

Water Quality



ANNUAL REPORT 2021

LETTER FROM THE DIRECTOR

I am pleased to announce that the City of Fresno met all state and federal water quality standards for the 2021 reporting period. As always, the City remains committed to continued investment in our water system and to providing, clean, safe, reliable water for our community.

The Department of Public Utilities (DPU) maintains proactive programs that focus on the protection of water resources used for drinking water. For surface water supplies, this includes conducting surveys of watersheds and river systems to ensure there are not any detrimental influences on water quality. To further protect this resource, the City has constructed dedicated conveyance pipelines that carry these water supplies directly to the surface water treatment facilities, thus avoiding the potential for quality degradation. For groundwater supplies, intentional recharge is conducted to aid in the replenishment of the aquifer. These are just a few examples of the measures we take to ensure source protection.

Water quality assurance is further established through the continuous sampling of the water sent through the water distribution system pipes delivering it to your home and place of work. In this manner, DPU makes sure that the drinking water we deliver meets all State and Federal requirements.

Another important element to protection of our drinking water is maintaining an adequate renewal and replacement program of water system infrastructure. As older portions of the water production and distribution system reach the end of their useful life, it is important to replace that infrastructure to avoid costly repairs and exposures to health risks.

Lastly, to make sure the City has adequate supplies to keep pace with future growth and new water demands, DPU prepares long-range planning documents. These documents make forecasts on population growth, allowing us to estimate the need for additional supplies. By being proactive in these efforts, the City is able to ensure we always have an ample supply of safe and reliable drinking water.

I invite you to take a moment to review our 2021 Water Quality Report, which provides an overview of general health information, water quality test results, and water conservation guidelines. I hope that this information provides helpful insight into the City's commitment to supplying customers with drinking water that meets all State and Federal requirements year after year.

Brock D. Buche, PE, PLS
Director

WHAT'S IN THIS REPORT?

This Annual Water Quality Report, prepared in cooperation with the California State Water Resources Control Board (State Board) - Division of Drinking Water, provides important information about Fresno's water supply, water quality, and water delivery system. Test results for Fresno's 2021 Water Quality Monitoring Program are summarized on the following pages. It is important to read the messages regarding various water quality issues from the U.S. Environmental Protection Agency (USEPA) and from your City of Fresno Water Division.

Unregulated contaminant monitoring helps USEPA and the State Board to determine where certain contaminants occur and whether the contaminants need to be regulated. A copy of this report is available on the Fresno City website. It can be found at [Fresno.gov/waterquality](https://www.fresno.gov/waterquality).

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Daimntawv tshaj tawm no muaj lus tseemceeb txog koj cov dej haus. Tshab txhais nws, los yog tham nrog tej tug neeg uas totaub txog nws.

Chi ti t này th t quan tr ng, xin nh ngu i d ch cho quý v.

FACTS ABOUT DRINKING WATER STANDARDS

Under the 1974 Safe Drinking Water Act, the United States Environmental Protection Agency and the California Department of Public Health are charged with the responsibility of setting and implementing safe drinking water standards. Congress reauthorized this act in 1996. There are 74 regulated contaminants and another 34 are subject to monitoring. Fortunately, only a small number have ever been detected in Fresno's water supply.

WHERE DOES OUR DRINKING WATER COME FROM?

For Fresno customers, there are two sources of drinking water. The Fresno Sole Source Aquifer is a large underground water system that supplies many communities in the San Joaquin Valley. The City operates approximately 260 wells that draw from this aquifer, which can lower the water table. For this reason, Fresno has an aggressive recharge program that is continually finding new places and methods to conduct ground water recharge. Water recharge operations can slow this decline, but with conservation, you can help have a greater impact.

The second source is surface water delivered via Fresno Irrigation District canals and comes from either Millerton or Pine Flat lakes located in the foothills east of Fresno. The surface water is treated to drinking water standards at three of Fresno's state of the art treatment facilities. One in northeast Fresno, the Northeast Surface Water Treatment Facility is rated at 30 million gallons per day. In east Fresno is the 4 million gallons per day T-3 Water Storage and Treatment Facility, and in southeast Fresno is our newest and largest facility, the Southeast Surface Water Treatment Facility rated 54 million gallons per day.

