THE IMPACT OF BLASTING ON QUARRY WATER

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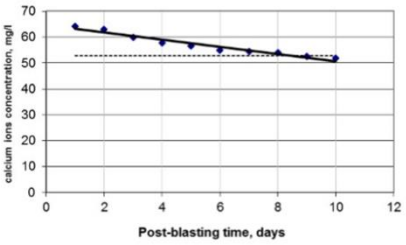
Each quarry that extracts a building stone, in accordance with the rules of mining, should have both a damp and a pool for water purification. Waters after cleaning are discharged into rivers, streams and the like.

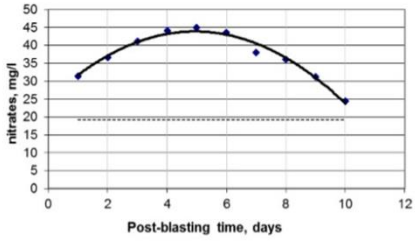
Pollution of water objects around quarries is mainly due to wastewater discharges. The chemical composition of the quarry water drainage is initially formed at the expense of the influx of underground water, and then undergoes changes in the process of production activity. The classification of the pollution of the quarry water was analyzed and the direction of the investigation was determined, namely, the pollution of the water by explosive works with the subsequent change in its chemical composition in time after the explosion.

As a control, a hydrochemical analysis of quarry waters was conducted immediately before the explosion. After a mass explosion, samples were taken at intervals of one day for 10 days, both in a damp and clearing pool.



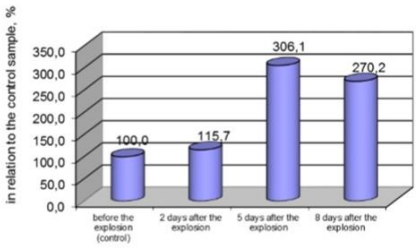
A

$C = -1{,}3733 \cdot t + 64{,}493$

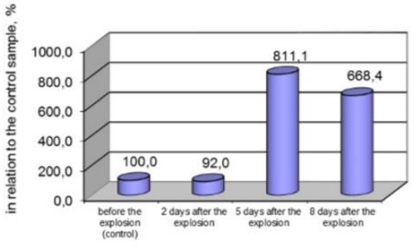


B

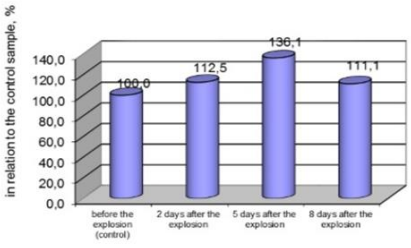
$C = -0{,}783 \cdot t^2 + 7{,}7295 \cdot t + 24{,}802$



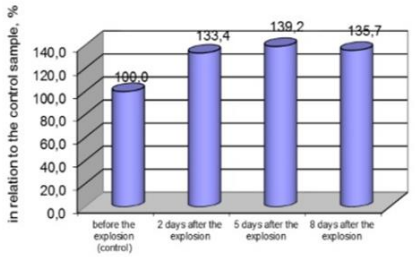
A



B



C



D

Among all the analyzed indicators, the most change is: Nitrates 3 times, Nitrites by 40%, Ammonium 8 times, Sulphates by 40%. For all of the above-mentioned indicators, the maximum is observed after 5 days.

For each indicator, the mathematical dependence of its change from the time after the explosion was determined.

The obtained mathematical dependencies allow to calculate the time of return of all indicators to the control sample.

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