

# Sound Velocity Worksheet

revised November 26, 2003

Your Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Lab partner(s): \_\_\_\_\_

Course & Section: \_\_\_\_\_ Station # \_\_\_\_\_ Date: \_\_\_\_\_

Distance  $d$  with uncertainty and units:  $d = \text{_____} \pm \text{_____}$

What is the uncertainty in your measurements of time? \_\_\_\_\_

Trial	Time	Velocity
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Mean velocity = \_\_\_\_\_ Standard dev. = \_\_\_\_\_ St. dev. of mean = \_\_\_\_\_

Calculated uncertainty in velocity for one typical run.  $\delta_v = \text{_____}$

Show your work on the back of this page.

How does this uncertainty compare to your results for Standard Deviation and St. Dev of the mean for your multiple trials? Do your results make sense?

$B = \text{_____} \pm \text{_____}$  Show your work on the back of this page.

Attach a printout of one of your *Logger Pro* plots.

GRADE: \_\_\_\_\_  
(out of 15 points)

GRADED BY \_\_\_\_\_  
(TA's initials)

Show your work for the calculation of the uncertainty in velocity for one typical run and for your calculation of the bulk modulus of air and its uncertainty: