To make a comparison between two mean values for paired data do the following:

1. From the **Tools** menu select **Data Analysis….**

2. Select **t-Test: Paired Two Sample For Means**

3. Click on the box for **Variable 1 Range** and highlight the data in your spreadsheet

4. Click on the box for **Variable 2 Range** and highlight the data in your spreadsheet

5. Click on the box for **Hypothesized mean difference** and enter 0 (zero)

6. Enter your desired value for alpha in the appropriate box

7. Select the radio button for **Output Range**, click in the associated box, and then click on the spreadsheet cell that will be the upper left cell for the output

8. Select **OK;** results will appear in the spreadsheet

Results are given for both one-tailed and two-tailed tests. If P(T<=t) is smaller than t Stat, then the difference between the two data sets is significant at the chosed confidence level. In the example shown below the difference between the concentration of Zn at the air-water and sediment-water interfaces is significant.

site	ppm Zn at air-water	ppm Zn at sediment-water
A	0.430	0.415
B	0.266	0.238
C	0.567	0.390
D	0.531	0.410
E	0.707	0.605
F	0.716	0.609

t-Test: Paired Two Sample for Means

	air-water	*ediment-water*
Mean	0.536166667	0.4445
Variance	0.029352567	0.0200987
Observations	6	6
Pearson Corre	0.942164663	
Hypothesized	0	
df	5	
t Stat	3.6998343	
P(T<=t) one-ta	0.007000908	
t Critical one-t	2.015049176	
P(T<=t) two-ta	0.014001816	
t Critical two-t	2.570577635	