Most forensic soil examinations involve the characterization of samples by identifying the particles and producing quantitative data that leads to an interpretation of whether two samples had a common source. Other examinations seek to locate a geographic place that was the source of questioned material. A murder in Ontario, Canada is an excellent example of an examination involving minerals, glass and human made particles. Sometimes, because of diligent search or luck, an unusual mineral or particle is observed. Conventional statistical procedures cannot be applied to the data collected in these studies. However, the examiner using experience or other information such as mineral collections and scientific publications is able to explain the significance of the unusual or rare material and thus increase the evidential value. There are many cases where the rare and unusual material has been important in determining the conclusion of common source and thus increasing the value of the evidence. Soils and related materials are excellent evidence because of the large number of kinds of minerals and rocks, fossils, human made particles and chemical additives found in soil samples.