

"patches" of newly made asphalt. However, new holes inevitably developing place of the recently laid patches. This is due to the fact that the road surface destruction originates not on the surface, but much deeper - under the ground. Suffusion drawdowns are often observed near the storm water drains as there is a significant increase in the speed of groundwater flow filtration, which in its turn, corresponds to silt removal intensification.

To prevent the consequences of suffusion, it is required to conduct activities aimed at reducing or stopping the flow of water in the soil, as well as decreasing the flow rate. For these purposes, a great variety of methods are used. The analysis of Tomsk flooding areas is one of these methods which can allow identifying the most dangerous areas of possible pothole and failure formation.

References

1. Ganzhary N.F. Geologiya s osnovami geomorfologii. - M.:INFRA-M, 2015. 207 p.
2. Natural Processes and Human Impacts: Interactions between Humanity and the Environment [Electronic Resource] – Access mode URL: https://books.google.ru/books?id=mX36xOSs-nAC&pg=PA33&lpg=PA33&dq=the+problems+cause+by+suffusion&source=bl&ots=zN4xjg-_Ty&sig=uKAm4ZL9NI8Bf7_JKVodsIlzBH8&hl=ru&sa=X&ved=0CDgQ6AEwA2oVC hMI-umM4fHayAIVqbNyCh11BgVY#v=onepage&q=the%20problems%20cause%20by%20suffusion&f=false
3. Suffusion hazard: Today's and tomorrow's problem for cities. [Electronic Resource] – Access mode URL: http://iaeg2006.geolsoc.org.uk/cd/PAPERS/IAEG_577.PDF
4. Zakonomernosti i prognoz suffuzionnykh protsessov. – M.: GEOS, 2003. – 216 p.
5. Zhukov M.M., Slavin V.I., Dunaeva N.N. Osnovy geologii.- M.: ID Al'yans, 2011.-544p.

INDUSTRIAL POLLUTION

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At all stages of its development man was closely connected with the outside world. But with an advent of industrial society dangerous human interference in nature has increased dramatically. Nowadays, industrial pollution threatens to become a global threat to humanity. Earlier factories were small and didn't produce so much smoke and pollution, but with the increase of human needs their number and size began to grow causing significant environmental pollution. With the development of technologically-developed factories into full-scale industries and manufacturing units, the problem of industrial pollution started to be of great importance.

There are a lot of different factors which cause industrial pollution. The most important are the following:

1. Unplanned industrial growth – in most industrial townships unplanned growth took place due to the fact that companies violated the rules and regulations, and polluted both water and air.

2. Use of outdated technologies – many companies continue to use outdated technologies to reduce cost and expenditure. It generates high amount of waste and pollution.

3. Lack of policies to combat pollution – absence of effective policies to combat pollution allows the companies to bypass the laws and regulations established by the state. This leads to the disruption of production technology and, consequently, to the contamination of the ecological environment

4. Inefficient waste disposal – most companies do not want to spend their money on waste disposal. And this causes a lot of environmental problems. Water pollution and soil pollution are often caused directly due to inefficiency of waste disposal. Factories produce a lot of CO₂ that from burning solid waste, with exhaust and industrial emissions. Long-term exposure to polluted air and water causes chronic health problems like respiratory disorders, making the issue of industrial pollution a severe problem.

5. Leaching resources from our natural world – industry requires a large amount of raw materials for production. They take these resources from beneath the earth. The extracted minerals can cause soil pollution (oil spilling on the earth or water), air pollution (different gases pollute atmosphere) that may prove harmful for marine or terrestrial life.

Industrial pollution contaminates air, water and soil all over the world. Major environmental disasters were caused by industrial pollution such as the well-known oil spill in the Gulf of Mexico, which occurred in 2010 and the explosion at the nuclear power plant in Chernobyl in 1986. Factories and facilities produce many things that we need, but they destroy our environment by causing a bad effect on our planet. So, what are these effects? Maybe we should mention only the two most drastic effects:

Wildlife Extinction Huge ecosystem are destroyed because of pollution, it causes their natural rhythms and patterns to fail. People are destroying forests and draining swamps to build factories, which leads to the extinction of species, loss of habitats. Environmental disasters such as oil spills, fires, leak of radioactive materials cause great damage to environment. And it's very hard for nature to recover contaminated and destroyed places.

Global Warming is a big problem which bothers now many people around the world. It is caused by the emission of large amounts of carbon dioxide into the atmosphere. Smoke and greenhouse gases are being released by industries into the air which cause an increase in global warming. Melting of glaciers, tsunamis, hurricanes and floods are also effects of this phenomenon.

The issue of industry pollution concerns all humanity. We should develop our technologies to reduce the pollution of our planet by industrial waste. Recycling is the best way to destroy the dangerous waste from factories. Organic methods are being used to clean the water and soil by using microbes. However, it will take a long time manage industrial pollution control, but people are trying to solve this problem: "we are thinking and are beginning to act.

References

1. Diamond R 1979 Preventing pollution / ed. A P Tsygankov/ Moscow Stroyizdat. p 172.
2. Malakhov V 1997 Thermal pollution industry: Analytical review Ecology 44. p 64-67.
3. Causes-effects of Industrial pollution [Electronic resource] <http://www.conserve-energy-future.com/causes-effects-of-industrial-pollution>.