

# NTMWD Tawakoni Water Treatment Plant

## Water Quality Data for Year 2018

### Coliform Bacteria

Maximum Contaminant Level Goal	Total Coliform Maximum Contaminant Level	Number of E. coli Positive Results	Number of Assessments Required	Number of Assessments Performed	Violation	Likely Source of Contamination
0	1 positive monthly sample	0	0	0		Naturally present in the environment.

**NOTE:** Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. If coliforms are found, this indicates the need to look for potential problems in water treatment or distribution. When this occurs, systems are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments. A Level 1 assessment must be conducted when a PWS exceeds one or more of the Level 1 treatment technique triggers specified previously. Under the rule, this self-assessment consists of a basic examination of the source water, treatment, distribution system and relevant operational practices. The PWS should look at conditions that could have occurred prior to and caused the total coliform-positive sample. Example conditions include treatment process interruptions, loss of pressure, maintenance and operation activities, recent operational changes, etc. In addition, the PWS should check the conditions of the following elements: sample sites, distribution system, storage tanks, source water, etc. If the number of positive samples is below the required action level, then no assessment is performed. *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. When *E. coli* bacteria are found, this indicates the need to look for potential problems in water treatment or distribution. When this occurs, systems are required to conduct level 2 assessment(s) to identify problems and to correct any problems that were found during these assessments.

### Regulated Contaminants

Disinfectants and Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Total Haloacetic Acids (HAA5)	2018	23	11.4-26.8	No goal for the total	60	ppb		By-product of drinking water chlorination.
Total Trihalomethanes (TTHm)	2018	34	2.12-36.1	No goal for the total	80	ppb		By-product of drinking water chlorination.
Bromate	2018	Levels lower than detect level	0 - 0	5	10	ppb	No	By-product of drinking water ozonation.

**NOTE:** Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future. TCEQ only requires one sample annually for compliance testing.

Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Antimony	2018	Levels lower than detect level	0 - 0	6	6	ppb	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; and test addition.
Arsenic	2018	Levels lower than detect level	0 - 0	0	10	ppb	No	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes.
Barium	2018	0.067	0.067 - 0.067	2	2	ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Beryllium	2018	Levels lower than detect level	0 - 0	4	4	ppb	No	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries.
Cadmium	2018	Levels lower than detect level	0 - 0	5	5	ppb	No	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints.
Chromium	2018	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	2018	0.343	0.343 - 0.343	4	4	ppm	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Mercury	2018	Levels lower than detect level	0 - 0	2	2	ppb	No	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Nitrate (measured as Nitrogen)	2018	0.123	0.123 - 0.123	10	10	ppm	No	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits.
Selenium	2018	Levels lower than detect level	0 - 0	50	50	ppb	No	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines.
Thallium	2018	Levels lower than detect level	0 - 0	0.5	2	ppb	No	Discharge from electronics, glass, and leaching from ore-processing sites; drug factories.

**Nitrate Advisory:** Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.

Radioactive Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
Beta/Photon emitters	2018	Levels lower than detect level	0 - 0	0	50	pCi/L	No	Decay of natural and man-made deposits.
Gross alpha excluding radon and uranium	2018	Levels lower than detect level	0 - 0	0	15	pCi/L	No	Erosion of natural deposits.
Radium-228	2018	Levels lower than detect level	0 - 0	0	5	pCi/L	No	Erosion of natural deposits.

