
TECHNICAL PUBLICATION 86-1

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DRE 221

PART 2 - APPENDICES

**PRELIMINARY ASSESSMENT OF
THE GROUNDWATER
RESOURCES OF WESTERN
COLLIER COUNTY, FLORIDA**

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APPENDIX I-1

INTRODUCTION

Introduction

This portion of the appendix contains relevant information on the wells used to develop the geologic and hydrogeologic information presented in this report. Appendix I-2 contains location data on individual control wells, and Appendix I-5 contains the geologic, hydrogeologic, and geophysical information pertinent to selected wells.

Appendix I-2 is a table listing all of the wells used to evaluate the geologic and hydrogeologic systems in the study area. The wells are in an alphabetical and numerical order that can be cross referenced to Figure 3 in the text. The first letter or letters are county or well origination designators. The Collier County wells start with a C or GJ, the Hendry County with an He, and the Lee County with an LE or L. The township-range, latitude-longitude, elevation and depth of wells are tabulated from left to right following the well number. All of the wells listed in this appendix have geological descriptions, but only those wells described by the authors and marked under the lithology available column are presented in Appendix I-5. Borehole geophysics was also available from most of these wells. If geophysical logs from a well are presented in Appendix I-5, the geophysics available column is appropriately marked in Appendix I-2.

Appendix I-5 contains the lithologic descriptions, stratigraphic columns, and borehole geophysical surveys of selected wells listed in Appendix I-2. The wells are in the same alphabetical and numerical order that they are listed in Appendix I-2. The lithologic log appears first followed by the stratigraphic column and geophysical logs, if available. The lithologic logs and stratigraphic columns are generated by two programs (LITHOLOGIC and STRATALOG) present on the Cyber Computer System at the District. Figure A-I is a legend for the columnar sections.

LITHOLOGY

COLUMN

ACCESSORY MINERALS

SAND

SAND AND SHELL

SANDY CLAY AND/OR DOLOSILT

CLAYEY SAND

DOLOSILT AND/OR CLAY

SANDSTONE (CALCITIC)

SANDSTONE (DOLOMITIC)

LIMESTONE

SANDY LIMESTONE

DOLOMITE

DOLOMITIC LIMESTONE

CALCITE
CALCITE
CALCITE
CALCITE
CALCITE
CALCITE
CALCITE
CALCITE
CALCITE
CALCITE

PHOSPHATE
PHOSPHATE
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PHOSPHATE

SUPPLEMENTAL SYMBOLS

Phosphate P
Gravel O

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POOR ↑ GOOD
← INDURATION →

Figure A-1 W2032

APPENDIX I-2

DATA FROM SELECTED HYDROGEOLOGIC CONTROL WELLS

<u>Well #</u>	<u>TMP</u>	<u>RGE</u>	<u>SEC</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>ELEVATION (NGVD)</u>	<u>DEPTH (FT.)</u>	<u>LITHOLOGY AVAILABLE</u>	<u>GEOPHYSICS AVAILABLE</u>
C2002	50	26	30	26 05 37	81 44 19	4.5	149		
C2003	50	26	23	26 05 49	81 40 21	9.2	183		
C2004	51	26	10	26 03 02	81 41 40	3.2	199		
C2005	51	29	30	26 00 18	81 38 22	3.9	198		
C2008	50	26	34	26 04 35	81 41 17	7.0	180		
C2009	50	26	33	26 04 04	81 42 44	6.0	190		
C2010	51	27	18	26 01 57	81 39 12	5.5	220		
C2014	51	27	8	26 02 58	81 37 20	8.0	198		
C2020	50	26	3	26 09 16	81 41 26	11.0	540	X	X
C2024	50	28	6	26 09 8	81 33 17	13.0	998		X
C2025	50	30	4	26 09 16	81 18 53	13.0	1205		X
C2028	51	26	33	25 58 57	81 42 52	6.0	800	X	X
C2029	51	27	35	25 59 10	81 35 55	6.0	880	X	X
C2030	52	28	13	26 56 23	81 27 25	6.0	1220	X	X
C2031	52	30	7	25 57 30	81 21 11	6.0	880	X	X
C2032	48	27	23	26 17 09	81 35 35	25.0	352	X	X
C2033	49	27	11	26 13 46	81 35 28	14.0	380	X	X
C2034	49	28	6	26 08 37	81 31 27	13.0	340	X	X
C2035	51	27	6	26 03 13	81 38 03	6.0	180	X	X
C2036	50	27	6	26 08 42	81 38 12	11.0	240	X	X
C2037	51	28	6	26 04 31	81 33 15	8.0	200	X	X
C2038	47	27	27	26 21 05	81 36 15	23.0	335	X	X
C2039	49	27	07	26 13 43	81 38 55	13.0	260	X	X
C2040	47	28	24	26 22 15	81 31 06	25.0	520	X	X

<u>Well #</u>	<u>TWP</u>	<u>RGE</u>	<u>SEC</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>ELEVATION (NGVD)</u>	<u>DEPTH (FT.)</u>	<u>LITHOLOGY AVAILABLE</u>	<u>GEOPHYSICS AVAILABLE</u>
C2041	48	28	23	26 17 33	81 31 07	18.0	380	X	X
C2042	47	30	29	26 21 38	81 20 55	22.0	460	X	X
C2044	51	29	6	26 03 10	81 27 25	15.0	420	X	X
C2045	52	30	34	26 54 03	81 18 12	5.0	140	X	X
C2046	49	28	2	26 15 00	81 31 12	15.0	200	X	X
C2049	48	27	33	26 15 00	81 37 30	15.0	52	X	X
C2050	49	26	13	26 12 10	81 39 20	12.0	32	X	X
C2051	49	26	3	26 13 58	81 42 15	13.0	37	X	X
C2052	48	27	8	26 18 28	81 37 34	15.0	40	X	X
C2053	49	25	9	26 13 10	81 48 06	16.0	935	X	X
C2054	46	29	31	26 26 02	81 27 01	30.0	340	X	X
C2055	47	29	1	26 25 09	81 22 37	30.0	540	X	X
C2056	46	29	10	26 29 10	81 25 00	36.0	183	X	X
C2057	48	25	24	26 16 22	81 45 15	16.0	225	X	X
C2058	46	28	28	26 26 40	81 31 01	21.0	260	X	X
C2059	46	29	7	26 28 59	81 27 30	42.0	410	X	X
C2060	48	27	7	26 18 41	81 38 32	16.0	390	X	X
C2061	48	29	23	26 17 40	81 23 54	18.0	498	X	X
C2062	48	28	17	26 17 36	81 32 45	16.0	460	X	X
C2063	50	25	12	26 08 16	81 45 23	7.0	60	X	X
GJ3	49	26	34	26 09 17	81 41 43	12.0	68		
GJ4	49	26	10	26 13 34	81 41 45	12.0	68		
GJ5	49	26	3	26 14 14	81 41 46	13.0	180		
GJ6	48	26	30	26 16 20	81 44 52	14.0	180		

<u>Well #</u>	<u>TWP</u>	<u>RGE</u>	<u>SEC</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>ELEVATION (NGVD)</u>	<u>DEPTH (FT.)</u>	<u>LITHOLOGY AVAILABLE</u>	<u>GEOPHYSICS AVAILABLE</u>
GJ7	49	25	12	26 12 46	81 46 02	11.0	180		
GJ11	48	25	33	26 14 48	81 48 55	5.0	160		
GJ12	49	25	9	26 12 44	81 48 16	14.0	70		
GJ15	50	25	23	26 06 29	81 46 43	4.0	100		
GJ17	49	26	17	26 12 35	81 44 07	13.0	100		
GJ19	49	25	26	26 11 04	81 46 15	8.0	140		
HE008	44	29	16	26 38 45	81 26 12	28.0	380	X	X
HE010	45	28	6	26 35 18	81 33 28	28.0	260	X	X
HE011	45	28	10	26 34 30	81 30 30	32.0	200	X	X
HE012	45	28	30	26 38 40	81 20 45	27.0	240	X	X
HE013	45	29	20	26 33 32	81 26 10	34.0	380	X	X
L607	46	25	33	26 25 51	81 49 02				
L612	44	26	28	26 37 00	81 42 54		300		
L613	45	27	07	26 34 59	81 38 45		360		
L617	46	27	30	26 26 59	81 39 36	22.0	340		
LE008	45	25	35	26 31 36	81 46 54	20.0	1126	X	
LE011	47	26	19	26 22 15	81 44 19	15.0	585	X	
LE017	47	26	13	26 23 12	81 42 15	20.0	1460		
LE020	46	26	15	26 28 30	81 42 30	23.0	310	X	
LE027	46	27	8	26 29 00	81 37 57	28.0	382	X	X
LE028	44	26	15	26 38 34	81 40 50	30.0	770	X	X
LE033	47	26	36	26 20 13	81 39 53	20.0	435	X	X

APPENDIX I-3
GEOLOGIC, HYDROGEOLOGIC, AND GEOPHYSICAL DATA
FROM SELECTED HYDROGEOLOGIC CONTROL WELLS

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2020

COLLIER CO. T50S R26E SEC 03AB 26 09 16 N 81 41 26 W
 TOTAL DEPTH- 540 FT. ELEV.- 11 FT. SAMPLES- 0- 540 FT.
 COMPLETED- 80.02.12 DEPTH WORKED FT.

WELL NAME-

COLLIER DEEP WELL C20200, SFWMD, ALVIN WOODSTER DRILLER

REMARKS-

WORKED BY STEVE PEACOCK, REWORKED BY STEVE ANDERSON, QUALITY (GOOD)

HYDROGEOLOGIC UNITS

- 0.0- 170.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 50.0 WATER TABLE AQUIFER
- 50.0- 80.0 TAMiami CONFINING BEDS
- 80.0- 170.0 LOWER TAMiami AQUIFER
- 170.0- 230.0 UPPER HAWTHORN CONFINING ZONE
- 230.0- 240.0 SANDSTONE AQUIFER
- 240.0- 300.0 MID-HAWTHORN CONFINING ZONE
- 300.0- 390.0 MID-HAWTHORN AQUIFER
- 390.0- 540.0 LOWER-HAWTHORN CONFINING ZONE

STRATIGRAPHIC FORMATIONS -

- 0.0- 10.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
- 10.0- 180.0 TAMiami FORMATION
- 180.0- 540.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2020 . COLLIER CO. T50S, R26E, SEC 03AB

- 0.0- 10.0 SANDSTONE, DARK YELLOWISH ORANGE TO MODERATE YELLOWISH BROWN, 10% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, SPARKY CALCITE CEMENT, 10% CALCILUTITE, 05% LIMESTONE, ORGANICS,
- 10.0- 20.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MULDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 03% QUARTZ SAND, FOSSIL FRAGMENTS,
- 20.0- 30.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MULDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 35.0- 40.0 LIMESTONE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS,
- 40.0- 50.0 LIMESTONE, WHITE TO LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, BRYOZOA,
- 50.0- 60.0 LIMESTONE, WHITE TO LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS, FOSSIL MOLDS, BRYOZOA, BENTHONIC FORAMINIFERA,
- 60.0- 70.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS,
- 70.0- 80.0 LIMESTONE, WHITE TO LIGHT GRAY, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, ECHINOID,
- 80.0- 90.0 LIMESTONE, WHITE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 18% QUARTZ SAND, 03% CALCILUTITE, FOSSIL FRAGMENTS, FOSSIL MOLDS, BENTHONIC FORAMINIFERA, BRYOZOA,
- 90.0- 100.0 LIMESTONE, WHITE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 18% QUARTZ SAND, 03% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, CORAL,
- 100.0- 110.0 LIMESTONE, WHITE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 18% QUARTZ SAND, 03% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, CORAL,

LITHOLOGIC LOG

W- 2020 . COLLIER CO. T50S, R26E, SEC 03AB

- 110.0- 120.0 LIMESTONE, WHITE TO LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 18% QUARTZ SAND, 03% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, BENTHONIC FORAMINIFERA,
- 120.0- 130.0 LIMESTONE, WHITE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 18% QUARTZ SAND, 04% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, BENTHONIC FORAMINIFERA,
- SOME FRAGS APPEAR TO BE REWORKED
TRACE HEAVY MINERALS
- 130.0- 140.0 LIMESTONE, WHITE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 25% QUARTZ SAND,
- 140.0- 150.0 LIMESTONE, WHITE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 30% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS,
- A LOT OF LOOSE SAND CONTAINED IN SAMPLES
- 150.0- 160.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, CLAY MATRIX, 20% QUARTZ SAND, 10% CLAY, 02% PHOSPHATIC SAND, COQUINA,
- 160.0- 170.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, FOSSIL FRAGMENTS, FOSSIL MOLDS,
- 170.0- 180.0 MUD-SILT, LIGHT OLIVE GRAY TO LIGHT GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 02% PHOSPHATIC SAND,

- 185.0- 190.0 DULO-SILT, LIGHT OLIVE GRAY TO LIGHT GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 02% PHOSPHATIC SAND,
- 190.0- 200.0 DULO-SILT, LIGHT OLIVE GRAY TO GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 05% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS,
- 200.0- 210.0 DULO-SILT, LIGHT OLIVE GRAY TO GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 05% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 210.0- 220.0 DULO-SILT, LIGHT OLIVE GRAY TO GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 05% QUARTZ SAND, 05% SILT, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 220.0- 230.0 DULO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 05% PHOSPHATIC SAND, 05% SILT, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 230.0- 240.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, 05% CLAY,
- 240.0- 250.0 DULO-SILT, VERY LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% LIMESTONE, 02% QUARTZ SAND, 05% CLAY,
- 250.0- 260.0 DULO-SILT, GRAYISH OLIVE GREEN TO DARK GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 15% CALCILUTITE, 02% QUARTZ SAND, 03% SILT, 02% PHOSPHATIC SAND,
- 260.0- 270.0 DULO-SILT, GRAYISH OLIVE GREEN TO DARK GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 15% CALCILUTITE, 03% QUARTZ SAND, 03% SILT, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

4-2020 . COLLIER CO. T50S, R26E, SEC 03AB

- 270.0- 280.0 DULD-SILT, GRAYISH OLIVE GREEN TO DARK GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 15% CALCILUTITE, 03% QUARTZ SAND, 04% SILT, 03% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 280.0- 290.0 DULD-SILT, GRAYISH OLIVE GREEN TO DARK GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 15% CALCILUTITE, 03% QUARTZ SAND, 04% SILT, 03% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 290.0- 300.0 SHELL BED, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, UNCONSOLIDATED, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 03% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 300.0- 310.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 03% PHOSPHATIC SAND, 04% QUARTZ SAND, 03% SILT, 03% CLAY, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,
- 310.0- 320.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, 04% PHOSPHATIC SAND, 03% SILT, 03% CLAY, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,
- 320.0- 330.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, 04% PHOSPHATIC SAND, 03% SILT, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,
- 330.0- 340.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, 03% PHOSPHATIC SAND, 03% SILT, FOSSIL FRAGMENTS, CORAL,
- 340.0- 350.0 LIMESTONE, WHITE TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, 03% PHOSPHATIC SAND, 03% SILT, FOSSIL FRAGMENTS, CORAL,
- 350.0- 360.0 LIMESTONE, WHITE TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 03% PHOSPHATIC SAND, 03% SILT, FOSSIL FRAGMENTS, CORAL, MOLLUSKS,

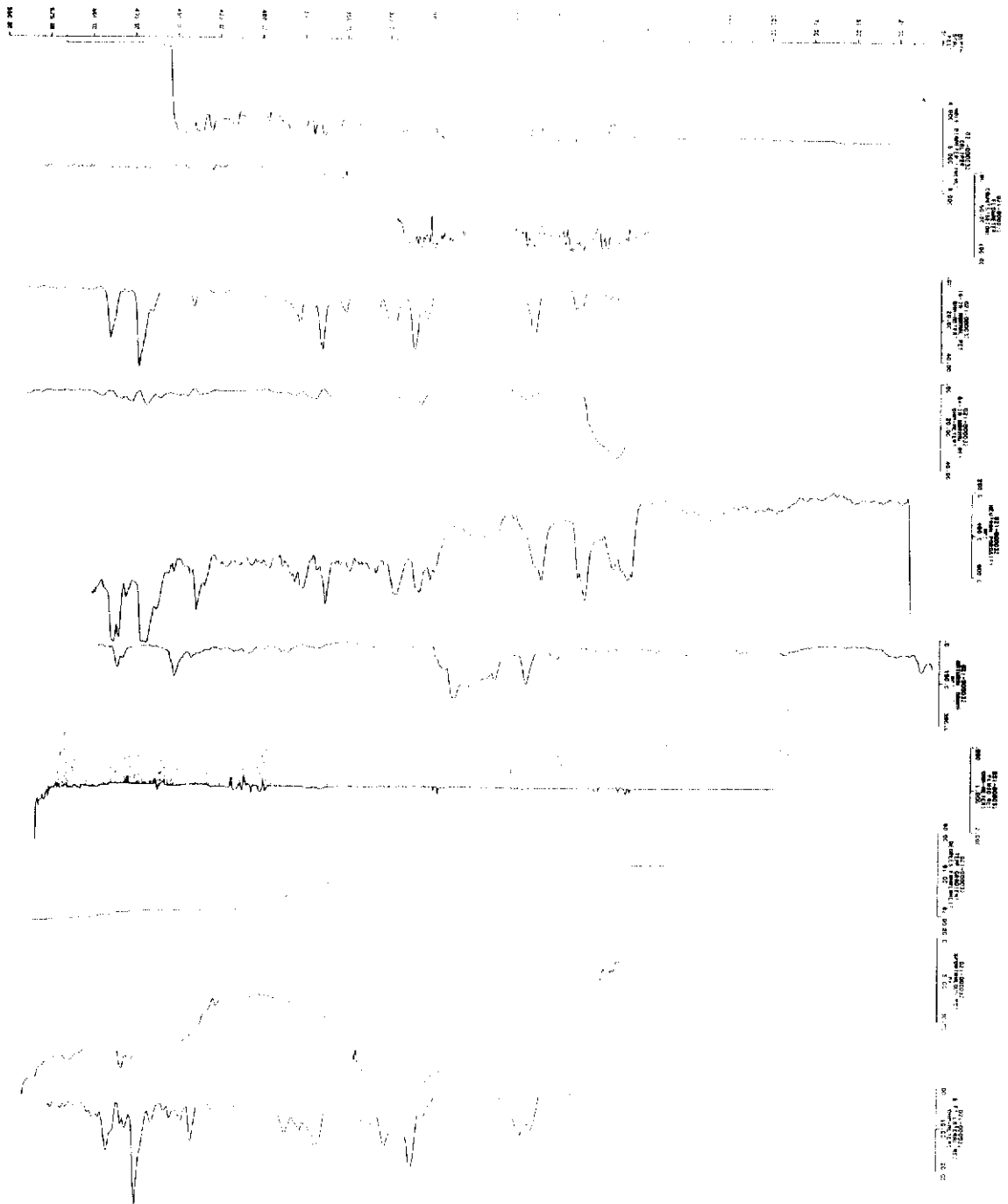
- 360.0- 370.0 LIMESTONE, WHITE TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% PHOSPHATIC SAND, 03% SILT, FOSSIL FRAGMENTS, CORAL, MOLLUSKS,
- 370.0- 380.0 LIMESTONE, WHITE TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% PHOSPHATIC SAND, 04% SILT, 03% QUARTZ SAND, FOSSIL FRAGMENTS, CORAL, MOLLUSKS,
- 380.0- 390.0 LIMESTONE, WHITE TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, CORAL,
- 390.0- 400.0 LIMESTONE, WHITE TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, CORAL, MOLLUSKS,
- 400.0- 410.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 07% PHOSPHATIC SAND, 05% QUARTZ SAND, FOSSIL FRAGMENTS, CORAL, MOLLUSKS, BRYOZOA, BENTHONIC FORAMINIFERA,
- 410.0- 420.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% PHOSPHATIC SAND, 05% QUARTZ SAND, FOSSIL FRAGMENTS, CORAL, MOLLUSKS, BRYOZOA, BENTHONIC FORAMINIFERA,
- 420.0- 430.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 35% CALCILUTITE, 20% DOLOMITE, 10% CLAY, 03% PHOSPHATIC SAND,
- 430.0- 440.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 11% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% CALCILUTITE, 03% PHOSPHATIC SAND, 05% QUARTZ SAND, CORAL, FOSSIL FRAGMENTS, FOSSIL MOLDS, ALGAE,

- 440.0- 450.0 SANDSTONE, LIGHT GRAY TO LIGHT OLIVE GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 20% CALCILUTITE, 05% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 450.0- 460.0 LIMESTONE, LIGHT GRAY TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 40% CALCILUTITE, 05% CLAY, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 460.0- 470.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 470.0- 480.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 02% PHOSPHATIC SAND, 07% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, CORAL,
- 480.0- 490.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 490.0- 500.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, 02% SILT, FOSSIL FRAGMENTS, MOLLUSKS, CORAL, SHARK TEETH,
- 500.0- 510.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, 02% SILT, FOSSIL FRAGMENTS, MOLLUSKS, CORAL, SHARK TEETH,

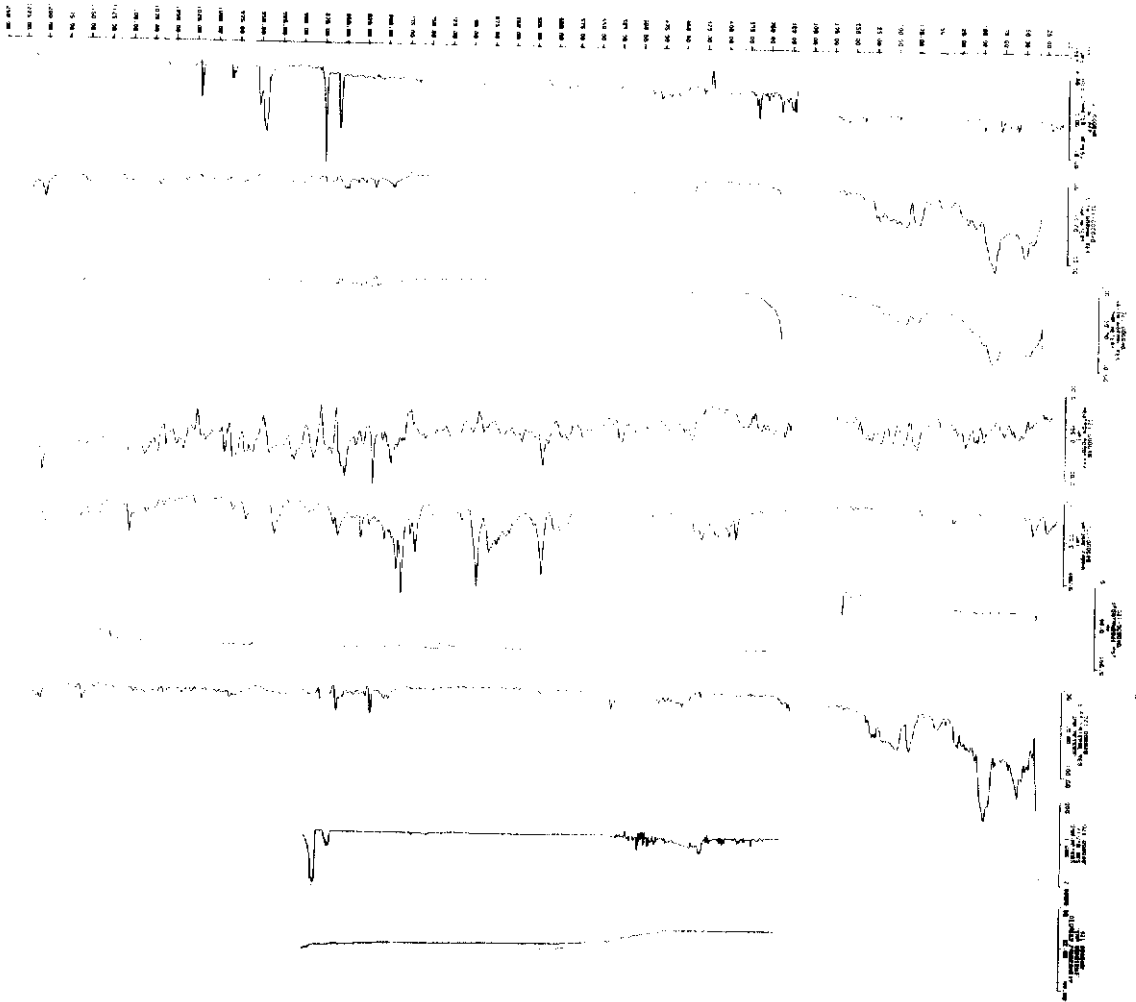
- 010.0- 020.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 0% PHOSPHATIC SAND, 0% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, CORAL,
- 020.0- 030.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 10% SPAR, 10% PHOSPHATIC SAND, 0% QUARTZ SAND, 0% SILT, FOSSIL FRAGMENTS, MOLLUSKS, CORAL,
- 030.0- 040.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 10% SPAR, 0% PHOSPHATIC SAND, 0% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, CORAL, BRYOZOA,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT				
0		CALCITE	TAMIAMI FORMATION	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER			
-40					TAM. CON. BEDS			
-80		SAND SAND SAND SAND SAND SAND SAND			LOWER TAMIAMI AQUIFER			
-120				SAND	HAWTHORN GROUP	SYSTEM	UPPER HAWTHORN CONFINING ZONE	
-160		CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE		CLAY			SANDSTONE A	
-200		CALCITE CALCITE CALCITE CALCITE CALCITE					MID-HAWTHORN CONFINING ZONE	
-240							AQUIFER	MID- HAWTHORN AQUIFER
-280								
-320								
-360								
-400								
-440		CALCITE DOLOMITE	HAWTHORN CARBONATE	INTERMEDIATE AQUIFER				
-480	CALCITE CLAY CLAY CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE							
-520	CALCITE PHOSPHATE CALCITE PHOSPHATE							
-560								

WC2020



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2020



NOTE: DELETIONS OCCUR ON THE GEO-
 PHYSICAL LOGS BETWEEN DEPTHS OF
 275 FEET TO 325 FEET. THESE DELETIONS
 ARE DUE TO DIFFERENT SAMPLING DATES.

