

95% as compared to the level of 1989. The total amount of the ozone-depleting substances and their substitutes released into the atmosphere for this period was reduced by 81.1%. Since the documents came into force, the concentration of ozone-depleting substances in the atmosphere began to decline. The systematic failure from ozone-depleting substances had the positive effect on global climate, most of these substances being significant greenhouse gases.

On September 16, 1994 the General Assembly proclaimed the protection of the ozone layer in the memory of that day in 1987, when the Montreal protocol was signed. The states were offered to devote this Day to promotion of activities according to the tasks of the Protocol and its corrections.

Saving the ozone layer as well as the whole planet is a matter of every person. Buying the air conditioner or refrigerator, much attention should be paid to how a compressor works. By 2010, Freon R22 had been banned in many countries. Therefore, buying an outdated technology, you will certainly do harm to the atmosphere. Our task is to minimize the use of chemicals in sprays such as deodorants, hair sprays, air fresheners, polishes, etc.

It is no secret that one of the main pollutants are vehicle exhaust. Limit your drives on private cars, preferring the public transport or, even better, bikes.

Green plantings enrich air with oxygen and hinder depletion of the ozone layer. Therefore, it is necessary to participate in planting our cities.

In addition, one needs to reduce amount of wastes because their processing will do irreparable harm to the atmosphere. Therefore, it is appropriate to use environmentally friendly bags, refuse from polyethylene in our everyday life. One of the ways of contributing to ozone layer preservation is using the water filters, having refused from bottled water.

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ECOLOGICAL PROBLEMS IN PETROLEUM ENGINEERING AND INDUSTRY

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The environmental impact of petroleum is often negative because it is toxic to almost all forms of life. When people began the exploitation of oil and gas fields, they did not think about the consequences of intensive extraction of these natural resources. A use of oil and gas as fuel hides a lot of danger. These products during burning emit carbon dioxide, nitrogen oxide, etc. Reducing the amount of oxygen in the atmosphere and increasing the number of carbon dioxide influences the climate.

Air pollution. The main role of air pollution belongs to the planes and cars. Modern planes absorb 35 tons of oxygen during the Atlantic Ocean crossing. Cars which amount to about 500 million have a great influence on our environment too. Emissions of one average vehicle are 135 kg of carbon per year, 25 kg of nitrogen per year, 20 kg hydrocarbons per year and 4 kg of sulfur. Besides the impact of factories, power and heat plants is rather high. A usual power plant working on heavy fuel oil throws out 500 tons of sulfur into the atmosphere every day. High temperatures created by the burning of petroleum cause nitrogen gas in the surrounding air to oxidize, creating nitrous oxides. Nitrous oxides, along with sulfur dioxide from the sulfur in the oil, combine with water in the atmosphere to create acid rain. Acid rain causes many problems such as dead trees and acidified lakes with dead fish. Acid rain leads to increased corrosion of machinery and structures, and to the slow destruction of archaeological structures like the marble ruins in Rome and Greece.

Water pollution (Oil spills). People pollute water reservoirs unsparingly. Every year from 2 to 10 tons of oil is dropped into the world oceans. Especially, this concerns the polluted waters of the Mediterranean Sea and the Atlantic Ocean. A liter of oil deprives oxygen of 40 thousand liters of seawater. A ton of oil pollutes 12 square km of ocean surface. There are a lot of source of income of oil into the seas and oceans: tanker crushing, accidents on drilling platforms, also rivers bring such polluting substances. The most striking example of the possible scale of oil spills in Russia, as a result of the poor state of infrastructure, was a leakage of oil in the Komi Republic, where during 6 months about 100 thousand tonnes of crude oil was leaking into the environment. The reasons were cracks, holes and gaps in the pipelines.

The Deepwater Horizon oil spill is considered the largest accidental marine oil spill in the history of the petroleum industry. 5 million barrels of oil poured through the gaps into the pipes of the well at a depth of 1,5 km in the Gulf of Mexico during 152 days. The oil slick reached the area of 75 thousand square kilometers. As a result of the oil spill the coastal pollution achieved 1770 kilometers in length. More than 6814 dead animals, including 6104 birds, 609 sea turtles, 100 dolphins and other mammals, and 1 reptile were found in November 2, 2010.

How will we solve these problems? How we are going to save inhabitants' lives? Such questions usually scientists, ecologists, petroleum engineers ask. Swedish and British experts suggest using old newspapers, pieces of wrappers, scraps of paper factories to clean out the seawater from oil. They are able to absorb more in 28 times the amount of oil concerning to their own weight.

Deformations of the earth's surface. It is a result of the extraction of oil, gas and groundwater. The earth's surface movement can be much more serious than the tectonic movements of the earth's crust. Settling of the earth's surface often leads to the destruction of pipelines, cables, railways, roads, power lines, bridges and other structures. This subsidence can cause landslides and flooding of the lower parts of the territory. In addition, forest cutting down, construction works, installation of drilling equipment (consequences of exploration and exploitation of oil fields) in the northern regions lead to the destruction of the upper layer of peat, which provides isolation of permafrost, which contributes a violation of thermal balance and changes in the ecosystem.

Nowadays there is a large-scale oil and gas development in the sea of Okhotsk, where whale summer habitats are situated. Operations development threatens the existence of this species because a significant part of the whale feed zones are within the territory of the Sakhalin-2 field.

The main task nowadays is to minimize undesired consequences by the rational use of natural conditions. Oil and gas industry will be more ecologically-friendly if we follow the next points:

1. develop new oil and gas fields in faraway areas.
2. improve the level of professional training of petroleum engineers and apply new technologies in order to carry out the exploration effectively as we and develop new oil and gas fields.
3. make better environmental conditions and compensate ecological consequences made by oil companies.
4. dispose oil associated gas.

Careless handling of oil can cause big troubles. We should use natural resources carefully and considerable. Oil requires an attentive attitude. All who deals with oil and gas industry should know it.

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ENVIRONMENTAL PROBLEMS OF OIL PRODUCTION IN THE ARCTIC

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In the spring of 2015 on the shelf of the Pechora Sea in the area of Nenets Autonomous Okrug the commercial oil was produced for the first time, which thereafter was sent to consumers. This event is the starting point for development of the Arctic as a region of hydrocarbon production, which is comparable to the resource base of Saudi Arabia.

At present it is little-known about the Arctic territories, but the information that has been obtained as a result of the expeditions is enough to state with confidence that oil and gas deposits on the Arctic shelf are significant [1].

The world's leading oil and gas producing companies are currently carrying out global researches on the territory of the Arctic shelf in order to develop a new resource base of Russia.

However, considering all the evidence of perspective development of the Arctic as a petroleum province of the future, one should remember that the Arctic is one of the regions, which is connected with other parts of the Earth, so, despite the remote access, the harmful pollutants can enter the Arctic territory by air, sea and river flows. Scientists have estimated that in Russia there are about hundreds of areas where indicators of pollution exceed significantly permissible levels. Some of them are associated with the activities of the oil and gas complex [2].

There are a number of environmental issues that arise in the Arctic as a result of the oil industry activities within the territory: