

THE ARAB REPUBLIC OF EGYPT

NORTH SINAI GROUNDWATER RESOURCES STUDY

IN

THE ARAB REPUBLIC OF EGYPT

FINAL REPORT

PORTFOLIO

OF

HYDROGEOLOGICAL MAP

October 1992

**JAPAN INTERNATIONAL COOPERATION AGENCY
(JICA)**

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THE ARAB REPUBLIC OF EGYPT

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

FINAL REPORT

**PORTFOLIO
OF
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PORTFOLIO OF HYDROGEOLOGICAL MAP

QUATERNARY

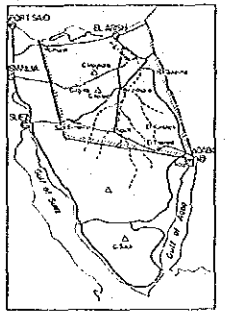
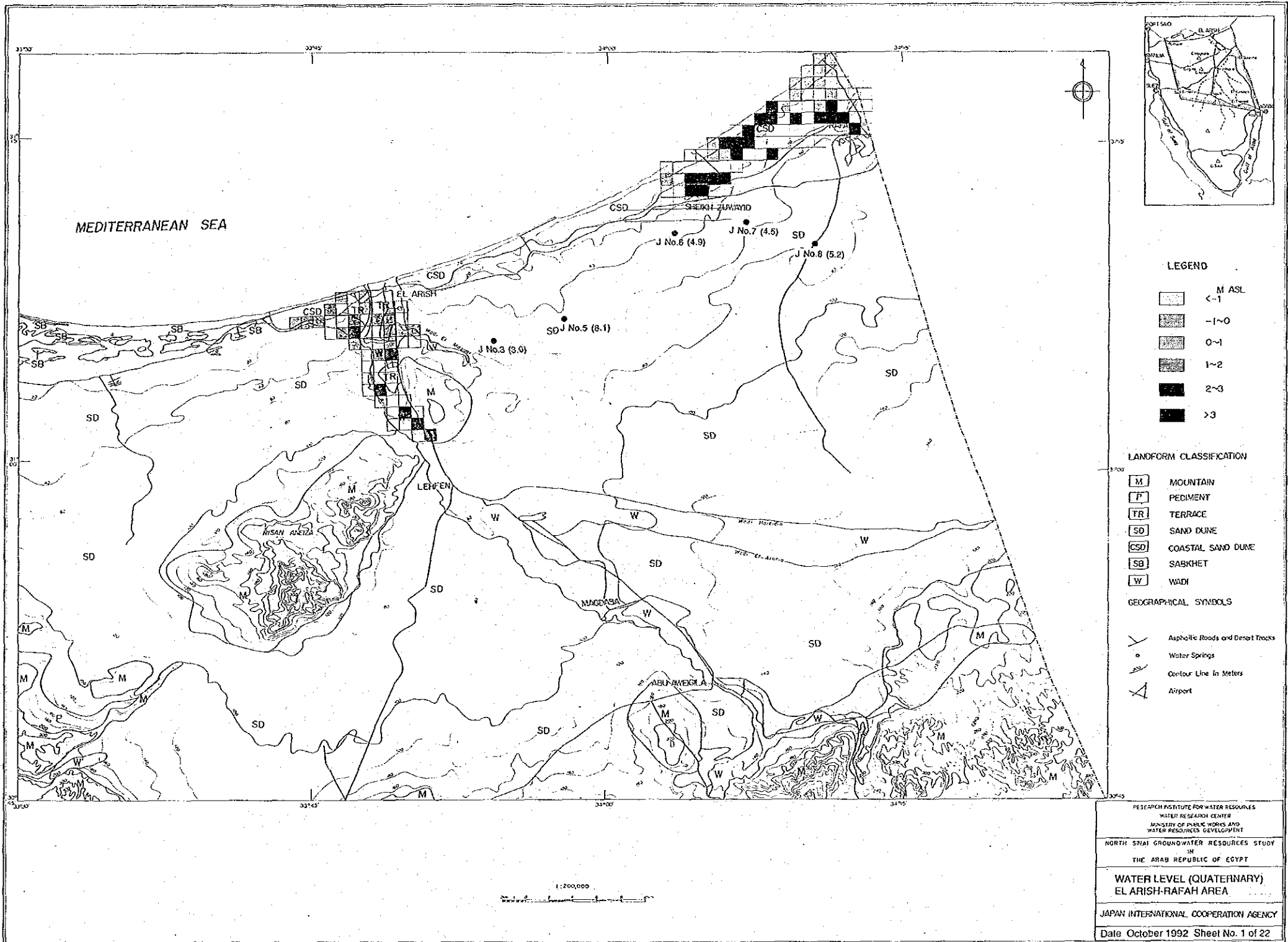
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LEGEND

- M ASL
- <-1
- 1~0
- 0~1
- 1~2
- 2~3
- >3

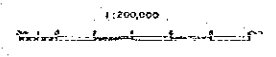
LANDFORM CLASSIFICATION

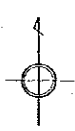
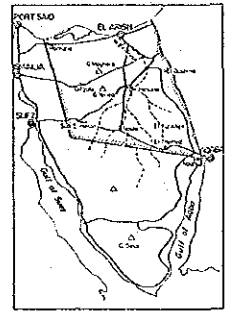
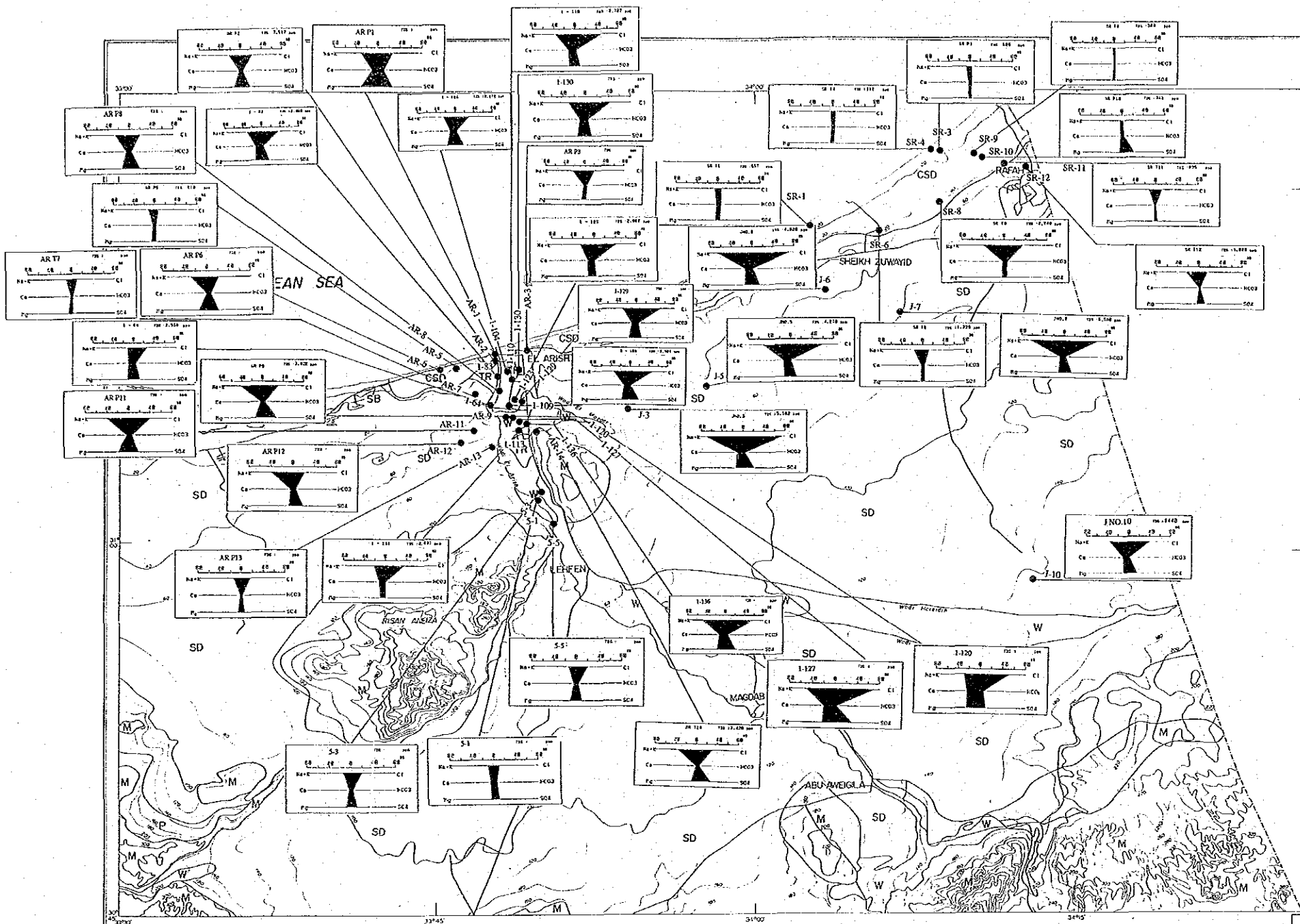
- MOUNTAIN
- PEDIMENT
- TERRACE
- SAND DUNE
- COASTAL SAND DUNE
- SABKHET
- WADI

GEOGRAPHICAL SYMBOLS

- Asphaltic Roads and Desert Tracks
- Water Springs
- Contour Line in Meters
- Airport

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**WATER LEVEL (QUATERNARY)
 EL ARISH-RAFAH AREA**
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 Date October 1992 Sheet No. 1 of 22





LEGEND

- AR-6 : Well/Well Code
- LANDFORM CLASSIFICATION**
- [M] MOUNTAIN
- [P] PEDIMENT
- [TR] TERRACE
- [SD] SAND DUNE
- [CSD] COASTAL SAND DUNE
- [SB] SABKHET
- [W] WADI
- GEOGRAPHICAL SYMBOLS**
- Asphaltic Roads and Desert Tracks
- o Water Springs
- ~ Contour Line in Meters
- △ Airport

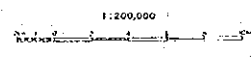
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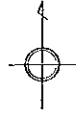
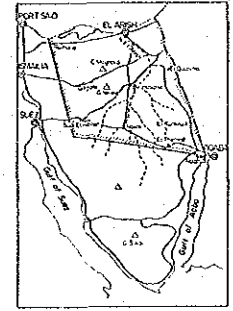
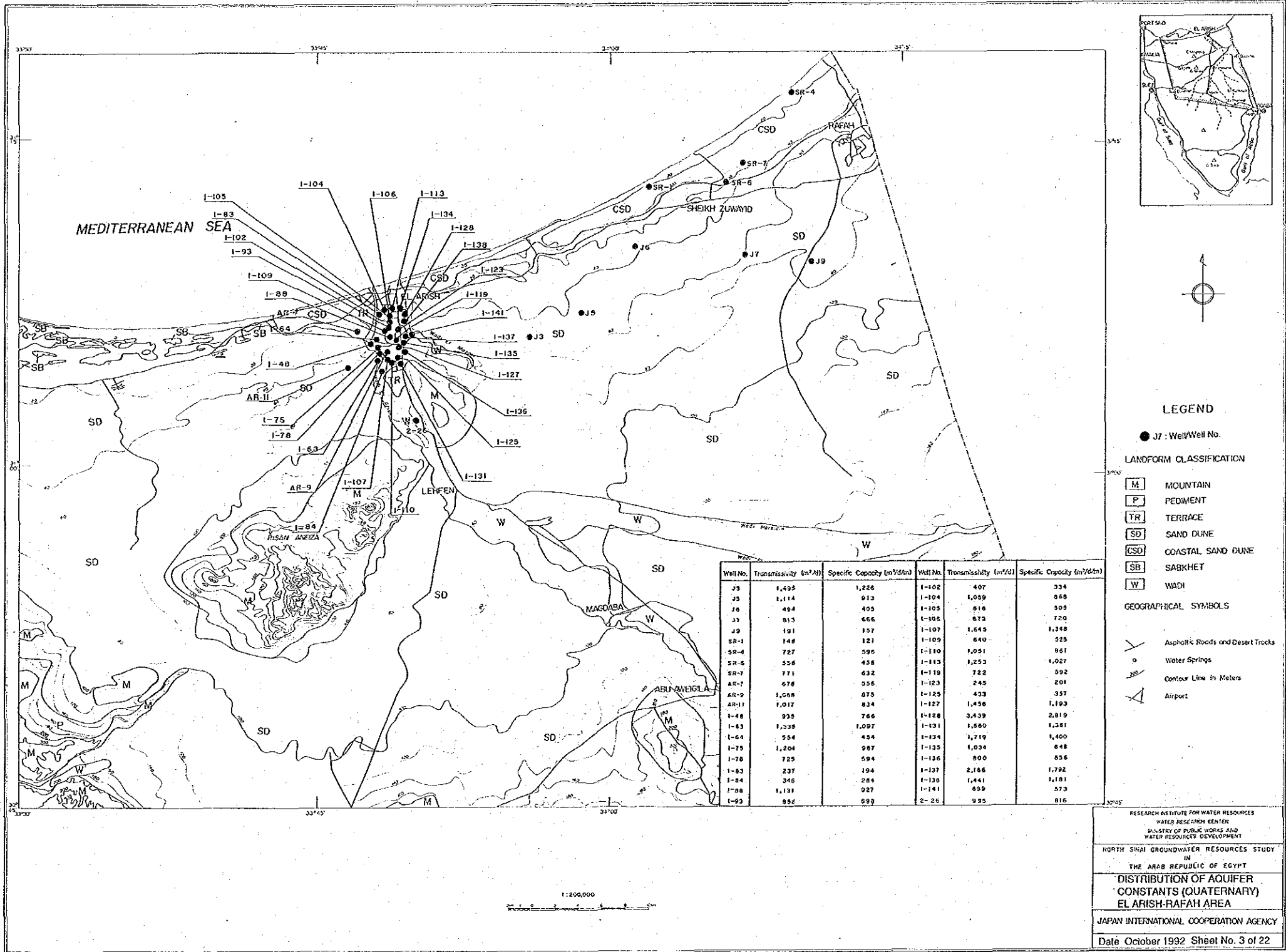
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**WATER QUALITY (QUATERNARY)
 EL ARISH-RAFAH AREA**

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LEGEND

● J7 : Well/Well No.

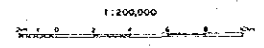
LANDFORM CLASSIFICATION

- M MOUNTAIN
- P PEDIMENT
- TR TERRACE
- SD SAND DUNE
- CSD COASTAL SAND DUNE
- SB SABKHET
- W WADI

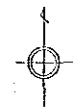
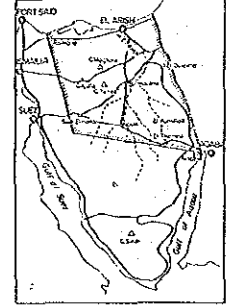
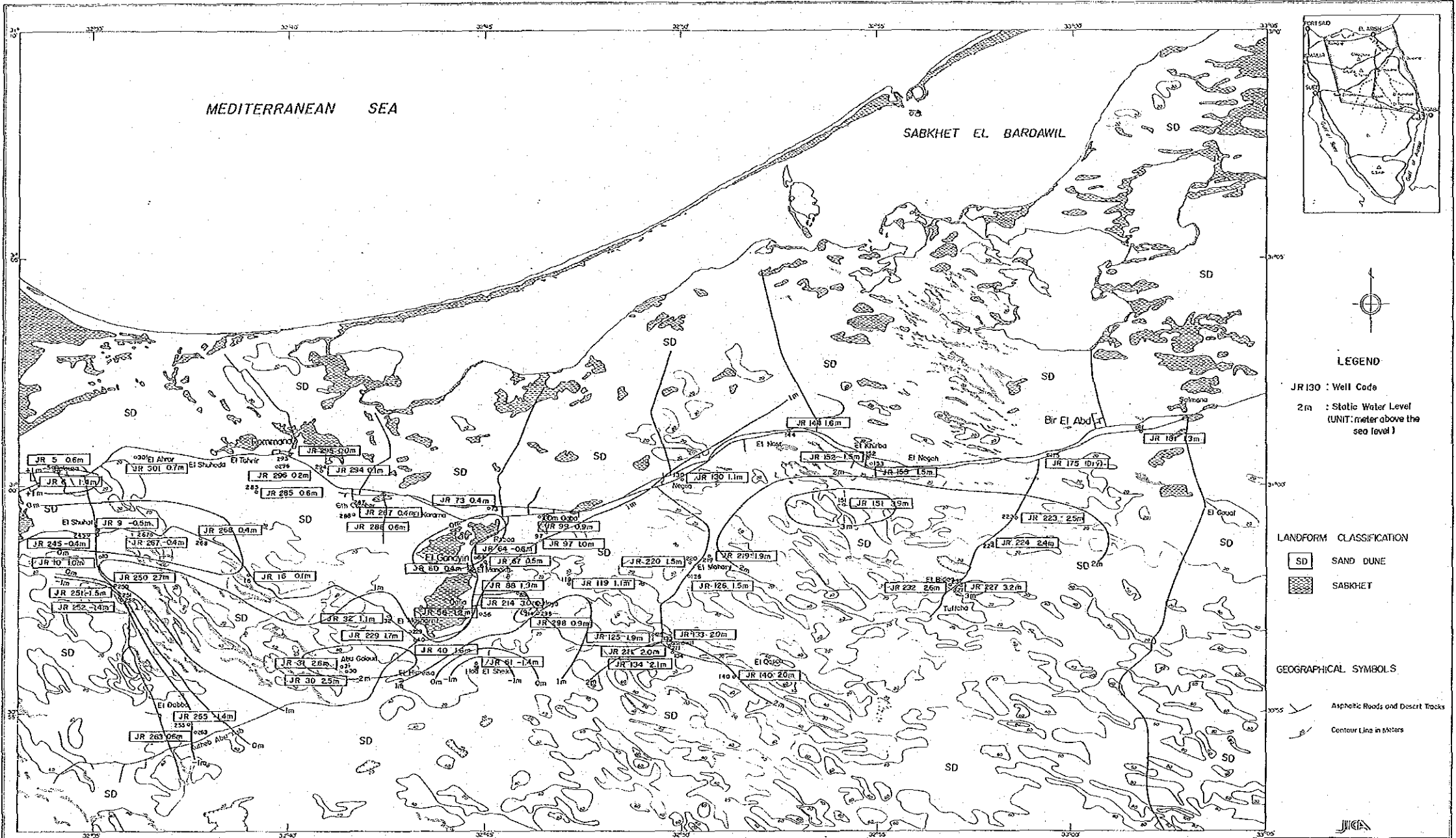
GEOGRAPHICAL SYMBOLS

- Asphaltic Roads and Desert Tracks
- Water Springs
- Contour Line in Meters
- Airport

Well No.	Transmissivity (m ² /d)	Specific Capacity (m ³ /d/m)	Well No.	Transmissivity (m ² /d)	Specific Capacity (m ³ /d/m)
J5	1,435	1,226	I-102	407	334
J5	1,114	913	I-104	1,059	868
J6	494	403	I-105	816	505
J5	813	666	I-106	873	720
J9	191	157	I-107	1,645	1,348
SR-1	148	121	I-109	640	525
SR-4	727	596	I-110	1,051	861
SR-6	556	458	I-113	1,253	1,027
SR-7	771	632	I-119	722	592
AR-7	678	556	I-123	245	201
AR-9	1,068	875	I-125	433	357
AR-11	1,017	834	I-127	1,458	1,193
I-48	935	766	I-128	3,439	2,819
I-63	1,338	1,097	I-131	1,580	1,381
I-64	554	454	I-134	1,719	1,400
I-75	1,204	987	I-135	1,034	848
I-78	725	594	I-136	800	656
I-83	237	194	I-137	2,166	1,792
I-84	346	284	I-138	1,441	1,181
I-88	1,131	927	I-141	699	573
I-93	852	699	2-26	985	816



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**DISTRIBUTION OF AQUIFER
 CONSTANTS (QUATERNARY)
 EL ARISH-RAFAH AREA**
 JAPAN INTERNATIONAL COOPERATION AGENCY
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LEGEND

JR 130 : Well Code
 2m : Static Water Level
 (UNIT: meter above the sea level)

LANDFORM CLASSIFICATION

- SD SAND DUNE
- SABKHET

GEOGRAPHICAL SYMBOLS

- Asphaltic Roads and Desert Tracks
- Contour Line in Meters



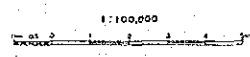
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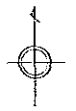
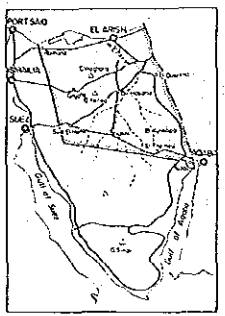
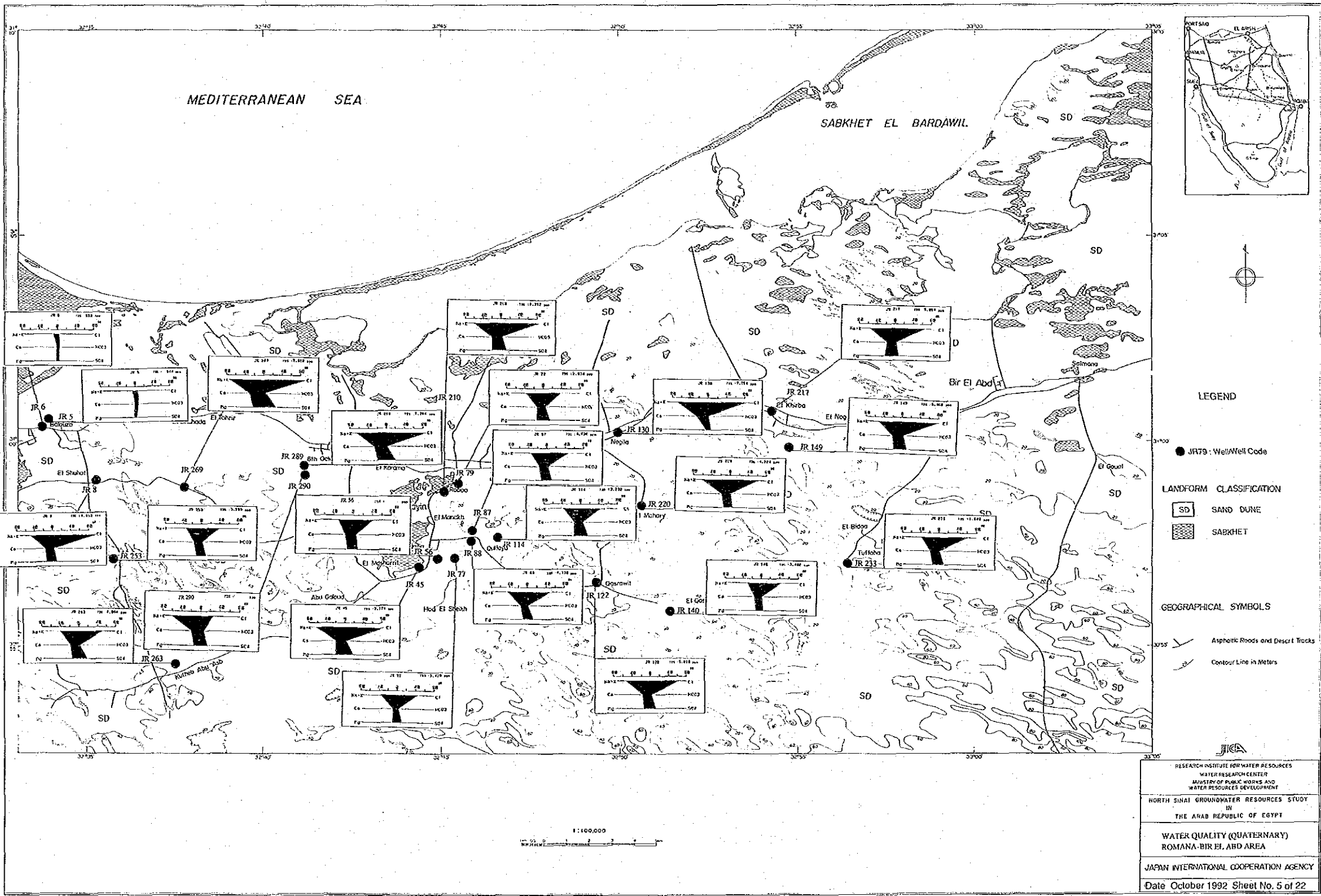
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 IN
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**WATER LEVEL OF QUATERNARY
 ROMANA-BIR EL ABD AREA**

JAPAN INTERNATIONAL COOPERATION AGENCY

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LEGEND

● JR79 : Well/Well Code

LANDFORM CLASSIFICATION

- SD SAND DUNE
- SABKHET

GEOGRAPHICAL SYMBOLS

- Asphaltic Roads and Desert Tracks
- Contour Line in Meters



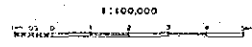
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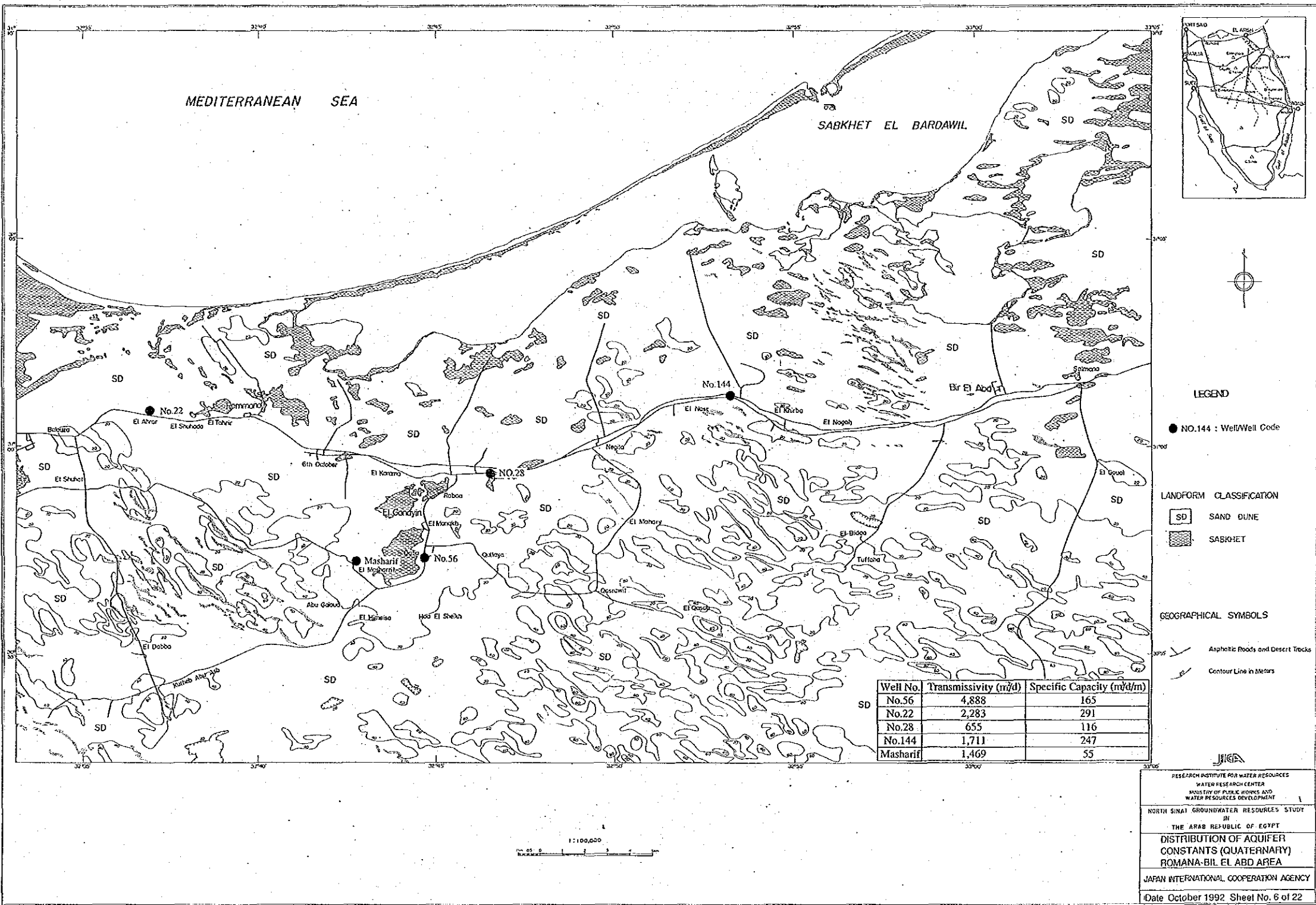
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 IN
 THE ARAB REPUBLIC OF EGYPT

WATER QUALITY (QUATERNARY)
 ROMANA-BIR EL ABD AREA

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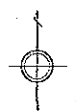
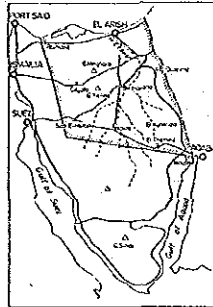
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SABKHET EL BARDAWIL



LEGEND

● NO.144 : Well/Well Code

LANDFORM CLASSIFICATION

- SD SAND DUNE
- SABKHET

GEOGRAPHICAL SYMBOLS

- Asphalitic Roads and Desert Tracks
- Contour Line in Meters

Well No.	Transmissivity (m ² /d)	Specific Capacity (m ³ /d/m)
No.56	4,888	165
No.22	2,283	291
No.28	655	116
No.144	1,711	247
Masharif	1,469	55



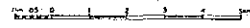
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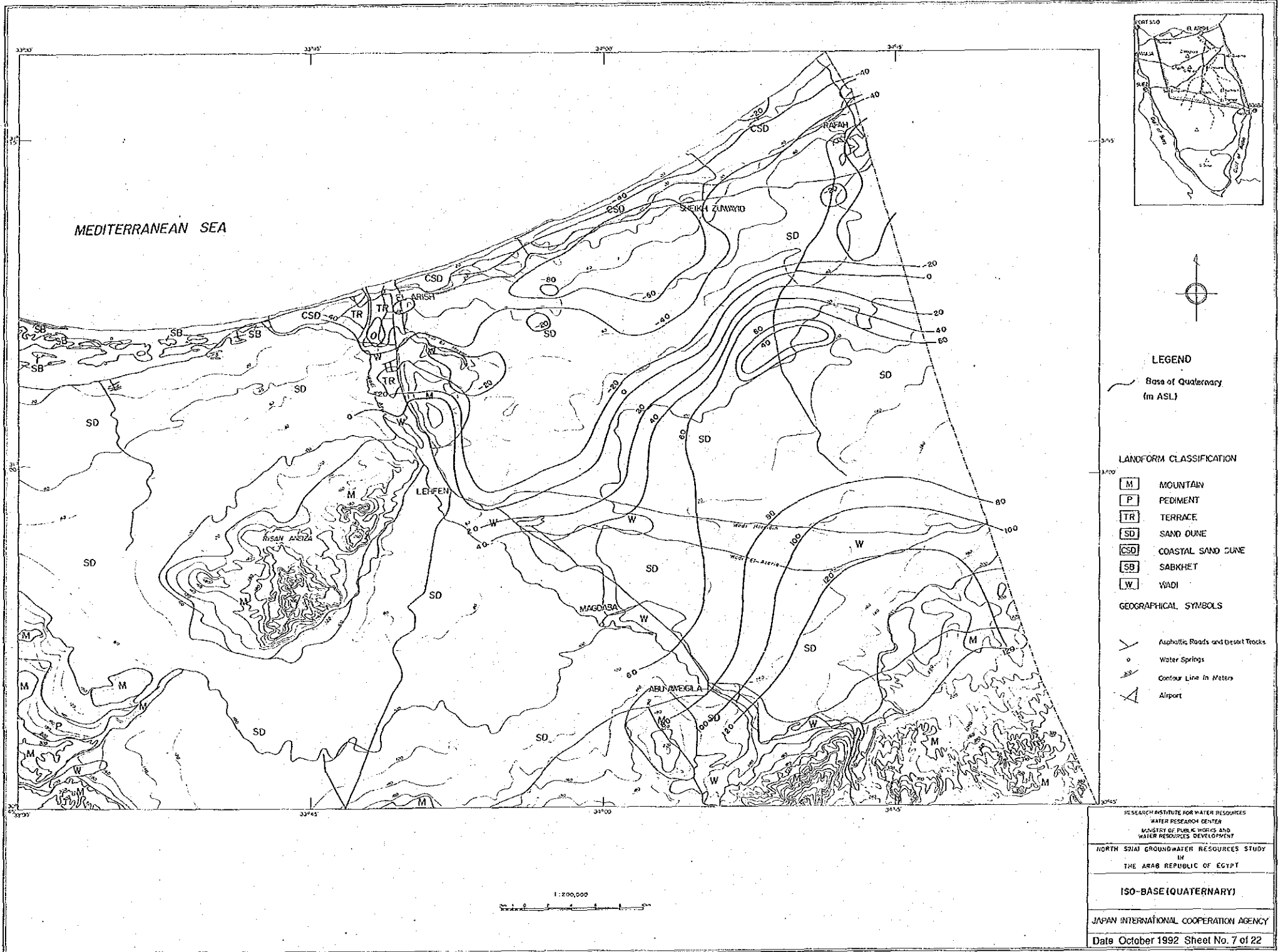
NORTH SINAI GROUNDWATER RESOURCES STUDY
 IN
 THE ARAB REPUBLIC OF EGYPT
 DISTRIBUTION OF AQUIFER
 CONSTANTS (QUATERNARY)
 ROMANA-BIL EL ABD AREA

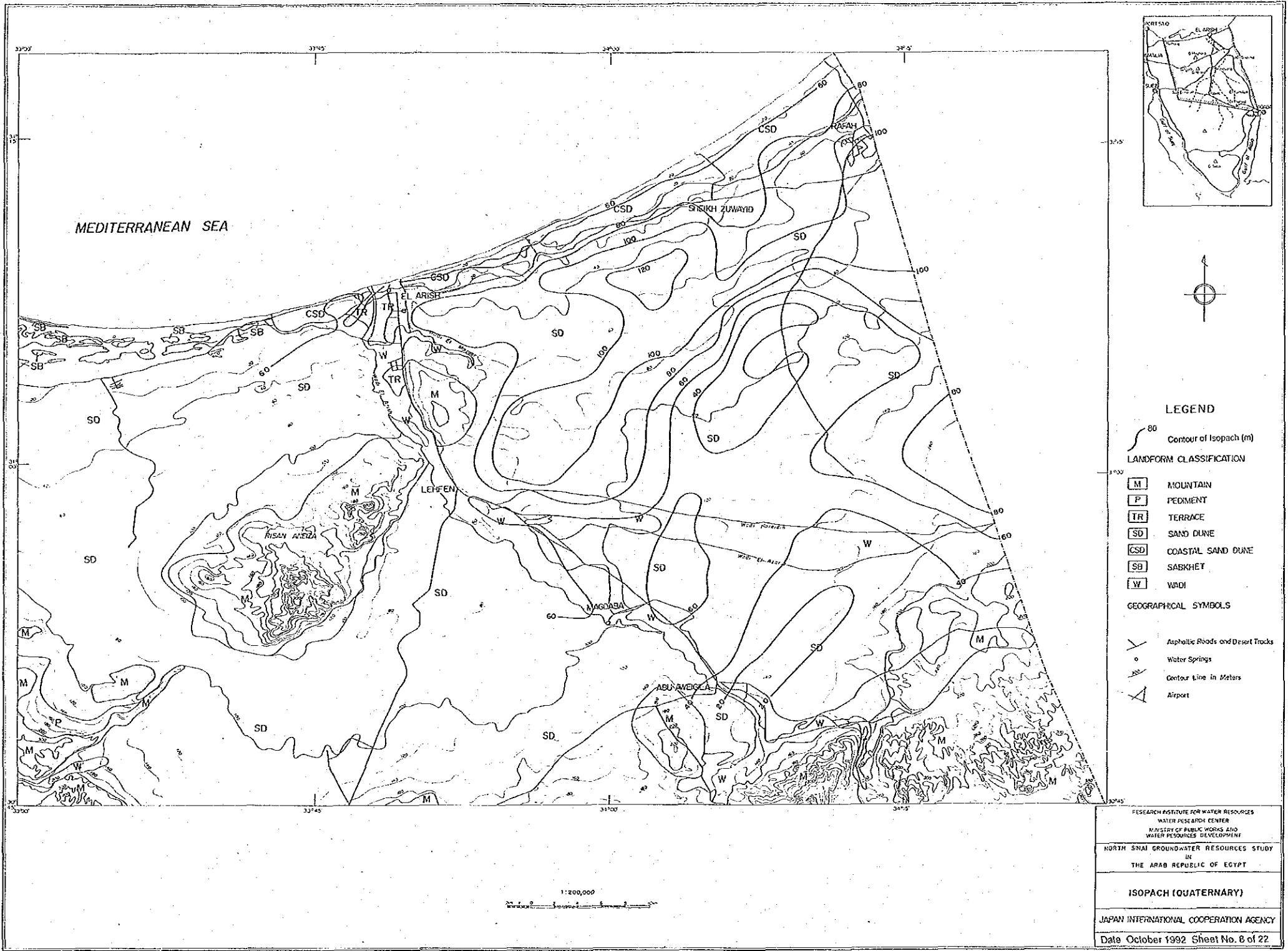
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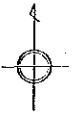
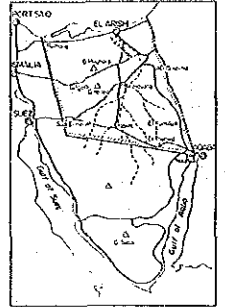
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LEGEND

80 Contour of Isopach (m)

LANDFORM CLASSIFICATION

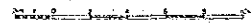
- M MOUNTAIN
- P PEDIMENT
- TR TERRACE
- SD SAND DUNE
- CSD COASTAL SAND DUNE
- SB SABKHET
- W WADI

GEOGRAPHICAL SYMBOLS

- Asphaltic Roads and Desert Tracks
- Water Springs
- Contour Line in Meters
- Airport

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 IN
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 ISOPACH (QUATERNARY)
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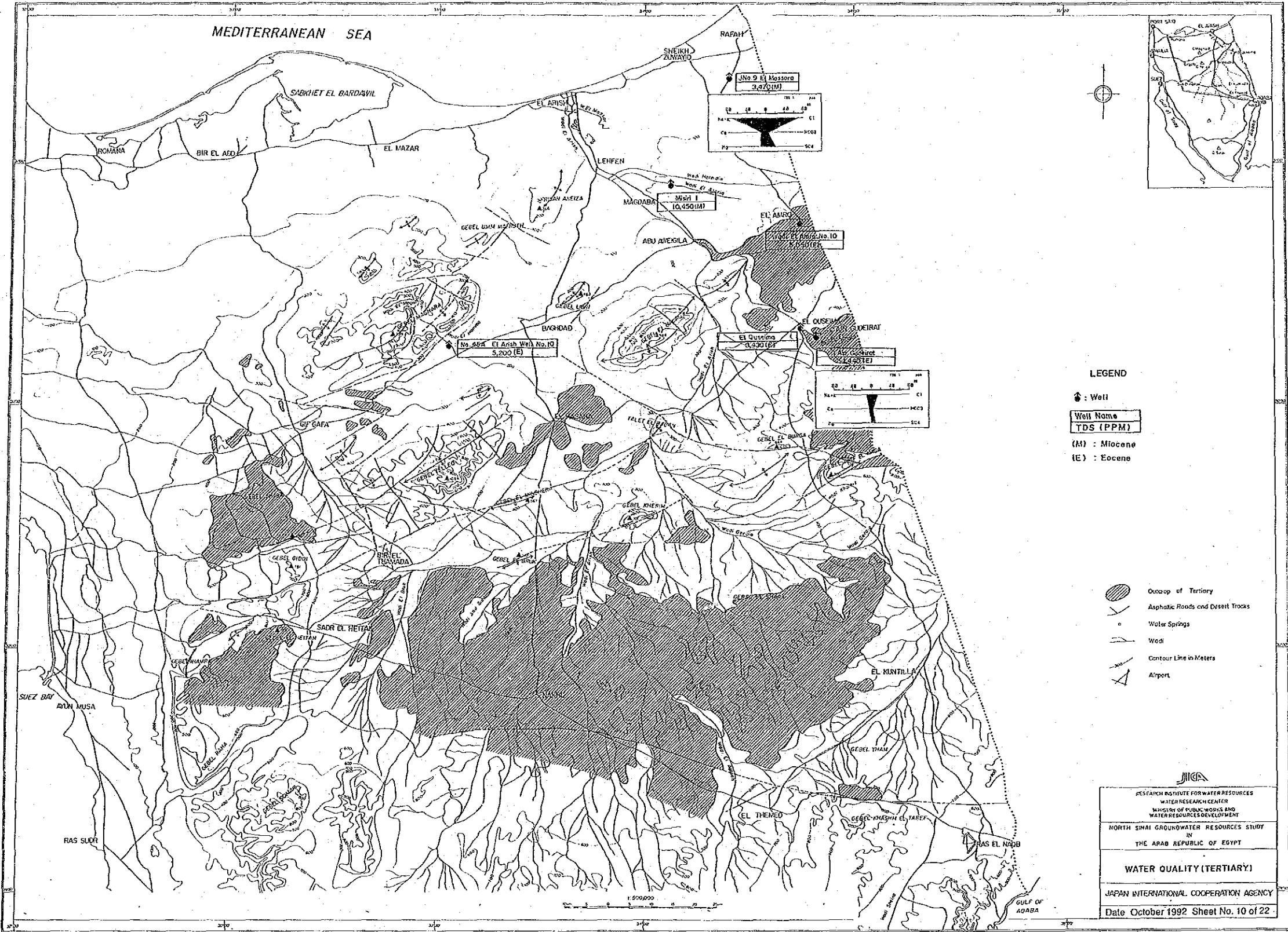


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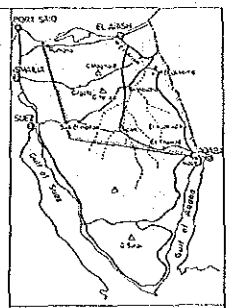
Well
 Well Name
 Water Level (m ASL)

- Outcrop of Tertiary
- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport

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WATER LEVEL (TERTIARY)
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LEGEND

