

DRE-94

Tech Map Series 79-1; Hydrogeologic Reconnaissance of the  
Floridan Aquifer System Upper East Coast Planning Area

Brown, Reese



**POTENTIOMETRIC SURFACE MAP OF THE  
FLORIDAN AQUIFER SYSTEM  
DURING SEPTEMBER 1977  
UPPER EAST COAST PLANNING AREA**

By  
HAROLD P. BROWN AND DONALD E. BAUER

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

1978

**INTRODUCTION**

A potentiometric map is a graphic representation of an aquifer system showing the hydraulic head or water table. It is a cross-section of the aquifer system, showing the hydraulic head or water table at various points. The potentiometric map of the Floridan aquifer system in the Upper East Coast Planning Area, Florida, was prepared for the South Florida Water Management District by the South Florida Water Management District during September 1977. The potentiometric map was prepared for the Upper East Coast Planning Area, Florida, to help in the planning and management of the aquifer system. The potentiometric map shows the hydraulic head or water table at various points in the aquifer system. The potentiometric map was prepared for the Upper East Coast Planning Area, Florida, to help in the planning and management of the aquifer system.

**DATA COLLECTION AND DESCRIPTION**

Data for this potentiometric map were collected from a network of observation wells installed in the aquifer system. The observation wells were installed in the aquifer system during the summer of 1977. The potentiometric map was prepared for the Upper East Coast Planning Area, Florida, to help in the planning and management of the aquifer system. The potentiometric map shows the hydraulic head or water table at various points in the aquifer system. The potentiometric map was prepared for the Upper East Coast Planning Area, Florida, to help in the planning and management of the aquifer system.

