

# Water Quality Report: 2013

## What is the Kern County Water Agency and its Improvement District No. 4?

The Agency was created in 1961 by a special act of the State Legislature and approved by Kern County voters. Its mission is to secure adequate water supplies for Kern County by serving as the local contracting entity for water from the State Water Project (SWP). The Agency was also granted powers that enable it to participate in a wide scope of water management activities, including water quality, flood control and groundwater.

ID4 was formed by the Agency Board of Directors in 1971 to act as the wholesale provider of a supplemental drinking water supply for portions of the metropolitan Bakersfield area. Purified surface water in ID4 is supplied to portions of the City of Bakersfield, unincorporated areas of Oildale, and other unincorporated sections of the northern and eastern metropolitan Bakersfield area. The Agency operates the Henry C. Garnett Water Purification Plant.

During 2013, the Henry C. Garnett Water Purification Plant produced on average 32.4 million gallons per day (mgd) using a conventional water purification process. The plant was constructed and put into service in January 1977 and has provided drinking water to homes and businesses within the north and eastern portions of ID4 boundaries ever since. This facility's peaking capacity was expanded in 2011 to 90 mgd and began to supply water to the northwest metropolitan Bakersfield area.

Residents within ID4 do not receive their drinking water directly from the Henry C. Garnett Water Purification Plant. Treated water is wholesaled to retail purveyors, which provide water to homes and businesses. These retail purveyors include the California Water Service Company, City of Bakersfield, East Niles Community Services District and North of the River Municipal Water District, which wholesales to Oildale Mutual Water Company.

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

## What is in 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 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.

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.



## Where do residents of ID4 get their drinking water?

ID4 has entitlement to 82,946 acre-feet (af) of SWP water through the Agency's contract with the California Department of Water Resources (DWR). This SWP water comes from northern California and is exchanged whenever possible with local water districts for Kern River water. These exchanges are beneficial to ID4 due to the Kern River's usually superior water quality compared to the SWP water. The Henry C. Garnett Water Purification Plant has also processed water from the Central Valley Project (Friant-Kern Canal) acquired through exchange and local groundwater sources in the past. During 2013, the Henry C. Garnett Water Purification Plant treated 2,554 af of SWP water, 19,049 af of Kern River water acquired by exchange, 3,007 af of Kern River water and 13,051 af of previously banked groundwater.



## Why chlorinate drinking water?

Disinfection is an absolutely essential component in water purification. Not only does chlorine disinfection greatly reduce the occurrence of water-borne diseases by killing microorganisms (bacteria and viruses), it is also mandated by CDPH that treated water be chlorinated before delivery to customers. Byproducts formed when surface waters are chlorinated, such as trihalomethanes and haloacetic acids, are a health concern when higher concentrations are present. Water professionals at the Henry C. Garnett Water Purification Plant work to optimize treatment and balance the need to inactivate microorganisms with the need to minimize risk from disinfection byproducts.

## Sanitary Surveys of the ID4 Water Sources

ID4 has participated with DWR in the development of the SWP sanitary survey. First completed in 1996, this study is conducted not only to ensure watershed management compliance, but also to provide continuous monitoring and surveillance necessary to reduce or eliminate real or potential water quality risks. An update of this survey was completed in 2011.

Similarly, ID4 participated in the sanitary survey of the Friant-Kern Canal and upper San Joaquin River watersheds. This survey was completed in 1998. An update of this survey was completed in 2009.

ID4 began its own survey of the Kern River watershed in 1992 and submitted the final draft to CDPH in 1997. An updated survey for the Kern River watershed was completed in 2000, 2005 and 2010. This continually evolving study monitors the Kern River for activities that can affect water quality and quantity. Of particular interest for ID4 are those items or practices that can degrade water quality. ID4 has been successful in coordinating its efforts with those of the California Water Service Company, City of Bakersfield, Kern County Department of Parks and Recreation, U.S. Bureau of Land Management, U.S. Forest Service and numerous other entities regarding the Kern River.

ID4 completed the first sanitary survey of the Cross Valley Canal (CVC) in 2000. The survey was updated in 2005 and in 2013. The CVC is a vital link for ID4 to the SWP, Friant-Kern Canal and groundwater banking projects.

