BOLU-SEBEN-KESENÖZÜ JEOTERMAL SAHASINDA YAPILAN ETÜT VE SONDAJ ÇALIŞMALARI VE BU TİP SAHALARDA KUYU GELİŞTİRMENİN ÖNEMİ

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ÖZ

MTA Genel Müdürlüğü'nün "Bolu ve Civarı Jeotermal Enerji Aramaları" Projesi kapsamında Bolu-Seben-Kesenözü jeotermal sahasının potansiyelini belirlemek amacıyla sahada detaylı jeolojik etüt, jeofizik elektrik (DES), hidrojeokimya ve toprak gazı ölçümleri gerçekleştirilmiştir. Yapılan bu çalışmaların neticesinde sahanın kavramsal modeli ortaya konmuş ve sahada 2200 m derinliğinde araştırma kuyusunun açılmasına karar verilmiştir.

2200 m'de tamamlanan BSK-1 kuyusunun başlangıç üretim değerleri kompresörle 10 l/sn,, artezyenik olarak 3 l/sn. ve 83^{0}C olmuş kuyunun uzun süreli üretimi, OMC basılarak yıkanması ve testlerden sonra belirlenen üretim zonlarına iki kademe halinde % 30 luk HCI basılmasıyla kuyuda üretim değerleri beş kat artarak kompresör debisinde 50 l/sn'ye artezyen debisinde 15 l/sn'ye ve kuyu ağzı artezyen sıcaklığında 90^{0}C'ye ulaşılmıştır.

Anahtar kelimeler: Bolu, Kesenözü, jeotermal araştırma, kuyu geliştirme, asitleme

GEOTHERMAL EXPLORATION STUDIES AND DRILLING IN THE BOLU-SEBEN-KESENÖZU GEOTHERMAL FIELD, AND SIGNIFICANCE OF WELL DEVELOPMENT STUDIES IN GEOTHERMAL AREAS

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ABSTRACT

This study was conducted under the "Geothermal Survey Studies in Bolu and Its Vicinity" Project by General Directorate of Mineral Research and Exploration of Turkey (MTA) in order to search out for the geothermal potential of Kesenözü-Seben-Bolu, north of Turkey. Detailed geological mapping, geophysical Vertical Electrical Sounding (VES), hydrogeochemical surveys and soil gas measurements were performed within the context of this study. A conceptual model was established and a 2200 m deep geothermal well was drilled as a result of these studies.

The compressor production rate was measured as 10 l/s, the arthesianic production rate was measured as 3 l/s and 83^{0}C during the initial production stage of this 2200 m deep well (BSK-1). After this stage, the well was stimulated with long term compressor operation and chemical OMC operation in order to remove clay particules inside the reservoir. Following the determination of production intervals by the well tests, two significant production intervals were acidified with %30 HCL acid. The arthesian production rate increased to 15 l/s, the compressor production rate increased to 50 l/s, with five times higher production rates with respect to initial production values. The last arthesian production temperature was measured as 90˚C.

Keywords: *Bolu, Kesenözü, geothermal research, well development, acidification*