STATE OF CALIFORNIA
The Resources Agency
DEPARTMENT OF WATER RESOURCES

BULLETIN NO. 106-2

GROUND WATER OCCURRENCE AND QUALITY, SAN DIEGO REGION

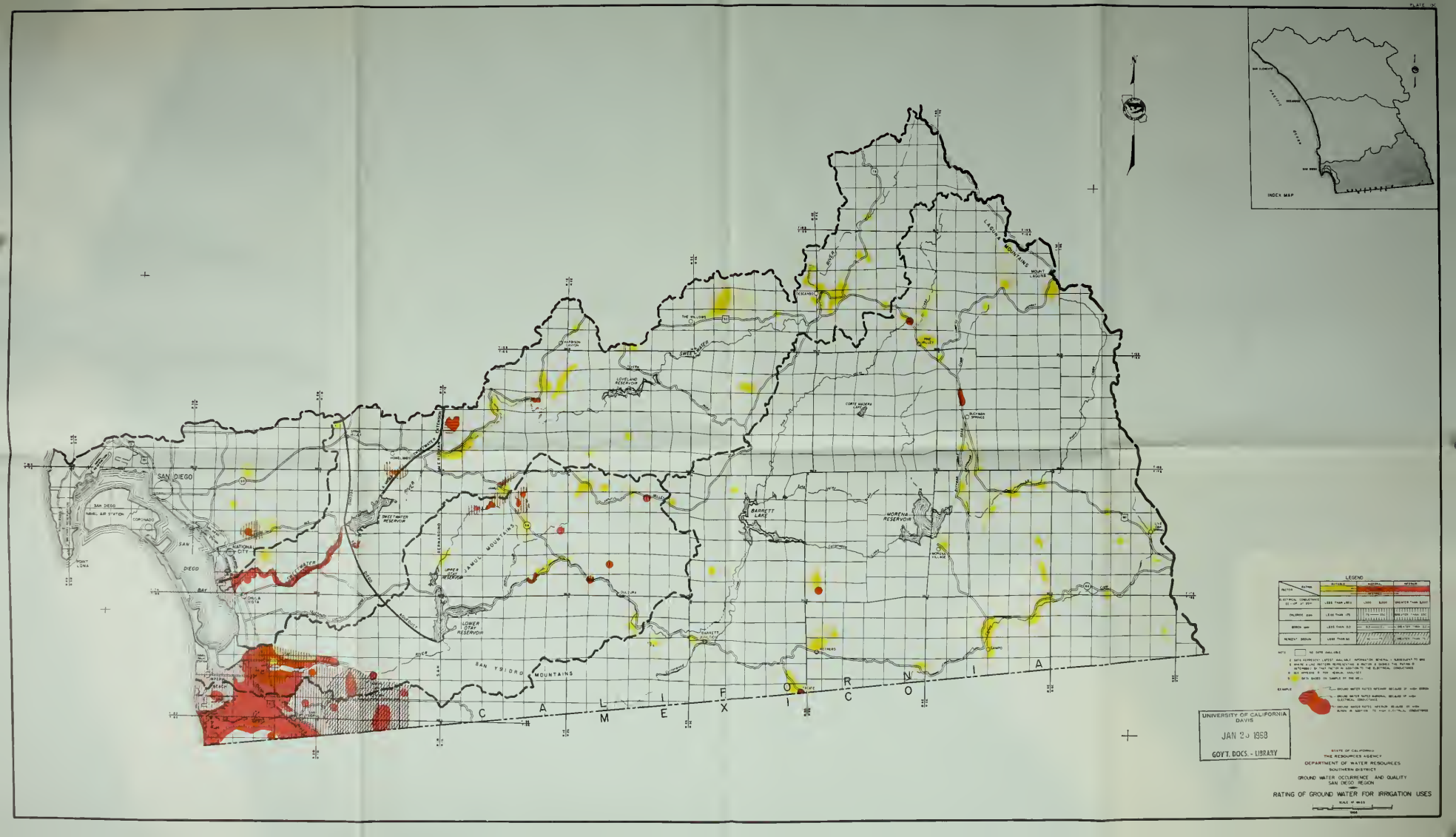
VOLUME II

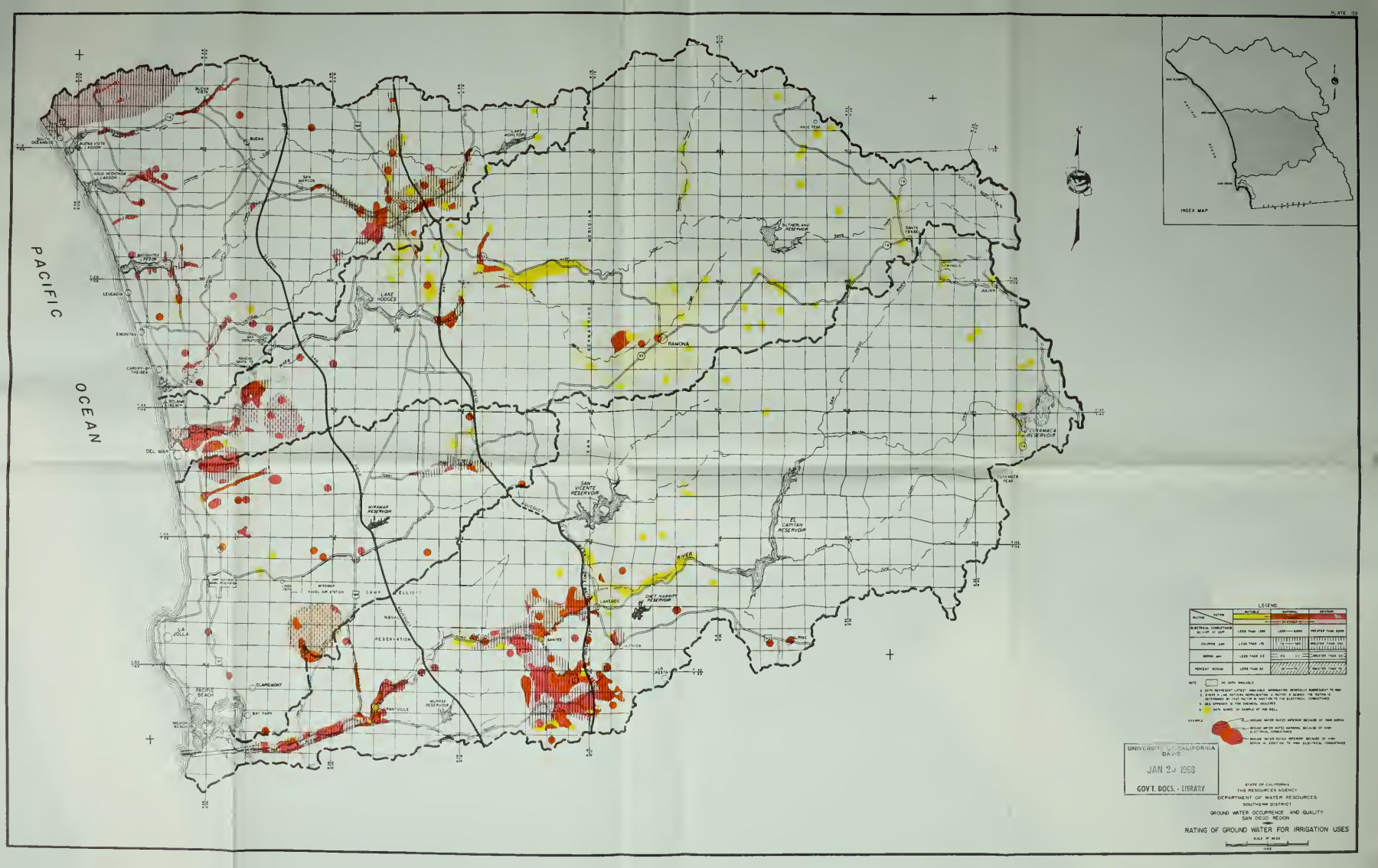
TABLE OF CONTENTS

(NOTE: Plates 1, 4A, 4B, 4C, 5, 7, and 10 are in Volume I)

Plate No.	Title
1	See Volume I
2A,B,C	Areal Geology
3A,B,C	Subsurface Lithology of Selected Areas
4A,B,C	See Volume I
5	See Volume I
6A,B,C	Location of Selected Wells and Springs
7	See Volume I
8A,B,C	Generalized Depths to Water in Wells
9A,B,C	Areal Extent of Total Dissolved Solids in Ground Water
10	See Volume I
11A,B,C	Chemical Character of Ground Water
12A,B,C	Rating of Ground Water for Domestic Uses
13A,B,C	Rating of Ground Water for Irrigation Uses

UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1968
GOV'T. DOCS. - LIBRARY


SAN DIEGO
SAN DIEGO NAVAL AIR STATION
CORONADO
POINT LOMA
SAN DIEGO BAY
NATIONAL CITY
CHULA VISTA
OTAY RESERVOIR
SWEETWATER RESERVOIR
UPPER OTAY RESERVOIR
LOWER OTAY RESERVOIR
SAN YSIDRO MOUNTAINS
LOVELAND RESERVOIR
CORTE MADERA LAKE
BARRETT LAKE
MORENA RESERVOIR
LAGUNA MOUNTAINS
MOUNT LAGUNA
CALIFORNIA
INDEX MAP
LEGEND
WATER RATING
POTABLE
NORMAL
MEDIOCRE
ELECTRICAL CONDUCTANCE
CHLORIDE
BORON
NITRATE
LESS THAN 1,000
1,000 - 5,000
GREATER THAN 5,000
LESS THAN 175
175 - 500
GREATER THAN 500
LESS THAN 0.3
0.3 - 1.0
GREATER THAN 1.0
LESS THAN 45
45 - 90
GREATER THAN 90
NOTE: NO DATA AVAILABLE
2 DATA REPRESENTS LATEST AVAILABLE INFORMATION DERIVED FROM SUBSEQUENT TO 1950
3 WHERE A LINE PATTERN REPRESENTING A RATING IS QUALIFIED THE RATING IS ACTUALLY A MIXTURE OF THE RATING SHOWN AND THE RATING IMMEDIATELY TO THE RIGHT ON THE ELECTRICAL CONDUCTANCE
4 DATA BASED ON SAMPLE BY THE USGS
63 SAMPLE
GROUND WATER RATED POTABLE BECAUSE OF LOW BORON
GROUND WATER RATED NORMAL BECAUSE OF LOW ELECTRICAL CONDUCTANCE
GROUND WATER RATED MEDIOCRE BECAUSE OF LOW BORON OR NITRATE TO LOW ELECTRICAL CONDUCTANCE
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 29 1958
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
RATING OF GROUND WATER FOR IRRIGATION USES
SCALE OF MILES



LEGEND

FACTOR	RATING	SUITABLE	MARGINAL	INFERIOR
			DECREASED	INCREASED
ELECTRICAL CONDUCTANCE BY 10⁶ AT 25°C		LESS THAN 1,500	1,500 — 4,000	GREATER THAN 4,000
CHLORIDE (Cl)		LESS THAN 175	175 — 700	GREATER THAN 700
BORON (B)		LESS THAN 1.0	1.0 — 2.0	GREATER THAN 2.0
PERCENT SODIUM		LESS THAN 60	60 — 75	GREATER THAN 75

NOTE: NO DATA AVAILABLE

1. DATA REPRESENT LATEST AVAILABLE INFORMATION GENERALLY SUBSEQUENT TO 1960
2. SHADE IN LINE PATTERN REPRESENTING A FACTOR IS SUBJECT TO THE RATING IS DETERMINED BY THAT FACTOR IN RELATION TO THE ELECTRICAL CONDUCTANCE
3. SEE APPENDIX 3 FOR CHEMICAL ANALYSES
4. DATA BASED ON SAMPLES OF ONE WELL

EXAMPLE

GROUND WATER RATED INFERIOR BECAUSE OF HIGH BORON

GROUND WATER RATED MARGINAL BECAUSE OF HIGH ELECTRICAL CONDUCTANCE

GROUND WATER RATED INFERIOR BECAUSE OF HIGH BORON IN 1950 OR TO HIGH ELECTRICAL CONDUCTANCE

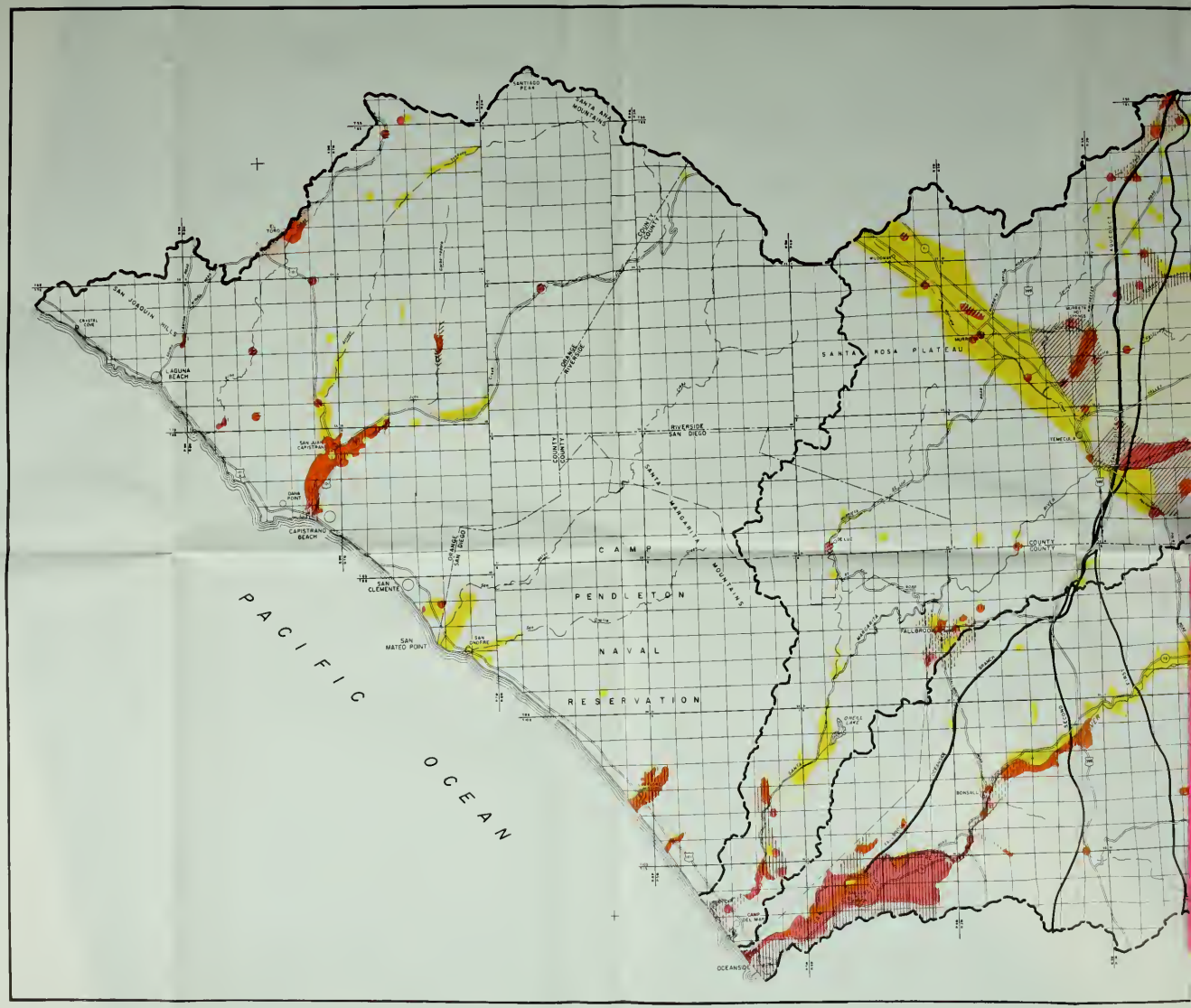
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2 J 1968
GOV'T. DOCS. - LIBRARY

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT

GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION

RATING OF GROUND WATER FOR IRRIGATION USES

SCALE OF MILES



SANTIAGO PEAK
SANTA ANA MOUNTAINS
EL TORO
SAN JOAQUIN HILLS
CRYSTAL COVE
LAGUNA BEACH
SAN JUAN CAPISTRANO
DANA POINT
CAPISTRANO BEACH
SAN CLEMENTE
SAN MATEO POINT
SAN ONOFRE
ORANGE COUNTY
RIVERSIDE COUNTY
SAN DIEGO COUNTY
SANTA MARGARITA MOUNTAINS
CAMP PENDLETON NAVAL RESERVATION
PACIFIC OCEAN
SANTA ROSA PLATEAU
WILDOMAR
MURRIETA
TEMECULA
DE LUZ
FALLBROOK
OHESS LAKE
BONSALL
CAMP DEL MAR
OCEANSIDE

