

2011 Consumer Confidence Report for the City of Hughson Water System

This report contains important information about the quality of drinking water for the period of January 1, 2011 – December 31, 2011. Included are details about where your water comes from, data about what is in your water and how water quality tests on your drinking water compare to federal and state drinking water standards. We encourage our non-English speaking residents to speak with someone who can assist them in reading this report.

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

The water supplied to the City of Hughson residents is comprised solely of groundwater. Groundwater is the water that soaks into the soils from rain or other precipitation and moves downward to fill cracks and other opening in beds of rocks and sand. The City has six active wells.

Your water comes from 6 sources: Well 3 (Starn Park), Well 4 (Hughson Elementary School), Well 5 (Tully Road – South of Whitmore), Well 6 (Locust Street near Samaritan Village), Well 7 (7th Street near Fox Road) and Well 8 (Euclid Avenue).

For more information about this report, or for any questions relating to your drinking water, please call (209) 883-4054 and ask for Sam Rush.

TERMS USED IN THIS REPORT:

Maximum Contaminant Level (MCL): The highest concentration of a contaminant allowed in drinking water per state and federal regulations.

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 Office of Environmental Health Hazard Assessment.

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.

Primary Drinking Water Standards (PDWS): A list of contaminants that have been shown to adversely affect the health of people drinking water with concentrations above the MCL, as established by state or federal government. Primary MCLs are set as close to PHG's as economically and technologically feasible.

Secondary Drinking Water Standards (SDWS): A list of contaminants that have been shown to affect taste, odor, or appearance of drinking water. SDWS contaminants concentrations that exceed MCLs typically do not adversely affect the health of people drinking the water.

Treatment Technique (TT): A required process intended to reduce the concentration of a contaminant in drinking water to less than the MCL.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a public water purveyor must comply.

Variations and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

Abbreviations:

ND: not detectable at testing limit

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (µg/L)

ppt: parts per trillion or nanograms per liter (ng/L)

ppq: parts per quadrillion or picograms per liter (pg/L)

pCi/l: picocuries per liter (a measure of radioactivity)

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What Is In Our Water?

In order to ensure that tap water is safe to drink, U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

Contaminants that State and Federal regulations require testing for in drinking water include:

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

The sources of drinking water include rivers, lakes, streams, ponds, reservoirs, spring, 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.

Additional Information On Drinking Water

All drinking water, including bottled water that is purchased at the store, 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. Immunocompromised 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 provider. 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)

For Lead (Pb): 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 Hughson 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>

Summary Information for Contaminants Exceeding an MCL or AL, or a Violation of any Treatment or Monitoring and Reporting Requirements

The following tables list all of the drinking water contaminants that were detected during the most recent sampling for the constituents. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The Department allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old.

2011 Consumer Confidence Report for the City of Hughson Water System

TABLE 1 - SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA					
Microbiological Contaminants (complete if bacteria detected)	Highest No. of Detections	No. of Months in Violation	MCL	MCLG	Typical Sources of Contaminant
Total Coliform Bacteria	3/mo. (2011)	0	no more than 1 positive monthly sample	0	Naturally present in the environment.

TABLE 2 - SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER						
Lead and Copper (complete if lead or copper detected in the last sample set)	No. of Samples Collected	90th Percentile Level	No. Site Exceeding AL	AL	PHG	Typical Sources of Contaminant
Lead (Pb) (ppb)	18 (2011)	0.50	0	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers, erosion of natural deposits
Copper (ppm)	18 (2011)	0.010	0	1.3	.17	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 - SAMPLING RESULTS FOR SODIUM AND HARDNESS						
Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG)	Typical Sources of Contaminant
Sodium (ppm)	2011	74	74 - 74	none	none	Salt present in the water and is generally naturally occurring
Hardness (ppm)	2011	83	35 - 200	none	none	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

TABLE 4 - DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD						
Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG) [MRDLG]	Typical Sources of Contaminant
Arsenic (As) Ppb	2011	10.1 ¹	5 - 17	10	n/a	Erosion of natural deposits; runoff from orchards, glass and electronics production wastes.
Barium (Ba) Ppm	2011	0.13	0.1 - 0.1	1	2	Discharge from oil drilling wastes and from metal refineries; erosion of natural deposits

¹ An MCL violation occurs when the average of four (4) quarterly samples exceeds 10.5 ppb, so exceeding the 10 ppb once does not indicate a violation. One City well had an average annual level of 11.0 ppb.