WHAT HAPPENS IN FRESNO IF A WELL EXCEEDS USEPA OR STATE BOARD STANDARDS?

If a well violates standards, it will be removed from service and an alternate water supply is provided. In the event a well exceeds standards but must stay in service, customers who receive water from that well would be directly notified by mail or by hand-delivered flyers.

WATER CONSERVATION

Increasing water demands coupled with highly variable rainfall patterns in California make implementation of Water Conservation measures a necessary way of life. We need to work collaboratively to implement practical water conservation solutions that have broad-based community benefit while also providing a range of free services for our residential and commercial customers.

REBATES

The City of Fresno offers a variety of rebates to qualified customers to offset some of the costs of installing water-efficient appliances, fixtures, and landscaping materials. Rebate forms are available online by visiting www.fresno.gov/water and clicking on “Rebates” or request a hard copy by calling the City of Fresno’s One Call Center by dialing 3-1-1 within City limits or by calling (559) 621-CITY (2489).

REBATES AVAILABLE

- Commercial & Multi-Family Toilet Rebate – up to \$100
- High-Efficiency Sprinkler Nozzle Rebate – up to \$4 per nozzle
- Hot Water Recirculating Pump Rebate – up to \$100
- Lawn to Garden Rebate - \$1.00 per square foot (up to 1500 sq. ft.)
- Micro (Drip) Irrigation Rebate - \$0.50 per square foot (up to 1000 sq. ft. of irrigated area)
- Rain Barrel Rebate – up to \$50
- Rain Sensor Rebate – up to \$50
- Residential Clothes Washer Rebate – up to \$100
- Residential Toilet Rebate – up to \$100
- Smart Irrigation Controller Rebate – up to \$100
- Swimming Pool Cover Rebate – up to \$100

SERVICES

The Water Conservation Program offers a variety of free services for our customers. These services are provided to help customers save money by reducing their water use and ensuring compliance with water conservation regulations. Customers can request any of the free services outlined below by submitting a service request through FresGO, or by calling the 311 Center by dialing 3-1-1 from within City limits or by calling (559) 621-CITY (2489).

SERVICES OFFERED

- Water-Wise Landscape Consultation
- Irrigation Efficiency Audit
- Irrigation Controller Assistance (Timer Tutorial)
- Interior/Exterior Water Leak Surveys

OUTDOOR WATER USE SCHEDULE

3-DAY OUTDOOR WATER USE SCHEDULE (APRIL 1 - OCTOBER 31)

- Addresses ending in odd numbers (1,3,5,7,9) – Tuesdays, Thursdays and Saturdays.
- Addresses ending in even numbers (2,4,6,8,0) – Wednesdays, Fridays and Sundays.
- Customers cannot water between 10am – 6pm and never on Mondays.

1-DAY OUTDOOR WATER USE SCHEDULE (NOVEMBER 1 - MARCH 31)

- Addresses ending in odd numbers (1,3,5,7,9) – Saturdays.
- Addresses ending in even numbers (2,4,6,8,0) – Sundays.
- Customers cannot water between 10am – 6pm and never on Mondays.

Outdoor Water Use Schedules are subject to change at any time.

IMPORTANT WATER CONSERVATION RULES

- Customers may not use potable (fresh, drinking) water to wash sidewalks, walkways, driveways, parking lots, open ground, or other hard surface areas except where necessary for public health or safety.
- Customers may not use potable (fresh, drinking) water in a way that causes runoff onto adjacent properties, walkways, roadways, or parking lots.
- Car washing on private property is only allowed with the use of a bucket and a hose equipped with a shut off nozzle for a quick rinse.
- Established swimming pools may only be drained once every 3 years. A pool drain exemption permit is available at www.fresno.gov/water by clicking on the “Exemption Requests” link.
- Customers may not exceed more than 400 gallons per hour of potable (fresh, drinking) water for outdoor water use on restricted days or times associated with the property address.

CALIFORNIA DRINKING WATER SOURCE ASSESSMENT AND PROTECTION PROGRAM

The City of Fresno Water Division and the State Water Resources Control Board, formerly the California Department of Public Health, CaDPH, has completed the California Drinking Water Source Assessment and Protection (DWSAP) Program for water wells operated by the Fresno Water Division. The complete report prepared in 2003 is available for viewing at the Water Division or the State Water Resources Control Board office. Please contact the Water Division at 621-5300 or State Water Resources Control Board at 447-3300 if you are interested in more information regarding this report.