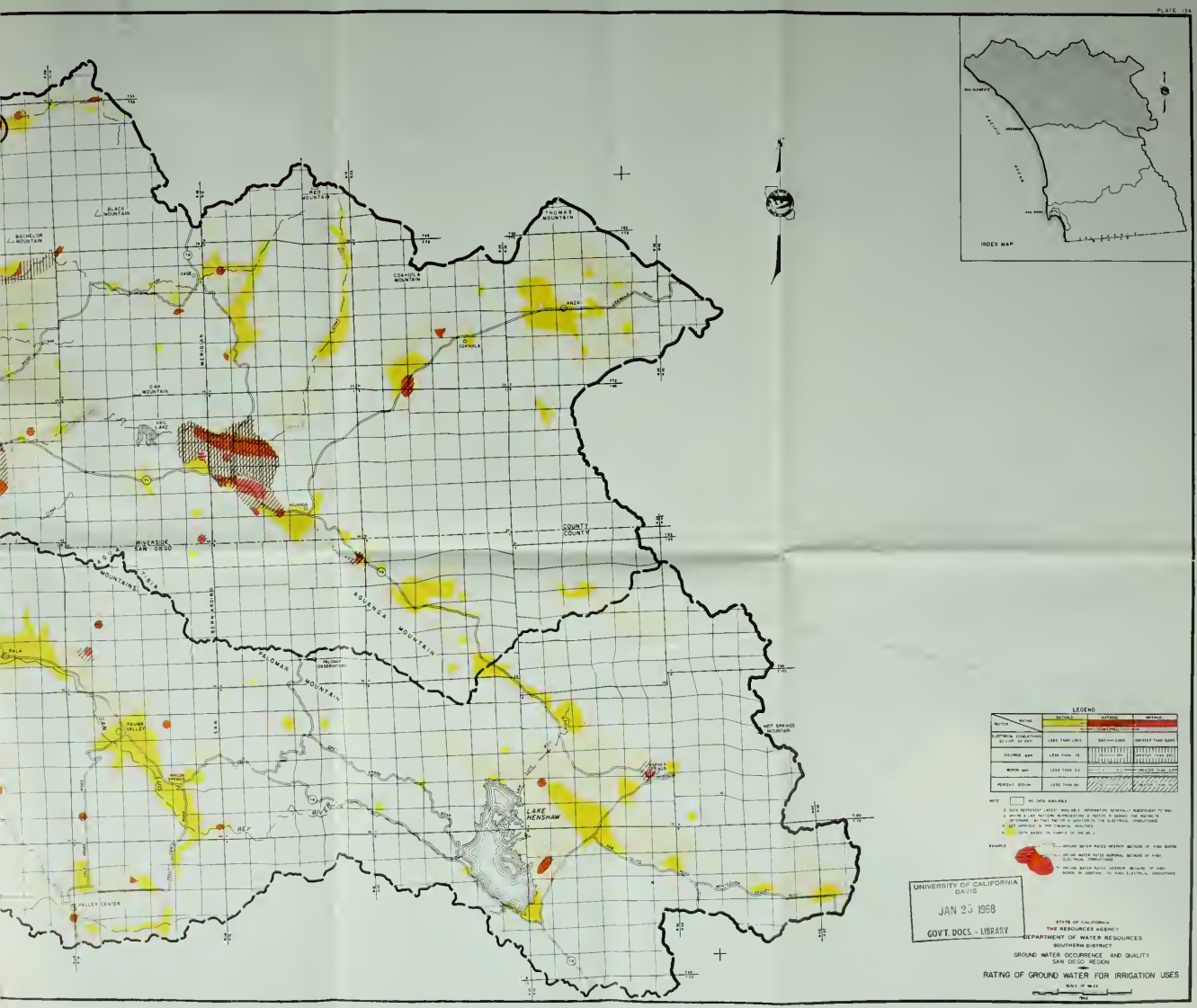
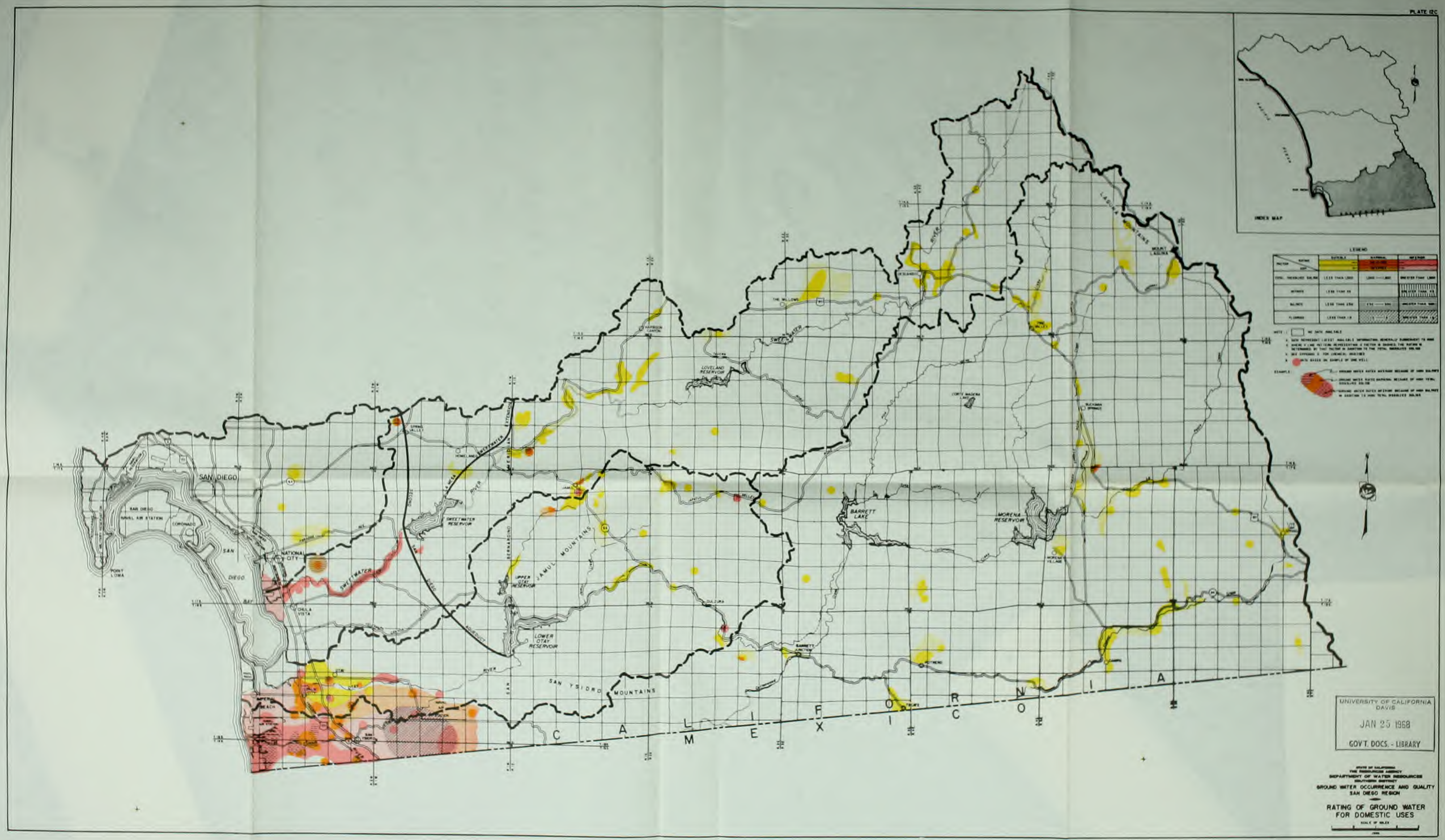
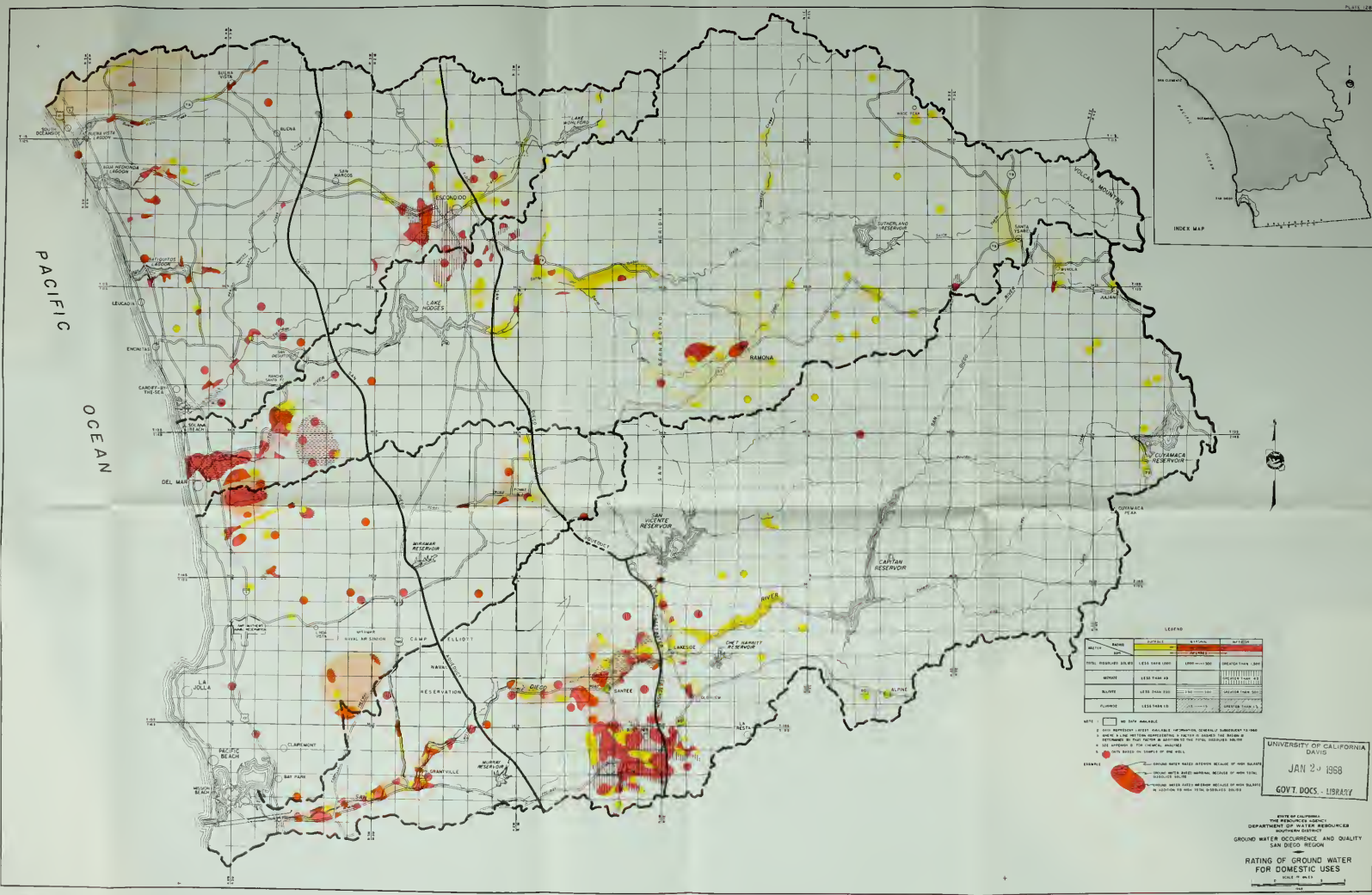
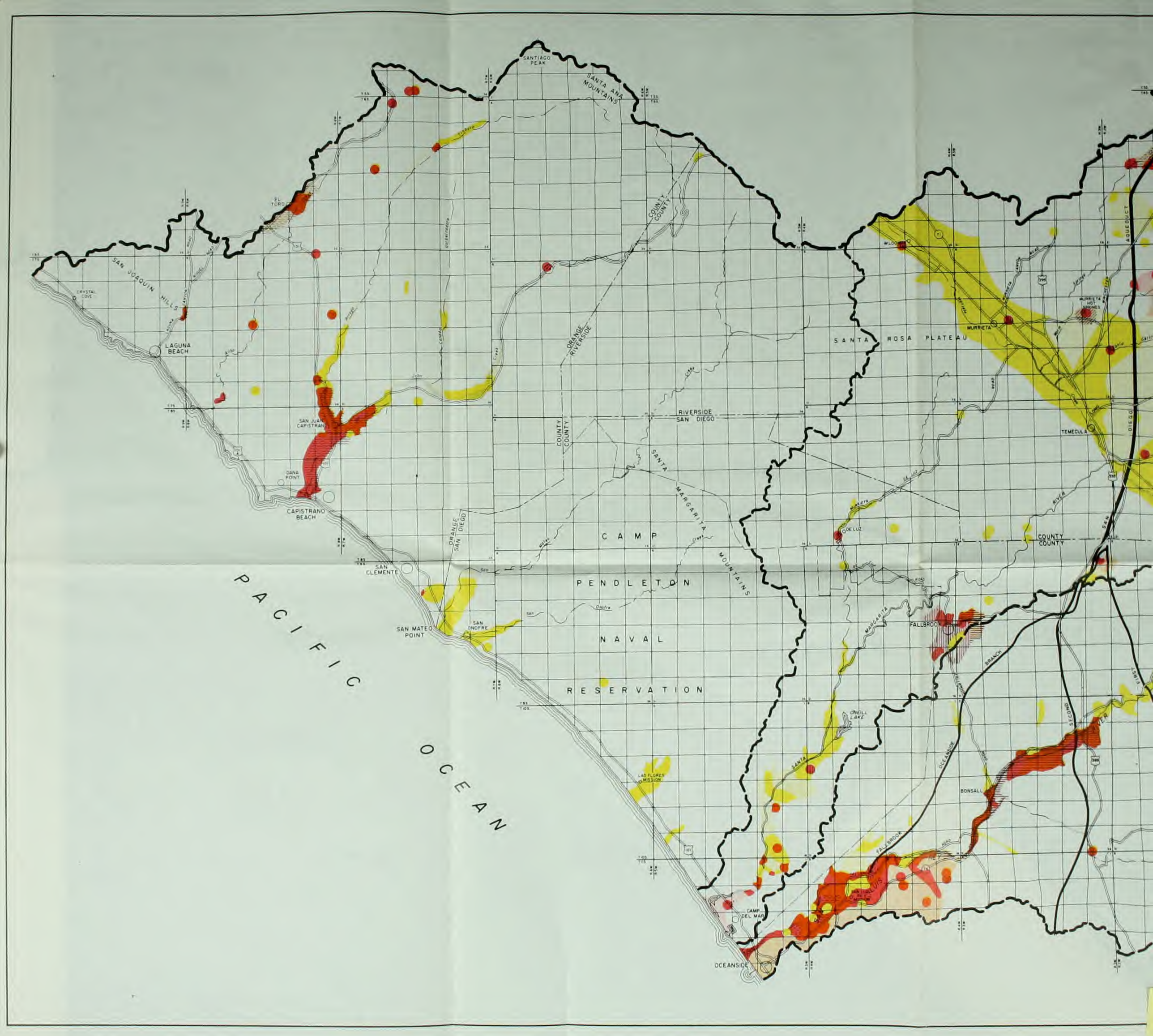

BLACK MOUNTAIN
BACHELOR MOUNTAIN
RED MOUNTAIN
THOMAS MOUNTAIN
COAHUILA MOUNTAIN
ANZA
COAHUILA
OAK MOUNTAIN
MERIDIAN
SAN BERNARDINO
RIVERSIDE
SAN DIEGO
COUNTY
COUNTY
MOUNTAINS
AGUANGA MOUNTAIN
PALOMAR MOUNTAIN
PALOMAR OBSERVATORY
PALA
PAUMA VALLEY
HOT SPRINGS MOUNTAIN
LAKE HENSHAW
VALLEY CENTER
INDEX MAP
LEGEND
NATURAL
MATERIAL
MATERIAL
NATURAL
MATERIAL
MATERIAL
FACTOR
RATING
ELECTRICAL CONDUCTANCE (EC) AT 25°C
LESS THAN 1,500
500 TO 1,500
GREATER THAN 5,000
CHLORIDE ppm
LESS THAN 10
BORON ppm
LESS THAN 0.5
PERCENT SODIUM
LESS THAN 60
NOTE
NO DATA AVAILABLE
2 DATA REPRESENT LATEST AVAILABLE INFORMATION GENERALLY SUBSEQUENT TO WWII
3 WHERE A LIMIT IS NOT REPRESENTED A FACTOR IS GIVEN THE RATING IS DETERMINED BY THAT FACTOR IN ADDITION TO THE ELECTRICAL CONDUCTANCE
4 NOT APPLICABLE IN FOR TRAPPING ANALYSES
5 DATA BASED ON SAMPLES OF INFERIOR
EXAMPLE
GROUND WATER PRIZES INFERIOR BECAUSE OF HIGH BORON
GROUND WATER RATED MARGINAL BECAUSE OF HIGH ELECTRICAL CONDUCTANCE
SURFACE WATER RATED INFERIOR BECAUSE OF HIGH BORON IN ADDITION TO HIGH ELECTRICAL CONDUCTANCE
UNIVERSITY OF CALIFORNIA DAVIS
JAN 29 1958
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
RATING OF GROUND WATER FOR IRRIGATION USES
SCALE OF MILES
1964

