

**2017 Annual Water Quality Report**

|   | Unit Measurement    | MCL/MRDL | PHG (MCLG) | Surface Water | Ground Water Range | Ground Water Average |
|---|---------------------|----------|------------|---------------|--------------------|----------------------|
| <b>Microbiological Contaminants</b>                         |                     |          |            |               |                    |                      |
| 1 Total Coliform Bacteria                                   | % of tests positive | 5%       | (zero)     | 0.0%          | N/D                | N/D                  |
| 2 Turbidity   | NTU                 | TT       | N/S        | 0.03          | .10-.29            | 0.17                 |
| <b>Radioactive Contaminants (2015)</b>                      |                     |          |            |               |                    |                      |
| 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                 |
| <b>Inorganic Contaminants (2017)</b>                        |                     |          |            |               |                    |                      |
| 5 Aluminum  | ppm                 | 1        | 0.6        | N/D           | N/D                | N/D                  |
| 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-.072           | 0.04                 |
| 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                | N/D                  |
| 16 Hexavalent Chromium (SW 2017 GW 2016)                    | 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         | N/D           | .46-1.3            | 0.87                 |
| 21 Nitrite(as N)  | ppm                 | 1        | 1          | N/D           | N/D                | N/D                  |
| 22 Perchlorate  | ppb                 | 6        | 1          | N/D           | N/D                | N/D                  |
| 23 Selenium   | ppb                 | 50       | (30)       | N/D           | N/D                | N/D                  |
| 24 Thallium   | ppb                 | 2        | 0.1        | N/D           | N/D                | N/D                  |
| <b>Volatile Organic Contaminants (2017)</b>                 |                     |          |            |               |                    |                      |
| 25 Benzene  | ppb                 | 1        | 0.15       | N/D           | N/D                | N/D                  |
| 26 Carbon tetrachloride                                     | ppt                 | 500      | 100        | N/D           | N/D                | N/D                  |
| 27 1,2-Dichlorobenzene[o-DCB]                               | ppb                 | 600      | 600        | N/D           | N/D                | N/D                  |
| 28 1,4-Dichlorobenzene[p-DCB]                               | ppb                 | 5        | 6          | N/D           | N/D                | N/D                  |
| 29 1,1-Dichloroethane                                       | ppb                 | 5        | 3          | N/D           | N/D                | N/D                  |
| 30 1,2-Dichloroethane                                       | ppt                 | 500      | 400        | N/D           | N/D                | N/D                  |
| 31 1,1-Dichloroethylene                                     | ppb                 | 6        | 10         | N/D           | N/D                | N/D                  |
| 32 cis-1,2-Dichloroethylene                                 | ppb                 | 6        | 100        | N/D           | N/D                | N/D                  |
| 33 trans-1,2-Dichloroethylene                               | ppb                 | 10       | 60         | N/D           | N/D                | N/D                  |
| 34 Dichloromethane  | ppb                 | 5        | 4          | N/D           | N/D                | N/D                  |
| 35 1,2-Dichloropropane                                      | ppb                 | 5        | 0.5        | N/D           | N/D                | N/D                  |
| 36 1,3 Dichloropropene                                      | ppt                 | 500      | 200        | N/D           | N/D                | N/D                  |
| 37 Ethylbenzene   | ppb                 | 300      | 300        | N/D           | N/D                | N/D                  |
| 38 Methyl-tert-butyl ether                                  | ppb                 | 13       | 13         | N/D           | N/D                | N/D                  |
| 39 Monochlorobenzene  | ppb                 | 70       | 200        | N/D           | N/D                | N/D                  |
| 40 Styrene  | ppb                 | 100      | 0.5        | N/D           | N/D                | N/D                  |
| 41 1,1,2,2-Tetrachlorethane                                 | ppb                 | 1        | 0.1        | N/D           | N/D                | N/D                  |
| 42 Tetrachloroethylene[PCE]                                 | ppb                 | 5        | 0.06       | N/D           | N/D-4.0            | 1.5                  |
| 43 1,2,4-Trichlorobenzene                                   | ppb                 | 5        | 5          | N/D           | N/D                | N/D                  |
| 44 1,1,1-Trichloroethane                                    | ppb                 | 200      | 1000       | N/D           | N/D                | N/D                  |
| 45 1,1,2-Trichloroethane                                    | ppb                 | 5        | 0.3        | N/D           | N/D                | N/D                  |
| 46 Trichloroethylene[TCE]                                   | ppb                 | 5        | 1.7        | N/D           | N/D                | N/D                  |
| 47 Toluene  | ppb                 | 150      | 150        | N/D           | N/D                | N/D                  |
| 48 Trichlorofluoromethane                                   | ppb                 | 150      | 700        | N/D           | N/D                | N/D                  |
| 49 1,1,2-Trichloro-1,2,2-trifluoroethane                    | ppb                 | 1.2      | 4          | N/D           | N/D                | N/D                  |
| 50 Vinyl Chloride   | ppt                 | 500      | 50         | N/D           | N/D                | N/D                  |
| 51 Xylenes  | ppm                 | 1.75     | 1.8        | N/D           | N/D                | N/D                  |
| <b>Disinfection Byproducts (Distribution System) (2017)</b> |                     |          |            |               |                    |                      |
| 52 TTHM [Total Trihalomethanes] (Avg) (Range)               | ppb                 | 80       | N/S        | 25            | 1.0 - 47.0         |                      |
| 53 Haloacetic Acids (Avg) (Range)                           | ppb                 | 60       | N/S        | 14            | ND - 24.0          |                      |
| 54 Chlorine (Avg) (Range)                                   | ppm                 | 4 [MRDL] | 4 [MRDL]   | 0.83          | .36 - 2.0          |                      |
| 55 Total Organic Carbon (TOC)                               | ppm                 | TT       | N/S        | 0.76          | N/A                | N/A                  |

