Iowa Environmental Public Health Tracking Network

Nationally Consistent Data Measures for Community Water Systems

Concentration of Disinfection by-product HAA5, 2009

Presented below are data that represent the nationally consistent data measures for presence of the disinfection by-product HAA5 in community water systems in Iowa for the Year 2009:

Community water systems (CWS) are regulated under the Safe Drinking Water Act, and are defined as public water supplies that provide water for human consumption that has at least 15 service connections or serves at least 25 people at least 60 days during the year. The Iowa Department of Natural Resources maintains a statewide Safe Drinking Water Information System (SDWIS), and CWS submit the results of required water quality monitoring to this system.

Disinfection by-products (DBPs) are a family of chemicals formed when these disinfectants react with naturally occurring organic matter and other substances in the source water. Consuming disinfection by-products (DBPs) at high levels over many years may increase their risk of developing bladder cancer. Adverse developmental and reproductive effects associated with exposure to disinfection by-products during pregnancy are a concern. They have been studied with mixed results; however, the weight of evidence of the health effects data suggests a potential association. The U.S. Environmental Protection Agency (EPA) requires that water systems use treatment methods to reduce the formation of DBPs and to protect people from waterborne disease and the potential harmful effects of DBPs.

HAA5 is a collection of five haloacetic acids that are common DBPs. The EPA has set a maximum contaminant level (MCL) for HAA5 of 60 micrograms per Liter (60 µg/L). The Iowa DNR works with CWS out of compliance with this MCL to take action to reach levels below the MCL.

CWS also provide estimates of population served through the SDWIS. These numbers are used in the measures presented below, but should be treated as rough estimates and not accurate counts of the population served.

This report contains the following NCDMs

- Distribution of number of community water systems and number of people served by mean HAA5 concentrations (micrograms per liter) by year and by quarter.
- Distribution of number of community water systems and number of people served by maximum HAA5 concentrations (micrograms per liter) by year.

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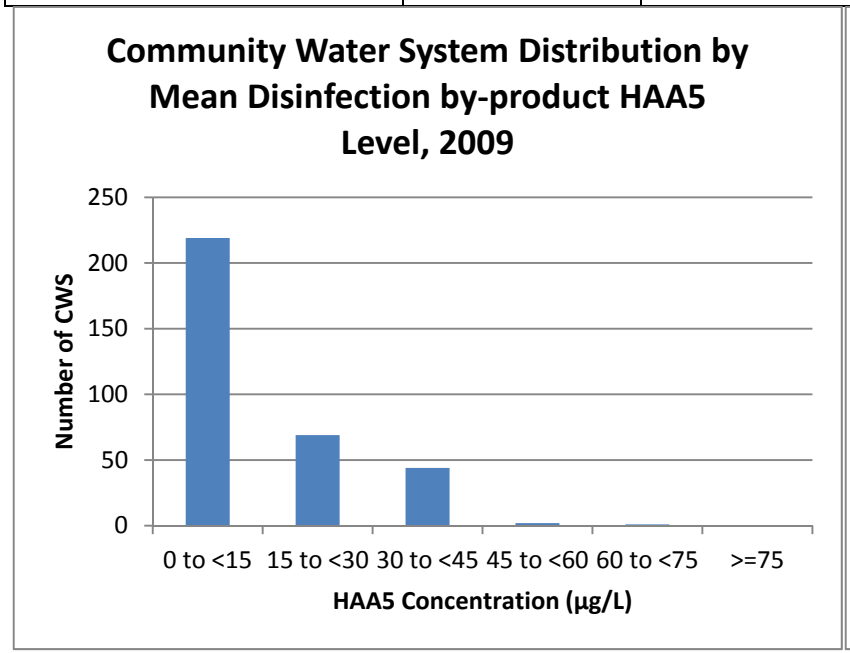
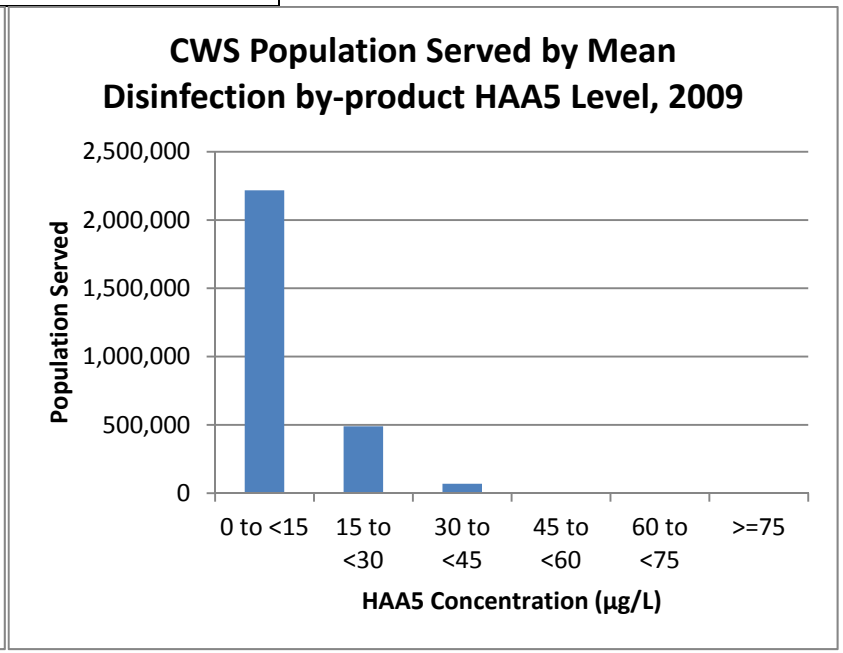
1. Distribution of number of community water systems and number of people served by mean HAA5 concentrations (micrograms per liter) by year.