GEOPHYSICAL LOGS, COLLIER COUNTY, C-2025

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2028

COLLIER CO. T515 R26E SEC 33BA 25 58 57 N 81 42 52 W
 TOTAL DEPTH- 800 FT. ELEV.- 0 FT. SAMPLES- 0- 800 FT.
 COMPLETED- 01.03.19 DEPTH WORKED FT.

WELL NAME-

COLLIER DEEP WELL (2028D, SF WMD, ALVIN WOODSTER DRILLER

REMARKS-

WORKED BY STEVE ANDERSON, 05-31-83, QUALITY (GOOD)

HYDROGEOLOGIC UNITS

- 0.0- 190.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 40.0 WATER TABLE AQUIFER
- 40.0- 60.0 TAMIAHI CONFINING BEDS
- 60.0- 220.0 LOWER TAMIAHI AQUIFER
- 220.0- 360.0 MID-HAWTHORN CONFINING ZONE
- 360.0- 450.0 MID-HAWTHORN AQUIFER
- 450.0- 650.0 LOWER HAWTHORN CONFINING ZONE
- 650.0- 800.0 LOWER HAWTHORN/TAMPA PRODUCING ZONE

STRATIGRAPHIC FORMATIONS -

- 0.0- 40.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
- 40.0- 200.0 TAMIAHI FORMATION
- 200.0- 730.0 HAWTHORN FORMATION *
- 730.0- 800.0 TAMPA LIMESTONE

LITHOLOGIC LOG

W- 2028 . COLLIER CO. T515, R26E, SEC 33BA

- 0.0- 10.0 SAND, LIGHT BROWN TO MODERATE BROWN, POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, UNCONSOLIDATED,
- 10.0- 20.0 SAND, LIGHT BROWN TO MODERATE BROWN, POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ANGULAR, UNCONSOLIDATED,
- 20.0- 30.0 SAND, LIGHT BROWN TO MODERATE BROWN, POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ANGULAR, UNCONSOLIDATED, ORGANICS,
- 30.0- 40.0 SAND, LIGHT BROWN TO MODERATE BROWN, POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, UNCONSOLIDATED, CALCILUTITE MATRIX,
- 40.0- 50.0 CALCILUTITE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 05% QUARTZ SAND, FOSSIL FRAGMENTS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

2028 . COLLIER CO. T51S, R26E, SEC 33BA

- 50.0- 60.0 CALCILUTITE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 05% QUARTZ SAND, FOSSIL FRAGMENTS,
- 60.0- 70.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 70.0- 80.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, FOSSIL FRAGMENTS,
- 80.0- 90.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 90.0- 100.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS,
- 100.0- 110.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS,
- 110.0- 120.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS,
- 120.0- 130.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS,

- 130.0- 140.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS,
- 140.0- 150.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 07% CALCILUTITE, FOSSIL FRAGMENTS,
- 150.0- 160.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 07% CALCILUTITE, FOSSIL FRAGMENTS,
- 160.0- 170.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 07% CALCILUTITE, FOSSIL FRAGMENTS,
- 170.0- 180.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 06% QUARTZ SAND, 02% PHOSPHATIC SAND, 05% CALCILUTITE, FOSSIL FRAGMENTS,
- 180.0- 190.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 06% QUARTZ SAND, 02% PHOSPHATIC SAND, 05% CALCILUTITE, FOSSIL FRAGMENTS, MOLLUSKS,
- INCREASE IN QUARTZ SAND ALMOST TO SANDSTONE
- 190.0- 200.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% QUARTZ SAND, 05% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 200.0- 210.0 SANDSTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 08% CALCILUTITE, FOSSIL MOLDS, MOLLUSKS,

- 210.0- 220.0 SANDSTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 08% CALCILUTITE, FOSSIL MOLDS, MOLLUSKS,
- 220.0- 230.0 MOLD-SILT, LIGHT OLIVE GRAY TO GREENISH GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 230.0- 240.0 MOLD-SILT, LIGHT OLIVE GRAY TO GREENISH GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 240.0- 250.0 MOLD-SILT, LIGHT OLIVE GRAY TO GREENISH GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 250.0- 260.0 MOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 04% QUARTZ SAND, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 260.0- 270.0 MOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 04% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 270.0- 280.0 MOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 04% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 280.0- 290.0 MOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 04% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 290.0- 300.0 MOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 04% QUARTZ SAND, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,

LITHOLOGIC LOG

W- 2028 . COLLIER CO. T51S, R26E, SEC 33BA

- 300.0- 310.0 DOLO-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 06% CLAY, 15% CALCILUTITE, 04% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 310.0- 320.0 DOLO-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 06% CLAY, 15% CALCILUTITE, 04% PHOSPHATIC SAND, 02% SILT, BENTHONIC FORAMINIFERA,
- 320.0- 330.0 DOLO-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 06% CLAY, 15% CALCILUTITE, 04% PHOSPHATIC SAND, 02% SILT, BENTHONIC FORAMINIFERA,
- 330.0- 340.0 DOLO-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 04% PHOSPHATIC SAND, 02% SILT, BENTHONIC FORAMINIFERA,
- 340.0- 350.0 DOLO-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 04% PHOSPHATIC SAND, 02% SILT, BENTHONIC FORAMINIFERA,
- 350.0- 360.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,
- 360.0- 370.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,
- 370.0- 380.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS,
- 380.0- 390.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS,

- 390.0- 400.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 400.0- 410.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 410.0- 420.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 420.0- 430.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 430.0- 440.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 440.0- 450.0 SANDSTONE, LIGHT OLIVE GRAY TO MODERATE YELLOWISH BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 20% DOLOMITE, 20% CALCILUTITE, 05% SILT, FOSSIL FRAGMENTS,
- 450.0- 460.0 SANDSTONE, LIGHT OLIVE GRAY TO MODERATE YELLOWISH BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 20% DOLOMITE, 20% CALCILUTITE, 05% SILT, FOSSIL FRAGMENTS,
- 460.0- 470.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 15% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 470.0- 480.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 15% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

W- 2028 . COLLIER CO. T51S, R26E, SEC 338A

- 480.0- 490.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 15% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 490.0- 500.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 15% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 500.0- 510.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% DOLOMITE, 10% CALCILUTITE, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 510.0- 520.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 520.0- 530.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% DOLOMITE, 12% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 530.0- 540.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% DOLOMITE, 15% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 540.0- 550.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND,

LITHOLOGIC LOG

202E • COLLIER CO. T51S, R20E, SEC 33BA

- 550.0- 560.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 10% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 560.0- 570.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 10% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 570.0- 580.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 05% CALCILUTITE, 05% DOLOMITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 580.0- 590.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 05% CALCILUTITE, 05% DOLOMITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 590.0- 600.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 10% CALCILUTITE, 10% DOLOMITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 600.0- 610.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 10% CALCILUTITE, 10% DOLOMITE, 03% PHOSPHATIC SAND,
- 610.0- 620.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 10% CALCILUTITE, 10% DOLOMITE, 03% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 620.0- 630.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% CALCILUTITE, 10% DOLOMITE, 03% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 630.0- 640.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% CALCILUTITE, 12% DOLOMITE, 03% PHOSPHATIC SAND,

640.0- 650.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% CALCILUTITE, 12% DOLOMITE, 03% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,

ALTERNATING BEDS OF SOFT WHITE LIMESTONE AND HARD GREY LIMESTONE
OCCURANCE OF MIOGYPSINA

650.0- 660.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,

660.0- 670.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% SPAR, 05% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,

670.0- 680.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% SPAR, 05% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,

680.0- 690.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% SPAR, 05% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,

690.0- 700.0 DOLOMITE, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 30% CALCILUTITE, 05% SPAR, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,

700.0- 710.0 DOLOMITE, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 30% CALCILUTITE, 05% SPAR, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,

- 710.0- 720.0 DOLOMITE, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 30% CALCILUTITE, 05% SPAR, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 720.0- 730.0 DOLOMITE, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 30% CALCILUTITE, 05% SPAR, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 730.0- 740.0 DOLOMITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% CALCILUTITE, 05% SPAR, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 740.0- 750.0 DOLOMITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% CALCILUTITE, 05% SPAR, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 750.0- 760.0 DOLOMITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% CALCILUTITE, 05% SPAR, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 760.0- 770.0 NO SAMPLE,
- 770.0- 780.0 NO SAMPLE,
- LARGE CAVITY ZONE, NO SAMPLES
- 780.0- 790.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% SPAR, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 790.0- 800.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% SPAR, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
0			UNDIFF.	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER
-50					TAM. CONF. BEDS
-100			TAMIAMI FORMATION	SURFICIAL AQUIFER SYSTEM	LOWER TAMIAMI AQUIFER
-150					
-200					
-250		CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE	UPPER CLASTIC	SYSTEM	MID- HAWTHORN CONFINING ZONE
-300					
-350				AQUIFER	MID- HAWTHORN AQUIFER
-400					
-450		CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE	LOWER	INTERMEDIATE	LOWER HAWTHORN CONFINING ZONE
-500					
-550		CALCITE CALCITE	CARBONATE	INTERMEDIATE	HAWTHORN CONFINING ZONE
-600					
-650		CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE	TAMPA FORMATION	FLORIDAN AQUIFER SYSTEM	LOWER HAWTHORN/ TAMPA PRODUCING ZONE
-700					
-750					
-800					

WC2028



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2028

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2029

COLLIER CO. T51S R27E SEC 36AD 25 59 10 N 81 35 55 W
 TOTAL DEPTH- 880 FT. ELEV.- 6 FT. SAMPLES- 0- 880 FT.
 COMPLETED- . . DEPTH WORKED FT.

WELL NAME-

COLLIER DEEP WELL C2029D, SFWMD, ALVIN WOODSTER DRILLER

REMARKS-

WORKED BY STEVE ANDERSON, 06-08-83, QUALITY (FAIR)

HYDROGEOLOGIC UNITS

- 0.0- 150.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 110.0 WATER TABLE AQUIFER
- 110.0- 120.0 TAMIAHI CONFINING ZONE
- 120.0- 150.0 LOWER TAMIAHI AQUIFER
- 150.0- 190.0 UPPER HAWTHORN CONFINING ZONE
- 190.0- 230.0 SANDSTONE AQUIFER
- 230.0- 340.0 MID-HAWTHORN CONFINING ZONE
- 340.0- 460.0 MID-HAWTHORN AQUIFER
- 710.0- 880.0 LOWER HAWTHORN/TAMPA PRODUCING ZONE

STRATIGRAPHIC FORMATIONS -

- .0- 20.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
- 20.0- 150.0 TAMIAHI FORMATION
- 150.0- 720.0 HAWTHORN FORMATION *
- 720.0- 880.0 TAMPA LIMESTONE

LITHOLOGIC LOG

W- 2029 . COLLIER CO. T51S, R27E, SEC 36AD

- .0- 10.0 SAND, LIGHT BROWN TO MODERATE BROWN, POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, UNCONSOLIDATED, CALCILUTITE MATRIX,
- 10.0- 20.0 SAND, LIGHT BROWN TO MODERATE BROWN, POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, UNCONSOLIDATED, CALCILUTITE MATRIX,
- 20.0- 30.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 30.0- 40.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

LITHOLOGIC LOG

#- 2029 . COLLIER CO. T51S, R27E, SEC 36AD

- 40.0- 50.0 CALCARENITE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS,
- 50.0- 60.0 CALCARENITE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS,
- 60.0- 70.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 04% QUARTZ SAND, FOSSIL FRAGMENTS, MULLUSKS,
- 70.0- 80.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 04% QUARTZ SAND, FOSSIL FRAGMENTS,
- 80.0- 90.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, FOSSIL FRAGMENTS,
- 90.0- 100.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, FOSSIL FRAGMENTS,
- 100.0- 110.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, FOSSIL FRAGMENTS, MULLUSKS,
- 110.0- 120.0 CALCILUTITE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 05% QUARTZ SAND, FOSSIL FRAGMENTS, MULLUSKS,
- 120.0- 130.0 LIMESTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND,
- 130.0- 140.0 LIMESTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND,

- 140.0- 150.0 LIMESTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIGGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, ...
- 150.0- 160.0 DOLO-SILT, GRAYISH OLIVE, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% QUARTZ SAND, MOLLUSKS,
- 160.0- 170.0 DOLO-SILT, GRAYISH OLIVE, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% QUARTZ SAND, MOLLUSKS,
- 170.0- 180.0 DOLO-SILT, GRAYISH OLIVE, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% QUARTZ SAND, MOLLUSKS,
- 180.0- 190.0 DOLO-SILT, GRAYISH OLIVE, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% QUARTZ SAND, MOLLUSKS,
- TRACE AMOUNT OF QUARTZ PEBBLES
- 190.0- 200.0 SAND, VERY LIGHT GRAY TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: GRANULE, RANGE: MEDIUM TO GRAVEL, ROUNDED, UNCONSOLIDATED, CALCILUTITE MATRIX,
- 200.0- 210.0 SAND, VERY LIGHT GRAY TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: GRANULE, RANGE: MEDIUM TO GRAVEL, ROUNDED, UNCONSOLIDATED, CALCILUTITE MATRIX,
- 210.0- 220.0 SAND, VERY LIGHT GRAY TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: GRANULE, RANGE: MEDIUM TO GRAVEL, ROUNDED, UNCONSOLIDATED, CALCILUTITE MATRIX,
- 220.0- 230.0 SAND, VERY LIGHT GRAY TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: GRANULE, RANGE: MEDIUM TO GRAVEL, ROUNDED, UNCONSOLIDATED, CALCILUTITE MATRIX,
- 230.0- 240.0 DOLO-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 02% QUARTZ SAND, MOLLUSKS,
- 240.0- 250.0 DOLO-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 02% QUARTZ SAND, MOLLUSKS,
- 250.0- 260.0 DOLO-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 02% QUARTZ SAND, MOLLUSKS,

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- 260.0- 270.0 DOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 02% QUARTZ SAND, MOLLUSKS,
- 270.0- 280.0 DOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 02% QUARTZ SAND, 02% QUARTZ SAND, MOLLUSKS,
- 280.0- 290.0 DOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 10% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS,
- 290.0- 300.0 DOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 10% PHOSPHATIC SAND, MOLLUSKS,
- 300.0- 310.0 DOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 10% PHOSPHATIC SAND, MOLLUSKS,
- 310.0- 320.0 DOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 08% PHOSPHATIC SAND, MOLLUSKS,
- 320.0- 330.0 DOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 08% PHOSPHATIC SAND, MOLLUSKS,
- 330.0- 340.0 DOLD-SILT, LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 08% PHOSPHATIC SAND, MOLLUSKS,
- 340.0- 350.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIUGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% PHOSPHATIC SAND, 03% QUARTZ SAND,
- 350.0- 360.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIUGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% PHOSPHATIC SAND, 03% QUARTZ SAND,

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- 360.0- 370.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 06% QUARTZ SAND, FOSSIL FRAGMENTS,
- 370.0- 380.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS,
- 380.0- 390.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 10% QUARTZ SAND, FOSSIL FRAGMENTS,
- 390.0- 400.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 12% CALCILUTITE, FOSSIL FRAGMENTS,
- 400.0- 410.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 12% CALCILUTITE, FOSSIL FRAGMENTS,
- 410.0- 420.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 420.0- 430.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 430.0- 440.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 440.0- 450.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, FOSSIL FRAGMENTS,
- 450.0- 460.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, FOSSIL FRAGMENTS,

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- 460.0- 470.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, POOR INDURATION, CALCILUTITE MATRIX, 02% PHOSPHATIC SAND, 20% CALCILUTITE, FOSSIL FRAGMENTS, MOLLUSKS,
- 470.0- 480.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, POOR INDURATION, CALCILUTITE MATRIX, 02% PHOSPHATIC SAND, 20% CALCILUTITE, FOSSIL FRAGMENTS, MOLLUSKS,
- 480.0- 490.0 LIMESTONE, LIGHT GRAY TO VERY LIGHT ORANGE, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 15% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, BRYOZOA,
- 490.0- 500.0 LIMESTONE, LIGHT GRAY TO VERY LIGHT ORANGE, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 15% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 500.0- 510.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 510.0- 520.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 520.0- 530.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 530.0- 540.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 540.0- 550.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,

OCCURANCE OF SOFT LIME STRINGERS FOR LAST 50 FEET

- 550.0- 560.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 560.0- 570.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, 03% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 570.0- 580.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, 04% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 580.0- 590.0 DOLO-SILT, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 10% CALCILUTITE, 03% QUARTZ SAND, 05% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 590.0- 600.0 DOLO-SILT, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 10% CALCILUTITE, 03% QUARTZ SAND, 05% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 600.0- 610.0 DOLO-SILT, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 10% CALCILUTITE, 03% QUARTZ SAND, 05% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 610.0- 620.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 620.0- 630.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,

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- 630.0- 640.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS,
- 640.0- 650.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 650.0- 660.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 660.0- 670.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 06% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 670.0- 680.0 DOLO-SILT, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 07% CALCILUTITE, 03% QUARTZ SAND, 04% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 680.0- 690.0 DOLO-SILT, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 07% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 690.0- 700.0 DOLO-SILT, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 07% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 700.0- 710.0 DOLO-SILT, LIGHT GRAY TO LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 07% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 710.0- 720.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, FOSSIL FRAGMENTS,

- 720.0- 730.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 730.0- 740.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 740.0- 750.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 750.0- 760.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 760.0- 770.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 770.0- 780.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 780.0- 790.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 790.0- 800.0 AS ABOVE,
- 800.0- 810.0 AS ABOVE,
- 810.0- 820.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,

LITHOLOGIC LOG

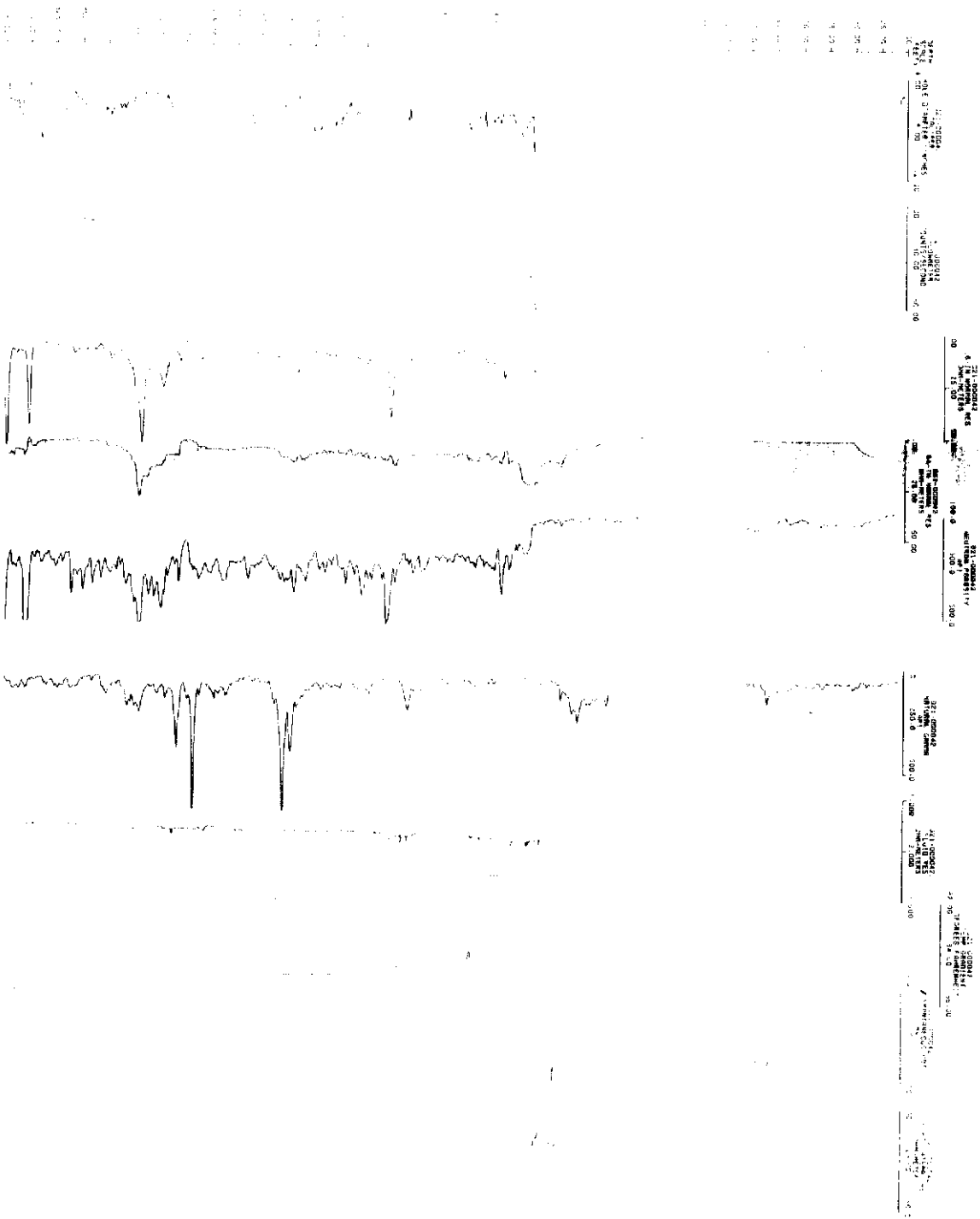
2029 . COLLIER CO. T51S, R27E, SEC 36AD

- 820.0- 830.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS, MOLLUSKS,
- 830.0- 840.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 840.0- 850.0 AS ABOVE,
- 850.0- 860.0 DOLOMITE, VERY LIGHT ORANGE TO LIGHT GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, FOSSIL FRAGMENTS,
- 860.0- 870.0 DOLomite, VERY LIGHT ORANGE TO LIGHT GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, FOSSIL FRAGMENTS,
- 870.0- 880.0 DOLomite, VERY LIGHT ORANGE TO LIGHT GRAY, POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, FOSSIL FRAGMENTS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT	
0				UNDIFF.	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER
-50				TAMIAMI		
-100				FORMATION		TAM. CONF. BEDS
-150					LOWER TAMIAMI AQ.	
-200			GROUP	UPPER	SYSTEM	UPPER HAWTHORN CONF. ZONE
-250				CLASTIC		SANDSTONE AQUIFER
-300		PHOSPHATE PHOSPHATE PHOSPHATE		MID- HAWTHORN CONFINING ZONE		
-350			HAWTHORN		AQUIFER	MID- HAWTHORN AQUIFER
-400		SAND CALCITE CALCITE		LOWER		
-450		CALCITE CALCITE		CARBON- ATE	INTERMEDIATE	LOWER
-500		CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE				HAWTHORN
-550						CONFINING ZONE
-600						
-650						
-700						
-750				TAMPA	FLORIDAN AQUIFER SYSTEM	LOWER HAWTHORN/ TAMPA
-800				FORMATION		PRODUCING ZONE
-850						
-900						

WC 2029

GEOPHYSICAL LOGS, COLLIER COUNTY, C-2029



SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2030

COLLIER CO. T52S R28E SEC 138C 26 56 23 N 81 28 08 W
 TOTAL DEPTH- 1220 FT. ELEV.- 6 FT. SAMPLES- 0- 1220 FT.
 COMPLETED- 80.12.19 DEPTH WORKED FT.

