL-IDPH-17598; CA-2958; MT-CERT0091; IA-369;
VT-02199; WI-105-10119; CO-IL100213; MI-9988; MO-1060

Maria Mozdzen
Analytical Lab Manager

pH - the acid strength of water on a scale of 0 to 14 (neutral = pH 7.0). Values from 7→0 are increasingly more acidic; values from 7→14 are increasingly more alkaline. The recommended range for drinking water under the U.S. regulations is 6.5 to 8.5.
Conductivity - the relative ability of water to carry an electrical current, used to estimate the total concentration of dissolved ions.
Turbidity - cloudiness in water caused by the dispersion of light by extremely tiny particles. Measured on an arbitrary scale of Nephelometric Turbidity Units (NTUs). The mandatory maximum under U.S. regulations is 0.5 NTU. Turbidity Filtered is measured after 11 micron filter paper.
Color - the amount of brownish-yellow color from dissolved tannins from vegetation (like tea) and metals (like rust) and their combinations, measured on an arbitrary scale. The recommended maximum under U.S. regulations is 15 CU.
Silica, SiO_2 - a naturally occurring dissolved mineral, which produces a glassy scale in high temperature equipment but is more important in predicting the life of certain water treatment media.
Hydrogen Sulfide, H_2S - a toxic, noxious, corrosive gas that smells like rotten eggs. Bacteria acting on sulfate or organic sulfurcontaining materials in the absence of oxygen produce it. Only “special” water analyses can determine hydrogen sulfide levels.
Total Hardness - the sum of all metal ions which react with soap to inhibit sudsing and form “scum” or “bathtub ring” - mostly Calcium and Magnesium. When heated or evaporated, hard water can cause lime scale that can deposit on sink and shower fixtures and walls and result in loss in efficiency or fuel waste in water heaters , boilers, and cooling systems.
Total Alkalinity - the sum of hydroxide (OH^-), carbonate (CO_3^{-2}), and bicarbonate (HCO_3^-) ions, which can combine with both acids and bases, which act to buffer water and prevent sudden uncontrolled changes in pH .
Cations - ions (atoms or molecules with an electrical charge) with a positive (+) electrical charge, so named because they go toward the cathode in an electric field. Besides the hardness ions, the main cations in water are sodium, Na^+, and potassium, K^+.
Anions - ions (atoms or molecules with an electrical charge) with a negative (-) electrical charge, so named because they go toward the anode in an electric field. The main anions in water are hydroxide (OH^-), carbonate (CO_3^{-2}), bicarbonate (HCO_3^-) (which together comprise "alkalinity"), sulfate (SO_4^{-2}), nitrate (NO_3^-) and chloride (Cl^-).
Nitrate/Nitrite, NO_3^-/NO_2^- - important because of toxicity to infants, nitrate comes from fertilizers and animal wastes. Water supplies with high nitrate levels should also be screened for agricultural pesticides and bacterial contamination. The mandatory limit under U.S. regulations is 10 mg/L.
Sulfate, SO_4^{-2} - a common mineral component, only rarely occurring at excessive levels, which can cause a temporary diarrhea in visitors who have not become acclimated to it. Recommended U.S. limit, 250 mg/L.
Fluoride, F^- - often added to water to inhibit tooth decay. Mandatory U.S. limits range from 4.0 mg/ L in northern regions to 1.4 mg/L in southern regions (where more water in consumed).
Chloride, Cl^- - a common mineral component, can be found in elevated levels near seawater and other salt supplies, which can cause taste problems and can contribute to corrosion. Recommended U.S. limit, 250 mg/L.
Iron, Fe - cause of metallic taste, rust stains on laundry and porcelain fixtures, and clogging/fouling of equipment. The recommended U.S. limit is 0.3 mg/L.
Manganese, Mn - cause of metallic taste and black stains on laundry and porcelain. Often occurs in combination with iron. The recommended U.S. limit is 0.05 mg/L Mn or a total of 0.3 mg/L of Fe + Mn.
Copper, Cu - cause of green stains on porcelain and fittings, seldom naturally-occurring, usually due to corrosion. The mandatory U.S. "actions level" of 1.3 mg/L is tied to the regulation for lead contamination due to corrosion of plumbing materials .
Zinc, Zn - cause of metallic taste and upset stomach. Due to corrosion of galvanized plumbing materials. Recommended U.S. limit, 5.0 mg/L.

DETERMINATION OF POTENTIAL NUISANCE BACTERIA POPULATION (cfu/mL - colony forming units per milliliter)

	Slime Forming Bacteria	Iron Related Bacteria	Sulfate Reducing Bacteria
Day 1	1,750,000-Aggressive	570,000-Aggressive	2,200,000-Aggressive
Day 2	440,000-Aggressive	140,000-Aggressive	500,000-Aggressive
Day 3	67,000-Aggressive	35,000-Aggressive	115,000-Aggressive
Day 4	13,000-Moderate	9,000-Aggressive	27,000-Aggressive
Day 5	2,500-Moderate	2,200-Moderate	6000-Aggressive
Day 6	500-Moderate	500-Moderate	1400-Moderate
Day 7	100-Not Aggressive	150-Moderate	325-Moderate
Day 8	0-None Present	25-Moderate	75-Moderate
Day 9		8-Not Aggressive	20-Not Aggressive
Day 10		0-None Present	5-Not Aggressive
Day 11			0-None Present

Units of Concentration used in this Report

gpg-abbreviation for "grains per gallon" calculated in terms of calcium carbonate equivalents. Multiply by 17.12 to convert gpg into either ppm or mg/L.
ppm-abbreviation for "parts per million." Interchangeable with mg/L.
mg/L-abbreviation for "milligrams per liter." Interchangeable with ppm. (There are one million milligrams in a liter of pure water).
ppb-abbreviation for "parts per billion." Interchangeable with µg/ L or micrograms per liter.
µg/L-abbreviation for “micrograms per liter.” Interchangeable with ppb. (There are a billion micrograms in a liter).

