

EXPLANATION








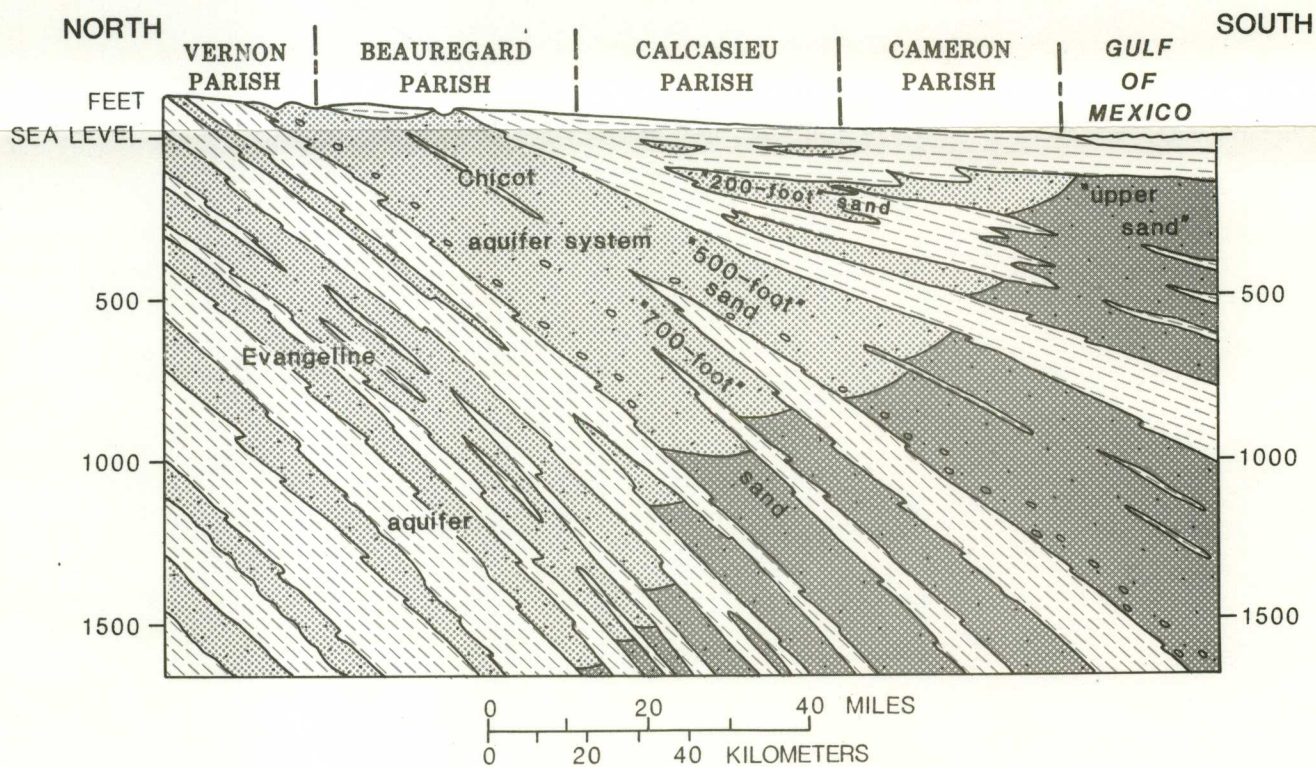
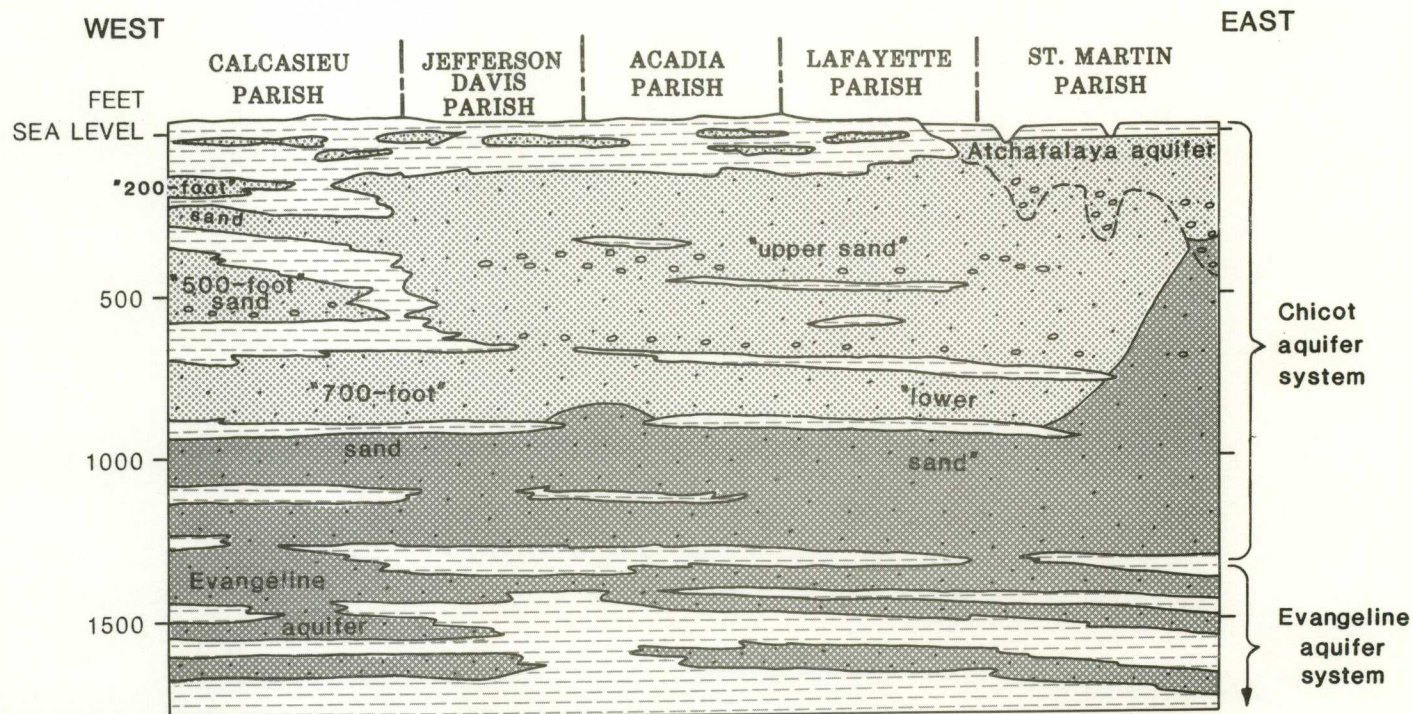
-  Recharge area of the Atchafalaya aquifer
-  Recharge area of the Chicot aquifer system
-  Recharge area of the Evangeline aquifer
-  Recharge area of the upper part of Jasper aquifer
-  Approximate boundary between massive sand of the Chicot aquifer system to the north and the "upper sand" and "lower sand" of the Chicot aquifer system to the south
-  Approximate boundary between massive sand of the Chicot aquifer to the north and the Lake Charles "500-foot" and "700-foot" sands to the south in Calcasieu Parish
-  Approximate boundary between Lake Charles sands and "upper sand" and "lower sand" of the Chicot aquifer system

PLATE 1. LOCATION OF THE STUDY AREA AND RECHARGE AREAS OF THE FOUR MAJOR AQUIFERS, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)

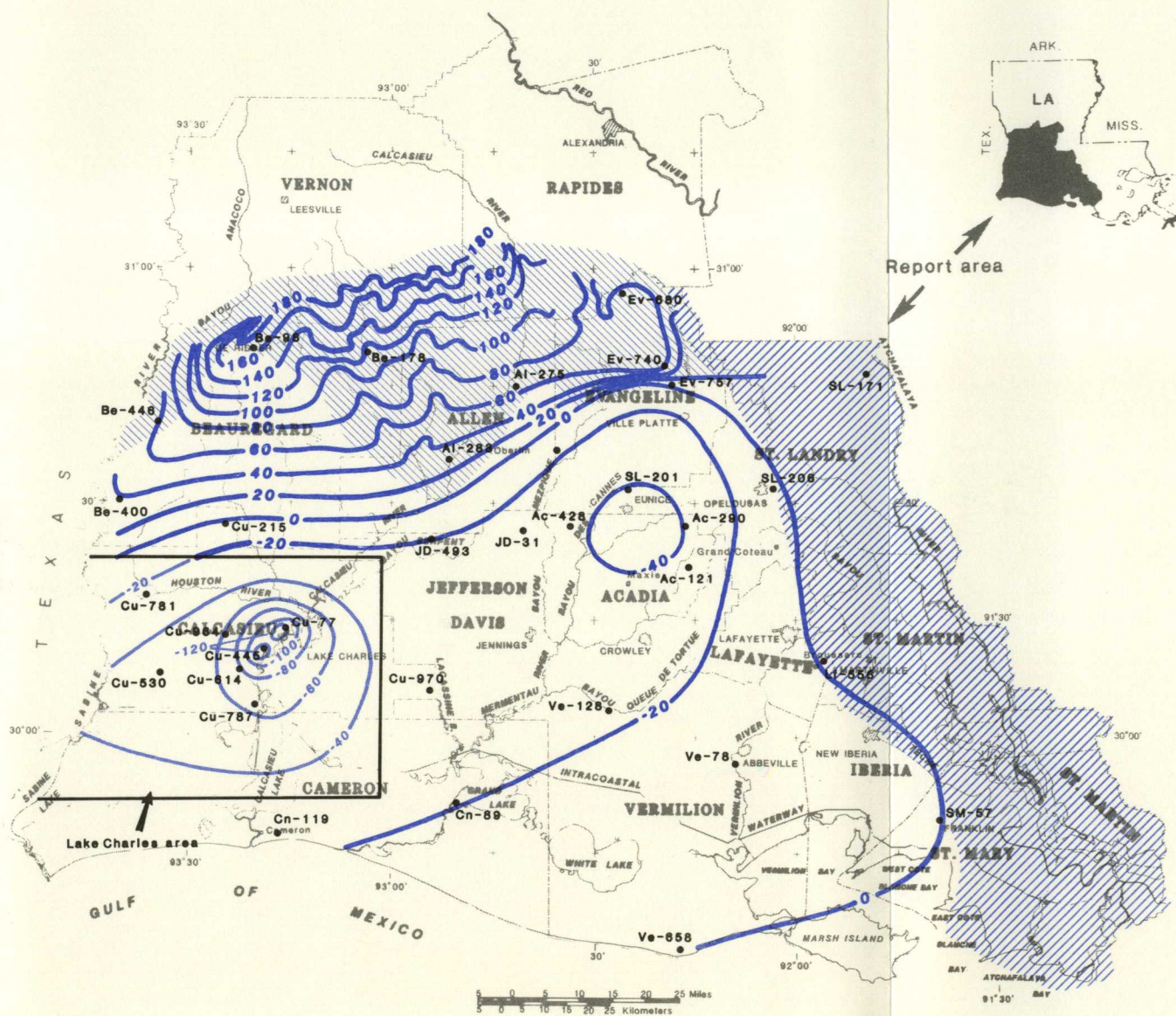


0 20 40 MILES
0 20 40 KILOMETERS

EXPLANATION

Freshwater sand
 Saltwater sand
 Mostly clay

PLATE 2. IDEALIZED GEOLOGIC SECTIONS SHOWING AQUIFER NAMES AND STRATIGRAPHIC RELATIONS IN SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