Community Water Systems and Population served by mean HAA5 concentration, 2009		
HAA5 Concentration (µg/L)	Number of CWS	Population Served
0 to <15	219	2,216,820
15 to <30	69	490,077
30 to <45	44	68,914
45 to <60	2	2,534
60 to <75	1	2,640
>=75	0	0





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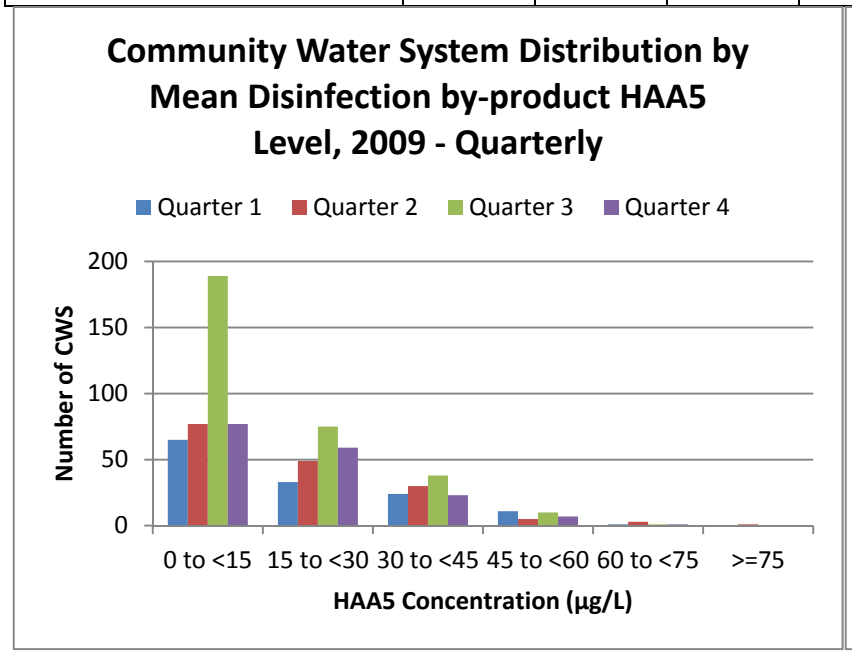
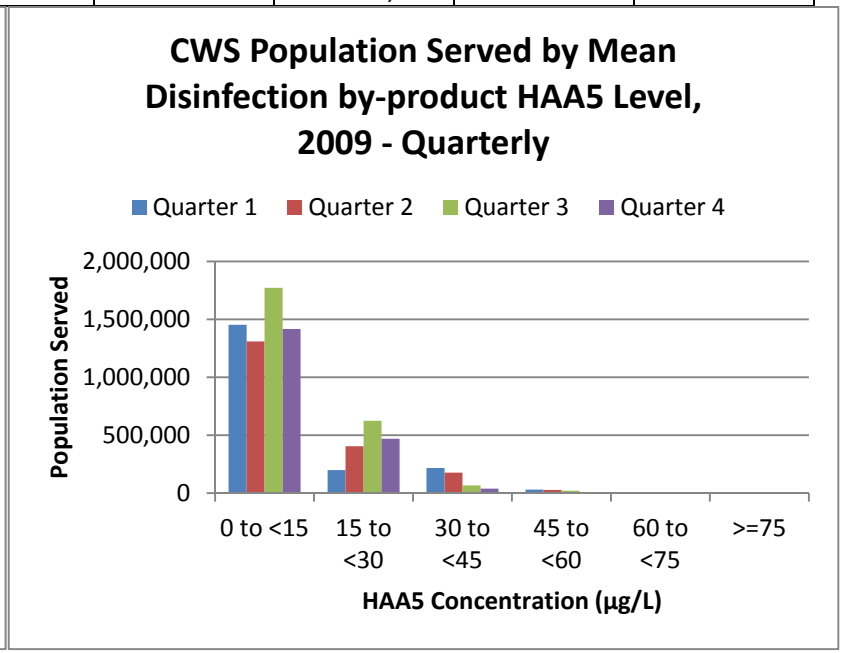
2. Distribution of number of community water systems and number of people served by mean HAA5 concentrations (micrograms per liter) by quarter.