WELL NAME-

COLLIER DEEP WELL C2030D, SFWMD, ALVIN WOOSTER DRILLER

REMARKS-

WORKED BY STEVE ANDERSON, 10-10-82, QUALITY (GOOD)

HYDROGEOLOGIC UNITS

- 0.0- 250.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 90.0 WATER TABLE AQUIFER
- 90.0- 130.0 TAMIAMI CONFINING BEDS
- 130.0- 250.0 LOWER TAMIAMI AQUIFER
- 372.0- 480.0 MID-HAWTHORN AQUIFER
- 750.0- 950.0 LOWER HAWTHORN/TAMPA PRODUCING ZONE
- 950.0-1220.0 SUWANNEE AQUIFER

STRATIGRAPHIC FORMATIONS -

- .0- 153.0 TAMIAMI FORMATION
- 153.0- 250.0 MIOCENE COARSE CLASTICS
- 250.0- 750.0 HAWTHORN FORMATION *
- 750.0- 950.0 TAMPA LIMESTONE
- 950.0- 1220.0 SUWANNEE LIMESTONE

LITHOLOGIC LOG

W- 2030 . COLLIER CO. T52S, R28E, SEC 138C

- .0- 10.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS,
- 10.0- 20.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS,
- 20.0- 30.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 11% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 01% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

- 30.0- 40.0 LIMESTONE, VERY LIGHT GRAY TO YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, PIN POINT VUGS, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 01% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS,
- 40.0- 50.0 LIMESTONE, VERY LIGHT GRAY TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL MOLDS, MOLLUSKS, CORAL, BRYOZOA,
- 50.0- 60.0 LIMESTONE, WHITE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL MOLDS, MOLLUSKS, CORAL, BRYOZOA,
- 60.0- 70.0 LIMESTONE, VERY LIGHT GRAY TO MODERATE GRAY, 11% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLomite CEMENT, 30% QUARTZ SAND, 10% DOLomite, FOSSIL MOLDS, MOLLUSKS, BRYOZOA,
- 70.0- 80.0 SANDSTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 16% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% CALCILUTITE, FOSSIL MOLDS, MOLLUSKS,
- SOME FRAGS REMORCKED (GOOD POROSITY)
TRACE HEAVY MINERALS
- 80.0- 90.0 SANDSTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% CALCILUTITE, FOSSIL MOLDS, MOLLUSKS, CORAL, ECHINOID, BENTHONIC FORAMINIFERA,
10% LIMESTONE CONTAINED IN SAMPLE
- 90.0- 100.0 SANDSTONE, VERY LIGHT ORANGE TO WHITE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% CALCILUTITE, FOSSIL MOLDS, MOLLUSKS, BRYOZOA,

100.0- 110.0 SAND, LIGHT OLIVE GRAY TO MODERATE LIGHT GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 05% LIMESTONE, 01% PHOSPHATIC SAND, 02% SILT, MOLLUSKS, FOSSIL FRAGMENTS,

DOLOSILT NOTED IN SAMPLE

110.0- 120.0 SMALL SAMPLE TAKEN, AS ABOVE

120.0- 130.0 LIMESTONE, WHITE TO MODERATE LIGHT GRAY, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 30% DOLOMITE, 02% CLAY, 05% PHOSPHATIC SAND, 08% QUARTZ SAND,

LIMESTONE, VERY LIGHT ORANGE TO WHITE, 17% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 06% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,

LARGE AMOUNT OF SHELL FRAGS IN SAMPLE

130.0- 140.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, ERODDED, 08% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, CORAL,

LARGE CORAL SAMPLES FOUND

140.0- 153.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND,

153.0- 160.0 SANDSTONE, MODERATE YELLOWISH BROWN TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 09% IRON STAIN, 02% PHOSPHATIC SAND, 03% CALCILUTITE, 03% DOLOMITE, FOSSIL FRAGMENTS, MOLLUSKS,

160.0- 170.0 SANDSTONE, DARK YELLOWISH BROWN TO GRAYISH ORANGE, 25% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, FISSILE, 05% IRON STAIN, 15% CALCILUTITE, 15% DOLOMITE, FOSSIL FRAGMENTS, MOLLUSKS, BRYOZOA,

PEBBLE ZONE, APPEARS TO BE REWORKED.
LARGE QUARTZITE PEBBLES

170.0- 180.0 GRAVEL, GRAYISH BROWN TO LIGHT BROWN, 35% POROSITY,
INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, UNCONSOLIDATED,
03% PHOSPHATIC SAND, 30% QUARTZ SAND, FOSSIL FRAGMENTS,
MOLLUSKS,

REWORKED ZONE-OCCURANCE OF PEBBLES, SHELL FRAGS.
PART OF SAMPLE IS WELL ROUNDED PHOSPHATE
LIMESTONE FRAGS IN SAMPLE

180.0- 190.0 SHELL BED, GRAYISH BROWN TO LIGHT GRAY, 35% POROSITY,
INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, UNCONSOLIDATED,
05% PHOSPHATIC SAND, 35% QUARTZ SAND, FOSSIL FRAGMENTS,
MOLLUSKS,

MAINLY SHELL FRAGS
SAMPLE CONTAINED PEBBLE SIZE QUARTZ,
WELL ROUNDED

190.0- 200.0 SAND, VERY LIGHT ORANGE TO LIGHT GRAY, 35% POROSITY,
INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN
SIZE: VERY COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR,
MEDIUM SPHERICITY, UNCONSOLIDATED, 15% PHOSPHATIC GRAVEL,
10% LIMESTONE, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL
FRAGMENTS,

200.0- 210.0 SAND, VERY LIGHT ORANGE TO LIGHT GRAY, 35% POROSITY,
INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN
SIZE: VERY COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR,
MEDIUM SPHERICITY, UNCONSOLIDATED, 15% PHOSPHATIC GRAVEL,
10% LIMESTONE, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL
FRAGMENTS,

210.0- 220.0 SAND, VERY LIGHT ORANGE TO LIGHT GRAY, 35% POROSITY,
INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN
SIZE: VERY COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR,
MEDIUM SPHERICITY, UNCONSOLIDATED, 15% PHOSPHATIC GRAVEL,
10% LIMESTONE, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL
FRAGMENTS,

CONTAINS SHELL FRAGS, LARGE PEBBLE PHOSPHATE
REWORKED MATERIALS AND WELL ROUNDED

220.0- 230.0 SAND, VERY LIGHT ORANGE TO LIGHT GRAY, 35% POROSITY,
INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN
SIZE: VERY COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR,
MEDIUM SPHERICITY, UNCONSOLIDATED, 05% PHOSPHATIC SAND, 10%
PHOSPHATIC GRAVEL, 10% LIMESTONE, MOLLUSKS, FOSSIL
FRAGMENTS,

INCREASE AMOUNT OF SHELL FRAGS.

LITHOLOGIC LOG

W- 2030 . COLLIER CO. 152S, R28E, SEC 138C

- 230.0- 240.0 SAND, VERY LIGHT ORANGE TO LIGHT GRAY, 35% POROSITY, INTERGRANULAR, MULDIC, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: VERY COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 05% PHOSPHATIC SAND, 10% PHOSPHATIC GRAVEL, 10% LIMESTONE, MULLUSKS, FOSSIL FRAGMENTS,
- 240.0- 250.0 SAND, VERY LIGHT ORANGE TO LIGHT GRAY, 35% POROSITY, INTERGRANULAR, MULDIC, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: VERY COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 05% PHOSPHATIC SAND, 10% PHOSPHATIC GRAVEL, 10% LIMESTONE, 10% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- FIRST OCCURANCE OF FINE GREEN SAND AND SILT.
- 250.0- 260.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 15% QUARTZ SAND, 15% SILT, PLANKTONIC FORAMINIFERA, BENTHONIC FORAMINIFERA,
- 260.0- 270.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 15% QUARTZ SAND, 15% SILT, PLANKTONIC FORAMINIFERA, BENTHONIC FORAMINIFERA,
- 270.0- 280.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 15% QUARTZ SAND, 15% SILT, 03% PHOSPHATIC SAND,
- 280.0- 290.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 15% QUARTZ SAND, 15% SILT, 03% PHOSPHATIC SAND,
- 290.0- 300.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 15% QUARTZ SAND, 15% SILT, 03% PHOSPHATIC SAND,
- 300.0- 310.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 09% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 10% QUARTZ SAND, 07% SILT, 01% PHOSPHATIC SAND, PLANKTONIC FORAMINIFERA, BENTHONIC FORAMINIFERA,

MAINLY DOLO-SILT, LOW PERCENT OF SAND.
DIATOMS?

- 310.0- 320.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLUMITE CEMENT, 10% QUARTZ SAND, 07% SILT, 01% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 320.0- 330.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLUMITE CEMENT, 12% QUARTZ SAND, 08% SILT, 05% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA,
- 330.0- 340.0 SANDSTONE, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLUMITE CEMENT, CLAY MATRIX, 05% CLAY, 20% DOLUMITE, 15% CALCILUTITE, 05% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 340.0- 350.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLUMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 06% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,

TRACE AMOUNTS OF PYRITE

- 350.0- 360.0 DOLO-SILT, LIGHT OLIVE GRAY TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLUMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 10% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS, CORAL,

INCREASE PHOSPHATE, LARGER SIZE FRAGS.

- 360.0- 372.0 DOLO-SILT, YELLOWISH GRAY TO LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLUMITE CEMENT, CLAY MATRIX, 05% CLAY, 15% CALCILUTITE, 10% PHOSPHATIC SAND, SHARK TEETH, MOLLUSKS, FOSSIL FRAGMENTS, ECHINOID,

- 372.0- 380.0 LIMESTONE, WHITE TO LIGHT GRAY, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, CORAL, MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS,

- 380.0- 390.0 LIMESTONE, WHITE TO LIGHT GRAY, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, CORAL, MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS,

30.0- 400.0 LIMESTONE, WHITE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,

30.0- 410.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, 01% PYRITE, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,

SMALL AMOUNTS OF SHELL IN SAMPLE.

410.0- 420.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,

420.0- 430.0 LIMESTONE, WHITE, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,

HARD DENSE LIMESTONE, CALCILUTITE

430.0- 440.0 LIMESTONE, WHITE, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,

440.0- 450.0 LIMESTONE, WHITE TO LIGHT GRAY, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,

450.0- 460.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS, CORAL,

LITHOLOGIC LOG

W- 2030 . COLLIER CO. T52S, R28E, SEC 1380

- 460.0- 470.0 LIMESTONE, WHITE TO LIGHT GRAY, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS, FOSSIL MULLS, MOLLUSKS, CORAL,
TRACE AMOUNT OF PHOSPHATE.
- 470.0- 480.0 LIMESTONE, WHITE TO LIGHT GRAY, 11% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% CALCILUTITE, FOSSIL FRAGMENTS, FOSSIL MULLS, MOLLUSKS, CORAL,
- 480.0- 490.0 DOLO-SILT, WHITE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 40% CALCILUTITE, 05% CLAY, 02% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 490.0- 500.0 DOLO-SILT, WHITE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 40% CALCILUTITE, 05% CLAY, 02% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 500.0- 510.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 20% DOLOMITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS, CORAL, BENTHONIC FORAMINIFERA,
- 510.0- 520.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 25% DOLOMITE, 02% PHOSPHATIC SAND, 01% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 520.0- 530.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 25% DOLOMITE, 02% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,

- 530.0- 540.0 LIMESTONE, WHITE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, SPARRY CALCITE CEMENT, 35% DOLomite, 02% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS, CORAL,
- 540.0- 550.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 550.0- 560.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 02% QUARTZ SAND, 02% SILT, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 560.0- 570.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 02% QUARTZ SAND, 02% SILT, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, CORAL,
- 570.0- 580.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 02% QUARTZ SAND, 02% SILT, MOLLUSKS, FOSSIL FRAGMENTS, CORAL,
- 580.0- 590.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% SPAR, 02% QUARTZ SAND, 02% SILT, MOLLUSKS, FOSSIL FRAGMENTS, CORAL,
- 590.0- 600.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 12% SPAR, 10% CLAY, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,

CLAY AND MICRITE INCREASE.

LITHOLOGIC LOG

W- 2030 . COLLIER CO. T52S, R28E, SEC 13BC

- 600.0- 610.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 12% SPAR, 10% CLAY, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 610.0- 620.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 12% SPAR, 10% CLAY, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 620.0- 630.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 12% SPAR, 10% CLAY, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 630.0- 640.0 LIMESTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 12% SPAR, 10% CLAY, 05% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, CORAL,
- 640.0- 650.0 DOLOMITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 11% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 40% CALCILUTITE, 02% PHOSPHATIC SAND, 01% QUARTZ SAND, 05% SPAR, MOLLUSKS, FOSSIL FRAGMENTS,
- 650.0- 660.0 DOLOMITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 11% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 40% CALCILUTITE, 02% PHOSPHATIC SAND, 01% QUARTZ SAND, 05% SPAR, MOLLUSKS, FOSSIL FRAGMENTS, ECHINOID, CORAL,
- 660.0- 670.0 DOLOMITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 11% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 40% CALCILUTITE, 02% PHOSPHATIC SAND, 01% QUARTZ SAND, 05% SPAR, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, CORAL,

LITHOLOGIC LOG

W- 2030 • COLLIER CO. T52S, R28E, SEC 138C

- 670.0- 680.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 05% SILT, MOLLUSKS, FOSSIL FRAGMENTS, CORAL, BENTHONIC FORAMINIFERA,
MIOGYPSINA SP.?
- 680.0- 690.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 05% SILT, MOLLUSKS, FOSSIL FRAGMENTS, CORAL, BENTHONIC FORAMINIFERA,
- 690.0- 700.0 DOLO-SILT, VERY LIGHT GRAY TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 02% CLAY, 05% SILT, MOLLUSKS, FOSSIL FRAGMENTS, CORAL, BENTHONIC FORAMINIFERA,
- 700.0- 710.0 SILT, VERY LIGHT GRAY TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 02% CLAY, 05% SILT, MOLLUSKS, FOSSIL FRAGMENTS, CORAL, BENTHONIC FORAMINIFERA,
- 710.0- 720.0 DOLO-SILT, VERY LIGHT GRAY TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 01% CLAY, 06% SILT, MOLLUSKS, FOSSIL FRAGMENTS,
- 720.0- 730.0 DOLOMITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 11% POROSITY, INTERGRANULAR, 50-90% ALTERED, ECHINOID, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 30% CALCILUTITE, 05% SPAR, MOLLUSKS, FOSSIL FRAGMENTS, ECHINOID, CORAL, BRYOZOA,
- 730.0- 740.0 DOLO-SILT, VERY LIGHT GRAY TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 02% CLAY, 25% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 740.0- 750.0 DOLO-SILT, VERY LIGHT GRAY TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 03% CLAY, 25% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

W- 2030 . COLLIER CO. T52S, R20E, SEC 138C

- 750.0- 760.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% SPAR, 02% SILT, 04% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 760.0- 770.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 06% SPAR, 02% SILT, FOSSIL FRAGMENTS, BRYOZOA,
- 770.0- 780.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 06% SPAR, 02% SILT, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 780.0- 790.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 06% SPAR, 02% SILT, FOSSIL FRAGMENTS, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 790.0- 800.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 06% SPAR, 02% SILT, FOSSIL FRAGMENTS, MOLLUSKS, BRYOZOA,
- CALCITE XLS. AND TRACE PHOSPHATE
- 800.0- 810.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% SPAR, 02% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, BRYOZOA,
- 810.0- 820.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% SPAR, 02% QUARTZ SAND,

LITHOLOGIC LOG

W- 2030 . COLLIER CO. T52S, R28E, SEC 138C

- 820.0- 830.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% SPAR, 02% QUARTZ SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 830.0- 840.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% SPAR, 02% SILT, 03% QUARTZ SAND,
- 840.0- 850.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% SPAR, 02% SILT, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 850.0- 860.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: VERY FINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% SPAR, 02% SILT, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, ECHINOID, MOLLUSKS,
- 860.0- 870.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: VERY FINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% SPAR, 02% SILT, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 870.0- 880.0 DOLomite, VERY LIGHT ORANGE TO GRAYISH ORANGE, 09% POROSITY, INTERCRYSTALLINE, PIN POINT VUGS, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTITE, FOSSIL FRAGMENTS, MOLLUSKS,
- 880.0- 890.0 NO SAMPLE,
- 890.0- 900.0 NO SAMPLE,
- LARGE CAVITIES ENCOUNTERED BY OPILL RIG
LOST CIRCULATION
- 900.0- 910.0 SAND, VERY LIGHT GRAY TO LIGHT OLIVE GRAY, GRAIN SIZE: VERY COARSE, RANGE: FINE TO GRAVEL, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% PHOSPHATIC SAND, POOR SAMPLE,
- SAMPLE APPEARS TO BE FROM ABOVE LITHOLOGY.
- 910.0- 920.0 AS ABOVE,

LITHOLOGIC LOG

W- 2030 . COLLIER CO. T52S, R28E, SEC 13BC

920.0- 930.0 AS ABOVE,

LIMESTONE FRAGS INCLUDED IN SAMPLE.
LARGE AMOUNT OF FORAMINIFERA.

930.0- 940.0 LIMESTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 05% SPAR, 12% QUARTZ SAND, POOR SAMPLE, FOSSIL FRAGMENTS, MOLLUSKS,

SAND IS LOOSE IN SAMPLE

940.0- 950.0 AS ABOVE,

950.0- 960.0 LIMESTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 05% SPAR, 08% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, CORAL,

INCREASE IN MICRITE

960.0- 970.0 LIMESTONE, WHITE TO LIGHT GRAY, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 05% SPAR, 10% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, CORAL,

970.0- 980.0 LIMESTONE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% DOLOMITE, 05% SPAR, 08% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, BENTHONIC FORAMINIFERA,

980.0- 990.0 LIMESTONE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% DOLOMITE, 07% SPAR, 07% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, BENTHONIC FORAMINIFERA, ECHINOID,

LITHOLOGIC LOG

W- 2030 . COLLIER CO. T52S, R28E, SEC 138C

- 990.0- 1000.0 LIMESTONE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% DOLOMITE, 07% SPAR, 07% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, BENTHONIC FORAMINIFERA, ECHINOID,
- 1000.0- 1010.0 LIMESTONE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% DOLOMITE, 08% SPAR, 05% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, ECHINOID, BENTHONIC FORAMINIFERA,
- MOST OF SAMPLE RECRYSTALLIZED, TRACE PHOSPHATE.
- 1010.0- 1020.0 AS ABOVE,
- 1020.0- 1030.0 LIMESTONE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% DOLOMITE, 07% SPAR, 09% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, BENTHONIC FORAMINIFERA, CORAL,
- 1030.0- 1040.0 AS ABOVE,
- 1040.0- 1050.0 LIMESTONE, VERY LIGHT ORANGE, 9% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 19% DOLOMITE, 08% SPAR, 05% QUARTZ SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, MOLLUSKS,
- MORE RECRYSTALLIZED THAN BEFORE
- 1050.0- 1060.0 AS ABOVE,
- TRACE PHOSPHATE
- 1060.0- 1070.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 12% DOLOMITE, 08% SPAR, 05% QUARTZ SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 1070.0- 1080.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 12% DOLOMITE, 07% SPAR, 04% QUARTZ SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MULES,

1080.0- 1090.0 AS ABOVE,

1090.0- 1100.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 08% SPAR, 03% QUARTZ SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS, CORAL,

INCREASE AMOUNT OF FORAMS.

1100.0- 1110.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 08% DOLOMITE, 08% SPAR, 03% QUARTZ SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, MOLLUSKS, CORAL,

1110.0- 1120.0 AS ABOVE,

1120.0- 1130.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 08% DOLOMITE, 08% SPAR, 03% QUARTZ SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, MOLLUSKS, CORAL,

1140.0- 1140.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 08% DOLOMITE, 10% SPAR, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, MOLLUSKS,

1140.0- 1150.0 AS ABOVE,

1150.0- 1160.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 10% SPAR, CORAL, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, ECHINOID, MOLLUSKS,

1160.0- 1170.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 10% SPAR, CORAL, FOSSIL FRAGMENTS, ECHINOID, BENTHONIC FORAMINIFERA, MOLLUSKS,

1170.0- 1180.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 10% SPAR, CORAL, FOSSIL FRAGMENTS, ECHINOID, BENTHONIC FORAMINIFERA, MOLLUSKS,

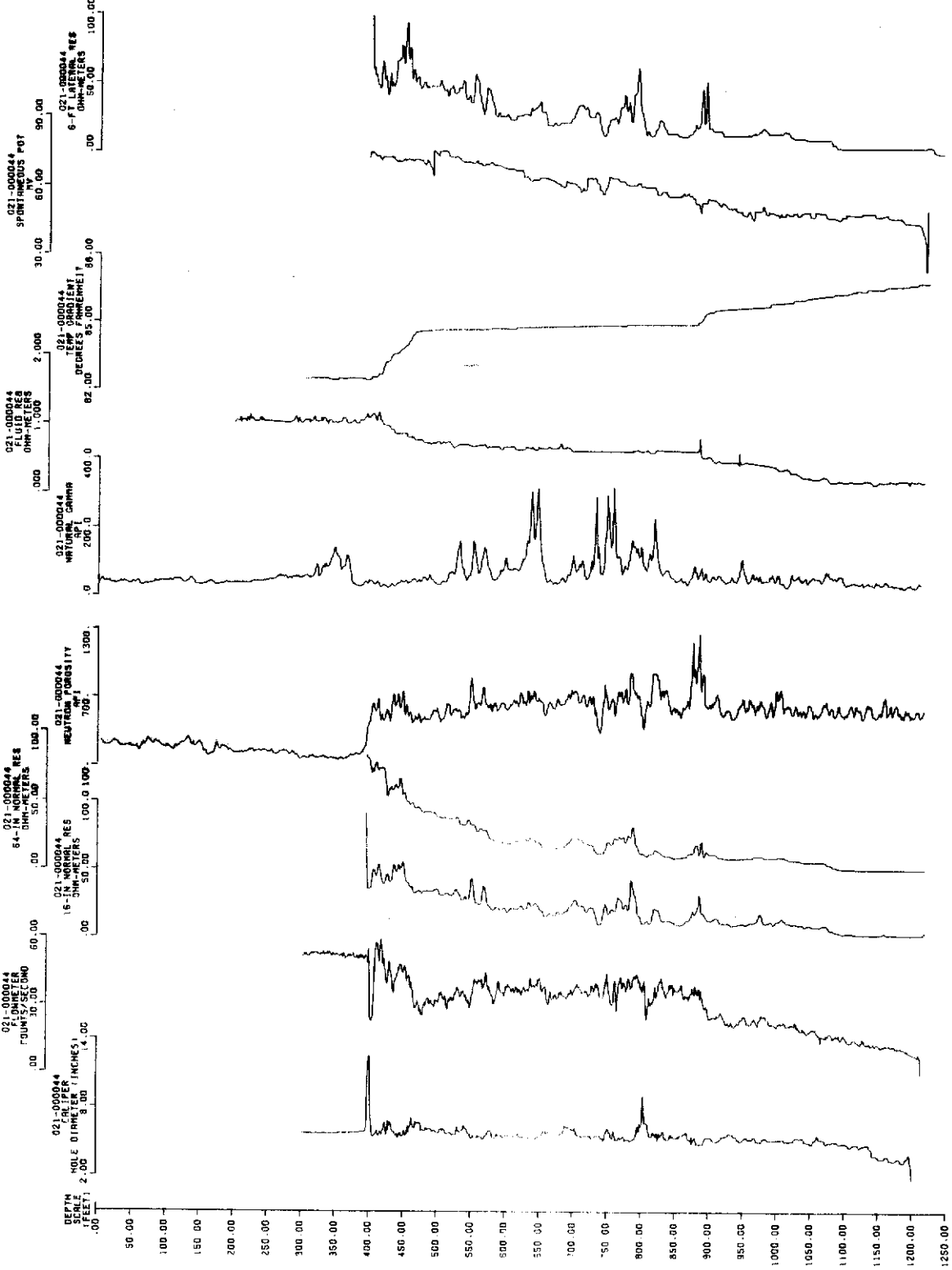
LITHOLOGIC LOG

W- 2030 . COLLIER CO. T52S, R28E, SEC 1380

- 1180.0- 1190.0 CALCARENITE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 10% SPAR, CORAL, FOSSIL FRAGMENTS, ECHINOID, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 1190.0- 1200.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 05% SPAR, GRANULAR, MOLLUSKS, BENTHONIC FORAMINIFERA, MILIOLIDS,
- 1200.0- 1210.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 05% SPAR, GRANULAR, MOLLUSKS, BENTHONIC FORAMINIFERA, MILIOLIDS,
- 1210.0- 1220.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 05% SPAR, 02% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, MILIOLIDS,
- 1220.0- 1230.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 05% SPAR, 04% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, MILIOLIDS,
- TRACE PHOSPHATE
- 1230.0- 1240.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% DOLOMITE, 05% SPAR, 05% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, MILIOLIDS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
0			TAMIAMI FORMATION	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER	
-50		DOLOMITE				TAMIAMI CONF. BEDS
-100		DOLOMITE DOLOMITE				
-150		DOLOMITE CALCITE				
-200		CALCITE CALCITE CALCITE CALCITE PHOSPHATE PHOSPHATE PHOSPHATE	UPPER CLASTIC	INTERMEDIATE AQUIFER SYSTEM	LOWER TAMIAMI AQUIFER	
-250		SILT SILT SILT SILT SILT SAND SAND SAND SAND CALCITE CALCITE PHOSPHATE PHOSPHATE				
-300						
-350			LOWER	HAWTHORN CONFINING ZONES		
-400						
-450						
-500		CALCITE CLAY CLAY	CARBON- ATE	INTERMEDIATE AQUIFER SYSTEM	MID- HAWTHORN AQUIFER	
-550		CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE				
-600						
-650		HAWTHORN CONFINING ZONE				
-700						
-750	CLAY CLAY					
-800		TAMPA FORMATION	INTERMEDIATE AQUIFER SYSTEM	LOWER HAWTHORN/ TAMPA PRODUCING ZONE		
-850						
-900	CALCITE					
-950	SAND SAND	SUWANNEE LIMESTONE	FLORIDAN AQUIFER SYSTEM	SUWANNEE AQUIFER		
-1000						
-1050						
-1100						
-1150	CALCITE CALCITE CALCITE CALCITE					
-1200						
-1250						

WC2030



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2030

W- 2031

COLLIER CO. T52S R30E SEC 07AB 81 21 11 N 25 57 30 W
 TOTAL DEPTH- 880 FT. ELEV.- 6 FT. SAMPLES- 0- 880 FT.
 COMPLETED- 81.01.28 DEPTH WORKED FT.

WELL NAME-

COLLIER DEEP WELL C2031D, SFWMD, ALVIN WOOSTER DRILLER

REMARKS-

WORKED BY STEVE ANDERSON, QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0- 160.0 SURFICIAL AQUIFER SYSTEM
 0.0- 80.0 WATER TABLE AQUIFER
 80.0- 160.0 LOWER TAMPAQUI AQUIFER
 160.0- 430.0 MID-HAWTHORN CONFINING ZONE
 430.0- 550.0 MID-HAWTHORN AQUIFER
 550.0- 690.0 LOWER-HAWTHORN CONFINING ZONE
 690.0- 880.0 LOWER-HAWTHORN/TAMPA PRODUCING ZONE

STRATIGRAPHIC FORMATIONS -

.0- 90.0 TAMPAQUI FORMATION
 90.0- 750.0 HAWTHORN FORMATION *
 750.0- 880.0 TAMPA LIMESTONE

LITHOLOGIC LOG

W- 2031 . COLLIER CO. T52S, R30E, SEC 07AB

0.0- 10.0 LIMESTONE, WHITE TO GRAYISH BROWN, 15% POROSITY,
 INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC,
 CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE
 MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,

10.0- 20.0 LIMESTONE, WHITE TO GRAYISH BROWN, 15% POROSITY,
 INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC,
 CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE
 MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,

20.0- 30.0 LIMESTONE, WHITE TO GRAYISH BROWN, 15% POROSITY,
 INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC,
 CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE
 MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,

30.0- 40.0 LIMESTONE, WHITE TO GRAYISH BROWN, 15% POROSITY,
 INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC,
 CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE
 MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 40.0- 50.0 LIMESTONE, WHITE TO GRAYISH BROWN, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 50.0- 60.0 LIMESTONE, WHITE TO GRAYISH BROWN, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 60.0- 70.0 LIMESTONE, VERY LIGHT GRAY TO MODERATE LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, FOSSIL MOLDS,
- 70.0- 80.0 LIMESTONE, VERY LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 80.0- 90.0 SAND, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MODERATE INDURATION, CALCILUTITE MATRIX, FOSSIL FRAGMENTS,
- 90.0- 100.0 SAND, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MODERATE INDURATION, CALCILUTITE MATRIX, FOSSIL FRAGMENTS,
- 100.0- 110.0 SAND, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MODERATE INDURATION, CALCILUTITE MATRIX, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 110.0- 120.0 SAND, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MODERATE INDURATION, CALCILUTITE MATRIX, 05% CALCILUTITE, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 120.0- 130.0 SAND, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MODERATE INDURATION, CALCILUTITE MATRIX, 07% CALCILUTITE, FOSSIL FRAGMENTS, MOLLUSKS,

LITHOLOGIC LOG

W- 2031 . COLLIER CO. T52S, R30E, SEC 07AB

- 130.0- 140.0 SAND, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MODERATE INDURATION, CALCILUTITE MATRIX, 10% CALCILUTITE, FOSSIL FRAGMENTS, MOLLUSKS,
- 140.0- 150.0 SAND, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MODERATE INDURATION, CALCILUTITE MATRIX, 10% CALCILUTITE, FOSSIL FRAGMENTS, MOLLUSKS,
- 150.0- 160.0 SAND, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MODERATE INDURATION, CALCILUTITE MATRIX, 12% CALCILUTITE, FOSSIL FRAGMENTS, MOLLUSKS,
- SAMPLE CONTAINS A LOT MORE SHELL FRAGS
- 160.0- 170.0 SANDSTONE, LIGHT GRAY TO GRAYISH BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, FOSSIL FRAGMENTS,
- 170.0- 180.0 DOLO-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 180.0- 190.0 DOLO-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 190.0- 200.0 DOLO-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 200.0- 210.0 DOLO-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,

LITHOLOGIC LOG

W- 2031 • COLLIER CO. T52S, R30E, SEC 07A8

- 210.0- 220.0 DULD-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 220.0- 230.0 DOLD-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 230.0- 240.0 DOLD-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 240.0- 250.0 DOLD-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 25% CALCILUTITE, 10% CLAY, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
 OCCURANCE OF PHUSPHATIC GRANULES AND QUARTZ PEBBLES
- 250.0- 260.0 SAND, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, UNCONSOLIDATED, CALCILUTITE MATRIX, DOLomite CEMENT, 20% CALCILUTITE, 10% DOLomite, 10% PHOSPHATIC GRAVEL, 05% PHUSPHATIC SAND, FOSSIL FRAGMENTS,
- 260.0- 270.0 DOLD-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 15% CALCILUTITE, 15% DOLomite, 05% PHOSPHATIC SAND, 10% PHUSPHATIC GRAVEL, FOSSIL FRAGMENTS,
- 270.0- 280.0 DOLD-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 15% CALCILUTITE, 15% DOLomite, 05% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS,
- 280.0- 290.0 DOLD-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 15% CALCILUTITE, 20% DOLomite,
- 290.0- 300.0 DOLD-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 10% CALCILUTITE, 20% DOLomite, 02% PHOSPHATIC SAND, PLANKTONIC FORAMINIFERA, BENTHONIC FORAMINIFERA,

LITHOLOGIC LOG

#- 2031 . CULLIER CO. T52S, R30E, SEC 07A8

- 300.0- 310.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 20% DOLOMITE, 02% PHOSPHATIC SAND, PLANKTONIC FORAMINIFERA, BENTHONIC FORAMINIFERA,
- 310.0- 320.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 20% DOLOMITE, 02% PHOSPHATIC SAND, PLANKTONIC FORAMINIFERA, BENTHONIC FORAMINIFERA,
- 320.0- 330.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 25% DOLOMITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 330.0- 340.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 25% DOLOMITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 340.0- 350.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 25% DOLOMITE, 02% PHOSPHATIC SAND, PLANKTONIC FORAMINIFERA, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 350.0- 360.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 25% DOLOMITE, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS,
- 360.0- 370.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 25% DOLOMITE, 02% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 370.0- 380.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 25% DOLOMITE, 03% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 380.0- 390.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 25% DOLOMITE, 05% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,

LITHOLOGIC LOG

W- 2031 . COLLIER CO. T52S, R30E, SEC 07AB

- 390.0- 400.0 DOLO-SILT, LIGHT OLIVE GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 25% DOLOMITE, 06% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 400.0- 410.0 DOLO-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 12% CALCILUTITE, 20% DOLOMITE, 03% QUARTZ SAND, 05% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 410.0- 420.0 DOLO-SILT, LIGHT OLIVE GRAY TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 07% LIMESTONE, 20% DOLOMITE, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 420.0- 430.0 AS ABOVE,
- 430.0- 440.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 07% PHOSPHATIC SAND, 03% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS, CORAL,
- 440.0- 450.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS, CORAL,
- 450.0- 460.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS, CORAL,
- 460.0- 470.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS, CORAL,
- 470.0- 480.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

W- 2031 . COLLIER CO. T52S, R30E, SEC 07AB

- 480.0- 490.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS,
- 490.0- 500.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS,
- 500.0- 510.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS,
- 510.0- 520.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 520.0- 530.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% PHOSPHATIC SAND, 02% QUARTZ SAND, FOSSIL FRAGMENTS,
- 530.0- 540.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 08% CALCILUTITE, 04% PHOSPHATIC SAND, 05% CLAY, 02% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 540.0- 550.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 08% CALCILUTITE, 04% PHOSPHATIC SAND, 05% CLAY, 02% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 550.0- 560.0 LIMESTONE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 12% CALCILUTITE, 04% PHOSPHATIC SAND, 06% CLAY, 02% QUARTZ SAND, FOSSIL FRAGMENTS,
- 560.0- 570.0 CALCARENITE, WHITE TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 03% PHOSPHATIC SAND, 06% CLAY, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

#- 2031 . CULLIER CO. 152S, R30E, SEC C74B

- 570.0- 580.0 CALCARENITE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 03% PHOSPHATIC SAND, 06% CLAY, FOSSIL FRAGMENTS,
- 580.0- 590.0 CALCARENITE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 03% PHOSPHATIC SAND, 06% CLAY, FOSSIL FRAGMENTS, MOLLUSKS,
- 590.0- 600.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 05% CALCILUTITE, 03% CLAY, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS, CORAL,
- 600.0- 610.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 12% CALCILUTITE, 05% CLAY, 05% DOLOMITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 610.0- 620.0 LIMESTONE, WHITE TO GRAYISH BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 08% CALCILUTITE, 20% DOLOMITE, 05% CLAY, 02% PHOSPHATIC SAND,
- 620.0- 630.0 DOLOMITE, WHITE TO GRAYISH BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 02% PHOSPHATIC SAND,
- 630.0- 640.0 DOLOMITE, WHITE TO GRAYISH BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 02% PHOSPHATIC SAND,
- 640.0- 650.0 DOLOMITE, WHITE TO GRAYISH BROWN, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 03% PHOSPHATIC SAND,
- 650.0- 660.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 15% CALCILUTITE, 10% DOLOMITE, 05% CLAY, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 660.0- 670.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 15% CALCILUTITE, 10% DOLOMITE, 05% CLAY, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

W- 2031 . COLLIER CO. T52S, R30E, SEC 07A8

- 670.0- 680.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 15% CALCILUTITE, 10% DOLOMITE, 05% CLAY, 05% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 680.0- 690.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 07% CALCILUTITE, 06% DOLOMITE, 04% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 690.0- 700.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 700.0- 710.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% CALCILUTITE, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 710.0- 720.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 07% CALCILUTITE, FOSSIL FRAGMENTS,
- 720.0- 730.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 07% CALCILUTITE, FOSSIL FRAGMENTS,
- 730.0- 740.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 07% CALCILUTITE, FOSSIL FRAGMENTS,
- OCCURANCE OF MIOGYPSINA, LAST 60 FEET.
- 740.0- 750.0 CALCARENITE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, FOSSIL FRAGMENTS, BRYOZOA, BENTHONIC FORAMINIFERA,
- 750.0- 760.0 CALCARENITE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, FOSSIL FRAGMENTS, BRYOZOA,

LITHOLOGIC LOG

W- 2031 . COLLIER CO. 152S, R30E, SEC 07AB

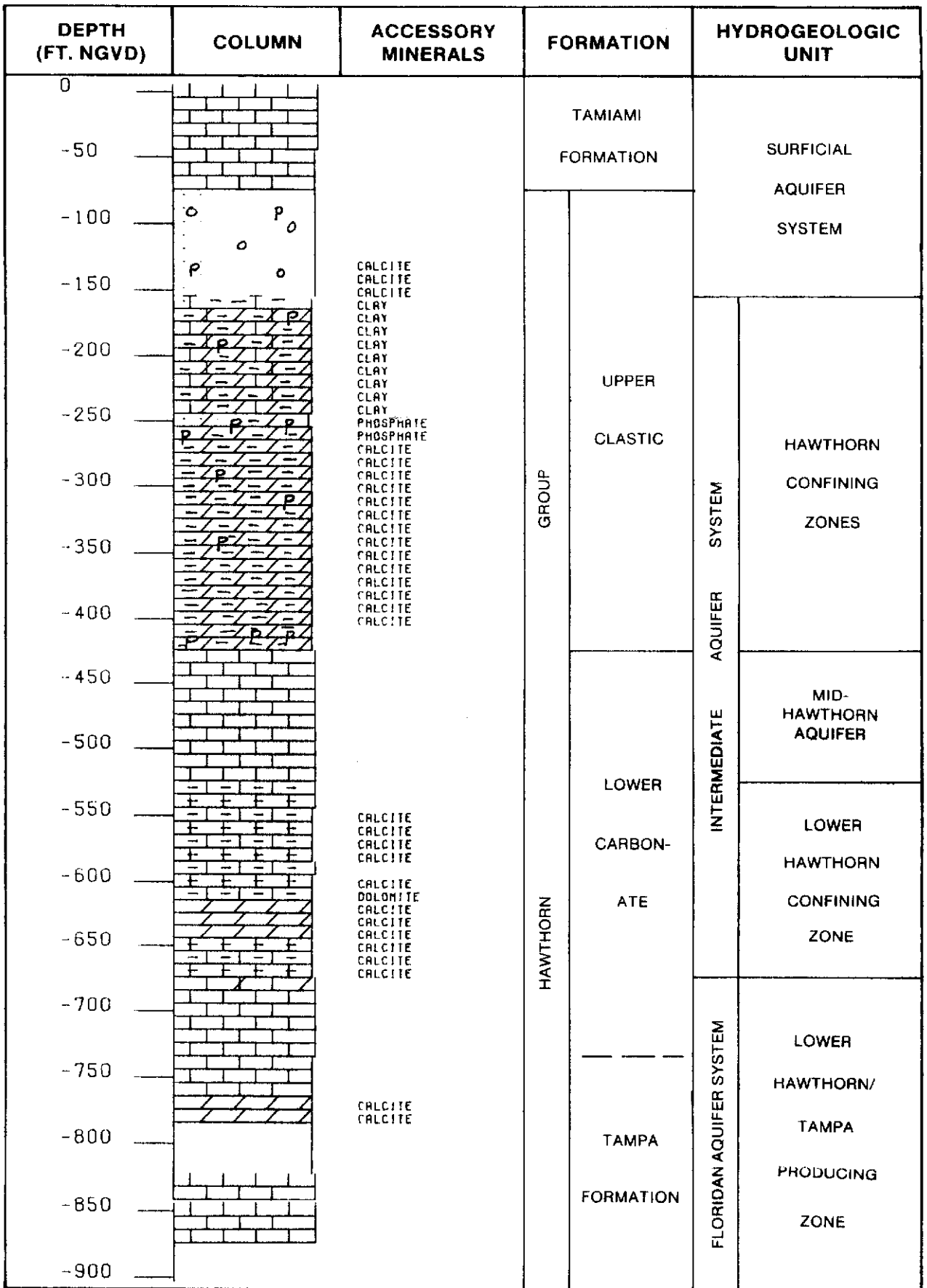
- 760.0- 770.0 CALCARENITE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS, BRYOZOA,
- 770.0- 780.0 BOLD-SILT, LIGHT OLIVE GRAY TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 20% DOLOMITE, 04% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 780.0- 790.0 BOLD-SILT, LIGHT OLIVE GRAY TO LIGHT GRAY, POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 10% CALCILUTITE, 20% DOLOMITE, 04% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 790.0- 800.0 NO SAMPLE,
- 800.0- 810.0 NO SAMPLE,
- 810.0- 820.0 NO SAMPLE,
- 820.0- 830.0 NO SAMPLE,
- CAVITY ZONE, POOR CUTTING RETURN, HARD DRILL.
- 830.0- 840.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 06% SPAR, FOSSIL FRAGMENTS,
- 840.0- 850.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS, BENTHONIC FORAMINIFERA,
- 850.0- 860.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,
- 860.0- 870.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

W- 2031 . COLLIER CO. T525, R30E, SEC 07A8

870.0- 880.0 LIMESTONE, WHITE TO VERY LIGHT GRAY, POROSITY,
INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC,
CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE,
MATRIX, SPARKY CALCITE CEMENT, FOSSIL FRAGMENTS,

LARGE CAVITIES LAST 50 FEET.



WC2031

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2032C

CULLIER CO. 1485 R27E SEC 23CA 26 17 19 N 81 35 35 W
 TOTAL DEPTH- 352 FT. ELEV.- 25 FT. 18 SAMPLES- 0- 352 FT.
 COMPLETED- 82.10.10 DEPTH WORKED 352 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GAMMA
 NEUTRON
 ELECTRIC

WELL NAME-

JANET #1, GAC REALTY TRUST, CONTINUOUS CORE, JUSTIN HODGES (DRILLER)

REMARKS-

DESCRIBED AND CODED BY MIKE KNAPP (NOV. 1982), QUALITY EXCELLENT

HYDROGEOLOGIC UNITS

0.0- 182.0 SURFICIAL AQUIFER SYSTEM
 0.0- 35.0 WATER TABLE AQUIFER
 35.0- 68.0 TAMIAHI CONFINING BEDS
 68.0- 182.0 LOWER TAMIAHI AQUIFER
 182.0- 197.0 UPPER HAWTHORN CONFINING ZONE
 197.0- 222.0 SANDSTONE AQUIFER
 222.0- 352.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

0.0- 15.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 15.0- 152.0 TAMIAHI FORMATION
 152.0- 182.0 MIOCENE COARSE CLASTICS
 182.0- 352.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2032C. CULLIER CO. 148S, R27E, SEC 23CA

0.0- 5.0 SAND, GRAYISH ORANGE, 42% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% CALCILUTITE, MOLLUSKS,
 5.0- 10.0 SAND, DARK YELLOWISH ORANGE, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, CALCILUTITE MATRIX, 10% CALCILUTITE, MOLLUSKS, FOSSIL FRAGMENTS,
 10.0- 15.0 SHELL BED, WHITE TO GRAYISH BROWN, 30% POROSITY, INTERGRANULAR, PDDR-INDURATED, CALCILUTITE MATRIX, 25% QUARTZ SAND, MOLLUSKS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 15.0- 18.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 18.0- 25.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
- 25.0- 28.0 LIMESTONE, GRAYISH BROWN, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CRYSTALS, BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 28.0- 30.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
- 30.0- 35.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH BROWN, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 08% QUARTZ SAND, MOLLUSKS, CORAL, FOSSIL MOLDS, FOSSIL FRAGMENTS,
- 35.0- 43.0 NO RECOVERY-DRILLER REPORTS CALCAREOUS CLAY
- 43.0- 46.0 SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 46.0- 51.0 AS ABOVE
- 51.0- 55.0 LOSS-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE CEMENT, CALCILUTITE MATRIX, 40% CALCILUTITE, 05% QUARTZ SAND, FOSSIL FRAGMENTS,
- 55.0- 59.0 AS ABOVE

- 59.0- 61.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 40% CALCILUTITE, 02% QUARTZ SAND, 01% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 61.0- 65.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 15% DOLOMITE, 15% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS,
- 63.0- 68.0 LIMESTONE, WHITE, 14% POROSITY, INTERGRANULAR, LOW PERMEABILITY, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% DOLOMITE, 10% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 68.0- 74.0 LIMESTONE, WHITE TO LIGHT GRAY, 16% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 20% DOLOMITE, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
 PECTEN, OYSTERS
- 74.0- 76.0 AS ABOVE,
- 76.0- 83.0 LIMESTONE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS, CORAL,
- 83.0- 88.0 SANDSTONE, WHITE, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 25% CALCILUTITE, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 88.0- 98.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, INTRACLASTS, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
- 98.0- 99.0 AS ABOVE,

- 99.0- 107.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, INTRACLASIS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLLS, FOSSIL FRAGMENTS, CORAL,
SOME ZONES ARE COQUINDID, WELL PRESERVED PECTIONS
- 107.0- 110.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 25% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 110.0- 113.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 15% QUARTZ SAND, COQUINA, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
BECOMES VERY SANDY (40%) AT BASE
- 113.0- 117.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 35% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 117.0- 118.0 SANDSTONE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, 40% CALCILUTITE, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLLS,
- 118.0- 122.0 AS ABOVE POSSIBLE HIGH PERMEABILITY
- 122.0- 127.0 NO RECOVERY-DRILLER REPORTS CALCAREOUS QUARTZ SANDS
- 127.0- 128.0 SANDSTONE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 01% PHOSPHATIC SAND, 10% DOLOMITE, 10% CALCILUTITE, MOLLUSKS,
- 128.0- 132.0 AS 116 TO 127

- 132.0- 133.0 DOLOMITE, LIGHT OLIVE GRAY TO GRAYISH BROWN, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 12% CALCILUTITE, 03% PHOSPHATIC SAND, 23% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 133.0- 141.0 AS 118 TO 127
- 141.0- 142.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 20% DOLOMITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 142.0- 152.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% DOLOMITE, 30% QUARTZ SAND, 01% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 150.0- 152.0 DOLOMITE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 20% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 152.0- 162.0 SHELL BED, YELLOWISH GRAY TO DARK GRAYISH YELLOW, 25% POROSITY, INTERGRANULAR, UNCONSOLIDATED, 25% QUARTZ SAND, MOLLUSKS,
- 162.0- 172.0 SAND, LIGHT OLIVE TO GRAYISH OLIVE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 05% CALCILUTITE, 05% DOLOMITE, 05% CLAY, 03% PHOSPHATIC SAND, MOLLUSKS,
- 172.0- 182.0 SAND, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 01% PHOSPHATIC SAND, 02% CALCILUTITE, MOLLUSKS, FOSSIL FRAGMENTS,
- 182.0- 192.0 DOLL-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 20% CALCILUTITE, 02% CLAY, 02% PHOSPHATIC SAND, MOLLUSKS,
- 192.0- 193.0 DOLL-SILT, LIGHT OLIVE TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 02% CLAY, PHOSPHATIC SAND, 35% QUARTZ SAND, MOLLUSKS,
- 193.0- 194.0 AS ABOVE,

- 194.0- 197.0 LITTLE RECOVERY-SANDY, PHOS DLUU-WITH COARSE PHOS RUBBLE.
- 197.0- 199.0 DOLOMITE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, MOLDIC, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 10% QUARTZ SAND, 15% PHOSPHATIC SAND, 02% PHOSPHATIC GRAVEL, MOLLUSKS, FOSSIL MOLDS,
- 199.0- 200.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CRYSTALS, BIOGENIC, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 40% DOLOMITE, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, 01% PHOSPHATIC GRAVEL, MOLLUSKS, FOSSIL MOLDS,
- 200.0- 202.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% DOLOMITE, 03% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 202.0- 203.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, INTERBEDDED, 30% DOLOMITE, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 203.0- 205.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 40% DOLOMITE, 05% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 205.0- 207.3 DOLOMITE, YELLOWISH GRAY TO GRAYISH ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 35% CALCILUTITE, 01% PHOSPHATIC SAND, 01% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, BRIOZOA, FOSSIL FRAGMENTS,
- 207.3- 207.9 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, CALCILUTITE MATRIX, 02% QUARTZ SAND, 01% PHOSPHATIC SAND, FOSSIL MOLDS,

LITHOLOGIC LOG

W- 20320. COLLIER CO. T48S, R27E, SEC 230A

- 207.9- 216.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 03% QUARTZ SAND, 01% PHOSPHATIC SAND, COQUINA, MOLLUSKS, FOSSIL MOLDS,
- 216.0- 219.0 AS ABOVE,
- 219.0- 222.0 DOLOMITE, YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% CALCILUTITE, 10% SPAR, 01% PHOSPHATIC SAND, 01% QUARTZ SAND, MOLLUSKS, CORAL,
- 222.0- 223.0 DOLOMITE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% CALCILUTITE, 02% QUARTZ SAND, FOSSIL MOLDS,
- 223.0- 225.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 35% DOLOMITE, 02% QUARTZ SAND, MOLLUSKS,
- 225.0- 227.0 DOLO-SILT, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 03% CLAY, MOLLUSKS,
- 227.0- 228.0 DOLO-SILT, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 35% CALCILUTITE, 03% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS,
- 228.0- 233.0 DOLO-SILT, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, Bioturbated, 06% QUARTZ SAND, 35% CALCILUTITE, 01% PHOSPHATIC SAND, MOLLUSKS,
- 233.0- 237.0 AS ABOVE-NO BIOTURB-QTZ GRAINS WELL ROUNDED (COARSE)
- 237.0- 239.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 04% QUARTZ SAND,
- 239.0- 241.0 AS ABOVE-BUT POORLY INDURATED

- 241.0- 242.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 01% QUARTZ SAND, 05% DOLOMITE, MUDDY, COQUINA, MOLLUSKS,
- 242.0- 242.5 GRADATIONAL TO UNDERLYING LITHO
- 242.5- 245.0 BOLD-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, LAMINATED, 10% CALCILUTITE, 05% CLAY, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS,
- 245.0- 247.0 AS ABOVE,
- 247.0- 249.0 AS ABOVE--WITH MORE SAND (10%) AND PHOS.(05%)
- 249.0- 254.5 BOLD-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, CALCILUTITE MATRIX, 02% CLAY, 05% CALCILUTITE, 03% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 254.5- 256.0 AS ABOVE--WITH COARSE QTZ SAND (10%)
- 256.0- 259.0 SAND, GRAYISH OLIVE, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 30% DOLOMITE, 03% CLAY, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 259.0- 262.0 AS ABOVE,
- 262.0- 265.0 SANDSTONE, WHITE TO VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 10% CALCILUTITE, 01% PHOSPHATIC SAND, MOLLUSKS,
- 265.0- 272.0 AS ABOVE WITH POOR INDURATION
- 272.0- 275.0 DOLOMITE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, 50-90% ALTERED, EHDHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 40% QUARTZ SAND, MOLLUSKS,
- 275.0- 282.0 SAND, VERY LIGHT ORANGE TO YELLOWISH GRAY, 16% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 05% CALCILUTITE, 05% DOLOMITE, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,

- 282.0- 292.0 AS ABOVE,
- 292.0- 295.0 SANDSTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% DOLOMITE, 10% CALCILUTITE, MOLLUSKS,
- 295.0- 295.3 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 05% CALCILUTITE, 01% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS,
- 295.3- 296.0 DOLO-SILT, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 25% QUARTZ SAND, MOLLUSKS,
- 296.0- 300.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 12% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, 03% QUARTZ SAND, 06% PHOSPHATIC SAND, MOLLUSKS,
- 300.0- 302.0 DOLO-SILT, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, CALCILUTITE MATRIX, 05% CLAY, 15% CALCILUTITE, 05% QUARTZ SAND, 06% PHOSPHATIC SAND, MOLLUSKS,
- 302.0- 303.0 LIMESTONE, WHITE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIUGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 35% DOLOMITE, 05% PHOSPHATIC SAND, 03% QUARTZ SAND, MOLLUSKS,
- 303.0- 305.0 AS ABOVE WITH V.C. PHOSPHATE
- 305.0- 306.5 DOLOMITE, LIGHT OLIVE GRAY TO PINKISH GRAY, 12% POROSITY, INTERGRANULAR, 50-90% ALTERED, EHDORAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 14% PHOSPHATIC SAND, 06% QUARTZ SAND, MOLLUSKS,
- REWORKED
- 306.5- 310.0 DOLO-SILT, LIGHT OLIVE GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, BANDED, 15% CALCILUTITE, 06% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, SHARK TEETH, FOSSIL FRAGMENTS,

SOME ZONE HAVE VERY HIGH PHOS. CONCENTRATIONS

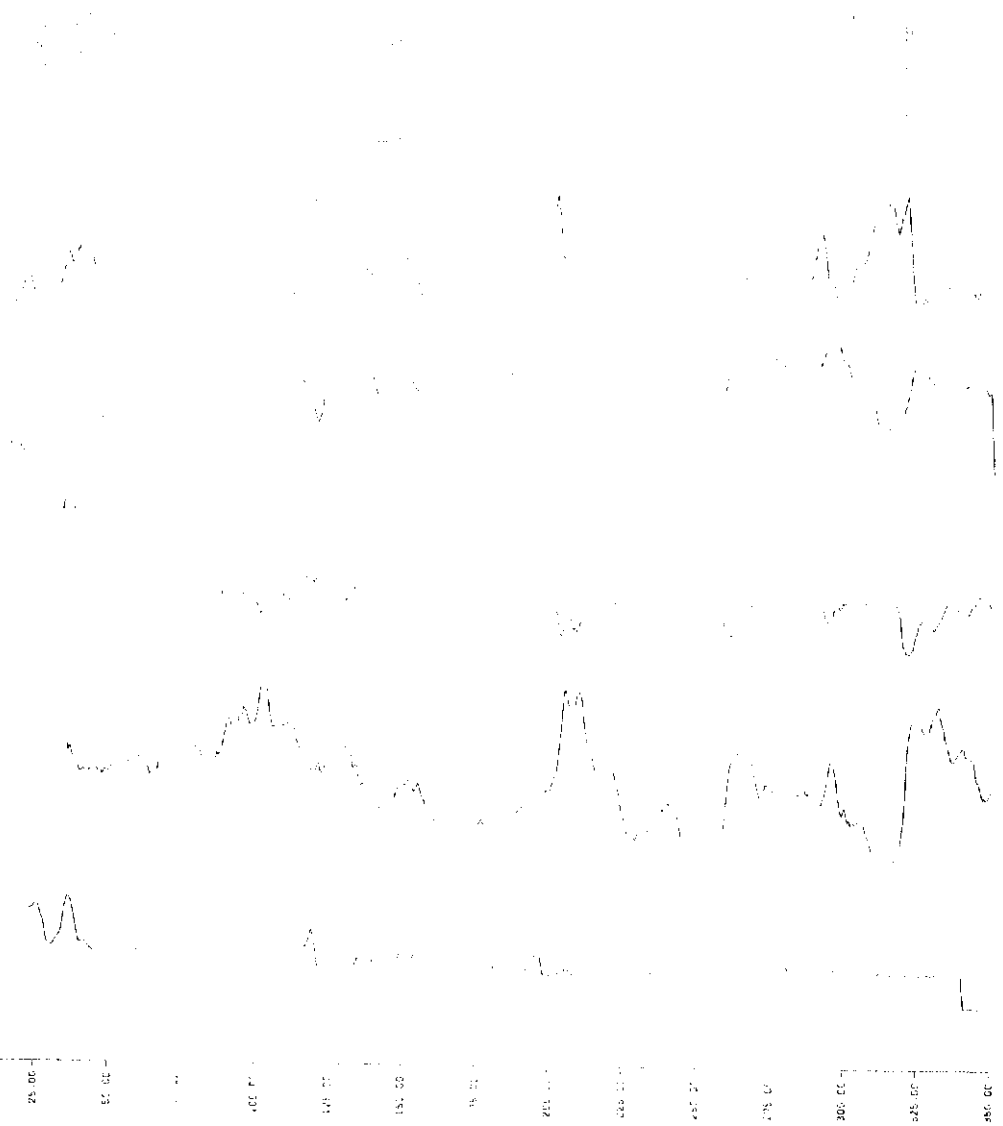
- 310.0- 312.0 AS ABOVE,
- 312.0- 314.0 DOLO-SILT, OLIVE GRAY TO PINKISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, BANDED, 05% CLAY, 05% CALCILUTITE, 10% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS, SHARK TEETH, VERTEBRATE,
- 314.0- 316.0 AS ABOVE - SECTION IS REWORKED - RUBBLE BEDS COMMON
- 318.0- 319.0 REWORKED DOLO-SILT AND LIMESTONE
- 319.0- 332.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 75% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: COARSE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, BRECCIATED, 25% DOLOMITE, 03% PHOSPHATIC SAND, 01% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 332.0- 342.0 LIMESTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 40% DOLOMITE, 06% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 342.0- 347.0 SILT, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, CALCILUTITE MATRIX, DOLOMITE CEMENT, 05% CALCILUTITE, 05% DOLOMITE, 02% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA,
OYSTER SHELL INTERBEDDED
- 347.0- 350.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 20% DOLOMITE, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA,
- 350.0- 352.0 AS ABOVE WITH GOOD INDURATION

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT	
25				UNDIFFERENTIATED	SURFICIAL AQUIFER SYSTEM	WATER TABLE
0		CALCITE SAND SAND		TAMIAMI FORMATION		AQUIFER
-25		SAND CALCITE CALCITE CALCITE CALCITE CALCITE				TAMIAMI CONFINING BEDS
-50		SAND CALCITE SAND SAND SAND				LOWER TAMIAMI AQUIFER
-75		SAND SAND				
-100		SAND CALCITE SAND SAND CALCITE SAND CALCITE CALCITE				
-125		SAND CALCITE CALCITE		MIOCENE COARSE CLASTICS	SYSTEM	UPPER HAWTHORN CONFINING ZONE
-150		SAND CALCITE CALCITE	HAWTHORN GROUP			UPPER CLASTICS
-175		CALCITE CLAY SAND PHOSPHATE		MID-HAWTHORN CONFINING ZONE		
-200		CALCITE CALCITE CLAY SAND				
-225		CALCITE CLAY		INTERMEDIATE AQUIFER	MID-HAWTHORN CONFINING ZONE	
-250		DOLOMITE SAND CALCITE CALCITE CALCITE DOLOMITE				
-275		CALCITE SAND PHOSPHATE PHOSPHATE CLAY		MID-HAWTHORN AQUIFER		
-300		SAND PHOSPHATE	LOWER CARBONATE			
-325						

WC2032

DEPTH
 00
 25.00
 50.00
 75.00
 100.00
 125.00
 150.00
 175.00
 200.00
 225.00
 250.00
 275.00
 300.00
 325.00
 350.00

C-1-00004*
 18.14 WARRIOR, ST
 1.2 CG 55.2
 130.0 19
 01-00004*
 18.14 WARRIOR, ST
 1.2 CG 55.2
 130.0 19
 01-00004*
 18.14 WARRIOR, ST
 1.2 CG 55.2
 130.0 19
 01-00004*
 18.14 WARRIOR, ST
 1.2 CG 55.2
 130.0 19



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2032

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2033

COLLIER CO. T49S R28E SEC 11AB 26 13 46 N 81 35 28 W
 TOTAL DEPTH- 380 FT. ELEV.- 14 FT. 38 SAMPLES- 0- 380 FT.
 COMPLETED- 83.05.01 DEPTH WORKED 380 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GEOLOGIST
 CALIPHER
 ELECTRIC
 NEUTRON

WELL NAME-

GOLDEN GATE #1, SFWMD, ALVIN WOODSTER DRILLER

REMARKS-

DESCRIBED BY MIKE KNAPP (2-28-83), QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0- 220.0 SURFICIAL AQUIFER SYSTEM
 0.0- 40.0 WATER TABLE AQUIFER
 40.0- 60.0 TAMiami CONFINING BEDS
 60.0- 220.0 LOWER TAMiami AQUIFER
 220.0- 240.0 UPPER HAWTHORN CONFINING ZONE
 240.0- 250.0 SANDSTONE AQUIFER
 250.0- 360.0 MID-HAWTHORN CONFINING ZONE
 360.0- T.D. MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 3.0 UNDIFFERENTIATED SAND AND CLAY
 3.0- 150.0 TAMiami FORMATION
 150.0- 230.0 MIOCENE COARSE CLASTICS
 230.0- 380.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2033 . COLLIER CO. T49S, R28E, SEC 11AB

.0- 3.0 SAND, MODERATE YELLOWISH BROWN, 35% POROSITY, INTERGRANULAR,
 GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR,
 ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, ORGANIC MATRIX,
 MOLLUSKS,
 3.0- 10.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY,
 INTERGRANULAR, INTERCRYSTALLINE, MULDIC, GRAIN TYPE:
 CALCILUTITE, CRYSTALS, SKELETAL, 20% ALLOCHEMICAL
 CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE
 MATRIX, SPARKY CALCITE CEMENT, 03% QUARTZ SAND, MOLLUSKS,
 CORAL, FOSSIL MOULDS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 10.0- 20.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, CORAL, FOSSIL MOLDS,
- 20.0- 30.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 30.0- 40.0 AS ABOVE,
- 40.0- 50.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, FOUR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, 02% CLAY, MOLLUSKS,
- 50.0- 60.0 NO SAMPLE-DRILLER REPORTS SANDSTONE (50FT)
- 60.0- 70.0 LIMESTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, INTRACLASTS, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS, CORAL,
- 70.0- 80.0 AS ABOVE,
- 80.0- 90.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, CORAL,
- TRACE PHOSPHATIC SAND
- 90.0- 100.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, CORAL, ECHINOID, BRYOZOA,

LITHOLOGIC LOG

2033 • COLLIER CO. T49S, R28E, SEC 11AH

- 100.0- 110.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, 65% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, BRYOZOA, ECHINOID,
- 110.0- 120.0 AS ABOVE,
- 120.0- 130.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, 65% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, BRYOZOA, ECHINOID, CORAL,
- 130.0- 140.0 AS ABOVE,
- 140.0- 150.0 AS ABOVE WITH MORE SAND (10%)
- 150.0- 160.0 SANDSTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 40% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS, BRYOZOA,
- 160.0- 170.0 AS ABOVE,
- 170.0- 180.0 AS ABOVE,
- 180.0- 190.0 SANDSTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% CALCILUTITE, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 190.0- 200.0 AS ABOVE,
- 200.0- 210.0 SANDSTONE, VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 30% CALCILUTITE, 01% PHOSPHATIC SAND, SHARK TEETH, MOLLUSKS, FOSSIL FRAGMENTS,
- 210.0- 220.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% QUARTZ SAND, MOLLUSKS, BRYOZOA, ECHINOID,

LITHOLOGIC LOG

W- 2033 . COLLIER CO. T49S, R28E, SEC 11AB

- 220.0- 230.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, 20% QUARTZ SAND, MOLLUSKS,
- 230.0- 240.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 02% CLAY, 35% QUARTZ SAND, 02% PHOSPHATIC SAND,
- 240.0- 250.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 20% DOLOMITE, 10% QUARTZ SAND, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,
- 250.0- 260.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 30% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 260.0- 270.0 AS ABOVE,
- 270.0- 280.0 AS ABOVE,
- 280.0- 290.0 SAND, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 20% DOLOMITE, 10% CALCILUTITE, 04% PHOSPHATIC SAND, 01% CLAY, MOLLUSKS,
- 290.0- 300.0 AS ABOVE,
- 300.0- 310.0 DOLO-SILT, DARK GRAYISH YELLOW TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CALCILUTITE, 10% CLAY, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 310.0- 320.0 AS ABOVE,
- 320.0- 330.0 DOLO-SILT, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% QUARTZ SAND, 02% PHOSPHATIC SAND, 15% CALCILUTITE, MOLLUSKS,
- 330.0- 340.0 AS ABOVE WITH L/S FRAGS AND V. COARSE PHOSPHATE
- 340.0- 350.0 AS ABOVE-RUBBLE ZONE

LITHOLOGIC LOG

#- 2033 . COLLIER CO. T49S, R28E, SEC 11AB

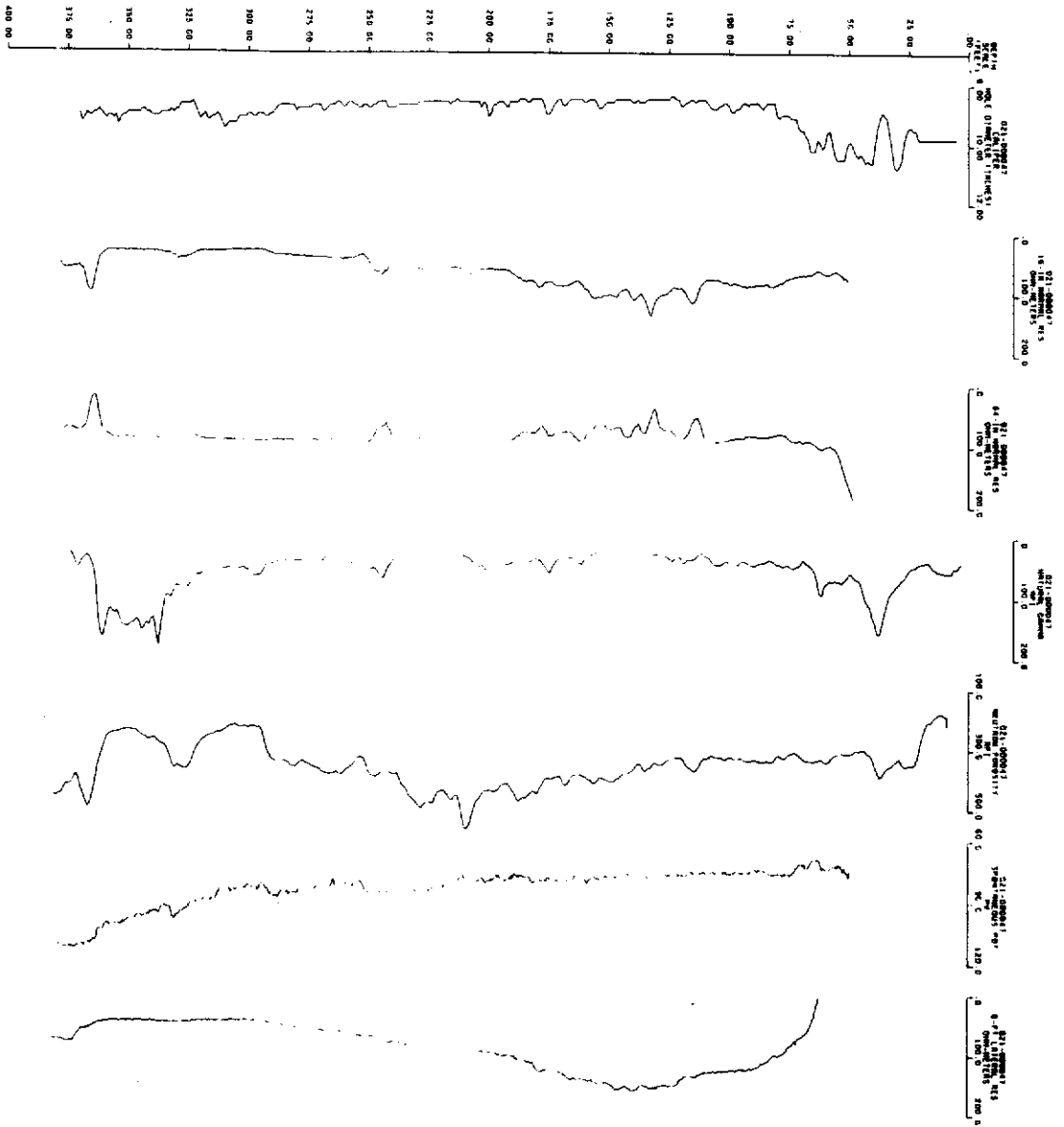
350.0- 360.0 AS ABOVE,

360.0- 370.0 LIMESTONE, VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR,
MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC,
CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN
SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE,
GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY
CALCITE CEMENT, 20% DOLOMITE, 03% QUARTZ SAND, 04%
PHOSPHATIC SAND, MULLUSKS, BRYOZOA, FOSSIL MOLDS,

370.0- 380.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT					
0			TAMIAMI FORMATION	SYSTEM	WATER TABLE				
-25					AQUIFER				
-50					TAM. CONF. BEDS				
-75					LOWER TAMIAMI AQUIFER				
-100									
-125									
-150									
-175						DOLOMITE DOLOMITE CLAY CLAY SAND SAND CALCITE CALCITE SAND SAND PHOSPHATE PHOSPHATE	GROUP HAWTHORN	SURFICIAL	
-200									
-225									
-250									
-275									
-300									
-325									
-350									
-375									
				SYSTEM					U. HAW. CON. Z.
					SANDSTONE AQ.				
				AQUIFER	MID-HAWTHORN				
					CONFINING				
				INTERMEDIATE	ZONE				
			LOWER CARBONATE		MID-HAWTHORN AQUIFER				

WC2033



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2033

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

2034

COLLIER CO. 149S R27E SEC 36DD 26 08 37 N 81 31 27 W
 TOTAL DEPTH- 340 FT. ELEV.- 13 FT. 34 SAMPLES- 0- 340 FT.
 COMPLETED- 05.26.83 DEPTH WORKED 340 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GAMMA
 ELECTRIC
 CALIPHER

WELL NAME-

2034, SFWMD, ALVIN WOOSTER (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP, (7-7-83), QUAL. (GOOD)

HYDROGEOLOGIC UNITS

0.0- 160.0 SURFICIAL AQUIFER SYSTEM
 0.0- 60.0 WATER TABLE AQUIFER
 60.0- 80.0 TAMiami CONFINING BEDS
 80.0- 160.0 LOWER TAMiami AQUIFER
 160.0- 330.0 HAWTHORN CONFINING BEDS
 330.0- 340.0 MID-HAWTHORN AQUIFER

LITHOLOGIC FORMATIONS -

0.0- 10.0 UNDIFFERENTIATED SAND AND CLAY
 10.0- 100.0 TAMiami FORMATION
 100.0- 190.0 MIOCENE COARSE CLASTICS
 190.0- 340.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

2034 . COLLIER CO. 149S, R27E, SEC 36DD

0.0- 10.0 NO SAMPLES
 10.0- 20.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY,
 INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN
 TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 50% ALLOCHEMICAL
 CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO
 COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE
 CEMENT, 0% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
 20.0- 30.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 18% POROSITY,
 INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN
 TYPE: CALCILUTE, SKELETAL, CRYSTALS, 60% ALLOCHEMICAL
 CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO
 COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE
 CEMENT, 0% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS,
 FOSSIL MOLDS,
 30.0- 40.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

W- 2034 . COLLIER CO. T49S, R27E, SEC 36DD

- 40.0- 50.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 50.0- 60.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 60.0- 70.0 SANDSTONE, LIGHT GRAYISH GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% CALCILUTITE, 10% DOLOMITE, MOLLUSKS,
- 70.0- 80.0 AS ABOVE WITH MICA
- 80.0- 90.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 35% QUARTZ SAND, MOLLUSKS,
- 90.0- 100.0 AS ABOVE,
- 100.0- 110.0 SHELL BED, LIGHT OLIVE GRAY TO DARK GRAY, 30% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, UNCONSOLIDATED, 30% QUARTZ SAND, 04% PHOSPHATIC GRAVEL, MOLLUSKS,
VERY COARSE FROSTED SAND
- 110.0- 120.0 AS ABOVE,
- 120.0- 130.0 AS ABOVE,
- 130.0- 140.0 LIMESTONE, MODERATE LIGHT GRAY TO MODERATE YELLOWISH BROWN, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 40% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA,
MUCH LOOSE SHELL

LITHOLOGIC LOG

W- 2034 . COLLIER CU. T49S, R27E, SEC 36L0

- 140.0- 150.0 DOLOMITE, MODERATE DARK GRAY TO MODERATE YELLOWISH BROWN, 10% POROSITY, INTERGRANULAR, PIN POINT VUGS, MOLDIC, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 04% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 150.0- 160.0 DOLOMITE, MODERATE YELLOWISH BROWN, 15% POROSITY, INTERGRANULAR, PIN POINT VUGS, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 04% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL MOLDS,
- 160.0- 170.0 LIMESTONE, VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 10% QUARTZ SAND, MOLLUSKS,
- 170.0- 180.0 AS ABOVE WITH COARSE SAND
- 180.0- 190.0 AS ABOVE,
- 190.0- 200.0 DOLO-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 35% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS,
VERY COARSE SAND (5%)
- 200.0- 210.0 AS ABOVE,
- 210.0- 230.0 DOLO-SILT, LIGHT OLIVE TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 20% QUARTZ SAND, 02% PHOSPHATIC SAND, 02% PHOSPHATIC GRAVEL, MOLLUSKS,
- 230.0- 240.0 SAND, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 20% DOLOMITE, 10% CALCILUTITE, 02% CLAY, 04% PHOSPHATIC SAND, MOLLUSKS,
- 240.0- 250.0 AS ABOVE,
- 250.0- 260.0 AS ABOVE,
- 260.0- 270.0 DOLO-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 40% QUARTZ SAND, 04% PHOSPHATIC SAND, 15% CALCILUTITE, MOLLUSKS,

LITHOLOGIC LOG

W- 2034 . COLLIER CO. T49S, R27E, SEC 3600

- 270.0- 280.0 DOLO-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% PHOSPHATIC SAND, 02% PHOSPHATIC GRAVEL, 20% QUARTZ SAND, 02% CLAY, MOLLUSKS,
- 280.0- 290.0 DOLO-SILT, LIGHT OLIVE, 05% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 03% PHOSPHATIC SAND, 03% QUARTZ SAND, 02% CLAY, MOLLUSKS,
- 290.0- 300.0 AS ABOVE,
- 300.0- 310.0 AS ABOVE,
- 310.0- 320.0 DOLO-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 10% PHOSPHATIC SAND, 20% QUARTZ SAND, MOLLUSKS,
- 320.0- 330.0 AS ABOVE WITH REWORKED L/S FRAGS
- 330.0- 340.0 LIMESTONE, WHITE, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
0		SAND SAND DOLomite DOLomite	NO SAMPLE	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER
-25			TAMIAMI		
-50			FORMATION		
-75					TAMIAMI CONF. BEDS
-100		SAND SAND	HAWTHORN GROUP	SURFICIAL AQUIFER SYSTEM	LOWER TAMIAMI AQUIFER
-125					
-150					
-175		CALCITE CALCITE	HAWTHORN GROUP	INTERMEDIATE AQUIFER SYSTEM	HAWTHORN CONFINING ZONES
-200	SAND SAND SAND SAND CALCITE CALCITE	UPPER			
-225		CALCITE CALCITE PHOSPHATE PHOSPHATE SAND SAND			
-250					
-275					
-300		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE	LOWER		MID-HAWTHORN AQUIFER
-325			CARBONATE		
-350					

WC2034

DEPT-
SCALE
(FEET)

25.00
50.00
75.00
100.00
125.00
150.00
175.00
200.00
225.00
250.00
275.00
300.00
325.00
350.00

021-000050
16-IN NORMAL RES
OHM-METERS

50.00
100.00



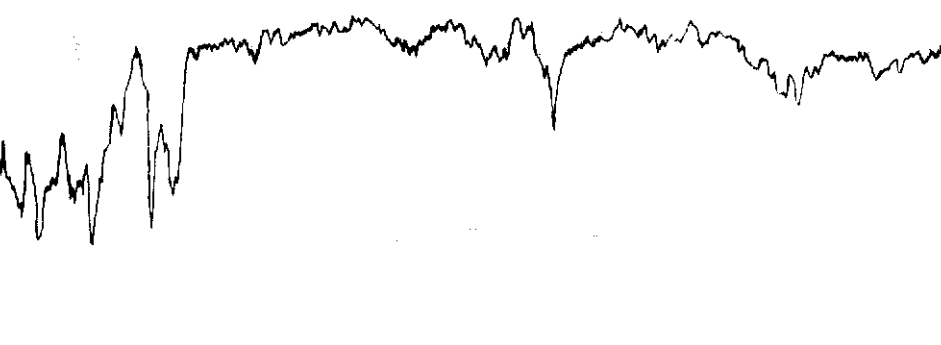
021-000050
64-IN NORMAL RES
OHM-METERS

50.00
100.00



021-000050
NORMAL GRMPP
RPI

100.0
200.0
45.00



021-000050
SPONTANEOUS POT
MV

20.00-
5.000



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2034

W- 2035

COLLIER CO. T51S R27E SEC 06 26 03 13 N 01 38 03 W
 TOTAL DEPTH- 180 FT. ELEV.- 7 FT. 18 SAMPLES- 0- 180 FT.
 COMPLETED- 06.16.83 DEPTH WORKED 180 FT.

