

The AERMOD model is used to assess air quality in the distribution function of the concentration of particles with size lower than 10 μm .

The results of dust dispersion modeling on the area of the future OCM “Ugljevik Istok 2” by application of model AERMOD, create the basis of expert paper, written by Nikola Lilic, Aleksandar Cvijetic, Uros Pantelic and Aleksandra Tomasevic from Mining and Geology Faculty, University of Belgrade.

Distribution of suspended particulate matter of 10 micrometers was modeled, with the procedure of protection against dust, and without the procedure. The analyzes show that, due to the total mining activities, a significant impact of dust on narrow operations area within OCM, can be expected.

In case of application of methods of dust reduction, the reliable estimation is that in range of dust emitted immissions of suspended particles will not exceed the prescribed limit of 50 mg/m^3 . The paper “Modelling of dust dispersion in the area of the OCM Ugljevik Istok 2” is published within the papers from “OMC 2014”, XI International Conference on the surface mining which was held on Zlatibor in October 2014.

The Banja Luka Company “Comsar Energy” plans to build the thermal power plant “Ugljevik III”, power of 2 x 300 MW as the third phase of the energy complex in Ugljevik. The supply of units by coal, will be done from the new open cast mine “Ugljevik Istok 2”. The project is a greenfield investment, and covers the concession area of 2,625 ha and 8,000 m^2 . Open cast mine should include the coal exploitation of the deposit “Ugljevik Istok 2” with the possibility of the mine extension on the part of deposit “Glinje”. Capacity of the open cast mine is planned for two million tons of coal annually. Therefore, this paper presents the results of dust dispersion modeling in the area of the future mine “Ugljevik Istok 2” using the AERMOD model. Distribution PM10 is modeled for meteorological conditions for the period 2009-2012, both with the application of methods and, without the application of methods and procedures for dust protection.

Potential danger of air pollution around the open cast mines, is largely in a function of dispersing the fine particles of dust from dry surface under the influence of wind. Model AERMOD is used to assess air quality in the distribution function of the concentration of particles of size lower than 10 microns. The obtained results represent the mean values of PM10 concentrations for defined sources of allocations, for certain period, and receptors. PM10 concentration contours show that significant dust impact can be expected, both, on narrow area of operations, within the open cast mine, as well as in the wider vicinity of the mine. However, in the case of dust reduction by spraying water, a reliable estimate is that in range receptors, which are within range of a dust emitted, immissions of suspended

particles will not exceed the prescribed limit of 50 mg/m³.

To achieve effective results for reducing the levels of air pollution in the area of coal mines, an application of technical protection measures is essentially important in order to raise the level of air quality management policy. In this way, the air quality can be led within limits prescribed by the protocol of the national ambient air quality. This approach provides an environmentally friendly mining and better habitat for all who live in the areas of mining activities execution.