

Diamond mining clean-up recognised at Golden Geckos

A CSIRO mining rehabilitation project was recognised as demonstrating ‘excellence in stakeholder consultation, international collaboration, and a rigorous and science-based approach to environmental stewardship’ at the recent 2012 Western Australian Golden Gecko Awards.



Credit: CSIRO

The CSIRO researchers led by Colin Johnston helped Rio Tinto's Argyle Diamonds make major advances in rehabilitating a groundwater contaminant plume that threatened the ecosystem of the Swan River and public health.

The remediation of an old diamond exploration laboratory site at Belmont in inner Perth became one of the key environmental issues for Argyle Diamonds when it inherited the site in 2000.

The groundwater beneath the site and neighbouring properties was found to have been contaminated with a dense organic chemical and its breakdown products about which little was known – tetrabromoethane (TBA).

Given the proximity to the sensitive Swan River, Argyle commissioned CSIRO in 2001 to investigate the behaviour of the contaminant.

CSIRO's investigations revealed the nature and extent of the contaminant source and that natural biodegradation of chemicals was occurring.

Ecotoxicology studies also concluded that aquatic species in the Belmont South Drain and the Swan River were unlikely to be impacted. This allowed the adoption of a simple but effective remediation approach at the site.

The research conducted by CSIRO and others at this site over the years has contributed significantly to the body of knowledge about TBA and its behaviour in the environment. With the involvement of international researchers from

the University of Florida and consultants Golder Associates, a new approach to water quality trigger levels was developed for use by the WA Department of Environment and Conservation.

The 10-year project has resulted in several papers in international scientific journals and was the focus of the International Association of Hydrogeologists GQ07 (groundwater quality) conference tour in 2007.

Source: CSIRO

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