

Figure 1. Geographical location of the research area

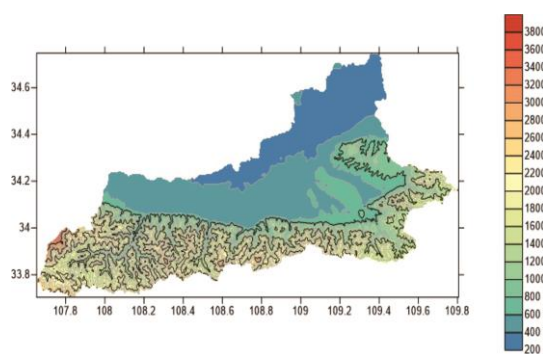


Figure 2. Xi'an City Elevation

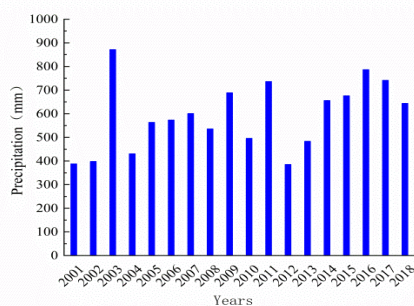


Figure 3. Histogram of annual precipitation distribution in Xi'an from 2001 to 2018

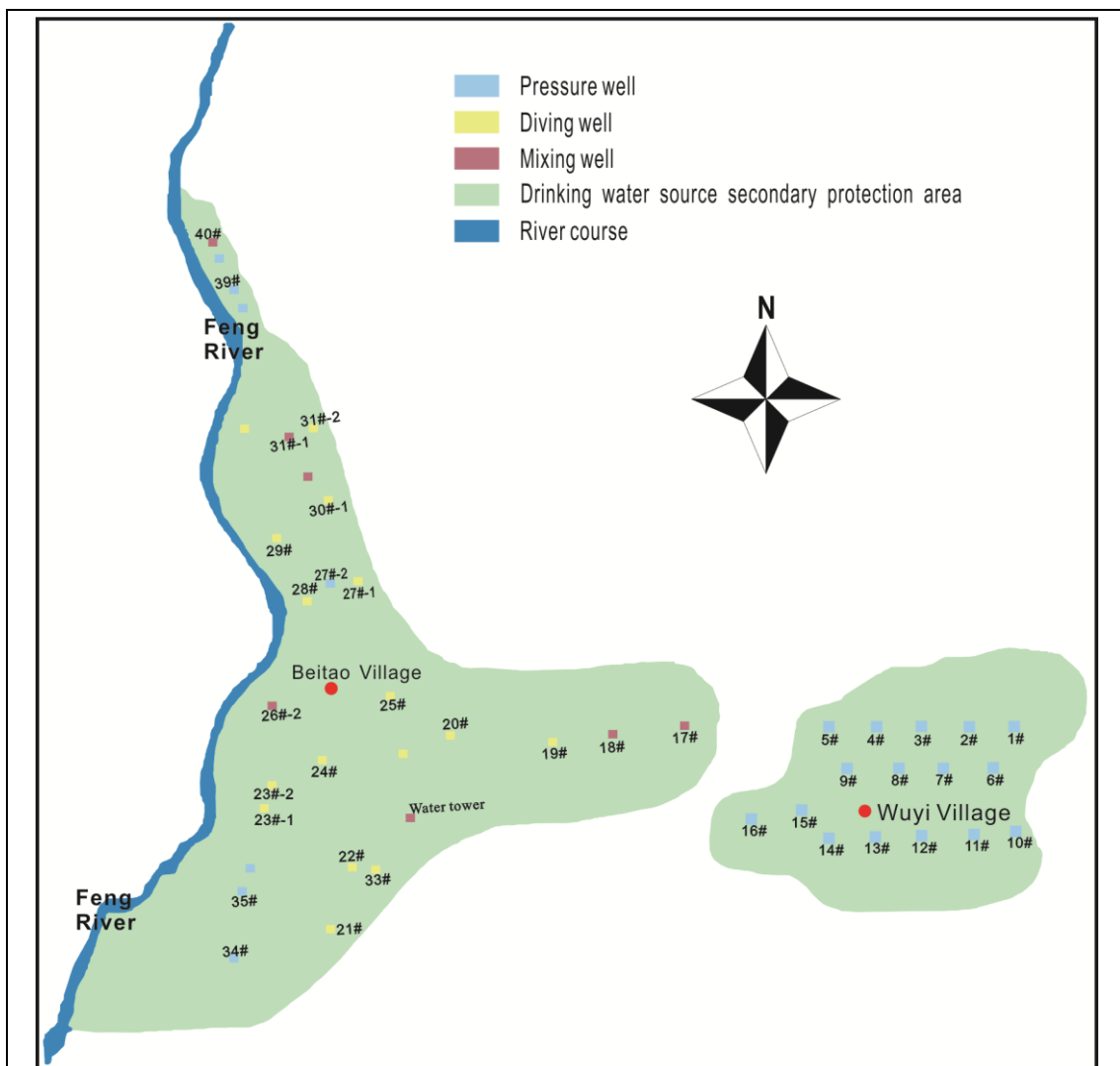


Figure 4. Geographical location of sampling point

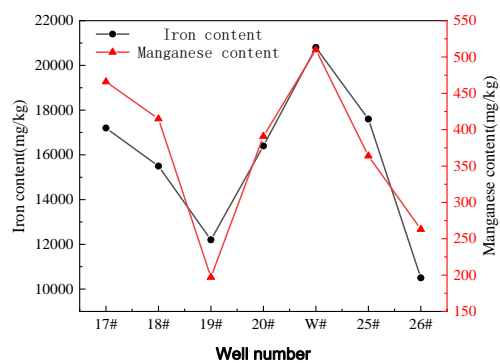


Figure 5. The east-west change law of iron and manganese content in surface soil

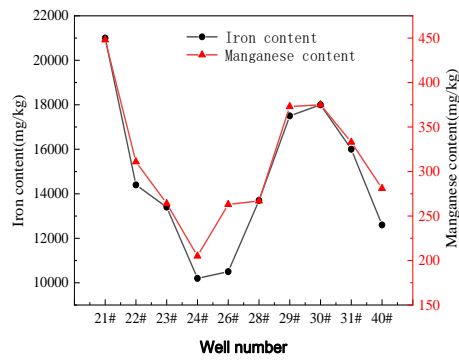


Figure 6. The north-south change law of iron and manganese content in surface soil