PLATE 12C


INDEX MAP
LEGEND
SAN DIEGO
SAN DIEGO NAVAL AIR STATION
CORONADO
POINT LOMA
NATIONAL CITY
CHULA VISTA
SWEETWATER
SWEETWATER RESERVOIR
LOVELAND RESERVOIR
UPPER OTAY RESERVOIR
LOWER OTAY RESERVOIR
JAMUL MOUNTAINS
SAN YSIDRO MOUNTAINS
BARRETT LAKE
MORENA RESERVOIR
LAGUNA MOUNTAINS
CALIFORNIA
MEXICO
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1968
GOV'T. DOCS. - LIBRARY
DEPARTMENT OF WATER RESOURCES
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
RATING OF GROUND WATER
FOR DOMESTIC USES



UNIVERSITY OF CALIFORNIA
DAVIS
JAN 29 1968
GOV'T. DOCS. - LIBRARY


SANTIAGO PEAK
SANTA ANA MOUNTAINS
EL TORO
SAN JOAQUIN HILLS
CRYSTAL COVE
LAGUNA BEACH
SAN JUAN CAPISTRANO
DANA POINT
CAPISTRANO BEACH
SAN CLEMENTE
SAN MATEO POINT
SAN ONOFRE
PACIFIC OCEAN
ORANGE COUNTY
RIVERSIDE COUNTY
ORANGE COUNTY
SAN DIEGO COUNTY
RIVERSIDE COUNTY
SAN DIEGO COUNTY
SANTA MARGARITA MOUNTAINS
CAMP PENDLETON NAVAL RESERVATION
SANTA ROSA PLATEAU
WILDOMAR
MURRIETA
MURRIETA HOT SPRINGS
TEMECULA
DE LUZ
FALLBROOK
ONEILL LAKE
BONSALL
LAS FLORES MISSION
CAMP DEL MAR
OCEANSIDE
SANTA MARGARITA RIVER
FALLBROOK BRANCH
OCEANSIDE AQUEDUCT
SECOND AQUEDUCT
FIRST AQUEDUCT

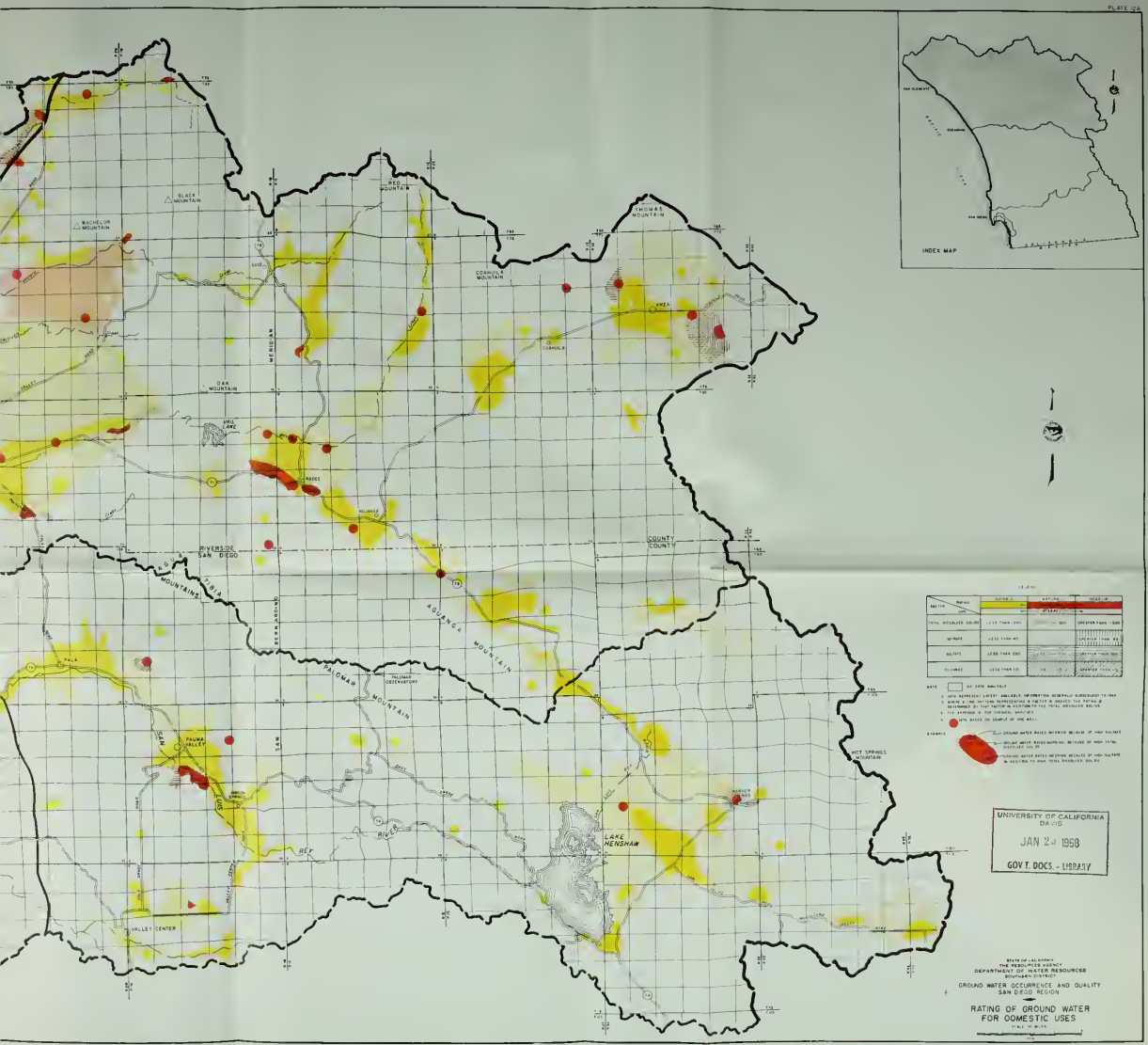


PLATE 12A
INDEX MAP
BLACK MOUNTAIN
BACHELOR MOUNTAIN
RED MOUNTAIN
THOMAS MOUNTAIN
COAHUILA MOUNTAIN
OAK MOUNTAIN
VAIL LAKE
RADEC
AGUANGA
RIVERSIDE
SAN DIEGO
COUNTY
COUNTY
AGUA TIBIA MOUNTAINS
AGUANGA MOUNTAIN
PALOMAR MOUNTAIN
PALOMAR OBSERVATORY
PALA
PAUMA VALLEY
SAN LUIS REY RIVER
LAKE HENSHAW
HOT SPRINGS MOUNTAIN
VALLEY CENTER
MERIDIAN
SAN BERNARDINO
LEGEND
GROUND WATER RATED INFERIOR BECAUSE OF HIGH SULFATE
GROUND WATER RATED INFERIOR BECAUSE OF HIGH SULFATE
GROUND WATER RATED INFERIOR BECAUSE OF HIGH SULFATE
GROUND WATER RATED INFERIOR BECAUSE OF HIGH SULFATE
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1968
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
RATING OF GROUND WATER
FOR DOMESTIC USES

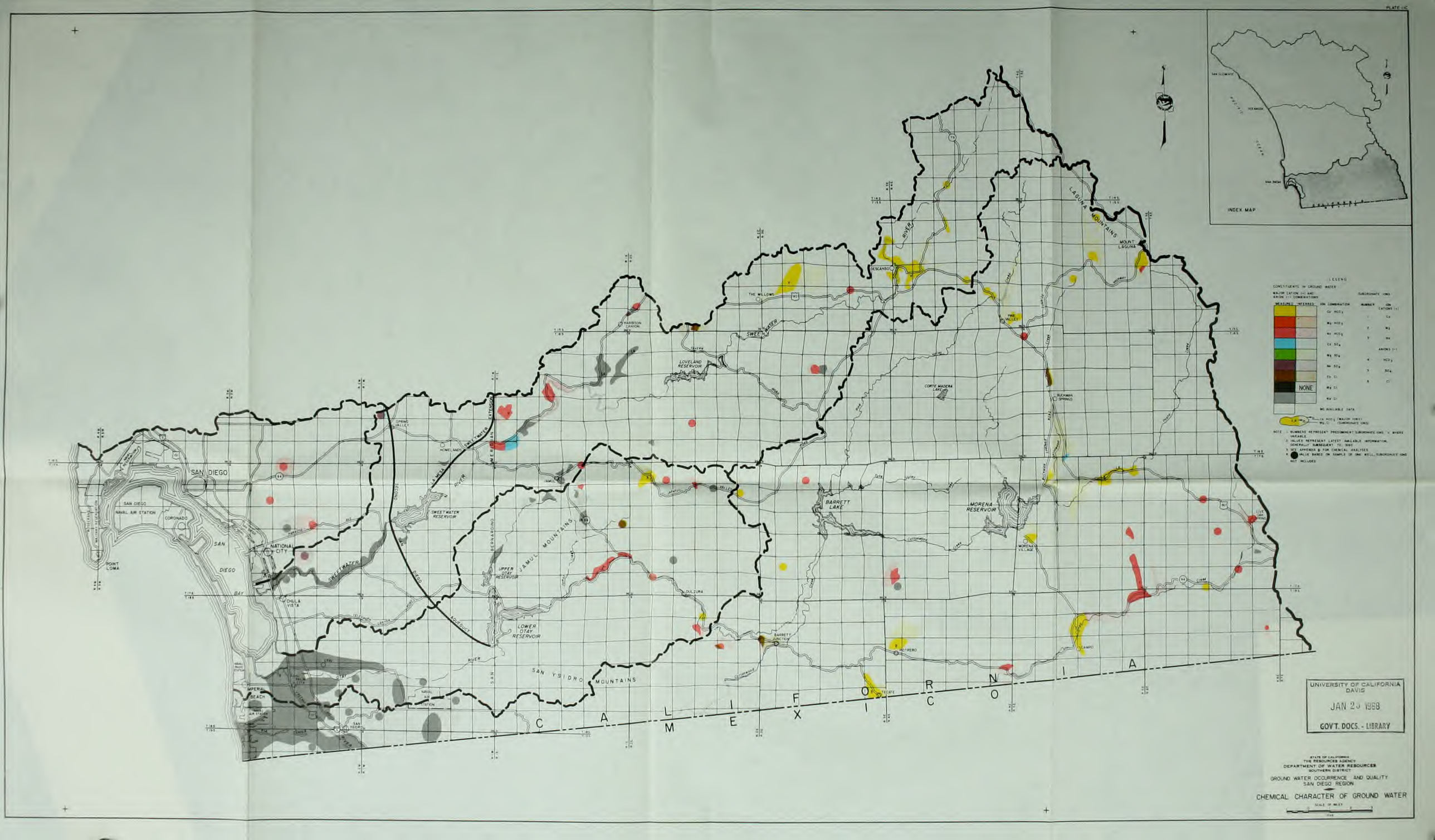
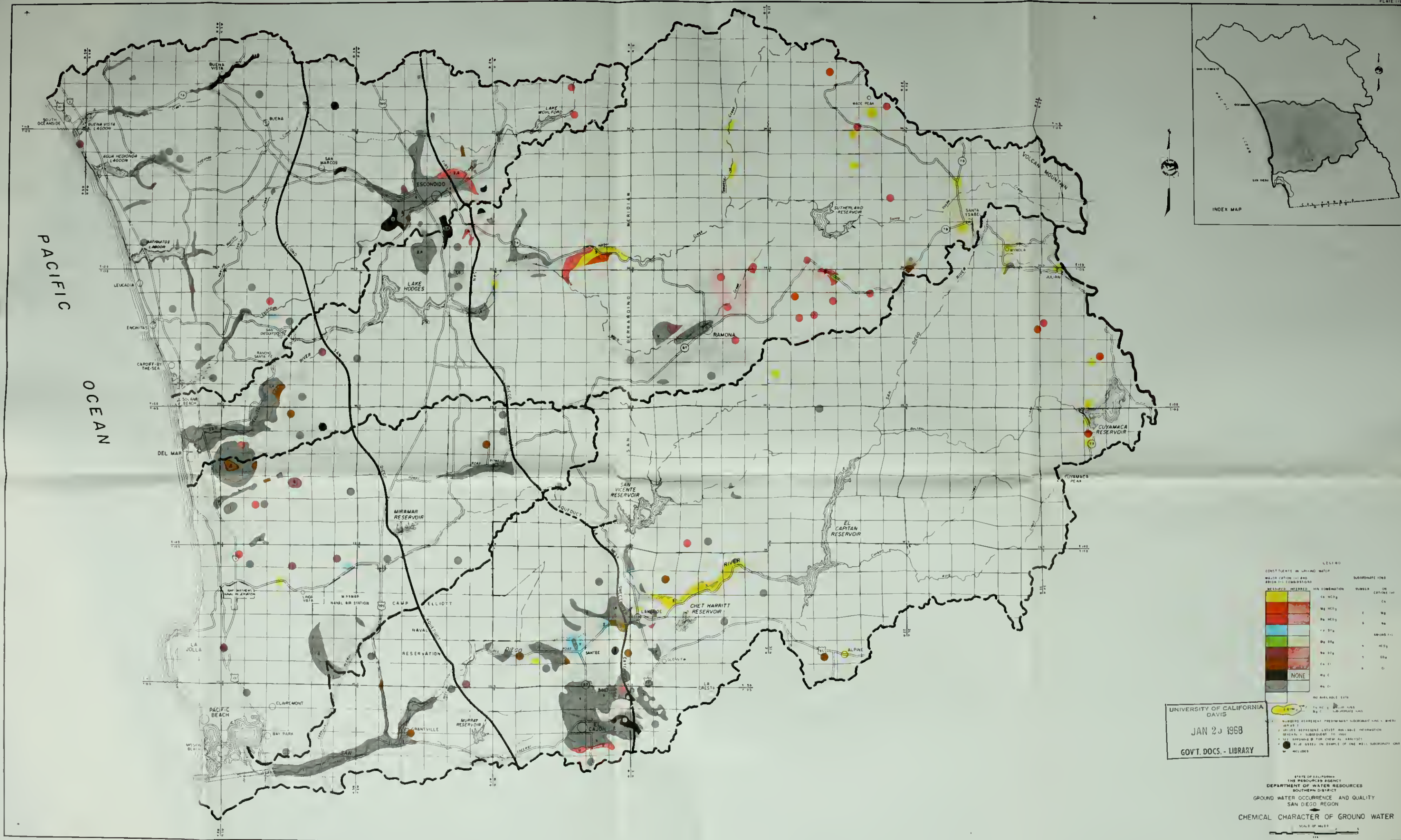


PLATE 11C
INDEX MAP
LEGEND
CONSTITUENTS IN GROUND WATER
MAJOR CATION (+) AND ANION (-) COMBINATIONS
MEASURED INFERRED
ION COMBINATION
NONE
NO AVAILABLE DATA
SUBORDINATE IONS
NUMBER
ION CATIONS (+)
ANIONS (-)
NOTE 1. NUMBERS REPRESENT PREDOMINANT SUBORDINATE IONS 'V' WHERE VARIABLE.
2. VALUES REPRESENT LATEST AVAILABLE INFORMATION, GENERALLY SUBSEQUENT TO 1960
3. SEE APPENDIX B FOR CHEMICAL ANALYSES
4. VALUE BASED ON SAMPLE OF ONE WELL, SUBORDINATE IONS NOT INCLUDED
SAN DIEGO
SAN DIEGO NAVAL AIR STATION
CORONADO
POINT LOMA
SAN DIEGO BAY
NATIONAL CITY
CHULA VISTA
IMPERIAL BEACH
SAN YSIDRO
SPRING VALLEY
HOMELANDS
SWEETWATER RESERVOIR
SWEETWATER RIVER
SECOND SAN DIEGO AQUEDUCT
JAMUL MOUNTAINS
UPPER OTAY RESERVOIR
LOWER OTAY RESERVOIR
SAN YSIDRO MOUNTAINS
DULZURA
BARRETT JUNCTION
BARRETT LAKE
MORENA RESERVOIR
MORENA VILLAGE
POTRERO
TECATE
CAMPO
LOVELAND RESERVOIR
CORTE MADERA LAKE
BUCKMAN SPRINGS
PINE VALLEY
DESCANSO
THE WILLOWS
HARBISON CANYON
LAGUNA MOUNTAINS
MOUNT LAGUNA
SWEETWATER RIVER
CALIFORNIA
MEXICO
UNIVERSITY OF CALIFORNIA DAVIS
JAN 25 1968
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
CHEMICAL CHARACTER OF GROUND WATER
SCALE OF MILES