## Source Water Assessment

In April 2003, CDPH completed a Source Water Assessment of the Kern River supply. The Kern River supply is considered to be most vulnerable to accidental spills of oilfield wastes, urban/stormwater runoff, agricultural drainage and recreational use. A copy of the Source Water Assessment can be obtained by contacting the Agency at (661) 634-1400.

## Are there precautions the public should consider?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These persons should seek advice about drinking water from their health care providers. The U.S. Environmental Protection Agency (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) or by visiting its website at: <http://water.epa.gov/drink/standards/hascience.cfm>.

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 Agency is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When water has been sitting for several hours, flushing the tap for 30 seconds to 2 minutes before using the water for drinking or cooking can minimize potential lead exposure. Concerns about lead in tap water can be addressed through water testing. Information on lead in drinking water, testing methods and steps that can be taken to minimize exposure is available from the Safe Drinking Water Hotline or at: <http://epa.gov/safewater/lead>.

In order to ensure that tap water is safe, USEPA and CDPH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. USEPA regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

In 2013, as in past years, water from the Henry C. Garnett Water Purification Plant met all USEPA and CDPH drinking water standards. ID4 vigilantly safeguards its water supplies and has not violated a maximum contaminant level or any other water quality standard.

More information about contaminants and potential health effects can be obtained by calling USEPA's Safe Drinking Water Hotline (1-800-426-4791) or by visiting its website at: <http://www.epa.gov/ogwdw>.