2011 Consumer Confidence Report for the City of Hughson Water System

TABLE 4 - DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG) [MRDLG]	Typical Sources of Contaminant
Chromium (Total Cr) Ppb	2011	2	2 - 2	50.0	n/a	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Mercury Ppb	2011	0.08	0.08 - 0.08	2	1.2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and cropland
Nickel Ppb	2011	2	2 - 2	100	12	Erosion of natural deposits; discharge from metal factories
Nitrate (NO ₃) Ppm	2011	30.0	ND - 67 ²	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate + Nitrite as N Ppm	2011	4.00	4.0 - 4.0	10	10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Gross Alpha pCi/L	2010	4.3	0.5 - 14	15	n/a	Erosion of natural deposits.
Uranium pCi/L	2010	8.2	6 - 10	20	0.5	Erosion of natural deposits
Dibromochloropropane (DBCP) ppb	2011	0.196	0.14 - 0.27 ³	0.2	0.017	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit

Any violation of MCL,AL or MRDL is shaded. Additional information regarding the violation is provided later in this report.

TABLE 5 - DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG)	Typical Sources of Contaminant
Chloride ppm	2011	77	77 - 77	500	n/a	Runoff/leaching from natural deposits; seawater influence
Corrosivity (Langlier Index)	2011	-1	-1 - -1	> 0	n/a	Natural or industrial-influenced balance of hydrogen, carbon and oxygen in the water, affected by temperature and other factors.
Iron (Fe) ppb	2011	650	ND - 5800	300	n/a	Leaching from natural deposits; Industrial Wastes
Manganese (Mn) ppb	2011	28	ND - 120	50	500	Leaching from natural deposits
Specific Conductance umhos/cm	2011	533	533 - 533	1600	n/a	Substances that form ions when in water; seawater influence.
Sulfate (SO ₄) ppm	2011	18.9	4.0 - 54	500	n/a	Runoff/leaching from natural deposits; industrial wastes

² One well exceeded nitrate and was subsequently removed from service.

³ An MCL violation occurs when the average of four (4) quarterly samples exceeds 0.25 ppb, so exceeding 0.2 ppb once does not indicate a violation. One City well had DBCP above 0.2 ppb.

2011 Consumer Confidence Report for the City of Hughson Water System

TABLE 5 - DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD						
Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG)	Typical Sources of Contaminant
TDS ppm	2011	340	340 - 340	1000	n/a	Runoff/leaching from natural deposits

Any violation of MCL,AL or MRDL is shaded. Additional information regarding the violation is provided later in this report.

TABLE 6 - DETECTION OF UNREGULATED CONTAMINANTS					
Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	Notification Level	Health Effects Language
Vanadium ppm	2011	0.02	0.004 - 0.03 (2011)	0.05	The babies of some pregnant women who drink water containing vanadium in excess of the action level may have an increased risk of developmental effects, based on studies in laboratory animals.

TABLE 7 - DETECTION OF FEDERAL DISINFECTANT/DISINFECTANT BYPRODUCT RULE						
Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL (MRDL)	PHG (MCLG)	Typical Sources of Contaminant
Total Trihalomethanes (TTHMs) ppb	2011	0.3	ND - 1.2	80	n/a	Byproduct of drinking water disinfection

About our Arsenic: Some people who drink water containing arsenic in excess of the MCL over many years may experience skin damage or circulatory system problems, and may have an increased risk of getting cancer.

In 2006, the U.S. Environmental Protection Agency (EPA) reduced the arsenic Maximum Contaminant Level (MCL) from 50 ppb to 10 ppb. Until that time, all public water systems allowed arsenic concentrations of arsenic up to 50 ppb. In 2011, 2 of the City's 6 wells exceeded arsenic standard. Well 6 averaged 10.33 ppb and Well 4 averaged 11 ppb.