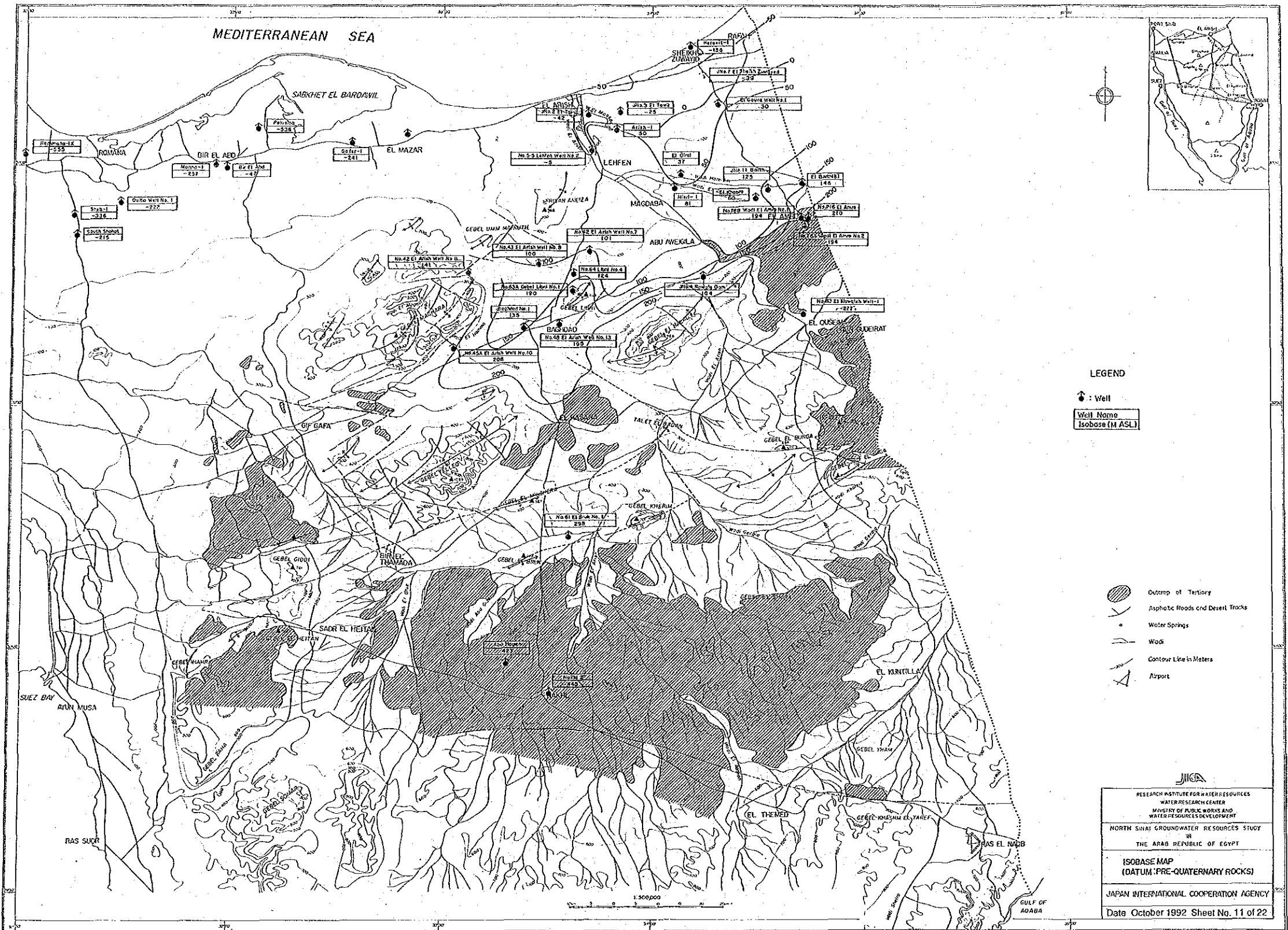
Well

Well Name
TDS (PPM)

(M) : Miocene
(E) : Eocene

- Outcrop of Tertiary
- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport

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WATER QUALITY (TERTIARY)
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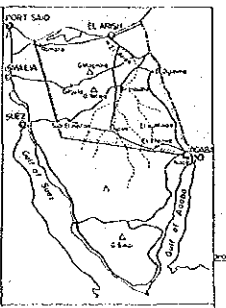
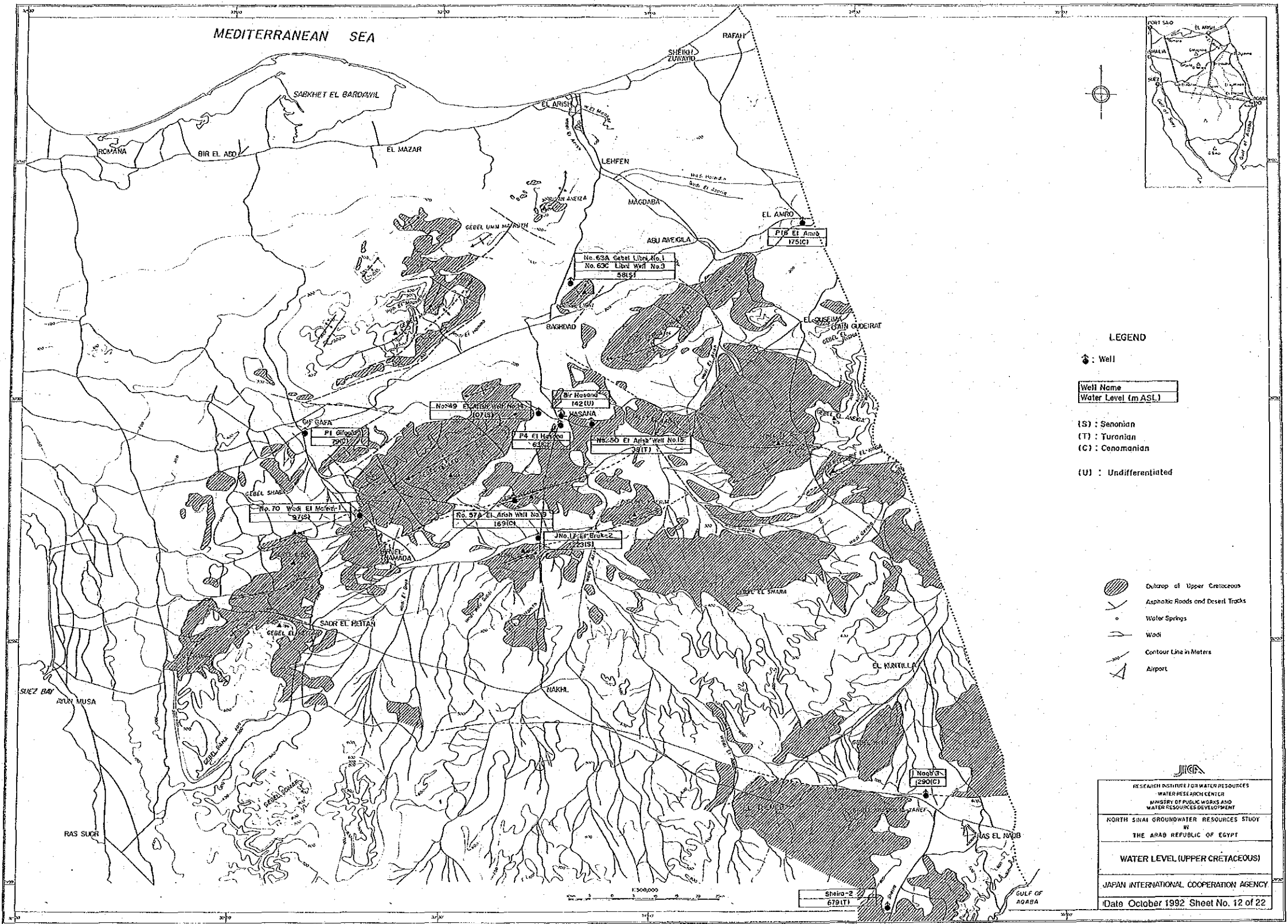
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LEGEND

Well
 Well Name
 Isobase (M ASL)

- Outcrop of Tertiary
- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport

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 IN
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 ISOBASE MAP
 (DATUM: PRE-QUATERNARY ROCKS)
 JAPAN INTERNATIONAL COOPERATION AGENCY
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LEGEND

Well

Well Name	Water Level (m ASL)
-----------	---------------------

(S) : Senonian

(T) : Turonian

(C) : Cenomanian

(U) : Undifferentiated

- Outcrop of Upper Cretaceous
- Asphaltic Roads and Desert Tracks
- Water Springs
- Well
- Contour Line in Meters
- Airport



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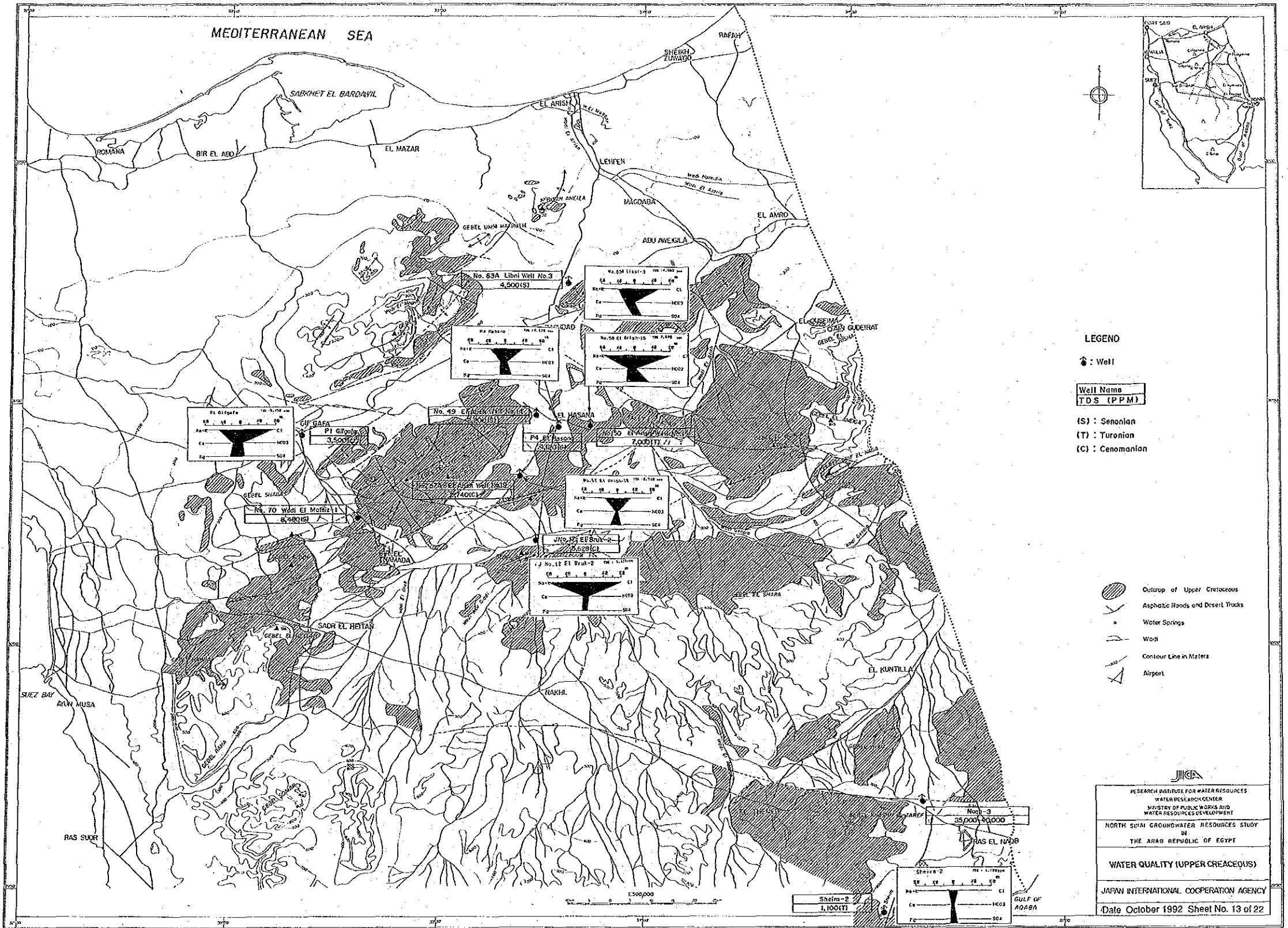
WATER LEVEL (UPPER CRETACEOUS)

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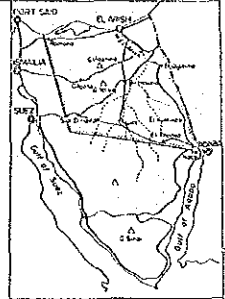
Date October 1992 Sheet No. 12 of 22

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LEGEND

Well

Well Name
TDS (PPM)

(S) : Senonian
(T) : Turonian
(C) : Cenomanian

- Outcrop of Upper Cretaceous
- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport

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WATER QUALITY (UPPER CRETACEOUS)

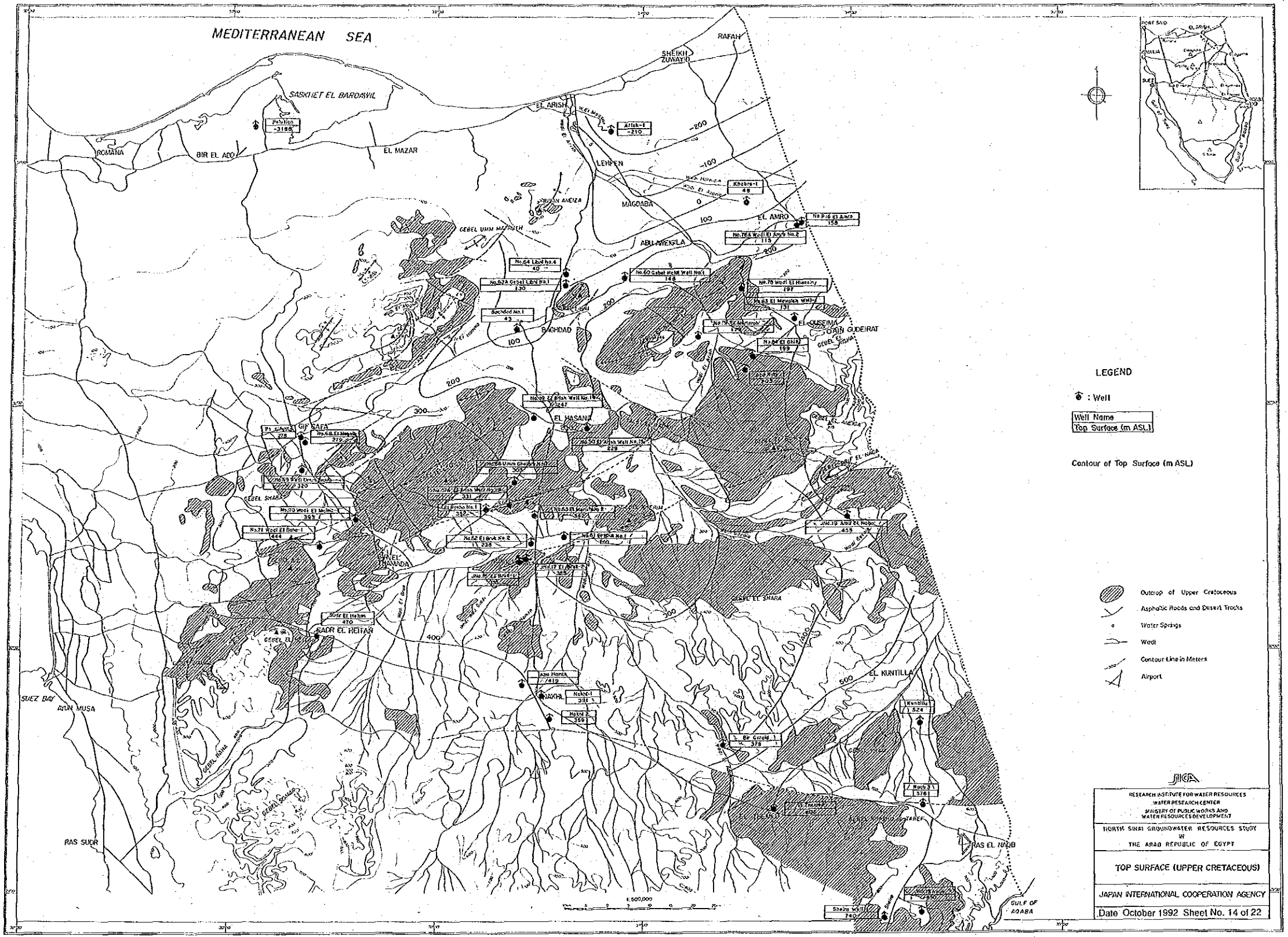
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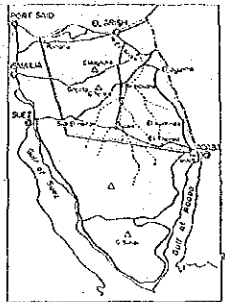
Sheet-2
1,100(T)



Scale 1:500,000



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LEGEND

⊙ : Well

Well Name
Top Surface (m ASL)

Contour of Top Surface (m ASL)

- Outcrop of Upper Cretaceous
- Asphaltic Rocks and Desert Tracks
- Water Springs
- Road
- Contour Line in Meters
- Airport

JICA

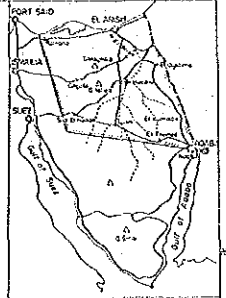
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IN
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TOP SURFACE (UPPER CRETACEOUS)


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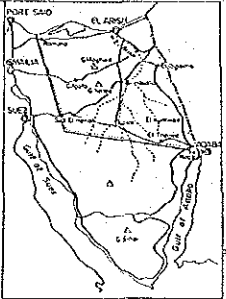
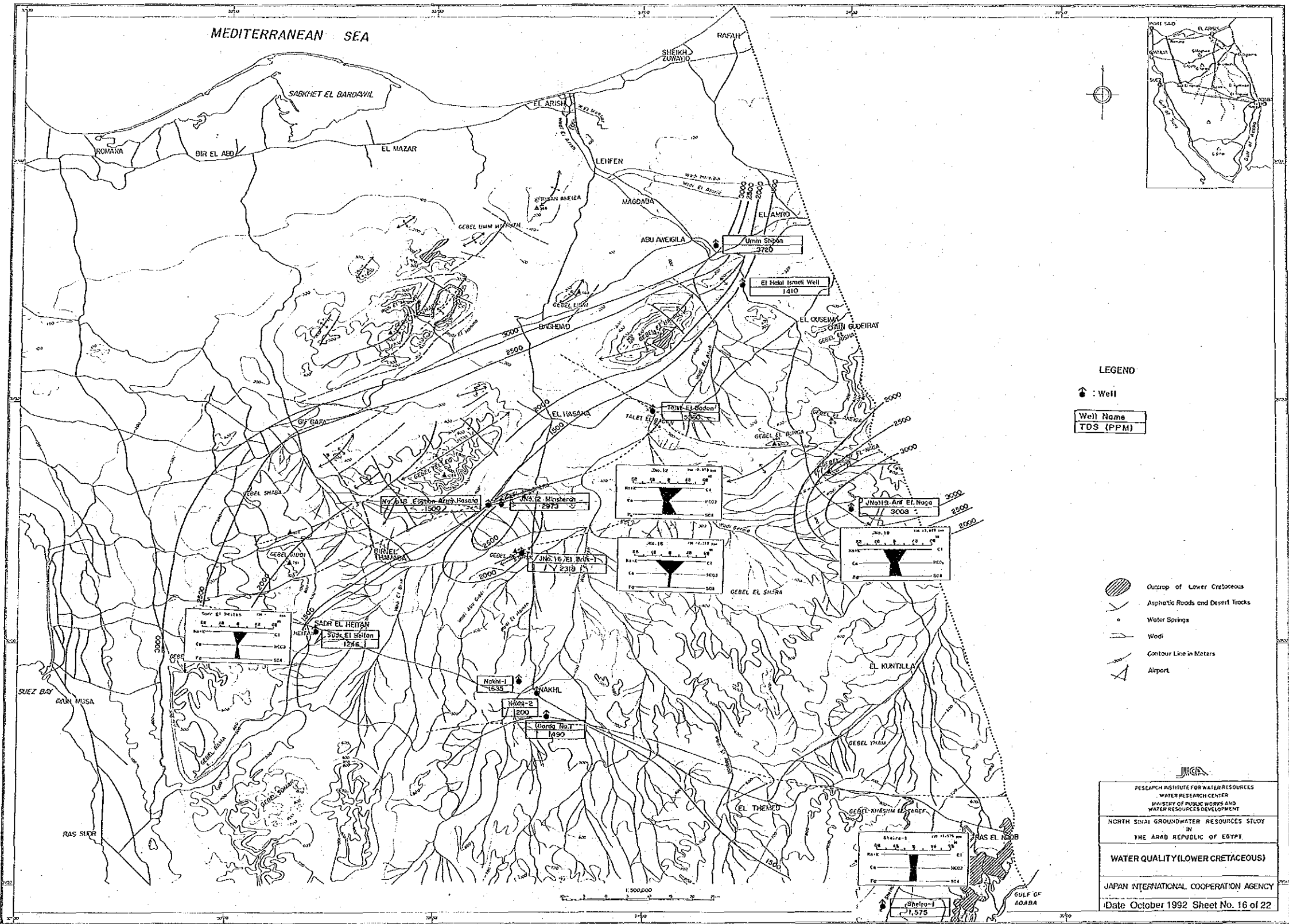
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- LEGEND**
- 200 --- Contour of water Level (m ASL)
 - 200 --- Contour of Depth to Water(m)
 - ← Major Water Flow
 - ▨ Area, Essentially No Groundwater

- Outcrop of Lower Cretaceous
- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport


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**WATER LEVEL AND DEPTH
 (LOWER CRETACEOUS)**
 JAPAN INTERNATIONAL COOPERATION AGENCY
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LEGEND

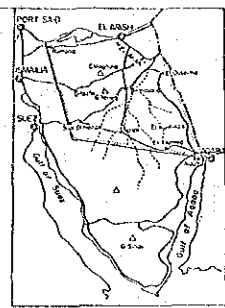
↑ : Well
 Well Name
 TDS (PPM)

- Outcrop of Lower Cretaceous
- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport








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 WATER QUALITY (LOWER CRETACEOUS)
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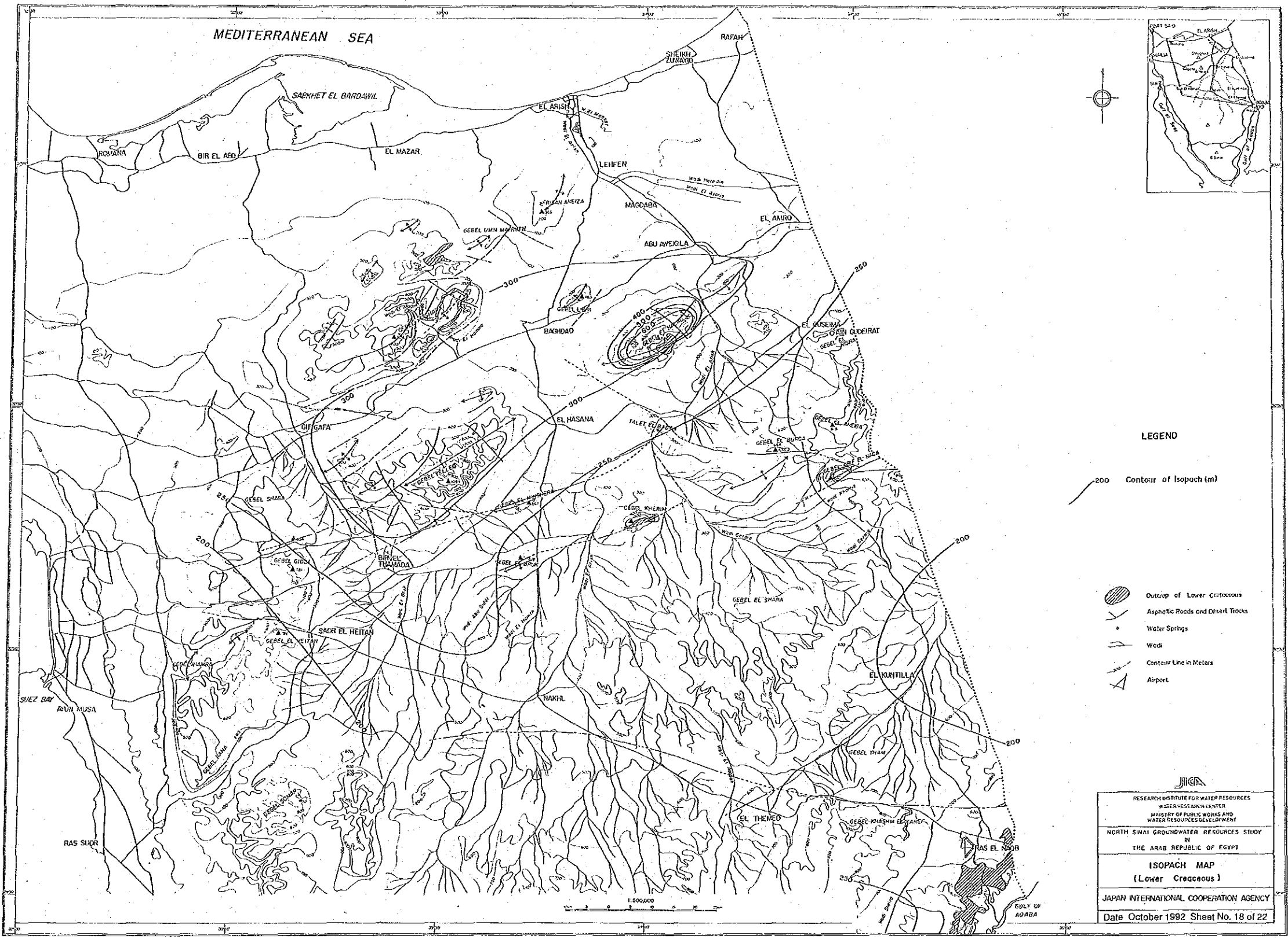


LEGEND

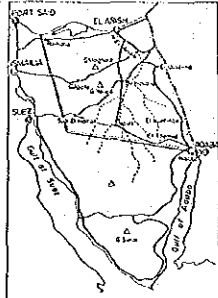
-  300 Contour of Top Surface (m)
-  Outcrop of Lower Cretaceous
-  Asphaltic Roads and Desert Tracks
-  Water Springs
-  Wadi
-  Contour Line in Meters
-  Airport

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 NORTH SINAI GROUNDWATER RESOURCES STUDY
 OF
 THE ARAB REPUBLIC OF EGYPT
 TOP SURFACE (LOWER CRETACEOUS)
 JAPAN INTERNATIONAL COOPERATION AGENCY
 Date October 1992 Sheet No. 17 of 22

1:500,000



MEDITERRANEAN SEA

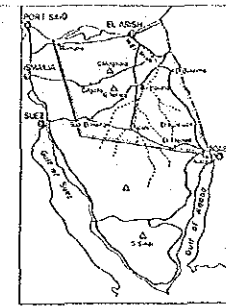
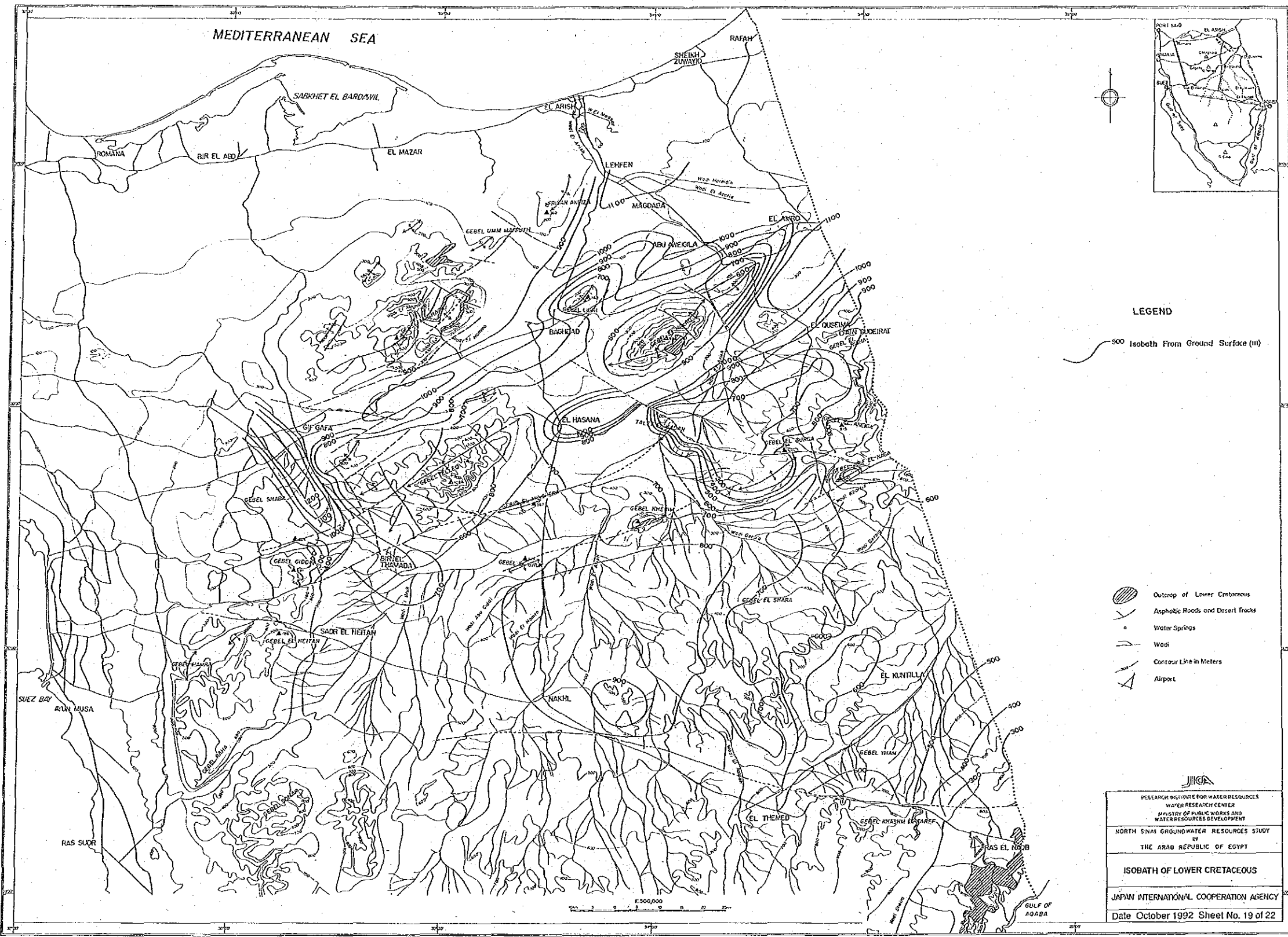


LEGEND








- 200 Contour of Isopach (m)
- Outcrop of Lower Cretaceous
- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport


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 IN
 THE ARAB REPUBLIC OF EGYPT
ISOPACH MAP
 (Lower Cretaceous)
 JAPAN INTERNATIONAL COOPERATION AGENCY
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1:500,000

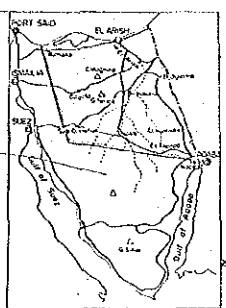
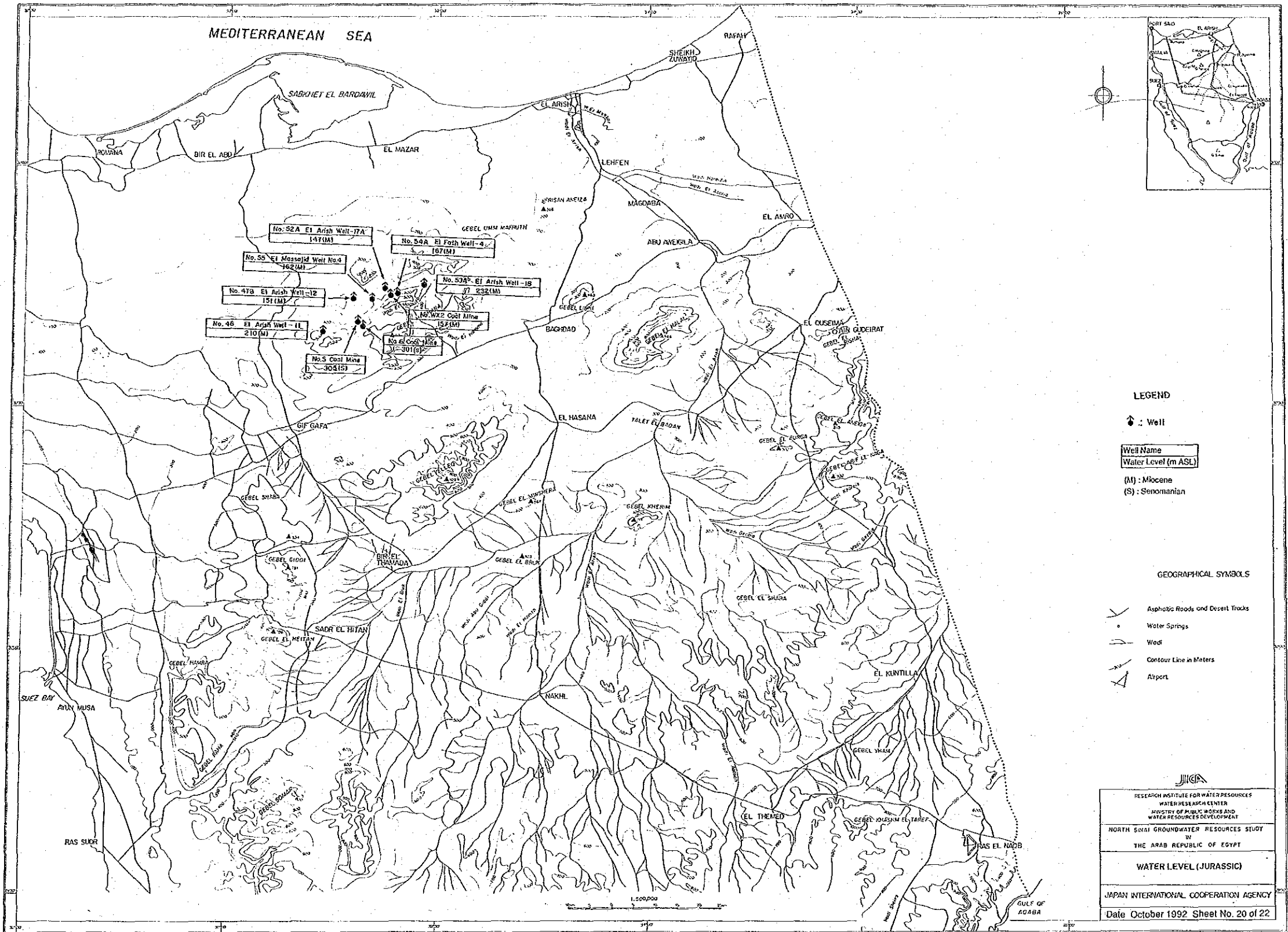


LEGEND

-  500 Isobath From Ground Surface (m)
-  Outcrop of Lower Cretaceous
-  Asphaltic Roads and Desert Tracks
-  Water Springs
-  Wadi
-  Contour Line in Meters
-  Airport


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ISOBATH OF LOWER CRETACEOUS
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1:500,000



LEGEND

- ↑ : Well
- Well Name
- Water Level (m ASL)
- (M) : Miocene
- (S) : Senonian

GEOGRAPHICAL SYMBOLS

- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport

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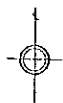
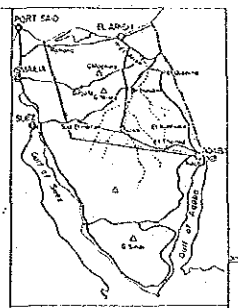
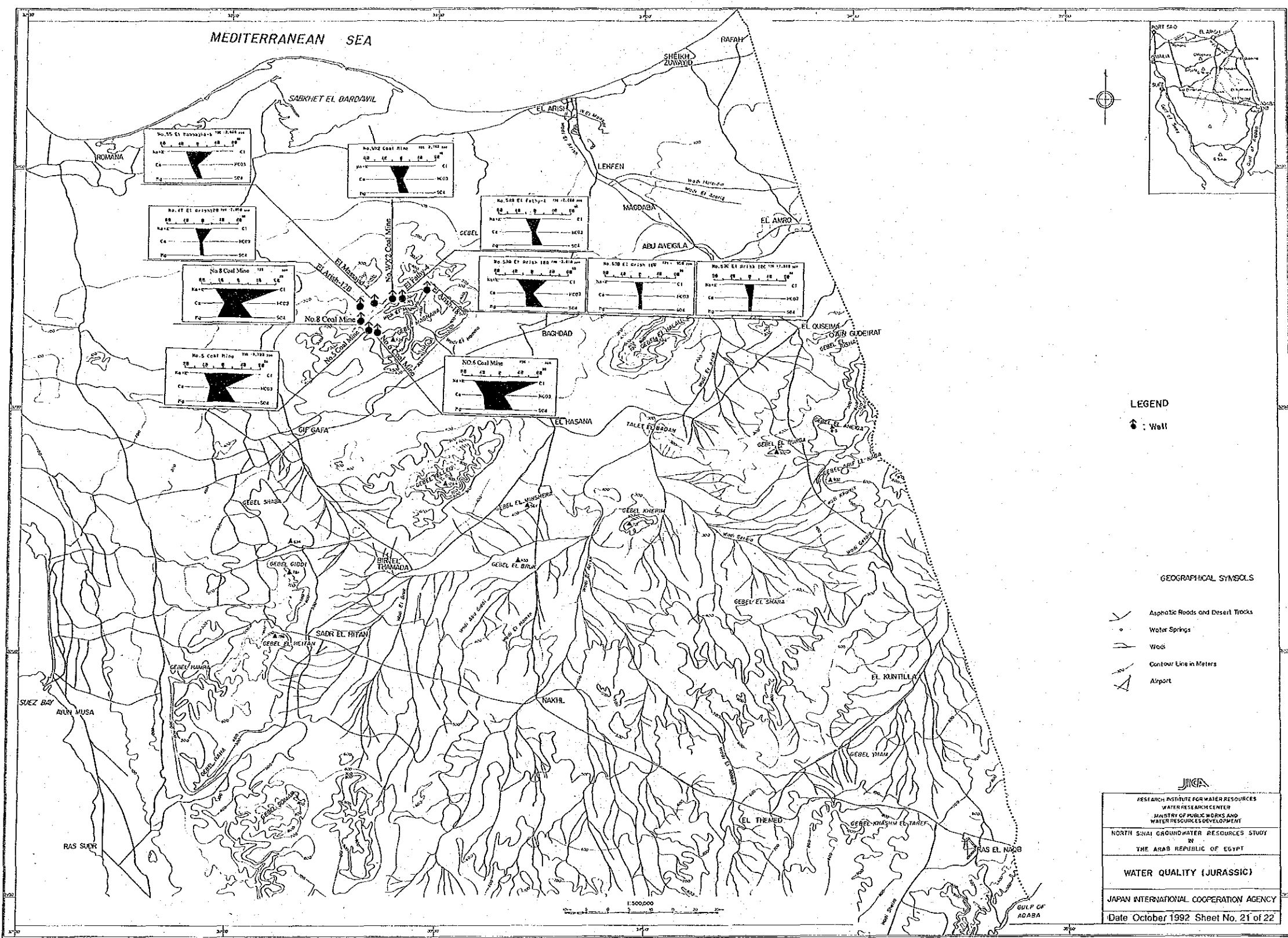
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IN
THE ARAB REPUBLIC OF EGYPT

WATER LEVEL (JURASSIC)

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LEGEND
 • Well

- GEOGRAPHICAL SYMBOLS**
- Asphaltic Roads and Desert Tracks
 - Water Springs
 - Wadi
 - Contour Line in Meters
 - Airport

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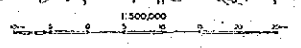
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 WATER RESOURCES DEVELOPMENT

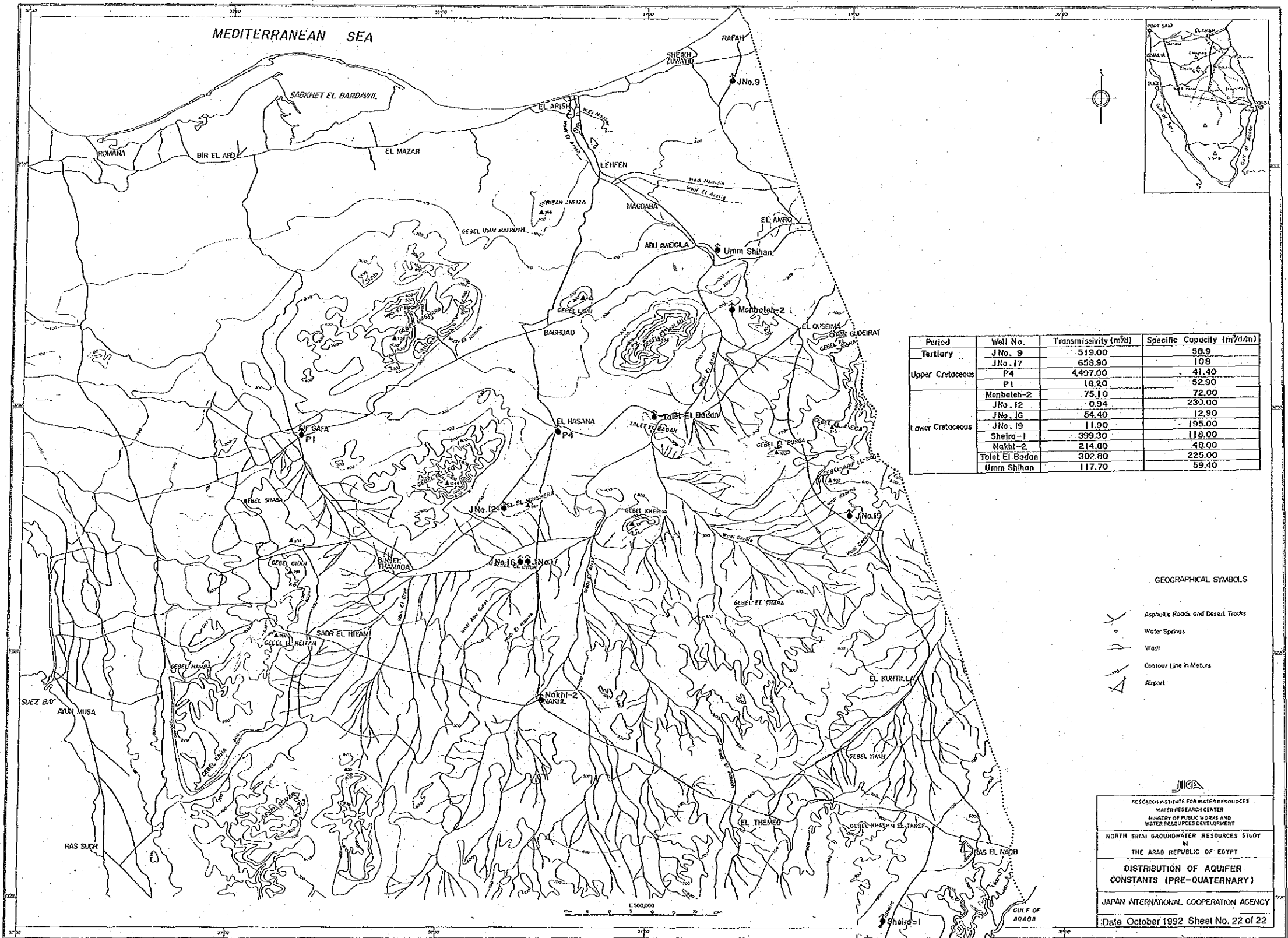
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WATER QUALITY (JURASSIC)

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Period	Well No.	Transmissivity (m ² /d)	Specific Capacity (m ³ /d/m)
Tertiary	JNo. 9	519.00	59.9
	JNo. 17	658.90	108
	P4	4,497.00	41.40
Upper Cretaceous	P1	18.20	52.90
	Monbatah-2	75.10	72.00
Lower Cretaceous	JNo. 12	0.94	230.00
	JNo. 16	54.40	12.90
	JNo. 19	11.90	195.00
	Sheira-1	399.30	118.00
	Nakhl-2	214.80	48.00
	Talet El Badan	302.80	225.00
	Umm Shihan	117.70	59.40

GEOGRAPHICAL SYMBOLS

- Asphaltic Roads and Desert Tracks
- Water Springs
- Wadi
- Contour Line in Meters
- Airport

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 DISTRIBUTION OF AQUIFER
 CONSTANTS (PRE-QUATERNARY)
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