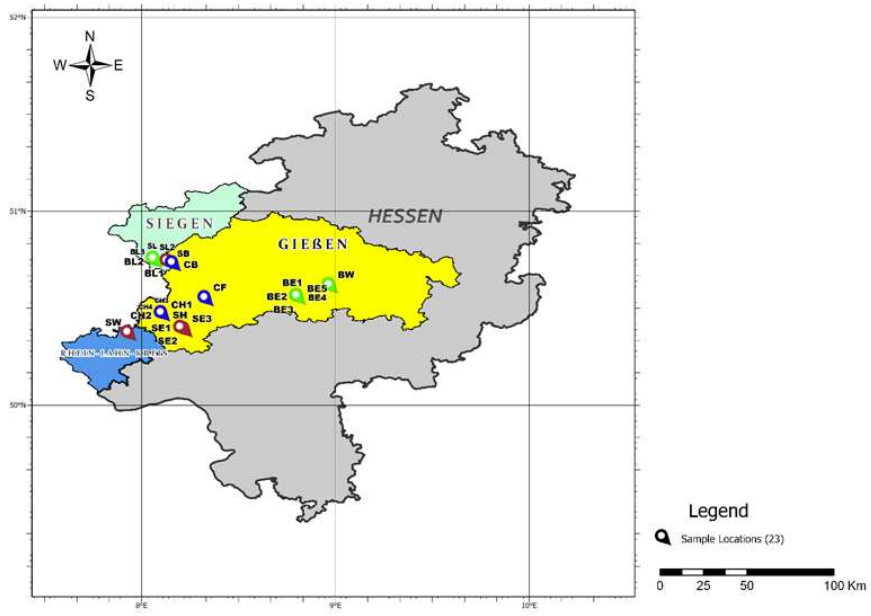

Figure 2.2: Sample locations relative to their position on a map of Hesse

The regional geology of the study area varies greatly in formation time and lithologyThe area is chiefly underlain by metasedimentary rocks from the late Palaeozoic era that are crosscut in various locations by Cenozoic volcanics. There are also various sedimentary units stretching geochronologically between the Palaeozoic and the Cenozoic. The units belong to geological provinces of the Rhenish Massif or Rhenish Slate Mountains ("Rheinisches Schiefergebirge" in German) and the Hessian Depression ("Hessische Senke" in German), both of which have been affected by the tectonics of the Tertiary period. The Rhenish massif is a made up of smaller geological units and the units which were sampled are the Taunus and Westerwald, located in the southern eastern portion of the province. The Hessian Depression also hosts a number geological units and the unit of interest to our study is the Vogelsberg volcanic field. The three significant units are shown in Figure 2.3 and would be discussed individually for the rest of the chapter.

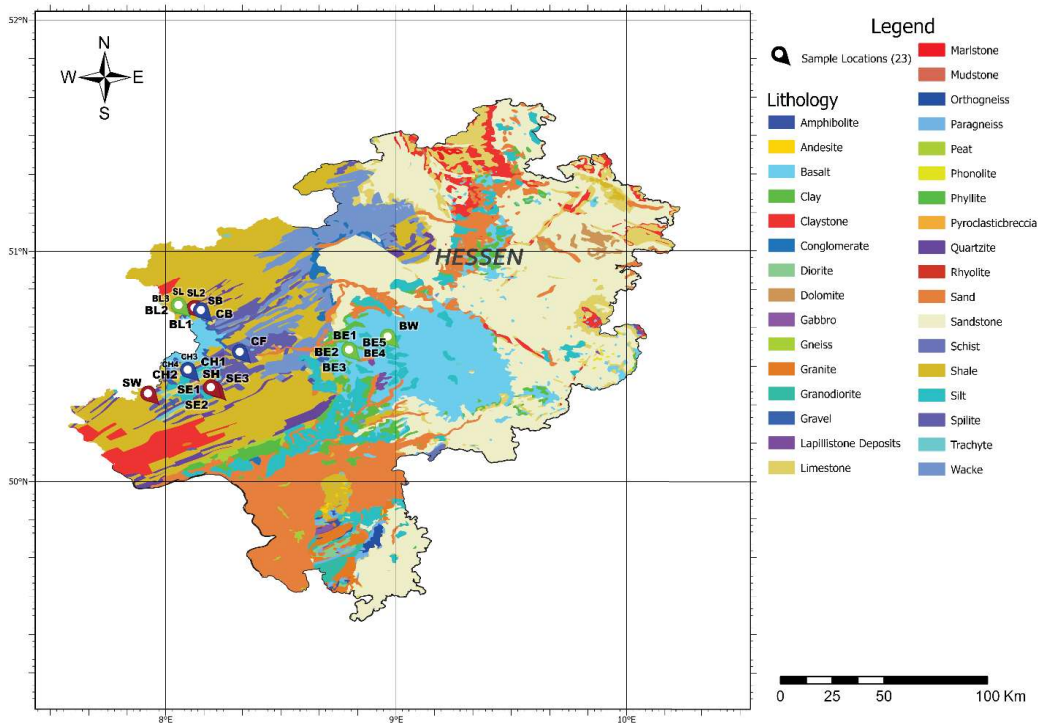

Figure 4.1: Geological map of study area showing sample location and the geology that underlay them (modified from BGR (2018)