

2016 Annual Water Quality Report

	Unit Measurement	MCL/MRDL	PHG (MCLG)	Surface Water	Ground Water Range	Ground Water Average
Microbiological Contaminants						
1 Total Coliform Bacteria	% of tests positive	5%	(zero)	0.0%	N/D	N/D
2 Turbidity	NTU	TT	N/S	0.03	<.10	<.10

Radioactive Contaminants (2015)

3 Gross Alpha Activity	pCi/L	15	0	N/D	N/D-2.21	0.94
4 Uranium (2014 Winding Way Well)	pCi/L	20	0.43	N/D	N/D -3.9	0.10

Inorganic Contaminants (SW 2016, GW 2015)

5 Aluminum	ppm	1	0.6			
6 Antimony	ppb	6	20	N/D	N/D	N/D
7 Arsenic	ppb	10	0.004	N/D	N/D	N/D
8 Asbestos	7 MFL	7	7	N/D	N/D	N/D
9 Barium	ppm	1	2	N/D	N/D-.15	0.07
10 Beryllium	ppb	4	1	N/D	N/D	N/D
11 Cadmium	ppb	5	0.04	N/D	N/D	N/D
12 Chromium (Total)	ppb	50	(100)	N/D	N/D	N/D
13 Copper	ppm	1.3	0.3	N/D	N/D	N/D
14 Cyanide	ppb	150	150	N/D	N/D	N/D
15 Fluoride	ppm	2	1	N/D	N/D - .18	0.05
16 Hexavalent Chromium	ppb	10	0.02	N/D	.66-3.0	1.6
17 Lead	ppb	15	0.2	N/D	N/D	N/D
18 Mercury (inorganic)	ppb	2	1.2	N/D	N/D	N/D
19 Nickel	ppb	100	12	N/D	N/D	N/D
20 Nitrate(as N)	ppm	10	10	0.25	.57-1.6	1.1
21 Nitrate(as NO3)	ppm	45	45		2.9-24	7.0
22 Nitrite(as nitrogen, N)	ppm	1	1	N/D	N/D	N/D
23 Perchlorate	ppb	6	1	N/D	N/D	N/D
24 Selenium	ppb	50	(30)	N/D	N/D	N/D
25 Thallium	ppb	2	0.1	N/D	N/D	N/D

Volatile Organic Contaminants (SW 2016, GW 2015)

26 Benzene	ppb	1	0.15	N/D	N/D	N/D
27 Carbon tetrachloride	ppt	500	100	N/D	N/D	N/D
28 1,2-Dichlorobenzene[o-DCB]	ppb	600	600	N/D	N/D	N/D
29 1,4-Dichlorobenzene[p-DCB]	ppb	5	6	N/D	N/D	N/D
30 1,1-Dichloroethane	ppb	5	3	N/D	N/D	N/D
31 1,2-Dichloroethane	ppt	500	400	N/D	N/D	N/D
32 1,1-Dichloroethylene	ppb	6	10	N/D	N/D	N/D
33 cis-1,2-Dichloroethylene	ppb	6	100	N/D	N/D	N/D
34 trans-1,2-Dichloroethylene	ppb	10	60	N/D	N/D	N/D
35 Dichloromethane	ppb	5	4	N/D	N/D	N/D
36 1,2-Dichloropropane	ppb	5	0.5	N/D	N/D	N/D
37 1,3 Dichloropropane	ppt	500	200	N/D	N/D	N/D
38 Ethylbenzene	ppb	300	300	N/D	N/D	N/D
39 Methyl-tert-butyl ether	ppb	13	13	N/D	N/D	N/D
40 Monochlorobenzene	ppb	70	200	N/D	N/D	N/D
41 Styrene	ppb	100	0.5	N/D	N/D	N/D
42 1,1,2,2-Tetrachlorethane	ppb	1	0.1	N/D	N/D	N/D
43 Tetrachloroethylene[PCE]	ppb	5	0.06	N/D	N/D-3.2	2.3
44 1,2,4-Trichlorobenzene	ppb	5	5	N/D	N/D	N/D
45 1,1,1-Trichloroethane	ppb	200	1000	N/D	N/D	N/D
46 1,1,2-Trichloroethane	ppb	5	0.3	N/D	N/D	N/D
47 Trichloroethylene[TCE]	ppb	5	1.7	N/D	N/D	N/D
48 Toluene	ppb	150	150	N/D	N/D	N/D
49 Trichlorofluoromethane	ppb	150	700	N/D	N/D	N/D
50 1,1,2-Trichloro-1,2,2-trifluoroethane	ppb	1.2	4	N/D	N/D	N/D
51 Vinyl Chloride	ppt	500	50	N/D	N/D	N/D
52 Xylenes	ppm	1.75	1.8	N/D	N/D	N/D

Disinfection Byproducts (Distribution System) (2016)