The City operates approximately 260 wells throughout Fresno's 115 sq. mile service area. Given the size and complexity of our system, the DWSAP report is a very large document and even a brief summary would be difficult to include in this Consumer Confidence report. However, two summary data tables are available on the City's website at www.fresno.gov. In the search box, type Water Quality Report and you will automatically be routed to the linking page containing the reports.

The multipurpose goal of the DWSAP is to identify ways communities can protect the water supplies, manage their water resources, improve drinking water quality, inform their citizens of known contaminants, identify known activities and locations that can threaten their supply, and meet regulatory requirements.

As an example, the following paragraph lists the contaminating activities and sources, which can affect Fresno's drinking water.

Airports-maintenance/fueling areas, apartments and condominiums, automobile-body shops, automobile-gas stations, automobile-repair shops, boat services/repair/refinishing, chemical/petroleum processing/storage, crops-irrigated, dry cleaners, electrical/electronic manufacturing, fertilizer, pesticide/herbicide application, golf courses, historic gas stations, historic waste dumps/landfills, home manufacturing, hospitals, housing-high density, junk/scrap/salvage yards, known contaminant plumes, landfills/dumps, machine shops, metal plating/finishing/fabricating, medical/dental offices/clinics, military installations, motor pools, office buildings/complexes, parks, pesticide/fertilizer/petroleum storage & transfer areas, photo processing/printing, plastics/synthetics producers, railroad yards/

maintenance/fueling areas, rental yards, schools, septic systems-high density, sewer collection systems, transportation corridors-railroads, underground storage tanks-confirmed leaking tanks, utility stations-maintenance areas, veterinary offices/clinics, wastewater treatment plants, wells-agriculture/irrigation, wells-water supply.

More information is included in the summary, which identifies the affected well(s) and associated activities.

SOURCES OF DRINKING WATER

The sources of drinking water (both tap water and bottled water) 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 storm water 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 storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural application, and septic systems.
- Radioactive contaminants that can be naturally occurring or be the result of oil and gas production and mining activities.

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. Additional information on bottled water is available on the California Department of Public Health website (<https://www.cdph.ca.gov/Programs/CEH/DFDCS/Pages/FDBPrograms/FoodSafetyProgram/Water.aspx>)

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; symptoms include 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.

Arsenic: While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Lead: 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. The City of Fresno is responsible for providing high quality drinking water but cannot 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 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 USEPA's Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/lead>.

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 that 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 USEPA's Safe Drinking Water Hotline (1-800-426-4791).

The following tables list all the drinking water contaminants that were tested for during the 2020 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing between January 1 through December 31, 2021. The State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data contained in this report, though representative of the water quality, is more than one year old.

