



Student Worksheet: Wind Effects – A Case Study

Name: _____

Procedure

1. Plot the following tide prediction data for Atlantic City, New Jersey, and create a line graph.
2. Using the line same graph, plot the following measured tide data for Atlantic City, New Jersey. Use a different color to complete the line.
3. Using the graph, answer the following questions:

Were there any significant discrepancies between the predicted and measured water levels?

Which day and time?

Can you hypothesize as to what might have occurred?

4. Review the following data recorded by the Coastal Monitoring Station presented below as time histories (Sept. 15 to Sept. 18).

5. Using the time histories, answer the following questions:

Why would a sudden drop in barometric pressure be of significance? When did the drop occur?

What happened to the Wind Speed, Gusts and Direction at the same time of the sudden drop in barometric pressure?

What are all of these meteorological conditions an indication of?

Comparing the water level data you graphed to the meteorological conditions, why do you think the predicted water levels did not correlate with the measured water levels?

Was your hypothesis correct?

6. Reviewing the predicted water levels and the meteorological information, how might the water levels been affected if the storm passed over Atlantic City at 11:30 am instead of 4:00 pm on September 16th? At 6:00 am?

7. Which area of New Jersey received the most water damage from the storm?