



An Environmental Management Model of Thermal Waters in Entre Ríos Province, Argentina

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Deep exploratory drillings, i.e. those with more than 500 meters depth, have been performed in the Entre Ríos province, Argentina, in order to ascertain the presence of thermal water. Drilling began in 1994, and until now there have been 18 polls with very variable results in terms of mineralization, resource flow, and temperature. The aim of this study was to present a management model, which should allow operators of thermal complexes to further develop procedures for safeguarding the biodiversity of the ecosystems involved, both during exploration and exploitation activities. The environmental management Plan proposed is constituted by a set of technical procedures that are formulated and should be performed during the stages of exploration and exploitation of the resource, and consists of: environmental monitoring, environmental audit, public information and contingency programs. This Plan describes the measures and proposals aimed at protecting environmental quality in the area of influence of a thermal complex project, ensuring that its execution remains environmentally responsibly, and allowing implementation of specific actions to prevent or correct environmental impacts, as predicted in the evaluation of the Environmental Program. The audit of environmental impact includes and takes into account natural factors, such as water, soil, atmosphere, flora and fauna, and also cultural factors. The technical audit Plan was prepared in order to get a systematic structure and organization of the verification process, and also with regard to document the degree of implementation of the proposed mitigation measures. Finally, an environmental contingency program was implemented, and its objective was to consider the safeguarding of life and its natural environment. Thus, a guide has been developed with the main actions to be taken on a contingency, since forecast increases the efficiency of the response. The methodology developed here was adopted as the procedure required by the authority for the application and regulation of the hydro-geo-thermal resources of the province of Entre Ríos, and it is also useful for the control and protection of the resource.