Table 1: Primary Standards and Unregulated Contaminants

Chemical Table	MCL	PHG (MCLG)	Fresno Average	Range of Detection's	MCL Violation	Last Sampled	Typical source of Contaminant
Volatile Organic Contaminants							
cis-1,2-Dichloroethylene (ug/L)	6	100	0.16	0 - 3.6	NO	2021	Discharge from industrial chemical factories; major biodegradation byproduct of TCE and PCE groundwater contamination
Tetrachloroethylene (PCE) (ug/L)	5	0.06	0.11	0 - 3.5	NO	2021	Discharge from factories, drycleaners, and auto shops (metal degreaser)
Trichloroethylene (TCE) (ug/L)	5	1.7	0.18	0 - 1.4	NO	2021	Discharge from metal degreasing sites and other factories
Synthetic Organic Contaminants							
Dibromochloropropane (DBCP) (ng/L)	200	1.7	30	0 - 150	NO	2021	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit
1,2,3-Trichloropropane (TCP) (ng/L) (1)	5	0.7	0.64	0 - 7.3	NO	2021	Discharge from industrial and agricultural chemical factories; leaching from hazardous waste sites; used as cleaning and maintenance solvent, paint and varnish remover, and cleaning and degreasing agent; byproduct during the production of other compounds and pesticides.
Inorganic Contaminants							
Aluminum (AL) (mg/L)	1	0.6	0.001	nd - 0.16	NO	2020	Erosion of natural deposits; residue from some surface water treatment plants
Arsenic (As) (ug/L)	10	0.004	1.1	nd - 10	NO	2020	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (Ba) (mg/L)	1	2	0.035	nd- 0.25	NO	2020	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (Total) (ug/L)	50	(100)	0.100	nd - 12	NO	2017	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ug/L)	2	1	0.090	nd - 1.9	NO	2017	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate (N) (mg/L)	10	10	4.03	0 - 9.5	NO	2021	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Perchlorate (ug/L)	6	6	0.028	nd - 3.1	NO	2020	Historic aerospace or industrial operations associated with rocket propellant, fireworks, explosives, flares, matches and a variety of industries.
Radionuclides							
Gross Alpha (pCi/L)	15	n/a	2.21	nd - 10.5	NO	2020	Erosion of natural deposits
Radium 228 (pCi/L)	5	0.019	0.28	nd - 3.9	NO	2020	Erosion of natural deposits
Uranium (pCi/L)	20	0.5	5.23	0 - 15	NO	2020	Erosion of natural deposits
Unregulated Contaminants (ICR, UCMR & Misc)							
Manganese (ug/L)	n/a	1	nd - 140	n/a	2020	We are required by regulations to monitor for certain unregulated contaminants. This is helpful to the USEPA and DDW for tracking the location of contaminants and whether there is a need for stricter regulations. Some contaminants may indicate detected values with a "<" symbol meaning less than. There are two possible reasons for this. First, the Detection Limit for Reporting, the DLR, has not been established by EPA or DDW. Second, for various reasons, the analytical equipment is unable to quantify the value below the stated "less than" value but analysis indicates the contaminant is present. For either reason, the concentration cannot be quantified and the City must assume that a "Fresno Average" is not applicable for this report.	
1,4-Dioxane (ug/L)	n/a	4	nd - 84	n/a	2017		
Dichlorodifluoromethane (Freon 12)	n/a	0.55	nd - 100	n/a	2020		
Hexavalent Chromium (ug/L)	n/a	2.4	nd - 8	n/a	2017		
Tert-Butyl Alcohol (TBA)	n/a	0.190	nd - 1	n/a	2017		
Vanadium (total)	n/a	11	nd - 71	n/a	2014		
Bromochloromethane	n/a	0.133	nd - 79	n/a	2014		
Chlorate	n/a	204	nd - 970	n/a	2014		
Chlorodifluoromethane	n/a	0.085	nd - 3.8	n/a	2014		
Molybdenum (total)	n/a	0.9	nd - 71	n/a	2014		
Strontium (total)	n/a	97	nd - 510	n/a	2014		
State Contaminants with Notification Levels							
Perfluorobutanesulfonic acid (PFBS) (ng/L) (2)	Notification Level 500	0.47	nd - 5.5	n/a	2021	Perfluorobutane sulfonic acid exposures resulted in decreased thyroid hormone in pregnant female mice.	
Perfluorooctanoic Acid (PFOA) (ng/L) (2)	Notification Level 5.1	0.80	nd - 5.2	n/a	2021	Perfluorooctanoic Acid exposures resulted in increased liver weight and cancer in laboratory animals	
Perfluorooctanesulfonic Acid (PFOS) (ng/L) (2)	Notification Level 6.5	1.27	nd - 11	n/a	2021	Perfluorooctanesulfonic Acid exposures resulted in immune suppression and cancer in laboratory animals	
Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors							
Total Trihalomethanes (TTHM) (ug/L)	80	n/a	6.4	nd - 17	NO	2021	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ug/L)	60	n/a	2.5	nd - 7.5	NO	2021	Byproduct of drinking water chlorination
Chlorine (NAOCL) (mg/L)	4	4	1.39	0.0 - 2.6	NO	2021	Drinking water disinfectant added for treatment

(1) See Table Footnotes. Two wells, 21A and 339 were tested several times in 2021 to determine compliance with State MCL for TCP. Testing for well 21A is still ongoing. Testing for well 339 actually continued into Jan and Feb 2022 before confirming above the MCL and being removed from service. (2) See Table Footnotes. We are required to monitor specific wells for the presence of PFAS related compounds as the Division of Drinking Water continues to evaluate the creation of additional regulations including MCL's for PFBS, PFOA and PFOS. Testing at well 77 in SE Fresno confirmed the presence of PFOS above the Notification level of 6.5 ng/l. No other action is required at this time except for continued monitoring of the identified source wells.