WELL NAME-

FRITCHEYS TREE FARM, SFWMD, ALVIN HOOSTER (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (7-7-83), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNIT

- 0.0- 160.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 50.0 WATER TABLE AQUIFER
- 50.0- 60.0 TAMiami CONFINING BEDS
- 60.0- 160.0 LOWER TAMiami AQUIFER

STRATIGRAPHIC FORMATIONS -

- .0- 10.0 UNDIFFERENTIATED SAND AND CLAY
- 10.0- 120.0 TAMiami FORMATION
- 120.0- 160.0 MIOCENE COARSE CLASTICS
- 160.0- 180.0 HAWTHORN FORMATION *

LITHOLOGIC LUG

W- 2035 . COLLIER CO. T51S, R27E, SEC 06

- .0- 10.0 SAND, DARK YELLOWISH BROWN, 42% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
- 10.0- 20.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 20.0- 30.0 AS ABOVE,
- 30.0- 40.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, ECHINOID, FOSSIL MOLDS,
- 40.0- 50.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

#- 2035 . COLLIER CO. T51S, R27E, SEC 06

- 50.0- 60.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, 15% QUARTZ SAND, MOLLUSKS,
- 60.0- 70.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% QUARTZ SAND, MOLLUSKS, ECHINOID,
- 70.0- 80.0 AS ABOVE,
- 80.0- 90.0 LIMESTONE, VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, BENTHONIC FORAMINIFERA,
- 90.0- 100.0 AS ABOVE,
- 100.0- 110.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 35% QUARTZ SAND, MOLLUSKS,
- 110.0- 120.0 AS ABOVE,
- 120.0- 130.0 SANDSTONE, GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS,
- 130.0- 140.0 AS ABOVE,
- 140.0- 150.0 AS ABOVE, BUT POORLY INDURATED WITH MUCH SHELL
- 150.0- 160.0 SAND, WHITE, 32% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 03% PHOSPHATIC SAND, 02% PHOSPHATIC GRAVEL, MOLLUSKS,
- 160.0- 170.0 SAND, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLUMITE CEMENT, CLAY MATRIX, 25% DOLUMITE, 02% CLAY, 10% PHOSPHATIC SAND, MOLLUSKS,

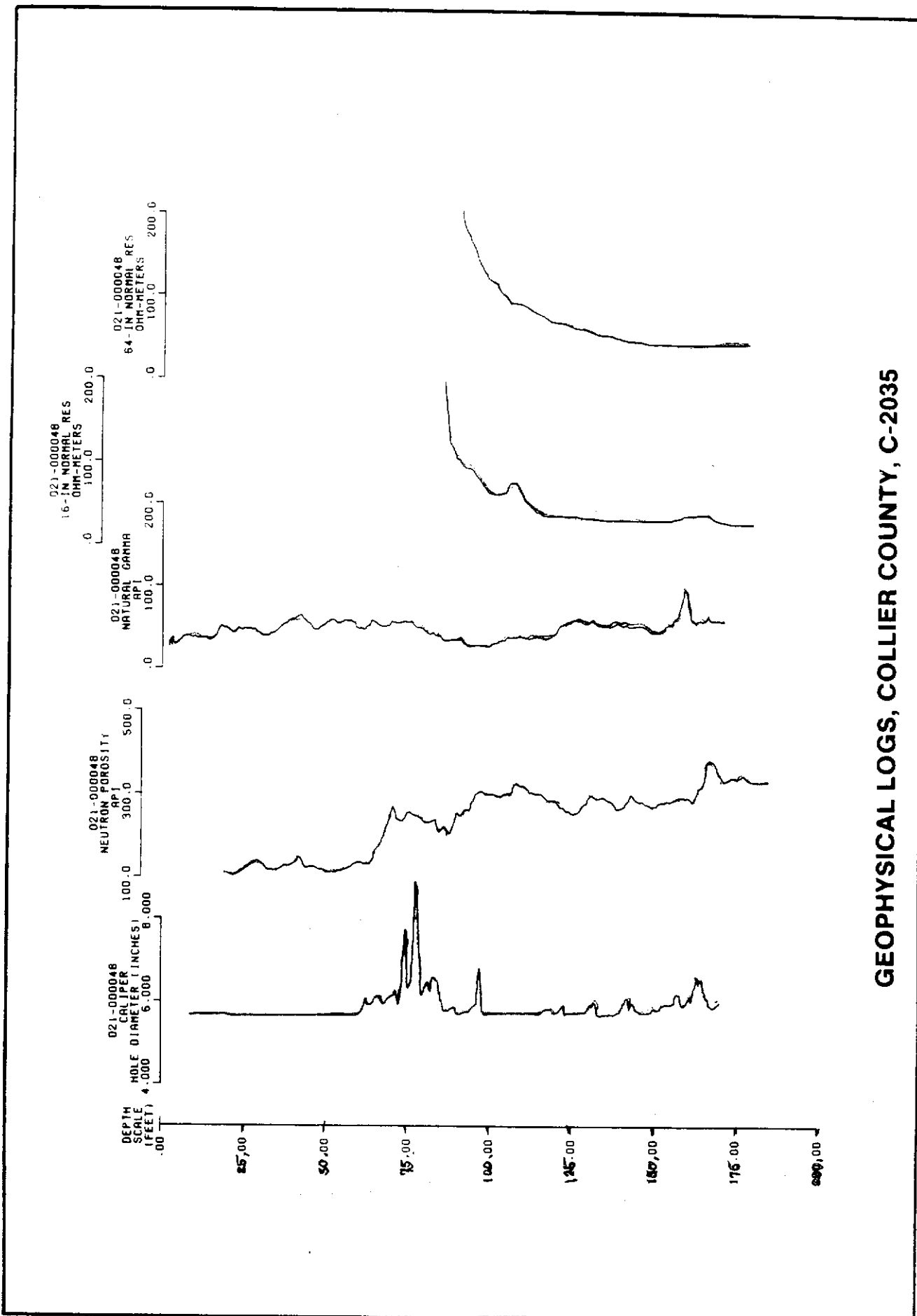
LITHOLOGIC LOG

W- 2035 . COLLIER CO. T51S, R27E, SEC 06

170.0- 180.0 DULO-SILT, LIGHT OLIVE TO GREENISH GRAY, 10% POROSITY,
INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLLOMITE
CEMENT, CLAY MATRIX, 0% CLAY, 35% QUARTZ SAND, 10%
PHOSPHATIC SAND, MULLUSKS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT		
0		SAND SAND SAND SAND	UNDIFF.		SYSTEM	WATER TABLE AQUIFER	
-25			TAMIAMI FORMATION				TAMIAMI CONF. BEDS
-50							
-75							
-100		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE	HAWTHORN GROUP	MIOCENE COARSE CLASTICS	SURFICIAL	LOWER TAMIAMI AQUIFER	
-125				UPPER CLASTIC			HAWTHORN CONFINING
-150							
-175							

WC2035



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2035

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2036

COLLIER CO. T50S R27E SEC 06AA 26 08 42 N 81 38 12 W
 TOTAL DEPTH- 240 FT. ELEV.- 11 FT. 0 SAMPLES- 240- 24 FT.
 COMPLETED- 6.21.83 DEPTH WORKED 240 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

ELECTRIC
 CALIPHER
 GAMMA
 PHOTO
 NEUTRON

WELL NAME-

W-2036, ALLIGATOR ALLEY, SFWMD, ALVIN WOODS (DRILLER)

REMARKS-

DESCRIBED AND CODED BY MIKE KNAPP (11-14-83), QUALITY (GOOD).

HYDROGEOLOGIC UNITS

0.0- 237.0 SURFICIAL AQUIFER SYSTEM
 0.0- 50.0 WATER TABLE AQUIFER
 50.0- 80.0 TAMiami CONFINING BEDS
 80.0- 160.0 LOWER TAMiami AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 130.0 TAMiami FORMATION
 130.0- 237.0 MIOCENE COARSE CLASTICS
 237.0- 240.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2036 . COLLIER CO. T50S, R27E, SEC 06AA

.0- 10.0 LIMESTONE, GRAYISH BROWN TO LIGHT GRAY, 15% POROSITY,
 INTERGRANULAR, MOLDIC, GRAIN TYPE: CRYSTALS, CALCILUTITE,
 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE,
 RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION,
 CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 35% QUARTZ SAND,
 MOLLUSKS,
 10.0- 20.0 AS ABOVE WITH LESS SAND (10%)
 20.0- 30.0 LIMESTONE, VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR,
 MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC,
 CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN
 SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE,
 GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT,
 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, ECHINOID,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT

- 30.0- 40.0 DOLOMITE, MODERATE LIGHT GRAY, 10% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, EUMEDIAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 0% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 40.0- 50.0 LIMESTONE, LIGHT GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 0% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 50.0- 60.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 0% CLAY, 0% QUARTZ SAND, MOLLUSKS,
- 60.0- 70.0 AS ABOVE WITH DOLOMITE FRAGS
- 70.0- 80.0 SANDSTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 30% CALCILUTITE, MOLLUSKS,
- 80.0- 90.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 1% DOLOMITE, 0% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 90.0- 100.0 AS ABOVE,
- 100.0- 110.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 20% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 110.0- 120.0 AS ABOVE,
- 120.0- 130.0 AS ABOVE,
- 130.0- 140.0 SANDSTONE, LIGHT GRAY TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 25% CALCILUTITE, MOLLUSKS,
- 140.0- 150.0 AS ABOVE WITH POOR INDURATION

- 150.0- 160.0 AS ABOVE,
- 160.0- 170.0 SANDSTONE, LIGHT GRAY TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 05% CLAY, MOLLUSKS,
- 170.0- 180.0 LIMESTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLLUSCAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 180.0- 190.0 AS ABOVE, BUT POORLY INDURATED, LOW PERM.
- 190.0- 195.0 NO SAMPLE-DRILLER V.FINE QUARTZ SAND
- 195.0- 200.0 SANDSTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 25% CALCILUTITE, 05% CLAY, MOLLUSKS,
- 200.0- 210.0 DULL-SILT, LIGHT OLIVE GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 20% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 210.0- 220.0 SANDSTONE, LIGHT GRAY TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLLUSCAR, PIN POINT VUGS, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 15% CALCILUTITE, 25% DOLOMITE, MOLLUSKS,
- 220.0- 230.0 AS ABOVE,
- 230.0- 237.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLLUSCAR, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, BRYOZOA, VERTBRATE,
- 237.0- 240.0 DULL-SILT, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 20% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT			
0		SAND SAND SAND SAND	TAMIAMI FORMATION	SYSTEM	WATER TABLE AQUIFER		
-25		SAND SAND				AQUIFER	TAMIAMI CONFINING BEDS
-50		SAND SAND					LOWER TAMIAMI AQUIFER
-75		CALCITE CALCITE SAND SAND CLAY CLAY CLAY CLAY CALCITE CALCITE CALCITE CALCITE		HAWTHORN GROUP	MIOCENE COARSE CLASTICS	UPPER HAWTHORN CONFINING ZONE	
-100							UPPER CLASTIC
-125		SAND SAND					
-150							
-175							
-200							
-225		SAND SAND					

WC2036

W- 2037

COLLIER CO. T51S R28E SEC 0688 26 03 31 N 81 33 15 W
 TOTAL DEPTH- 200 FT. ELEV.- 8 FT. 20 SAMPLES- 0- 206 FT.
 COMPLETED- 06.28.83 DEPTH WORKED 200 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

CALIPHER
 GAMMA
 ELECTRIC
 NEUTRON
 PHOTO

WELL NAME-

C2037, EVERGLADES BLVD, SFWMD, ALVIN WOODSTER (DRILLER)

REMARKS-

DESCRIBED AND CODED BY MIKE KNAPP (11-21-83), QUALITY (GOOD).

HYDROGEOLOGIC UNITS

0.0- 180.0 SURFICIAL AQUIFER SYSTEM
 0.0- 60.0 WATER TABLE AQUIFER
 60.0- 120.0 TAMiami CONFINING BEDS
 120.0- 180.0 LOWER TAMiami AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 140.0 TAMiami FORMATION
 140.0- 180.0 MIOCENE COARSE CLASTICS
 180.0- 200.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2037 . COLLIER CO. T51S, R28E, SEC 0688

- 0.0- 5.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, CORAL, BRYOZOA, FOSSIL MOLDS,
- 5.0- 20.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, CORAL, BRYOZOA, FOSSIL MOLDS,
- 20.0- 30.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 30.0- 40.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, VUGULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, SPARRY CALCITE CEMENT, CALCILUTITE MATRIX, 40% SPAR, 02% QUARTZ SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLLS,
- 40.0- 50.0 AS ABOVE,
- 50.0- 60.0 LIMESTONE, WHITE, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 35% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 60.0- 80.0 SANDSTONE, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% CALCILUTITE, 20% DOLOMITE, MOLLUSKS,
- 80.0- 90.0 SAND, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, CALCILUTITE MATRIX, DOLOMITE CEMENT, 05% CLAY, 15% CALCILUTITE, 20% DOLOMITE, 02% PHOSPHATIC SAND, MOLLUSKS,
- 90.0- 100.0 AS ABOVE,
- 100.0- 110.0 AS ABOVE,
- 110.0- 120.0 SAND, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, 15% CLAY, 10% DOLOMITE, 03% PHOSPHATIC SAND, MOLLUSKS,
- 120.0- 135.0 LIMESTONE, VERY LIGHT ORANGE TO DARK YELLOWISH ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, VUGULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 40% DOLOMITE, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 135.0- 140.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, 02% QUARTZ SAND, MOLLUSKS,

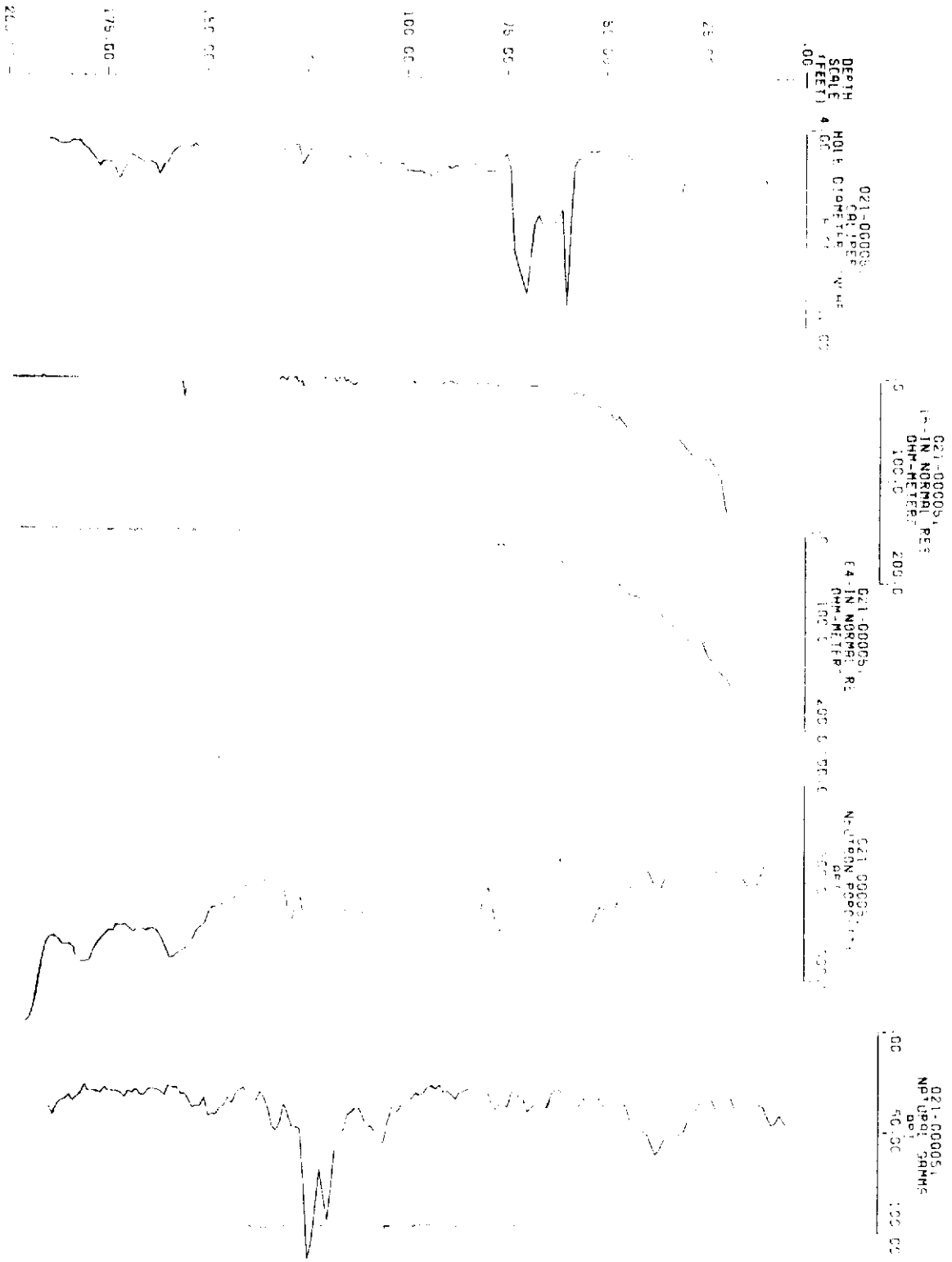
LITHOLOGIC LOG

w- 2037 . COLLIER CO. T515, R280, SEC 0680

- 140.0- 160.0 SANDSTONE, VERY LIGHT ORANGE TO LARK YELLOWISH ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, DOLUMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% DOLUMITE, 15% CALCILUTITE, MOLLUSKS,
- 160.0- 180.0 SAND, WHITE TO VERY LIGHT ORANGE, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 05% PHOSPHATIC SAND, 03% PHOSPHATIC GRAVEL, MOLLUSKS,
- 180.0- 190.0 BOLD-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLUMITE CEMENT, 10% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 190.0- 200.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
0			TAMIAMI FORMATION	SYSTEM	WATER TABLE AQUIFER
-25					AQUIFER
-50				SURFICIAL	
-75		SAND AND SILT AND CLAY	HAWTHORN GROUP		HAWTHORN CONFINING ZONE
-100				MIOCENE COARSE CLASTICS	
-125					
-150		PHOSPHATE AND OTHER MINERALS			
-175					
-200					

WC2037



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2037

W- 2038

COLLIER CO. T47S R27E SEC 27DC 26 21 05 N 81 36 15 W
 TOTAL DEPTH- 335 FT. ELEV.- 23 FT. 35 SAMPLES-
 COMPLETED- 03.08.17 DEPTH WORKED 335 FT. 0- 335 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GEOLOGIST
 CALIPHER
 ELECTRIC

WELL NAME-

C2038, JOHN VLEIT, DRILLED BY SFWMD, ALVIN WOOSTER DRILLER

REMARKS-

DESCRIBED BY MIKE KNAPP, (1-5-84), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0 160.0 SURFICIAL AQUIFER SYSTEM
 0.0 40.0 WATER TABLE AQUIFER
 40.0 55.0 TAMiami CONFINING ZONE
 55.0 160.0 LOWER TAMiami AQUIFER
 160.0 225.0 UPPER HAWTHORN CONFINING ZONE
 225.0 320.0 SANDSTONE AQUIFER
 340.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 10.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 10.0- 140.0 TAMiami FORMATION
 140.0- 160.0 MIOCENE COARSE CLASTICS
 160.0- 340.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2038 . COLLIER CO. T47S, R27E, SEC 27DC

0.0- 2.0 SAND, WHITE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE:
 MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM
 SPHERICITY, UNCONSOLIDATED, 10% CALCILUTITE, 02% HEAVY
 MINERALS, MOLLUSKS,
 2.0- 10.0 SHELL BED, VERY LIGHT ORANGE TO WHITE, UNCONSOLIDATED, 40%
 QUARTZ SAND, MOLLUSKS,
 HIGHLY RECRYSTALL. L/S IN SAMPLE (CARBONATE)
 10.0- 20.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR,
 MOLLUSKS, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10%
 ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE,
 RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION,
 CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 02% QUARTZ SAND,
 MOLLUSKS, FOSSIL MOLDS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 20.0- 30.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, BRYOZOA, CORAL, FOSSIL MOLDS,
- 30.0- 40.0 AS ABOVE,
- 40.0- 55.0 DOLO-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 10% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS,
- 55.0- 60.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,
- 60.0- 70.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, CORAL, FOSSIL MOLDS,
- 70.0- 80.0 AS ABOVE,
- 80.0- 90.0 AS ABOVE SANDIER (30%)
- 90.0- 100.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, PELLET, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, 20% QUARTZ SAND, MOLLUSKS, PLANT REMAINS, FOSSIL MOLDS,
- 100.0- 110.0 SANDSTONE, WHITE, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 30% CALCILUTITE, MOLLUSKS,
DOLO-SILT (15%)
- 110.0- 120.0 DOLOMITE, GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, PIN POINT VUGS, 50-90% ALTERED, EHDREDAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,

LITHOLOGIC LOG

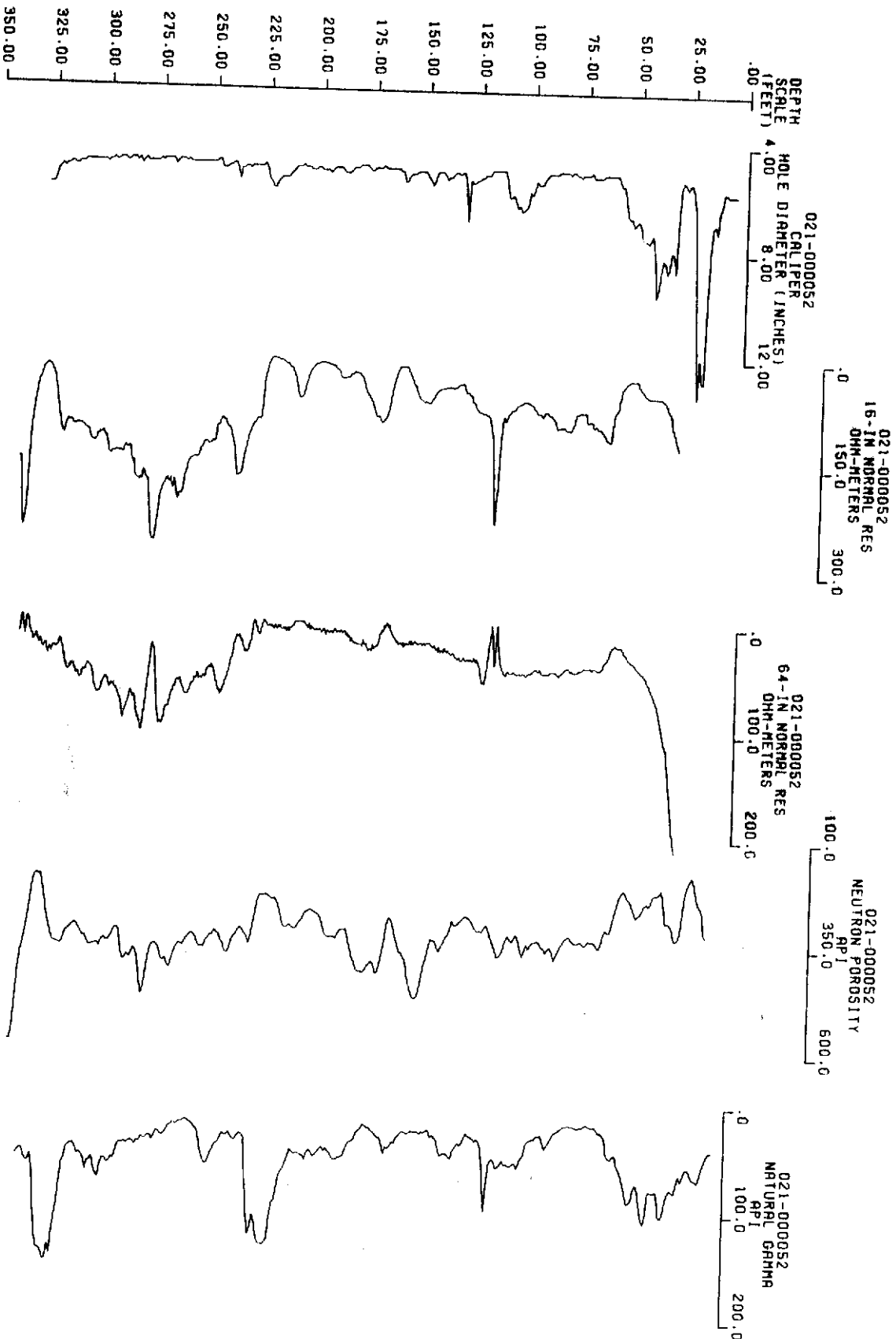
W- 2036 . COLLIER CO. T47S, R27E, Sec 2700

- 120.0- 130.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MUDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 130.0- 140.0 AS ABOVE,
- 140.0- 150.0 AS ABOVE WITH COARSE SAND (2%)
- 150.0- 160.0 AS ABOVE,
- 160.0- 170.0 DULO-SILT, LIGHT OLIVE TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 15% QUARTZ SAND, MOLLUSKS,
- SAND IS V.C. TO GRANULE SIZE
- 170.0- 175.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 40% DOLOMITE, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 175.0- 180.0 DULO-SILT, VERY LIGHT ORANGE TO LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 15% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS,
- 180.0- 190.0 AS ABOVE,
- 190.0- 200.0 DULO-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 02% CLAY, 25% CALCILUTITE, 05% PHOSPHATIC SAND, 25% QUARTZ SAND, MOLLUSKS,
- 200.0- 210.0 AS ABOVE,
- 210.0- 220.0 DULO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 10% CLAY, 05% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 220.0- 225.0 AS ABOVE,

- 225.0- 240.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 5% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 0% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 240.0- 250.0 AS ABOVE,
- 250.0- 260.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, PIN POINT VUGS, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 0% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 260.0- 270.0 AS ABOVE,
- 270.0- 280.0 AS ABOVE,
- 280.0- 290.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, PIN POINT VUGS, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,
- 290.0- 300.0 AS ABOVE MORE PHOS (0.8%) WITH ECHINOID SPINES
- 300.0- 310.0 AS ABOVE,
- 310.0- 325.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS,
- 325.0- 330.0 DULO-SILT, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DULOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 10% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS,
- SOME V.C. PHOS : SAND
- 330.0- 340.0 DULOMITE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, VUGULAR, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DULOMITE CEMENT, 0% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT			
0		CALCITE	UNDIFF.	SYSTEM	WATER TABLE		
		SAND SAND	TAMIAMI FORMATION		AQUIFER	TAMIAMI CONFINING BEDS	
-25		SAND SAND SAND PHOSPHATE SAND SAND				LOWER TAMIAMI AQUIFER	
-50							
-75							
-100							
-125							
-150				SAND SAND SAND SAND	MIOCENE COARSE CLASTICS	SYSTEM	UPPER HAWTHORN CONFINING ZONE
-175				PHOSPHATE SAND PHOSPHATE SAND	GROUP		UPPER CLASTIC
-200				PHOSPHATE PHOSPHATE		AQUIFER	SANDSTONE
-225		SAND SAND SAND		INTERMEDIATE	AQUIFER		
-250		SAND SAND	MID-HAWTHORN CONF.				
-275			LOWER CARBONATE	MID-HAWTHORN AQUIFER			
-300		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE					
-325							

WC2038



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2038

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2039

COLLIER CO. T49S R27E SEC 07AA 26 13 43 N 81 38 55 W
 TOTAL DEPTH- 260 FT. ELEV.- 13 FT. 30 SAMPLES- 0- 260 FT.
 COMPLETED- 83.09.07 DEPTH WORKED 260 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

CALIPHER
 ELECTRIC
 NEUTRON
 SONIC

WELL NAME-

SFWMO 2039-GOLDEN GATE BLVD #2, ALVIN WOOSTER (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (5-10-84), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

- 0.0- 250.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 25.0 WATER TABLE AQUIFER
- 25.0- 50.0 TAMiami CONFINING BEDS
- 50.0- 250.0 LOWER TAMiami AQUIFER

STRATIGRAPHIC FORMATIONS -

- 0.0- 5.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
- 5.0- 190.0 TAMiami FORMATION
- 190.0- 250.0 MIOCENE COARSE CLASTICS
- 250.0- 260.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2039 . COLLIER CO. T49S, R27E, SEC 07AA

- 0.0- 5.0 SAND, MODERATE YELLOWISH BROWN, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% LIMESTONE, 0% HEAVY MINERALS,
- 5.0- 15.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 0% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 15.0- 20.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 0% QUARTZ SAND, MOLLUSKS, CRUSTACEA, ECHINID,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 20.0- 25.0 AS ABOVE,
- 25.0- 30.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 02% CLAY, 10% QUARTZ SAND, MOLLUSKS,
- 30.0- 40.0 AS ABOVE,
- 40.0- 50.0 SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, 15% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS,
- 50.0- 60.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, MOLLUSKS, CORAL,
SILT INTERMIXED
- 60.0- 70.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, CORAL,
- 70.0- 80.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, PELLET, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, CORAL, BRYOZOA,
GOOD ECHINOPLE
- 80.0- 90.0 AS ABOVE,
- 90.0- 100.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 40% QUARTZ SAND, MOLLUSKS,
- 100.0- 110.0 AS ABOVE,

LITHOLOGIC LOG

W- 2039 . COLLIER CO. T49S, R27E, SEC 07AA

- 110.0- 120.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, 40% QUARTZ SAND, MOLLUSKS, ECHINOID,
- 120.0- 130.0 SANDSTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 35% CALCILUTITE, MOLLUSKS,
- 130.0- 140.0 AS ABOVE,
- 140.0- 150.0 LIMESTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 25% QUARTZ SAND, MOLLUSKS, CORAL, FOSSIL MOLDS, ECHINOID,
- 150.0- 160.0 AS ABOVE,
- 160.0- 170.0 AS ABOVE,
- 170.0- 180.0 LIMESTONE, LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND, MOLLUSKS, ECHINOID, CORAL, FOSSIL MOLDS, BRYOZOA,
- 180.0- 190.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 190.0- 200.0 AS ABOVE-PLURLY INDURATED
- 200.0- 210.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% CALCILUTITE, 15% DOLOMITE, MOLLUSKS,
- 210.0- 220.0 AS ABOVE,

LITHOLOGIC LOG

W- 2039 . COLLIER CO. T49S, R27E, SEC 07AA

- 220.0- 230.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 25% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, CORAL, BRYOZOA,
- 230.0- 240.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 65% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, CORAL, BRYOZOA, CRUSTACEA,
- 240.0- 250.0 AS ABOVE,
- 250.0- 255.0 SILT, YELLOWISH GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% QUARTZ SAND, MOLLUSKS,
- 255.0- 260.0 AS ABOVE,

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2040

COLLIER CO. T47S R28E SEC 2426 22 05 81 N 27 20 W
 TOTAL DEPTH- 520 FT. ELEV.- 25 FT. 52 SAMPLES- 0- 520 FT.
 COMPLETED- . . . DEPTH WORKED 520 FT.

WELL NAME-

W2040-SFWMD-ALVIN WOOSTER (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (12-15-83), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

- 0.0-208.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 90.0 UPPER TAMiami AQUIFER
- 90.0-150.0 TAMiami CONFINING BEDS
- 150.0-208.0 LOWER TAMiami AQUIFER
- 208.0-310.0 UPPER HAWTHORN CONFINING ZONE
- 310.0-375.0 SANDSTONE AQUIFER
- 375.0-460.0 MID-HAWTHORN CONFINING ZONE
- 460.0-520.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

- .0- 37.0 UNDIFFERENTIATED SAND AND CLAY
- 37.0- 176.0 TAMiami FORMATION
- 176.0- 208.0 MIOCENE COARSE CLASTICS
- 208.0- 520.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

- 2040 . COLLIER CO. T47S, R28E, SEC 2426

- .0- 4.0 NO SAMPLE,
- 4.0- 10.0 SHELL BED, BROWNISH GRAY TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, PUCK INDURATION, CALCILUTITE MATRIX, 10% CALCILUTITE, 20% QUARTZ SAND, 5% CLAY, MOLLUSKS,
- 10.0- 20.0 AS ABOVE, BUT UNCONSOLIDATED, CHIONE AND LARGE GASTROPODS
- 20.0- 35.0 AS ABOVE,
- 35.0- 55.0 SHELL BED, LOOSELY CEMENTED WITH MICRITE AND SAND
- 55.0- 90.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIogenic, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLLUS, CORAL,
- 90.0- 50.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

50.0- 60.0 LIMESTONE, MODERATE LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 15% DOLOMITE, 25% QUARTZ SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,

60.0- 70.0 AS ABOVE,

70.0- 80.0 LIMESTONE, LIGHT GRAY TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, HIGH RECRYSTALLIZATION, CORAL, MOLLUSKS, FOSSIL MOLDS, BENTHONIC FORAMINIFERA,

80.0- 90.0 AS ABOVE,

90.0- 100.0 DULO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 05% CALCILUTITE, 05% CLAY, 10% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, PLANKTONIC FORAMINIFERA, BENTHONIC FORAMINIFERA,

100.0- 120.0 AS ABOVE,

120.0- 130.0 DULO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 02% CALCILUTITE, 25% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, PLANKTONIC FORAMINIFERA, BENTHONIC FORAMINIFERA,

130.0- 140.0 AS ABOVE,

140.0- 150.0 AS ABOVE,

150.0- 155.0 LIMESTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, SPARRY CALCITE CEMENT, CALCILUTITE MATRIX, 25% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

155.0- 160.0 AS ABOVE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GOOD INDURATION, SPARRY CALCITE CEMENT, CALCILUTITE MATRIX, 25% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

- 160.0- 176.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, BRYZZOA, FOSSIL MOLDS,
- 176.0- 180.0 SAND, WHITE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
- 180.0- 195.0 NO RECOVERY-CLEAN SANDS
- 195.0- 200.0 SANDSTONE, MODERATE LIGHT GRAY, 15% POROSITY, INTERGRANULAR, VUGULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, SPARRY CALCITE CEMENT, CALCILUTITE MATRIX, 30% SPAR, 20% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
- 200.0- 208.0 AS ABOVE-WITH PHOSPHATE (5%)
- 208.0- 220.0 SAND, LIGHT OLIVE, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, CALCILUTITE MATRIX, 05% CLAY, MOLLUSKS,
- 220.0- 230.0 AS ABOVE,
- 230.0- 240.0 AS ABOVE,
- 240.0- 250.0 AS ABOVE WITH SHELL (5%) AND PHOSPHATE (5%)
- 250.0- 260.0 SAND, DARK YELLOWISH BROWN, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 02% CLAY, 05% PHOSPHATIC SAND, MOLLUSKS,
- 260.0- 270.0 AS ABOVE,
- 270.0- 280.0 AS ABOVE,
- 280.0- 290.0 BULK-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 30% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS,
- 290.0- 300.0 SAND, YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 02% CLAY, 05% PHOSPHATIC SAND, MOLLUSKS,
- 300.0- 310.0 AS ABOVE BUT UNCONSOLIDATED-QUARTZITE PEBBLES

LITHOLOGIC LOG

#- 2040 . COLLIER CO. T47S, R28E, SEC 2426

- 310.0- 320.0 SANDSTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 40% DOLOMITE, 05% PHOSPHATIC SAND, MOLLUSKS,
- 320.0- 340.0 SAND, WHITE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 05% CALCILUTITE, 01% PHOSPHATIC SAND, NO FOSSIL,
- 340.0- 355.0 SAND, LIGHT OLIVE TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 10% DOLOMITE, 05% CLAY, 03% PHOSPHATIC SAND, MOLLUSKS,
- 355.0- 360.0 LIMESTONE, GRAYISH ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 360.0- 373.0 AS ABOVE,
- 373.0- 374.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, 02% QUARTZ SAND, MOLLUSKS, BRYOZOA,
- 374.0- 375.0 AS ABOVE - (SANDIER 10%)
- 375.0- 380.0 DOLO-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 05% CLAY, 20% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 380.0- 390.0 DOLO-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 25% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 390.0- 400.0 AS ABOVE,
- 400.0- 410.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 30% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 410.0- 420.0 AS ABOVE,
- 420.0- 440.0 AS ABOVE - WITH MORE PHOS (15%)

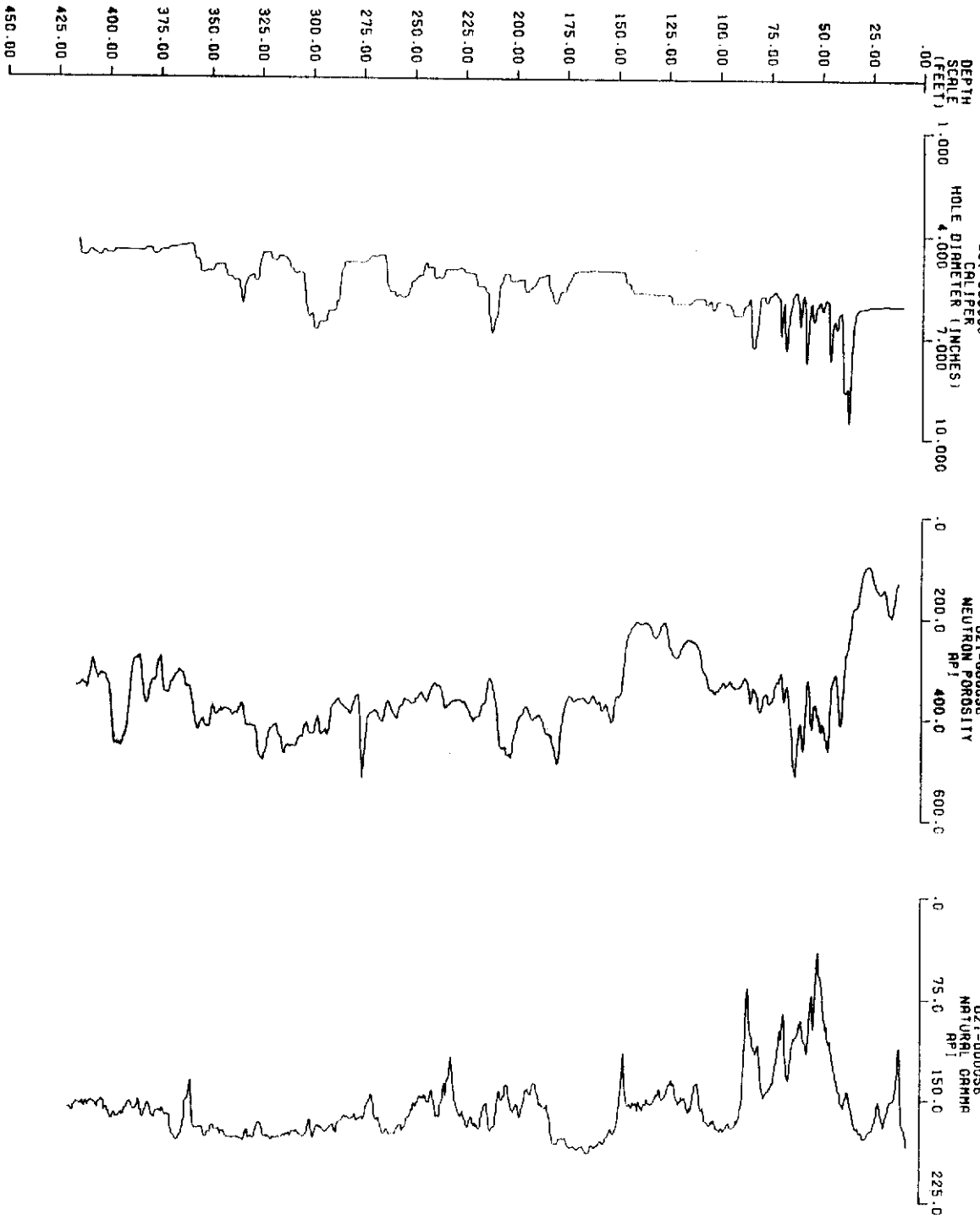
LITHOLOGIC LOG

W- 2040 . CULLIER CO. T47S, R28E, SEC 2426

- 440.0- 450.0 AS ABOVE,
- 450.0- 460.0 SAND, LIGHT OLIVE TO GRAYISH OLIVE, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 25% DOLomite, 05% CLAY, 10% CALCILUTITE, 20% PHOSPHATIC SAND, MULLUSKS,
- 460.0- 470.0 SAMPLE IS A MIX OF ABOVE LITHO-SANDY, PHOS, DOLO LIMESTONE
- 470.0- 480.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 30% DOLomite, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 480.0- 490.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 15% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS,
- 490.0- 500.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, PELLET, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 20% DOLomite, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, PLANT REMAINS, BENTHONIC FORAMINIFERA, BRYOZOA,
- 500.0- 510.0 AS ABOVE,
- 510.0- 520.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
25		SAND	UNDIFFERENTIATED	SYSTEM	WATER TABLE	
0		SAND SAND				
-25		DOLOMITE DOLOMITE	TAMIAMI FORMATION	AQUIFER	TAMIAMI CONFINING BEDS	
-50		SAND SAND				
-75		SAND SAND				
-100						
-125						
-150		SAND SAND SAND				LOWER TAMIAMI AQUIFER
-175		T P P T T T O T P		MIOCENE COARSE CLASTICS	SURFICIAL	
-200		P				
-225	P P P	PHOSPHATE PHOSPHATE PHOSPHATE	HAWTHORN GROUP	SYSTEM	UPPER HAWTHORN CONFINING ZONE	
-250	P					
-275	P P P	CLAY CLAY PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE				
-300	P	CLAY CLAY CALCITE CALCITE CALCITE DOLOMITE DOLOMITE SAND				
-325	P P P					
-350	P P P P	PHOSPHATE PHOSPHATE SAND PHOSPHATE SAND				
-375	P P P P	PHOSPHATE PHOSPHATE				
-400	P P P P					
-425	P P P P	PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE				
-450						LOWER CARBONATE
-475		SAND SAND				
-500						

WC2040



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2040

W- 2041

COLLIER CO. T48S R28E SEC 23AA 26 17 33 N 81 31 07 W
 TOTAL DEPTH- 380 FT. ELEV.- 18 FT. 55 SAMPLES- 0- 380 FT.
 COMPLETED- 09.14.83 DEPTH WORKED 380 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

- GAMMA
- ELECTRIC
- CALIPHER
- NEUTRON

WELL NAME-

SFAMD C2041, OIL WELL RD. 6 846, ALVIN WOOSTER DRILLER

REMARKS-

DESCRIBED BY MIKE KNAPP (2-14-84), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

- 0.0 170.0 SURFICIAL AQUIFER SYSTEM
- 0.0 50.0 WATER TABLE AQUIFER
- 50.0 75.0 TAMiami CONFINING BEDS
- 75.0 170.0 LOWER TAMiami AQUIFER
- 170.0 232.0 UPPER HAWTHORN CONFINING ZONE
- 232.0 270.0 SANDSTONE AQUIFER
- 270.0 345.0 MID-HAWTHORN CONFINING ZONE
- 345.0 380.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

- .0- 8.0 NO SAMPLES
- 8.0- 135.0 TAMiami FORMATION
- 135.0- 170.0 MIOCENE COARSE CLASTICS
- 170.0- 380.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2041 . COLLIER CO. T48S, R28E, SEC 23AA

- .0- 8.0 NO SAMPLES
- 8.0- 10.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 30% QUARTZ SAND, MOLLUSKS, SHELL INTERMIXED
- 10.0- 20.0 SHELL BED, WHITE, 25% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERFEABILITY, POOR INDURATION, CALCILUTITE MATRIX, 20% QUARTZ SAND, MOLLUSKS, CALLOSANATCHEE TYPE MOLLUSKS

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

LITHOLOGIC LOG

W- 2041 . COLLIER CO. T48S, R28E, SEC 23AA

- 20.0- 28.0 AS ABOVE,
- 28.0- 32.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND, MOLLUSKS,
MUCH SHELL IN SAMPLE
- 32.0- 35.0 LIMESTONE, GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, VUGULAR, GRAIN TYPE: BIOGENIC, CRYSTALS, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND,
- 35.0- 40.0 AS ABOVE - SANDIER (40%)
- 40.0- 45.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLLUS, BRYOZOA,
TYPE OCHUPEE
- 45.0- 50.0 AS ABOVE,
- 50.0- 55.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 15% SILT, MOLLUSKS, FOSSIL FRAGMENTS,
- 55.0- 60.0 CALCILUTITE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 02% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 15% SILT, 20% QUARTZ SAND, MOLLUSKS,
- 60.0- 70.0 AS ABOVE - MORE SHELL
- 70.0- 75.0 AS ABOVE,
- 75.0- 80.0 LIMESTONE, YELLOWISH GRAY TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLLUS,

- 88.0- 90.0 AS ABOVE,
- 90.0- 100.0 LIMESTONE, WHITE TO LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 03% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, CORAL, FOSSIL MOLDS,
- 100.0- 110.0 AS ABOVE - GOLD TAMAMI
- 110.0- 115.0 AS ABOVE,
- 115.0- 120.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 08% QUARTZ SAND, MOLLUSKS, BRYOZOA, CORAL, FOSSIL MOLDS,
- 120.0- 130.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 130.0- 140.0 AS ABOVE - VERY SANDY (40%) - LOWER POROSITY (15%)
- 140.0- 150.0 AS ABOVE,
- 150.0- 170.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 35% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 170.0- 180.0 SAND, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 05% CALCILUTITE, MOLLUSKS,
- 180.0- 190.0 AS ABOVE,

LITHOLOGIC LOG

W- 2041 . CULLIER CO. T48S, R28E, SEC 23AA

- 190.0- 200.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, MULLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS, BRYOZOA,
- 200.0- 203.0 AS ABOVE,
- 203.0- 210.0 DOLOMITE, LIGHT GRAY, 10% POROSITY, INTERCRYSTALLINE, PIN POINT VUGS, 50-90% ALTERED, EHDREDAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 10% QUARTZ SAND, HIGH RECRYSTALLIZATION, MULLUSKS,
- 210.0- 220.0 BOLD-SILT, VERY LIGHT ORANGE TO LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 20% QUARTZ SAND, MULLUSKS,
- 220.0- 232.0 AS ABOVE,
- 232.0- 238.0 SANDSTONE, DARK YELLOWISH ORANGE, 15% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, DOLOMITE CEMENT, 30% DOLOMITE,
SOME LOOSE GRANULE SIZE QUARTZ
- 238.0- 240.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% QUARTZ SAND, HIGH RECRYSTALLIZATION, MULLUSKS,
- 240.0- 250.0 AS ABOVE,
- 250.0- 260.0 SANDSTONE, WHITE TO LIGHT GRAY, 20% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% CALCILUTITE, 20% SPAR, HIGH RECRYSTALLIZATION, MULLUSKS,
- 260.0- 270.0 AS ABOVE,
- 270.0- 280.0 SANDSTONE, LIGHT GRAYISH GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 30% CALCILUTITE, 02% CLAY, 01% PHOSPHATIC SAND, MULLUSKS,

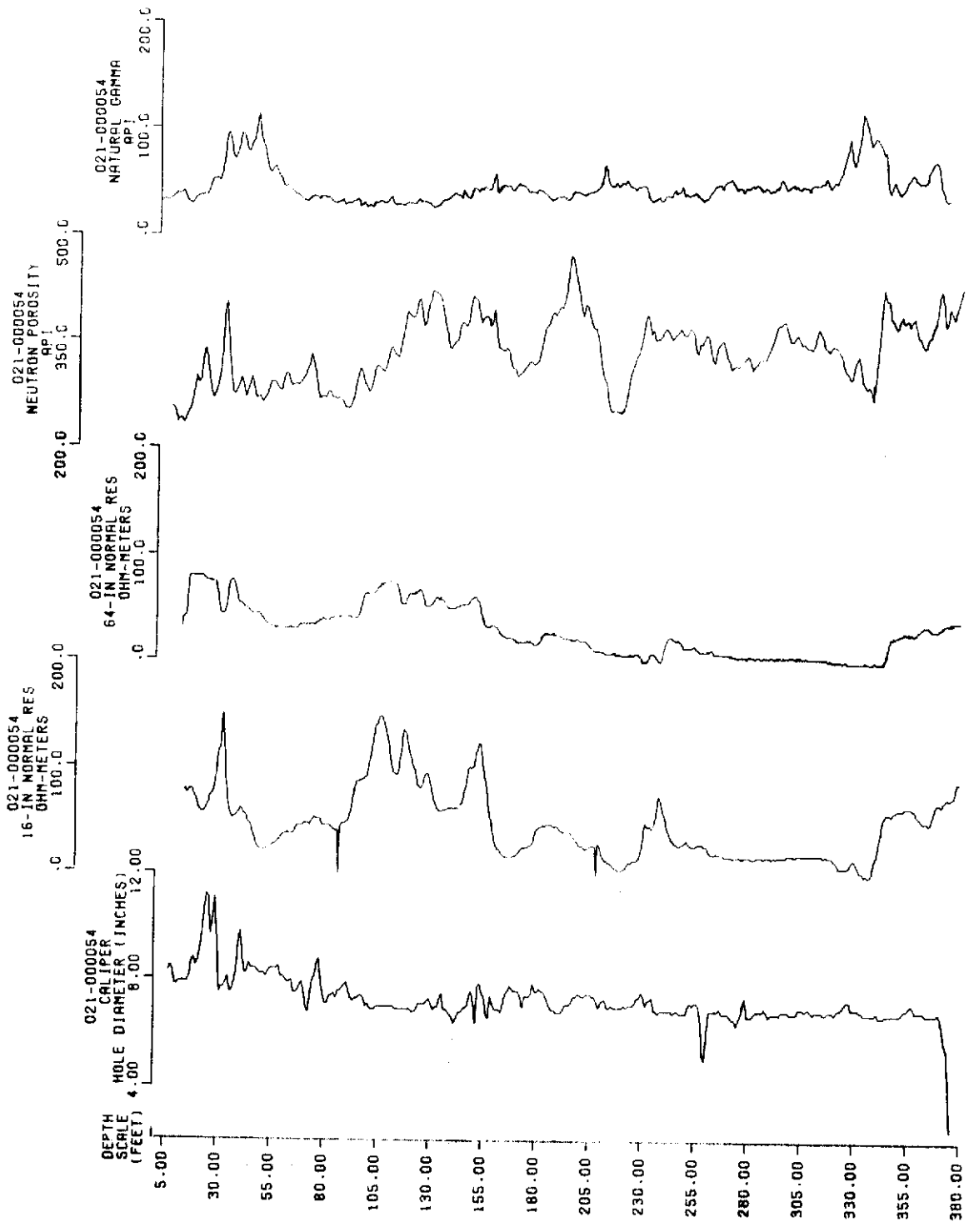
LITHOLOGIC LOG

W- 2041 . COLLIER CO. T48S, R28E, SEC 23AA

- 280.0- 290.0 AS ABOVE,
- 290.0- 300.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 20% CALCILUTITE, 05% CLAY, 15% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS,
- 300.0- 315.0 AS ABOVE,
- 315.0- 322.0 NO SAMPLE-DRILLER REPORTS HARD DRILLING-DOLOMITE
- 322.0- 330.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 05% CLAY, 25% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS,
- 330.0- 335.0 AS ABOVE-MUCH SHELL
- 335.0- 340.0 DOLO-SILT, GRAYISH BLUE GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, CALCILUTITE MATRIX, 10% CLAY, 08% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS,
- 340.0- 345.0 AS ABOVE,
- 345.0- 350.0 DOLOMITE, YELLOWISH GRAY TO LIGHT OLIVE, 15% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS,
- 350.0- 355.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, 0% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% DOLOMITE, 02% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 355.0- 365.0 AS ABOVE,
- 365.0- 380.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 05% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT		
0		SAND		UNDIFF.		WATER TABLE	
-25		SAND SAND SAND SAND		TAMIAMI FORMATION	SYSTEM	TAMIAMI AQUIFER	
-50		SILT CLAY				TAMIAMI CONFINING BEDS	
-75		SAND			AQUIFER	LOWER TAMIAMI AQUIFER	
-100		SAND					
-125		SAND					
-150				MIOCENE COARSE CLASTICS	SURFICIAL		
-175		CALCITE CALCITE		HAWTHORN GROUP		SYSTEM	UPPER HAWTHORN CONFINING ZONE
-200		SAND SAND CALCITE SAND SAND SAND			UPPER CLASTIC		SANDSTONE AQUIFER
-225		DOLomite SAND			AQUIFER	MID- HAWTHORN CONFINING ZONE	
-250		SILT CLAY					
-275		SAND SAND					
-300				LOWER CARBONATE	INTERMEDIATE	MID- HAWTHORN AQUIFER	
-325		PHOSPHATE CALCITE CALCITE PHOSPHATE PHOSPHATE					
-350		SAND SAND SAND					
-375							

