

Bank Blasting with Low Nitro Powder

The force and value of black powder is often overlooked in these days of high-grade nitro explosives. There are places where black powder, or the more modern "low" nitro powder, does the work required more satisfactorily and less expensively than high-grade powders will. In the case of moving or shattering large banks of gravel or comparatively soft and shattered rock, the low-grade explosives are often as effective as the high grade. At the Blue Point gravel mine in Yuba county, Cal., some years ago a charge of 50,000 pounds of black powder was laid, which dislodged 150,000 cubic yards of gravel. The powder was distributed in a system of drifts. The main drift, 3x4 feet, was run in 275 feet. From this there were lateral branches, six on either side, each 80 to 120 feet in length. The powder was fired by electric machine, the contact being made at ten different points. At the Dardanelles hydraulic mine, near Forest Hill, Placer county, Cal., 36,000 pounds of "low" nitro powder were fired in a single blast and dislodged 500,000 cubic yards of gravel. The face exposed was 175 feet high and 1000 feet long. The material was gravel of fairly even character, with comparatively few large boulders. Under this bank 1200 feet of drifts had been run, in which the powder was distributed. This charge was also fired electrically. Dynamite is comparatively ineffective when charged in small holes in gravel banks, but under some circumstances when placed in drifts in comparatively large amounts it has accomplished relatively more work than an equal cost in black or "low" nitro powder. An instance is cited where 3500 pounds of 40% dynamite broke 200,000 cubic yards of gravel.

Mining and Scientific Press, V. 90, 4/15/1905, p. 231