**Secondary Drinking Water Standards (2017)**

|                                   |             |          |     |       |         |      |
|-----------------------------------|-------------|----------|-----|-------|---------|------|
| 56 Aluminum                       | ppb         | 200      | N/S | N/D   | N/D     | N/D  |
| 57 Color                          | units       | 15 units | N/S | N/D   | N/D     | N/D  |
| 58 Copper                         | ppm         | 1        | N/S | N/D   | N/D     | N/D  |
| 59 Foaming Agents [MBAS]          | ppb         | 500      | N/S | N/D   | N/D     | N/D  |
| 60 Iron                           | ppb         | 300      | N/S | N/D   | N/D     | N/D  |
| 61 Manganese                      | ppb         | 50       | N/S | N/D   | N/D     | N/D  |
| 62 Methyl-tert-butyl ether [MTBE] | ppb         | 5        | N/S | N/D   | N/D     | N/D  |
| 63 Odor-Threshold                 | TON (units) | 3        | N/S | N/D   | N/D     | N/D  |
| 64 Silver                         | ppb         | 100      | N/S | N/D   | N/D     | N/D  |
| 65 Thiobencarb                    | ppb         | 1        | N/S | N/D   | N/D     | N/D  |
| 66 Turbidity                      | units       | 5 units  | N/S | 0.030 | .10-.29 | 0.17 |
| 67 Zinc                           | ppm         | 5        | N/S | N/D   | N/D     | N/D  |
| 68 Total Dissolved Solids         | ppm         | 1000     | N/S | 52    | 120-180 | 157  |
| 69 Specific Conductance           | micromhos   | 1600     | N/S | 80    | 140-260 | 207  |
| 70 Chloride                       | ppm         | 500      | N/S | 2.6   | 3.8-6.5 | 5.0  |
| 71 Sulfate                        | ppm         | 500      | N/S | 2.2   | 4.4-8.0 | 6.8  |

