

THE ARAB REPUBLIC OF EGYPT

**NORTH SINAI GROUNDWATER RESOURCES STUDY
IN
THE ARAB REPUBLIC OF EGYPT**

FINAL REPORT

1. LANDFORM CLASSIFICATION
2. GEOLOGICAL MAP
3. GEOLOGICAL SECTION
4. HYDROGEOLOGICAL MAP (NAQB)
5. HYDROGEOLOGICAL SECTION (NAQB)

October 1992

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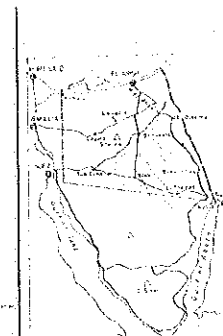
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North Sinai groundwater resources study in the Arab Republic of Egypt final report.



- LEGEND**
- MOUNTAIN
 - HILLY UPLAND
 - PLATEAU
 - HIGHER TERRACE
 - LOWER TERRACE
 - OLD FAN
 - ALLUVIAL FAN
 - PEDIMENT
 - ROCK PLAIN
 - GRAVEL PLAIN
 - TALUS
 - SAND DUNE
 - COASTAL SAND DUNE
 - COASTAL PLAIN
 - LAGOONAL LOWLAND
 - SAND BAR
 - WADI
- NOTE: INTERPRETED FROM LANDSAT
(IMAGE NO. 14010) APRIL, 1987

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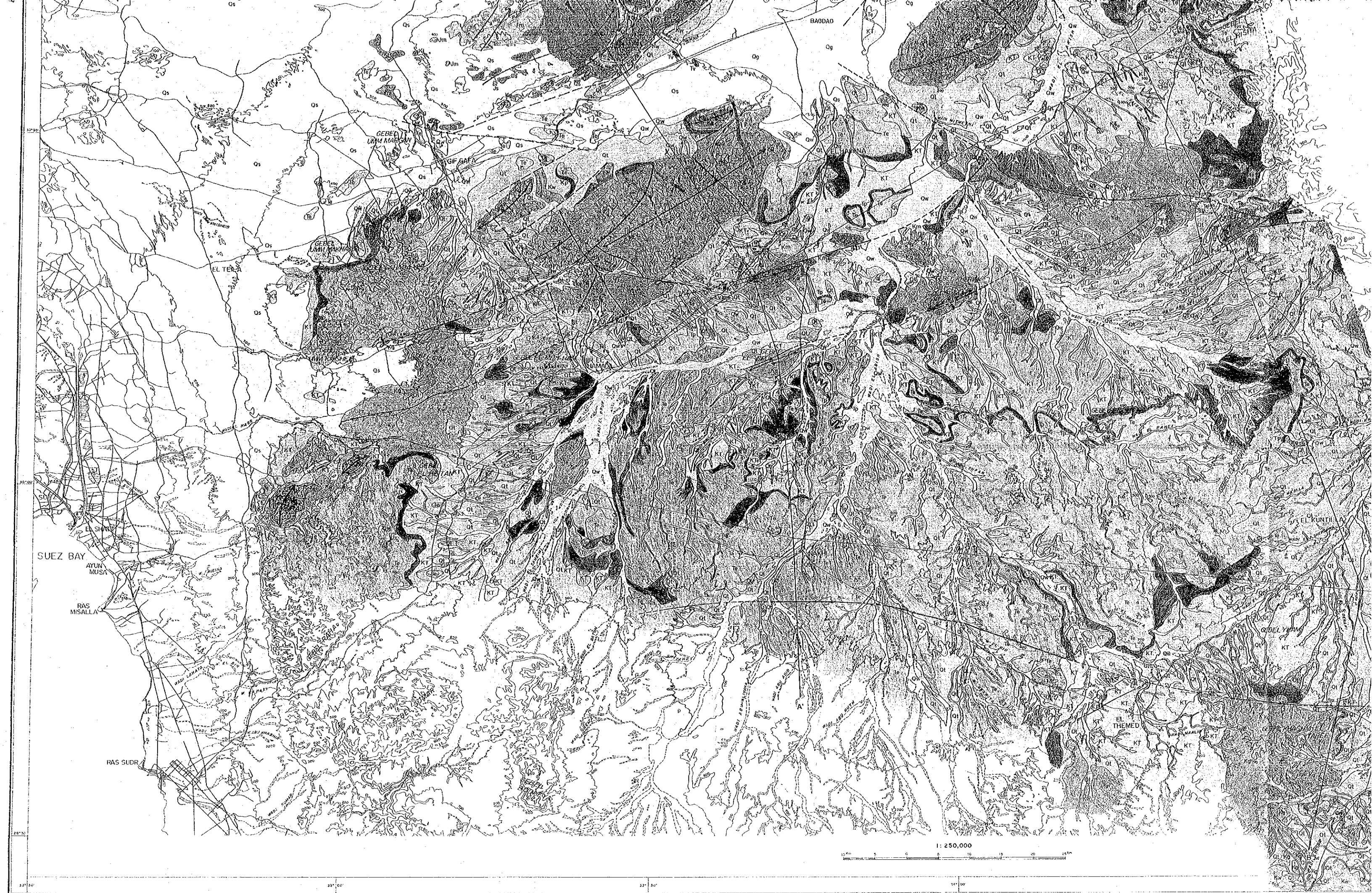
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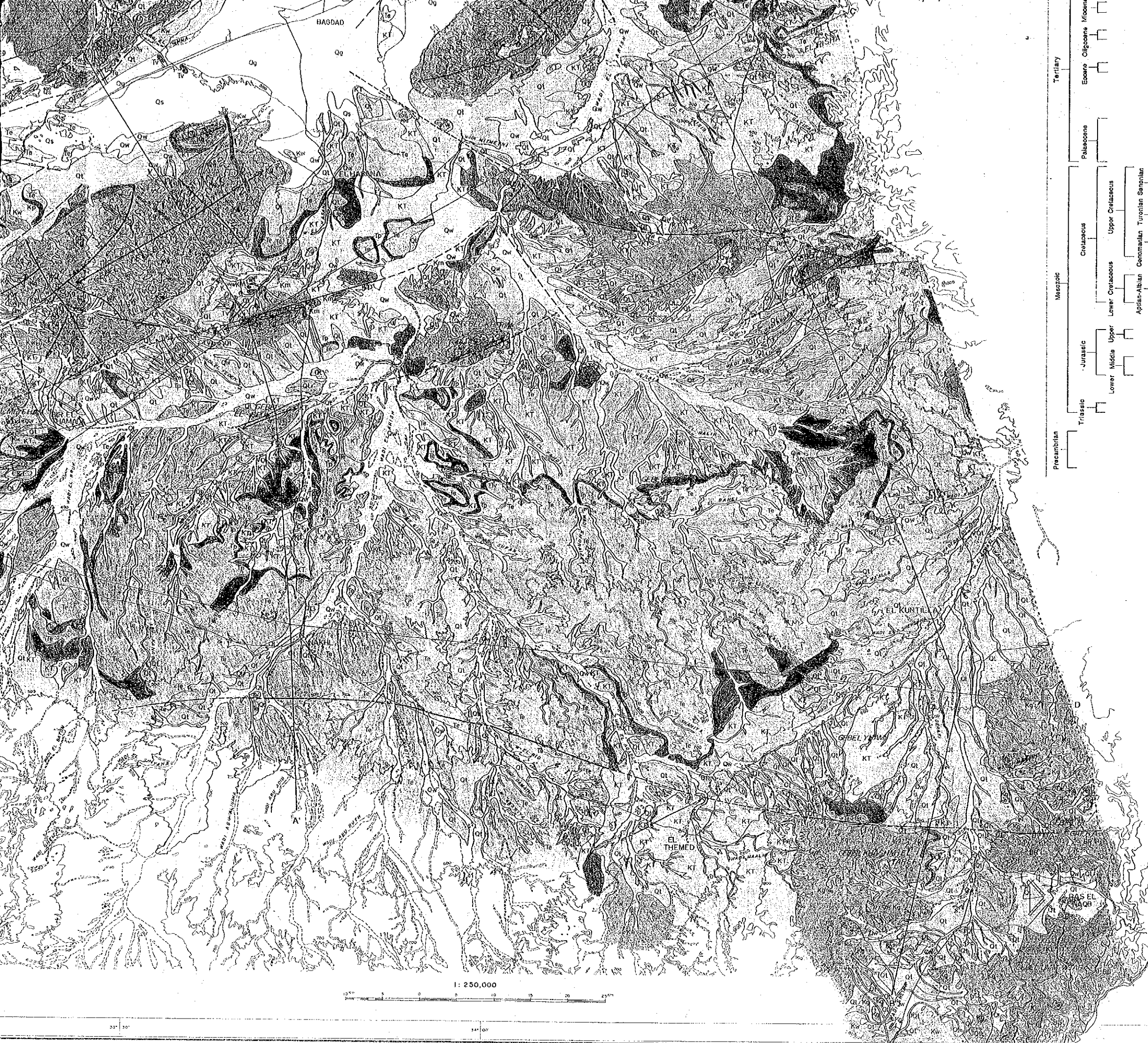
LANDFORM CLASSIFICATION