EXPLANATION






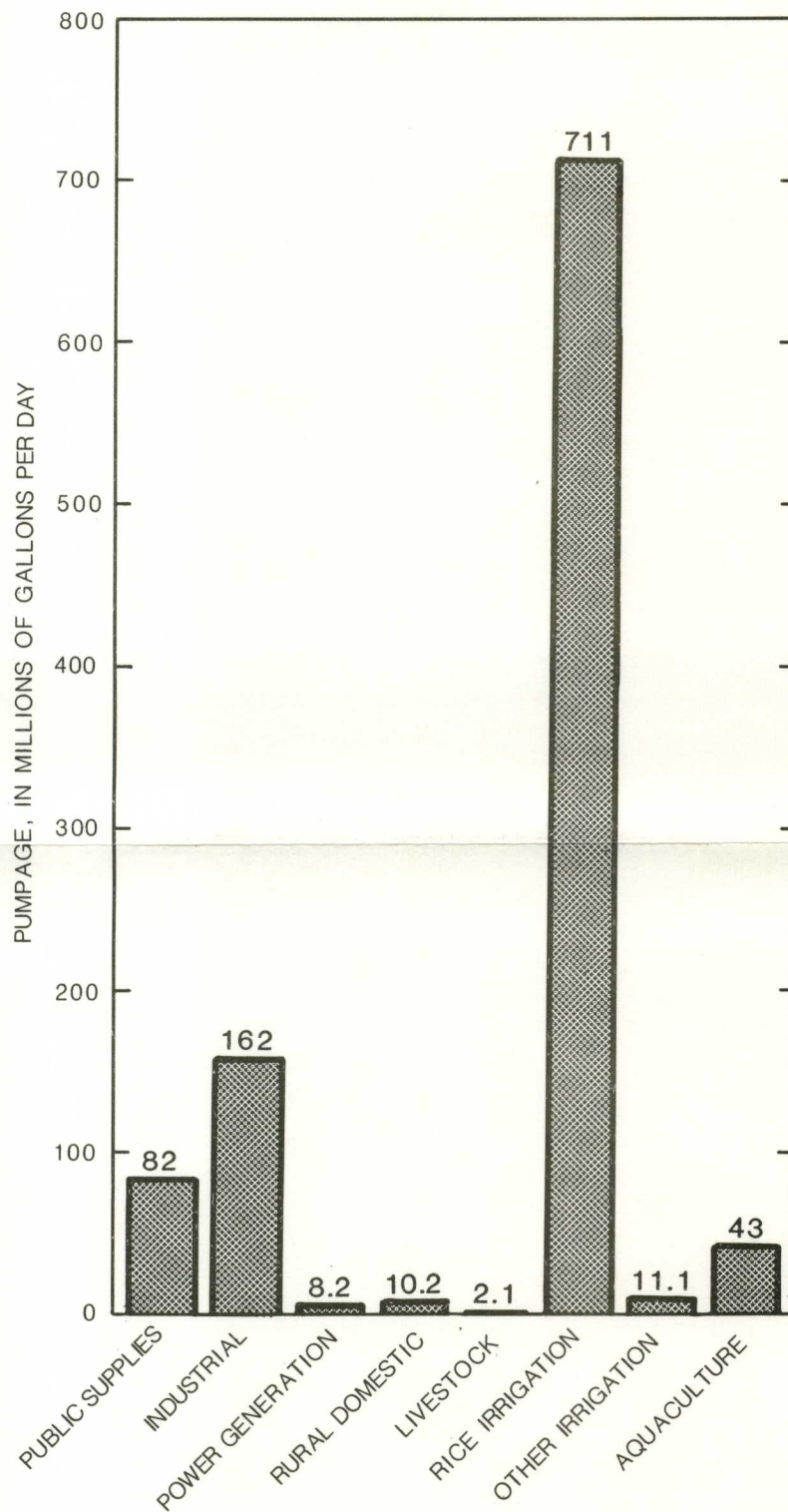
-  Recharge area of the Atchafalaya aquifer
-  Recharge area of the Chicot aquifer system
-  **20** POTENTIOMETRIC CONTOUR--Shows general configuration of water level in the Atchafalaya aquifer and Chicot aquifer system. Contour interval 20 feet. Datum is sea level
-  **-40** POTENTIOMETRIC CONTOUR--Shows general configuration of water-level surface in the "500-foot" sand of the Chicot aquifer system in the Lake Charles area. Contour interval 20 feet. Datum is sea level
-  **Ve-78** OBSERVATION WELL and parish well number

PLATE 3. WATER LEVELS FOR THE CHICOT AQUIFER SYSTEM AND ATCHAFALAYA AQUIFER, SPRING 1981, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



**PLATE 4. AVERAGE DAILY GROUND-WATER
WITHDRAWALS IN SOUTHWESTERN
LOUISIANA FOR MAJOR WATER-USE
CATEGORIES DURING 1980.
(WATER RESOURCES TECHNICAL REPORT NO. 42)**

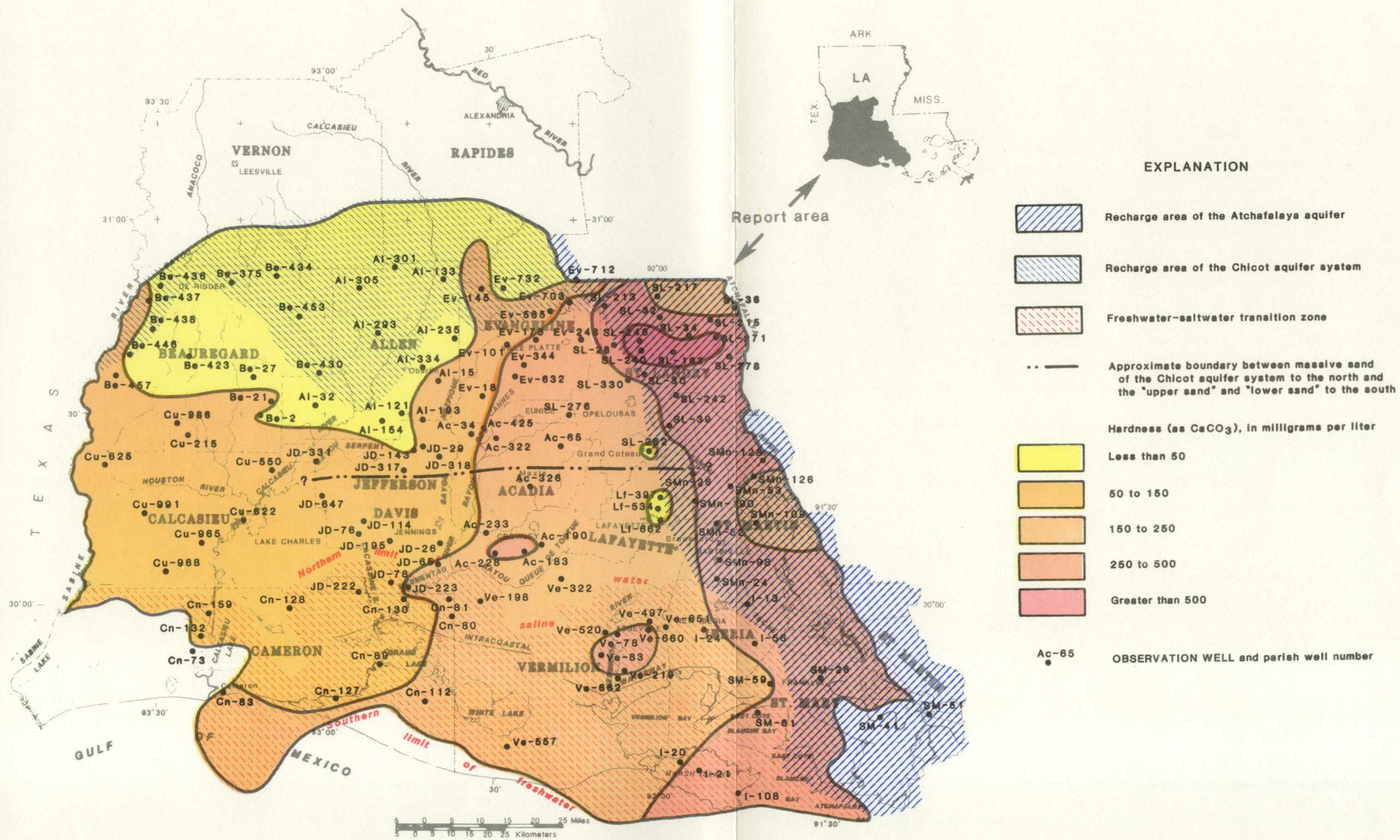
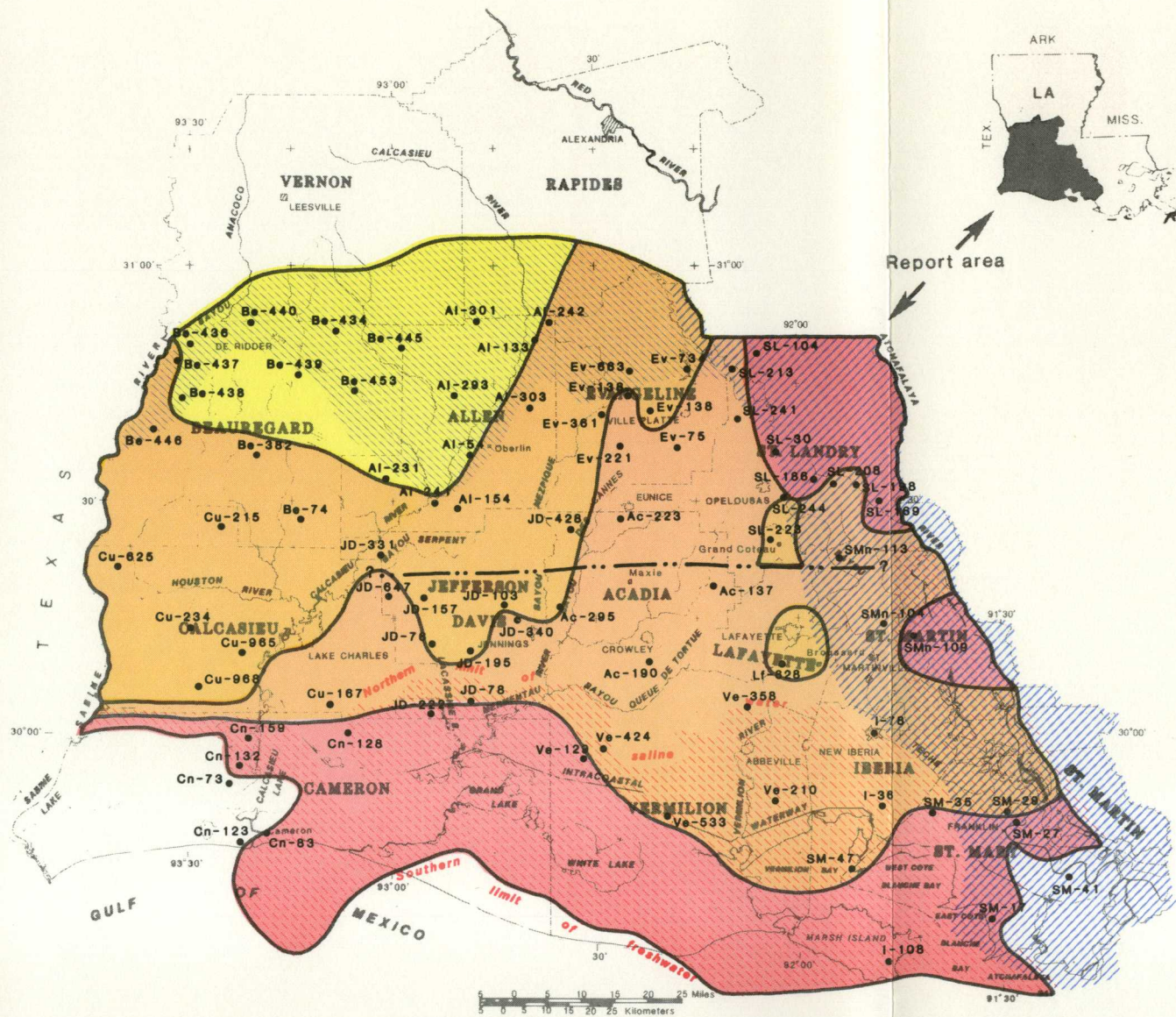


PLATE 6. RANGE OF HARDNESS, "UPPER SAND" OF THE CHICOT AQUIFER SYSTEM AND THE ATCHAFALAYA AQUIFER, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



