



## 90<sup>th</sup> Percentile Calculation – EXAMPLES:

### Systems that collect 5 samples

1. Order lead results from lowest to highest:

No 1: 0.008 mg/L

No 2: 0.008 mg/L

No 3: 0.008 mg/L

No 4: 0.011 mg/L

No 5: 0.020 mg/L

→ PB90 = 0.0155 mg/L

2. Multiply number of samples by 0.9 to determine which sample represents 90th percentile level.

5 samples \* 0.9 = 4.5 (average of the 4<sup>th</sup> and 5<sup>th</sup> highest sample results).

Average the 4th & 5th samples highest sample results to get 90th percentile value  
(0.011 mg/L + 0.020 mg/L)/2 = **0.0155 mg/L**

3. Compare to lead action level exceedance

PB90 0.0155 mg/L > 0.015 mg/L (Action Level Exceedance)

4. Repeat for copper.

### Systems that collect 10 samples

1. Order lead results from lowest to highest :

No. 1: 0.005                      No. 6: 0.014

No. 2: 0.005                      No. 7: 0.014

No. 3: 0.005                      No. 8: 0.014

No. 4: 0.005                      No. 9: 0.020

No. 5: 0.014                      No. 10: 0.040

→ PB90 = 0.020 mg/L

2. Multiply number of samples by 0.9 to determine which sample represents 90th percentile level

10 samples x 0.9 = 9th highest sample

3. Compare to lead action level exceedance

PB90 0.02 mg/L > 0.015 mg/L (Action Level Exceedance)

4. Repeat for copper.

### Systems that collect less than 5 samples

1. PB90 and CU90 are equal to the highest lead and copper levels.

# 90<sup>th</sup> Percentile Calculation - DEQ REPORTS

Go to: <http://deq.mt.gov/wqinfo/pws/leadcopper.mcpx>

The image consists of two side-by-side screenshots of a web browser displaying the Montana Department of Environmental Quality (DEQ) website. The left screenshot shows the 'Public Water Supply Online Query Reports' page. A callout box points to the 'Active PWS System Data' selection option. The right screenshot shows the 'Lead & Copper Sample Summaries' report, which includes a table of sample data and a section for 'Violations & Enforcements'. A callout box points to the sample data table.

Period Begin	Period End	Collection End	Type	Period Name	Code	Count	Measure	UoM
01/01/2009	06/30/2009	05/13/2009	6M	1ST 6M 09	PB90	5	.125	MG/L
01/01/2009	06/30/2009	05/13/2009	6M	1ST 6M 09	CU90	5	.225	MG/L
07/01/2008	12/31/2008	11/4/2008	6M	6M 200802	PB90	6	.0074	MG/L
07/01/2008	12/31/2008	11/4/2008	6M	6M 200802	CU90	6	.1626	MG/L
01/01/2008	06/30/2008	04/30/2008	6M	6M 200801	PB90	4	.0191	MG/L
01/01/2008	06/30/2008	04/08/2008	6M	6M 200801	CU90	11	.2287	MG/L
07/01/2007	12/31/2007	12/17/2007	6M	2ND 6M 07	PB90	6	.0378	MG/L
07/01/2007	12/31/2007	12/17/2007	6M	2ND 6M 07	CU90	6	.0788	MG/L
01/01/2007	06/30/2007	02/15/2007	6M	1ST 6M 07	PB90	5	.0165	MG/L
01/01/2007	06/30/2007	02/15/2007	6M	1ST 6M 07	CU90	5	.1795	MG/L
01/01/2006	06/30/2006	05/25/2006	6M	1ST 6M 06	PB90	5	.0135	MG/L
01/01/2006	06/30/2006	05/25/2006	6M	1ST 6M 06	CU90	5	.169	MG/L

Select Active PWS System Data, after the jump, enter your PWSID and dates of interest and select "Submit Query".

Lead & Copper Sample Summaries or 90<sup>th</sup> percentiles are listed on the last page of the report just above Violations & Enforcements.