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Synthetic organic contaminants including pesticides and herbicides	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
2, 4, 5 - TP (Silvex)	2018	Levels lower than detect level	0 - 0	50	50	ppb	No	Residue of banned herbicide.
2, 4 - D	2018	Levels lower than detect level	0 - 0	70	70	ppb	No	Runoff from herbicide used on row crops.
Alachlor	2018	Levels lower than detect level	0 - 0	0	2	ppb	No	Runoff from herbicide used on row crops.
Aldicarb	2018	Levels lower than detect level	0 - 0	1	3	ppb	No	Runoff from pesticide used on row crops.
Aldicarb Sulfone	2018	Levels lower than detect level	0 - 0	1	2	ppb	No	Runoff from pesticide used on row crops.
Aldicarb Solfoxide	2018	Levels lower than detect level	0 - 0	1	4	ppb	No	Runoff from pesticide used on row crops.
Atrazine	2018	0.2	0.2 - 0.2	3	3	ppb	No	Runoff from herbicide used on row crops.
Benzo (a) pyrene	2018	Levels lower than detect level	0 - 0	0	200	ppt	No	Leaching from linings of water storage tanks and distribution lines.
Carbofuran	2018	Levels lower than detect level	0 - 0	40	40	ppb	No	Leaching of soil fumigant used on rice and alfalfa.
Chlordane	2018	Levels lower than detect level	0 - 0	0	2	ppb	No	Residue of banned termiticide.
Dalapon	2018	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff from herbicide used on rights of way.
Di (2-ethylhexyl) adipate	2018	Levels lower than detect level	0 - 0	400	400	ppb	No	Discharge from chemical factories.
Di (2-ethylhexyl) phthalate	2018	Levels lower than detect level	0 - 0	0	6	ppb	No	Discharge from rubber and chemical factories.
Dibromochloropropane (DBCP)	2018	Levels lower than detect level	0 - 0	0	200	ppt	No	Runoff / leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards.
Dinoseb	2018	Levels lower than detect level	0 - 0	7	7	ppb	No	Runoff from herbicide used on soybeans and vegetables.
Endrin	2018	Levels lower than detect level	0 - 0	2	2	ppb	No	Residue of banned insecticide.
Ethylene dibromide	2018	Levels lower than detect level	0 - 0	0	50	ppt	No	Discharge from petroleum refineries.
Heptachlor	2018	Levels lower than detect level	0 - 0	0	400	ppt	No	Residue of banned termiticide.
Heptachlor epoxide	2018	Levels lower than detect level	0 - 0	0	200	ppt	No	Breakdown of heptachlor.
Hexachlorobenzene	2018	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from metal refineries and agricultural chemical factories.
Hexachlorocyclopentadiene	2018	Levels lower than detect level	0 - 0	50	50	ppb	No	Discharge from chemical factories.
Lindane	2018	Levels lower than detect level	0 - 0	200	200	ppt	No	Runoff / leaching from insecticide used on cattle, lumber, and gardens.
Methoxychlor	2018	Levels lower than detect level	0 - 0	40	40	ppb	No	Runoff / leaching from insecticide used on fruits, vegetables, alfalfa, and livestock.
Oxamyl [Vydate]	2018	Levels lower than detect level	0 - 0	200	200	ppb	No	Runoff / leaching from insecticide used on apples, potatoes, and tomatoes.
Pentachlorophenol	2018	Levels lower than detect level	0 - 0	0	1	ppb	No	Discharge from wood preserving factories.
Picloram	2018	Levels lower than detect level	0 - 0	500	500	ppb	No	Herbicide runoff.
Simazine	2018	Levels lower than detect level	0 - 0	4	4	ppb	No	Herbicide runoff.
Toxaphene	2018	Levels lower than detect level	0 - 0	0	3	ppb	No	Runoff / leaching from insecticide used on cotton and cattle.
Volatile Organic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
1, 1, 1 - Trichloroethane	2018	Levels lower than detect level	0 - 0	200	200	ppb	No	Discharge from metal degreasing sites and other factories.
1, 1, 2 - Trichloroethane	2018	Levels lower than detect level	0 - 0	3	5	ppb	No	Discharge from industrial chemical factories.
1, 1 - Dichloroethylene	2018	Levels lower than detect level	0 - 0	7	7	ppb	No	Discharge from industrial chemical factories.
1, 2, 4 - Trichlorobenzene	2018	Levels lower than detect level	0 - 0	70	70	ppb	No	Discharge from textile-finishing factories.

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Volatile Organic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source of Contamination
1, 2 - Dichloroethane	2018	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
1, 2 - Dichloropropane	2018	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from industrial chemical factories.
Benzene	2018	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories; leaching from gas storage tanks and landfills.
Carbon Tetrachloride	2018	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from chemical plants and other industrial activities.
Chlorobenzene	2018	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from chemical and agricultural chemical factories.
Dichloromethane	2018	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from pharmaceutical and chemical factories.
Ethylbenzene	2018	Levels lower than detect level	0 - 0	0	700	ppb	No	Discharge from petroleum refineries.
Styrene	2018	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from rubber and plastic factories; leaching from landfills.
Tetrachloroethylene	2018	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from factories and dry cleaners.
Toluene	2018	Levels lower than detect level	0 - 0	1	1	ppm	No	Discharge from petroleum factories.
Trichloroethylene	2018	Levels lower than detect level	0 - 0	0	5	ppb	No	Discharge from metal degreasing sites and other factories.
Vinyl Chloride	2018	Levels lower than detect level	0 - 0	0	2	ppb	No	Leaching from PVC piping; discharge from plastics factories.
Xylenes	2018	Levels lower than detect level	0 - 0	10	10	ppm	No	Discharge from petroleum factories; discharge from chemical factories.
cis - 1, 2 - Dichloroethylene	2018	Levels lower than detect level	0 - 0	70	70	ppb	No	Discharge from industrial chemical factories.
o - Dichlorobenzene	2018	Levels lower than detect level	0 - 0	600	600	ppb	No	Discharge from industrial chemical factories.
p - Dichlorobenzene	2018	Levels lower than detect level	0 - 0	75	75	ppb	No	Discharge from industrial chemical factories.
trans - 1, 2 - Dichloroethylene	2018	Levels lower than detect level	0 - 0	100	100	ppb	No	Discharge from industrial chemical factories.

### Turbidity

	Limit (Treatment Technique)	Level Detected	Violation	Likely Source of Contamination
Highest single measurement	1 NTU	0.15	No	Soil runoff.
Lowest monthly percentage (%) meeting limit	0.3 NTU	100.00%	No	Soil runoff.

