

# COMPARISON OF THE DISSOLUTION OF MINERALS BY WATER AND AQUEOUS SOLUTIONS OF SIMPLE ORGANIC ACIDS

| Mineral     | Composition                                                       | Element determined | µg/ml in solution after 24 hour extraction by: |                   |                |         |         |          |          |
|-------------|-------------------------------------------------------------------|--------------------|------------------------------------------------|-------------------|----------------|---------|---------|----------|----------|
|             |                                                                   |                    | H <sub>2</sub> O/<br>atmos CO <sub>2</sub>     | Salicylic<br>acid | Citric<br>acid | Glycine | Alanine | Catechin | Fructose |
| Galena      | PbS                                                               | Pb                 | 1.1                                            | 14.6              | 18.3           | 1.7     | 2.1     | 5.2      | 1.6      |
| Bornite     | Cu <sub>5</sub> FeS <sub>4</sub>                                  | Cu                 | 2.0                                            | 30                | 60             | 80      | 7.2     | 9.8      | 2.3      |
| Pyrite      | FeS <sub>2</sub>                                                  | Fe                 | 0.9                                            | 1.1               | 1.5            | 0.9     | 1.0     | 1.0      | 0.8      |
| Loellinigte | FeAs <sub>2</sub>                                                 | Fe                 | 1.1                                            | 70                | 60             | 1.3     | 1.6     | 9.0      | 1.7      |
| Hematite    | Fe <sub>2</sub> O <sub>3</sub>                                    | Fe                 | 1.1                                            | 1.5               | 1.6            | 1.1     | 1.5     | 1.4      | 1.2      |
| Pyrolusite  | MnO <sub>2</sub>                                                  | Mn                 | 3.3                                            | 60                | 50             | 7.5     | 3.6     | 8.2      | 5.3      |
| Azurite     | Cu <sub>3</sub> (OH) <sub>2</sub> (CO <sub>3</sub> ) <sub>2</sub> | Cu                 | 4.2                                            | 580               | 1520           | 800     | 140     | 190      | 5.0      |
| Anglesite   | PbSO <sub>4</sub>                                                 | Pb                 | 3.0                                            | 270               | 480            | 180     | 190     | 230      | 140      |
| Calcite     | CaCO <sub>3</sub>                                                 | Ca                 | 13.0                                           | 480               | 980            | 80      | 55      | 110      | 55       |