



**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

# PALMDALE WATER DISTRICT 2018 CONSUMER CONFIDENCE REPORT

Our mission is to provide high-quality water to our current and future customers at a reasonable cost.

**Questions or comments on the contents of this report are encouraged.** Please contact Operations Manager Mynor Masaya at 661-947-4111 x1185 or Water Quality & Regulatory Affairs Supervisor Amanda Thompson at 661-947-4111 x1178, Monday through Thursday, 8:00 a.m. to 6:00 p.m.

**Atencion Residentes!**

Esta publicación está disponible en español en nuestro sitio web en [palmdalewater.org](http://palmdalewater.org).  
Para obtener una copia impresa en español, visite nuestra oficina o llame al 661-947-4111.

# State of Our Water

For the first time in seven years, much of California's land area is showing no signs of a drought. The storms in the early months of 2019 have greatly improved the levels of water in reservoirs and snow depths throughout the state. Locally, consecutive weeks of heavy rain caused Littlerock Dam's spillway to overflow beginning in mid-February.

Although these are all positive signs for the current water supply, Palmdale Water District (PWD) knows it must continue to be forward-thinking to ensure that there will be ample water for the community in the coming decades. This year, PWD voted to extend its contract with the State Water Project for imported water from northern California through 2085. PWD also is a partner in two regional water recharge projects – the Upper Amargosa Creek Recharge Project and the Big Rock Creek Recharge Project. Both are expected to increase PWD's groundwater supply.

In addition, PWD has started work on its Littlerock Sediment Removal Project to restore the reservoir's capacity and continues with testing for the Palmdale Regional Groundwater Recharge and Recovery Project.

The PWD Board of Directors and staff are committed to these innovative projects that will bring water security to more than 115,000 customers who rely on us for safe, clean and reliable water in their homes and businesses. At the same time, we also pledge to continue providing you with the best customer care, lowest rates possible and water-use efficiency programs to save you money.

We greatly appreciate your support as we enter our second century of service with much hope for our water future. Thank you for being part of our journey that began in 1918.

**Vincent Dino** (PWD Board President)

**Dennis D. LaMoreaux** (PWD General Manager)

## The Palmdale Water District is pleased to announce 100% regulatory compliance in 2018 and is confident its drinking water is of the highest quality.

This Consumer Confidence Report is a snapshot of PWD's 2018 water quality and will provide you with a better understanding of the excellent quality of your drinking water. This report includes details about where your water comes from, what it contains, and how it compares to drinking water standards as set by the state of California. We are committed to providing you with this information because informed customers are our best allies. Stringent water-quality testing is performed before the water is delivered to consumers. Last year, PWD tested more than 10,000 samples for over 80 regulated contaminants. Only 12 primary standard contaminants were detected in 2018, and all were at levels below the Maximum Contaminant Level allowed by the state.

Please take the time to review this Consumer Confidence Report and Water Quality Data Chart to become an informed consumer. The Water Quality Data Chart is divided into two standards – Primary and Secondary. Primary standards are set to protect public health from contaminants in water that may be immediately harmful to humans or affect their health if consumed for long periods of time. Secondary standards govern aesthetic qualities of water, such as taste, mineral content, odor, color, and turbidity. Please call 661-947-4111 x1178 or x1185 with any questions.

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## How to contact PWD:

- Attend Board of Directors meetings the second and fourth Monday of each month. Board meetings start at 6:00 p.m. and are held at the PWD office, 2029 East Avenue Q, Palmdale.
- Call 661-947-4111 with questions about PWD or to file a water quality complaint.
- Call 661-947-4111 x1001 for information on water-use efficiency, including conservation and water education.

For more information, visit our website at [palmdalewater.org](http://palmdalewater.org).



# OUR WATER SUPPLY

PWD acquires its water from one of three sources or a combination of these sources.

## 1. Surface water from the State Water Project (SWP/CA Aqueduct)

This water source begins in northern California, flows into the Delta near Sacramento, and is pumped south to Lake Palmdale. PWD is entitled to take a maximum of 21,300 acre-feet, or 6.9 billion gallons of water, per year. Based on the amount of rain & snowfall in the Sierra Nevada mountains and the amount of water stored in northern California reservoirs, PWD is granted a percentage of the annual entitlement. In 2018, PWD received 10,184 acre-feet from the SWP. The water is drawn from the SWP aqueduct and stored in Lake Palmdale prior to treatment.

