

## ANILITY: RESULTS OF INDUSTRIAL TESTS

A. A. Dobrynin<sup>1,2</sup>, A. M. Abdulganiev<sup>3</sup>, and I. A. Dobrynin<sup>2</sup>

<sup>1</sup>Rosakkreditatsiya, 7 Vavilov Str., Moscow 117997, Russian Federation

<sup>2</sup>PiroVzryv, 7-1 Petra Pomanova Str., Moscow 115193, Russian Federation

<sup>3</sup>PKF Stimul Ltd., village of Untsukul', Dagestan, Russian Federation

**Abstract:** The results of industrial testing of mixed liquid explosives “Anility,” manufactured from nonexplosive components (dinitrogen tetroxide and liquid petroleum products) in the field of drilling and blasting. Mixed liquid explosives “Anility” are the analogues of mixed liquid explosives “VVGIMI,” which have been admitted by Gosgortekhnadzor for permanent use in 1993, but in mixed liquid explosives “Anility,” liquid petroleum products of higher quality are applied. The tests were carried out in 2016, in an industrial installation according to the project “Production drilling and blasting for loosening rock borehole and blast hole charges in the reconstruction of the road “Tsurib–Arcib,” “Bridge on 21 km,” Charodinskogo district, Republic of Dagestan, Makhachkala, 2015. Design parameters, calculated on the charges of Ammonite No. 6 GV, have been adjusted, namely, the distance between the charge and workings has been increased to reduce the weight of charges. High performance mixed liquid explosives “Anility” significantly reduced the volume of drilling works and specific consumption of explosives compared to the “Ammonite No. 6 GV.” This has increased the quality of rock crushing, and the output of “oversized” has decreased significantly. To improve the quality of drilling and blasting, contour blasting was used. During the test, the laboratory of ecological monitoring of the State University of the Republic of Dagestan has carried out ecological research aimed at studying the influence of drilling and blasting using mixed liquid explosives “Anility” on the environment. In January 2017, Rostekhnadzor issued a permit for permanent application of mixed liquid explosives “Anility” on the earth surface.

**Keywords:** mixed liquid explosives; industrial testing; project of drilling and blasting; contour blasting; reconstruction of road; environmental studies

## References

1. Bendersky, L. F., V. Y. Adjemian, and V. A. Ponomarev. 1976. Issledovanie parametrov detonatsii zhidkikh vzryvchatykh smesey, primenyaemykh vo vzryvogeneratorsnykh ustanovkakh [Study of parameters of detonation of liquid explosive mixtures in explosion-generating installations]. *Mekhanizatsiya gornoprokhodcheskikh rabot* [Mechanization of mining operations] 2:104–111.
2. Dobrynin, A. A. 2010. Opyt primeneniya bezopasnogo initsiatora zhidkikh VV na vzryvnykh rabotakh vnutri deystvuyushchikh GES [Experience of application of safe initiator liquid explosives for blasting operations within existing hydropower plants]. *Conference (International) “ShockWaves in Condensed Matter” Book of Abstracts*. Novgorod. 121–124.

Received January 31, 2017

## Contributors

**Dobrynin Aleksandr A.** (b. 1957) — Candidate of Science in technology, expert of the highest qualification in industrial safety; expert, Rosakkreditatsiya, 7 Vavilov Str., Moscow 117997, Russian Federation; director, PiroVzryv, 7-1 Petra Romanova Str., Moscow 115193, Russian Federation; pirovzryv@mail.ru

**Abdulganiev Ahmed M.** (b. 1956) — General Director of PKF Stimul Ltd., village of Untsukul', Dagestan, Russian Federation; stm-1995@yandex.ru

**Dobrynin Ivan A.** (b. 1981) — Candidate of Science in technology, expert in industrial safety, researcher, Pirovzryv, 7-1 Petra Romanova Str., Moscow 115193, Russian Federation; pirovzryv@mail.ru