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Tertiary	Oligocene-Miocene		Undivided Miocene Deposits	Clay and limestone, upper in oil exploratory wells, approximately 200m thickness.
			Dike and Sheet	Basalt, dolerite dike and sheet.
Paleocene			Egma Formation	Yellowish white to white, hard limestone, shaly in parts, cracked and jointed, cavernous, may contain a huge amount of groundwater, with chert bands nodules, fossiliferous, more than 300 m thickness.
			Esna Formation (Londanian-Ypresian)	Green shale with marl bands near top, mainly covered by debris in some area, thickness range from 20 to 40 m.
Cretaceous	Upper Cretaceous		Sudr Formation (Campanian-Danlian)	Snow white chalk, marly in part, fossiliferous, with thickness range from 200 to 300m.
			Matulla Formation (Coniacian-Santonian)	Yellowish green marl, green clay phosphate near with minor sandstone and limestone
			Wala Formation	Thick yellowish grey limestone with green clay interbeds, highly fossiliferous with Ammonite sp.
	Lower Cretaceous		Galata Formation	Grey to yellowish white limestone hard, with dolomite and dolomitic limestone and clay interbeds, with occasionally sandstone beds cracked and jointed, contains groundwater, its thickness
			Malha Formation	White to reddish white sandstone medium to coarse-grained, cross-bedded, more arenaceous towards the south, more clayey toward the north, thickness ranges from 250 to 660m, contains a huge amount of groundwater. The lower part belongs to the Paleozoic in Naqah area.
			Upper Jurassic Formations	White to greyish white limestone hard, cracked and jointed; it represents the main aquifer in El-Maghra area, assume 650m thickness.
Mesozoic	Jurassic		Safa Formation and older Formations	Dark brown to yellowish white sandstone at top (Safa Formation) which contains the coal deposit underlain by limestone, claystone, shale and sandstone, its thickness ranges from 150 to 1800m, contains saline water.
			Undivided Triassic Rocks	Yellow to reddish white sandstone, its cross-bedded fine to coarse grained with shale and limestone intercalations.
Precambrian			Extrusive Rocks	Alkali rhyolite
			Plutonic and Metamorphic rocks	Granite and gneiss.