EXPLANATION










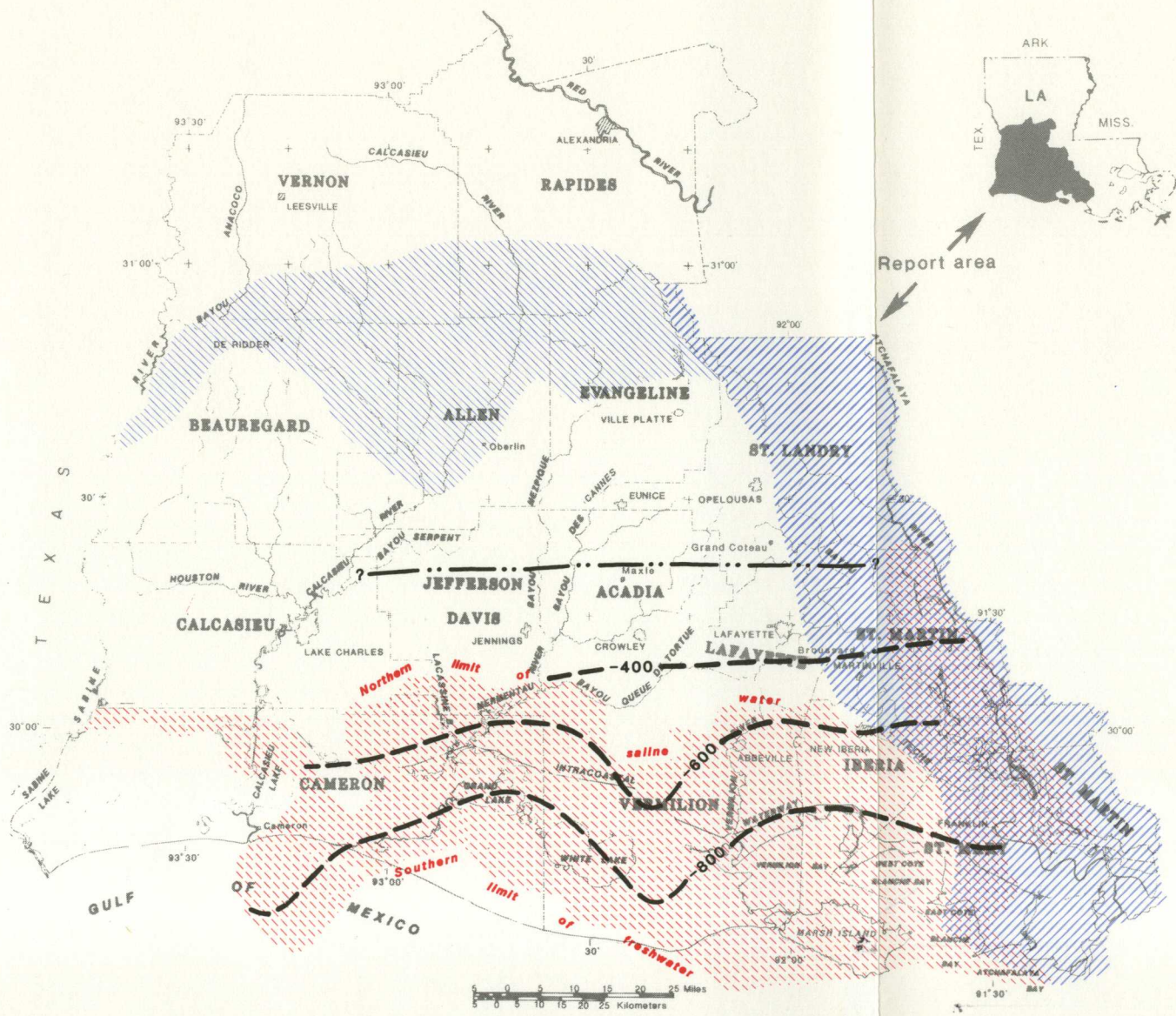
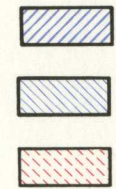
-  Recharge area of the Atchafalaya aquifer
-  Recharge area of the Chicot aquifer system
-  Freshwater-saltwater transition zone
-  Approximate boundary between massive sand of the Chicot aquifer system to the north and the "upper sand" and "lower sand" to the south
- Specific conductance, in microsiemens per centimeter:
-  Less than 150
-  150 to 500
-  500 to 1,000
-  Greater than 1,000
-  JD-78 OBSERVATION WELL and parish well number

PLATE 7. RANGE OF SPECIFIC CONDUCTANCE, "UPPER SAND" OF THE CHICOT AQUIFER SYSTEM AND OF THE ATCHAFALAYA AQUIFER, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



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- Recharge area of the Atchafalaya aquifer
- Recharge area of the Chicot aquifer system
- Freshwater-saltwater transition zone

—600—

STRUCTURE CONTOUR--Shows approximate altitude of base of the "upper sand" of the Chicot aquifer system. Contour interval 200 feet. Datum is sea level

.. —

Approximate boundary between massive sand of the Chicot aquifer system to the north and the "upper sand" and "lower sand" to the south

PLATE 9. STRUCTURE CONTOURS OF THE BASE OF THE "UPPER SAND" OF THE CHICOT AQUIFER SYSTEM, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)

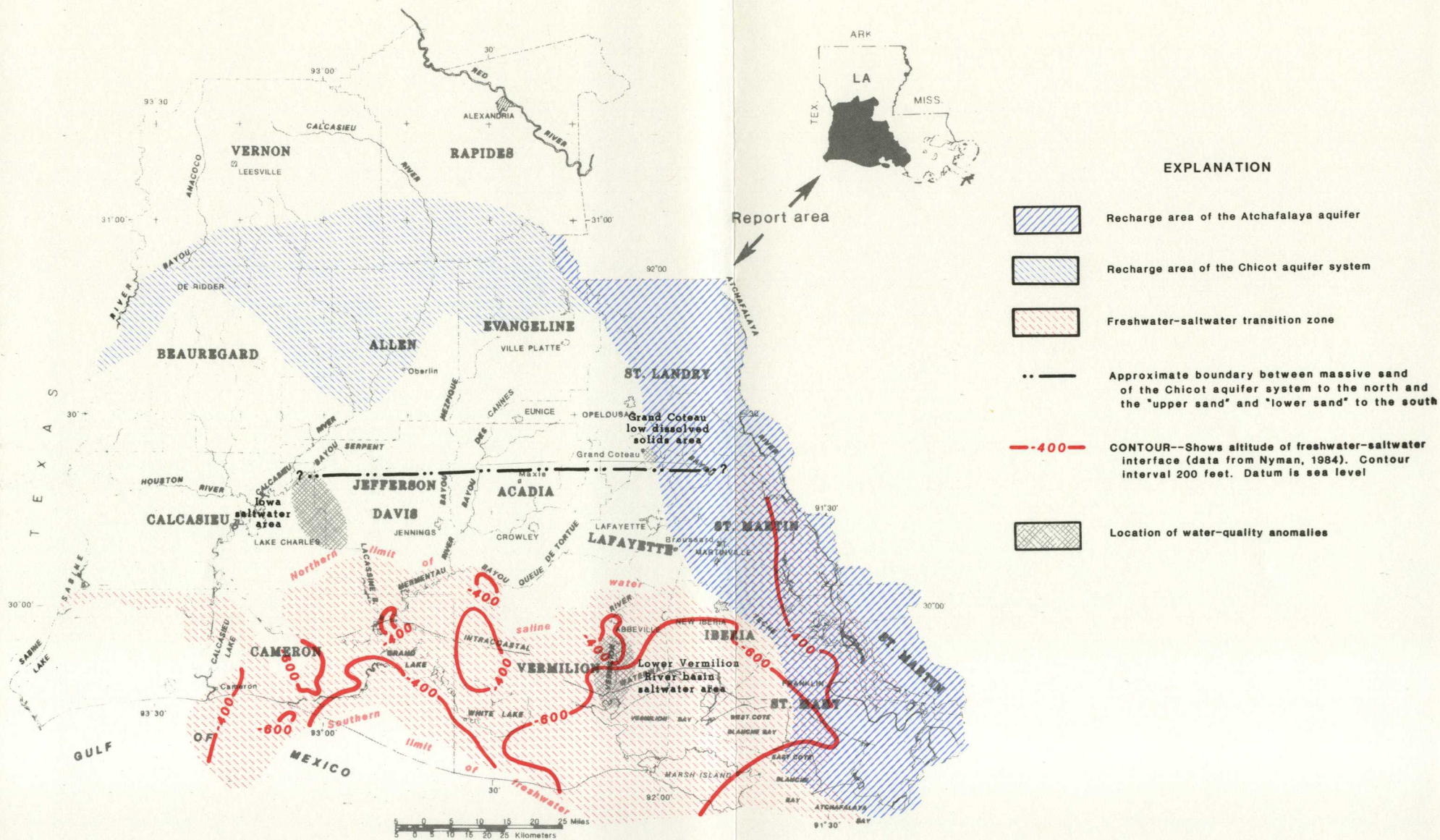
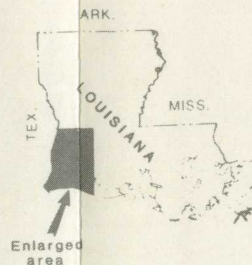
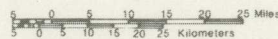
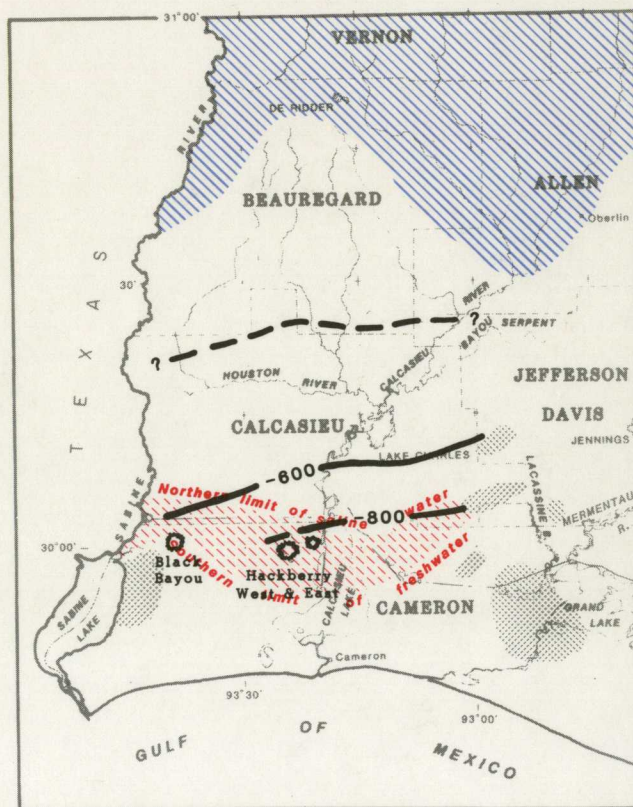


PLATE 10. ALTITUDE OF THE FRESHWATER-SALTWATER INTERFACE IN THE "UPPER SAND" OF THE CHICOT AQUIFER SYSTEM, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



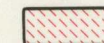
EXPLANATION



Recharge area of the Chicot aquifer system



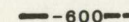
Area where "500-foot" sand is generally missing



Freshwater-saltwater transition zone



Salt dome



STRUCTURE CONTOUR--Shows altitude of base of the "500-foot" sand. Dashed where approximate. Contour interval 200 feet. Datum is sea level



Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Chicot aquifer system in the Lake Charles area to the south

PLATE 11. STRUCTURE CONTOURS ON THE BASE OF THE "500-FOOT" SAND OF THE CHICOT AQUIFER SYSTEM IN THE LAKE CHARLES AREA, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)

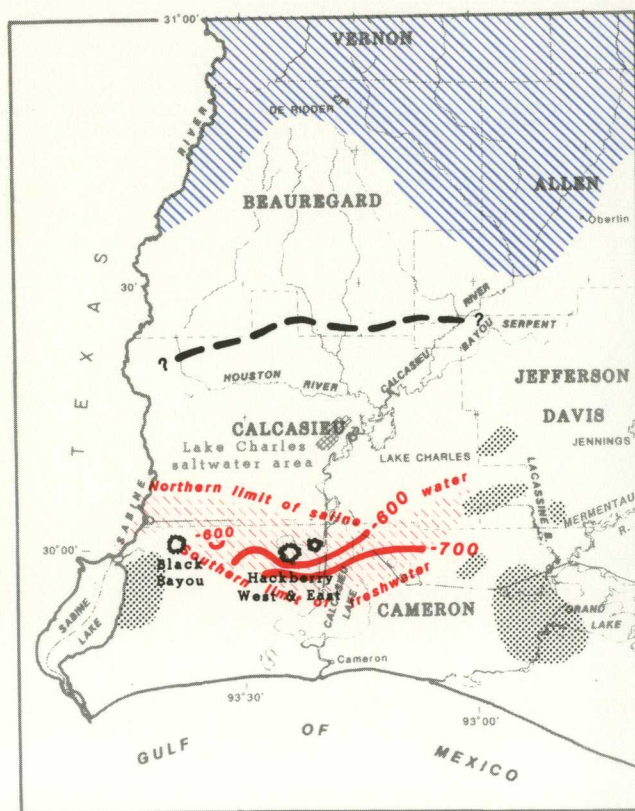
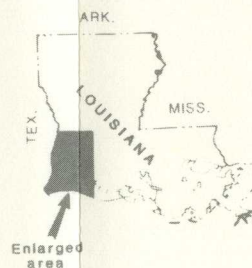


PLATE 12. ALTITUDE OF THE FRESHWATER-SALTWATER INTERFACE IN THE "500-FOOT" SAND OF THE CHICOT AQUIFER SYSTEM IN THE LAKE CHARLES AREA, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



EXPLANATION



Recharge area of the Chicot aquifer system



Area where "500-foot" sand is generally missing



Freshwater-saltwater transition zone



Salt dome



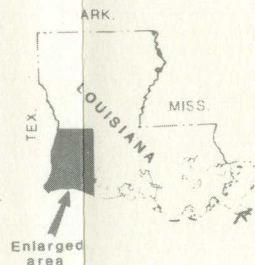
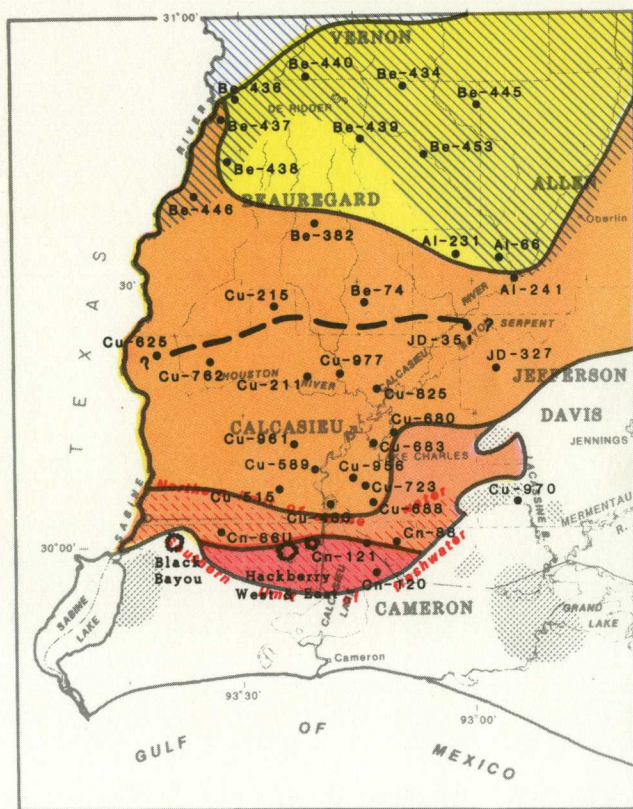
Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Chicot aquifer system in the Lake Charles area



CONTOUR--Shows altitude of freshwater-saltwater interface (data from Nyman, 1984). Contour interval 100 feet. Datum is sea level



Location of water-quality anomaly



EXPLANATION



Recharge area of the Chicot aquifer system



Area in which "500-foot" sand is generally missing



Freshwater-saltwater transition zone



Salt dome



Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Chicot aquifer system to the south

Specific conductance, in microsiemens per centimeter:



Less than 150



150 to 500



500 to 1,000

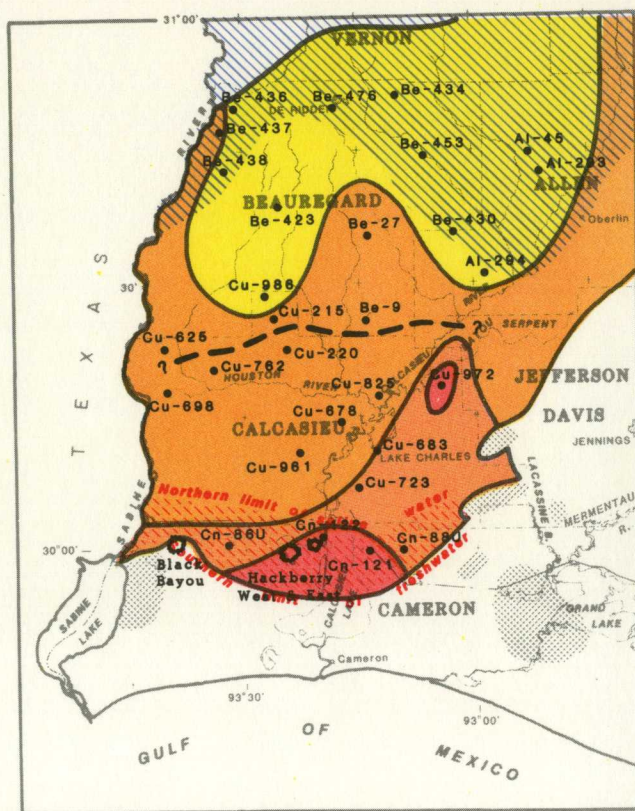


Greater than 1,000



OBSERVATION WELL and parish well number

PLATE 13. RANGE OF SPECIFIC CONDUCTANCE IN THE "500-FOOT" SAND OF THE CHICOT AQUIFER SYSTEM IN THE LAKE CHARLES AREA, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



EXPLANATION











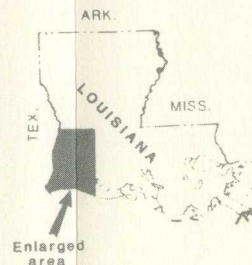
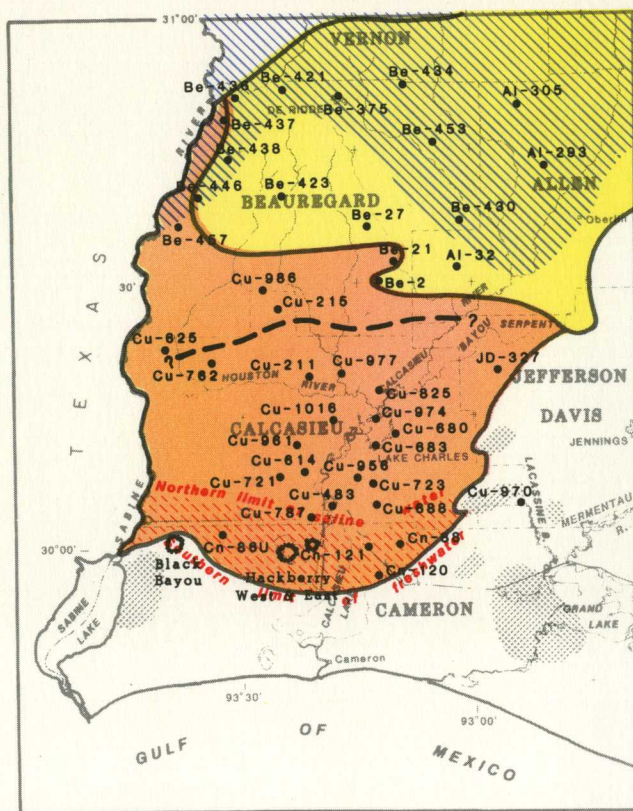
-  Recharge area of the Chicot aquifer system
-  Area in which "500-foot" sand is generally missing
-  Freshwater-saltwater transition zone
-  Salt dome
-  Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Chicot aquifer system to the south
- pH:
 -  5.5 to 6.5
 -  6.5 to 7.5
 -  7.5 to 8.5
 -  Greater than 8.5
-  Cu-961 OBSERVATION WELL and parish well number

PLATE 14. RANGE OF PH IN THE "500-FOOT" SAND OF THE CHICOT AQUIFER SYSTEM IN THE LAKE CHARLES AREA, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



EXPLANATION



Recharge area of the Chicot aquifer system



Area in which "500-foot" sand is generally missing



Freshwater-saltwater transition zone



Salt dome



Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Chicot aquifer system in the Lake Charles area to the south

Hardness (as CaCO_3), in milligrams per liter



Less than 50

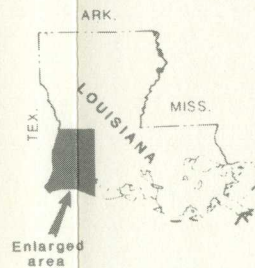
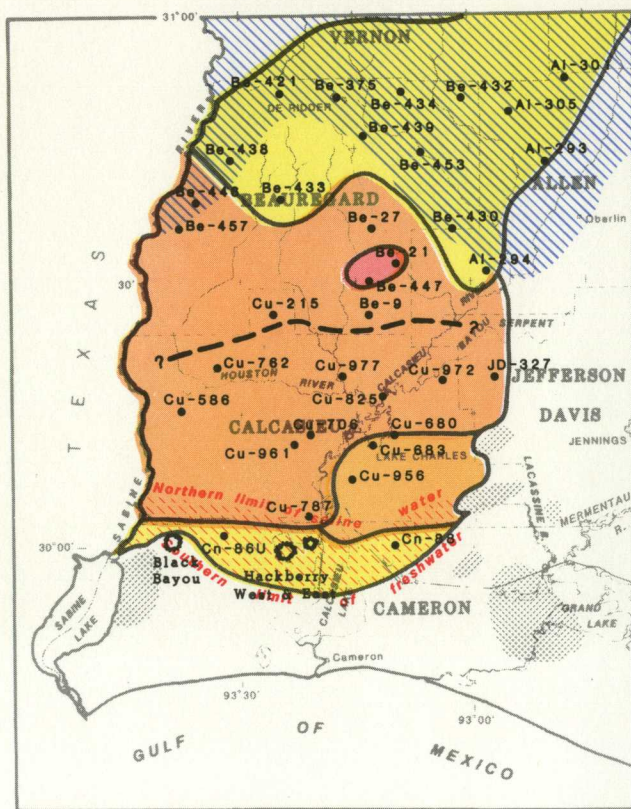


50 to 150

Cu-961

OBSERVATION WELL and parish well number

PLATE 15. RANGE OF HARDNESS IN THE "500-FOOT" SAND OF THE CHICOT AQUIFER SYSTEM IN THE LAKE CHARLES AREA, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



EXPLANATION



Recharge area of the Chicot aquifer system



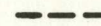
Area in which "500-foot" sand is generally missing



Freshwater-saltwater transition zone

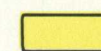


Salt dome



Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Chicot aquifer system in the Lake Charles area to the south

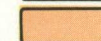
Iron concentration, in micrograms per liter:



Less than 200



200 to 1,000



1,000 to 5,000

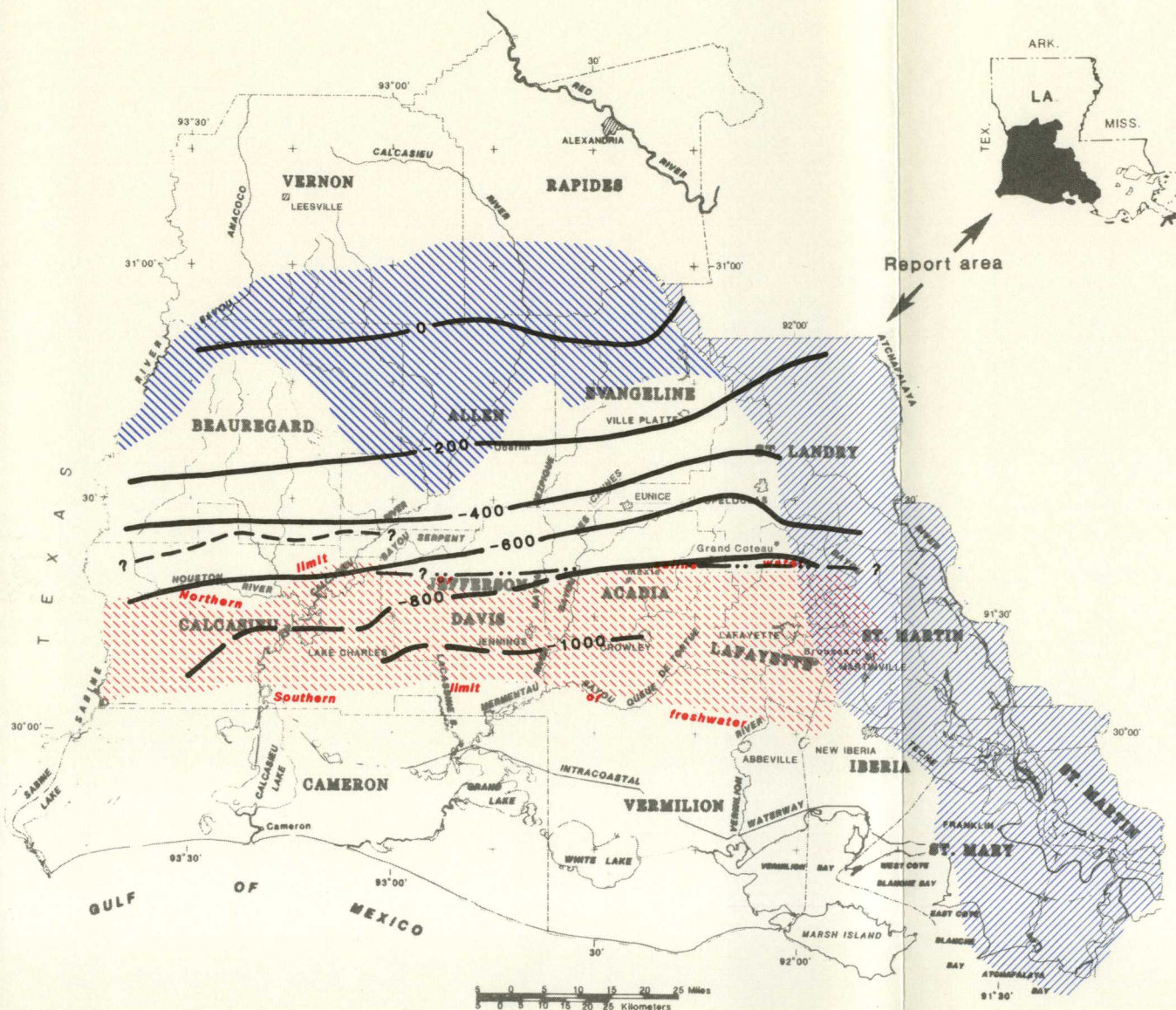


Greater than 5,000

Cu-961

OBSERVATION WELL and parish well number

PLATE 16. RANGE OF IRON CONCENTRATION IN THE "500-FOOT" SAND OF THE CHICOT AQUIFER SYSTEM IN THE LAKE CHARLES AREA, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



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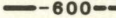


-  Recharge area of the Atchafalaya aquifer
-  Recharge area of the Chicot aquifer system
-  Freshwater-saltwater transition zone
-  **STRUCTURE CONTOUR**--Shows altitude of base of Chicot aquifer system (data modified from Whitfield, 1975). Dashed where approximate. Contour interval 200 feet. Datum is sea level
-  -- Approximate boundary between massive sand of the Chicot aquifer system to the north and the "upper sand" and "lower sand" of the Chicot aquifer system to the south
-  - - - Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Chicot aquifer system in the Lake Charles area to the south

PLATE 17. STRUCTURE CONTOURS ON THE BASE OF THE "LOWER SAND" AND "700-FOOT" SAND OF THE CHICOT AQUIFER SYSTEM, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)

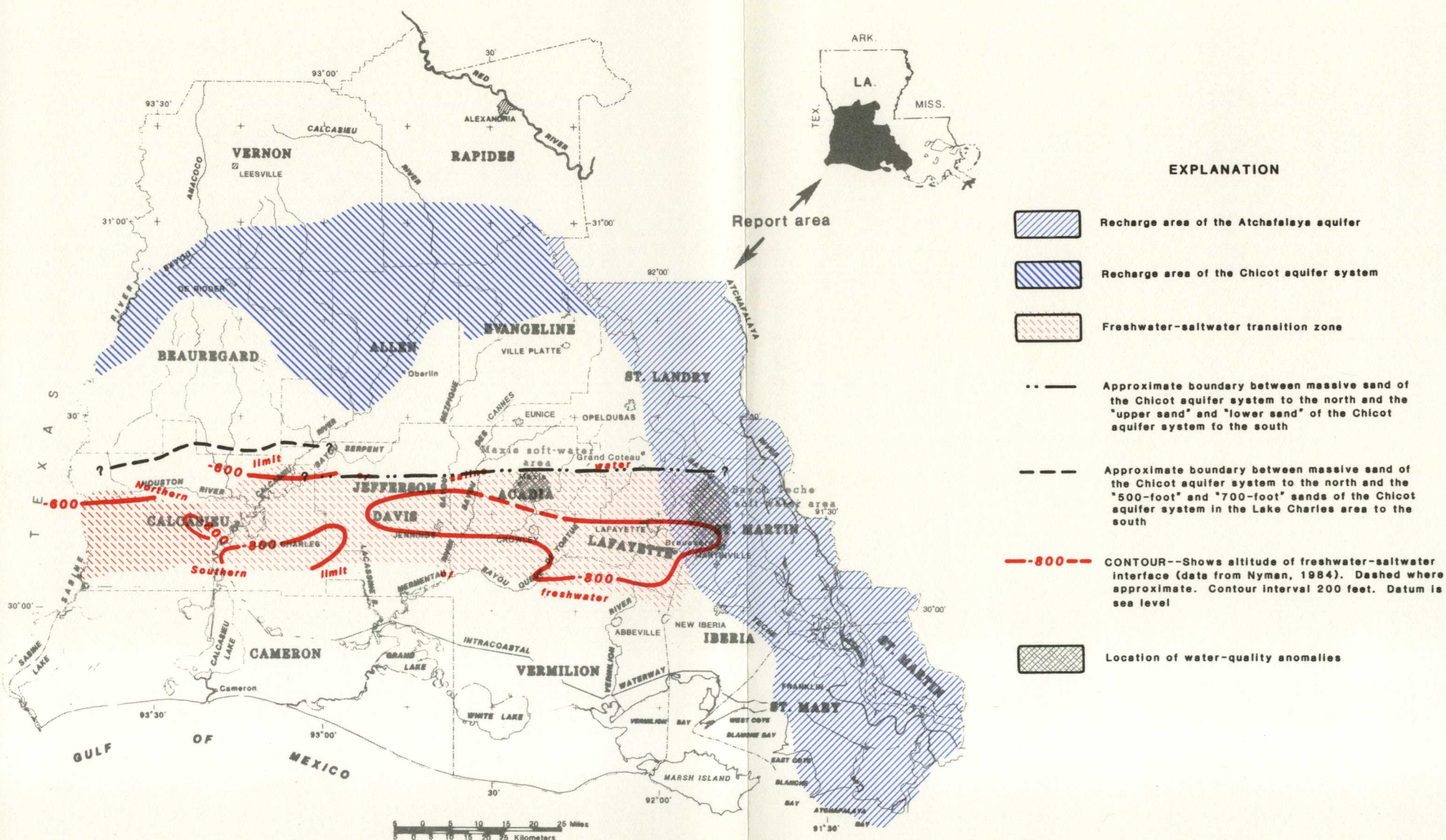
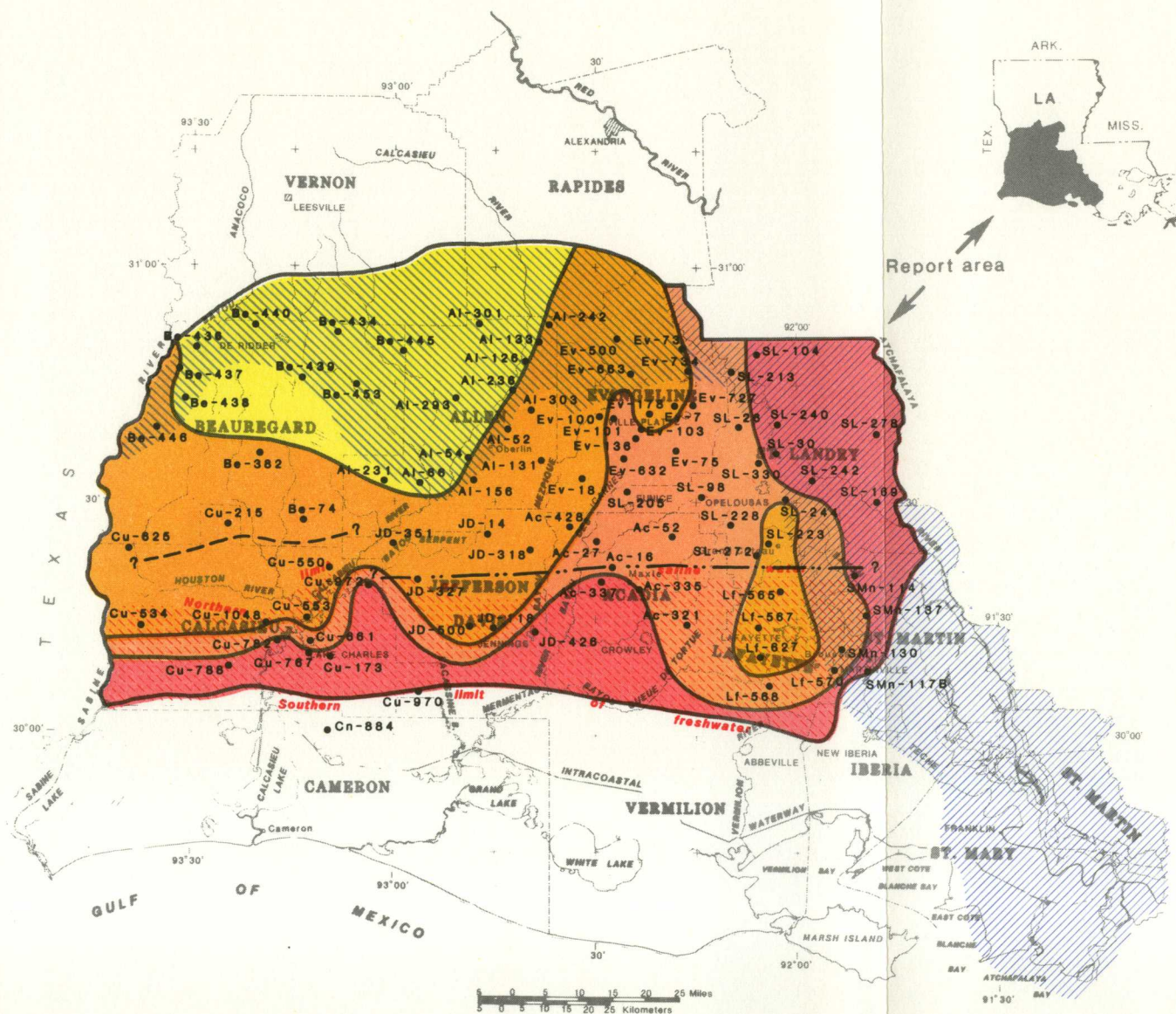


