

2009
Annual Drinking Water Quality Report
Town of Laverne, OK

We're very pleased to provide you with this year's Annual Quality Water Report. We want to keep you informed about the excellent water and services we have delivered to you over the past year. Our goal is and always has been, to provide to you a safe and dependable supply of drinking water.

Our water source is ground water drawn from Beaver River Aquifer. An analysis of contamination susceptibility of our source water has been done. The analysis showed that our water's susceptibility to contamination is high. This plan is available in our office for viewing. Information such as potential sources of contamination are listed in the plan.

This report shows our water quality and what it means.

If you have any questions about this report or concerning your water utility, please contact Town Superintendent Gabe Hope at (580) 921-5121. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the first Monday of every month at 6:30 P.M. in the Conference Room of the Municipal Complex.

The Town of Laverne routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2009. (Some of our data may be more than one year old because the state allows us to monitor for some constituents less often than once per year. All detects will have the highest detected level along with the year it was found.) All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some constituents. It's important to remember that the presence of these constituents does not necessarily pose a health risk.

WATER QUALITY DATA TABLE

The table below lists all of the drinking water contaminants we detected for the calendar year of this report. The presence of 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 done in the calendar year of the report.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.

Parts per million (ppm) or Milligrams per liter (mg/l)

Parts per billion (ppb) or Micrograms per liter (ug/l)

Parts per trillion (ppt) or Nanograms per liter (nanograms/l)

Parts per quadrillion (ppq) or Picograms per liter (picograms/l)

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Action Level (AL) - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level (MCL) - The MCL is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal -The MCLG is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

TEST RESULTS						
Contaminant	Violation Y/N	Highest Level Detected	Range Detected	MCL	MCLG	Likely Source of Contamination

Microbiological Contaminants						
1. Total Coliform Bacteria (System takes 340 monthly samples) (System takes <40 monthly samples) <i>(highest number of samples in a single month)</i>	N	N/D		5% positive 1 positive	0	Naturally present in the environment
2. Fecal coliform and E.coli <i>(highest number of samples in a single month)</i>	N	N/D		a routine sample and repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive	0	Human and animal fecal waste
Radiochemical Contaminants						
3. Gross Beta (pCi/L)	N	5.3 2003	2.00-5.3	50	0	Decay of natural and man-made deposits
4. Gross Alpha (pCi/L)	N	4.36 2009	1.76-4.36	15	0	Erosion of natural deposits
5. Combined radium 226/228 (pCi/L)	N	1.23 2008	.10-1.23	5	0	Erosion of natural deposits
6. Uranium (pCi/L or ug/l)	N	8.40 2007	4.70-8.40	20.1 pCi / L Or 30 ug / L	0	Erosion of natural deposits
Inorganic Contaminants						
7. Antimony (ppb)	N	<2.0 2009	<2.0-2.0	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
8. Arsenic (ppb)	N	5.8	3.8-5.8	10	0	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
9. Barium (ppb)	N	194 2006	61-194	2000	2000	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
10. Beryllium (ppb)	N	<2.0 2006	<2.0-2.0	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
11. Bromate (ppb)	N			10	0	By-product of drinking water ozonation
12. Cadmium (ppb)	N	<2 2006	<2.0-2.0	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
13. Chloramines (ppm)	N			MRDL = 4	MRDLG = 4	Water additive used to control microbes
14. Chlorine (ppm)	N	2.0	.6-2.0	MRDL = 4	MRDLG = 4	Water additive used to control microbes

15. Chlorite (ppm)	N			1	0.8	Water additive used to control microbes
16. Chlorine Dioxide (ppb)	N			MRDL = 800	MRDLG = 800	Water additive used to control microbes
17. Chromium (ppb)	N			100	100	Discharge from steel and pulp mills; erosion of natural deposits
18. Copper (ppm)	N	0.221 2007	.010-.221	AL=1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
19. Cyanide (ppb)	N			200	200	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
20. Fluoride (ppm)	N	.82 2006	.67-.82	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
21. Lead (ppb)	N	<5.0 2007	<5-12	AL=15 <i>Action Level – 90% of samples must be below this level.</i>	0	Corrosion of household plumbing systems, erosion of natural deposits
22. Mercury (ppb) (inorganic)	N	.14 2006	.05-.14	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
23. Nitrate - NO ₃ (ppm) (as Nitrogen)	N	11.00 10/2008	4.93-11	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
24. Nitrite - NO ₂ (ppm) (as Nitrogen)	N			1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
25. Selenium (ppb)	N			50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
26. Thallium (ppb)	N			2	0.5	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Volatile Organic Contaminants						
27. Benzene (ppb)	N	N/D 2009		5	0	Discharge from factories; leaching from gas storage tanks and landfills