GENERAL LEGEND	
GEOLOGICAL SYMBOLS	
	Geological Boundary, Established
	Normal Fault with Visible Dip
	Actual Fault
	Inferred Fault
	Concealed Fault
	Strike and Dip of Sedimentary Beds
	Anticlinal Axis, Showing Direction of Plunge
	Synclinal Axis
	Geological Cross-Section
GEOGRAPHICAL SYMBOLS	
	Urban Area
	Asphaltic Roads and Desert Tracks
	Water Springs
	Wadi
	Contour Line in Meters
	Airport

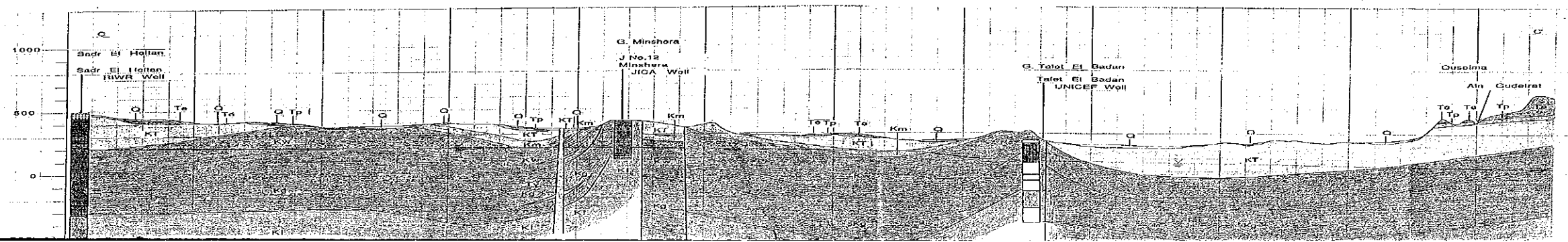
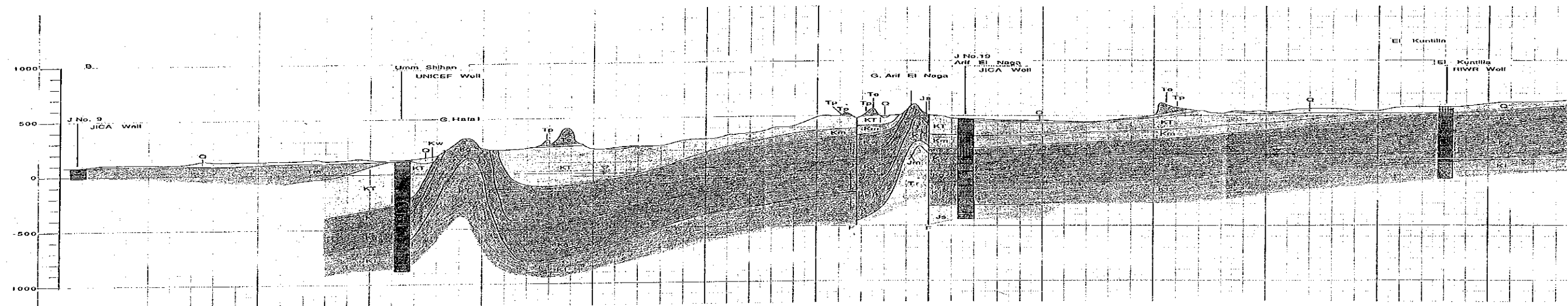
