Fossil fuels and environment

Leaching study of trace elements from bottom ashes: a case study of Chandrapura Thermal Power Station

[130] Coal is the major source of energy in India since India has vast reserves of thermal power grade coal. Indian coals contain high ash coupled with low calorific value and consequently results in huge amount of bottom ash. This ash accumulates in on site piles and ponds thereby resulting in serious environmental problems particularly trace elements contamination of ground and surface waters. This study envisages the environmental assessment of bottom ash from Chandrapura Thermal Power Station. Trace elements were observed within the regulatory limits. Many of the trace elements evaluated, namely Cr, Ni, Co, Se, Al, As, B, Ba, Sb, Hg were observed at below detection limits of AAS (atomic absorption spectroscopy). Na, K, Ca, Mg, Fe, Pb, Cd and other dissolved ions leached at significant concentration levels while Cu and Zn leached normally at low concentration levels. This study suggests low cost high volume utilization of bottom ash as fill material for reclaiming surrounding abandoned mined out areas in an environmentally acceptable manner. (2 tables)

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Damodar Valley Corporation, Chandrapura Thermal Power Station, Chandrapura – 825 303, India

Impact assessment of a coal washery project on socio-economic environment: an Indian case study

[131] All industrial developments including coal washery projects are accompanied by changes in socio-economic factors in the project area and surrounding regions. To evaluate the impact of a coal washery project, an investigation was carried out in the Patherdih coal washery of BCCL (Bharat Coking Coal Ltd). The existing socio-economic environmental scenario of the study area has been discussed and the methodology adopted has been described. Socio-economic parameters are analysed on the basis of census reports and a detailed household questionnaire. The survey was carried out in core and buffer zones and the results have been discussed on the basis of socio-economic determinants. The number of households shifted due to the implementation of the project, compensation provided to project affected people, facilities provided by the project authority for the improvement of the status of the employees and local people and the overall impact on the socio-economic environment have been discussed. The coal washery project appears to have brought significant socio-economic development to the area. It has involved the immigration of industrial workers in the area and opened avenues for different types of employment. (1 figure, 3 tables, 16 references)

Ghose M K and Giradhari L.
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Centre of Mining Environment, Indian School of Mines, Dhanbad – 826 004, India

Trace metal distribution in water bodies around Lakwa oil field, Assam—a case study

[132] The north-eastern region of India occupies a prominent position in the history of natural resource and it contributes a huge amount towards the growth of national economy. The spillage of oil and untreated/less treated/formation/drilling water from various oil fields in Assam, in Sibsagar district and Lakwa oil field, is a matter of great concern for the inhabitants, vegetation and agricultural crops. The basic objectives undertaken for the present investigation were: (1) to assess the heavy metal content in ponds and stagnated water bodies around the oil installations,