28. Carbon tetrachloride (ppb)	N	N/D 2009		5	0	Discharge from chemical plants and other industrial activities
29. Chlorobenzene (ppb)	N	N/D 2009		100	100	Discharge from chemical and agricultural chemical factories
30. o-Dichlorobenzene (ppb)	N	N/D 2009		600	600	Discharge from industrial chemical factories
31. p-Dichlorobenzene (ppb)	N	N/D 2009		75	75	Discharge from industrial chemical factories
32. 1,2-Dichloroethane (ppb)	N	N/D 2009		5	0	Discharge from industrial chemical factories
33. 1,1-Dichloroethylene (ppb)	N	N/D 2009		7	7	Discharge from industrial chemical factories
34. cis-1,2-Dichloroethylene (ppb)	N	N/D 2009		70	70	Discharge from industrial chemical factories
35. trans - 1,2 -Dichloroethylene (ppb)	N	N/D 2009		100	100	Discharge from industrial chemical factories
36. Dichloromethane (ppb)	N	N/D 2009		5	0	Discharge from pharmaceutical and chemical factories
37. 1,2- Dichloropropane (ppb)	N	N/D 2009		5	0	Discharge from industrial chemical factories
38. Ethylbenzene (ppb)	N	N/D 2009		700	700	Discharge from petroleum refineries
39. Haloacetic Acids (HAA5) (ppb)	N	6.0 2009	6.0-6.0	60	N/A	By-product of drinking water chlorination
40. Styrene (ppb)	N	N/D 2009		100	100	Discharge from rubber and plastic factories; leaching from landfills
41. Tetrachloroethylene (ppb)	N	N/D 2009		5	0	Leaching from PVC pipes; discharge from factories and dry cleaners
42. 1,2,4- Trichlorobenzene (ppb)	N	N/D 2009		70	70	Discharge from textile-finishing factories
43. 1,1,1 - Trichloroethane (ppb)	N	N/D 2009		200	200	Discharge from metal degreasing sites and other factories
44. 1,1,2 - Trichloroethane (ppb)	N	N/D 2009		5	3	Discharge from industrial chemical factories
45. Trichloroethylene (ppb)	N	N/D 2009		5	0	Discharge from metal degreasing sites and other factories
46. TTHM [Total trihalomethanes] (ppb)	N	25.9 2005	11.1 -25.9	80	N/A	By-product of drinking water chlorination
47. Toluene (ppm)	N	N/D 2009		1	1	Discharge from petroleum factories
48. Vinyl Chloride (ppb)	N	N/D 2009		2	0	Leaching from PVC piping; discharge from plastics factories

49. Xylenes (ppb)	N	N/D 2009	10	10	Discharge from petroleum factories; discharge from chemical factories
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Microbiological Contaminants:

- (1) Total Coliform. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
- (2) Fecal coliform/E.Coli. Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

Radiochemical Contaminants:

- (3) Gross Beta. Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
- (4) Gross Alpha. 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.
- (5) Combined Radium 226/228. Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
- (6) Uranium. Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.

Inorganic Contaminants:

- (7) Antimony. Some people who drink water containing antimony well in excess of the MCL over many years could experience increases in blood cholesterol and decreases in blood sugar.
- (8) Arsenic. Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.
- (9) Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
- (10) Beryllium. Some people who drink water containing beryllium well in excess of the MCL over many years could develop intestinal lesions.
- (11) Bromate. Some people who drink water containing bromate in excess of the MCL over many years may have an increased risk of getting cancer.
- (12) Cadmium. Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
- (13) Chloramines. Some people who use water containing chloramines well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chloramines well in excess of the MRDL could experience stomach discomfort or anemia.
- (14) Chlorine. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
- (15) Chlorite. Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.
- (16) Chlorine Dioxide. Some infants and young children who drink water containing chlorine dioxide in excess of the MRDL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorine dioxide in excess of the MRDL. Some people may experience anemia.
- (17) Chromium. Some people who use water containing chromium well in excess of the MCL over many years could experience allergic dermatitis.
- (18) 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 could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.
- (19) Cyanide. Some people who drink water containing cyanide well in excess of the MCL over many years could experience nerve damage or problems with their thyroid.
- (20) Fluoride. Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.
- (21) Lead. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.
- (22) Mercury (inorganic). Some people who drink water containing inorganic mercury well in excess of the MCL over many years could experience kidney damage.
- (23) Nitrate. Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.
- (24) Nitrite. Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue-baby syndrome.