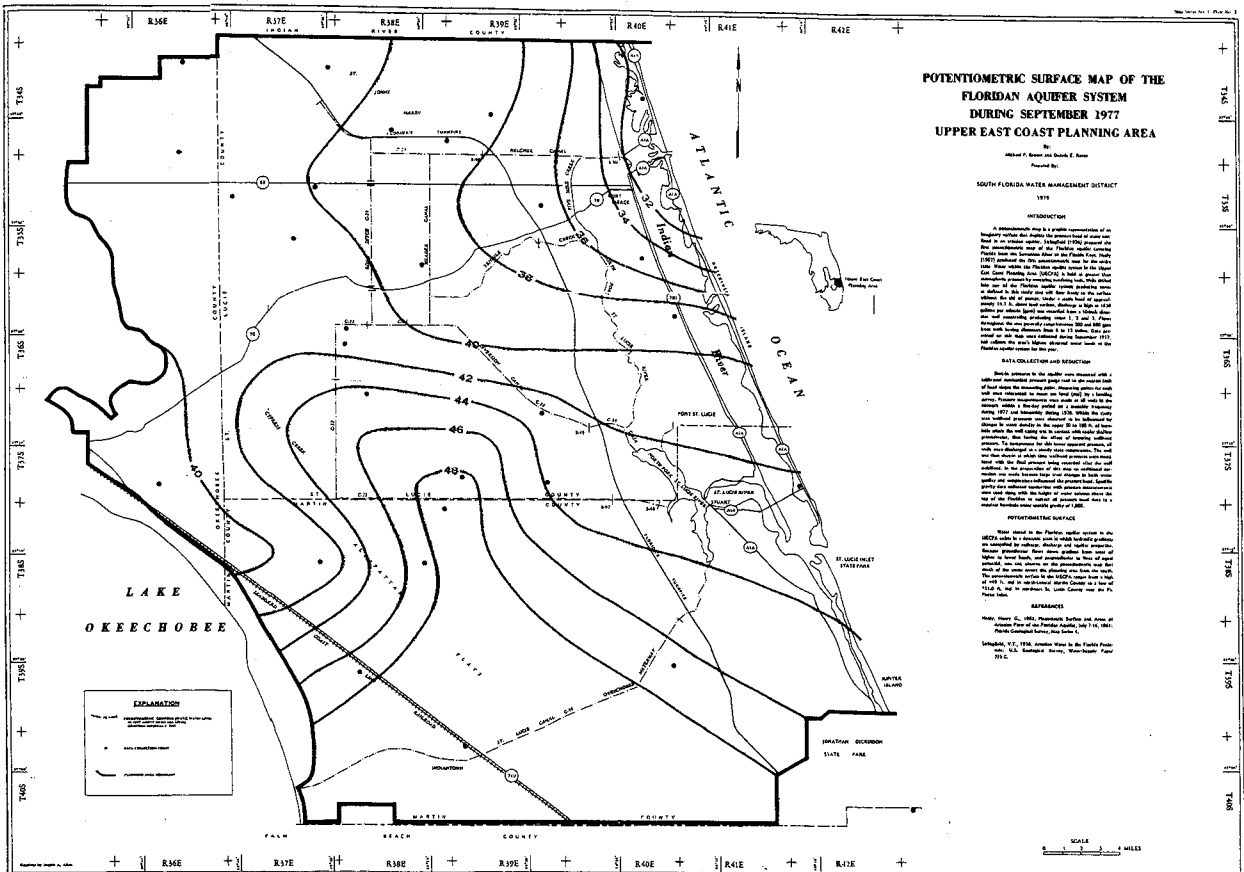
**POTENTIOMETRIC SURFACE**

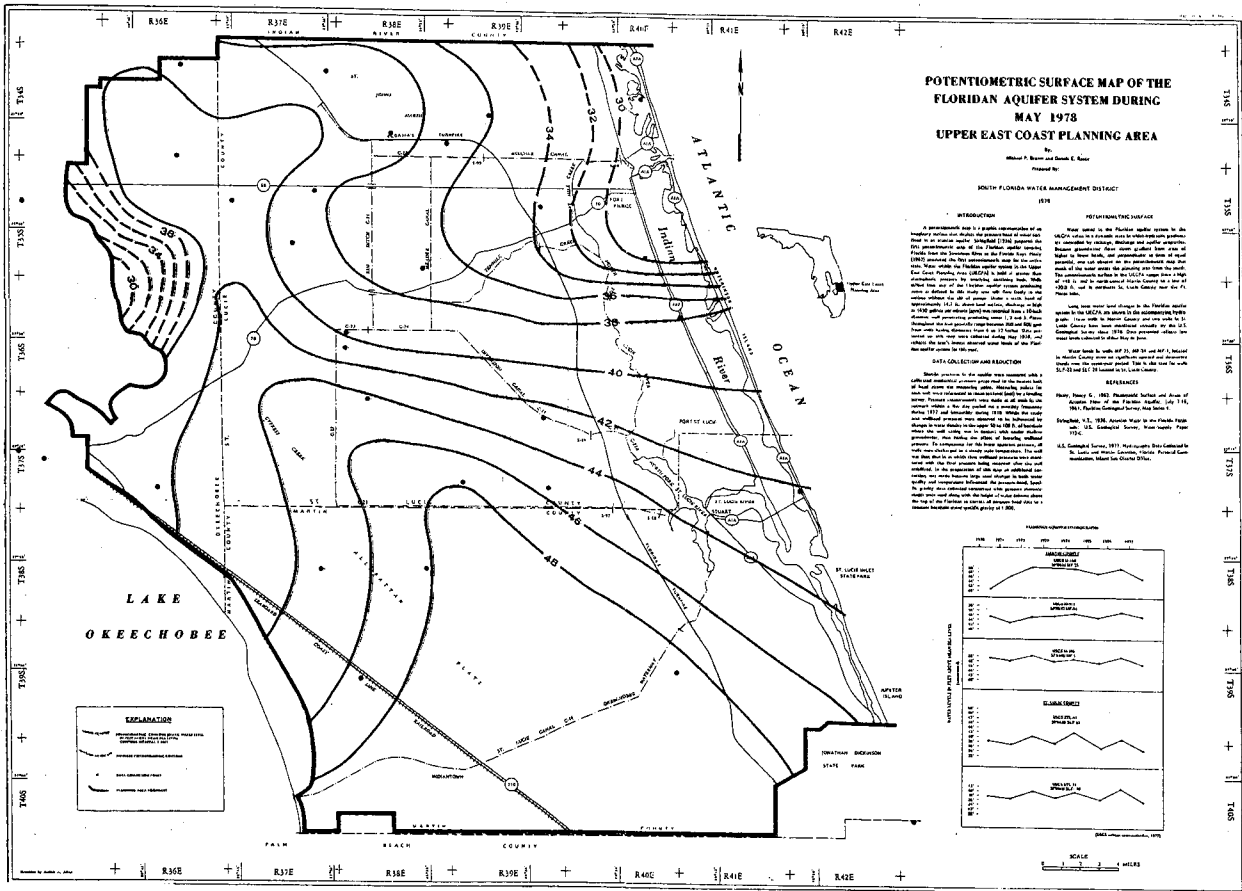
The potentiometric surface is the surface of the aquifer system. It is a cross-section of the aquifer system, showing the hydraulic head or water table at various points. The potentiometric surface was prepared for the Upper East Coast Planning Area, Florida, to help in the planning and management of the aquifer system. The potentiometric surface shows the hydraulic head or water table at various points in the aquifer system. The potentiometric surface was prepared for the Upper East Coast Planning Area, Florida, to help in the planning and management of the aquifer system.

**REFERENCES**

Bauer, Donal E., 1982, Potentiometric Surface Map of the Upper East Coast Planning Area, South Florida Water Management District, July 1981, Florida Geological Survey, Open File 1.

South Florida Water Management District, 1978, Potentiometric Surface Map of the Upper East Coast Planning Area, Florida, U.S. Geological Survey, Water-Supply Paper 791-C.





## POTENTIOMETRIC SURFACE MAP OF THE FLORIDAN AQUIFER SYSTEM DURING MAY 1978 UPPER EAST COAST PLANNING AREA

By  
Richard P. Burdette and E. Gary

SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
1978

### INTRODUCTION

This report is a graphic representation of the potentiometric surface and water level data for the upper east coast planning area during the month of May 1978. The data were collected by the South Florida Water Management District (SFWMD) as part of its continuing effort to monitor the Floridan aquifer system. The potentiometric surface map shows the water table elevation in feet above mean sea level (MSL) for the upper east coast planning area. The map is based on data collected during the month of May 1978. The data were collected by the South Florida Water Management District (SFWMD) as part of its continuing effort to monitor the Floridan aquifer system. The potentiometric surface map shows the water table elevation in feet above mean sea level (MSL) for the upper east coast planning area. The map is based on data collected during the month of May 1978. The data were collected by the South Florida Water Management District (SFWMD) as part of its continuing effort to monitor the Floridan aquifer system.

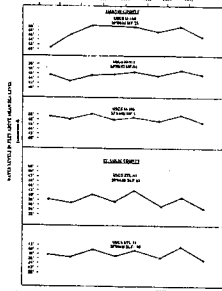
### POTENTIOMETRIC SURFACE

Water levels in the Floridan aquifer system in the upper east coast planning area are shown potentiometrically on this map. The map is based on data collected during the month of May 1978. The data were collected by the South Florida Water Management District (SFWMD) as part of its continuing effort to monitor the Floridan aquifer system. The potentiometric surface map shows the water table elevation in feet above mean sea level (MSL) for the upper east coast planning area. The map is based on data collected during the month of May 1978. The data were collected by the South Florida Water Management District (SFWMD) as part of its continuing effort to monitor the Floridan aquifer system.