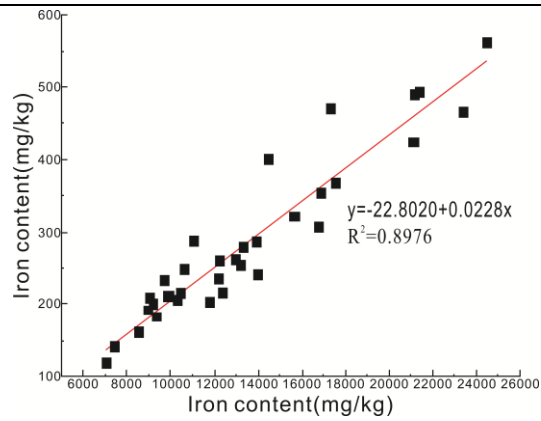
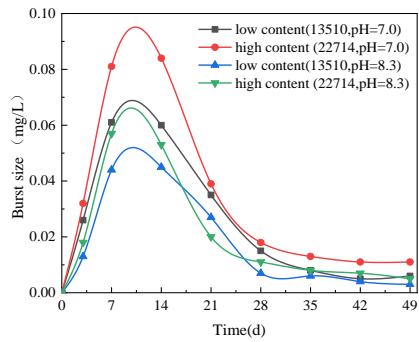
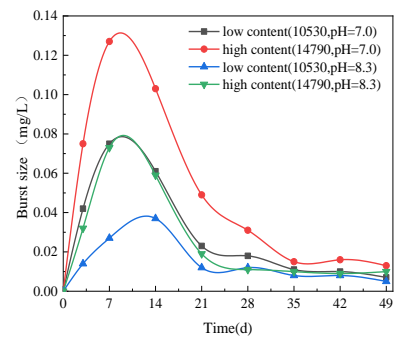


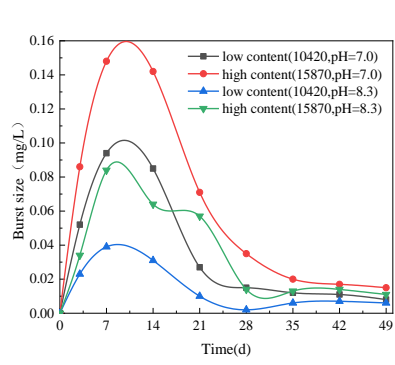
Figure 7. Correlation of iron and manganese in rock mass



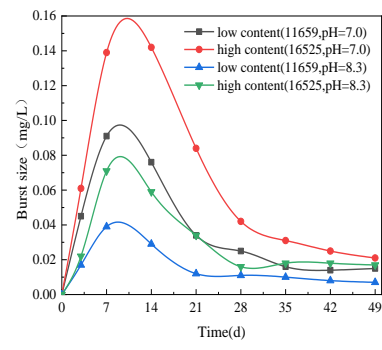
(a) The release of iron from silty clay



(b) The release of iron from fine sand

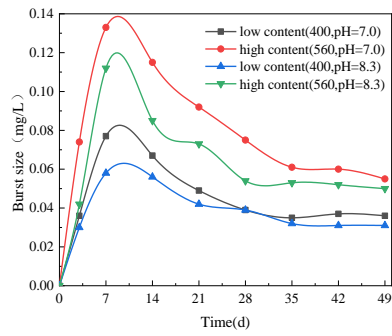


(c) The release of iron from medium coarse sand

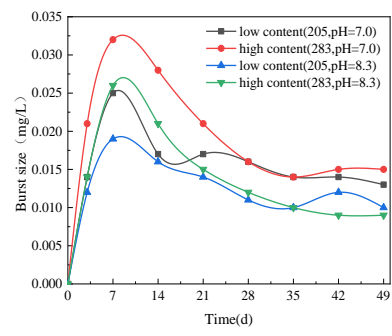


(d) The release of iron from boulders

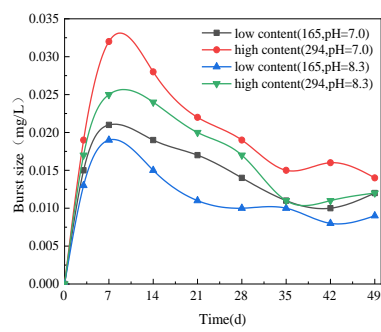
Figure 8. The release of iron in different rock masses



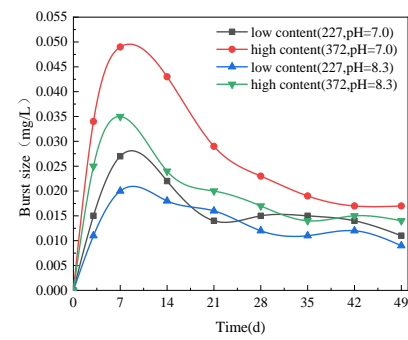
(a) The release of manganese from silty clay



(b) The release of manganese from fine sand



(c) The release of manganese from medium coarse sand



(d) The release of manganese from boulders

Figure 9. The release of manganese in different rock masses