Environmental Chemistry environmental problems · chemical approaches



CONTENTS

83



Cove

Should perchlorate still qualify as an emerging contaminant of concern? In this Research Front, we present a series of papers from widely different perspectives in order to provide a starting point from which this question can be answered.



Perchlorate and nitrate are common contaminants in groundwater, and both are biodegradable. Their biodegradation can be monitored using isotope fractionation analysis. See P. B. Hatzinger et al. (pp. 44–52).

Photo: G. Heath (CSIRO Land and Water)

RESEARCH FRONT

Perchlorate in the Environment

| FOREWORD Perchlorates in the environment – the key current issues David R. Parker | 1 |
|--|----|
| OPINIONS Constraints on the possible atmospheric sources of perchlorate James M. Roberts | 3 |
| Perchlorate: a cause for iodine deficiency? Purnendu K. Dasgupta | 7 |
| REVIEW Perchlorate in the environment: the emerging emphasis on natural occurrence David R. Parker | 10 |
| RESEARCH PAPERS Perchlorate and ion chemistry of road runoff Jennie Munster and Gilbert N. Hanson | 28 |
| Perchlorate in an urban lawn environment Jennie Munster and Gilbert N. Hanson | 36 |
| Fractionation of stable isotopes in perchlorate and nitrate during in situ biodegradation in a sandy aquifer Paul B. Hatzinger, John Karl Böhlke, Neil C. Sturchio, Baohua Gu, Linnea J. Heraty and Robert C. Borden | 44 |
| Characteristics of perchlorate formation via photodissociation of aqueous chlorite Namgoo Kang, Todd A. Anderson, Balaji Rao and W. Andrew Jackson | 53 |
| RESEARCH PAPERS Investigating biogenic heterogeneity in coastal sediments with two-dimensional measurements of iron(II) and sulfide David Robertson, David T. Welsh and Peter R. Teasdale | 60 |
| Variation of atmospheric volatile organic compounds over the Southern Indian Ocean (30–49°S) Aurélie Colomb, Valérie Gros, Séverine Alvain, Roland Sarda-Esteve, Bernard Bonsang, C. Moulin, Thomas Klüpfel and Jonathan Williams | 70 |
| Relationship between oxidative degradation of 2-mercaptobenzothiazole and physicochemical properties of manganese (hydro)oxides | |

EARLY ALERT Sign-up at **www.publish.csiro.au/journals/env** for our electronic early alert.

Cheng-shuai Liu, Li-jia Zhang, Chun-hua Feng, Chang-an Wu,

Fang-bai Li and Xiang-zhong Li