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### REFERENCES

- Burdette, R. P., and E. Gary, 1978, Potentiometric Surface and Water Level Data for the Upper East Coast Planning Area, South Florida Water Management District, Report No. 1978-1.
- Florida Department of Natural Resources, 1978, Florida Department of Natural Resources, Report No. 1978-1.
- United States Geological Survey, 1978, United States Geological Survey, Report No. 1978-1.
- South Florida Water Management District, 1978, South Florida Water Management District, Report No. 1978-1.



SCALE  
0 1 2 MILES

# DIFFERENCE IN POTENTIOMETRIC SURFACE OF THE FLORIDIAN AQUIFER SYSTEM BETWEEN SEPTEMBER 1977 AND MAY 1978 UPPER EAST COAST PLANNING AREA

701  
Michael A. Brown and Dennis C. Brown  
Report No.:  
SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
1978

### SYNOPSIS

The potentiometric surface of the Floridian aquifer system in the upper east coast planning area was determined for September 1977 and May 1978. The difference in potentiometric surface between these two dates is shown on this map. The potentiometric surface in September 1977 was generally higher than in May 1978, with the greatest difference occurring in the central and eastern portions of the planning area. The potentiometric surface in May 1978 was generally lower than in September 1977, with the greatest difference occurring in the central and eastern portions of the planning area. The potentiometric surface in September 1977 was generally higher than in May 1978, with the greatest difference occurring in the central and eastern portions of the planning area.

### INTRODUCTION

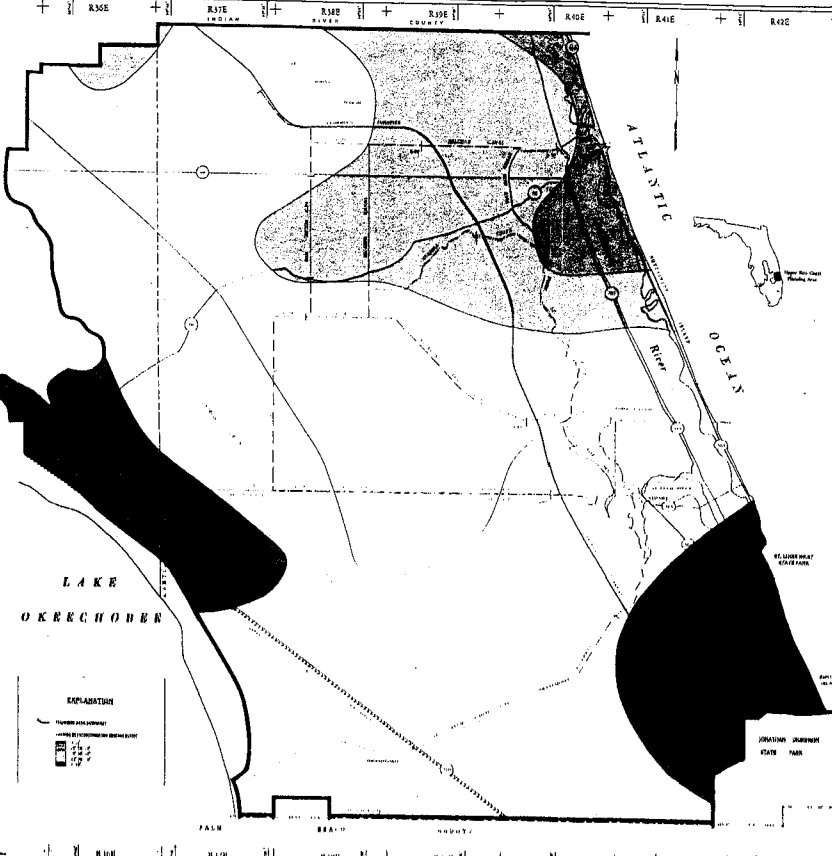
This map was prepared to show the difference in potentiometric surface of the Floridian aquifer system between September 1977 and May 1978. The potentiometric surface in September 1977 was generally higher than in May 1978, with the greatest difference occurring in the central and eastern portions of the planning area. The potentiometric surface in May 1978 was generally lower than in September 1977, with the greatest difference occurring in the central and eastern portions of the planning area.

### DEFINITIONS

Contours of equal potentiometric surface are shown on this map. Contours are drawn at 1-foot intervals. The potentiometric surface in September 1977 was generally higher than in May 1978, with the greatest difference occurring in the central and eastern portions of the planning area. The potentiometric surface in May 1978 was generally lower than in September 1977, with the greatest difference occurring in the central and eastern portions of the planning area.