PLATE 18. ALTITUDE OF THE FRESHWATER-SALTWATER INTERFACE IN THE "LOWER SAND" OF THE CHICOT AQUIFER SYSTEM, SOUTHWESTERN LOUISIANA
(WATER RESOURCES TECHNICAL REPORT NO. 42)



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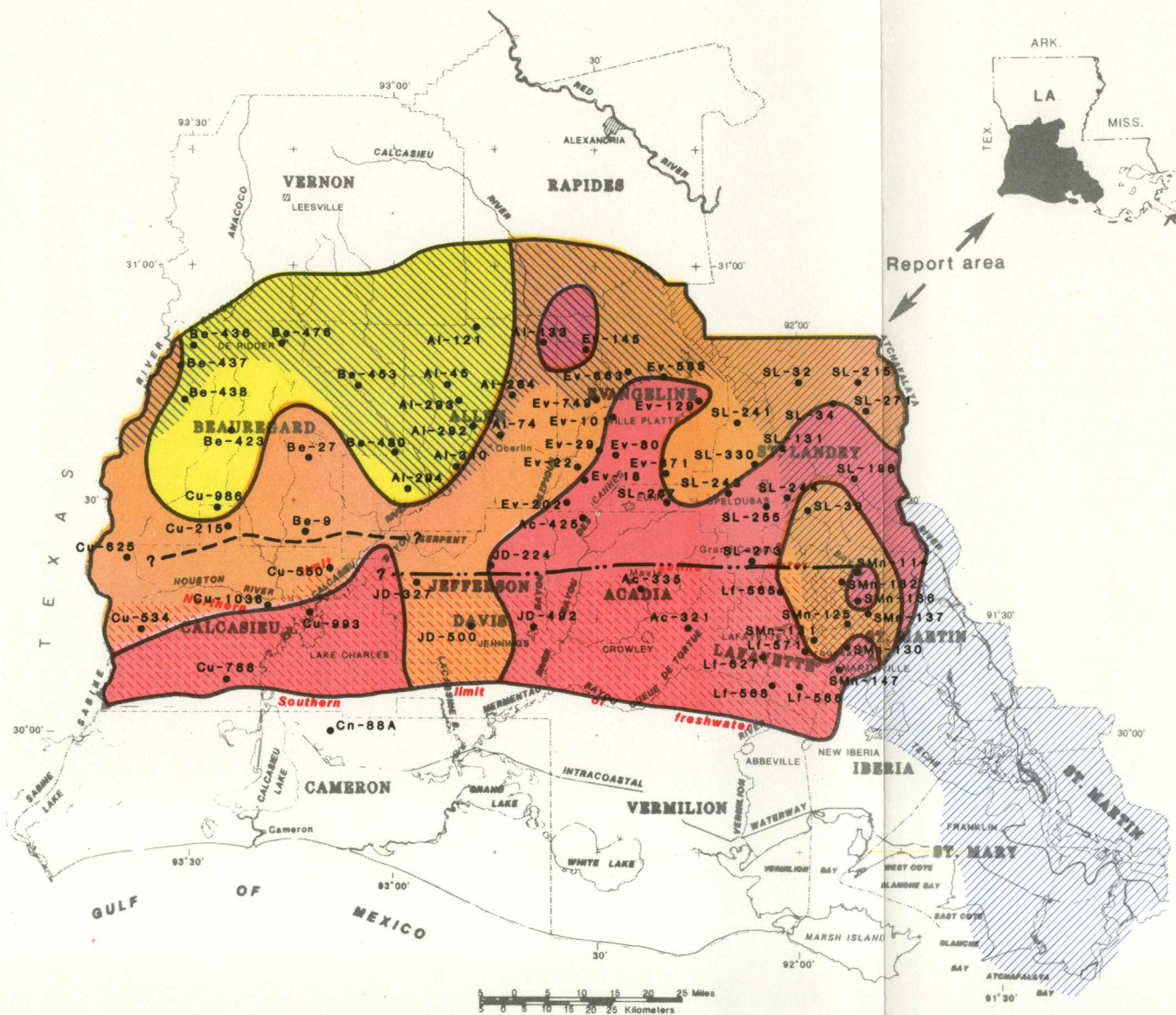
-  Recharge area of the Atchafalaya aquifer
-  Recharge area of the Chicot aquifer system
-  Freshwater-saltwater transition zone
-  Approximate boundary between massive sand of the Chicot aquifer system to the north and the "upper sand" and "lower sand" of the Chicot aquifer system to the south
-  Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Chicot aquifer system in the Lake Charles area to the south
- Specific conductance, in microsiemens per centimeter:
 -  Less than 150
 -  150 to 500
 -  500 to 1,000
 -  Greater than 1,000
-  OBSERVATION WELL and parish well number

PLATE 19. RANGE OF SPECIFIC CONDUCTANCE, "LOWER SAND" AND "700-FOOT SAND" OF THE CHICOT AQUIFER SYSTEM, SOUTHWESTERN LOUISIANA.
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Recharge area of the Atchafalaya aquifer



Recharge area of the Chicot aquifer system



Freshwater-saltwater transition zone



Approximate boundary between massive sand of the Chicot aquifer system to the north and the "upper sand" and "lower sand" of the Chicot aquifer system to the south



Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Lake Charles area to the south

pH:



5.5 to 6.5



6.5 to 7.5

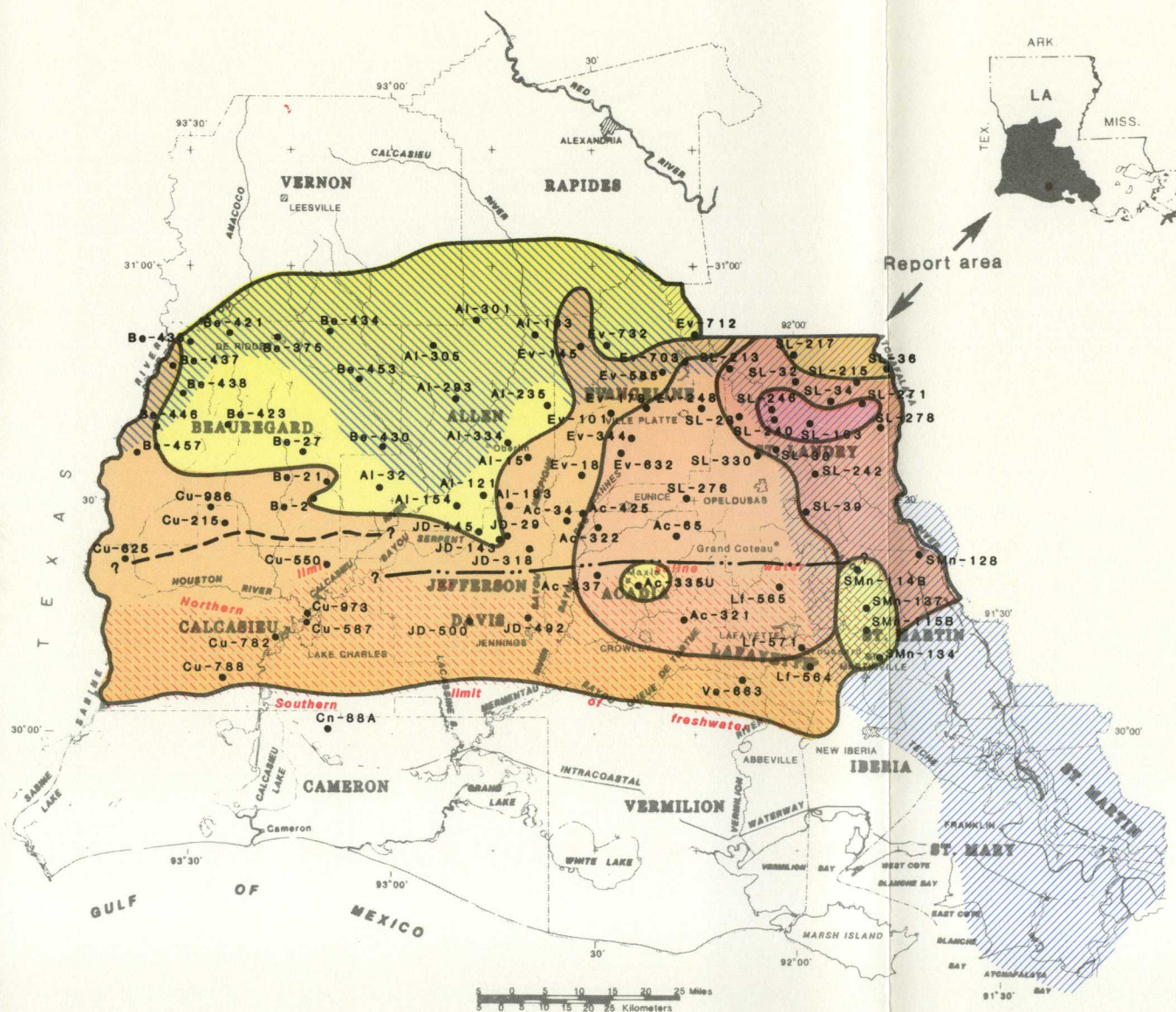


7.5 to 8.5

Be-9

OBSERVATION WELL and parish well number

PLATE 20. RANGE OF PH, "LOWER SAND" AND "700-FOOT SAND" OF THE CHICOT AQUIFER SYSTEM, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



