

# Alkaline mine drainage from metal sulphide and coal mines: examples from Svalbard and Siberia

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## Abstract

Not all water from coal or metal mines is acidic. Circum-neutral or alkaline mine drainage may be due to: (i) a low content of sulphide minerals; (ii) the presence of monosulphides rather than pyrite or marcasite; (iii) a large pyrite grain-size limiting oxidation rate; (iv) neutralization of acid by carbonate or basic silicate minerals; (v) engineering factors (introduction of lime dust for explosion prevention; cement or rock flour during construction works); (vi) neutralization of acid by naturally highly alkaline groundwaters; (vii) circulating water not coming into effective contact with sulphide minerals; and (viii) oxygen not coming into direct contact with sulphide minerals or influent water being highly reducing.

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