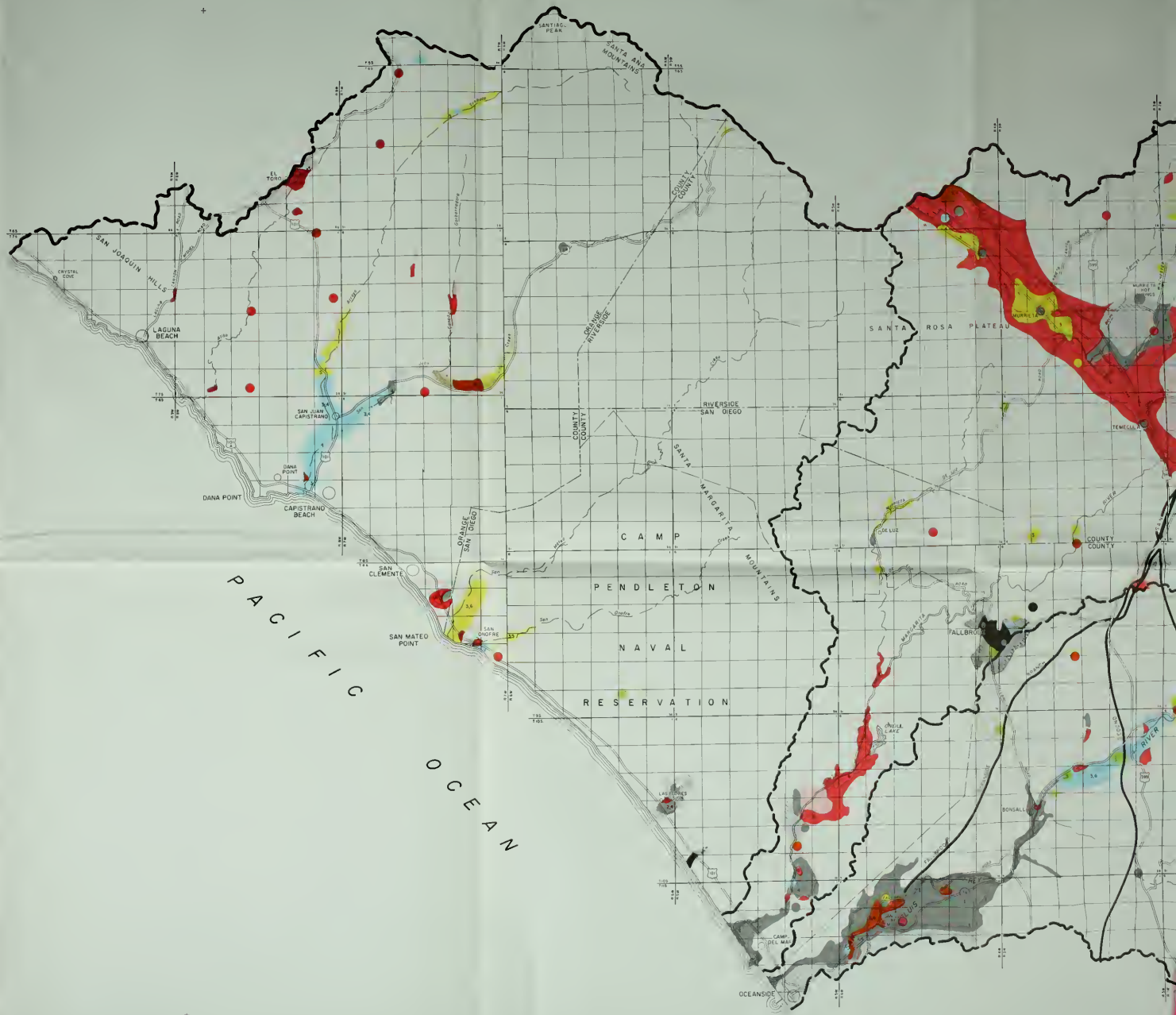


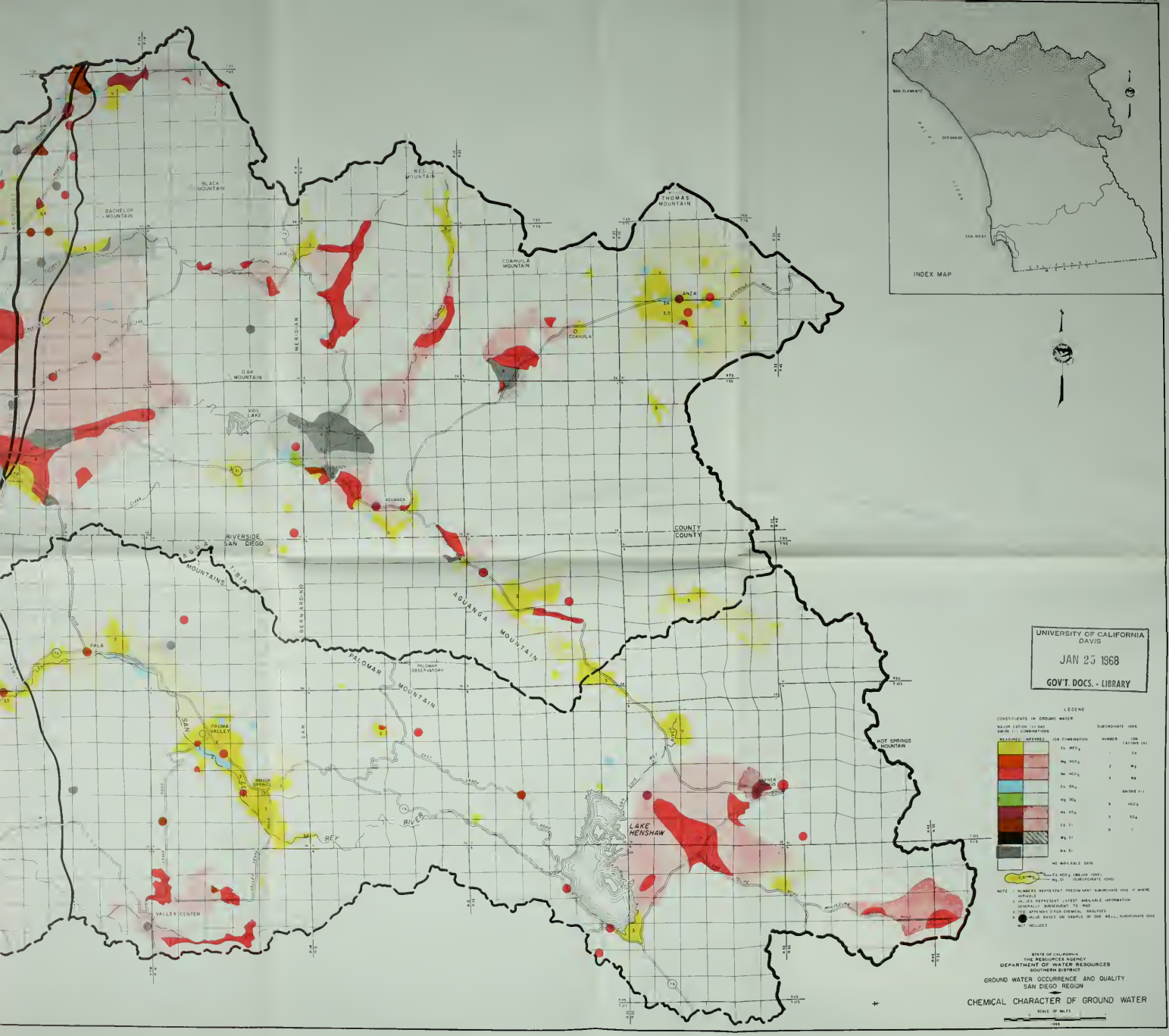
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2_ 1968
GOV'T. DOCS. - LIBRARY

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT

GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION

CHEMICAL CHARACTER OF GROUND WATER


SANTIAGO PEAK
SANTA ANA MOUNTAINS
EL TORO
SAN JOAQUIN HILLS
CRYSTAL COVE
LAGUNA BEACH
SAN JUAN CAPISTRANO
DANA POINT
CAPISTRANO BEACH
SAN CLEMENTE
SAN MATEO POINT
SAN ONOFRE
ORANGE
RIVERSIDE
COUNTY
COUNTY
RIVERSIDE
SAN DIEGO
SANTA MARGARITA MOUNTAINS
CAMP PENDLETON NAVAL RESERVATION
PACIFIC OCEAN
SANTA ROSA PLATEAU
MURRIETA
TEMECULA
DE LUZ
FALLBROOK
ONDULL LAKE
BONSALL
LAS FLORES
CAMP DEL MAR
OCEANSIDE
RIVER


INDEX MAP
SAN CLEMENTE
RIVERSIDE
PACIFIC
OCEAN
SAN DIEGO
BLACK MOUNTAIN
BACHELOR MOUNTAIN
RED MOUNTAIN
THOMAS MOUNTAIN
COAHUILA MOUNTAIN
ANZA
COAHUILA
OAK MOUNTAIN
VAIL LAKE
AGUANGA
RIVERSIDE
SAN DIEGO
COUNTY
COUNTY
AGUANGA MOUNTAIN
PALOMAR MOUNTAIN
PALOMAR OBSERVATORY
PALA
PAUMA VALLEY
PAUMA
VALLEY CENTER
HOT SPRINGS MOUNTAIN
LAKE HENSHAW
SAN LUIS REY RIVER
MERIDIAN
SAN BERNARDINO
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1968
GOV'T. DOCS. - LIBRARY
LEGEND
CONSTITUENTS IN GROUND WATER
MAJOR CATION (+) AND ANION (-) COMBINATIONS
MEASURED
INFERRED
ION COMBINATION
Ca HCO3
Mg HCO3
Na HCO3
Ca SO4
Mg SO4
Na SO4
Ca Cl
Mg Cl
Na Cl
SUBORDINATE IONS
NUMBER
ION (CATION (+))
1
Ca
2
Mg
3
Na
ANIONS (-)
4
HCO3
5
SO4
6
Cl
NO AVAILABLE DATA
Ca HCO3 (MAJOR IONS)
Mg SO (SUBORDINATE IONS)
NOTE - NUMBERS REPRESENT PREDOMINANT SUBORDINATE IONS (IF WHERE AVAILABLE
1. VALUES REPRESENT LATEST AVAILABLE INFORMATION GENERALLY SUBSEQUENT TO 1960
2. SEE APPENDIX D FOR CHEMICAL ANALYSES
3. VALUE BASED ON SAMPLE OF ONE WELL; SUBORDINATE IONS NOT INCLUDED
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
CHEMICAL CHARACTER OF GROUND WATER
SCALE OF MILES

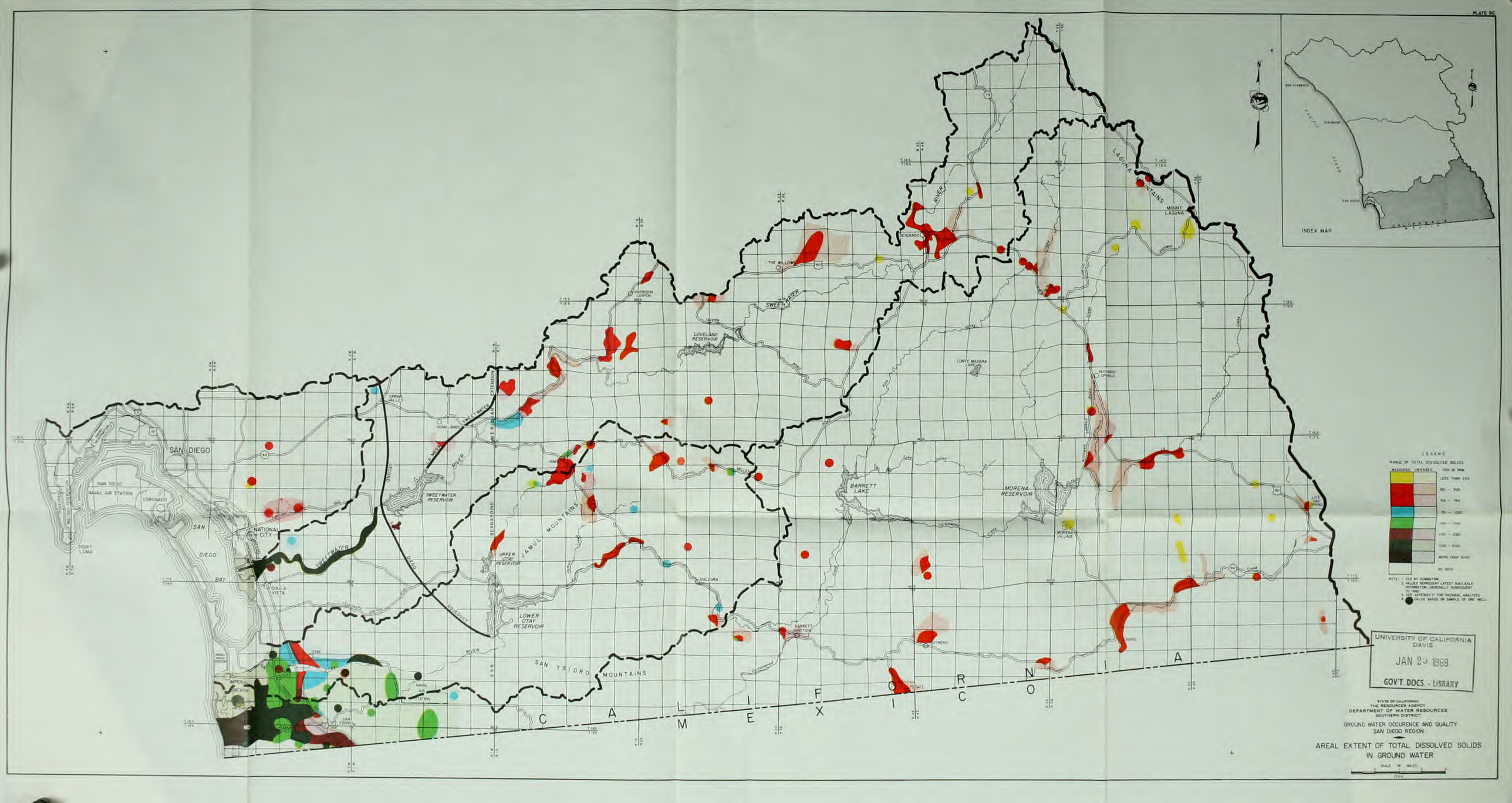
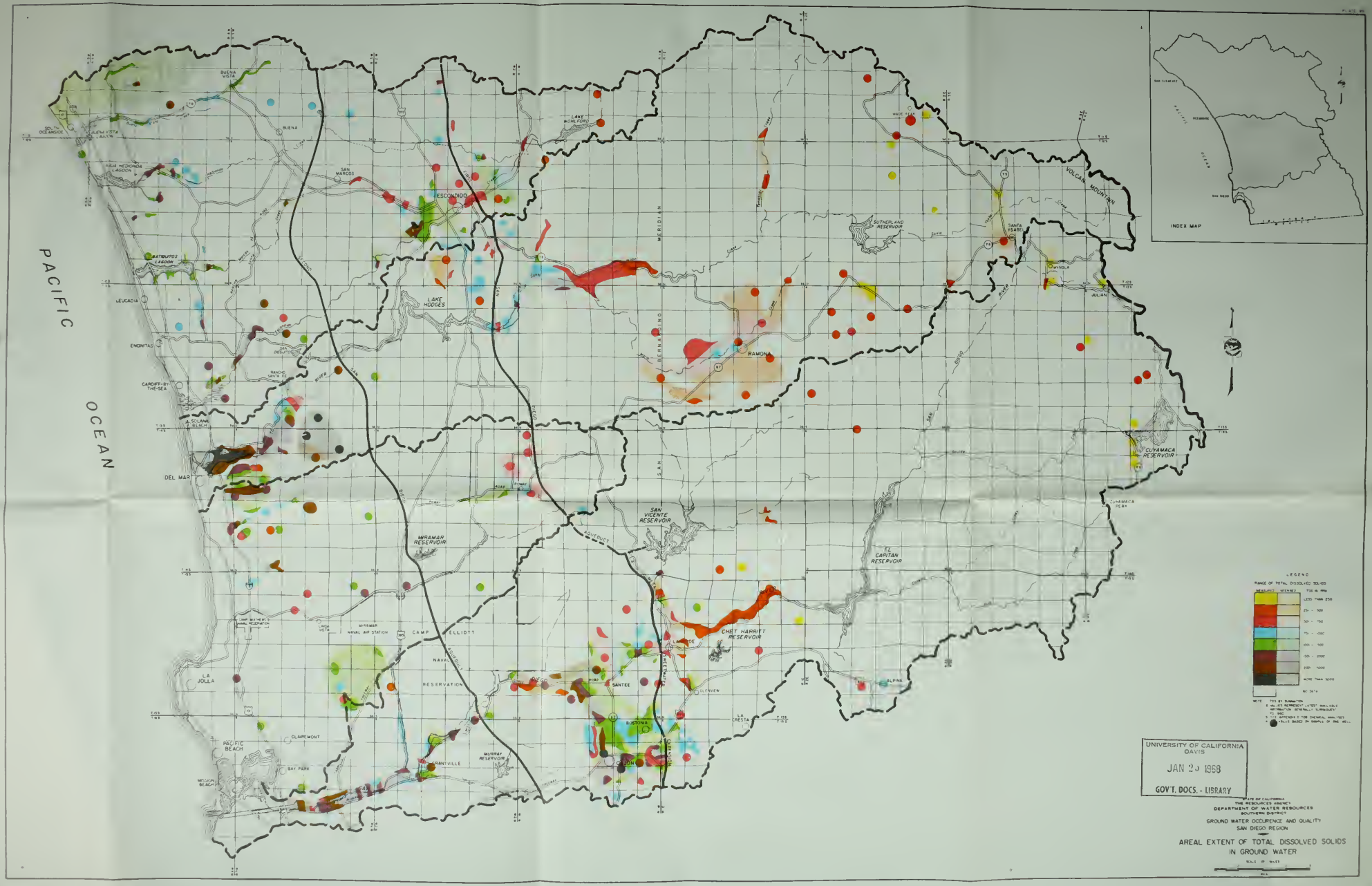
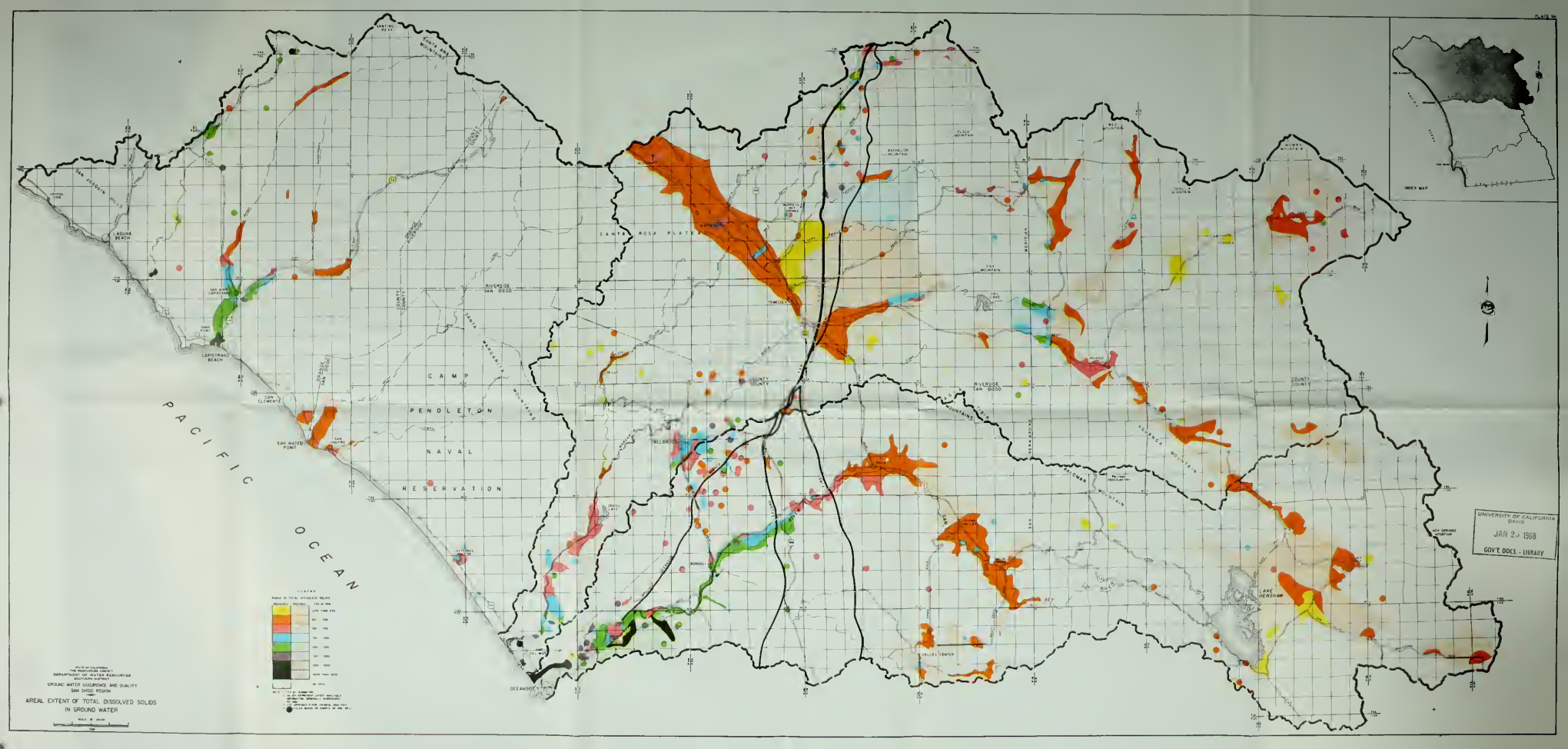