				Avg	Range	
53 TTHM [Total Trihalomethanes] (Avg) (Range)	ppb	80	N/S	18	1.0 - 35.0	
54 Haloacetic Acids (Avg) (Range)	ppb	60	N/S	10	ND - 20.0	
55 Chlorine (Avg) (Range)	ppm	4 [MRDL]	4 [MRDL]	0.90	.41 - 1.3	
56 Total Organic Carbon (TOC)	ppm	TT	N/S	0.85	N/A	N/A

Secondary Drinking Water Standards (SW 2016, GW 2015)

57 Aluminum	ppb	200	N/S	N/D	N/D	N/D
58 Color	units	15 units	N/S	N/D	N/D	N/D
59 Copper	ppm	1	N/S	N/D	N/D	N/D
60 Foaming Agents [MBAS]	ppb	500	N/S	N/D	N/D	N/D
61 Iron	ppb	300	N/S	N/D	N/D - .13	N/D
62 Manganese	ppb	50	N/S	N/D	N/D	N/D
63 Methyl-tert-butyl ether [MTBE]	ppb	5	N/S	N/D	N/D	N/D
64 Odor-Threshold	TON (units)	3	N/S	N/D	N/D	N/D
65 Silver	ppb	100	N/S	N/D	N/D	N/D
66 Thiobencarb	ppb	1	N/S	N/D	N/D	N/D
67 Turbidity	units	5 units	N/S	0.030	N/D-0.10	0.10
68 Zinc	ppm	5	N/S	N/D	N/D	N/D
69 Total Dissolved Solids	ppm	1000	N/S	52	130-330	205
70 Specific Conductance	micromhos	1600	N/S	92	140-480	283
71 Chloride	ppm	500	N/S	3.8	4.4-29	11.2
72 Sulfate	ppm	500	N/S	3.2	5.0-31	12.9

Synthetic Organic Contaminants including Pesticides and Herbicides (Sampled in 2014)

73 DBCP	ppt	200	1.7	N/D	N/D	N/D
74 EDB	ppt	50	10	N/D	N/D	N/D
75 Aldrin	ppb	N/S	N/S	N/D	N/D	N/D
76 Chlordane	ppt	100	30	N/D	N/D	N/D
77 Chorothalonil	ppb	N/S	5	N/D	N/D	N/D
78 Dieldrin	ppb	N/S	0.02	N/D	N/D	N/D
79 Endrin	ppb	2	2	N/D	N/D	N/D
80 Heptachlor	ppt	10	8	N/D	N/D	N/D
81 Heptachlor Epoxide	ppt	10	6	N/D	N/D	N/D
82 Hexachlobenzene	ppb	1	0.03	N/D	N/D	N/D
83 Hexachlorocyclopentadiene	ppb	50	50	N/D	N/D	N/D
84 Lindane	ppt	200	32	N/D	N/D	N/D
85 Methoxychlor	ppb	30	0.09	N/D	N/D	N/D
86 PCB Arochlor Screen	ppt	500	90	N/D	N/D	N/D
87 Toxaphene	ppb	3	0.03	N/D	N/D	N/D
88 Trifluralin	ppb	N/S	N/S	N/D	N/D	N/D
89 2,4,5-T (2C)	ppb	N/S	N/S	N/D	N/D	N/D
90 2,4,5-TP (Silvex) (2C)	ppb	50	25	N/D	N/D	N/D
91 2,4-D (2C)	ppb	70	20	N/D	N/D	N/D
92 Bentazon	ppb	18	200	N/D	N/D	N/D
93 Dalapon	ppb	200	200	N/D	N/D	N/D
94 Dicamba	ppb	N/S	N/S	N/D	N/D	N/D
95 Dinoseb	ppb	7	14	N/D	N/D	N/D
96 Pentachlorophenol	ppb	1	1	N/D	N/D	N/D
97 Picloram	ppb	500	500	N/D	N/D	N/D
98 N-Nitrosodiethylamine (NDEA)	ppt	N/S	10	N/D	N/D	N/D
99 N-Nitrosodimethylamine (NDMA)	ppt	N/S	10	N/D	N/D	N/D
100 N-Nitrosodi-n-butylamine (NDBA)	ppt	N/S	10	N/D	N/D	N/D
101 N-Nitrosodi-n-propylamine (NDPA)	ppt	N/S	10	N/D	N/D	N/D
102 N-Nitrosopyrrolidine (NMEA)	ppt	N/S	10	N/D	N/D	N/D
103 N-Nitrosopyrrolidine (NPYR)	ppt	N/S	10	N/D	N/D	N/D
104 Alachlor	ppb	2	4	N/D	N/D	N/D
105 Atrazine	ppb	1	0.15	N/D	N/D	N/D
106 Benzo(a)pyrene	ppt	200	7	N/D	N/D	N/D
107 Bis(2-ethylhexyl) adipate	ppb	N/S	N/S	N/D	N/D	N/D
108 Bis(2-ethylhexyl) phthalate	ppb	N/S	N/S	N/D	N/D	N/D
109 Bromcil	ppb	N/S	N/S	N/D	N/D	N/D
110 Butachlor	ppb	N/S	N/S	N/D	N/D	N/D
111 Diazinon	ppb	N/S	N/S	N/D	N/D	N/D
112 Dimethoate	ppb	N/S	N/S	N/D	N/D	N/D
113 Metolachlor	ppb	N/S	N/S	N/D	N/D	N/D
114 Metribuzin	ppb	N/S	N/S	N/D	N/D	N/D
115 Molinate	ppb	20	1	N/D	N/D	N/D
116 Propachlor	ppb	N/S	N/S	N/D	N/D	N/D
117 Simazine	ppb	4	4	N/D	N/D	N/D
118 Thiobencarb	ppb	70	70	N/D	N/D	N/D
119 3-Hydroxycarbofuran	ppb	N/S	N/S	N/D	N/D	N/D
120 Aldicarb	ppb	N/S	N/S	N/D	N/D	N/D
121 Aldicarb Sulfone	ppb	N/S	N/S	N/D	N/D	N/D

