

## INTISARI

Penelitian dilakukan di antara Sungai Kuranji Hilir dan Saluran Banjir Kanal Kecamatan Padang Utara dan sekitarnya di Kota Madya Padang. Bentuk lahan di daerah penelitian terdiri dari proses asal fluvial dan vulkanik yang berkembang menjadi kawasan kota terbangun permukiman dan perkantoran. Penduduk di daerah penelitian dalam memenuhi kebutuhan air bersih domestik mengambil air tanah tak tertekan dan tertekan, yang berakibat turunnya muka air tanah pada bagian timur dan bagian baratnya air tanah berwarna kekuningan.

Tujuan penelitian kajian air tanah tak tertekan untuk kebutuhan domestik adalah (1) mempelajari agihan air tanah berdasarkan satuan bentuk lahan (2) mempelajari perkembangan penggunaan lahan pertanian yang cenderung berubah ke permukiman dan pengaruhnya terhadap umpan air tanah (3) mengevaluasi imbalanced air tanah antara kebutuhan domestik dengan ketersediaan.

Metode yang dilakukan untuk mencapai tujuan penelitian yaitu interpretasi foto udara pankromatik skala 1 : 10.000, peta topografi, peta geologi, peta tata guna tanah, kerja lapangan, observasi dan laboratorium. Kerja lapangan yang dilakukan adalah pengukuran tinggi tempat, tinggi muka air tanah, pengambilan contoh air tanah dan pengecekan hasil interpretasi foto dan peta, wawancara dilakukan terhadap kepala keluarga pengguna air bersih domestik dengan pengambilan sampel secara acak di setiap satuan bentuk lahan.

Hasil penelitian menunjukkan pada satuan bentuk lahan dataran banjir, dataran aluvial dan kipas fluvial vulkanik terdapat (1) potensi air tanah relatif tergolong kategori sedang yang dicirikan oleh karakteristik daripada permeabilitas sedang, kedalaman muka air tanah dangkal dan kualitas air tanah tergolong jelek hingga sedang, (2) perkembangan penggunaan lahan pertanian ke permukiman seluas 190,5 ha dari tahun 1990 sampai tahun 2000 berakibat berkurangnya umpan air tanah sebanyak 5571 m<sup>3</sup>, (3) rasio antara kebutuhan air domestik dengan ketersediaan air tanah tahun 2000 diperoleh imbalanced untuk bentuk lahan dataran banjir 79,01% (keadaan kritis), dataran aluvial 78,69% (keadaan kritis), dan kipas fluvial vulkanik 66,20% (mendekati kritis), di masa mendatang pada tahun 2005 kondisi air tanah pada dataran banjir 100% (kritis), dataran aluvial 96,72% (mendekati kritis) dan kipas fluvial vulkanik 81,06% (mendekati kritis).

Kata kunci: potensi air tanah, penggunaan lahan, kebutuhan air domestik imbalanced air tanah,

## ABSTRACT

The research was done between Kuranji Hilir river and kanal flood channel in Nort Padang sub district and its surrounding areas in Padang Municipality. The shape of land for the research area includes the fluvial and volcanic early process and its development until becoming a constructed urban area where many houses and office affairs. The population of research land in full filling need the domestic fresh water take ground water unconfined aquifer and confined aquifer, consequently ground water surface is down in east part and the west ground water turned brown.

The aim of this research for ground water study, which are unconfined aquifer on the domestic needs, are at (1) studying the apportion of ground water potency based on the land shape unit (2) studying the changing tendency from the use of land for agriculture to the building of houses and its influence toward the bait of ground water (3) evaluating the balance of the water for both domestic need and its supply.

The methods implemented to gain the purpose of the research are by panchromatic aerial photograph interpretation using the scale of 1 : 10.000, topographical map, geological map, land use map, field work, observation and laboratory. The field work is carried out by measuring the height of the area, the height of the ground water surface, taking the sample of ground water, and checking the result of photographic and map interpretation. Interview is taken with the family using domestic clean water by taking a random sampling for each unit of the land shape.

The finding of the research shows that in a flood plain shape land, alluvial plain, and fluvial volcanic fan, there found (1) a relative ground water potency is medium that being classified by the characteristic of its medium permeability, the depth of surface ground water is shallow and ground water quality being classified as low until medium, (2) the development of the changing tendency from agriculture use of land to the are for settlement on a land of 190,5 ha since 1990 until 2000 which has caused a decrease of the number of ground water bait for about 5571 m<sup>3</sup> (3) the ratio between domestic water need and ground water availability in 2000 showed that there was a balance in flood land shape area for 79,01% (critical condition), alluvial land 78,69% (critical condition), and fluvial volcanic fan 66,20% (nearly critical), in 2005 the ground water condition in flood area will reach 100% (critical), alluvial land 96,22% (nearly critical) and fluvial volcanic fans land for about 81,06% (nearly critical).

Key words: ground water potency, land use, the ground water need the balance of ground water