

IMPACT ON THE ENVIRONMENT EXTRACTION COALS

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ABSTRACT: In this paper, two kinds of impacts associated with coal extraction technologies, namely through career and mine.

KEY WORDS: impact, mine, coal, environmental factors

1. INTRODUCTION

By their nature are most impure coal fuels, with many negative effects on the environment.

Their mere existence underground, can produce air pollution CH_4 and CO_2 elimination through cracks in the coal layers.

Among all types of pollution produced by coal the most powerful and far almost impossible to prevent or diminished, it is to eliminate the atmosphere of a large amount of CO_2 gas whose concentration in atmosphere exacerbate the greenhouse effect, a phenomenon with direct the annual average temperature rise and thus considered the main culprit of global warming and the occurrence of dangerous climate disturbances.

2. COAL FORMATION

Hundreds of millions of years, the surface area continental replicate climatic conditions, morphological, hydrological and geo conducive to the development of abundant vegetation and accumulation of plant material, frequency, magnitude and number corresponding stability, expansion and persistence of environments excess humidity or underwater as those associated

with marshes, ponds, meadows, deltas, enclosed bays etc. The plant material (scrap moss, sedge, trees and other plants) together with inorganic material can accumulate in plant growth or place outside this place, forming deposits that indigenous or non-indigenous.

After deposition, the plant material or less immersed in water is decomposed, at least partially, both chemical oxidation and biochemical activity of aerobic bacteria and fungi, and the plant material submerged in water or covered by sediment thin is converted primarily by activity anaerobic. In physical, chemical and biochemical different types and countless generations of plants deposited in environments with anaerobic conditions and mineralized partly with the release of large amounts of gas, resulting a special type of humus brown or black called peat which is presented in sometimes a layer thicker in some peatland eutrophic or oligotrophic or low and high. peatlands eutrophic shall constitute the filing relatively intense sediment local or transported to swamp coastal inundation by tides that those on the Atlantic coast of the United States, bays closed by coastal belts like the one in Mangalia Saturn in our country, in lakes remaining meandering rivers or depressions

of glacial origin and peatlands oligotrofe formed by sedimentation of less intense type of plant muscles on poorly drained land with clay substrate, such as those known in the northern part of Europe and in our country Pilugani-Poiana Stampa. Under the terms of formation, provenance oligotrophic peat is acidic more fiber and low in nitrogen, minerals and microorganisms than eutrophic peat origin.

With the formation of peat starts the carbonation or carbonization by which plant debris sediments turns slowly, releasing oxygen as carbon dioxide and water, hydrogen to form methane and water and nitrogen as ammonia, while keeping the preferential carbon.

This process is emphasized first by covering peat with other sediments, then both by increasing pressure due to thickening and compaction of sediment cover, tectonic movements and deformations geo and by increasing the temperature by gradient geothermal local and possibly close to some igneous intrusions or extrusions.

The increased pressure causes mainly changing the physical properties, such as hardness, mechanical strength, optical anisotropy and porosity, while the temperature increase determined in particular modification of the chemical composition for the purpose of increasing the concentration of the carbon decrease the content of oxygen and hydrogen, to increase the amount of fixed carbon, decrease the volatile content and calorific value growth, so the fossilized peat and metamorphosed into a lesser or greater results in the final full range of differentiated by the degree of carbonation coal, carbon content, the nature of the ingredient substances etc.

This range can be extended in extremis to natural coke sometimes generated by rapid metamorphosis in the vicinity of magmatic intrusion or extrusion. Compared to coal carbonation wood species formed by accumulated layers of peat, coal derived by carbonation vegetate isolated fragments have an insignificant share. Coal origin is deduced on the basis of their content in fossil plant as pollen grains, spores, fruits, seeds or other conifer pine cones, leaves or cuticle of leaves

and tree trunks. Even with an advanced transformations in coal recognize the particular vegetable portions organs, tissues or cells, which are grouped under the term botanical entities fiter identifiable genetic studies associated with entities paleobotanical and Petrology.

These entities are indispensable for botanical and petrology characterization macroscopic and microscopic components of coal.

3. IMPACTS FROM COAL MINES

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By disturbing the original structure due to coal exploitation of coal cracks and pores are large amounts of gases released mainly CH_4 and CO_2 released into the atmosphere through the ventilation holes.

Sometimes underground accumulations of CH_4 combined with atmospheric air in certain proportions, give fire damp, strong gas explosive character who has killed thousands of coal miners underground during operation.