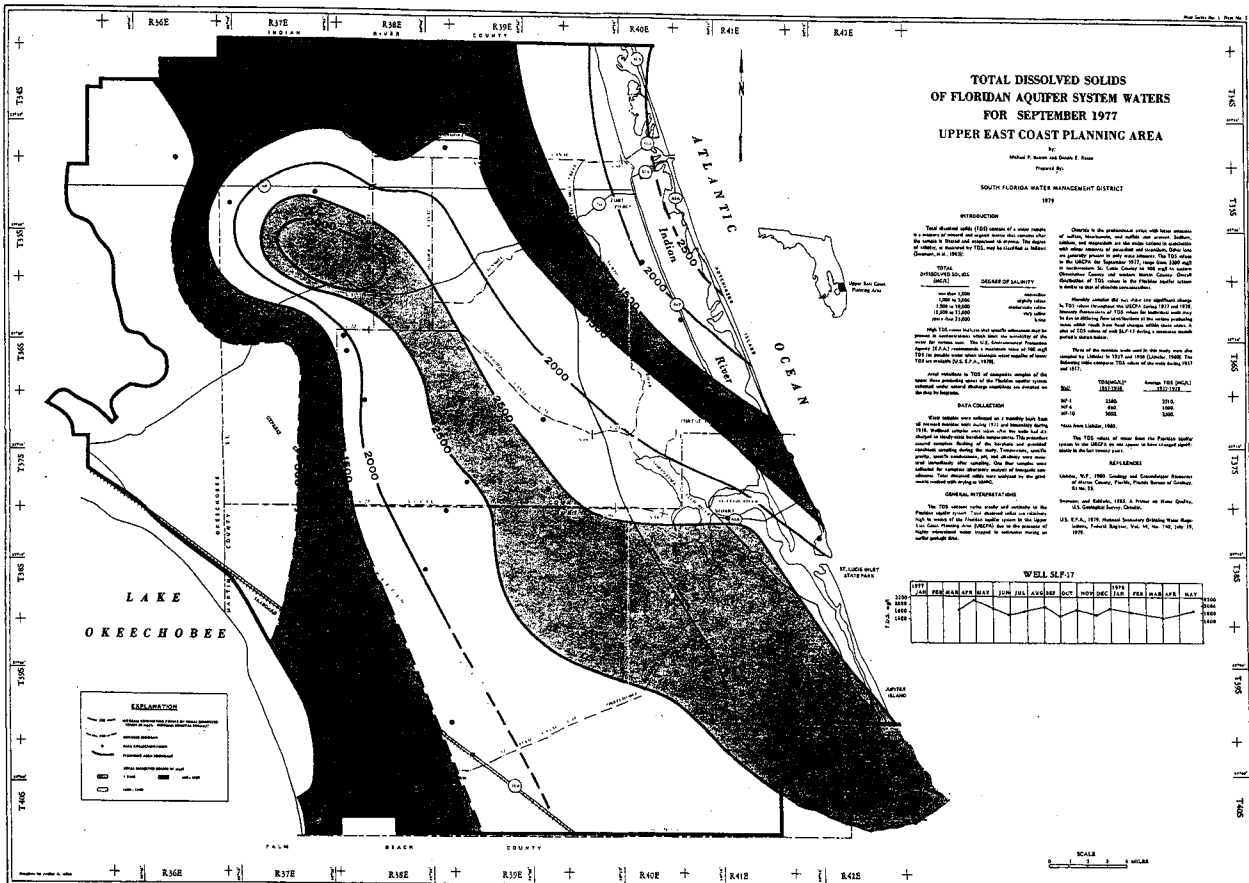
### REFERENCES

Florida Department of Natural Resources, 1977. Floridian Aquifer System of the Upper East Coast Planning Area. Report No. 77-1. Tallahassee, Florida.  
Florida Department of Natural Resources, 1978. Floridian Aquifer System of the Upper East Coast Planning Area. Report No. 78-1. Tallahassee, Florida.



### EXPLANATION

- FLORIDIAN AQUIFER SYSTEM
- BOUNDARY OF POTENTIOMETRIC SURFACE
- WATER LEVEL
- WATER LEVEL FLUCTUATION



**TOTAL DISSOLVED SOLIDS  
OF FLORIDAN AQUIFER SYSTEM WATERS  
FOR SEPTEMBER 1977  
UPPER EAST COAST PLANNING AREA**

Michael F. Brown and Donald E. Pinner  
Project No. 1

SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
1979

**INTRODUCTION**

This distribution map (TDS) shows a cross section of water quality in a portion of the Floridan aquifer system that includes the upper Floridan and aquifers in Florida. The degree of salinization is indicated by TDS, as described in Exhibit C, Exhibit A, & Exhibit B.

**TOTAL DISSOLVED SOLIDS (TDS)**  
 mg/L  
 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 6500 7000 7500 8000 8500 9000 9500 10000 10500 11000 11500 12000 12500 13000 13500 14000 14500 15000 15500 16000 16500 17000 17500 18000 18500 19000 19500 20000

These TDS values have not been specifically determined but are based on measurements taken from areas surrounding the upper Floridan aquifer system. A salinity level of 1000 mg/L is the maximum value which is considered to be suitable for drinking water. A salinity level of 2000 mg/L is the maximum value which is considered to be suitable for irrigation water. A salinity level of 3000 mg/L is the maximum value which is considered to be suitable for industrial water. A salinity level of 4000 mg/L is the maximum value which is considered to be suitable for domestic water. A salinity level of 5000 mg/L is the maximum value which is considered to be suitable for agricultural water. A salinity level of 6000 mg/L is the maximum value which is considered to be suitable for industrial water. A salinity level of 7000 mg/L is the maximum value which is considered to be suitable for domestic water. A salinity level of 8000 mg/L is the maximum value which is considered to be suitable for agricultural water. A salinity level of 9000 mg/L is the maximum value which is considered to be suitable for industrial water. A salinity level of 10000 mg/L is the maximum value which is considered to be suitable for domestic water. A salinity level of 11000 mg/L is the maximum value which is considered to be suitable for agricultural water. A salinity level of 12000 mg/L is the maximum value which is considered to be suitable for industrial water. A salinity level of 13000 mg/L is the maximum value which is considered to be suitable for domestic water. A salinity level of 14000 mg/L is the maximum value which is considered to be suitable for agricultural water. A salinity level of 15000 mg/L is the maximum value which is considered to be suitable for industrial water. A salinity level of 16000 mg/L is the maximum value which is considered to be suitable for domestic water. A salinity level of 17000 mg/L is the maximum value which is considered to be suitable for agricultural water. A salinity level of 18000 mg/L is the maximum value which is considered to be suitable for industrial water. A salinity level of 19000 mg/L is the maximum value which is considered to be suitable for domestic water. A salinity level of 20000 mg/L is the maximum value which is considered to be suitable for agricultural water.

These TDS values are based on a number of factors including the amount of rainfall, the amount of evaporation, the amount of groundwater recharge, and the amount of groundwater discharge. The amount of rainfall is the primary factor in determining TDS values. The amount of evaporation is the second most important factor. The amount of groundwater recharge is the third most important factor. The amount of groundwater discharge is the fourth most important factor.

**DATA COLLECTION**  
 This project was conducted as a part of the South Florida Water Management District's Upper East Coast Planning Area study. The data was collected from a number of wells in the Upper East Coast Planning Area. The data was collected from the following wells: W-1, W-2, W-3, W-4, W-5, W-6, W-7, W-8, W-9, W-10, W-11, W-12, W-13, W-14, W-15, W-16, W-17, W-18, W-19, W-20, W-21, W-22, W-23, W-24, W-25, W-26, W-27, W-28, W-29, W-30, W-31, W-32, W-33, W-34, W-35, W-36, W-37, W-38, W-39, W-40, W-41, W-42, W-43, W-44, W-45, W-46, W-47, W-48, W-49, W-50, W-51, W-52, W-53, W-54, W-55, W-56, W-57, W-58, W-59, W-60, W-61, W-62, W-63, W-64, W-65, W-66, W-67, W-68, W-69, W-70, W-71, W-72, W-73, W-74, W-75, W-76, W-77, W-78, W-79, W-80, W-81, W-82, W-83, W-84, W-85, W-86, W-87, W-88, W-89, W-90, W-91, W-92, W-93, W-94, W-95, W-96, W-97, W-98, W-99, W-100.

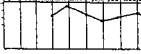
**GENERAL INTERESTS**  
 This TDS distribution map is intended to provide information to the public about the water quality in the Upper East Coast Planning Area. The information is intended to help the public understand the water quality in the Upper East Coast Planning Area and to help the public make decisions about the water quality in the Upper East Coast Planning Area.

**REFERENCES**  
 United States Geological Survey, 1965. *Water Resources of the State of Florida*. Florida Bureau of Geology, Tallahassee, Florida.

**ACKNOWLEDGMENTS**  
 The authors wish to thank the following individuals for their assistance in the preparation of this map: Michael F. Brown, Donald E. Pinner, and the staff of the South Florida Water Management District.

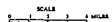
**APPENDIX**  
 A list of wells and their locations in the Upper East Coast Planning Area is provided in Appendix A.

**WELL SLP-17**  
 This graph shows the monthly variation of TDS in well SLP-17 from 1976 to 1977. The Y-axis represents TDS in mg/L, and the X-axis represents the month. The TDS values are generally higher in the summer months and lower in the winter months.



**EXPLANATION**

- 1000 TDS contour
- 1500 TDS contour
- 2000 TDS contour
- 2500 TDS contour
- 3000 TDS contour
- 3500 TDS contour
- 4000 TDS contour
- 4500 TDS contour
- 5000 TDS contour
- 5500 TDS contour
- 6000 TDS contour
- 6500 TDS contour
- 7000 TDS contour
- 7500 TDS contour
- 8000 TDS contour
- 8500 TDS contour
- 9000 TDS contour
- 9500 TDS contour
- 10000 TDS contour
- 10500 TDS contour
- 11000 TDS contour
- 11500 TDS contour
- 12000 TDS contour
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- 13500 TDS contour
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- 15500 TDS contour
- 16000 TDS contour
- 16500 TDS contour
- 17000 TDS contour
- 17500 TDS contour
- 18000 TDS contour
- 18500 TDS contour
- 19000 TDS contour
- 19500 TDS contour
- 20000 TDS contour



# CHLORIDE CONCENTRATION OF FLORIDAN AQUIFER SYSTEM WATERS FOR SEPTEMBER 1977 UPPER EAST COAST PLANNING AREA

Map of  
Miami F. Stone and Robert C. Stone

South Florida Water Management District  
1979

### INTRODUCTION

The chloride concentration of Floridan aquifer system waters in the Upper East Coast Planning Area (UECPA) is the primary factor in determining the suitability of these waters for irrigation. The Florida Department of Agriculture and Consumer Services (FDACS) has established a maximum chloride concentration of 100 mg/L for irrigation water. The Florida Department of Agriculture and Consumer Services (FDACS) has established a maximum chloride concentration of 100 mg/L for irrigation water. The Florida Department of Agriculture and Consumer Services (FDACS) has established a maximum chloride concentration of 100 mg/L for irrigation water.

Annual chloride in the Floridan aquifer system waters of the Upper East Coast Planning Area (UECPA) is the primary factor in determining the suitability of these waters for irrigation. The Florida Department of Agriculture and Consumer Services (FDACS) has established a maximum chloride concentration of 100 mg/L for irrigation water.

### DATA COLLECTION

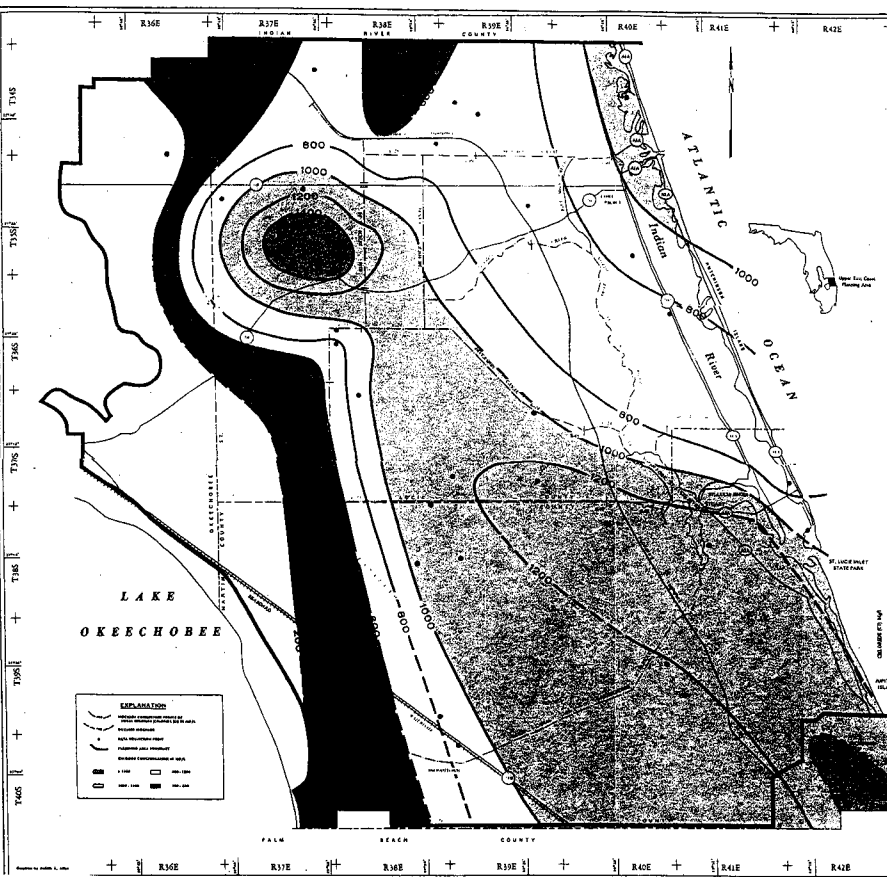
Water samples were collected at 12 locations from August 1976 to August 1977 for chloride analysis. The samples were analyzed for chloride concentration in mg/L. The samples were analyzed for chloride concentration in mg/L.

### GENERAL OBSERVATIONS

Chloride concentrations are high in the Upper East Coast Planning Area (UECPA) and are generally higher than in the other parts of the State. The chloride concentrations are high in the Upper East Coast Planning Area (UECPA) and are generally higher than in the other parts of the State.

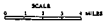
### REFERENCES

- California, R. L., and J. L. (1961) Salinity of water in the Floridan aquifer system of the Upper East Coast Planning Area of Florida. Florida Department of Agriculture and Consumer Services, Tallahassee, Florida. P. 10.
- U.S. G.S. (1974) National Economic Geology Map Series. 1:500,000 scale. Washington, D.C. No. 1000.



**EXPLANATION**

- Shaded area: Chloride concentration greater than 1000 mg/L
- : 1000 mg/L
- : 1500 mg/L
- : 2000 mg/L
- : 2500 mg/L
- : 3000 mg/L
- : 3500 mg/L
- : 4000 mg/L







# TOP OF PRODUCING ZONE 3 AND ACCOMPANYING WATER QUALITY FLORIDAN AQUIFER SYSTEM UPPER EAST COAST PLANNING AREA

Prepared by  
Michael C. Smith and David C. Sams

SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
1979

### INTRODUCTION

This map shows the location of the Floridan aquifer system in the Upper East Coast Planning Area. The Floridan aquifer system is a series of sandstone and limestone layers that are overlain by a thick layer of clay. The Floridan aquifer system is the primary source of water for the Upper East Coast Planning Area. The map shows the location of the Floridan aquifer system in the Upper East Coast Planning Area. The map shows the location of the Floridan aquifer system in the Upper East Coast Planning Area.

Field monitoring is related to water quality indicators in the following manner:

- 1. Field monitoring is related to water quality indicators in the following manner:
- 2. Field monitoring is related to water quality indicators in the following manner:
- 3. Field monitoring is related to water quality indicators in the following manner:

### SYMBOLS

One symbol is used to indicate the location of the Floridan aquifer system in the Upper East Coast Planning Area. The symbol is a triangle with the number 1790 inside. The symbol is a triangle with the number 1790 inside. The symbol is a triangle with the number 1790 inside.

### NOTES

The map shows the location of the Floridan aquifer system in the Upper East Coast Planning Area. The map shows the location of the Floridan aquifer system in the Upper East Coast Planning Area. The map shows the location of the Floridan aquifer system in the Upper East Coast Planning Area.

