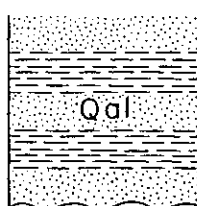
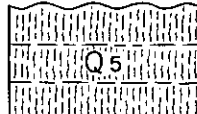



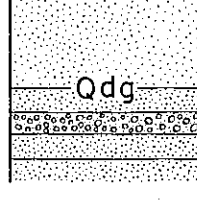


GEOLOGIC COLUMN AND UNIT DESCRIPTION

AGE	ROCK UNIT	LITHOLOGY; THICKNESS WHERE KNOWN	UNIT DESCRIPTION
QUATERNARY	Alluvium	 Q ₀	Loessic silt, clay and sand; thickness less than 10 meters
	UNCONFORMITY		
	Quaternary deposits	 Q ₅	Q ₅ : sandy loess; thickness 50 - 150 m
		 Q ₃	Q ₃ : loessic silt and quartz sand; thickness 70 m
		 Q ₂	Q ₂ : quartz sand and gravel; thickness less than 100 m
 Q ₁	Q ₁ : silt, clay and quartz sand; thickness 50 - 100 m		
RELATION UNKNOWN			
	Diluvium	 Q _{dg}	Quartz sand, micaceous sand and quartzose gravel; thickness 30 - 50 m
(Column not drawn to scale)			

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GROUND WATER

The water table lies at depths of 2 to 4 m along the Tienchin-Puk'ou railway line and at 4 to 6 m along the Peip'ing-Hankou railway line. The highest water level along the Peip'ing-Hankou line is observed during the dry season between February and April and during the rainy season between August and September, the lowest water level is seen between July and August and in October. The especially high water level between February and March is a result of a slow but constant increase of water from the western mountains after November of the preceding year. The maximum increase of ground water is thought to result from precipitation during the rainy season of the preceding year on the west side of the Chi-hsi (冀西) and T'ai-hsing (太行) mountains. Water soaks into the plain and after six to eight months becomes the source of ground water. Seasonal fluctuation of the water level cannot be seen along the Tienchin-Puk'ou railway line and water seems to decrease eastward. The quality of shallow water is characterized by high degree of hardness owing to the Ca, SO₄ and Cl contents. The hardness ranges generally from 231 to 712 ppm. The SO₄ content is also high, generally ranging from 50 to 60 mg/l in good water and from 300 to 400 mg/l in poor water. The Cl content in North China is related to natural and artificial origin. The natural Cl content becomes higher eastward as far as the coastal regions where 2,000 to 3,000 mg/l of Cl is detected, although the SO₄ content is reversely small. The artificial Cl content is attributed to pollution from villages and cities. The level of the deep-seated aquifer becomes gradually shallower westward ranging in depth from 150 m to 50 m (KURATA, 1951). In the area of Q₅, the amount of water is rather small, and the quality becomes poorer northward. The Cl content is more than 800 mg/l, and decreases as the depth decreases. In the area of Q₃, water is generally well preserved due to the distribution of quartz sand beds. The quality of water is generally good. In the area of Q₂, the depth ranges from 50 m to 100 m. The amount of water is very large. The Cl content is less than 50 mg/l, and the hardness is generally about 180 ppm. Water is favorably preserved in a varicolored gravel bed, and the quality of water is very good. In the area of Q₁, the depth of the aquifer is generally more than 100 m and the amount of water is usually large. In the northeastern part of the map area, the Cl content decreases as the depth increases, and the total hardness also tends to decrease as the depth increases, although the tendency reverses inland toward the southwestern part of the map area where the Cl content decreases as the depth decreases. In the area of Q_{dg}, the amount of water is comparatively large. The Cl content is less than 50 mg/l, and the hardness is about 267 ppm, somewhat higher than in the area of Q₂. The quality becomes better as the depth increases.