

CCP: Environmental Bonafides for Agricultural Uses

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ABSTRACT

The Ash Development Association of Australia undertook an environmental investigation programme into coal combustion products (CCP's). The aim of this investigation was to collate and interpret the analytical knowledge on its members' CCP's through a coordinated sampling, analysis and reporting programme.

The programme investigated the chemical characteristics of CCP's from several producers and marketers, which will assist the Association in identifying alternative uses to which CCP's can be used as a secondary resource.

The methodology consisted of collecting fine, medium, coarse fly ash and furnace bottom ash samples from ADAA members throughout Australia. The samples were analysed for a range of metals (total and leachate), dioxins and furans. Fifty four (54) samples were tested for leachate and thirteen (13) were selected for total metals analysis. Three (3) were analysed for dioxins and furans.

In summary the four major findings were; (1) Total metal results for Cadmium (Cd), Lead (Pb) and Mercury (Hg) were within the proposed guidelines (Fertiliser Act 1985) nominated by Department of Environment and Conservation; (2) All leachate results, under the worse case scenario, were either below or just above the laboratory detection limit for each analyte and so were well within the maximum acceptance criteria; (3) Leachate results from the previous investigations (1993 – 2001) were also low; either below or slightly above the detection limit, for the same range of analytes; (4) All three samples tested for dioxins and furans met the 100 pg/g criterion.

These investigations were seen as an important step towards demonstrating the responsible and environmentally sustainable use of CCP for applications, but not limited to, civil engineering fills, raw materials for the cement and concrete industries and for agricultural and horticultural purposes.

These results coupled with the agreed investigation methods of the regulatory authority provided the scientific evidence to pave the way for approval for CCP re-use in agricultural applications. These findings, process and criteria will be discussed.