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**MINING IN THE MIDDLE DON
RIVER BASIN: THREATS AND
COUNTERACTION**

RUSSIA



The Don River

THE DON RIVER

- **1 950 km in length**
- **the area of its basin is 425 000 km²**
- **average discharge – 935 m³/s**

**Voronezh area is
located in the
Middle Don River
Basin**



Territory of the area – 52 200 km²

Total area population – 2 294 600

Population density – 44 persons/ km²

City of Voronezh – 840 700 citizens



Voronezh



Voronezh

The Middle Don River basin is one of
the most important territories for
Russian economy

due to significant deposits of

-iron ore

-phosphates

-granite

-chalk

-ochre

Large-scaled mining and mining
related enterprises situated in the
Middle Don River Basin:

Lebedjan Mining Plant

Pavlovskgranite Mining Company

Voronezhskoe Rudoupravlenie

Novolipetsk Metallurgical Works

In the Middle Don River Basin mine waste poses an environmental threat not only through its volume but because of its toxicity. Mine tailing commonly contain

sulfides

arsenic

iron

cadmium

nickel

**According to the United States
Environmental Protection Agency**

water pollution from mining poses

**one of the top three ecologic
security threats in the world**

Within the Middle Don River Basin 561 000 people live in conditions of polluted water. From such pollution originate many diseases with a growing incidence. They include

- malignant tumors
- congenital malformations
- infertility
- blood system diseases
- food-related allergies
- degenerative diseases of the central nervous system

Local non-government organizations

- Clean Water Foundation
- Green World
- Youth for Environment

are promoting the broad spectrum of activities for maintaining ecologic balance in the Middle Don River Basin

- conferences on negative agricultural effects of mining and population health protection

- empowering local democratic institutions in environmental field

- study the most significant sources of wastewater at the south of Central Russia

In course of environment conservation and human health protection the main step was establishing the Centre for Ecologic Adversity Counteraction (CEAC). CEAC is non-government organization, rendering information, medical and juridical assistance.

CEAC is promoting TV and newspaper campaign devoted to mining impacts on environment in the Middle Don River Basin.

The main functions of the mass media dealing with environmental issues are as follows :

- * Supplying environmental information;
- * Providing social communications on environmental risks;
- * Providing continuing social and individual learning on environmental risks.

Radical changes in Russian society had many effects on environmental press coverage:

- ecology issues in the national press ceased to be a specialty of scientists and professional bureaucrats, but become a field of national interest leading to heavy involvement in discussions of many and various journalists, as well as of many other social groups

- in dealing with environmental issues the mass media turned directly to basic human needs, to need for a healthy environment, and to responsibility of each individual in keeping the environment safe

- the social actions to improve the environment became an integral part of societal efforts to build civil society

The effective system of medical monitoring of population in the zones of mining activities

The present work was carried out at the mining enterprise of the Joint-Stock Company Voronezhskoe Rudoupravlenie. To pick out industrial units and neighboring areas with higher content of toxic substances in sewage the comparative test of data of the State Sanitary and Epidemiological Inspection was conducted.



Voronezhskoe
Rudoupravlenie

The groups with the largest risk of gaining different pathological changes among the workers and those who live in the adjoining area were defined. The expert assessment method was applied. It gave the chance to single out the main risk factors of appearing the diseases and to apprise their indices quantitatively.

Those who took a certain number of points form the groups requiring immediate, scheduled or preventive diagnostic procedures.

Screening medical examination included objective inspection, laboratory research (full-scale general blood test, biochemical testing complex), endoscopic investigations and ultrasound testing of the internal organs.

The analysis of the data obtained showed that there were much more patients with various diseases among people from the highest risk group than in other groups. Early identification of different diseases enabled to conduct successful treatment in time.



The considerable efforts have been made

- to predict the consequences of putting into commission new mining enterprises and expanding already working ones
- to initiate public discussion on carrying out certification of wastewaters and production wastes
- to revising the current sanitary norms and regulations

The Don Riverside



Environmental degradation and human health hazard are the painful matters for interaction between local authorities and community activists.

Only coordination of their activities will allow to get the positive changes of ecologic situation in the Middle Don River Basin

THE END