## Detected Contaminants

Analyte	Store No.	Units	MCL	PHG (MCLG)	Range	Sample Date	Average	Violation	Major Sources of Contamination	
<b>Primary Standards</b>										
<b>Microbiological Contaminants</b>										
Total Coliform Bacteria	N/A	present/absent	> 5.0% present	(0)	0%	2013	0.0%	no	Naturally present in the environment	
<b>Inorganic Chemicals</b>										
Aluminum	01105	ug/L	1000	500	51 - 147	2013	102	no	Erosion of natural deposits	
Asenic	01002	ug/L	10	0.004	ND - 3	2013	1	no	Erosion of natural deposits	
Chlorate	A-037	mg/L	0.8 NL	N/A	171 - 540	2013	0.307	no	By-product of drinking water disinfection	
Fluoride	00951	mg/L	2	1	17 - 29	2013	0.23	no	Erosion of natural deposits	
Nitrate (as NO <sub>3</sub> )	71850	mg/L	45	45	ND - 6.29	2013	2.01	no	Runoff/leaching from fertilizer use; leaching from septic tanks and sewage erosion of natural depp	
Nitrite + Nitrate (Sum as Nitrogen N)	A-029	mg/L	10	10	ND - 1.42	2013	0.45	no	Runoff/leaching from fertilizer use; leaching from septic tanks and sewage erosion of natural depp	
<b>Volatile Organic Chemicals</b>										
Total Trihalomethanes (TTHMs)	82080	ug/L	80	N/A	22.2 - 48.8	2013	46.8	no	By-product of drinking water disinfection	
Haloacetic Acids (HAA5)	A-049	ug/L	60	N/A	15.9 - 26.9	2013	26.9	no	By-product of drinking water disinfection	
<b>Radionuclides</b>										
Gross Beta Particle Activity	03501	pCi/L	50	(0)	3.10 - 4.17	2005	3.21	no	Decay of natural and man-made deposits	
Strontium-90	13501	pCi/L	8	0.35	ND - 0.10	2005	0.09	no	Decay of natural and man-made deposits	
Gross Alpha Particle Activity	01501	pCi/L	15	(0)	ND - 4.43	2013	2.62	no	Erosion of natural deposits	
Combined Radium	11503	pCi/L	5	(0)	ND - 1.82	2013	0.69	no	Erosion of natural deposits	
Uranium	28012	pCi/L	20	0.43	ND - 3.9	2013	2.24	no	Erosion of natural deposits	
<b>Filter Performance</b>										
Turbidity (Highest Single Measurement)	N/A	NTU	TT = 1.0	N/A	N/A	2013	0.16	no	Soil Runoff	
TT = 95% of samples ≤ 0.3 NTU	N/A	%	TT 95% ≤ 0.3	N/A	N/A	2013	95.9%	no		
<b>Disinfection Residuals</b>										
Chlorine	N/A	mg/L	MRDL	MRDLG	4.0	0.75 - 2.00	2013	1.35	no	Drinking water disinfectant added for treatment
<b>Disinfection Byproduct Precursors</b>										
Total Organic Carbon (TOC)	00880	mg/L	N/A	N/A	0.55 - 1.8	2013	1.2	no	Various natural and manmade sources	
<b>Secondary Standards</b>										
Aluminum	01105	ug/L	200	N/A	51 - 147	2013	102	no	Erosion of natural deposits	
Color	00081	Units	15	N/A	< 2.5 - < 2.5	2013	< 2.5	no	Naturally-occurring organic materials	
Color	00086	Units	3	N/A	1.4 - 2	2013	2	no	Naturally-occurring organic materials	
Turbidity	82079	NTU	5	N/A	0.04 - 0.08	2013	0.05	no	Soil Runoff	
Zinc	01002	ug/L	5000	N/A	ND - 52	2013	13	no	Runoff/leaching from natural deposits	
Total Dissolved Solids	70300	mg/L	1000	N/A	108 - 223	2013	142	no	Runoff/leaching from natural deposits	
Specific Conductance	00095	µS/cm	1600	N/A	181 - 384	2013	245	no	Substances that form ions when in water	
Chloride	00940	mg/L	500	N/A	42.4 - 42.6	2013	19.2	no	Substances that form ions when in water	
Sulfate	00945	mg/L	500	N/A	26.7 - 32.8	2013	29.6	no	Runoff/leaching from natural deposits	
<b>General Minerals</b>										
Alkalinity	00410	mg/L	N/A	N/A	50 - 69	2013	60	no	Naturally-occurring	
Bicarbonate	00440	mg/L	N/A	N/A	61.9 - 84.2	2013	73.5	no	Naturally-occurring	
Calcium	00916	mg/L	N/A	N/A	13.5 - 29.6	2013	19.3	no	Naturally-occurring	
Magnesium	00927	mg/L	N/A	N/A	1.82 - 3.35	2013	2.57	no	Naturally-occurring	
Potassium	00937	mg/L	N/A	N/A	1.35 - 2.23	2013	1.76	no	Naturally-occurring	
Sodium	00929	mg/L	N/A	N/A	16.8 - 32.5	2013	22.0	no	Naturally-occurring	
Total Hardness	00900	mg/L	N/A	N/A	42.4 - 81.4	2013	68.5	no	Naturally-occurring	
pH	00403	Units	N/A	N/A	7.19 - 7.39	2013	7.30	no	Naturally-occurring	
<b>Additional Analysis</b>										
Boron	01020	ug/L	1000 NL	N/A	N/A	2013	150	no	Naturally-occurring	
Phosphate	00650	mg/L	N/A	N/A	ND - 0.51	2013	0.24	no	Naturally-occurring	
Silica	00955	mg/L	N/A	N/A	3.68 - 17.3	2013	10.50	no	Naturally-occurring	
Bromide	82298	mg/L	N/A	N/A	ND - 0.11	2013	0.03	no	Naturally-occurring	

MCL: Maximum Contaminant Level  
MCLG: Maximum Contaminant Level Goal  
mg/L: milligrams per liter, or parts per million  
µCi/L: microCuries per liter  
µCi/cm: microCuries per centimeter  
TT = Treatment Technique  
\* Value shown in the range is above the MCL. Compliance is based on the running annual average.

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

## Definitions

**Primary Drinking Water Standard (PDWS):**  
Legally enforceable standards that protect public health by limiting the levels of contaminants in drinking water.

**Public Health Goal (PHG):**  
The level of a contaminant in drinking water below which there is no known or expected risk to health.

**Maximum Contaminant Level (MCL):**  
The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to PHGs (or MCLGs) as is economically and technically 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 which there is a known or expected risk to health. MCLGs are set by USEPA.

**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.

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

## How can the public get involved?

Meetings of the Agency Board of Directors are open to the public and are generally held on the fourth Thursday of each month, at 12:00 p.m., except in November and December when meetings are held on the Wednesday before the third Thursday of each month. Meetings are held at the Stuart T. Pyle Water Resources Center at 3200 Rio Mirada Drive, Bakersfield, California.

If you have any questions or need more information, please contact:

James M. Beck, General Manager

(661) 634-1400 or by mail at

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