## 2. Surface water from Littlerock Reservoir

Littlerock Dam was built in 1924 and renovated in 1994 to strengthen the dam and increase the reservoir capacity to 3,500 acre-feet, or 1.1 billion gallons of water. In 2018, PWD diverted 1,188 acre-feet from this source. Littlerock Reservoir is fed by natural runoff from snowpacks in the local San Gabriel Mountains and from rainfall. The water is then transferred from Littlerock Reservoir to Lake Palmdale through a ditch connecting the two bodies of water for storage prior to treatment.

## 3. Groundwater

Groundwater is pumped from the Antelope Valley groundwater basin through 23 wells. In 2018, PWD pumped 6,058 acre-feet from 22 of these wells. This water is treated with chlorine before being pumped directly into the distribution system.

*All three sources are constantly tested and treated in compliance with all applicable regulations to ensure high water quality and dependability of the water system. The Palmdale Water District delivered approximately 70% surface water and 30% groundwater to its consumers in 2018.*

# SOURCES OF DRINKING WATER

**The sources of drinking water, both tap and bottled, include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.**

### Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides that may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

### Drinking Water Source Assessment and Protection Program

Palmdale Water District's Sanitary Survey, including a Source Water Assessment of surface waters, was updated in 2017 in compliance with state of California regulations. The assessment of surface water sources included Littlerock Reservoir and Lake Palmdale. A Groundwater Assessment and Protection Program was completed in January of 1999, and a Wellhead Protection Plan was completed in November 2000.

PWD's drinking water sources are considered most vulnerable to the following activities associated with contaminants detected in the water supply: illegal activities, such as unauthorized dumping; recreation;

highways; railroads; and sewer collection systems. A comprehensive source water protection program can prevent contaminants from entering the public water supply, reduce treatment costs, and increase public confidence in the quality, reliability and safety of drinking water.

You can help prevent water contamination and pollution by properly disposing of trash and waste materials.

Remember, many common household products can contaminate surface and groundwater supplies. Anything you throw in the trash, dump on the ground, pour down the drain, or wash down the driveway can eventually reach water sources and cause contamination.

The Sanitary Survey, Source Water Assessment, Groundwater Assessment, and Wellhead Protection Plan are available for review on PWD's website at [palmdalewater.org](http://palmdalewater.org) or at PWD's office by calling Assistant General Manager Adam Ly at 661-947-4111 x1062.

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**THE WATER QUALITY DATA CHART LISTS ALL DRINKING WATER CONTAMINANTS DETECTED DURING THE 2018 CALENDAR YEAR.**

The presence of these contaminants in the water does not necessarily indicate the water poses a health risk. PWD tests for many contaminants in addition to those listed in the chart. Test results for these additional contaminants were all "None Detected" (ND) and are not required to be included in the chart. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. As a result, some of the data, though representative of the water quality, is more than 1 year old. Unless otherwise noted, the data presented in this chart is from testing performed January 1 to December 31, 2018. Unregulated contaminant monitoring helps USEPA and the State Water Resources Control Board determine where certain contaminants occur and whether the contaminants need to be regulated.

Parameter Primary Standards	MCL or MRDL (units)	Meets Standard?	DLR	Sample Frequency* Surface Water/ Groundwater	Treated Surface Water		*Groundwater Sampled in 2016		EPA (MCLG) PHG or [MRDLG]	Typical Source of Contaminant
					Range	Sampled 2/14/2018 or Average Effluent	Range	Average		
Turbidity (Water Clarity)	TT = 1 NTU TT = 95% of monthly samples ≤0.3 NTU	Y	NA	Continuous/Once in 3 yrs.	0.05 - 0.29 100%	0.10 100%	0.06 - 0.62 NA	0.12 NA	NA	Soil Runoff

Turbidity is a measure of the cloudiness of the water. We measure it because it is a good indicator of the effectiveness of our filtration system. Treated Surface Water Range and Average are of Daily Maximum.