1000 ppb = 1 ppm; 1000 µg/L = 1 mg/L

CONTAMINANT	PRODUCT RECOMMENDATION
Alkalinity	Softener
Aluminum	Softener
Ammonia	Deionization, Filtration
Antimony	Ultra Filtration, Reverse Osmosis
Arsenic	Arsenic Filter
Arsenic +3	Arsenic Filter
Arsenic +5	Arsenic Filter
Barium	Softener
Beryllium	Reverse Osmosis, UF, Softener
Bromate	Activated Carbon
Cadmium	Reverse Osmosis, UF, Ion Exchange
Calcium	Softener
Chloride	Ion Exchange
Chromium	Reverse Osmosis
Color	Activated Carbon
Conductivity	Deionization
Copper	Reverse Osmosis, Softener
Fluoride	Reverse Osmosis
Hydrogen Sulfide	Sulfur-Cleer
Iron	Iron Cleer
Iron Bacteria	Chlorine, UV, Ultrafiltration
Lead	Carbon Block, Faucet Filter, AquaCleer with RO
Magnesium	Softener
Manganese	Softener
Mercury	Carbon Block
Mod Susp Solids	Depth Filter, Particle Filter
Nitrate/Nitrite	Reverse Osmosis
pH	Calcite
Potassium	Softener
Selenuim	Reverse Osmosis
Silica	Reverse Osmosis
Silver	Reverse Osmosis, Ion Exchange, Activated Carbon
Slime Forming Bacteria	Chlorine, UV, Ultrafiltration
Sodium	Reverse Osmosis
Solids (TDS, TSS, TS) each	Reverse Osmosis, Deionization
Strontium	No Reliable Treatment
Sulfate	Ion Exchange, Reverse Osmosis
Sulfate Bacteria	Chlorine, UV, Ultrafiltration
Tannins (if color is present)	Carbon Filter
Thallium	Reverse Osmosis, Cation Exchange
TOC	Carbon Filter
Total Coliform	Chlorine, UV, Ultrafiltration
Total Hardness	Softener
Total Phosphate	No Reliable Treatment
Turbidity	Particle Filter, Depth Filter, Reverse Osmosis
Uranium	Ion Exchange
Volitile Organic Compound	Carbon Filter
Zinc	Reverse Osmosis, Cation Exchange

Note: The product recommendations listed above are not guaranteed solutions for all applications. The client is solely responsible for proper system selection and application . Not all product recommendation may be used in all states.

Rw

2001141

Culli

Control Number:
ST
al Laboratory
100

Rosemont, IL ..

ACCOUNT # 37-452
ACCOUNT NAME: SHARP WATER CULLIG
PHONE # 610-580-4673
EMAIL lfranchi@sharpwaterculligan.com
PERSON TAKING SAMPLE LARRY FRANCH

SAMPLE SUBMITTED BY:
Account Number: 4926
Account Name:
Phone Number:
E-MAIL:
Person Taking Sample: Larry Franchi
Date Sample Taken: 2/4/20 Time Sample Taken: 10:15 AM

CUSTOMER INFORMATION:
Location Name: Anthony West (Keystone Academy charter School)
Address: 4521 Long Shore Ave
City: Philadelphia State: PA. Zip: 19135
Customer reported concern: Lead

SAMPLE INFORMATION:
Water Supply: Private ____ Municipal ✓
Source: Surface ____ Well ____ Unknown ____
Condition: Treated ____ Untreated ____ Cloudy ____ Colored ____
Sample Point: Faucet ____ Equipment ____ Other ____
Application: Household ____ Commercial ____ National Account
Comments:

ANALYSIS REQUESTED:
____ Basic Well
____ Expanded Well
____ Gold Well
✓ Realtor Well Testing

FEB 11:57AM

For Questions or Special Analysis contact Maria Mozdzen at (847) 43[illegible]

SAM
1. Let water run to drain for 3 to
2. Remove aerator from faucet
3. Sanitize faucet with alcohol w
4. Wear gloves
5. Fill Sample Bottle to within 1
6. Fill clear bacteria bottle to wit
7. Fill out Sample Request comp rejected for analysis.
8. Return both bottles in enclose collection date Monday thru Thursday only.

W0550A DEC 23, 2019 ACT WT 1.0 LBS #PK 1
SVC 1DA BL WT
TRACKING# 1ZW0550A8445945364 ALL CURRENCY USD
REF 1:7926
REF 2:WATER LAB

HC 0.00 CNS 0.00 FRT: SHP
SHIPMENT PUB RATE CHARGES: SVC 56.62 USD
DV 0.00 COD 0.00 RS 0.50
DC 0.00 DGD 0.00
AH 0.00 PR 0.00 ROD 0.00
TOT PUB CHG 57.12 PUB+HC57.12