

Diese Technik wird in Deutschland seit mehreren Jahren erfolgreich insbesondere bei der Gasförderung in Niedersachsen eingesetzt. Die Horizontal-Bohrtechnik kann außerdem angewendet werden, um Bohrungen in umweltsensiblen Gegenden zu vermeiden, indem der Bohrplatz an der Oberfläche so gelegt wird, dass er manchmal kilometerweit vom unterirdischen Zielort entfernt liegt.

Horizontale Bohrtechnik mit größerer Reichweite spielt eine entscheidende Rolle in einem Projekt zur Entwicklung eines bedeutenden Öl- und Gasvorkommens an der nordöstlichen Küste der Insel Sachalin im Ochotskischen Meer im fernen Osten Russlands. Das Chayvo Feld vor Sachalin wird mit zahlreichen Horizontal-Bohrungen mit großer Reichweite erschlossen, die von einer an Land und einer vor der Küste gelegenen Bohranlage aus gebohrt werden. Ein Teil der Bohrungen wurde horizontal über mehr als 12 Kilometer Länge niedergebracht, wodurch sie zu den längsten der Welt gehören. Die Anwendung dieser Bohrtechnologie reduziert die Entwicklungskosten und minimiert die Einwirkung auf das Meer, da zusätzliche Bohrinseln vor der Küste eingespart werden können.

Literatur

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FLUORIDE IN SNOW WATER FROM INDUSTRIAL DISTRICT OF KRASNOYARSK CITY S.A. Polikanova

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The enterprises of aluminum industry are considered to be the typical sources of environmental contamination by fluoride. Fluorine reacts with other elements. Excessive presence of fluoride in the environment leads to fluorosis (chronic intoxication by fluorine leading to serious disturbances in the human skeletal system), malfunction of the nervous activity and brain dysfunction. Fluorides attack the immune system, causing the so-called autoimmune diseases. Such weakening of the immune system can cause cancer, rheumatoid arthritis, multiple sclerosis, etc. The negative effect of fluoride is also observed in the thyroid gland which regulates the metabolism of the human body. It can also cause a variety of diseases.

According to the snow survey [1], we can conclude that the Krasnoyarsk Aluminum Plant is a major source of fluoride pollution in the city. The concentrations of fluoride increase more than ten times from west to east of the city [1].

In 2013 snow samples were collected at distances 1 to 3 km from the Krasnoyarsk Aluminum Plant. In 2014 samples were taken at a distance of 1 to 3 kilometers and further from the south-west to north-east from the Krasnoyarsk Aluminum Plant. Collection, preparation and analysis of samples were performed according to methodical recommendations taken from V.N. Vasilenko's and I.M. Nazarov's works and the long-term experience stored by the workers of Geoecology and Geochemistry Department (TPU). Totally, 8 snow water samples were examined by potentiometric analysis with a fluoride ion-selective electrode for determining fluoride.

Table

Results of potentiometric analysis snow water

Remoteness from Krasnoyarsk Aluminum Plant	Value, mg/dm ³
2013	
1 km on the north-east	13,13
2 km on the north-east	13,76
3 km on the north-east	15,38
2014	
1 km on the north-east	11,34
2 km on the north-east	8,99
3 km on the north-east	9,80
8 km on the north-east	3,45
13 km on the north-east	1,20

Thus, it is seen that the concentration of fluoride in snow water is increased over the whole territory in 2013. This is due to the fact that fluoride is a volatile element and can be transported over long distances. However, the concentration of fluoride in the snow water samples decreases with distance (from 8 km) in 2014.

References

1. Khlebopros R.G., Taseiko O.V., Ivanov Y.D., Mikhailuta S.V. Krasnoyarsk. Environmental Essays: monograph. – Krasnoyarsk Siberian Federal University, 2012. – 130 p.