

Antelope Valley-East Kern Water Agency
2009 Annual Water Quality Report - Kern County System

The Antelope Valley-East Kern Water Agency provides treated surface water as a source of drinking water.

Treatment technique: Conventional

EPA Turbidity Performance Standards: Turbidity of the filtered water must:

1. Be less than or equal to 0.30 NTU in 95% of measurements in a month.
2. Not exceed 1 NTU at any time.

Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1: 100%

Highest single turbidity measurement during the year: 0.13 NTU

Percentage of samples < 0.30 NTU: 100%

The number of violations of any surface water treatment requirements: NONE

Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

MICROBIOLOGICAL CONTAMINANTS						
Type of Sample(s)	Parameter	Sampling Frequency	MCL	No. of Months in Violation	System Results	
					Range	Average
Distribution	Total Coliform Bacteria	78 - 91 / mo	5% positive	None	0%	0%
& Effluent	Fecal Coliform and E. coli	78 - 91 / mo	1 pos. with 2 TC pos.	None	0%	0%

INORGANIC CONTAMINANTS

Parameter	Units	MCL	DLR	PHG or (MCLG)	Plant Effluent (CWR)		Raw Influent (Source)	
					Range	Average	Range	Average
Aluminum	mg/L	1	0.05	0.6	ND	ND	ND	ND
Antimony	µg/L	6	6	20	ND	ND	ND	ND
Arsenic	µg/L	10	2	0.004	2.3-2.8	2.6	ND	4.6
Barium	mg/L	1	0.1	2	ND	ND	ND	ND
Beryllium	µg/L	4	1.0	1	ND	ND	ND	ND
Cadmium	µg/L	5	1.0	0.04	ND	ND	ND	ND
Chromium (total)	µg/L	50	10.0	(100)	ND	ND	ND	ND
Copper	mg/L	1	0.05	0.3	ND	ND	ND	ND
Cyanide	µg/L	150	100	150	ND	ND	ND	ND
Fluoride	mg/L	2	0.1	1	0.10	0.10	ND	0.11
Lead	µg/L		5.0	0.2	ND	ND	ND	ND
Mercury	µg/L	2	1	1.2	ND	ND	ND	ND
Nickel	µg/L	100	10.0	12	ND	ND	ND	ND
Nitrate (as NO3)	mg/L	45	2	45	2.8	2.8	ND-6.1	3.8
Nitrite (as N)	mg/L	1	0.4	1	ND	ND	ND	ND
Total Nitrate+Nitrite(N)	mg/L	10	0.4	10	1.0	1.0	ND	1.0
Perchlorate	µg/L	6	4	6	ND	ND	ND	ND
Selenium	µg/L	50	5	(50)	6.3	6.3	ND	ND
Thallium	µg/L	2	1	0.1	ND	ND	ND	ND

RADIOLOGICAL CONTAMINANTS

Parameter	Units	MCL	DLR	PHG or (MCLG)	RESULTS	
					Raw Influent (Source)	
Gross Beta	pCi/L	50	4.0	None	2.16 ± 2.17	

SYNTHETIC ORGANIC CHEMICALS - including Pesticides and Herbicides

Parameter	Units	MCL	DLR (DL)	RESULTS	
				Plant Effluent (CWR)	Raw Influent (Source)
Dioxin	µg/L	30	5.00		ND
Diquat	µg/L	20	4		ND
Endothall	µg/L	100	45		ND
Thiobencarb (Bolero)	µg/L	70	1.0	ND	ND

