

## **METHODS OF ARTIFICIAL WATER RESOURCES ACCUMULATION IN NORTH-EAST OF RUSSIA (EURASIA)**

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North-East of Russia (NER) belongs to the very cold regions with an average annual temperature of  $-2.5^{\circ}\text{C}$ , and permafrost occurs at all places. Winter period lasts 8 months here. During this time the most number of rivers and lakes freeze (the thickness of ice is up to 2.5m), and the streams yield of the underground waters under the beds of river valleys decreases for tens and hundreds times. Because of this, there is a shortage of fresh water, used for the water supply. Different methods of accumulation of drink water were used. There were some specific methods for criolitic zone. Among the later, method of snow melioration was tested. This method consists of the artificial accumulation of snow at the bottom and slopes of the river valleys at the first half of the winter period, and acceleration of its melting of the second half by means of albedo decrease. Method of creation of the artificial water-containing volumes in frozen ice gravel and sands was tested. Good results have been obtained by the method of an artificial decrease of the velocity of the underground waters levels fall in the river valleys by the underground loitering or by the transformation of water from the well that was located higher. Traditional methods of head and free infiltration were used. Because of head infiltration, resources of free water increased in the upstream of the Kolyma River in the under-permafrost horizons at the depth of 100-300m. Accumulation of fresh waters in the underground volumes is economically and ecologically more advantageous that construction of reservoirs of the large volumes in the river valleys.