WHAT SHOULD I DO? You do not need to use an alternative (e.g. bottled) water supply. However, if you have specific health concerns consult your doctor.

WHAT DOES THIS MEAN? This is not an immediate risk. If it had been, you would have been notified immediately. However, some studies suggest that people who regularly drink water containing arsenic in excess of the MCL over many years could experience skin damage or circulatory system problems, and could have an increased risk of cancer.

WHAT HAS BEEN DONE AND WHAT IS BEING DONE? The City is continuing to implement programs to reduce arsenic to less than the MCL, including construction of new, deeper wells, treatment, and operational changes to reduce arsenic in the drinking water. In late 2010, the City of Hughson built Well 8 which is equipped with a treatment system for arsenic reduction. This facility can now produce water with arsenic concentrations below the maximum contaminant level (MCL). The City is also investigating the possibility of constructing deeper wells that will provide water with arsenic levels below the MCL without expensive treatment.

About our Nitrates: Nitrate in drinking water at levels above 45 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 serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 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.

2011 Consumer Confidence Report for the City of Hughson Water System

Water sampled from the City of Hughson Well #7 on July 14, 2011, failed the nitrate maximum contaminant level (MCL) of 45 mg/L. The City failed to notify the consumers in July 2011 of the high nitrate result when it failed to resample within 24 hours and continued to use Well #7 as a source of drinking water until the last day of October 2011. Well #7 has been taken offline until a solution to treat the water for nitrates is developed and approved by CDPH.

About our Iron (Fe): Iron was found at levels that exceed the secondary MCL. The Iron MCL was set to protect you against unpleasant aesthetic affects such as color, taste, odor and the staining of plumbing fixtures (e.g., tubs and sinks), and clothing while washing. Violating this MCL does not pose a risk to public health. In April of 2011, an iron concentration of 2510ppb was determined from a sample taken from Well 5. This result exceeds the MCL of 300 ppb. In July of 2011, an iron concentration of 5820 was determined from a sample taken from Well 4. All other samples were in compliance with the MCL.

About our Manganese (Mn): Manganese was found at levels that exceed the secondary MCL. The Manganese MCL was set to protect you against unpleasant aesthetic affects such as color, taste, odor and the staining of plumbing fixtures (e.g., tubs and sinks), and clothing while washing. Violating this MCL does not pose a risk to public health. Manganese (Mn) result found exceeded California Department of Public Health (CDPH) notification level. The notification level for manganese is used to protect consumers from neurological effects. High levels of manganese in people have been shown to result in effects of the nervous system.

Drinking Water Source Assessment Information

Assessment Info

A source water assessment was conducted for the WELL 3, WELL 4, and WELL 5 of the City of Hughson water system in January, 2001. According to the Drinking Water Source Assessment and Protection Program's Source Water Assessments Public Access web page, the Public Water Source WELL 6 of the City of Hughson water system number 5010008, does not have a completed Source Water Assessment on file. A source water assessment was conducted for WELL 7 and WELL 8 of the City of Hughson water system, although the info is not contained in this report the assessments may be viewed at City Hall. For more information regarding the assessments contact Sam Rush, Public Works Superintendent at (209) 883-4054.

Depending on the locations, the wells may be susceptible to all or some of the possible contaminating activities (PCAs) that are listed next: sewer collection systems, septic tanks, storm water detention, dry cleaners, metal plating/finishing/fabricating, agricultural wells, farm machinery repairs, gas stations, automobile repair and body shops, housing, agricultural wells, fertilizers, pesticides, herbicides, animal grazing, etc.

Water Conservation

Conservation is important to our water supply! Please remember to:

- Follow the water schedule on the City's website at <http://hughson.org/government/city-departments/public-works-department/water-system/> and never water from noon to 7pm.
- Repair all leaks – Inside and Outside
- Economize – Shut water off while brushing teeth; run full loads of dishes/laundry; reduce shower time
- Install water-saving devices – aerators, flow regulators and displacement devices

You are welcome to participate in the City Council Board Meetings to voice any concern regarding our drinking water. The Board meets the 2nd and 4th Monday of each month at 7:00pm at City Hall located at 7018 Pine Street, Hughson, CA.