

HUBUNGAN KARAKTERISTIK SINTER SILIKA DAN TEMPERATUR PERMUKAAN MATA AIR PANAS

Studi Kasus: Mata Air Panas Bawah Kubang, Garara dan Bukik Gadang di Kabupaten Solok

ABSTRAK

Telah dilakukan analisis hubungan karakteristik sinter silika terhadap temperatur permukaan mata air panas yang ada di Kabupaten Solok. Karakteristik tersebut meliputi kandungan mineral silika yang ada di dalam sampel sinter silika dan nilai resistivitas listrik sinter silika. Sampel sinter silika diambil dari tiga lokasi mata air panas di Kabupaten Solok, yaitu Bawah Kubang (APBK), Garara (APGR) dan Bukik Gadang (APBG). Kandungan mineral silika yang ada di dalam sampel diketahui melalui metode XRF (*X-Ray Fluorescence*), sedangkan nilai resistivitas listrik sinter silika didapatkan menggunakan metode probe dua elektroda. Temperatur permukaan masing-masing lokasi mata air panas adalah sebesar 38°C (APBK), 51°C (APGR) dan 48°C (APBG). Kandungan silika pada sampel sinter silika dari ketiga mata air panas tersebut adalah 35,76% (APBK), 54,28% (APGR) dan 44,56% (APBG). Resistivitas listrik rata-rata sinter silika pada setiap lokasi adalah 13,18 Ω m (APBK), 9,79 Ω m (APGR) dan 12,49 Ω m (APBG). Semakin tinggi temperatur permukaan mata air panas maka persentase endapan mineral silika pada lokasi tersebut juga semakin tinggi, sedangkan nilai resistivitas silika jenuh air berbanding terbalik terhadap temperatur permukaan mata air panas.

Kata Kunci : mata air panas, probe dua elektroda, resistivitas, sinter silika



THE RELATIONSHIP OF SILICA SINTER CHARACTERISTICS AND HOT SPRING SURFACE TEMPERATURES

Case Study: Bawah Kubang, Garara and Bukik Gadang Hot Springs in Solok Regency

ABSTRACT

The relationship of silica sinter characteristics and the surface temperature of the hot springs in Solok had been analyzed. These characteristics include mineral contents of silica in the silica sinter samples and the value of the silica sinter resistivity. Silica sinter samples were taken from three locations of the hot springs in Solok, that are Bawah Kubang (APBK), Garara (APGR) and Bukik Gadang (APBG). The mineral contents of silica were identified by XRF method (X-ray fluorescence), while the value of the electrical resistivity silica sinter obtained using two-electrode probe. The temperature of the surface of each hot springs is at 38°C (APBK), 51°C (APGR) and 48°C (APBG). The content of silica in the silica sinter samples from the hot springs is 35.76% (APBK), 54.28% (APGR) and 44.56% (APBG). The average silica sinter resistivity at each location is 13.18 Ω m (APBK), 9.79 Ω m (APGR) and 12.49 Ω m (APBG). The higher the surface temperature of the hot springs, then the percentage of silica mineral deposits in these locations are also higher, while the water-saturated silica resistivity is inversely proportional to the surface temperature of the hot springs.

Keywords: hot springs, two-electrode probe, resistivity, silica sinter