PLATE 9C
INDEX MAP
SAN DIEGO
SAN DIEGO NAVAL AIR STATION
CORONADO
POINT LOMA
NATIONAL CITY
CHULA VISTA
SAN DIEGO BAY
SWEETWATER RESERVOIR
SWEETWATER RIVER
SECOND DIEGO AQUEDUCT
HOMELAND
SPRING VALLEY
HARBISON CANYON
THE WILLOWS
DESCANSO
LOVELAND RESERVOIR
CORTE MADERA LAKE
BUCKMAN SPRINGS
LAGUNA MOUNTAINS
MOUNT LAGUNA
JAMUL MOUNTAINS
UPPER OTAY RESERVOIR
LOWER OTAY RESERVOIR
DULZURA
BARRETT LAKE
MORENA RESERVOIR
MORENA VILLAGE
BARRETT JUNCTION
POTRERO
CAMPO
TECATE
SAN YSIDRO MOUNTAINS
NAVAL AIR STATION
SAN YSIDRO
CALIFORNIA
MEXICO
LEGEND
RANGE OF TOTAL DISSOLVED SOLIDS
MEASURED
INFERRED
TDS IN PPM
LESS THAN 250
251 – 500
501 – 750
751 – 1000
1001 – 1500
1501 – 2000
2001 – 5000
MORE THAN 5000
NO DATA
NOTE: 1. TDS BY SUMMATION
2. VALUES REPRESENT LATEST AVAILABLE INFORMATION, GENERALLY SUBSEQUENT TO 1960
3. SEE APPENDIX D FOR CHEMICAL ANALYSES
4. VALUE BASED ON SAMPLE OF ONE WELL
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2[illegible] 1968
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURENCE AND QUALITY
SAN DIEGO REGION
AREAL EXTENT OF TOTAL DISSOLVED SOLIDS
IN GROUND WATER
SCALE OF MILES
1966


PACIFIC
OCEAN
BUENA VISTA
BUENA
SAN MARCOS
ESCONDIDO
LAKE WOHLFORD
LAKE HODGES
RAMONA
SUTHERLAND RESERVOIR
SANTA YSABEL
WYNOLA
JULIAN
VOLCAN MOUNTAIN
LEUCADIA
ENCINITAS
CARDIFF-BY-THE-SEA
SOLANA BEACH
DEL MAR
MIRAMAR RESERVOIR
SAN VICENTE RESERVOIR
EL CAPITAN RESERVOIR
CUYAMACA RESERVOIR
CUYAMACA PEAK
CHET HARRITT RESERVOIR
LA JOLLA
PACIFIC BEACH
CLAIREMONT
BAY PARK
MISSION BEACH
GRANTVILLE
MURRAY RESERVOIR
SANTEE
BOSTONIA
GLENVIEW
LA CRESTA
ALPINE
CAMP ELLIOTT
NAVAL RESERVATION
MIRAMAR NAVAL AIR STATION
SAN BERNARDINO MERIDIAN
INDEX MAP
LEGEND
RANGE OF TOTAL DISSOLVED SOLIDS
MEASURED
INFERRED
LESS THAN 250
NO DATA
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 20 1968
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURENCE AND QUALITY
SAN DIEGO REGION
AREAL EXTENT OF TOTAL DISSOLVED SOLIDS
IN GROUND WATER


PACIFIC OCEAN
CAMP PENDLETON NAVAL RESERVATION
SANTA ROSA PLATEAU
SAN JOAQUIN HILLS
LAGUNA BEACH
CAPISTRANO BEACH
SAN CLEMENTE
SAN MATEO POINT
SANTA ANA MOUNTAINS
SANTA MARGARITA MOUNTAINS
RIVERSIDE SAN DIEGO
COUNTY COUNTY
ORANGE RIVERSIDE
ORANGE SAN DIEGO
TEMECULA
BALLBROOK
BONSALL
OCEANSIDE
VALLEY CENTER
LAKE HENSHAW
AGUANGA MOUNTAIN
PALOMAR MOUNTAIN
BACHELOR MOUNTAIN
BLACK MOUNTAIN
OAK MOUNTAIN
MERIDIAN
INDEX MAP
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2 1968
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
AREAL EXTENT OF TOTAL DISSOLVED SOLIDS
IN GROUND WATER
SCALE OF MILES

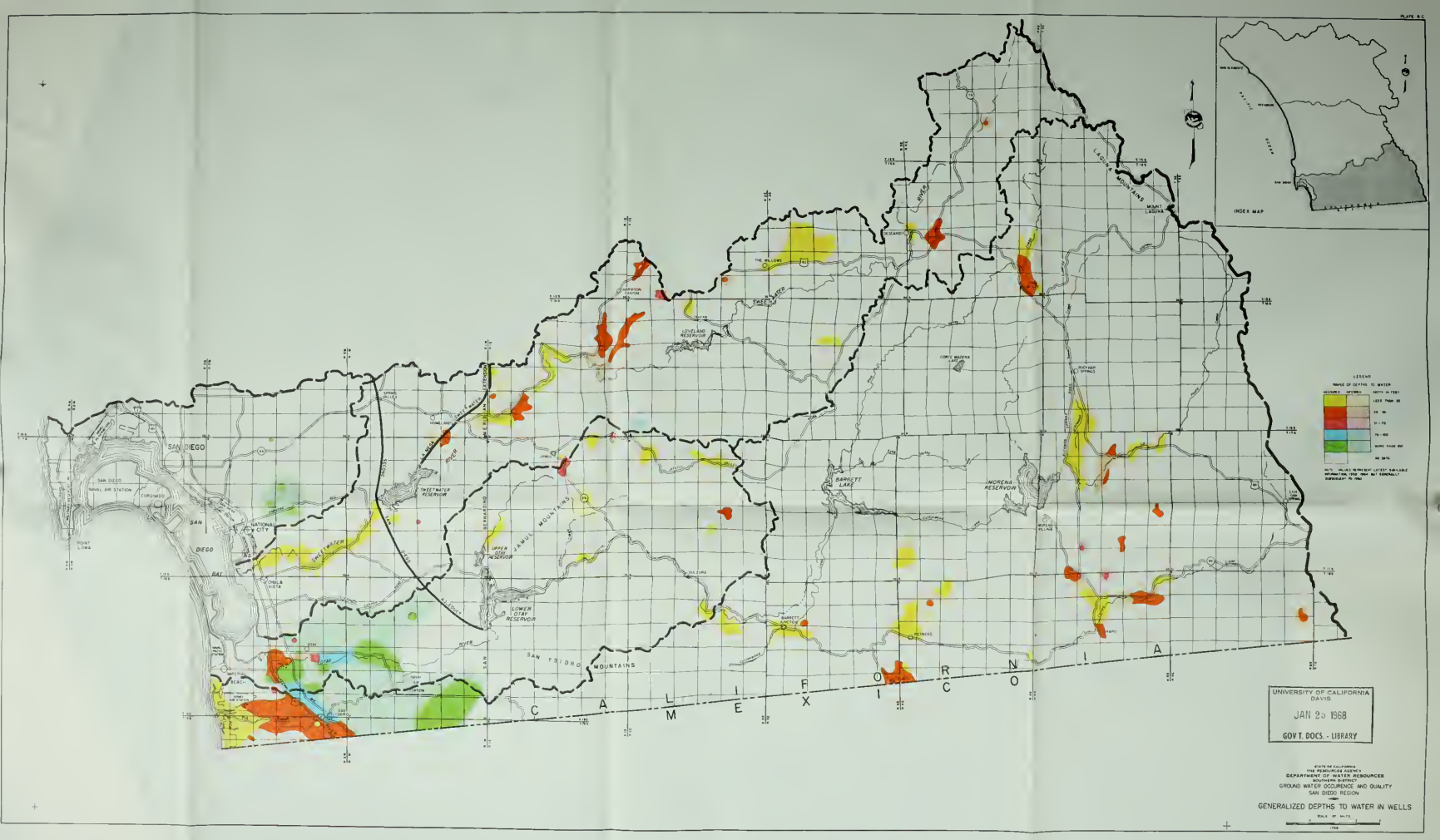
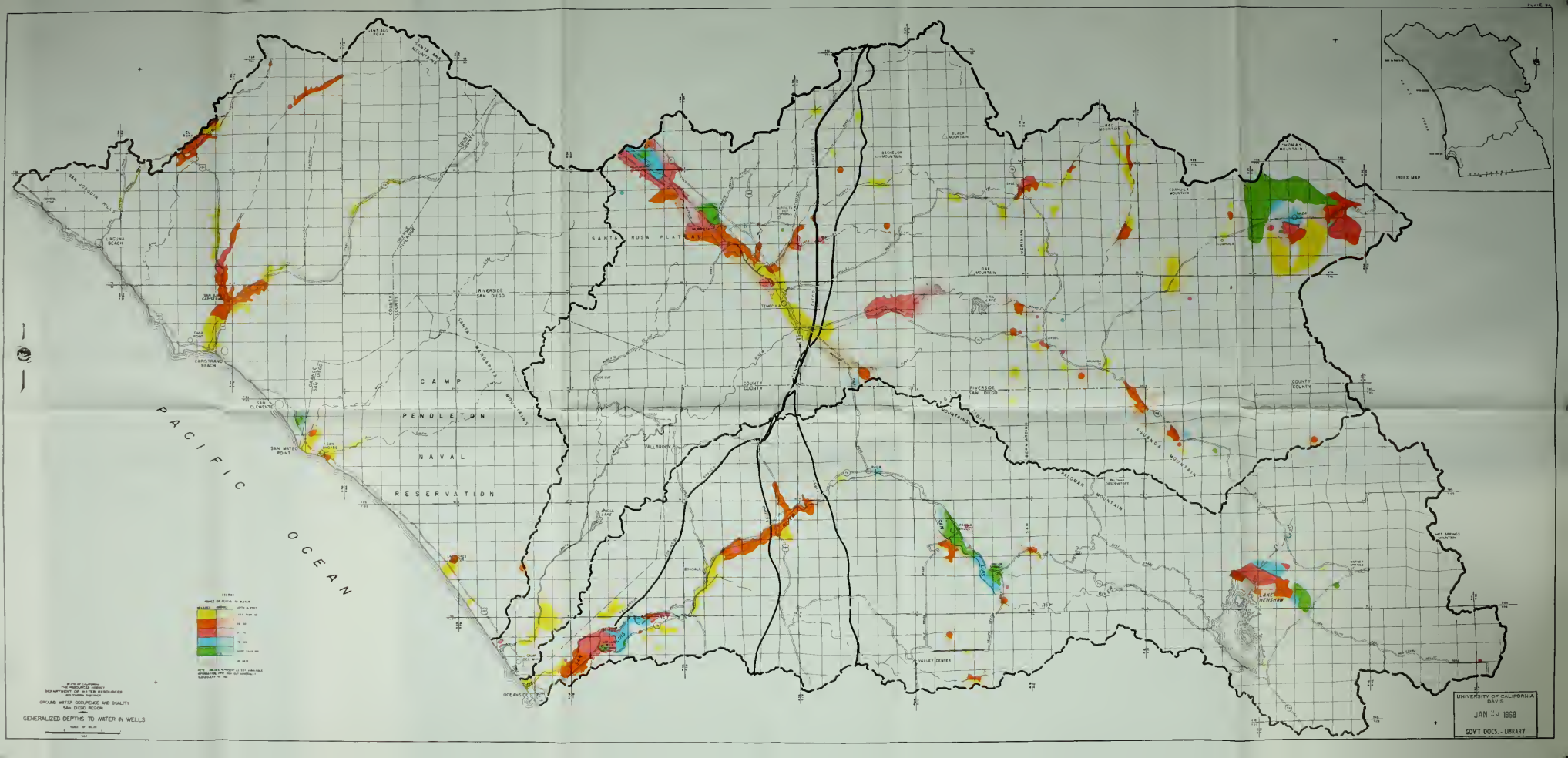
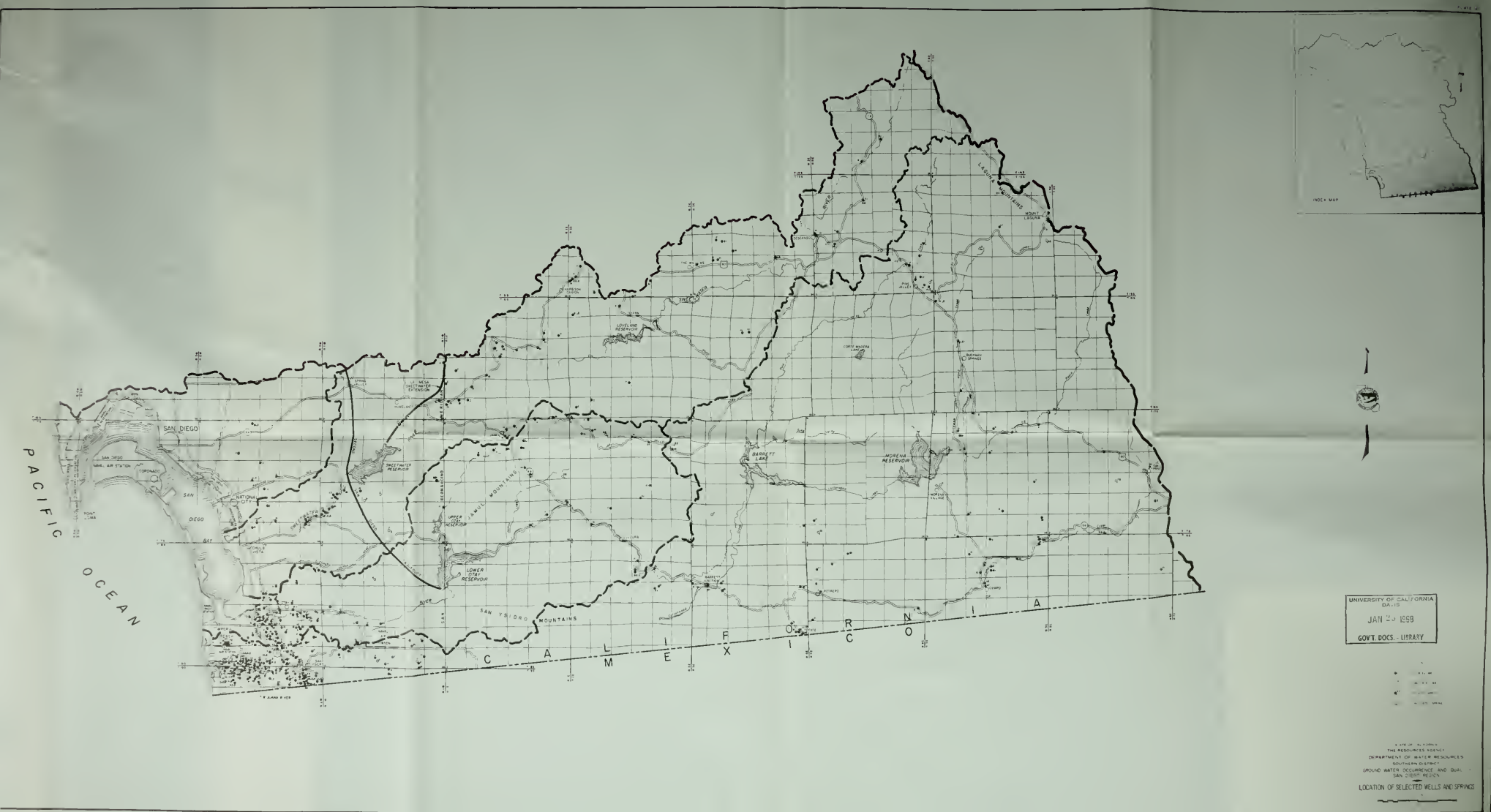