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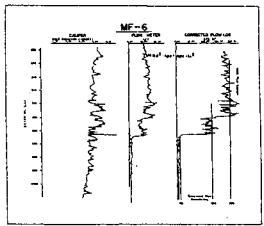
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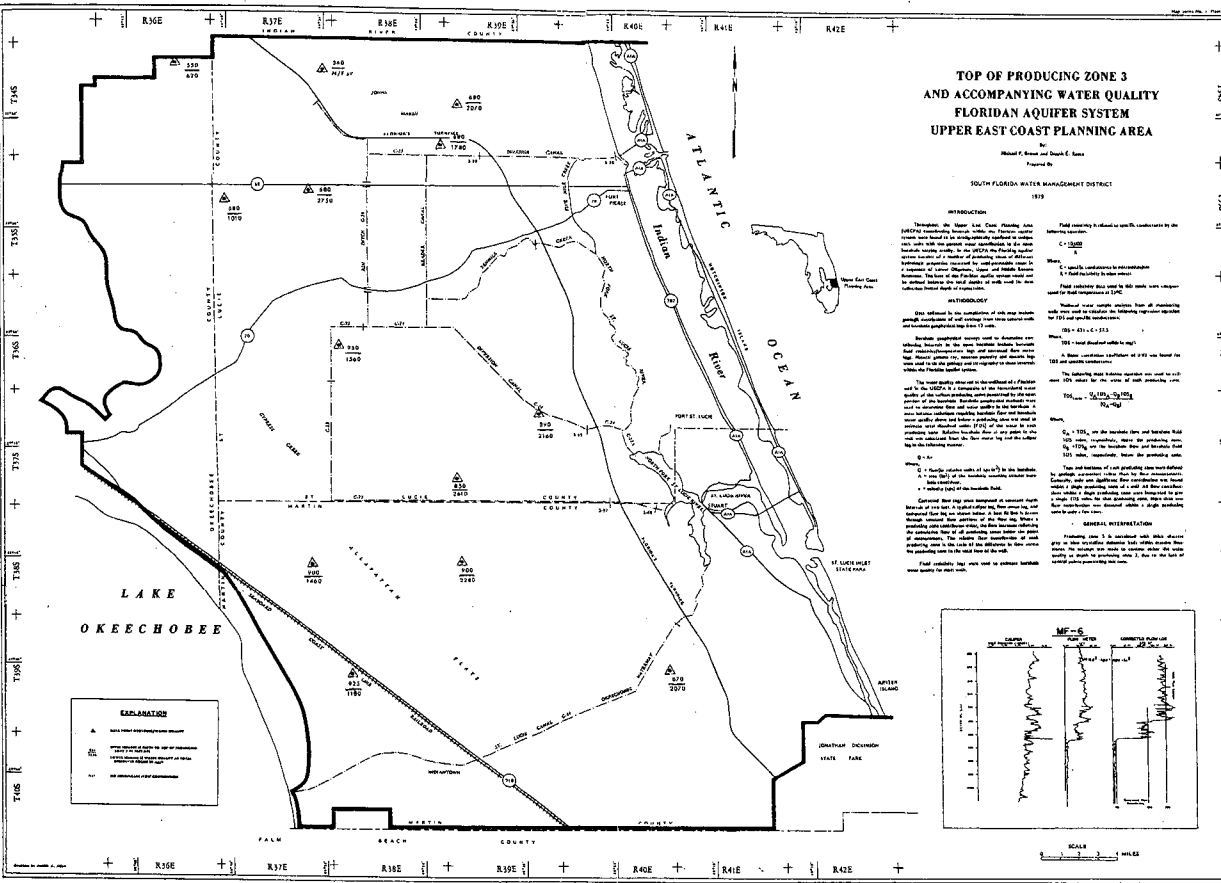
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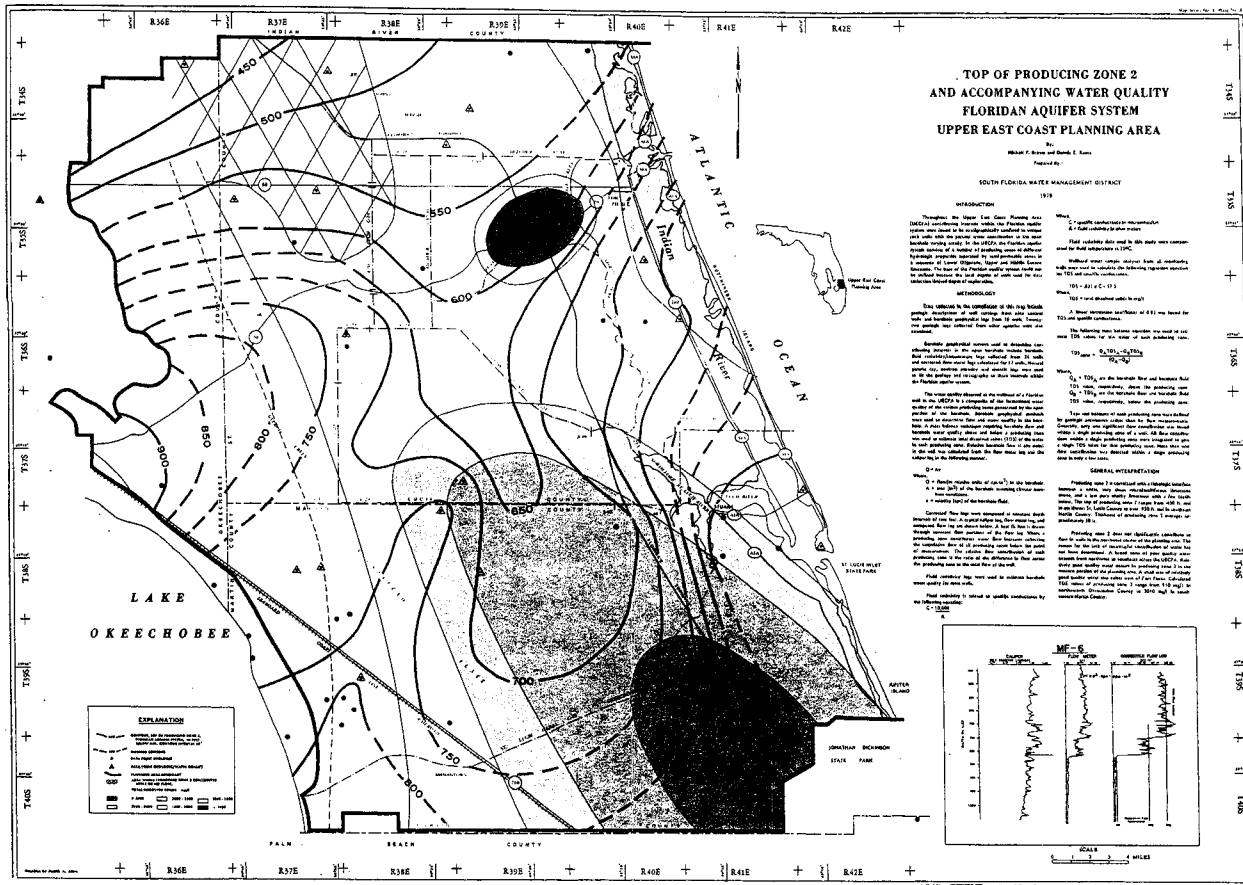
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EXPLANATION	
▲	WATER QUALITY MONITORING POINT
○	WATER QUALITY MONITORING POINT
□	WATER QUALITY MONITORING POINT
△	WATER QUALITY MONITORING POINT
○	WATER QUALITY MONITORING POINT
□	WATER QUALITY MONITORING POINT
△	WATER QUALITY MONITORING POINT



