**Standard Curve Lab**

**Objective:** You will build a standard curve for the concentration of total nitrogen (TN) in your samples. Then fit the raw values of the samples to the curve. You will be working with data from the whole class. You can use R or excel, whichever you prefer. To begin, download the sample ID sheet and raw data from Canvas.

**Instructions:**

* For TN, create your standard curve.
* Fit a linear regression to the points of your standard curve and remove any outlying standard curve points to achieve the best possible fit.
* If necessary, trim your curve so that there is only one point above and one point below the max/min of your raw data.
* Determine the equation of your curve (the regression line)
* Use this equation to calculate the concentration of total nitrogen values of your samples.

**Questions:**

*Please answer the following questions for concentration of total nitrogen.*

*Include units in your answers.*

1. Insert the graph of your standard curve. For full credit, please give your graph a title and label your axis approximately (including units as needed). Your graph should show the points of the standard curve (all that you chose to include) and the regression line fit to those points.
2. What is the equation of the standard curve?
3. What is the R2 of your curve?
4. Did you remove any of the points from your curve? Why or why not?
5. Were you able to determine the value of all of the samples? Why or why not?
6. What is the mean N of surface samples (across all groups)?
7. What is the standard deviation of surface samples (across all groups)?
8. What is the mean deep water samples (across all groups)?
9. What is the standard deviation of deep water samples (across all groups)?
10. How do your groups samples compare to the other groups’ samples? Please provide specific values [type them below].

**Total Nitrogen:**

(Group number)

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.