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VOLATILE ORGANIC CONTAMINANTS					
<u>Parameter</u>	<u>Units</u>	<u>MCL</u>	<u>DLR (DL)</u>	<u>PHG or (MCLG)</u>	<u>RESULTS</u> <u>Raw Influent (Source)</u>
Total Trihalomethanes	µg/L	80			ND
Bromodichloromethane	µg/L		0.5	0.4	ND
Bromoform	µg/L		0.5	5	ND
Chloroform (Trichloromethane)	µg/L		0.5	1	ND
Dibromochloromethane	µg/L		0.5	0.7	ND
Benzene	µg/L	1	0.5	0.15	ND
Carbon tetrachloride	µg/L	0.5	0.5	0.1	ND
1,2-Dichlorobenzene (o-DCB)	µg/L	600	0.5	600	ND
1,4-Dichlorobenzene (p-DCB)	µg/L	5	0.5	6	ND
1,1-Dichloroethane	µg/L	5	0.5	3	ND
1,2-Dichloroethane	µg/L	0.5	0.5	0.4	ND
1,1-Dichloroethylene	µg/L	6	0.5	10	ND
cis-1,2-Dichloroethylene	µg/L	6	0.5	(70)	ND
trans-1,2-Dichloroethylene	µg/L	10	0.5	(100)	ND
Dichloromethane	µg/L	5	0.5	4	ND
1,2-Dichloropropane	µg/L	5	0.5	0.5	ND
Total 1,3-Dichloropropene	µg/L	0.5	0.5	0.2	ND
Ethyl Benzene	µg/L	300	0.5	300	ND
Methyl tert-Butyl Ether (MTBE)	µg/L	13	3.0	13	ND
Monochlorobenzene	µg/L	70	0.5	200	ND
Styrene	µg/L	100	0.5	0.5	ND
1,1,1,2,2-Tetrachloroethane	µg/L	1	0.5	0.1	ND
Tetrachloroethylene (PCE)	µg/L	5	0.5	0.06	ND
1,2,4-Trichlorobenzene	µg/L	5	0.5	5	ND
1,1,1-Trichloroethane	µg/L	200	0.5	100	ND
1,1,2-Trichloroethane	µg/L	5	0.5	0.3	ND
Trichloroethylene (TCE)	µg/L	5	0.5	1.7	ND
Toluene	µg/L	150	0.5	150	ND
Trichlorofluoromethane (Freon11)	µg/L	150	5	700	ND
Trichlorotrifluoroethane (Freon 113)	mg/L	1.2	0.01	4	ND
Vinyl chloride	µg/L	0.5	0.5	0.05	ND
Xylenes (total)	mg/L	1.750	0.0005	1.800	<0.50
m,p-Xylenes	µg/L		0.5		ND
o-Xylene	µg/L		0.5		ND
tert-amyl Methyl Ether	µg/L		3		ND
Acetone	µg/L				<10
Bromobenzene	µg/L		0.5		ND
Bromochloromethane	µg/L		0.5		ND
Bromomethane(Methyl Bromide)	µg/L		0.5		ND
n-Butylbenzene	µg/L		0.5		ND
sec-Butylbenzene	µg/L		0.5		ND
tert-Butylbenzene	µg/L		0.5		ND
Chloroethane	µg/L		0.5		ND
Chloromethane(Methyl Chloride)	µg/L		0.5		ND
2-Chlorotoluene	µg/L		0.5		ND
4-Chlorotoluene	µg/L		0.5		ND
Dibromomethane	µg/L		0.5		ND
1,3-Dichlorobenzene (m-DCB)	µg/L		0.5		ND
Dichlorodifluoromethane	µg/L		0.5		ND
1,3-Dichloropropane	µg/L		0.5		ND
2,2-Dichloropropane	µg/L		0.5		ND
1,1-Dichloropropene	µg/L		0.5		ND
Ethyl tert-Butyl Ether (ETBE)	µg/L		3.0		ND
Hexachlorobutadiene	µg/L		0.5		ND
Isopropylbenzene	µg/L		0.5		ND
p-Isopropyltoluene	µg/L		(0.5)		<0.50
Naphthalene	µg/L		0.5		<1.0
n-Propylbenzene	µg/L		0.5		ND
1,1,1,2-Tetrachloroethane	µg/L		0.5		ND
1,2,3-Trichlorobenzene	µg/L		0.5		ND
1,2,3-Trichloropropane	µg/L				<0.50
1,2,4-Trimethylbenzene	µg/L		0.5		ND
1,3,5-Trimethylbenzene	µg/L		0.5		ND
Methyl Ethyl Ketone (MEK)	µg/L		5.0		<10
Methyl Isobutyl Ketone (MIBK)	µg/L		5.0		<10

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DISINFECTION RESIDUAL, PRECURSORS, and BYPRODUCTS

Type of Sample(s)	Parameter	Units	MCL/MRDL	DLR	MRDLG	RESULTS	
						Range	Average
Distribution	Chlorine (as total Cl2)	mg/L	4.0**		4	ND-1.60	0.78
Treated Water	Total Organic Carbon (TOC)	mg/L	Treatment Requirement	DLR=0.3		0.8-2.2	1.4
Source Water	Total Organic Carbon (TOC)	mg/L	Treatment Requirement	DLR=0.3		1.1-3.7	2.2
Distribution	Total Trihalomethanes	µg/L	80**	0.5	none	53-62	53 #
Distribution	Total Haloacetic Acids (5)	µg/L	60**	2		11-15	14 #

** Running Annual Average of distribution system samples. The MCLs are based upon Running Annual Averages.

This average is a system-wide value, please see the attached summaries for site specific averages.