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








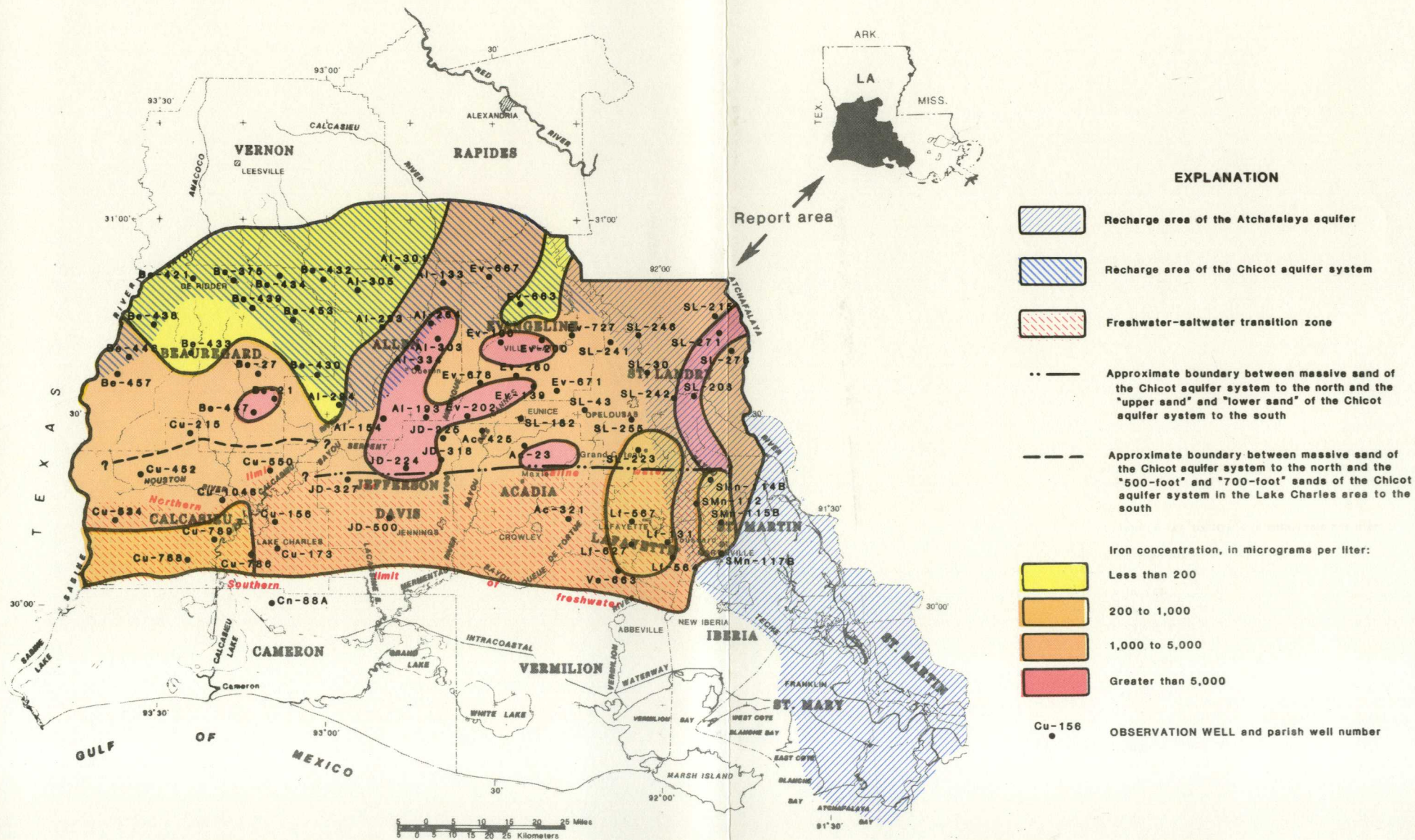
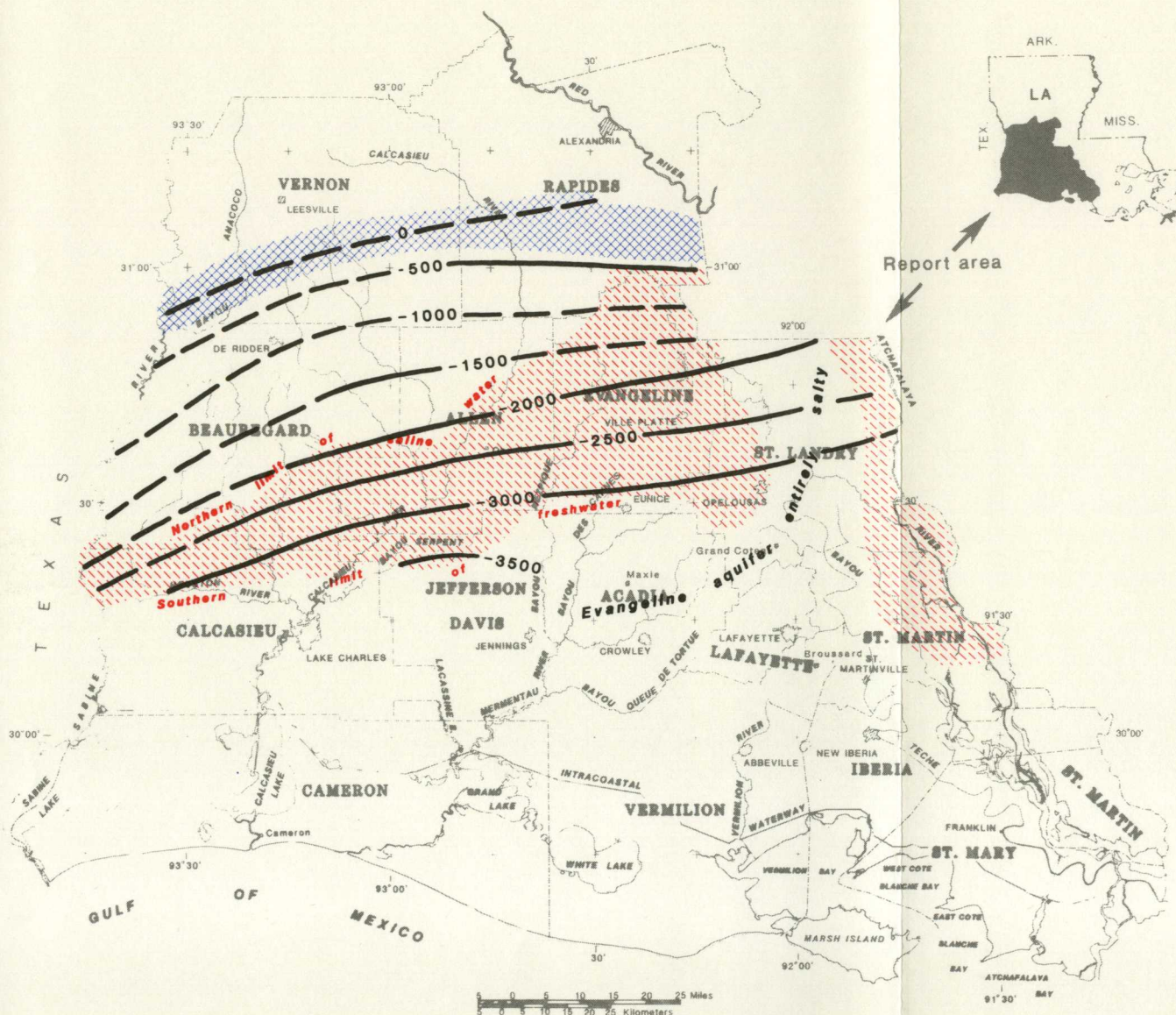
-  Recharge area of the Atchafalaya aquifer
-  Recharge area of the Chicot aquifer system
-  Freshwater-saltwater transition zone
-  Approximate boundary between massive sand of the Chicot aquifer to the north and the "upper sand" and "lower sand" to the south
-  Approximate boundary between massive sand of the Chicot aquifer system to the north and the "500-foot" and "700-foot" sands of the Lake Charles area to the south
-  Hardness (as CaCO_3), in milligrams per liter:
Less than 50
-  50 to 150
-  150 to 250
-  250 to 500
-  Greater than 500
-  Al-32 OBSERVATION WELL and parish well number

PLATE 21. RANGE OF HARDNESS, "LOWER SAND" AND "700-FOOT SAND" OF THE CHICOT AQUIFER SYSTEM, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)





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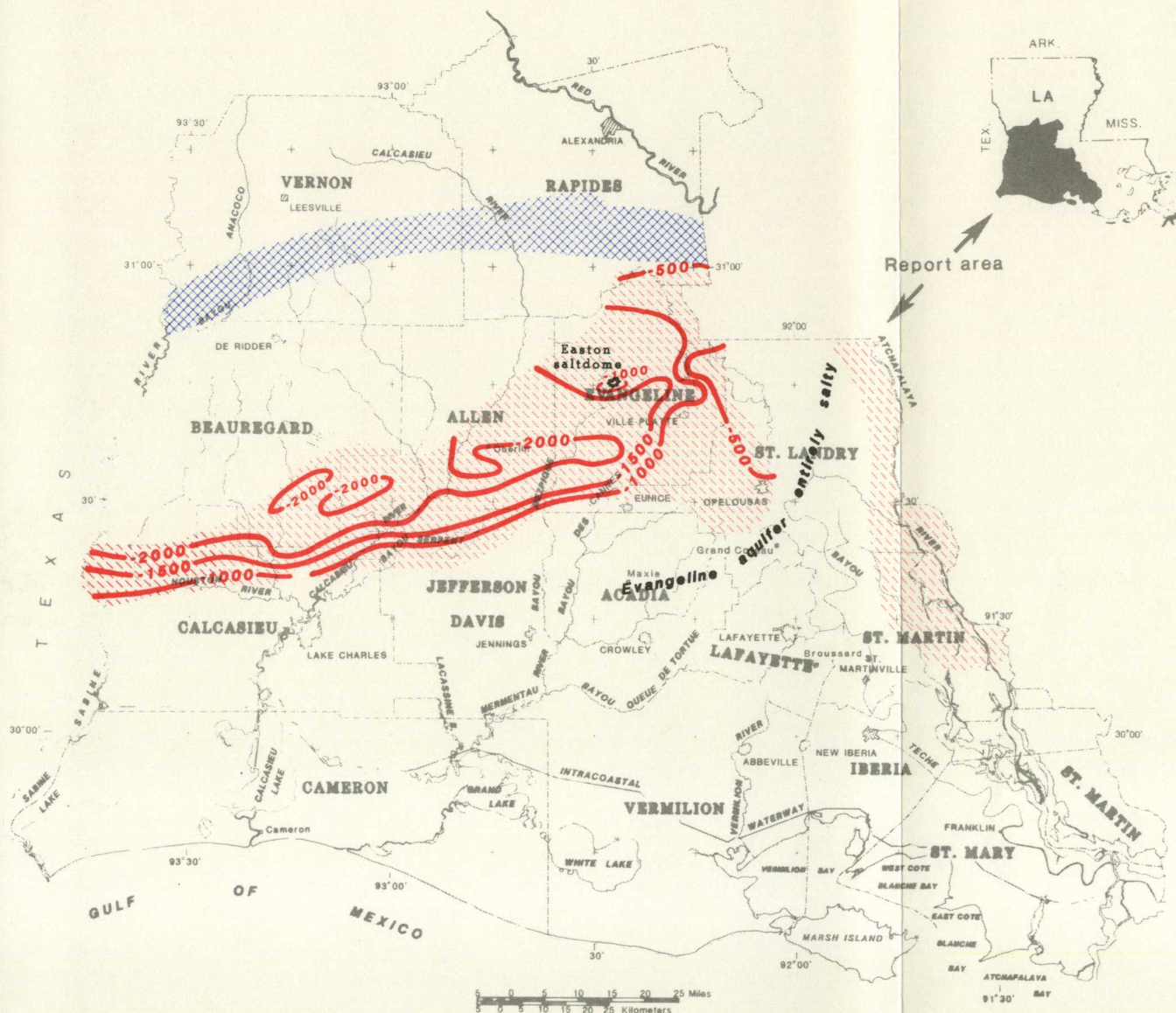
Recharge area of the Evangeline aquifer



Freshwater-saltwater transition zone

---500--- STRUCTURE CONTOUR--Shows altitude of base of Evangeline aquifer (contours based on Rogers, 1981; Rogers and Calandro, 1965; and Whitfield, 1975). Dashed where approximate. Contour interval 500 feet. Datum is sea level

PLATE 23. GENERALIZED STRUCTURE CONTOURS ON THE BASE OF THE EVANGELINE AQUIFER, SOUTHWESTERN LOUISIANA
(WATER RESOURCES TECHNICAL REPORT NO. 42)



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Recharge area of the Evangeline aquifer