PLATE 8C
INDEX MAP
LEGEND
RANGE OF DEPTHS TO WATER
MEASURED
OBSERVED
DEPTH IN FEET
LESS THAN 20
20 - 50
51 - 75
76 - 100
MORE THAN 100
NO DATA
NOTE: VALUES REPRESENT LATEST AVAILABLE INFORMATION, 1956 1964 BUT GENERALLY AVAILABLE 70 1964
SAN DIEGO
SAN DIEGO NAVAL AIR STATION
CORONADO
POINT LOMA
SAN DIEGO BAY
NATIONAL CITY
CHULA VISTA
SWEETWATER
SWEETWATER RESERVOIR
SWEETWATER RIVER
SAN DIEGO AQUEDUCT
UPPER OTAY RESERVOIR
LOWER OTAY RESERVOIR
JAMUL MOUNTAINS
SAN YSIDRO MOUNTAINS
SAN DIEGO RIVER
SAN DIEGO AQUEDUCT
BARRETT LAKE
MORENA RESERVOIR
LOVELAND RESERVOIR
THE WILLOWS
DESCANSO
CORTE MADERA LAKE
BUCKMAN SPRINGS
LAGUNA MOUNTAINS
MOUNT LAGUNA
CALIFORNIA
MEXICO
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1968
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURENCE AND QUALITY
SAN DIEGO REGION
GENERALIZED DEPTHS TO WATER IN WELLS
SCALE OF MILES
1964

PLATE 8B

UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1968
GOV'T. DOCS. - LIBRARY


PACIFIC OCEAN
CAMP PENDLETON NAVAL RESERVATION
SANTA ROSA PLATEAU
SAN JOAQUIN HILLS
LAGUNA BEACH
SAN JUAN CAPISTRANO
CAPISTRANO BEACH
SAN CLEMENTE
SAN MATEO POINT
SAN ONOFRE
SANTA ANA MOUNTAINS
SANTA MARGARITA MOUNTAINS
RIVERSIDE SAN DIEGO
COUNTY COUNTY
TEMECULA
MURRIETA
PALLBROOK
BONSALL
OCEANSIDE
VALLEY CENTER
PALA
BACHELOR MOUNTAIN
BLACK MOUNTAIN
RED MOUNTAIN
THOMAS MOUNTAIN
CORONULA MOUNTAIN
OAK MOUNTAIN
LAKE HENSHAW
HOT SPRINGS MOUNTAIN
AGUANGA MOUNTAIN
PALOMAR MOUNTAIN
INDEX MAP
LEGEND
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
GENERALIZED DEPTHS TO WATER IN WELLS
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2 1968
GOV'T DOCS. - LIBRARY


PACIFIC OCEAN
SAN DIEGO
SAN DIEGO NAVAL AIR STATION
CORONADO
NATIONAL CITY
SAN DIEGO BAY
SWEETWATER RESERVOIR
SWEETWATER
LOWER OTAY RESERVOIR
UPPER OTAY RESERVOIR
JAMUL MOUNTAINS
SAN YSIDRO MOUNTAINS
LOVELAND RESERVOIR
BARRETT LAKE
MORENA RESERVOIR
LAGUNA MOUNTAINS
MOUNT LAGUNA
CALIFORNIA
MEXICO
INDEX MAP
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1959
GOV'T. DOCS. - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUAL
SAN DIEGO REGION
LOCATION OF SELECTED WELLS AND SPRINGS

UNIVERSITY OF CALIFORNIA
DAVIS
JAN 23 1968
GOV'T. DOCS. - LIBRARY

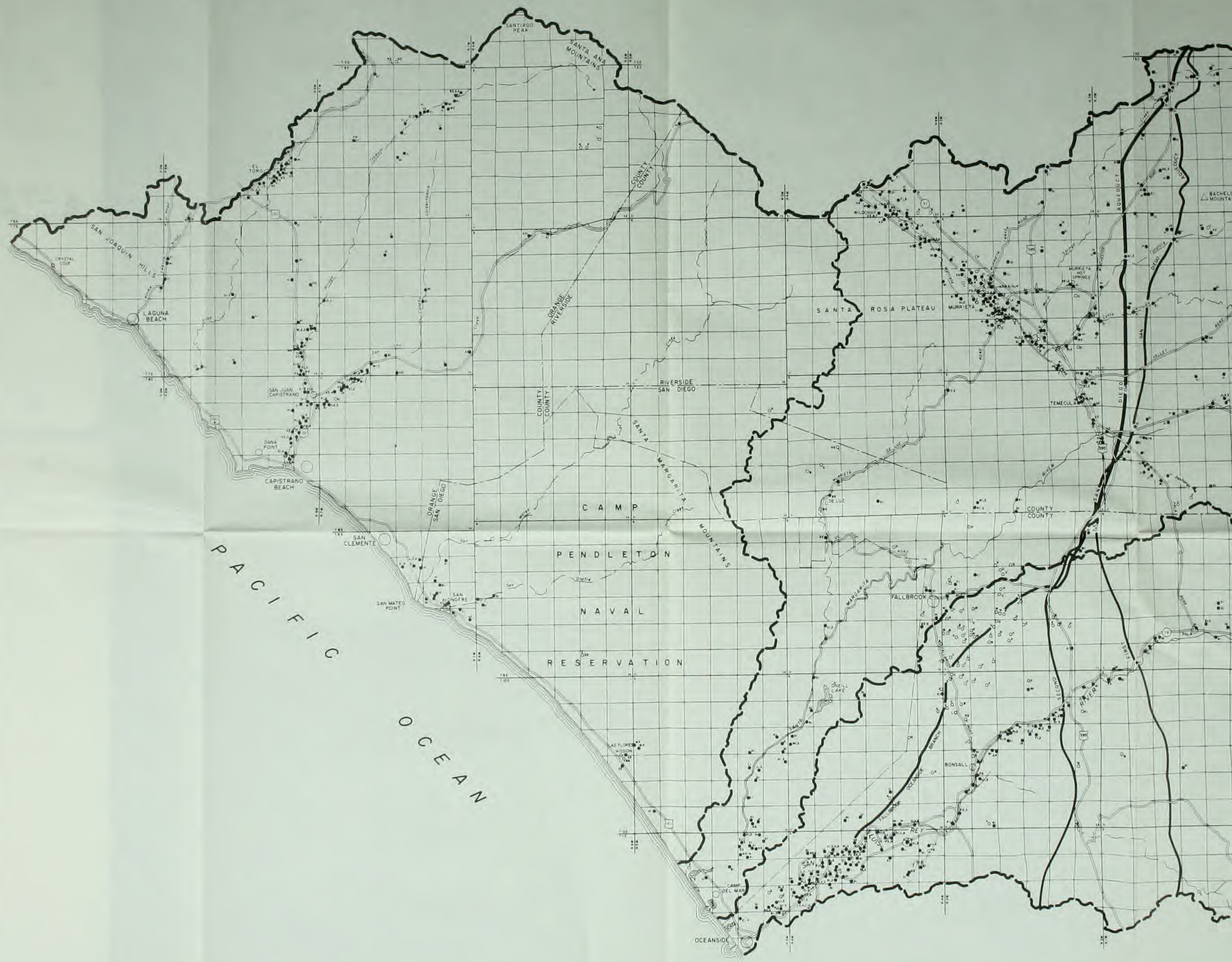
LEGEND

- LOCATED WELL
- UNLOCATED WELL
- LOCATED SPRING
- UNLOCATED SPRING

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION

LOCATION OF SELECTED WELLS AND SPRINGS

SCALE OF MILES


SANTIAGO PEAK
SANTA ANA MOUNTAINS
EL TORO
SAN JOAQUIN HILLS
CRYSTAL COVE
LAGUNA BEACH
SAN JUAN CAPISTRANO
DANA POINT
CAPISTRANO BEACH
SAN CLEMENTE
SAN MATEO POINT
SAN ONOFRE
ORANGE
SAN DIEGO
COUNTY
COUNTY
ORANGE
RIVERSIDE
RIVERSIDE
SAN DIEGO
SANTA MARGARITA MOUNTAINS
CAMP PENDLETON NAVAL RESERVATION
PACIFIC OCEAN
LAS FLORES MISSION
CAMP DEL MAR
OCEANSIDE
SANTA ROSA PLATEAU
WILDOMAR
MURRIETA
MURRIETA HOT SPRINGS
TEMECULA
DE LUZ
COUNTY
COUNTY
FALLBROOK
ONEILL LAKE
BONSALL
SAN LUIS REY
FALLBROOK OCEANSIDE BRANCH
SECOND
FIRST
RIVER
AQUEDUCT
SAN DIEGO
BACHELOR MOUNTAIN