Community Water Systems and Population served by mean HAA5 concentration, 2009								
HAA5 Concentration (µg/L)	Number of CWS				Population Served			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
0 to <15	65	77	189	77	1,453,261	1,309,506	1,771,960	1,417,711
15 to <30	33	49	75	59	198,266	405,274	623,794	470,235
30 to <45	24	30	38	23	217,273	177,389	66,160	38,515
45 to <60	11	5	10	7	30,028	28,125	20,119	8,511
60 to <75	1	3	1	1	204	2,444	2,640	2,640
>=75	0	1	0	0	0	2,640	0	0





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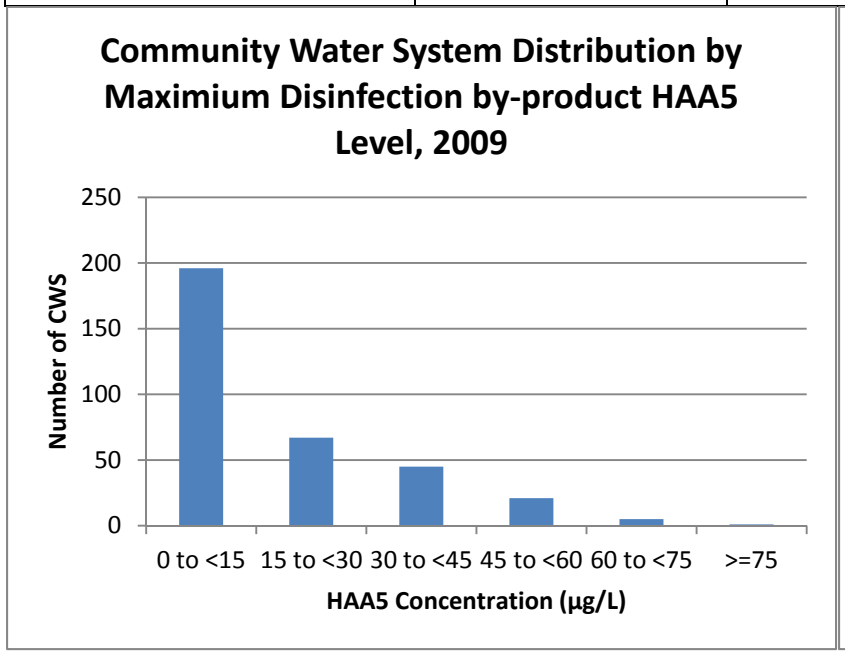
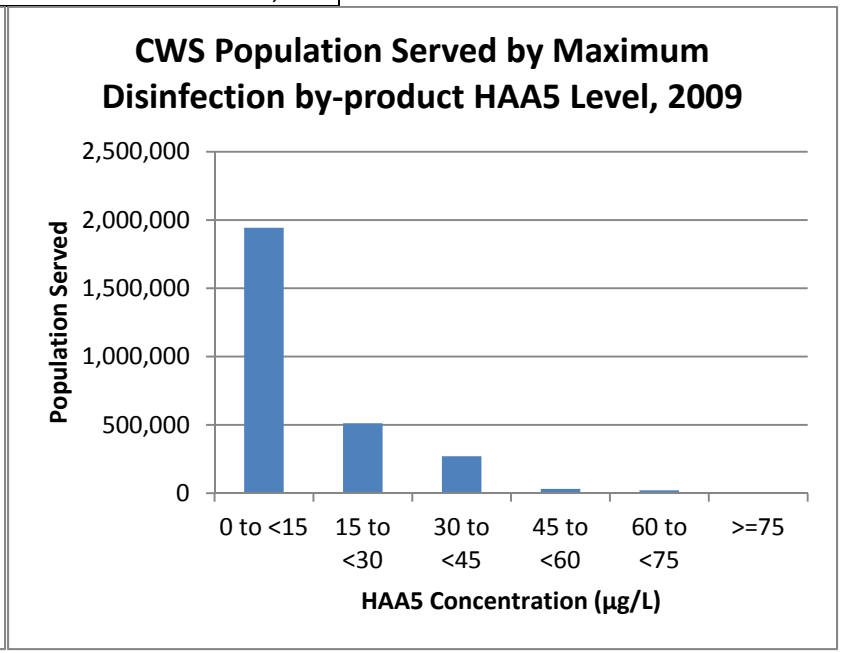
3. Distribution of number of community water systems and number of people served by maximum HAA5 concentrations (micrograms per liter) by year.

Community Water Systems and Population served by maximum HAA5 concentration, 2009		
HAA5 Concentration (µg/L)	Number of CWS	Population Served
0 to <15	196	1,943,846
15 to <30	67	512,090
30 to <45	45	270,314
45 to <60	21	31,129
60 to <75	5	20,966
>=75	1	2,640





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