**Synthetic Organic Contaminants including Pesticides and Herbicides (2017)**

|                                      |     |     |      |     |     |     |
|--------------------------------------|-----|-----|------|-----|-----|-----|
| 72 DBCP                              | ppt | 200 | 1.7  | N/D | N/D | N/D |
| 73 EDB                               | ppt | 50  | 10   | N/D | N/D | N/D |
| 74 Aldrin                            | ppb | N/S | N/S  | N/D | N/D | N/D |
| 75 Chlordane                         | ppt | 100 | 30   | N/D | N/D | N/D |
| 76 Chorothalonil                     | ppb | N/S | 5    | N/D | N/D | N/D |
| 77 Dieldrin                          | ppb | N/S | 0.02 | N/D | N/D | N/D |
| 78 Endrin                            | ppb | 2   | 2    | N/D | N/D | N/D |
| 79 Heptachlor                        | ppt | 10  | 8    | N/D | N/D | N/D |
| 80 Heptachlor Epoxide                | ppt | 10  | 6    | N/D | N/D | N/D |
| 81 Hexachlobenzene                   | ppb | 1   | 0.03 | N/D | N/D | N/D |
| 82 Hexachlorocyclopentadiene         | ppb | 50  | 50   | N/D | N/D | N/D |
| 83 Lindane                           | ppt | 200 | 32   | N/D | N/D | N/D |
| 84 Methoxychlor                      | ppb | 30  | 0.09 | N/D | N/D | N/D |
| 85 PCB Arochlor Screen               | ppt | 500 | 90   | N/D | N/D | N/D |
| 86 Toxaphene                         | ppb | 3   | 0.03 | N/D | N/D | N/D |
| 87 Triflualin                        | ppb | N/S | N/S  | N/D | N/D | N/D |
| 88 2,4,5-T (2C)                      | ppb | N/S | N/S  | N/D | N/D | N/D |
| 89 2,4,5-TP (Silvex) (2C)            | ppb | 50  | 25   | N/D | N/D | N/D |
| 90 2,4-D (2C)                        | ppb | 70  | 20   | N/D | N/D | N/D |
| 91 Bentazon                          | ppb | 18  | 200  | N/D | N/D | N/D |
| 92 Dalapon                           | ppb | 200 | 200  | N/D | N/D | N/D |
| 93 Dicamba                           | ppb | N/S | N/S  | N/D | N/D | N/D |
| 94 Dinoseb                           | ppb | 7   | 14   | N/D | N/D | N/D |
| 95 Pentachlorophenol                 | ppb | 1   | 1    | N/D | N/D | N/D |
| 96 Picloram                          | ppb | 500 | 500  | N/D | N/D | N/D |
| 97 N-Nitrosodiethylamine (NDEA)      | ppt | N/S | 10   | N/D | N/D | N/D |
| 98 N-Nitrosodimethylamine (NDMA)     | ppt | N/S | 10   | N/D | N/D | N/D |
| 99 N-Nitrosodi-n-butylamine (NDBA)   | ppt | N/S | 10   | N/D | N/D | N/D |
| 100 N-Nitrosodi-n-propylamine (NDPA) | ppt | N/S | 10   | N/D | N/D | N/D |
| 101 N-Nitrosopyrollidine (NMEA)      | ppt | N/S | 10   | N/D | N/D | N/D |
| 102 N-Nitrosopyrollidine (NPYR)      | ppt | N/S | 10   | N/D | N/D | N/D |
| 103 Alachlor                         | ppb | 2   | 4    | N/D | N/D | N/D |
| 104 Atrazine                         | ppb | 1   | 0.15 | N/D | N/D | N/D |
| 105 Benzo(a)pyrene                   | ppt | 200 | 7    | N/D | N/D | N/D |
| 106 Bis(2-ethylhexyl) adipate        | ppb | N/S | N/S  | N/D | N/D | N/D |
| 107 Bis(2-ethylhexyl) phthalate      | ppb | N/S | N/S  | N/D | N/D | N/D |
| 108 Bromcil                          | ppb | N/S | N/S  | N/D | N/D | N/D |
| 109 Butachlor                        | ppb | N/S | N/S  | N/D | N/D | N/D |
| 110 Diazinon                         | ppb | N/S | N/S  | N/D | N/D | N/D |
| 111 Dimethoate                       | ppb | N/S | N/S  | N/D | N/D | N/D |
| 112 Metolachlor                      | ppb | N/S | N/S  | N/D | N/D | N/D |
| 113 Metribuzin                       | ppb | N/S | N/S  | N/D | N/D | N/D |
| 114 Molinate                         | ppb | 20  | 1    | N/D | N/D | N/D |
| 115 Propachlor                       | ppb | N/S | N/S  | N/D | N/D | N/D |
| 116 Simazine                         | ppb | 4   | 4    | N/D | N/D | N/D |
| 117 Thiobencarb                      | ppb | 70  | 70   | N/D | N/D | N/D |
| 118 3-Hydroxycarbofuran              | ppb | N/S | N/S  | N/D | N/D | N/D |
| 119 Aldicarb                         | ppb | N/S | N/S  | N/D | N/D | N/D |
| 120 Aldicarb Sulfone                 | ppb | N/S | N/S  | N/D | N/D | N/D |