(25) Selenium. Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years could experience hair or fingernail losses, numbness in fingers or toes, or problems with their circulation.

(26) Thallium. Some people who drink water containing thallium in excess of the MCL over many years could experience hair loss, changes in their blood, or problems with their kidneys, intestines, or liver.

Volatile Organic Contaminants:

(27) Benzene. Some people who drink water containing benzene in excess of the MCL over many years could experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.

(28) Carbon Tetrachloride. Some people who drink water containing carbon tetrachloride in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

(29) Chlorobenzene. Some people who drink water containing chlorobenzene in excess of the MCL over many years could experience problems with their liver or kidneys.

(30) o-Dichlorobenzene. Some people who drink water containing o-dichlorobenzene well in excess of the MCL over many years could experience problems with their liver, kidneys, or circulatory systems.

(31) p-Dichlorobenzene. Some people who drink water containing p-dichlorobenzene in excess of the MCL over many years could experience anemia, damage to their liver, kidneys, or spleen, or changes in their blood.

(32) 1,2-Dichloroethane. Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

(33) 1,1-Dichloroethylene. Some people who drink water containing 1,1-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

(34) cis-1,2-Dichloroethylene. Some people who drink water containing cis-1,2-dichloroethylene in excess of the MCL over many years could experience problems with their liver.

(35) trans-1,2-Dichloroethylene. Some people who drink water containing trans-1,2-dichloroethylene well in excess of the MCL over many years could experience problems with their liver.

(36) Dichloromethane. Some people who drink water containing dichloromethane in excess of the MCL over many years could have liver problems and may have an increased risk of getting cancer.

(37) 1,2-Dichloropropane. Some people who drink water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

(38) Ethylbenzene. Some people who drink water containing ethylbenzene well in excess of the MCL over many years could experience problems with their liver or kidneys.

(39) Haloacetic Acids. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

(40) Styrene. Some people who drink water containing styrene well in excess of the MCL over many years could have problems with their liver, kidneys, or circulatory system.

(41) Tetrachloroethylene. Some people who drink water containing tetrachloroethylene in excess of the MCL over many years could have problems with their liver, and may have an increased risk of getting cancer.

(42) 1,2,4-Trichlorobenzene. Some people who drink water containing 1,2,4-trichlorobenzene well in excess of the MCL over many years could experience changes in their adrenal glands.

(43) 1,1,1,-Trichloroethane. Some people who drink water containing 1,1,1-trichloroethane in excess of the MCL over many years could experience problems with their liver, nervous system, or circulatory system.

(44) 1,1,2-Trichloroethane. Some people who drink water containing 1,1,2-trichloroethane well in excess of the MCL over many years could have problems with their liver, kidneys, or immune systems.

(45) Trichloroethylene. Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

(46) TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

(47) Toluene. Some people who drink water containing toluene well in excess of the MCL over many years could have problems with their nervous system, kidneys, or liver.

(48) Vinyl Chloride. Some people who drink water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.

(49) Xylenes. Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA 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.

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.

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791).

Stage 2 DBP Rule requires some systems to complete an Initial Distribution System Evaluation (IDSE) to characterize DBP levels in their distribution systems and identify locations to monitor DBPs for Stage 2 DBP Rule compliance. The following table summarizes the individual sample results for the IDSE monitoring in 2008:

Contaminant	Number of Analyses	Minimum Level Detected	Highest Level Detected	Maximum Level
Haloacetic Acids (HAA5) (ppb)	1	<6.0	<6.0 2009	60
Total Trihalomethanes (TTHM) (ppb)	1	11.1 2009	25.9 2005	80

What does all this mean?

Basically this table shows your drinking water to be safe! We had no monitoring or detection violations during 2009.

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 before we treat it 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 and residential uses.

**Radioactive contaminants*, which are naturally occurring.

**Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 EPA's Safe Drinking Water Hotline (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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a significant increased risk of having the described health effect.

Nitrates: As a precaution we always notify physicians and health care providers in this area if there is ever a higher than normal level of nitrates in the water supply.

Lead: Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced.

Spanish - Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda.

Thank you for allowing us to continue providing your family with clean, quality water this year. The Town of Laverne is exploring every possible funding source including grants to maintain and improve our water system. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for understanding.

Please call our office if you have questions.

The Town of Laverne crews work around the clock to provide top quality water to every tap. A safe reliable water source in every home is very important to us and we will continue to strive to keep it that way. For more information or to print a copy of this report please visit our website at www.townoflaverne.org or contact the Town Superintendent with the information below.

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Gabriel W. Hope
Town Superintendent
Town of Laverne