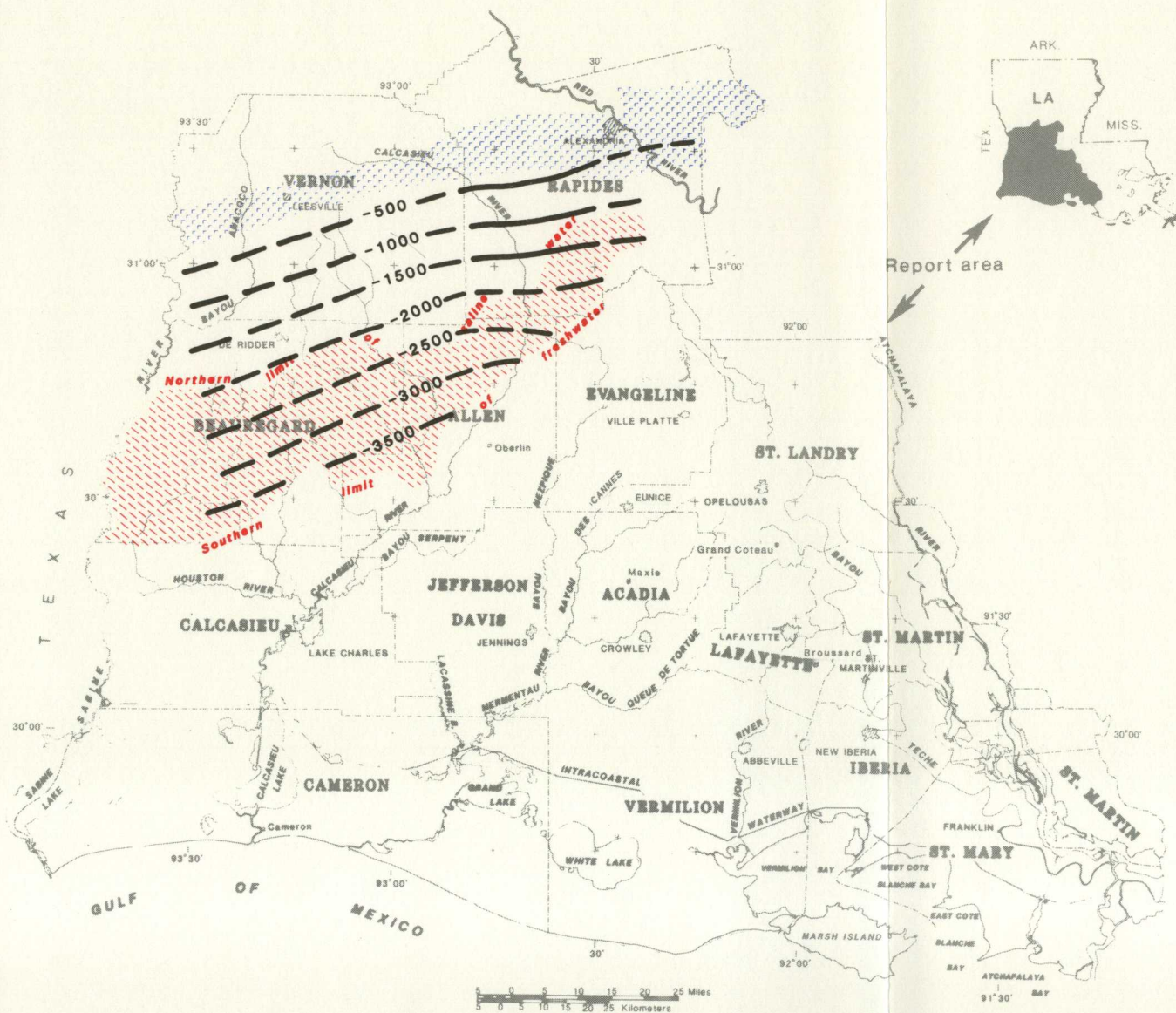


Freshwater-saltwater transition zone



CONTOUR--Shows altitude of freshwater-saltwater interface (contours based on Whitfield, 1975; Rogers, 1981). Contour interval 500 feet. Datum is sea level

PLATE 24. ALTITUDE OF FRESHWATER-SALTWATER INTERFACE IN THE EVANGELINE AQUIFER, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



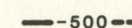
EXPLANATION



Recharge area of the upper part of the Jasper aquifer
(Williamson Creek Member of Fleming Formation)

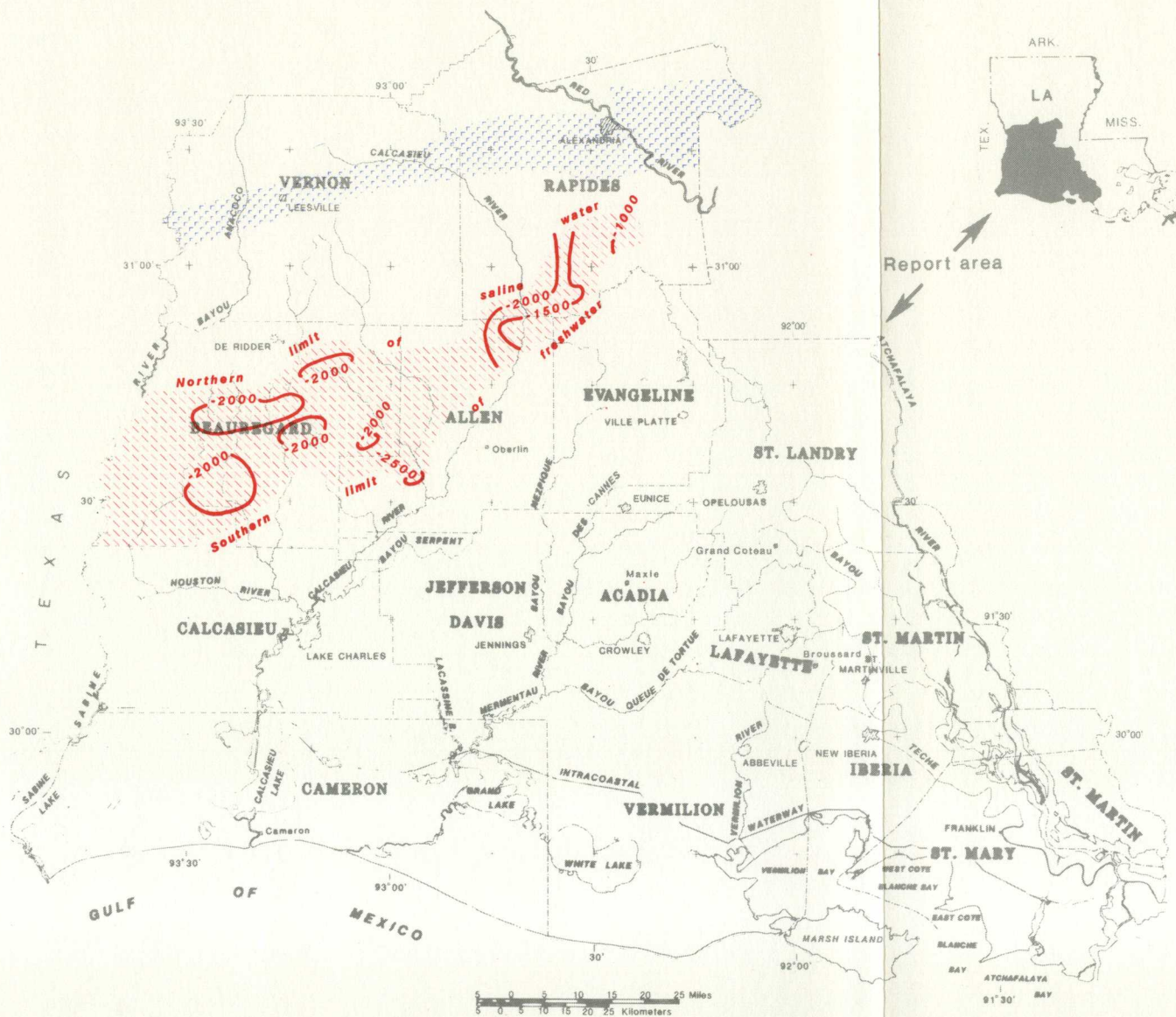


Freshwater-saltwater transition zone



STRUCTURE CONTOUR--Shows altitude of base of
Williamson Creek Member of Fleming Formation
(contours based on Rogers, 1981; Whitfield, 1975;
and Rogers and Calandro, 1965). Dashed where
approximate. Contour interval 500 feet. Datum is
sea level

PLATE 26. GENERALIZED STRUCTURE CONTOURS ON THE BASE OF THE UPPER PART OF THE JASPER AQUIFER
(WILLIAMSON CREEK MEMBER OF THE FLEMING FORMATION), SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



EXPLANATION



Recharge area of the upper part of the Jasper aquifer (Williamson Creek Member of the Fleming Formation)

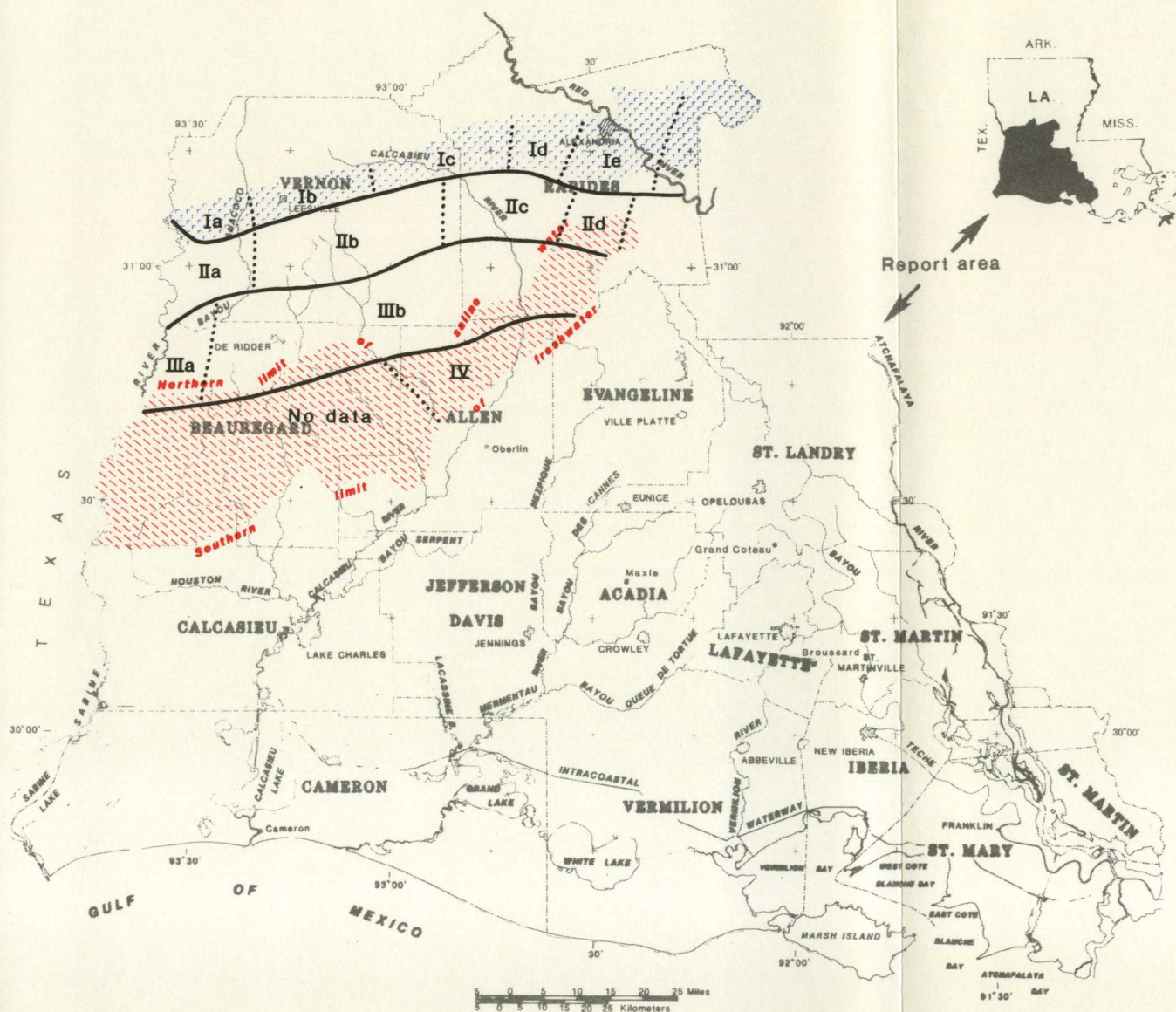


Freshwater-saltwater transition zone



CONTOUR--Shows altitude of freshwater-saltwater interface (modified from Whitfield, 1975). Contour interval 500 feet. Datum is sea level

PLATE 27. ALTITUDE OF THE FRESHWATER-SALTWATER INTERFACE IN THE UPPER PART OF THE JASPER AQUIFER, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)



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Recharge area of the upper part of the Jasper aquifer
(Williamson Creek Member of the Fleming Formation)



Freshwater-saltwater transition zone



Regions (I to IV) and subregions (a to e) of related
ground-water quality. See table 5

PLATE 28. REGIONS AND SUBREGIONS OF THE UPPER PART OF THE JASPER AQUIFER THAT ARE RELATED BY GROUND-WATER CHEMISTRY AND DEPTH, SOUTHWESTERN LOUISIANA.
(WATER RESOURCES TECHNICAL REPORT NO. 42)