# **South Carolina Department of Transportation**

# **Geophysics Training Short Course**

# **Homework Assignment #2**

1. A crosshole test is performed at a site with the following seismic wave velocity profile:

|  |  |  |
| --- | --- | --- |
| Layer Thickness (ft) | Compression Wave Velocity (ft/sec) | Shear Wave Velocity (ft/sec) |
| 10 | 1000 | 650 |
| 5.5 | 850 | 500 |
| 8.3 | 1400 | 900 |
| - | 2000 | 1200 |

The spacing between the three boreholes is 10 ft (i.e., 10 ft from the source to the first receiver and 10 ft from the first to second receiver).

Plot the apparent compression wave and shear wave velocity profiles that would be observed if measurements were conducted at 1-ft depth increments from the ground surface to a depth of 30 ft below ground surface. Also plot the “true” compression and shear wave velocity profiles from the table above for comparison.