**NOTE:** Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

### Maximum Residual Disinfectant Level

Disinfectant Type	Year	Average Level	Minimum Level	Maximum Level	MRDL	MRDLG	Units	Source of Chemical
Chlorine Residual (Chloramines)	2018	3.18	1.5	4	4.0	<4.0	ppm	Disinfectant used to control microbes.
Chlorine Dioxide	2018	0.01	0	0.31	0.8	0.8	ppm	Disinfectant.
Chlorite	2018	0.14	0	0.98	1.0	N/A	ppm	Disinfectant.

**NOTE:** Water providers are required to maintain a minimum chlorine disinfection residual level of 0.5 parts per million (ppm) for systems disinfecting with chloramines and an annual average chlorine disinfection residual level of between 0.5 (ppm) and 4 parts per million (ppm).

### Total Organic Carbon

	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Source Water	2018	5.33	4.62 - 5.33	ppm	Naturally present in the environment.
Drinking Water	2018	3.51	1.96 - 3.51	ppm	Naturally present in the environment.
Removal Ratio	2018	59.4%	25.8 - 59.4%	% removal *	N/A

**NOTE:** Total organic carbon (TOC) has no health effects. The disinfectant can combine with TOC to form disinfection by-products. Disinfection is necessary to ensure that water does not have unacceptable levels of pathogens. By-products of disinfection include trihalomethanes (THMs) and haloacetic acids (HAA) which are reported elsewhere in this report.

\* Removal ratio is the percent of TOC removed by the treatment process divided by the percent of TOC required by TCEQ to be removed.

## NTMWD Tawakoni Water Treatment Plant Water Quality Data for Year 2018 (Cont.)

### Cryptosporidium and Giardia

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Cryptosporidium	2018	0	0	(Oo) Cysts/L	Naturally occurring in the environment.
Giardia	2018	0	0	(Oo) Cysts/L	Naturally occurring in the environment.

**NOTE:** Crypto/Giardia measured in the raw water.

### Lead and Copper

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Likely Source of Contamination
Lead	2016	0.0042	<.0010-.0042	0.015	0.015	ppm	Corrosion of customer plumbing. Action Level = 0.015 ppm
Copper	2016	0.47	.015-.47	1.3	1.3	ppm	By-product of drinking water disinfection. Action Level = 1.3 ppm

**ADDITIONAL HEALTH INFORMATION FOR 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. [CUSTOMER] 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 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 Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

### Unregulated Contaminants

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Chloroform	2018	12.5	12.5-20.9	ppb	By-product of drinking water disinfection.
Bromoform	2018	<1.00	<1.00	ppb	By-product of drinking water disinfection.
Bromodichloromethane	2018	10.2	6.50-10.2	ppb	By-product of drinking water disinfection.
Dibromochloromethane	2018	5.3	2.88-5.30	ppb	By-product of drinking water disinfection.

**NOTE:** Bromoform, chloroform, dichlorobromomethane, and dibromochloromethane are disinfection by-products. There is no maximum contaminant level for these chemicals at the entry point to distribution.

### Secondary and Other Constituents Not Regulated

Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	Units	Likely Source of Contamination
Aluminum	2018	0.043	0.043 - 0.043	ppm	Erosion of natural deposits.
Calcium	2018	38.4	38.4 - 38.4	ppm	Abundant naturally occurring element.
Chloride	2018	16.2	11.1 - 16.2	ppm	Abundant naturally occurring element; used in water purification; by-product of oil field activity.
Iron	2018	Levels lower than detect level	0 - 0	ppm	Erosion of natural deposits; iron or steel water delivery equipment or facilities.
Magnesium	2018	2.75	2.75 - 2.75	ppm	Abundant naturally occurring element.
Manganese	2018	0.003	0.003 - 0.003	ppm	Abundant naturally occurring element.
Nickel	2018	0.0037	0.0037 - 0.0037	ppm	Erosion of natural deposits.
pH	2018	8.40	7.70 - 8.40	units	Measure of corrosivity of water.
Silver	2018	Levels lower than detect level	0 - 0	ppm	Erosion of natural deposits.
Sodium	2018	14.6	14.6 - 14.6	ppm	Erosion of natural deposits; by-product of oil field activity.
Sulfate	2018	67.9	54.9 - 67.9	ppm	Naturally occurring; common industrial by-product; by-product of oil field activity.
Total Alkalinity as CaCO <sub>3</sub>	2018	92	54 - 92	ppm	Naturally occurring soluble mineral salts.
Total Dissolved Solids	2018	350	174 - 350	ppm	Total dissolved mineral constituents in water.
Total Hardness as CaCO <sub>3</sub>	2018	174	96.6 - 174	ppm	Naturally occurring calcium.
Zinc	2018	Levels lower than detect level	0 - 0	ppm	Moderately abundant naturally occurring element used in the metal industry.