|                            |     |     |      |     |     |     |
|----------------------------|-----|-----|------|-----|-----|-----|
| 121 Aldicarb Sulfoxide     | ppb | N/S | N/S  | N/D | N/D | N/D |
| 122 Carbaryl               | ppb | N/S | N/S  | N/D | N/D | N/D |
| 123 Carbofuran             | ppb | 18  | 1.7  | N/D | N/D | N/D |
| 124 Methomyl               | ppb | N/S | N/S  | N/D | N/D | N/D |
| 125 Oxamyl                 | ppb | 50  | 26   | N/D | N/D | N/D |
| 126 Glyphosate             | ppb | 700 | 900  | N/D | N/D | N/D |
| 127 Endothall              | ppb | 100 | 580  | N/D | N/D | N/D |
| 128 Diquat                 | ppb | 20  | 15   | N/D | N/D | N/D |
| 129 1,4 Dioxane            | ppb | N/S | 1    | N/D | N/D | N/D |
| 130 Dioxane [2,3,7,8-TCDD] | ppq | 30  | 0.05 | N/D | N/D | N/D |

**Unregulated Contaminants and Constituents of Interest (2017)**

|               |     |     |     |     |         |      |
|---------------|-----|-----|-----|-----|---------|------|
| 131 Sodium    | ppm | N/S | N/S | 7.2 | 6.9-10  | 8.6  |
| 132 Calcium   | ppm | N/S | N/S | 6.4 | 11.0-20 | 16.3 |
| 133 Hardness  | ppm | N/S | N/S | 26  | 54-100  | 82   |
| 134 Magnesium | ppm | N/S | N/S | 2.4 | 6.7-13  | 10.2 |
| 135 NDMA      | ppt | N/S | N/S | N/A | N/D     | N/D  |
| 136 Potassium | ppm | N/S | N/S | N/D | 2.0-3.0 | 2.7  |

**Lead and Copper (Sampled in 2017)**

|            |     |     |      |                 |                              |
|------------|-----|-----|------|-----------------|------------------------------|
|            |     | AL  | PHG  | 90th Percentile | Number of sites exceeding AL |
| 137 Lead   | ppb | 15  | 0.2  | N/D             | Zero                         |
| 138 Copper | ppm | 1.3 | 0.17 | 0.18            | Zero                         |

**Unregulated Contaminants - UCMR 4 (Sampled in 2015)**

|                                     |     |     |     |         |         |
|-------------------------------------|-----|-----|-----|---------|---------|
|                                     |     |     |     | High SW | High GW |
| 139 Chromium                        | ppb | N/S | N/S | N/D     | 2.0     |
| 140 Cobalt                          | ppb | N/S | N/S | N/D     | N/D     |
| 141 Molybdenum                      | ppb | N/S | N/S | N/D     | 1.2     |
| 142 Strontium                       | ppb | N/S | N/S | 68      | 280     |
| 143 Vanadium                        | ppb | N/S | N/S | 0.77    | 12      |
| 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-butanefluoromethane | 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 2017.
2. Groundwater samples collected in 2017, except when indicated
3. Groundwater nitrates sampled quarterly.
4. Groundwater samples for NDMA, Pechlorate, and VOC's are collected quarterly.

**For additional water quality data, contact:  
Carmichael Water District at 483-2452**