Table 2: Micro Biological Contaminants

Over 220 bacteriological samples are collected every month in Fresno's distribution system. In addition, over 300 bacteriological samples are collected from wells and treatment sites.					
Contaminant	Highest No. of Detection's	No. of Months in Violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	1 of 235 or 0.42%	0	5%	(0)	Naturally present in the environment
E.coli	0	0	A routine sample is positive for E.coli and a repeat sample is positive for total, fecal or E.coli bacteria	(0)	Human or animal fecal waste

Table 3: Lead and Copper

Under the Lead and Copper Rule, samples are collected from inside residences meeting criteria established by the USEPA.								
Contaminant	No. of Samples Collected	90th Percentile Level Detected	No. of Sites Exceeding Action Level	Range of Detections	Action Level	MCLG	No. of Schools requesting lead testing	Typical Source of Contaminant
Lead (ug/L) (Sampled in August 2019)	56	0	0	ND	15	0.2	3 sampled in 2019	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (mg/L) (Sampled in August 2019)	56	0.18	0	ND - 0.29	1.3	0.3		Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Table 4: Secondary Standards Contaminants List

Secondary standards are based on aesthetic factors (taste, appearance and odor, etc.) and are not health related.

Inorganic Contaminants	SMCL	Fresno Average	Range of Detection's	SMCL Violation	Last Sampled	Typical Source of Contaminant
Aluminum (ug/L)	200	1.06	nd - 160	NO	2020	Erosion of natural deposits; residual from some surface water treatment processes
Apparent Color (Unfiltered)	15	0.15	nd - 10	NO	2020	Naturally-occurring organic materials
Iron (Fe) (ug/L) (3)	300	36	nd - 2000	NO	2020	Leaching from natural deposits; industrial wastes
Manganese (Mn) (ug/L) (4)	50	3.3	nd - 140	NO	2020	Leaching from natural deposits
Specific Conductance (E.C.) (umho/cm+)	1600	305	30 - 920	NO	2020	Substances that form ions when in water; seawater influence
Sulfate (SO4) (mg/L)	500	9.71	nd - 91	NO	2020	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS) (mg/L)	1000	216	24 - 620	NO	2020	Runoff/leaching from natural deposits
Turbidity (Lab) (units)	5	0.190	nd - 4.5	NO	2020	Soil runoff
Zinc (Zn) (mg/L)	5	0.001	nd - 0.11	NO	2017	Runoff/leaching from natural deposits; industrial wastes
Sodium (Na) (mg/L)	n/a	20	1.9 - 72	NO	2020	Sodium and Total Hardness are not regulated but many customers are interested due to concerns about sodium in the diet or water hardness
Total Hardness (as CaCO3) (mg/L, GPG)	n/a	108, 6.3	9 - 410	NO	2020	

(3) See Table Footnotes. Single well (186) with high detection followup testing was ND.
 (4) See Table Footnotes. 345-1 multiple detects above SMCL. Removed from service.

Table 5: Turbidity in North East Fresno related to Surface Water Treatment Plant Operations

	MCL	MCLG	Level Found	Range	Sample Date	Violation	Typical Source
Turbidity (NTU)	TT = 1 NTU	n/a	0.220	.024 - .220	6-Aug-21	n/a	Soil runoff
	TT = 95% of samples ≤0.3 NTU	n/a	100%		Continuous	n/a	

Turbidity is a measurement of the cloudiness of the water determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Table 5: Turbidity in South East Fresno related to T-3 Surface Water Treatment Plant Operations

	MCL	MCLG	Level Found	Range	Sample Date	Violation	Typical Source
Turbidity (NTU)	TT = 1 NTU	n/a	n/a	n/a	n/a	n/a	Soil runoff
	TT = 95% of samples ≤0.3 NTU	n/a	n/a		n/a	n/a	

Turbidity is a measurement of the cloudiness of the water determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light. We monitor it because it is a good indicator of the effectiveness of our filtration system. T-3 was offline in 2019.

