

# Lead and Copper Results Worksheet

System Name:

WSID:

Sample Collection Date(s):

**Action Levels (at the 90<sup>th</sup> Percentile)**  
 Lead: >0.015 mg/L  
 Copper: >1.3 mg/L

Determine the 90th Percentile Lead and Copper Levels:

- List all of the samples in Table 1 below.
- Circle the highest three values for both lead and copper.
- Determine the 90th percentile lead level by following the instructions given in Table 2.
- Write down the 90th Percentile level for Lead =           mg/L
- Determine the 90th percentile copper level by following the instructions given in Table 2.
- Write down the 90th Percentile level for Copper =           mg/L

**Table 1 - Sample Results**

	Sample Address	Lead Level (mg/L)	Copper Level (mg/L)
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

**Table 2 - Determining the 90th Percentile Lead or Copper Level**

<b>Number of Tap Samples Collected</b>	<b>How to Determine the 90th Percentile Lead or Copper Level</b>
5 to 7	Average the two highest sample results to get the 90th percentile level.
8 to 12	The 90th percentile level is the second highest sample result.
13 to 17	Average the second and third highest sample results to get the 90th percentile level.
18 to 22	The 90th percentile level is the third highest sample result.

**EPA Guidance for Calculating 90<sup>th</sup> Percentile Values:**

The 90<sup>th</sup> percentile is calculated separately for lead and copper. The procedure for determining the lead 90<sup>th</sup> percentile value is as follows:

**If you are required to collect more than 5 samples:**

**Step 1:** Place *lead* results in ascending order (from lowest to highest value).

**Step 2:** Assign each sample a number, 1 for lowest value.

**Step 3:** Multiply the total number of samples by 0.9.

**Step 4:** Compare the 90<sup>th</sup> percentile level to the action level of 0.015 mg/L [i.e., 15 parts per billion (ppb)]. If your 90<sup>th</sup> percentile value is higher than 0.015 mg/L, you have an exceedance.

*Repeat this procedure for **copper** sample results, except compare the 90<sup>th</sup> percentile copper level against its action level of 1.3 mg/L. If your 90<sup>th</sup> percentile value is greater than 1.3 mg/L, you have an exceedance.*

**If you are required to collect 5 samples:**

**Step 1:** Place lead or copper results in ascending order.

**Step 2:** Take the average of the 4<sup>th</sup> and 5<sup>th</sup> highest sample. This is your 90<sup>th</sup> percentile level.

**Step 3:** Compare the 90<sup>th</sup> percentile level against the lead or copper action level.

**IMPORTANT NOTE:**

**Using Rounding:** EPA's policy is to:

1. Round down to the nearest whole number if your decimal is 0.4 or lower.
2. Round up to the nearest whole number if your decimal is 0.5 or higher.