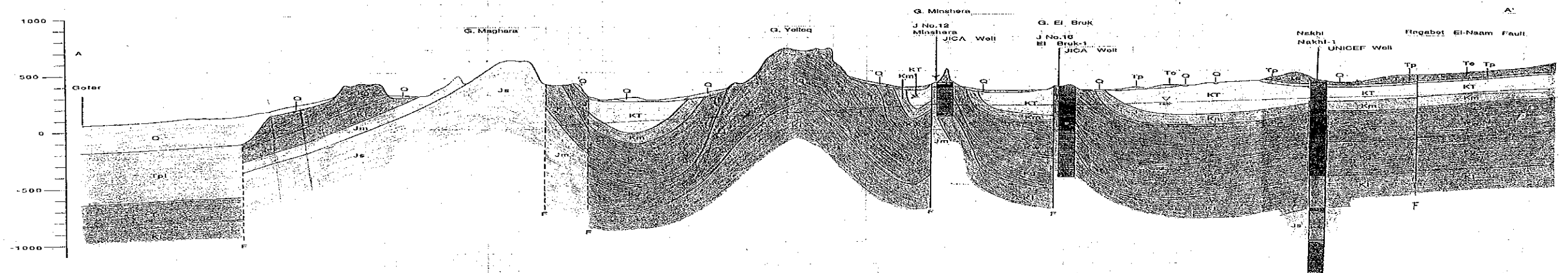
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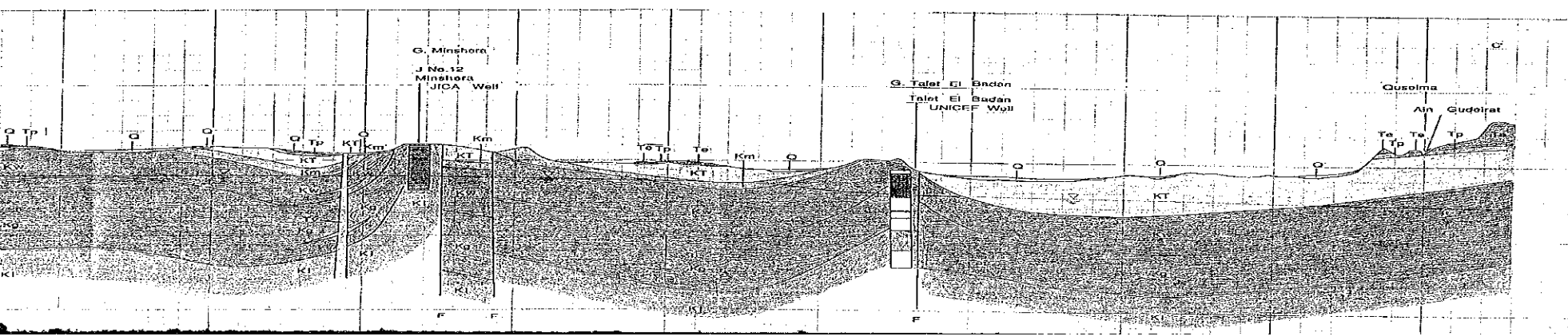
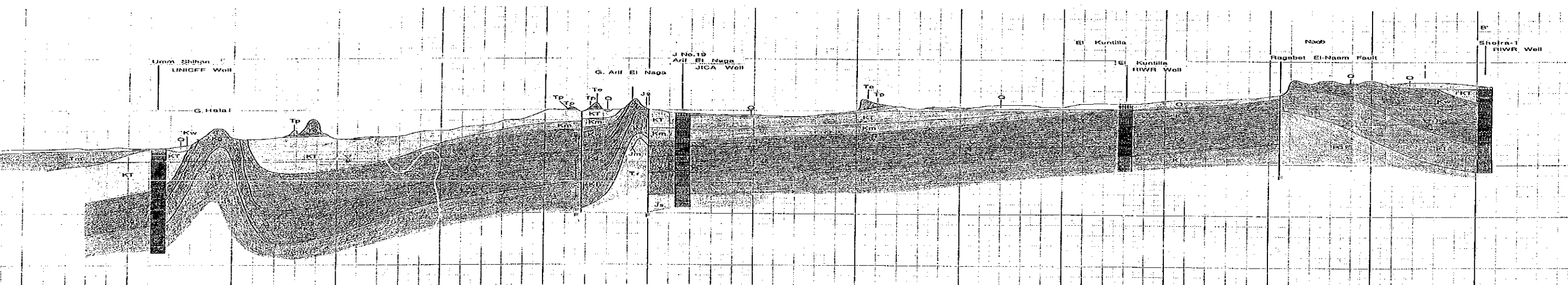
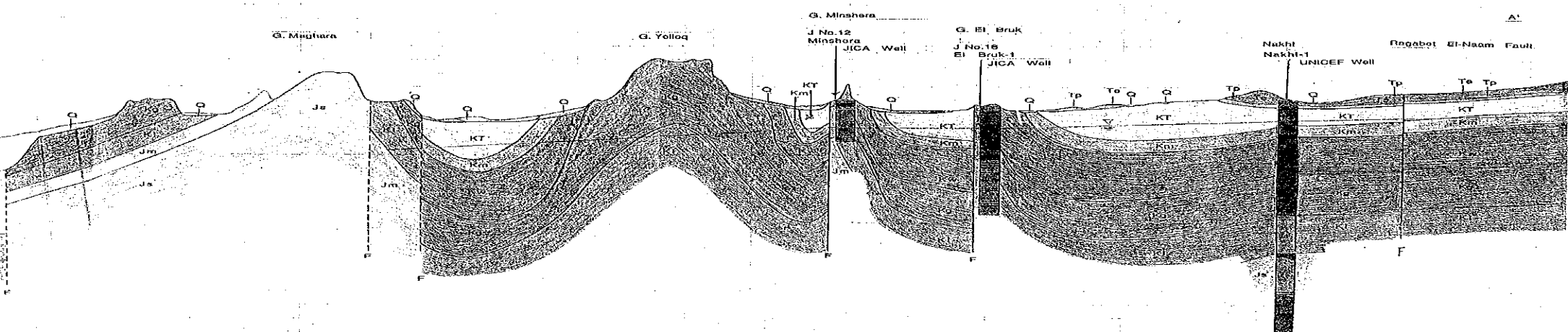