SCALE  
MILES

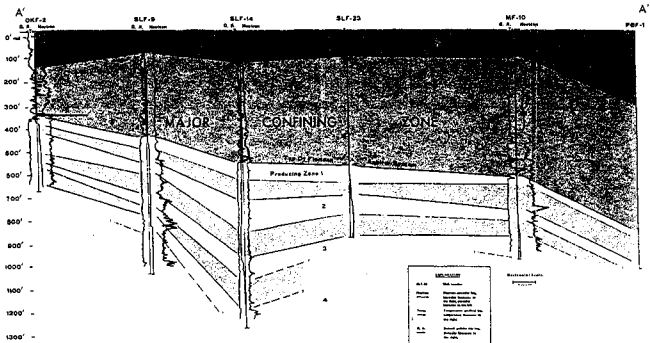




Map No. 100

## GENERALIZED HYDROGEOLOGIC CROSS SECTIONS UPPER EAST COAST PLANNING AREA

Prepared by  
**Robert F. Brown and Donald L. Ryan**  
**SOUTH FLORIDA WATER MANAGEMENT DISTRICT**  
1978



### INTRODUCTION

The hydrogeologic cross sections shown on this map were prepared by the Hydrogeologic Section of the South Florida Water Management District. The purpose of this report is to provide a general overview of the hydrogeologic conditions in the Upper East Coast Planning Area. The information presented herein is based on data collected from a variety of sources, including well logs, geologic maps, and other available information. The data were analyzed and interpreted to provide a general overview of the hydrogeologic conditions in the Upper East Coast Planning Area. The information presented herein is for general informational purposes only and should not be used as a basis for engineering or other professional design.

The top of the Floridan aquifer system (including the upper and lower Floridan aquifers) is shown on the map. The upper Floridan aquifer is the primary source of water for the Upper East Coast Planning Area. The lower Floridan aquifer is a secondary source of water. The upper Floridan aquifer is a sandstone and siltstone sequence that is overlain by a thick layer of clay. The lower Floridan aquifer is a sandstone and siltstone sequence that is overlain by a thick layer of clay. The upper Floridan aquifer is a sandstone and siltstone sequence that is overlain by a thick layer of clay. The lower Floridan aquifer is a sandstone and siltstone sequence that is overlain by a thick layer of clay.

### METHODOLOGY

The data used in the preparation of these general hydrogeologic cross sections were obtained from well logs and other available information. The well logs were obtained from the South Florida Water Management District and other sources. The other available information included geologic maps, topographic maps, and other available information. The data were analyzed and interpreted to provide a general overview of the hydrogeologic conditions in the Upper East Coast Planning Area.

### ACKNOWLEDGMENTS

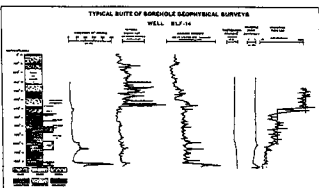
The authors wish to thank the following individuals for their assistance in the preparation of these general hydrogeologic cross sections: Robert F. Brown, Donald L. Ryan, and other staff members of the Hydrogeologic Section of the South Florida Water Management District.

Additional general hydrogeologic cross sections are available for the Upper East Coast Planning Area. These cross sections are available for the Upper East Coast Planning Area. These cross sections are available for the Upper East Coast Planning Area.

Other available information includes geologic maps, topographic maps, and other available information. The data were analyzed and interpreted to provide a general overview of the hydrogeologic conditions in the Upper East Coast Planning Area.

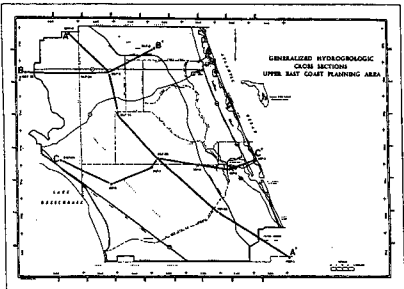
### GENERAL REFERENCES

- Thompson, G. W. 1964. Hydrogeologic Section of the Upper East Coast Planning Area. South Florida Water Management District, Hydrogeologic Section, Fort Lauderdale, Florida.
- U.S. Geological Survey. 1964. Hydrogeologic Section of the Upper East Coast Planning Area. U.S. Geological Survey, Fort Lauderdale, Florida.
- U.S. Geological Survey. 1964. Hydrogeologic Section of the Upper East Coast Planning Area. U.S. Geological Survey, Fort Lauderdale, Florida.
- U.S. Geological Survey. 1964. Hydrogeologic Section of the Upper East Coast Planning Area. U.S. Geological Survey, Fort Lauderdale, Florida.



SYMBOLS

Symbol	Meaning
—	Well Log
—	Geologic Map
—	Topographic Map
—	Other Available Information



## GENERALIZED HYDROGEOLOGIC CROSS SECTIONS UPPER EAST COAST PLANNING AREA

By  
Michael C. Brown and Charles L. Lane  
Prepared For:  
SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
1974