Dist. System Microbiological										
Total Coliform Bacteria (state Total Coliform Rule)	For systems that collect less than 40 samples per month: more than 1 positive sample. For systems that collect 40 or more samples per month: no more than 5.0% of monthly samples are positive	Y	NA	Weekly	0% - 0.6%	0.06%	NA	NA	(0)	Naturally present in the environment
<i>E. coli</i> (state Total Coliform Rule)	A routine sample and a repeat sample are total coliform positive, and one of these is also <i>E. coli</i> positive	Y	NA	Weekly	NA	0%	NA	NA	(0)	Human and animal fecal waste
Fecal Indicator <i>E. coli</i> (Federal Groundwater Rule)	0	Y	NA	Triggered by positive TCR sample	NA	0	NA	0	(0)	Human and animal fecal waste

Organic Chemicals										
Disinfection By-products										
					Stage 2 D/DBP					
					All Sample Range	Highest LRAA				
TTHMs (Total Trihalomethanes)	80 µg/L	Y	NA	Monthly/NA	8.0 - 70	54	NA	NA	NA	Byproduct of drinking water disinfection
HAA5 (Sum of 5 Haloacetic Acids)	60 µg/L	Y	NA	Monthly/NA	ND - 9.0	7.7				
Disinfectant Residual										
					System RAA from Dist. Syst.					
Chlorine Residual	4.0 (mg/L as Cl <sub>2</sub> )	Y	NA	Weekly/NA	0.16 - 1.70	0.88	NA	NA	[4]	Drinking water disinfectant added for treatment
Disinfectant By-product Precursors										
Control of DBP Precursor (Total Organic Carbon, TOC) - see explanation on the next page	TT = ratio of actual TOC removal to required TOC removal shall be ≥ 1	Y	1	Monthly/NA	1.90 - 3.22	2.57	NA	NA	NA	Various natural and manmade sources
Total Organic Carbon	Reported as mg/L		0.3		0.7 - 1.5	1.0				

Inorganic Chemicals										
Arsenic	10 µg/L	Y	2	Yearly/Once in 3 yrs.	NA	ND	ND - 2.3	ND	0.004	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Fluoride	2 mg/L	Y	0.1	Quarterly/Quarterly	0.11 - 0.18	0.14	ND - 0.45	0.16	1	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (as nitrogen)	10 mg/L	Y	0.4	Quarterly/Quarterly	NA	ND	ND - 6.4	1.4	10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits

Radioactivity										
Gross Alpha Activity**	15 pCi/L	Y	3	**See comment	NA	ND	ND - 5.7	ND	(0)	Erosion of natural deposits
Uranium***	20 pCi/L	Y	1	***See comment	NA	ND	NA	1.1	0.43	

Tap Monitoring Lead & Copper	Action Level	Meets Standard?	DLR	Lead and Copper Rule			Lead Testing in Schools			EPA (MCLG) PHG or [MRDLG]	Typical Source of Contaminant
				No. of samples in 2018	90th Percentile	No. sites exceeded AL	Average	Range	No. of Schools requesting lead sampling in 2018		
Lead	15 µg/L	Y	5	50	ND	NONE	ND	88 sites sampled; 0 sites over AL	29	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper	1.3 mg/L	Y	0.05	50	0.420	NONE	NA	NA	NA	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Parameter Secondary Standards	Secondary MCL (units)	Meets Standard?	DLR	Sample Frequency* Surface Water/ Groundwater	Treated Surface Water		*Groundwater Sampled in 2016		EPA (MCLG) PHG or [MRDLG]	Typical Source of Contaminant
					Range	Sampled 2/14/2018 or Average Effluent	Range	Average		
Color	15 units	Y	NA	Weekly/Once in 3 yrs.	NA	ND	NA	ND	NA	Naturally occurring organic materials
Odor-Threshold	3 units	Y	1	Weekly/Once in 3 yrs.	NA	1.0	ND - 1.0	ND	NA	
Chloride	500 mg/L	Y	NA	Quarterly/Quarterly	70 - 101	81	6 - 93	25	NA	Runoff/leaching from natural deposits; seawater influence
Iron	300 µg/L	Y	NA	Monthly/Quarterly	NA	ND	ND - 110	ND	NA	Leaching from natural deposits; industrial wastes
Sulfate	500 mg/L	Y	0.5	Quarterly/Quarterly	24 - 37	30	14 - 130	40	NA	Runoff/leaching of natural deposits; industrial wastes
Total Dissolved Solids	1000 mg/L	Y	NA	Yearly/Once in 3 yrs.	NA	230	140 - 550	246	NA	Runoff/leaching of natural deposits
Specific Conductance	1600 µmhos/cm	Y	NA	Yearly/Once in 3 yrs.	NA	430	250 - 900	406	NA	Substances that form ions when in water; seawater influence