122 Aldicarb Sulfoxide	ppb	N/S	N/S	N/D	N/D	N/D
123 Carbaryl	ppb	N/S	N/S	N/D	N/D	N/D
124 Carbofuran	ppb	18	1.7	N/D	N/D	N/D
125 Methomyl	ppb	N/S	N/S	N/D	N/D	N/D
126 Oxamyl	ppb	50	26	N/D	N/D	N/D
127 Glyphosate	ppb	700	900	N/D	N/D	N/D
128 Endothall	ppb	100	580	N/D	N/D	N/D
129 Diquat	ppb	20	15	N/D	N/D	N/D
130 1,4 Dioxane	ppb	N/S	1	N/D	N/D	N/D

Unregulated Contaminants and Constituents of Interest (SW 2016, GW 2015)

131 Sodium	ppm	N/S	N/S	8.4	6.7-26	12.6
132 Calcium	ppm	N/S	N/S	7.1	11.0-40	22.3
133 Hardness	ppm	N/S	N/S	28	57-190	108
134 Magnesium	ppm	N/S	N/S	2.4	10.0-23	13
135 Potassium	ppm	N/S	N/S	N/D	N/D-3.0	1.2

Lead and Copper (Sampled in 2014)

		AL	PHG	90th Percentile	Number of sites exceeding AL
136 Lead	ppb	15	0.2	N/D	0
137 Copper	ppm	1.3	0.17	0.16	Zero

Unregulated Contaminants - UCMR 4 (Sampled in 2015)

				High SW	High GW
138 Chromium	ppb	N/S	N/S	N/D	2.0
139 Cobalt	ppb	N/S	N/S	N/D	N/D
140 Molybdenum	ppb	N/S	N/S	N/D	1.2
141 Strontium	ppb	N/S	N/S	68	280
142 Vanadium	ppb	N/S	N/S	0.77	12
143 Hexavalent Chromium	ppb	N/S	N/S	0.14	2.0
144 Chlorate	ppb	N/S	N/S	340	340
145 1,4 Dioxane	ppb	N/S	N/S	N/D	N/D
146 1,1-Dichloroethane	ppb	N/S	N/S	N/D	N/D
147 1,2,3-Trichloropropane	ppb	N/S	N/S	N/D	N/D
148 1,3-Butadiene	ppb	N/S	N/S	N/D	N/D
149 Bromochloromethane	ppb	N/S	N/S	N/D	N/D
150 Bromomethane	ppb	N/S	N/S	N/D	N/D
151 Chlorodifluoromethane	ppb	N/S	N/S	N/D	N/D
152 Chloromethane	ppb	N/S	N/S	N/D	N/D
153 Perfluoro-1-butanefulfonic acid	ppb	N/S	N/S	N/D	N/D
154 Perfluoro-1-hexanesulfonic acid	ppb	N/S	N/S	N/D	N/D
155 Perfluoro-1-octanesulfonic acid	ppb	N/S	N/S	N/D	N/D
156 Perfluoro-n-heptanoic acid	ppb	N/S	N/S	N/D	N/D
157 Perfluoro-n-nananoic acid	ppb	N/S	N/S	N/D	N/D
158 Perfluoro-n-octanoic acid	ppb	N/S	N/S	N/D	N/D

LEGEND:

N/D = Analyzed; Non Detected

NTU = Nephelometric Turbidity Unit

PPM = Parts Per Million

MCL = Maximum Contaminant Level

MCLG = Maximum Contaminant Level Goal

MRDL = Maximum Residual Disinfection Level

PCi/l = Picocuries per Liter

PHG = Public Health Goal

N/A = Not Applicable

N/S = No Standard

TT = Treatment Technique

AL = Alert Level

***Total Trihalomethanes =**

Sum of results for Chloroform, Bromoform, Dibromochloromethane and Bromochloromethane

Notes:

1. Surface water samples collected in 2016.
2. Groundwater samples collected in 2015.
3. Nitrates sampled annually.
4. Groundwater samples for NDMA, Pechlorate, and VOC's are collected quarterly.

For additional water quality data, contact:

Carmichael Water District at 483-2452