REGULATED CONTAMINANTS with SECONDARY MCLs

Parameter	Units	MCL	DLR	RESULTS		RESULTS	
				Plant Effluent (CWR) Range	Plant Effluent (CWR) Average	Raw Influent (Source) Range	Raw Influent (Source) Average
Aluminum	µg/L	200	50	ND	ND	ND	ND
Chloride	mg/L	250			75	76	
Color	Units	15		<1-<5	<5	15	
Copper	mg/L	1	50		ND	ND	
Corrosivity		non-corrosive			***	***	
Foaming Agents (MBAS)	mg/L	0.5			<0.050	<0.050	
Iron	µg/L	300	100		ND	ND	
Manganese	µg/L	50	20		ND	ND	
Odor @ 60 C	Units	3	1	<1-1	<1	2	
Silver	µg/L	100	10		ND	ND	
Sulfate	mg/L	250	0.5		54	35	
Specific Conductance	µmhos	2200			490	480	
Total Dissolved Solids	mg/L	500			240	210	
Turbidity	Units	5		0.01-0.13	0.03		
Zinc	mg/L	5.0	0.05		1.1	ND	

ADDITIONAL CONSTITUENTS ANALYZED

Parameter	Units	MCL	DLR	RESULTS		RESULTS	
				Plant Effluent (CWR) Range	Plant Effluent (CWR) Average	Raw Influent (Source) Range	Raw Influent (Source) Average
Total Alkalinity (as CaCO3)	mg/L	no standard			54	60-92	77
Bicarbonate Alkalinity(HCO3)	mg/L	no standard			66		
Carbonate Alkalinity	mg/L	no standard			<1.0		
Hydroxide Alkalinity	mg/L	no standard			<1.0		
Boron	µg/L	no standard	100		160		150
Calcium	mg/L	no standard			21		20
Magnesium	mg/L	no standard			8.6		9.4
pH	Units	no standard		6.5-7.4	7.0	7.2-9.0	8.1
Potassium	mg/L	no standard			2.2		2.3
Sodium	mg/L	no standard			56		55
Total Hardness (as CaCO3)	mg/L	no standard			88		89

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DEFINITIONS and FOOTNOTES:

Plant Effluent, CWR, is finished, treated drinking water.

Raw Water is the Source Water, the California Aqueduct, prior to treatment.

Units: **mg/L** = milligrams per liter, parts per million (ppm)

µg/L = micrograms per liter, parts per billion (ppb)

µmhos = micromhos, a measure of specific conductance

MFL = million fibers per liter

pCi/L = pico Curies per liter

< = less than

> = greater than

ND = none detected above the DLR

NTU = nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

MCL: Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. MCLs are set by the US Environmental Protection Agency or the California Department of Public Health as close to the PHGs and MCLGs as is economically or technologically feasible.

MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

DLR: Detection Limit for purposes of Reporting.

(DL): Detection limit determined by the Laboratory when no DLR has been established.

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.

MRDLG: Maximum Residual Disinfectant Level Goal. The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the US Environmental Protection Agency.

PHG: Public Health Goal: 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.

Primary Drinking Water Standard: Primary MCLs, specific treatment techniques adopted in lieu of primary MCLs, and monitoring and reporting requirements for MCLs that are specified in regulations.

Secondary Standards: Aesthetic standards established by the California Department of Public Health.

AL: Action Level. There is no MCL, if this level is exceeded, action is required by the California Department of Public Health.

This average is a system-wide value, please see the attached summary for site specific averages.

****** Total Trihalomethanes and Haloacetic Acids(5) MCLs an annual running average of distribution system samples.

******* A corrosion inhibitor is added to the treated water before entry into the distribution system

All analyses performed by the ELAP certified laboratories: AVEK Water Agency, BSK Analytical Laboratories, MWH Laboratories, MWH subcontract lab, or BSK subcontract lab.