**Additional Constituents Analyzed**

pH	NA (Units)	NA	NA	Continuous/Once in 3 yrs.	7.0 - 8.1	7.2	7.9 - 8.4	8.1	NA	Leaching from natural deposits
Hardness	NA (mg/L)	NA	NA	Weekly/Once in 3 yrs.	98 - 150	116	24 - 240	122	NA	Sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.
Alkalinity	NA (mg/L)	NA	NA	Weekly/Once in 3 yrs.	54 - 90	71	79 - 200	117	NA	Dissolved as water passes through limestone deposits
Calcium	NA (mg/L)	NA	NA	Yearly/Once in 3 yrs.	NA	23	8 - 75	38	NA	
Sodium	NA (mg/L)	NA	NA	Yearly/Once in 3 yrs.	NA	42	17 - 80	36	NA	Generally naturally occurring salt present in water
Potassium	NA (mg/L)	NA	NA	Yearly/Once in 3 yrs.	NA	2.4	ND - 3.0	1.6	NA	Leaching from natural deposits
Magnesium	NA (mg/L)	NA	NA	Yearly/Once in 3 yrs.	NA	9.4	0.7 - 16	6.8	NA	Dissolved as water passes through magnesium-bearing minerals
Hexavalent Chromium	NA (µg/L)	Y	1	Quarterly/Quarterly	NA	ND	ND - 8.4	3.8	0.02	Steel and pulp mill discharges, chrome plating, natural erosion

**Special Testing**

UCMR 4 (Sampled in 2018)					Effluent & Dist. System		Groundwater			Environmental Source
HAA5	NA (µg/L)	NA	NA	Special	2.0 - 8.3	5.4	NA	NA	NA	Byproduct of drinking water disinfection
HAA6Br	NA (µg/L)	NA	NA	Special	2.6 - 16	10	NA	NA	NA	Byproduct of drinking water disinfection
HAA9	NA (µg/L)	NA	NA	Special	3.5 - 18	12	NA	NA	NA	Byproduct of drinking water disinfection
Manganese	50 µg/L	NA	0.40	Special	NA	0.9	ND - 1	ND	NA	Leaching from natural deposits

Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

\* Wells are sampled once/3 yrs. except for Fluoride, Chloride, Sulfate, & Nitrate, which are sampled quarterly.  
 \*\* Sampled between 2010 and 2018. Individual sites are sampled once/6 yrs. or once/9 yrs. Range is from individual sample results.  
 \*\*\* Sample collected only when Gross Alpha exceeds 5pCi/L.

# Lead and Copper

Palmdale Water District is required to draw new sample sets of tap samples for lead and copper every 3 years. The last samples were taken in 2018 (50 samples). The 90th percentile results of none-detected for lead and 0.420 ppm for copper are well within the AL of 15 ppb lead and the AL of 1.3 ppm for copper. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. PWD is responsible for providing high-quality drinking water, but is unable to control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. [If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.]

If you are concerned about lead in your drinking water, you may wish to have your

water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/lead>.

**Health Effects of Lead:** Infants and children who drink water containing lead in excess of the action level may experience delays in their physical and mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink this water over many years may develop kidney problems or high blood pressure.

**Health Effects of Copper:** Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

## DEFINITIONS:

The following definitions of key terms are provided to help you understand the data used in this report.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

**Locational Running Annual Average (LRAA):** The running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of samples taken at a particular monitoring location.

**Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by OEHHA (Office of Environmental Health Hazard Assessment), a division of the California Environmental Protection Agency (CEPA).

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Running Annual Average (RAA):** The running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected.

**Detection Limit for purposes of Reporting (DLR):** The smallest concentration of a contaminant that can be measured and reported. DLRs are set by the DDW (same as MRL, Minimum Reporting Level, set by USEPA).

**Unregulated Contaminant Monitoring (UCMR):** Unregulated contaminant monitoring helps USEPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Regulatory Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

**Notification Level (NL):** State guidelines developed by DDW that address the concentration of a contaminant which, if exceeded, triggers public notification.

**Primary Drinking Water Standard (PDWS):** MCLs, MRDLs and treatment techniques (TT) for contaminants that affect health, along with their monitoring and reporting requirements.

