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## An experimental study on the volume of quicksand through underground boreholes

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**Abstract:** This paper presents an experimental study of the factors influencing the volume of quicksand through underground boreholes for dewatering by exposing sand aquifers. Six blocks with various diameters to simulate boreholes with different diameters and 4 kinds of sands with different particle sizes are used to examine the relationship among the volume of quicksand, particle size and diameter of the borehole. The results show that the volume of quicksand increases with decreasing particle size of sand. For the same particle size of sand, the larger the diameter of the boreholes, the faster of speed of quicksand, and the volume of quicksand decreases linearly with time. While the diameter of the boreholes is smaller than 15 mm, the speed of quicksand is lower, and the curve of the volume of quicksand vs time is a parabola.

**Key words:** underground drilling; dewatering; unconsolidated aquifer; the volume of quicksand

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• 封面说明 •

### 国土资源部表彰抗旱找水打井先进

4月28日,全国国土资源系统北方四省抗旱找水打井工作总结表彰会在北京召开。国土资源部部长、党组书记、国家土地总督察徐绍史,国土资源部党组成员、副部长、中国地质调查局局长汪民,四川省委常委、常务副省长魏宏,山东省副省长贾万志出席会议并为先进集体和先进个人代表颁奖。国土资源部总工程师张洪涛主持会议。

去冬今春,我国华北、黄淮等地出现严重旱情。国土资源部迅速启动山东、河南、河北、山西四省抗旱找水打井行动,选派山东、河南、河北、山西、四川、贵州、黑龙江、湖北八省和国土资源部有关直属单位的精干地勘力量近万人,携带先进的物探设备和钻井装备上千台套,实施钻井2200多眼,解决了220多万人的饮水和50万亩农田的灌溉问题,受到了旱区干部群众的高度评价。为总结和弘扬抗旱救灾工作中涌现出的先进集体、先进个人的好品质、好作风,鼓舞全系统干部职工士气,激发工作热情,国土资源部决定通报表扬河北省国土资源厅等129个参与北方四省抗旱找水打井工作的单位和白贵成等569名个人。在总结表彰会上,徐绍史、汪民、魏宏、贾万志、张洪涛为先进集体和先进个人代表颁奖。

中国国土资源报 孙洪悦/摄影