Table 5: Turbidity in South East Fresno related to Surface Water Treatment Plant Operations

	MCL	MCLG	Level Found	Range	Sample Date	Violation	Typical Source
Turbidity (NTU)	TT = 1 NTU	n/a	0.221	.016 - .221	7-Jul-21	n/a	Soil runoff
	TT = 95% of samples ≤0.3 NTU	n/a	100%		Continuous	n/a	

Turbidity is a measurement of the cloudiness of the water determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light. We monitor it because it is a good indicator of the effectiveness of our filtration system.

TABLE FOOTNOTES

TABLE 1: PRIMARY STANDARDS AND UNREGULATED CONTAMINANTS

(1) 1,2,3-Trichloropropane (TCP): In 2021, the city continued with initial monitoring of wells for TCP. Wells that were not available to sample in 2018 through 2020 still required the initial compliance sampling. Two wells, 21A and 339 were among the wells that sampled above the MCL during 2021 sample events. Well 339 confirmed above the MCL and was removed from service in February 2021. We continue to monitor well 21A as of May 2022. Determination as to whether a well exceeds an MCL for non-acute contaminants such as TCP is based on a running average for a prescribed period of time, typically six months. Therefore, a well may have several results above the MCL yet still meet drinking water standards and “not” exceed the MCL. Some people who drink water containing TCP in excess of the MCL over many years may have an increased risk of getting cancer.

(2) PFAS Compounds. The city is currently engaged in an ongoing state mandated testing program to determine the presence of 18 different PFAS compounds. Specifically, PFOA, PFOS (and PFBS, added in 2021) are the primary compounds of interest, and the State has established notification and response levels for these three. During quarterly testing events, we have detected the presence of PFAS compounds at several wells near Fresno Yosemite International Airport. All but two sites are below established levels, and all continue to operate. PS 77 exceeds the notification level for PFOS, and we must continue to monitor. PS 70 is above the response level for PFOA and PFOS but remains online because a suitable treatment system is in place. All post treatment sample results from PS 70 have been non-detect since monitoring began in 2019. Perfluorooctanoic Acid (PFOA) exposure can result in increased liver weight and cancer in laboratory animals. Perfluorooctanesulfonic Acid (PFOS) and Perfluorobutanesulfonic Acid (PFBS) exposures resulted in immune suppression and cancer in laboratory animals.

TABLE 4: SECONDARY STANDARDS CONTAMINANTS LIST

(3) Iron: One well, 186, near Chestnut and Behymer in NE Fresno had a result that exceeded the Secondary MCL for Iron. The iron found in well 186 is most likely related to corrosion of the column pipe and well casing, something that is normal for wells that have been offline for a period of time. A confirmation sample of the well was collected, and results were non-detect, a result more consistent with historical results. Iron in water may cause discoloration and staining of appliances, fixtures and clothing.

(4) Manganese: One well, 345-1 near Kings Canyon and Fowler was being evaluated to determine both the manganese and iron concentration in the well. A number of samples were collected, some while the well was being pumped to waste confirmed that manganese exceeded the SMCL. The well has been removed from service and a treatment system is being planned for this well. Manganese in water may cause discoloration and staining of appliances, fixtures and clothing.

ACRONYMS AND ABBREVIATIONS

n/a: not applicable

NTU: Nephelometric Turbidity Unit (a measure of light)

nd: not detectable at reporting limits.

ng/L: nanograms per liter or parts per trillion.

ug/L: micrograms per liter or parts per billion

mg/L: milligrams per liter or parts per million

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

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.

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 the California Environmental Protection Agency.

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

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.

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

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



1910 East University Avenue
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A copy of this report is available on the Fresno City website. It can be found at Fresno.gov/waterquality

A translation of this report in Spanish, Hmong, or Vietnamese can be requested by calling (559) 621-5300.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Daimntawv tshaj tawm no muaj lus tseemceeb txog koj cov dej haus. Tshab txhais nws, log yog tham nrog tej tug neeg uas totaub txog nws.

Chi ti t này th t quan tr ng, xin nh ngu i d ch cho quý v.

A large print version of this report can be requested by calling (559) 621-5300.