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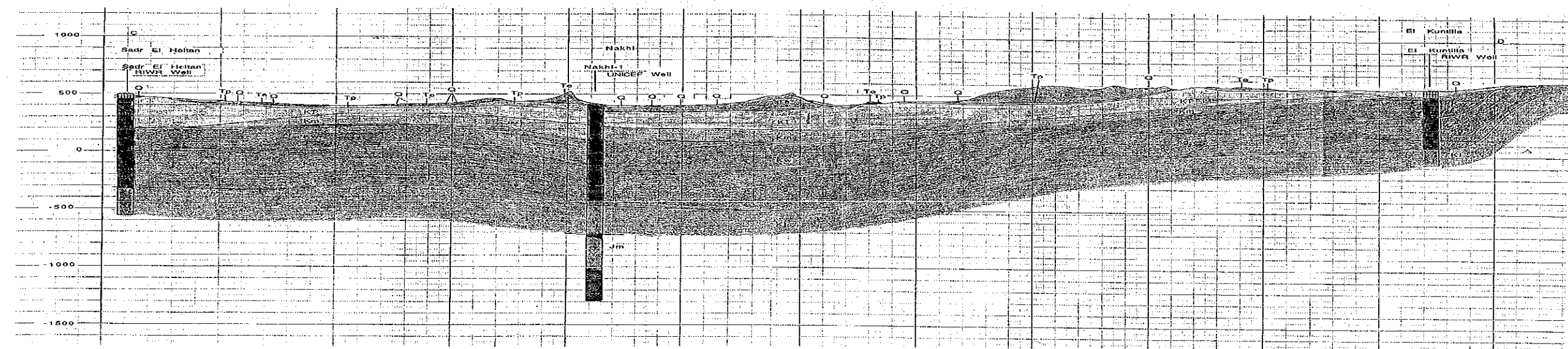
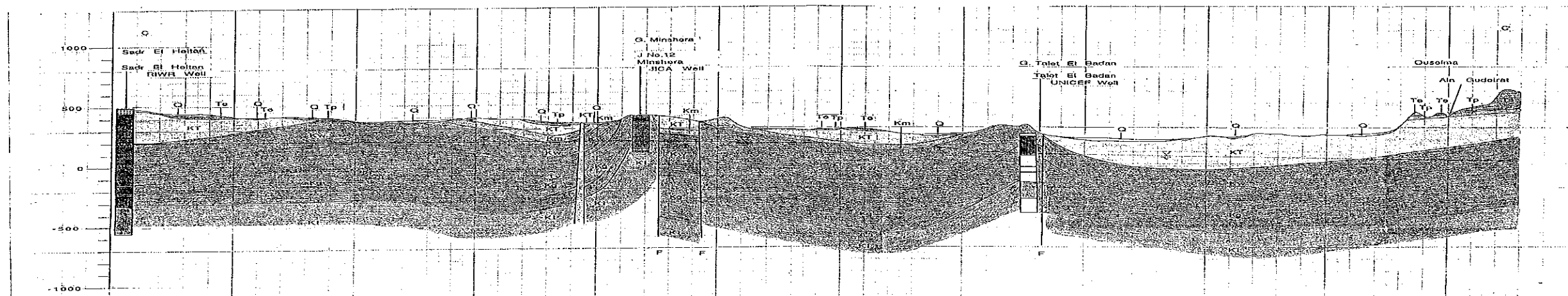
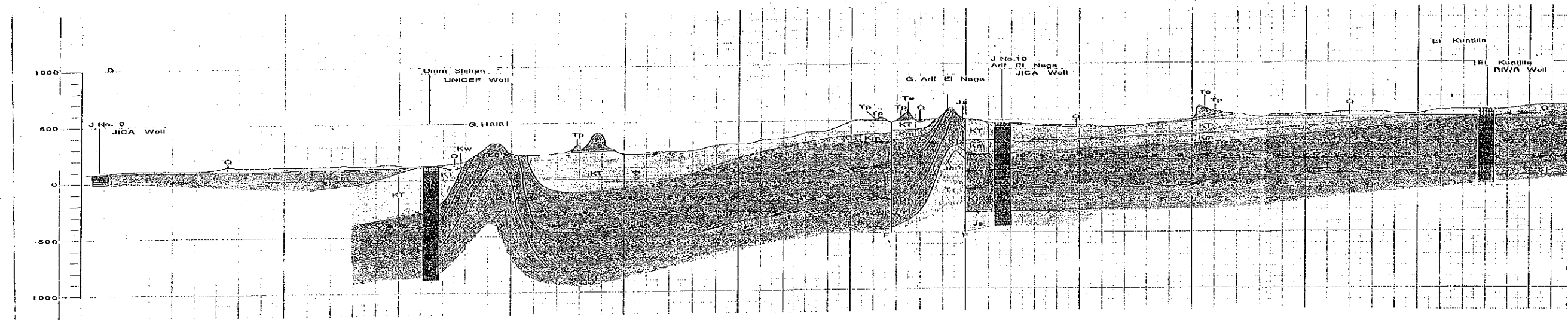
GEOLOGICAL MAP
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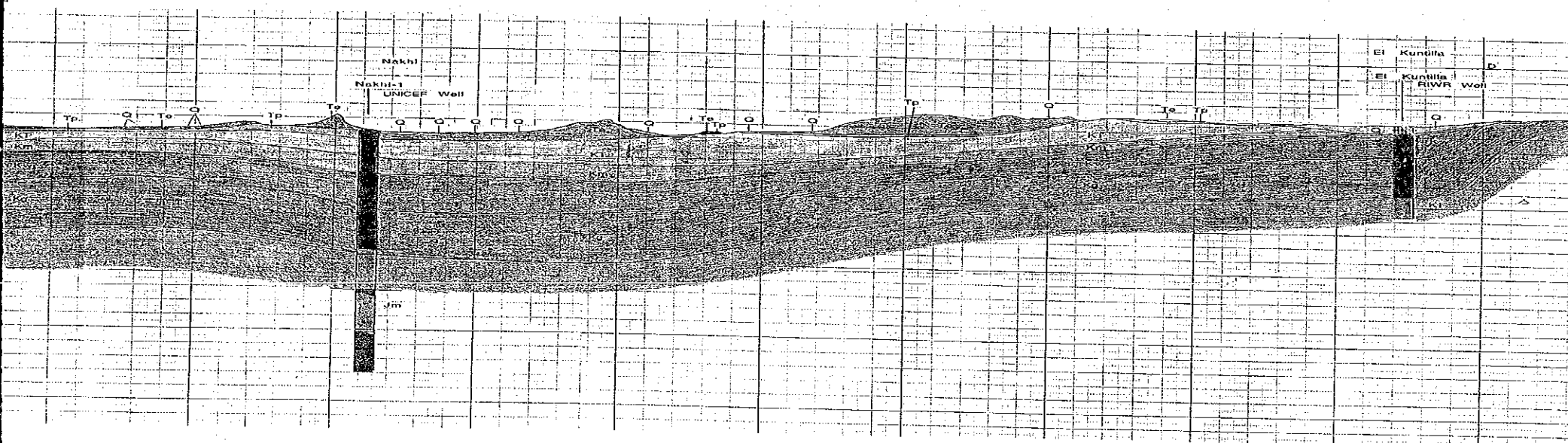