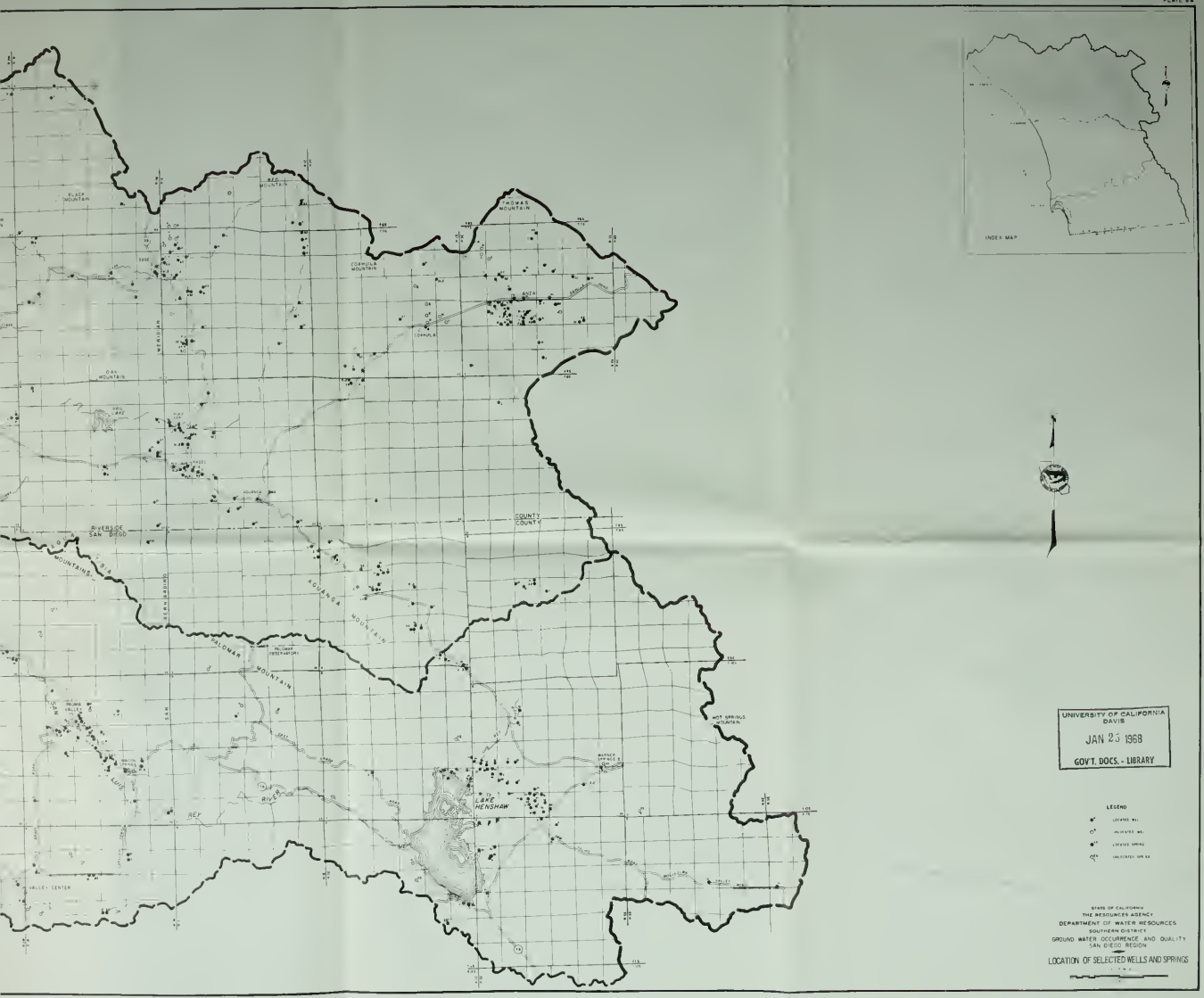
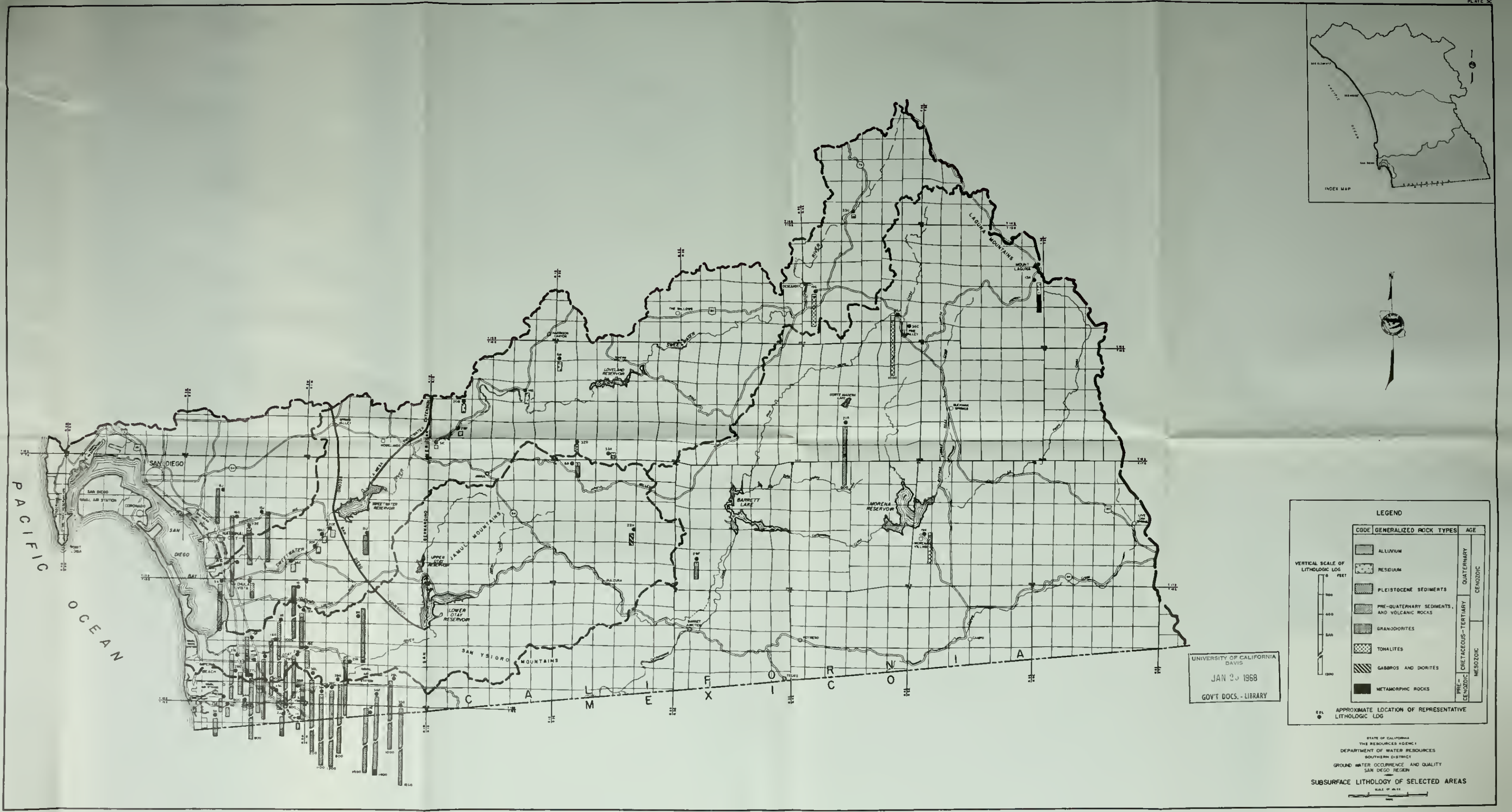
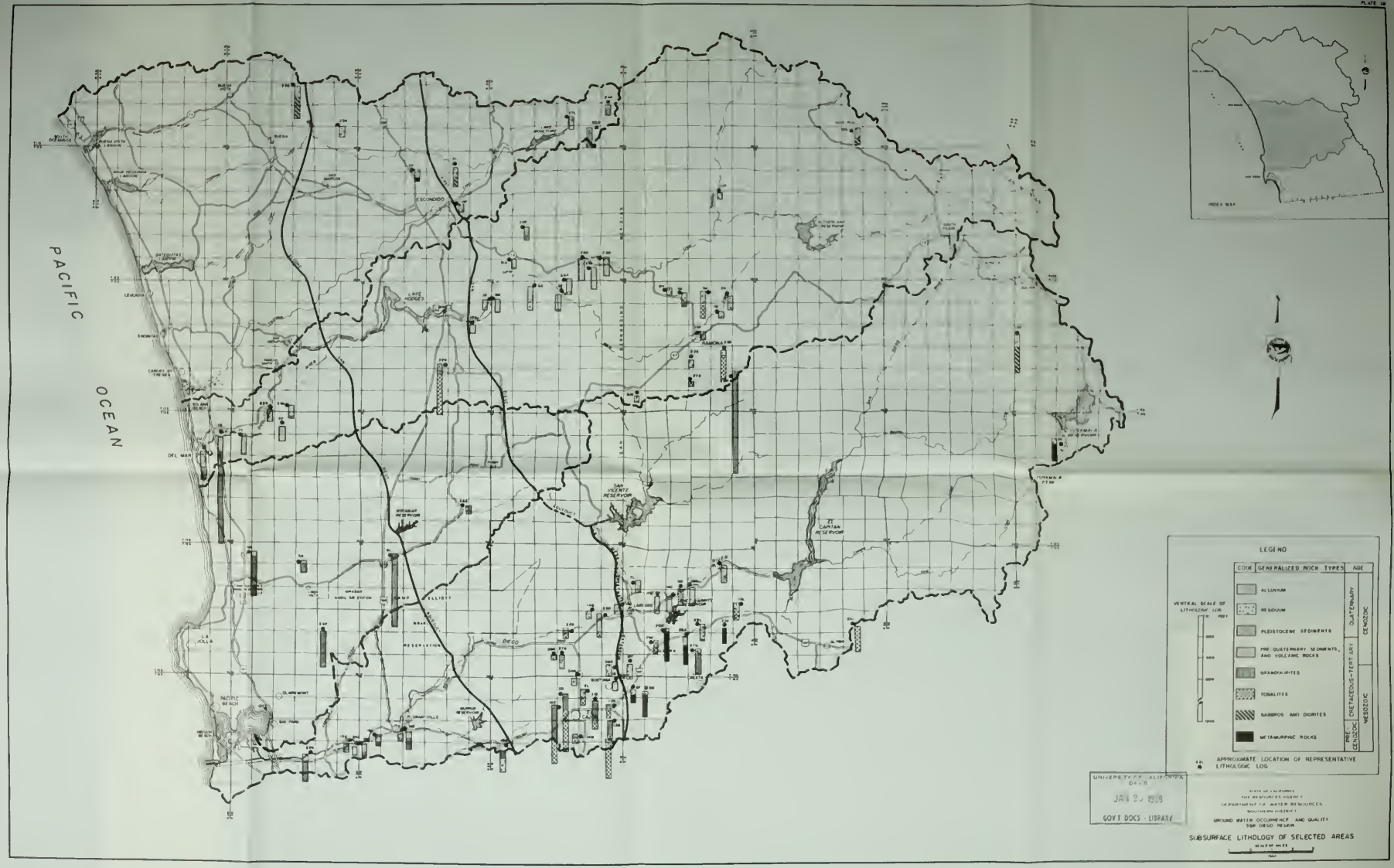
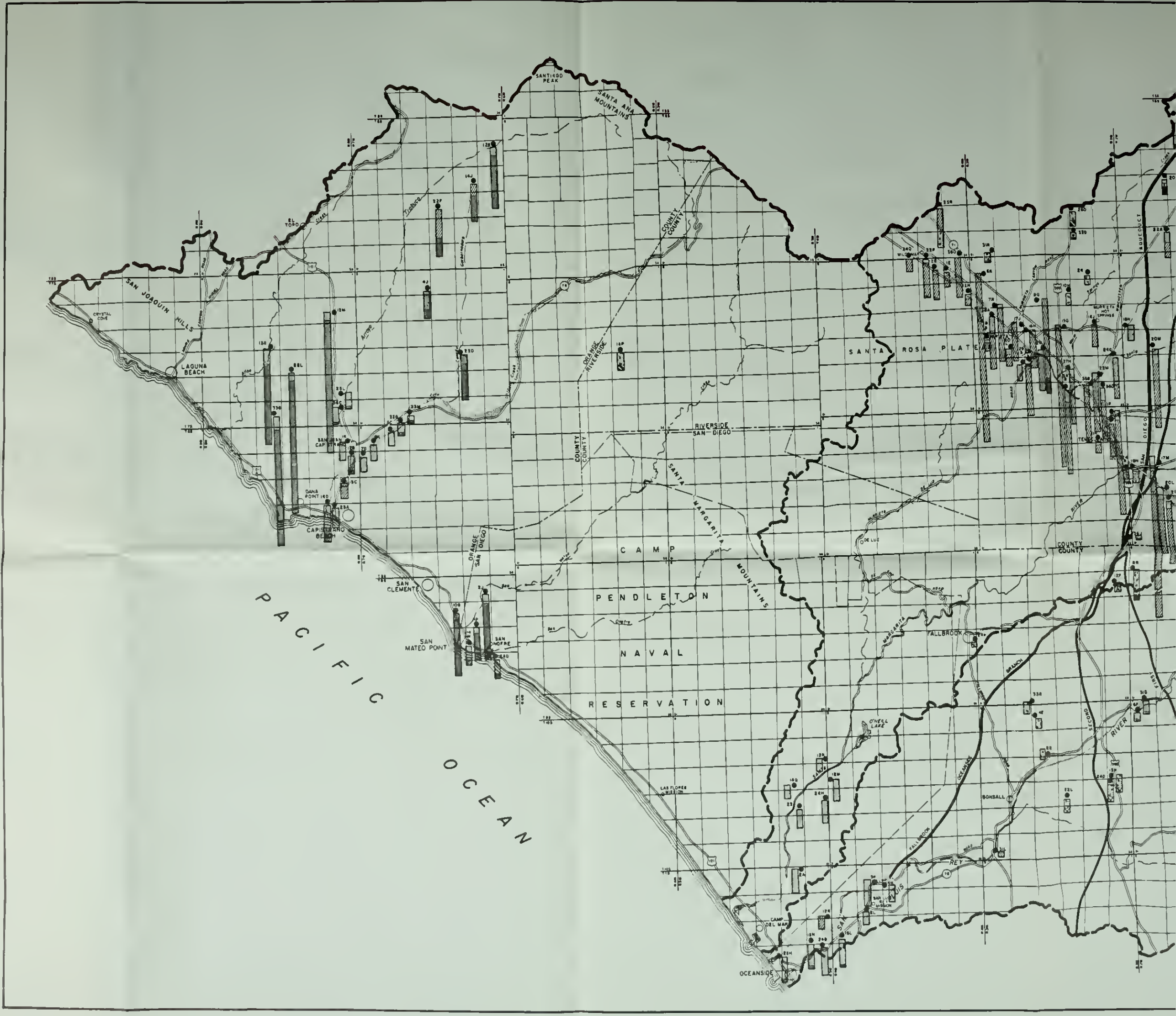


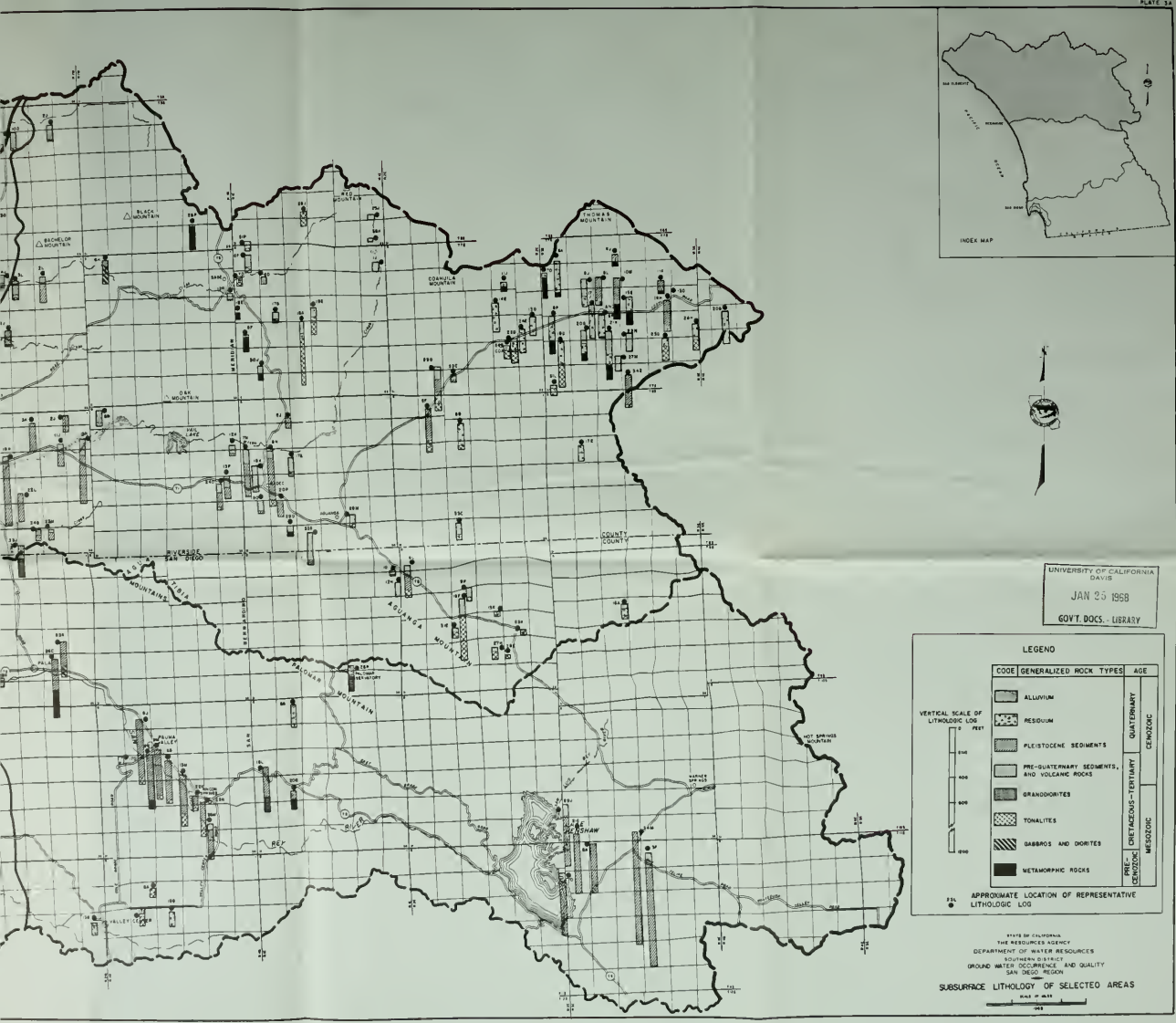
PLATE 6A
INDEX MAP
BLACK MOUNTAIN
RED MOUNTAIN
THOMAS MOUNTAIN
COAHUILA MOUNTAIN
ANZA
COAHUILA
OAK MOUNTAIN
VAIL LAKE
PASEO
AGUANGA
RIVERSIDE
SAN DIEGO
COUNTY
COUNTY
MOUNTAINS
AGUANGA MOUNTAIN
PALOMAR OBSERVATORY
PALOMAR MOUNTAIN
SAN BERNARDINO
MERIDIAN
PALMA VALLEY
LUIS REY RIVER
LAKE HENSHAW
HOT SPRINGS MOUNTAIN
VALLEY CENTER
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1968
GOV'T. DOCS. - LIBRARY
LEGEND
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION
LOCATION OF SELECTED WELLS AND SPRINGS



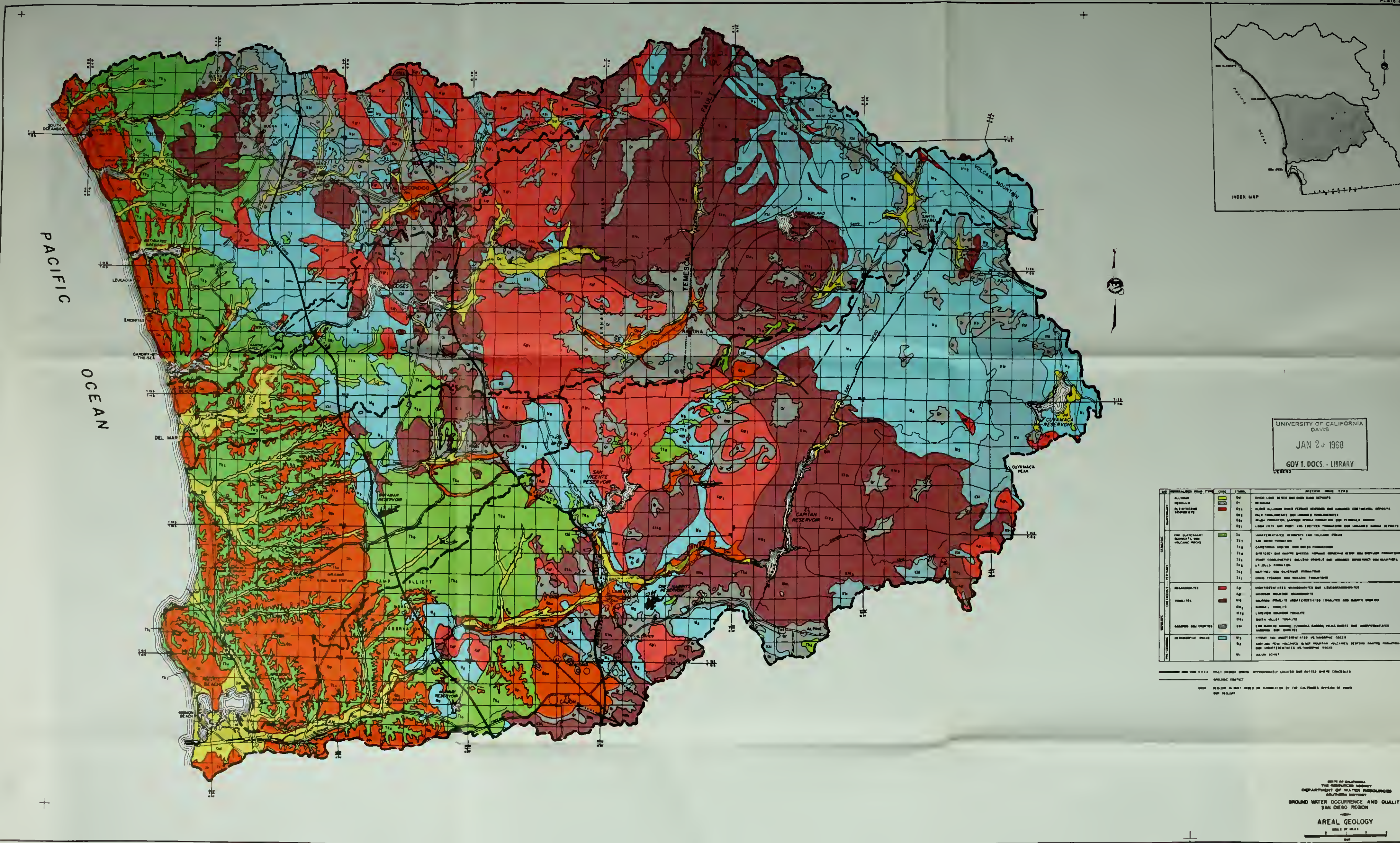
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2_ 1968
GOV'T DOCS. - LIBRARY


