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A Guide to Sulfur Gas Emissions from Wetlands and Disposal Basins: Implications for Salinity Management

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Summary

In areas with irrigated agriculture, excess drainage waters are often stored in disposal basins to avoid returning saline waters to riverways. An unexpected environmental concern associated with disposal basins is that some of them emit foul odours when water levels are lowered or attempts are made to dry them. The causes and mechanisms of foul odour generation from disposal basins are not known but are almost certainly associated with the cycle of sulfur (S) in these environments. The purpose of this review is to provide a guide on the possible causes and mechanisms of foul odour generation due to the biological and chemical transformations of sulfur compounds in disposal basins. There is almost no information available on S gas emissions from Australian wetlands. Therefore, many of the mechanisms that will be proposed here should be viewed as testable hypotheses that will require validation with field and laboratory studies.