# Unit 3: Codorus Creek Seismic Refraction Case Study

Using the spreadsheet you completed for Unit 2 - Exercise 2, and the field data seismogram images provided from Codorus Creek (ExportedRefractionSeismogramExamples.zip), anlyze the field data and answer the following two questions:

1)how deep is the bedrock, and;

2)how difficult it will be to excavate the overburden.

Start by reviewing the example in the Part 2 Powerpoint Slideshow where the picking is annotated and it is shown how to use the first arrival time points to develop the travel time-offset plot. You might pick slightly different points – that’s OK, it’s your *interpretation.*

To answer questions #1 and #2, you will need to use the following equation:

You already worked with this for a previous dataset in Unit 2 – Exercise 2 where you entered the equation into the Excel workbook. For this problem using Codorus Creek seismic refraction data, you can use the same workbook from Unit 2 – Exercise 2, just save a new version, delete the “data” that was entered for the old dataset, and re-enter new data based on the seismic refraction images collected at Codorus Creek.

$$h=\frac{t\_{1}}{2\sqrt{\frac{1}{v\_{1}^{2}}-\frac{1}{v\_{2}^{2}}}}$$

To document your results, please prepare a short report that includes a summary of the methods, explanation of your results, interpretations and analysis based on the results, and a specific answer to each of the above questions indicating how you arrived at these answers based on the seismic evidence you produced. You will need to use information from the slides that accompany this unit, as well as the ancillary information associated with the dataset.