

## Kingston fossil plant ash release – Assessment at one year

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Initial and ongoing investigations of environmental impacts of the December, 2008, Kingston Fossil Plant Ash Release are summarized for the first year after the release. Since the release, air and surface water have been analyzed on a continual basis. Various characterizations of the released ash (chemical, physical, and radiological properties, aquatic toxicity, geomorphology and transport) will be presented. Results of seasonal fish studies and initial assessments of other biota will also be discussed. Surface water analytical results showed no discernable impact except during high rainfall events where re-suspension of silt-sized sediment transported the materials downstream. Air monitoring data indicate that dust suppression efforts have been extremely effective in preventing off-site impacts. Plans for long-term biological monitoring to assess potential effects on the ecosystem and for investigating chemically and biologically mediated arsenic and selenium transformations will be presented.

## Continuous 520,000-year sea-level record in 250-year timesteps, on an independent radiometrically calibrated chronology

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We present a sea-level record for the last 520,000 years based on stable oxygen isotope analyses of planktonic foraminifera and bulk sediments from the Red Sea, with a mean temporal resolution of 250 yr [1]. It reveals a strong signal similarity with the EPICA Dome C ice-core record of Antarctic temperature variations. The orbital-scale variability in the sea-level record is expressed on its own chronology [2], which is independent of ice-core chronology and which does not involve any assumptions for astronomical tuning. This is achieved by a straightforward (linear) calibration with radiometrically dated coral and speleothem sea-level benchmarks. Despite being achieved by a simple linear transformation, the new chronology for our continuous sea-level record remains within 1.5% of radiometric datings throughout the last 520,000 years. The sea-level record on the radiometrically calibrated chronology is available from <http://www.soes.soton.ac.uk/staff/ejr/ejrhome.htm#2010>.

[1] Rohling *et al.* (2009) *Nature Geoscience* **2**, 500-504.

[2] Rohling *et al.* (2010) *Earth and Planetary Science Letters* **291**, 97-105.