Entry into operation of coal mines raises new pollution problems. Underground mine galleries are crossed by groundwater that have high pyrite, which in contact with water and air, it oxidizes and go in sulfuric acid so that the water drained from the mine and taken out with pumps can have an acidic.

This phenomenon has caused in 1930 in US surface waters to be discharged about 2.3 million tons of sulfuric acid, which led to

massive pollution of rivers and lakes with disastrous effects on flora and fauna them.

4. THE IMPACT OF COAL PITS

Cast mining (quarries) primarily affects the landscape, producing drastic changes its large expanses hilly or flat areas are hilly or worse, deep pits.

Cities, forests and farmland are down for a long time. Large areas are destroyed soils and groundwater disappears. Dumps covering flat surfaces that become positive relief and having structure, lack of groundwater and although they may be affected by landslides, possibly affecting the infrastructure (railways, roads, quarries,) and even localities.



Figure nr. 1. Impact on human settlements



Figure nr. 2. Impact on wild vegetation

Both underground mining and in the surface coal dust, especially those clays produce occupational diseases,

pneumoconiosis, from the underground anthracosis and those on the surface silicosis.

4. 1. Impact of lignite mining on the global ecosystem

The exploitation and utilization of coal resources, disrupting the environment begins with the extraction of these resources by mining units by:

- Sealing and deforestation of land;
- Opening of new routes;
- Construction of concrete silos, housing, barracks and warehouses;
- The concentration of means of transportation and arrangement of parking or garaging them;
- Storage of liquid fuels, materials, scrap and rubbish;
- Installation of transformers and electric networks;
- Installation of conveyor belts;
- Stripping and excavation pits;
- Digging wells, adits, inclined planes and mining works;
- Stockpiling coal dumps and sometimes autoinflammatory;
- Drainage of mining operations;
- Directed collapse of the terrain above the underground excavations;
- Changing geomorphology and water courses;
- Onset or reactivation of landslides,
- Favoring soil erosion and degradation;

4.2. Land use

As a result of growing needs for raw materials which will operate largely through careers, will increase the need for farmland.

Depending on their location, in the meadow or hilly, remove aside areas of arable land, pastures, meadows, orchards and forests.

The surfaces are required for operation perimeters dumps external location for purposes related to industrial activity, such as construction, industrial, mining premises, access roads, railways etc.

In our country the areas that were affected by cast mining occupies about 1% of arable land.

A special aspect of employment land by cast mining Displacement is related to settlements, the railways, rivers, power lines in the area of operation.

4.3. Air and water pollution

Quarries and dumps during prolonged drought and strong winds can cause air pollution.

The environment can be influenced by waste dumps and burning.

Location careers must take into account the direction of prevailing winds and to reduce this influence to create protection curtains made of trees.

4.4. Dumps

Dumps besides occupy large areas of land and pollute the atmosphere, is in the initial phase charging and degradation of the landscape. In case of improper locations, they can make some damage due to landslides.

4.5. Water management

Lowering the hydrostatic level, or lowering groundwater due to intensive dewatering works, which are mainly in the areas of lignite mining operations to date is another factor that influences the environment.

Depending on the nature of the terrain, permeability coefficient, thickness layers of coverings, surface subsidence occurs sometimes that reach values of 2-3 m. The phenomena is found especially in thermal power plants located right in the epicenter area mining.

Lowering the water level lowers the water level in wells and water businesses, neighboring villages and communes, so that their operation is greatly influenced and often even stopped.

In these cases, the technical documentation shall be provided the necessary funds to ensure the water supply of the beneficiaries in the area.

CONCLUSION

1. Industrial civilization, of our century still faces the problem of energy, which periodically forces a priority in all questions of rank decisive.
2. Mining to date has varied and complex influence on the environment as follows:
3. Employment of temporary or permanent land areas, affecting in some cases hydrogeology, mining and the surrounding landscape;
4. Partial or total degradation of soils and landscape;
5. Change hydrographic conditions;
6. Changing the further degradation of the environment and living conditions of the inhabitants of the industrial regions;

7. In our country the areas that were affected by cast mining occupies about 1% of arable land.

8. Quarries and dumps during prolonged drought and strong winds can cause air pollution.

9. If underground coal mining in Oltenia area of land and existing buildings on it is degraded due to cracks, fractures and subsidence of up to 2-3 meters.

10. Special attention must be given to protecting mining areas historical and cultural areas.

11. opencast mining attack also formed phytocenosis biosphere components, zoocenoze and microcenoze.

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