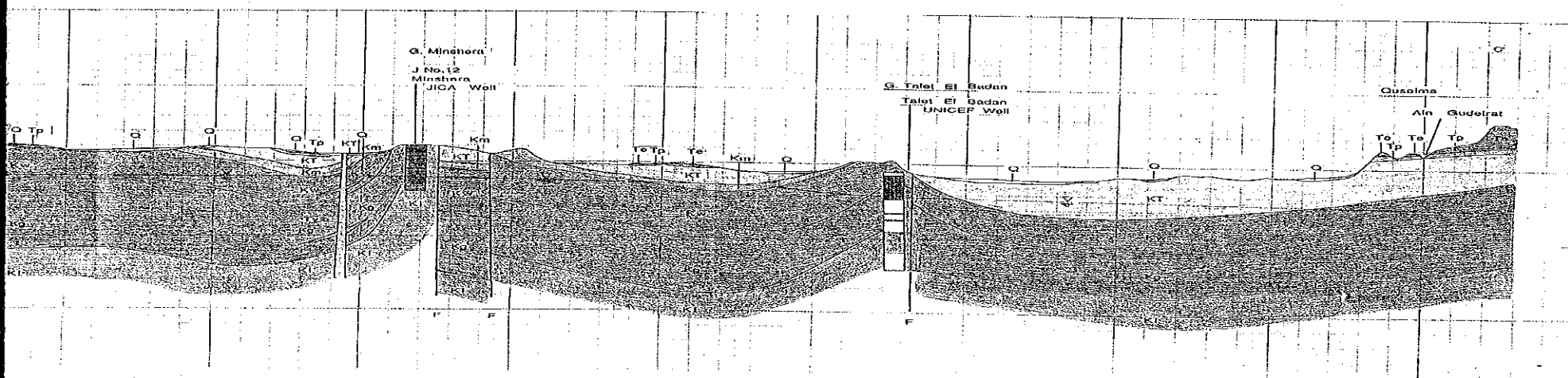
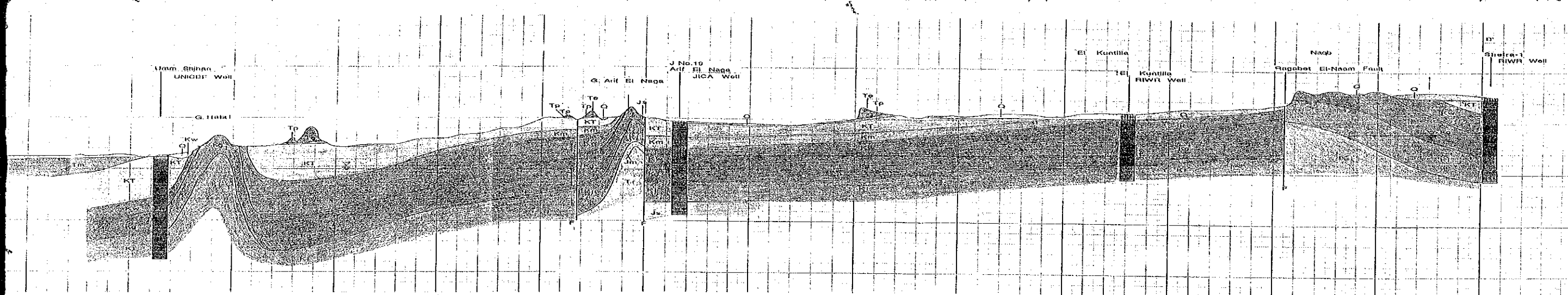
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GEOLOGICAL SECTION
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