PACIFIC
OCEAN
ESCONDIDO
LAKE HODGES
RAMONA
SAN VICENTE RESERVOIR
EL CAPITAN RESERVOIR
DEL MAR
LA JOLLA
PACIFIC BEACH
CLAIREMONT
SAN DIEGO
LEGEND
CODE
GENERALIZED ROCK TYPES
AGE
ALLUVIUM
RESIDUUM
PLEISTOCENE SEDIMENTS
PRE QUATERNARY SEDIMENTS, AND VOLCANIC ROCKS
GRANODIORITES
TOBALITES
GABBROS AND DIORITES
METAMORPHIC ROCKS
QUATERNARY
CENOZOIC
CRETACEOUS-TERTIARY
MESOZOIC
PRE-CENOZOIC
APPROXIMATE LOCATION OF REPRESENTATIVE LITHOLOGIC LOG
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 20 1988
GOV'T DOCS - LIBRARY
STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
GROUND WATER OCCURRENCE AND QUALITY
SDR DIEGO REGION
SUBSURFACE LITHOLOGY OF SELECTED AREAS

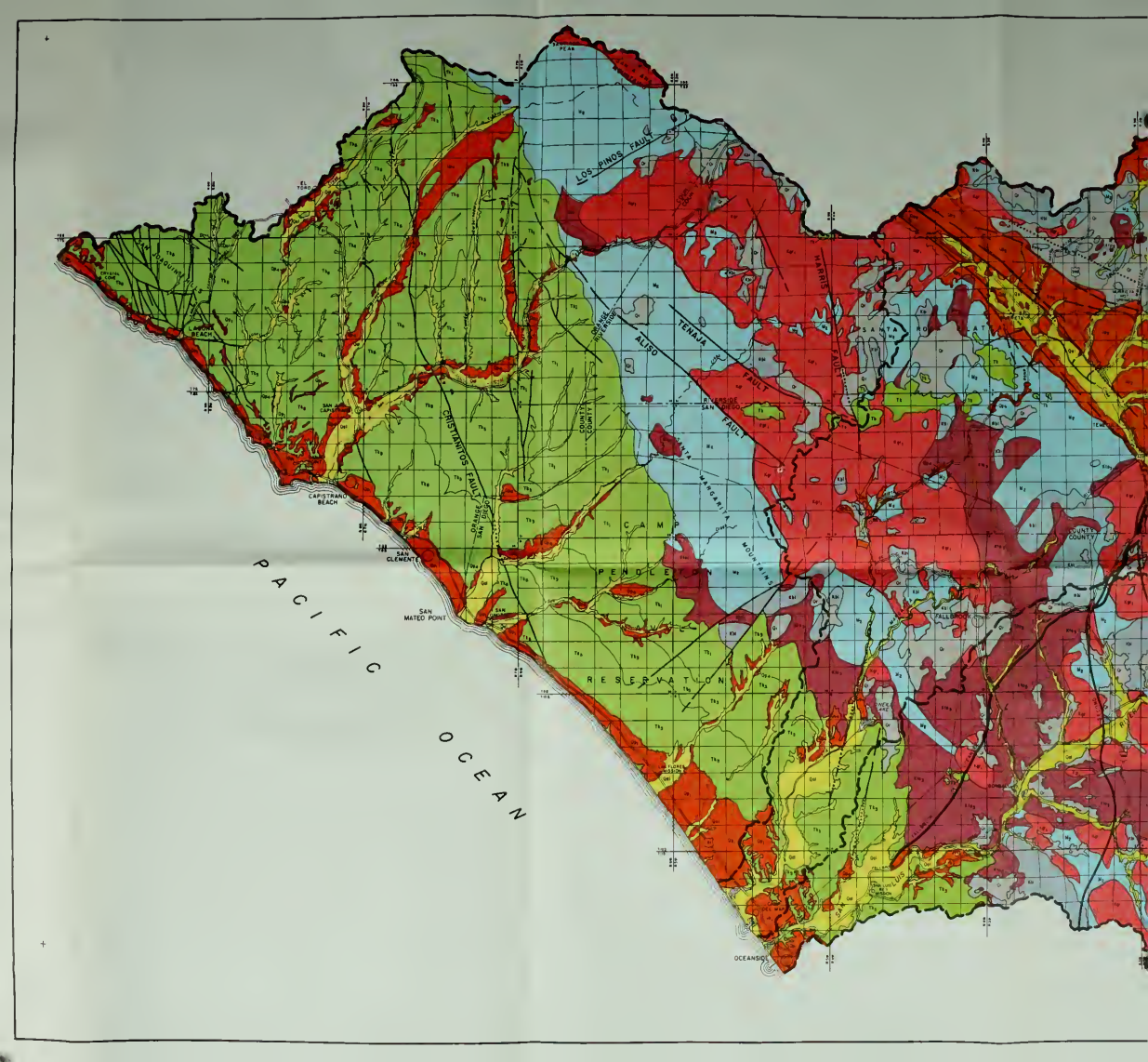

SANTIAGO PEAK
SANTA ANA MOUNTAINS
EL TORO
SAN JOAQUIN HILLS
CRYSTAL COVE
LAGUNA BEACH
DANA POINT
CAPISTRANO BEACH
SAN JUAN CAPISTRANO
SAN CLEMENTE
SAN MATEO POINT
SAN ONOFRE
PACIFIC OCEAN
ORANGE COUNTY
RIVERSIDE COUNTY
SAN DIEGO
CAMP PENDLETON NAVAL RESERVATION
SANTA MARGARITA MOUNTAINS
SANTA ROSA PLATE
DE LUZ
FALLBROOK
O'NEILL LAKE
LAS FLORES MISSION
BONSALL
SAN LUIS REY
CAMP DEL MAR
OCEANSIDE
AQUEDUCT
TEMECULA
SAN DIEGO RIVER
SECOND
MURRIETA HOT SPRINGS



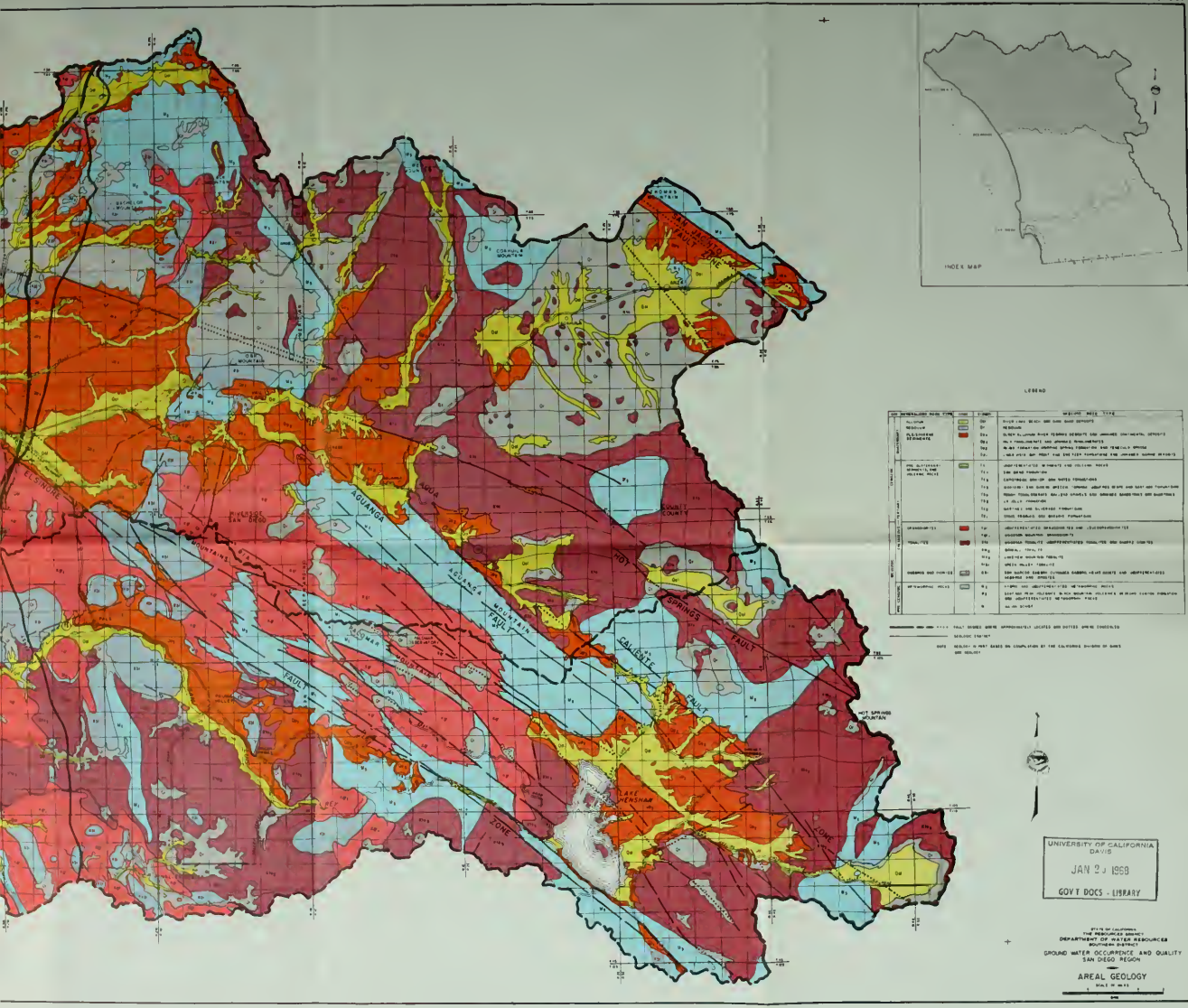
UNIVERSITY OF CALIFORNIA
DAVIS
JAN 25 1968
GOVT. DOCS. - LIBRARY



UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2J 1968
GOV T. DOCS. - LIBRARY



LOS PINOS FAULT
HARRIS FAULT
TENAJA FAULT
ALISO FAULT
CRISTIANITOS FAULT
ORANGE RIVERSIDE
RIVERSIDE SAN DIEGO
COUNTY COUNTY
SANTA MARGARITA MOUNTAINS
CAMP PENDLETON RESERVATION
CAPISTRANO BEACH
SAN CLEMENTE
SAN MATEO POINT
PACIFIC OCEAN
OCEANSIDE
FALLBROOK

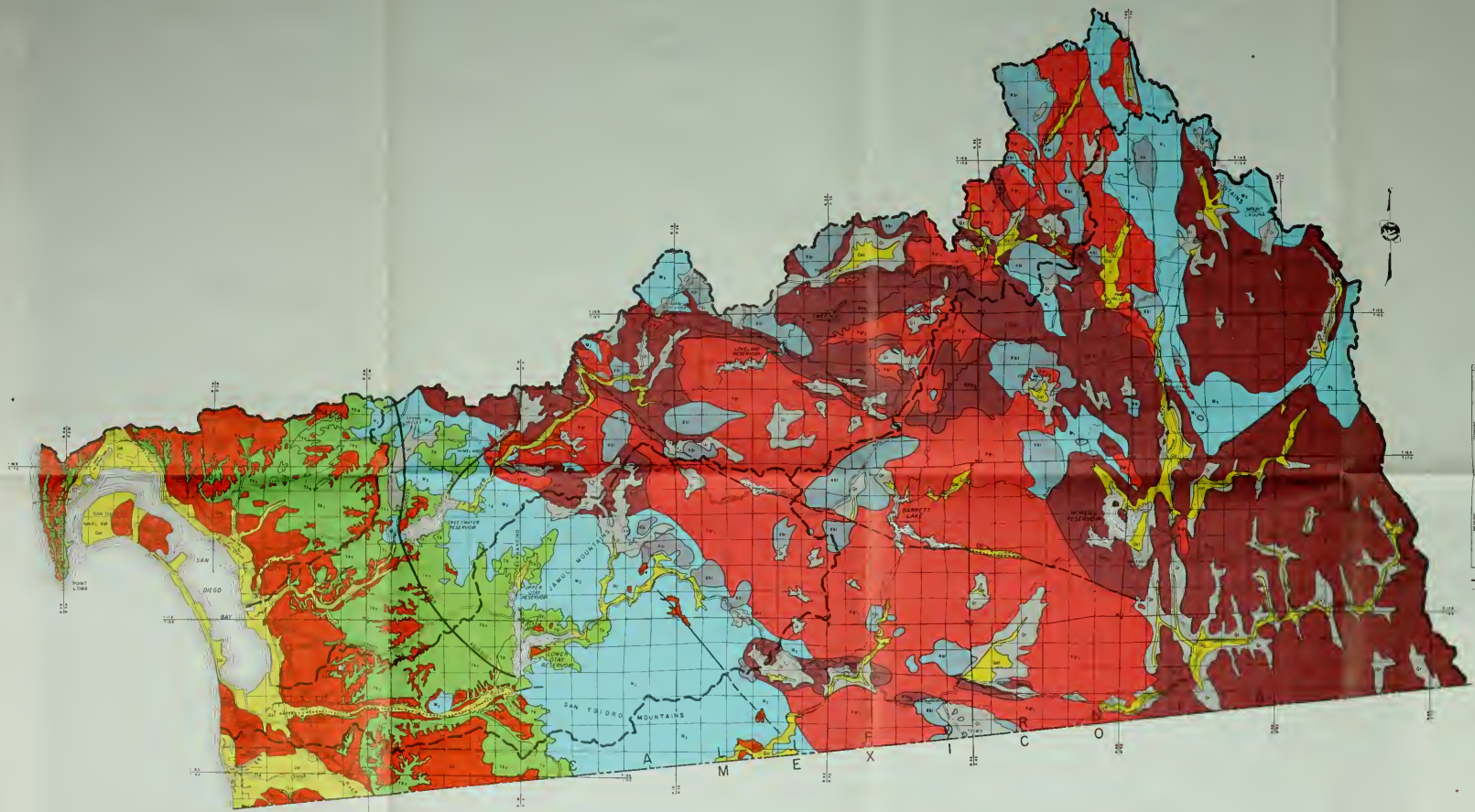


UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2 J 1968
GOV'T DOCS - LIBRARY

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT

GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION

AREAL GEOLOGY



LEGEND

AGE	GEOLOGIC FORMATION	COLOR	SYMBOL	DESCRIPTION
QUATERNARY	RECENT DEPOSITS		Qal	RIVER, LAKE, BEACH AND DUNE SAND DEPOSITS
	PLEISTOCENE DEPOSITS		Qt	TERRACE
			Qpc	OLDER ALLUVIAL RIVER TERRACE DEPOSITS AND UNDIVIDED CONTINENTAL DEPOSITS
			Qpj	JULIAN FANGLOMERATE AND UNDIVIDED FANGLOMERATE
			Qpg	PALM SPRINGS FORMATION, DEPOSITS OF PLEISTOCENE AGE
			Qpu	UNCLASSIFIED PLEISTOCENE DEPOSITS
TERTIARY	PRE-CRETACEOUS SEDIMENTARY AND VOLCANIC ROCKS		Tv	UNDIFFERENTIATED SEDIMENTARY AND VOLCANIC ROCKS
			Tsv	SANDSTONE FORMATION
			Tpg	LONGITUDE AND DE SOTO WATER FORMATIONS
			Tpg	DOMITILA AND MISSION BRIDGE FORMATIONS, MONTEREZ, SLOPE AND MARTINEZ FORMATIONS
			Tpg	POINT LOMA FORMATIONS, MILLING GRANITE AND UNDIVIDED SANDSTONES AND MUDSTONES
			Tpg	LA JOLLA FORMATION
			Tpg	SANTIAGO AND SILVERADO FORMATIONS
			Tpu	OTHER TERTIARY AND UNDIVIDED FORMATIONS
	GRANODIORITES		Kgr	UNDIFFERENTIATED GRANODIORITES AND LEUCOGRANODIORITES
			Kgr	WOODSON MOUNTAIN GRANODIORITE
	TONALITES		Kt	ANCIENT TONALITE UNDIFFERENTIATED TONALITES AND QUARTZ DIORITES
			Kbg	BONSALL TONALITE
			Kbg	LAKESIDE TONALITE CONTACTS
			Kbg	GREEN VALLEY TONALITE
	GABBROS AND DIORITES		Kd	SAN MARCOS GABBRO, OTAY MESA GABBRO, VISTA DIORITE AND UNDIFFERENTIATED GABBROS AND DIORITES
	METAMORPHIC ROCKS		Mz	TRIASSIC AND UNDIFFERENTIATED METAMORPHIC ROCKS
			Mz	JURASSIC AND TRIASSIC VOLCANIC, BLUE MOUNTAIN VOLCANICS, JULIAN AND LAKESIDE FORMATION AND UNDIFFERENTIATED METAMORPHIC ROCKS
			P	PALEOZOIC

FAULT SHOWN WHERE APPROXIMATELY LOCATED AND DOTTED WHERE CONCEALED

GEOLOGIC CONTACT

NOTE: GEOLOGY IS MOSTLY BASED ON FOUNDATION BY THE CALIFORNIA DIVISION OF MINES AND GEOLOGY

UNIVERSITY OF CALIFORNIA
DAVIS
JAN 2 1959
GOVT DOCS. - LIBRARY

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT

GROUND WATER OCCURRENCE AND QUALITY
SAN DIEGO REGION

AREAL GEOLOGY

SCALE OF MILES