**Secondary Drinking Water Standard (SDWS):** MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL level.

## ABBREVIATIONS USED IN 2018 WATER QUALITY DATA CHART:

**ND:** Not detectable or None detected at testing limit (DLR)

**NA:** Not Applicable

< Less Than

> Greater Than

**pCi/L:** picocuries per liter (a measure of radiation)

**DBP:** Disinfection Byproducts

Comparison examples are provided for the following measurements to help you better understand the amount of chemical contaminants detected in the water. This does not mean that the amounts are not significant regarding risk of health effects for specific contaminants.

**ppm:** parts per million or milligrams per liter (mg/L) = qualitatively, approximately 1 second in 11.5 days

**ppb:** parts per billion or micrograms per liter (µg/L) = qualitatively, approximately 1 second in nearly 32 years

**ppt:** parts per trillion or nanograms per liter (ng/L) = qualitatively, approximately 1 second in nearly 32,000 years

**µmhos/cm:** micromhos per centimeter (a measure for conductivity)

## EDUCATIONAL INFORMATION AND POSSIBLE DRINKING WATER CONTAMINANTS:

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline 1-800-426-4791. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

**TOTAL TRIHALOMETHANES (TTHMs):** Total Trihalomethanes (TTHMs) are the total of four trihalomethanes of concern in drinking water: chloroform, bromoform, bromodichloromethane, and chlorodibromomethane. In the Primary Standards Disinfection Byproducts section of the Water Quality Chart under highest LRAA from Distribution System, the highest Locational Running Annual Average (LRAA) for 2018 is 54 µg/L, which is less than and complies with the Federal TTHM MCL of 80 µg/L. The range of monthly sample results from all 8 sampling points in 2018 is 8.0 – 70 µg/L. These samples were taken from dedicated sample points within the distribution system and are representative of maximum residence time in the system.

**Health effects of Total Trihalomethanes (TTHMs):** Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems and may have an increased risk of getting cancer.

**TOTAL ORGANIC CARBON (TOC):** Total Organic Carbon (TOC) has no health effects. However, TOC provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (TTHMs) and haloacetic acids (HAAs). TOC result is based on quarterly RAA of percent removal ratio. The percent removal between source water and treated water is divided by the required monthly TOC percent removal based on certain criteria that all public water systems must follow. The quarterly RAA of these monthly results should be 1.0 or higher. Our quarterly RAA in 2018 ranged from 1.90 to 3.22 and averaged 2.57. Individual TOC sample results for treated water ranged from 0.7 to 1.5 mg/L and averaged 1.0 mg/L.

**FLUORIDE:** Fluoride in the treated surface water ranged from 0.11 to 0.18 mg/L and averaged 0.14 mg/L. The groundwater samples ranged from ND to 0.45 mg/L and averaged 0.16 mg/L. The fluoride MCL is 2 mg/L and the DLR is 0.1 mg/L.

**Health effects of Fluoride:** Some people who drink water containing fluoride in excess of the federal MCL of 4 mg/L over many years may get bone disease, including pain and tenderness of the bones. Children who drink water containing fluoride in excess of the state MCL of 2 mg/L may get mottled teeth.

**NITRATE:** In the Primary Standards Inorganic Chemicals section of the chart for Nitrate (as Nitrogen), treated surface water sample is None Detected (ND). In the groundwater column, the range of Nitrate (as Nitrogen) is ND to 6.4 mg/L, and the average is 1.4 mg/L. The State Water Resource Control Board requires annual sampling if all results are less than 50% of the MCL. If the result from any one source is greater than 50% of the MCL, then sampling must be done quarterly at that source. PWD samples all its wells on a quarterly basis (4 times a year) even when they test below 50% of the MCL. The numbers expressed on the chart are derived from quarterly sampling of all PWD wells, except those that are out of service.

**Health effects of Nitrate:** Nitrate in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness with symptoms including shortness of breath and blueness of the skin. Nitrate levels above 10 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant or you are pregnant, you should ask advice from your health care provider. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity.

**GROSS ALPHA PARTICLE ACTIVITY:** Between 2010 - 2018, 23 wells have been sampled for Gross Alpha. Results ranged from ND - 5.7 pCi/L and averaged ND. In 2018, Well 33 was the only well sampled for Gross Alpha. Well 33 = None Detected (ND). The remaining water sources will be monitored in the future during this compliance cycle.

**Health effects of Gross Alpha Particle Activity:** Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.