WC2041



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2041

#- 2042

COLLIER CO. 1475 R30E SEC 29AC 26 21 38 N 81 20 55 W
 TOTAL DEPTH- 460 FT. ELEV.- 22 FT. 60 SAMPLES- 0- 460 FT.
 COMPLETED- 05.10.14 DEPTH WORKED 460 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GAMMA
 ELECTRIC
 CALIPHER

WELL NAME-

SFWMO C2042, ALVIN WOOSTER (KILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (3-19-64), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

- 0.0- 245.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 55.0 WATER TABLE AQUIFER
- 55.0- 85.0 TAMiami CONFINING BEDS
- 85.0- 245.0 LOWER TAMiami AQUIFER
- 245.0- 310.0 UPPER HAWTHORN CONFINING ZONE
- 310.0- 390.0 SANDSTONE AQUIFER
- 390.0- 450.0 MID-HAWTHORN CONFINING ZONE
- 450.0- 460.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

- 0.0- 3.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
- 3.0- 95.0 TAMiami FORMATION
- 95.0- 245.0 MIOCENE COARSE CLASTICS
- 245.0- 460.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

#- 2042 . COLLIER CO. 1475, R30E, SEC 29AC

- 0.0- 3.0 SAND, GRAYISH BROWN, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, CALCILUTITE MATRIX, 0% CALCILUTITE, MOLLUSKS,
- 3.0- 95.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, EUGENIC, CRYSTALS, ICA, ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% QUARTZ SAND, MOLLUSKS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

LITHOLOGIC LOG

W-204c • COLLIER CO. 1475, R30E, SEC 29AC

- 5.0- 10.0 LIMESTONE, DARK YELLOWISH ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 10.0- 15.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% QUARTZ SAND, MOLLUSKS,
SHELL INTERMIXED
- 15.0- 20.0 AS ABOVE-CHITONE CANCELLATA
- 20.0- 25.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, VUGULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 40% QUARTZ SAND, MOLLUSKS,
- 25.0- 30.0 AS ABOVE,
- 30.0- 35.0 LIMESTONE, LIGHT OLIVE GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, INTERCRYSTALLINE, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 35.0- 40.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 30% QUARTZ SAND, MOLLUSKS,
- 40.0- 45.0 AS ABOVE,
- 45.0- 55.0 AS ABOVE - WELL INDURATED
- 55.0- 60.0 SUDO-SILT, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 92% CLAY, 35% QUARTZ SAND, MOLLUSKS,
- 60.0- 70.0 SAND, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 20% DOLOMITE, 65% CLAY, 10% CALCILUTITE, MOLLUSKS,

LITHOLOGIC LOG

2042 . COLLIER CO. T47S, R30E, SEC 29AC

- 70.0- 80.0 DULO-SILT, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 0% CLAY, 45% QUARTZ SAND, MOLLUSKS,
- 80.0- 85.0 AS ABOVE,
- 85.0- 95.0 LIMESTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MULDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% QUARTZ SAND, MOLLUSKS, BRYOZOA, FOSSIL MOLLUS, CORAL,
- 95.0- 100.0 AS ABOVE,
- 100.0- 115.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
 SOPE V.C. QUARTZITE AND PHOS. GRAINS
- 115.0- 120.0 AS ABOVE,
- 120.0- 130.0 SAND, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 25% CALCILUTITE, MOLLUSKS,
- 130.0- 140.0 SAND, LIGHT OLIVE, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 15% DOLOMITE, 00% CLAY, 10% CALCILUTITE, 05% PHOSPHATIC SAND, MOLLUSKS,
- 140.0- 145.0 SAND, VERY LIGHT GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 10% CALCILUTITE, 01% PHOSPHATIC SAND, MOLLUSKS,
- 145.0- 150.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 25% DOLOMITE, 02% CLAY, MOLLUSKS,
- 150.0- 160.0 SAND, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 25% DOLOMITE, 05% CLAY, 02% PHOSPHATIC SAND, MOLLUSKS,

LITHOLOGIC LOG

2042 • COLLIER CO. T47S, R30E, SEC 29AC

- 160.0- 170.0 AS ABOVE,
- 170.0- 180.0 AS ABOVE,
- 180.0- 190.0 SAND, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 02% DOLomite, 02% CLAY, 05% PHOSPHATIC SAND, MULLUSKS,
- 190.0- 210.0 AS ABOVE,
- 210.0- 220.0 SAND, GREENISH GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: COARSE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 04% PHOSPHATIC SAND, 02% DOLomite,
- 220.0- 237.0 SAND, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 10% CLAY, 02% DOLomite, 05% PHOSPHATIC SAND,
- 237.0- 245.0 AS ABOVE,
- 245.0- 255.0 DULL-SILT, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 10% QUARTZ SAND, MULLUSKS,
- 255.0- 260.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 10% DOLomite, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, MULLUSKS,
- 260.0- 265.0 AS ABOVE,
- 265.0- 275.0 SANDSTONE, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 30% CALCILUTITE, 02% PHOSPHATIC SAND, MULLUSKS,
- 275.0- 280.0 AS ABOVE,
- 280.0- 290.0 NO SAMPLE,
- 290.0- 320.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, 30% QUARTZ SAND, MULLUSKS,

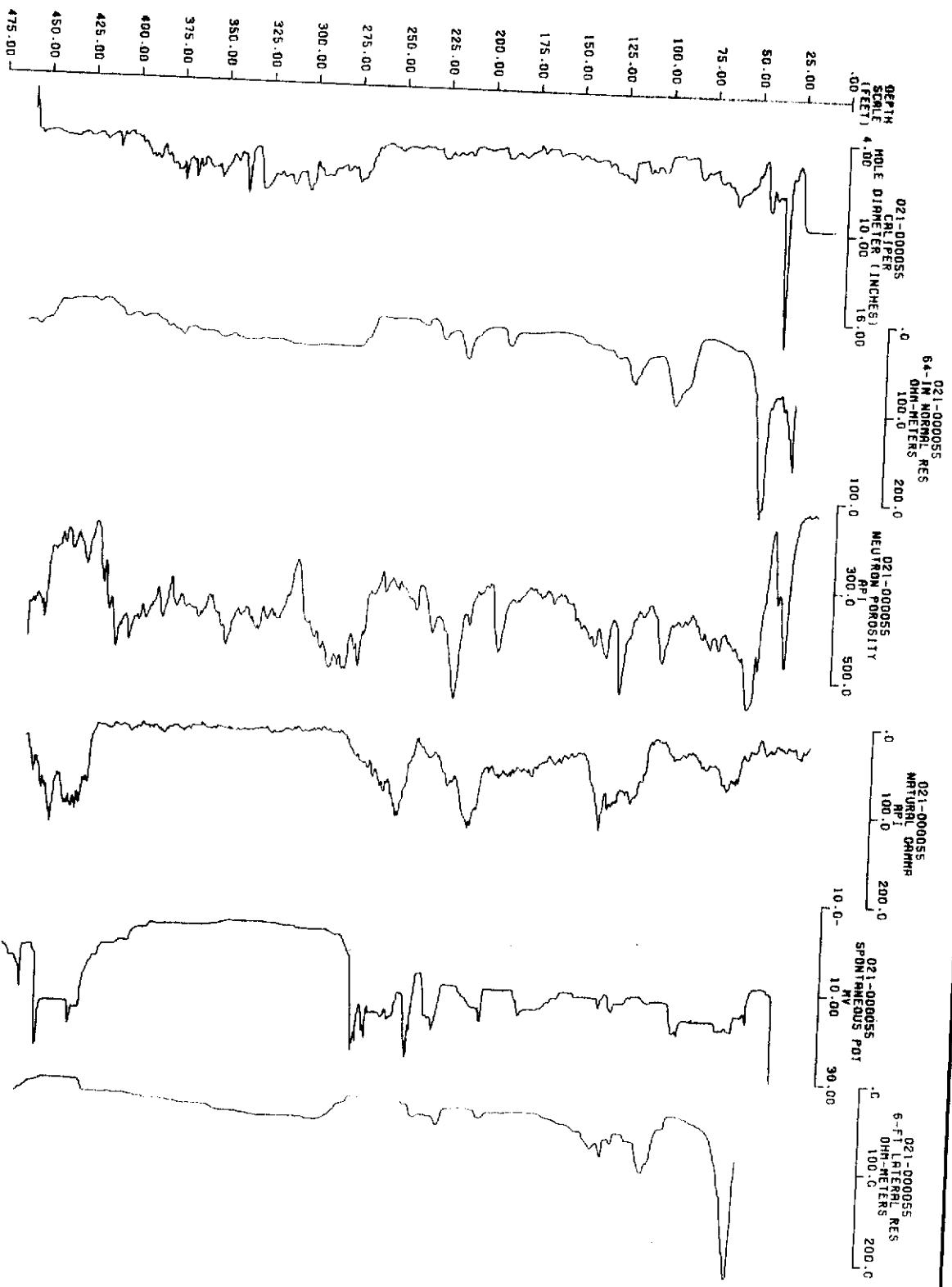
LITHOLOGIC LOG

- 2042 • COLLIER CL. T47S, R30E, SEC 29AL

- 320.0- 330.0 SAND, VERY LIGHT ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 05% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS, SHARK TEETH,
- 330.0- 350.0 AS ABOVE,
- 350.0- 380.0 SAND, VERY LIGHT ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 03% PHOSPHATIC SAND, 03% CALCILUTITE, MOLLUSKS, FOSSIL FRAGMENTS,
- 380.0- 390.0 AS ABOVE,
- 390.0- 400.0 MUD-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CALCILUTITE, 02% CLAY, 05% PHOSPHATIC SAND, 40% QUARTZ SAND, MOLLUSKS,
- 400.0- 410.0 AS ABOVE,
- 410.0- 420.0 MUD-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CALCILUTITE, 02% CLAY, 10% PHOSPHATIC SAND, 20% QUARTZ SAND, MOLLUSKS,
- 420.0- 430.0 AS ABOVE,
- 430.0- 440.0 SAND, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 20% DOLomite, 02% CLAY, 05% CALCILUTITE, 03% PHOSPHATIC SAND, MOLLUSKS,
- 440.0- 450.0 AS ABOVE,
- 450.0- 460.0 LIMESTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLomite CEMENT, 10% DOLomite, 02% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT	
0		SAND	UNDIFFERENTIATED		SYSTEM	WATER TABLE
-25		SAND	TAMIAMI			AQUIFER
-50		CLAY CLAY CLAY CALCITE CALCITE CLAY CLAY	FORMATION		AQUIFER	TAMIAMI CONFINING BEDS
-75						LOWER
-100			GROUP	MIOCENE	SURFICIAL	TAMIAMI
-125		PHOSPHATE PHOSPHATE CALCITE DOLomite DOLomite DOLomite				
-150						
-175		PHOSPHATE PHOSPHATE				
-200			CLASTICS	AQUIFER	AQUIFER	
-225		PHOSPHATE PHOSPHATE PHOSPHATE DOLomite				
-250		SAND SAND SAND	HAWTHORN	UPPER	SYSTEM	UPPER HAWTHORN CONFINING ZONE
-275						
-300						
-325		CALCITE CALCITE	CLASTIC	AQUIFER	AQUIFER	
-350						
-375		PHOSPHATE PHOSPHATE	INTERMEDIATE			MID- HAWTHORN CONFINING ZONE
-400		PHOSPHATE PHOSPHATE				
-425		CALCITE CALCITE				
-450			LOWER CARBONATE			MID-HAWTHORN AQUIFER

WC2042



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2042

SOUTH FLORIDA WML - LITHO LOG PRINTOUT

W- 20440

COLLIER CO. T51S R29E SEC 0600 26 03 10 N 81 27 25 W
 TOTAL DEPTH- 420 FT. ELEV.- 15 FT. 42 SAMPLES- 0- 420 FT.
 COMPLETED- 03.11.22 DEPTH WORKED 420 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

ELECTRIC
 NEUTRON
 GAMMA
 SONIC

WELL NAME-

UNK-FAKAMACHEE STRAND STATE PARK-SFWMD-ALVIN WOODSIEP (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (1-17-84), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0- 135.0 SURFICIAL AQUIFER SYSTEM
 0.0- 46.0 WATER TABLE AQUIFER
 46.0- 70.0 TAMiami CONFINING BEDS
 70.0- 260.0 LOWER TAMiami AQUIFER
 260.0- 370.0 UPPER HAWTHORN CONFINING ZONE
 370.0- TD MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

0.0- 190.0 TAMiami FORMATION
 190.0- 260.0 MIOCENE COARSE CLASTICS
 260.0- 420.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 20440. COLLIER CO. T51S, R29E, SEC 0600

0.0- 10.0 LIMESTONE, GRAYISH ORANGE TO LIGHT YELLOWISH ORANGE, 15% POROSITY, INTERGRANULAR, MOLLUSK, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
 10.0- 20.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLLUSK, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, MOLLUSKS, BERTHONIC FORAMINIFERA, CORAL, BRYOZOA, FOSSIL MOLDS,
 20.0- 30.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

- 30.0- 40.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 02% QUARTZ SAND, MOLLUSKS, CORAL, BENTHONIC FORAMINIFERA, BRYOZOA, FOSSIL MOLDS,
- 40.0- 40.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 15% QUARTZ SAND, MOLLUSKS, CORAL, BENTHONIC FORAMINIFERA, BRYOZOA, FOSSIL MOLDS,
- 46.0- 60.0 MUD-SILT, GRAYISH OLIVE GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, CALCILUTITE MATRIX, 10% CALCILUTITE, 35% QUARTZ SAND, 01% PHOSPHATIC SAND,
- 60.0- 70.0 SAND, MODERATE GRAYISH GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 15% CLAY, 03% PHOSPHATIC SAND, SHARK TEETH,
- 70.0- 80.0 SHELL BED, VERY LIGHT ORANGE TO LIGHT OLIVE, 15% POROSITY, INTERGRANULAR, POOR INDURATION, 35% QUARTZ SAND, MOLLUSKS,
- 80.0- 90.0 AS ABOVE,
- 90.0- 100.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 100.0- 110.0 AS ABOVE,
- 110.0- 120.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 120.0- 130.0 SAND, VERY LIGHT GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, MOLLUSKS,

LITHOLOGIC LOG

W- 20440. COLLIER CO. T51S, R29E, SEC 0600

- 135.0- 140.0 DULC-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 10% CLAY, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 140.0- 150.0 AS ABOVE SANDIER (25%), MORE PHOSPHATE (05%)
- 150.0- 160.0 DULC-SILT, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 20% QUARTZ SAND, MOLLUSKS,
- 160.0- 166.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 35% DOLomite, 15% QUARTZ SAND, MOLLUSKS, BRYOZOA,
- 166.0- 180.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 25% DOLomite, 05% QUARTZ SAND, MOLLUSKS, BRYOZOA,
- 180.0- 190.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, BRYOZOA, FOSSIL MOLLUS,
- 190.0- 200.0 SANDSTONE, GRAYISH BROWN, 35% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 15% CALCILUTITE, 20% SPARK, MOLLUSKS,
- 200.0- 210.0 SAND, VERY LIGHT GRAY, 30% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: VERY COARSE, RANGE: VERY FINE TO GRANULE, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% PHOSPHATIC SAND, 02% CALCILUTITE, MOLLUSKS, FOSSIL FRAGMENTS,
- QUARTZ AND SHELL WELL ROUNDED-FLOWERED
- 210.0- 220.0 SANDSTONE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 10% CALCILUTITE, 20% DOLomite, MOLLUSKS, FOSSIL FRAGMENTS,
- 220.0- 230.0 AS ABOVE,

LITHOLOGIC LOG

W- 20440. COLLIER CO. T51S, R29E, SEC 0600

- 230.0- 240.0 AS ABOVE,
- 240.0- 250.0 SANDSTONE, VERY LIGHT GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, SPARKY CALCITE CEMENT, 25% SPAR, 02% PHOSPHATIC SAND,
- 250.0- 260.0 AS ABOVE,
- 260.0- 270.0 SAND, LIGHT OLIVE BROWN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 20% DOLomite, 05% CLAY, 14% PHOSPHATIC SAND, MOLLUSKS,
- 270.0- 280.0 AS ABOVE,
- 280.0- 290.0 AS ABOVE,
- 290.0- 300.0 DULC-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 05% CLAY, 30% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 300.0- 310.0 DULC-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 05% CLAY, 10% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 310.0- 320.0 AS ABOVE-VERY LOW PERMEABILITY
- 320.0- 330.0 AS ABOVE,
- 330.0- 340.0 DULC-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 02% CLAY, 10% SILT, 15% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 340.0- 350.0 AS ABOVE,
- 350.0- 360.0 AS ABOVE-SANDIER-MORE PHOSPHATIC
- 360.0- 370.0 SAND, LIGHT OLIVE, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLomite CEMENT, 02% CLAY, 05% DOLomite, 10% PHOSPHATIC SAND, 03% PHOSPHATIC GRAVEL, MOLLUSKS,
- 370.0- 380.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAB TYPE: BIGGENIC, CALCILUTE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTE MATRIX, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 380.0- 390.0 AS ABOVE,

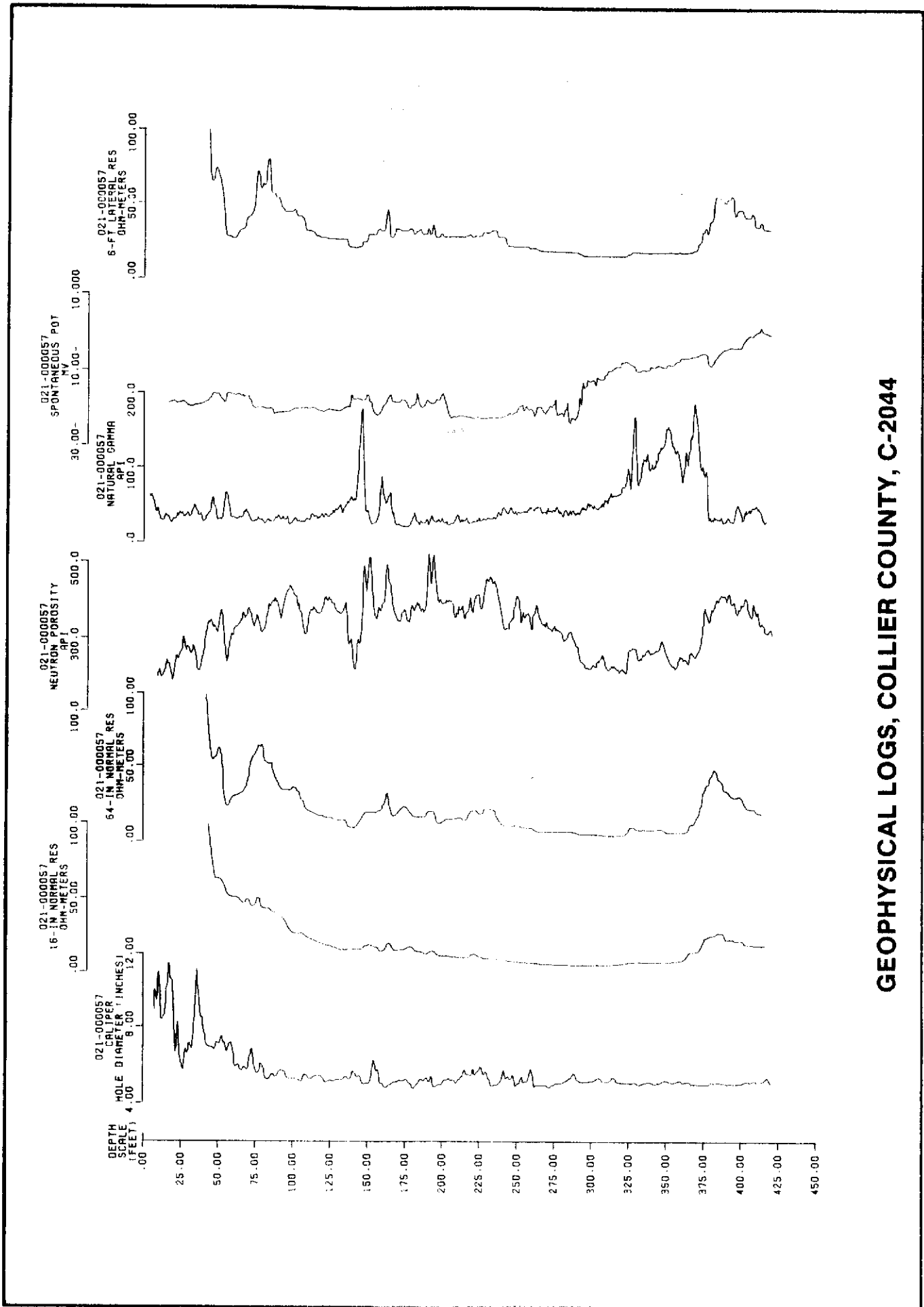
LITHOLOGIC LOG

4- 20440. COLLIER CO. T51S, R29E, SEC 0600

- 390.0- 400.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY,
INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE,
CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE:
MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD
INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02%
PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 400.0- 420.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
0		SAND SAND	TAMIAMI FORMATION	SYSTEM	WATER TABLE AQUIFER	
-25		SAND CALCITE CALCITE CALCITE			TAMIAMI CONFINING BEDS	
-50						
-75					AQUIFER	LOWER
-100		SAND SAND				
-125		SAND SAND SAND SAND SAND SAND SAND SAND SAND				
-150				TAMIAMI		
-175						
-200						
-225						
-250			SURFICIAL	AQUIFER		
-275						
-300		DOLOMITE DOLOMITE	GROUP	SYSTEM	HAWTHORN CONFINING BEDS	
-325		CLAY CLAY PHOSPHATE PHOSPHATE				
-350		SALT SALT				
-375		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE	HAWTHORN	AQUIFER	MID- HAWTHORN AQUIFER	
-400						

WC2044



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2044

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2045

COLLIER CO. T52S R30E SEC 34B4 26 54 03 N 81 18 12 W
 TOTAL DEPTH- 140 FT. ELEV.- 5 FT. 20 SAMPLES- 0- 140 FT.
 COMPLETED- 83.12.03 DEPTH WORKED 140 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

CALIPHER
 GAMMA
 NEUTRON
 ELECTRIC

WELL NAME-

SFWMD C2045-OCCHOPEE-ALVIN WOODSTER (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (03-21-84), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0 140.0 SURFICIAL AQUIFER SYSTEM
 0.0 58.0 WATER TABLE AQUIFER
 58.0 70.0 TAMiami CONFINING BEDS
 70.0 140.0 LOWER TAMiami AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 3.0 UNDIFFERENTIATED SAND AND CLAY
 3.0- 80.0 TAMiami FORMATION
 80.0- 140.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

- 2045 . COLLIER CO. T52S, R30E, SEC 34B4

.0- 3.0 SAND, DARK YELLOWISH BROWN, 15% POROSITY, INTERGRANULAR,
 GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR,
 MEDIUM SPHERICITY, UNCONSOLIDATED, CALCILUTITE MATRIX, CLAY
 MATRIX, 02% CALCILUTITE, 02% CLAY, 01% HEAVY MINERALS,
 3.0- 10.0 LIMESTONE, GRAYISH ORANGE, 10% POROSITY, INTERGRANULAR,
 INTERCRYSTALLINE, MOLLIC, GRAIN TYPE: BIOGENIC, CALCILUTITE,
 CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE:
 MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD
 INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02%
 QUARTZ SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLS,
 10.0- 15.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLLIC,
 POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC,
 CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN
 SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE,
 GOOD INDURATION, CALCILUTITE MATRIX, 02% QUARTZ SAND,
 MOLLUSKS, FOSSIL MOLS, CEPAL, BRYOZOA,
 15.0- 20.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 20.0- 23.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 0% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, BRYOZOA, CORAL, FOSSIL MOLDS,
- 25.0- 30.0 AS ABOVE,
- 30.0- 40.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 0% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, BENTHONIC FORAMINIFERA, CORAL,
- 40.0- 50.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 50.0- 58.0 SANDSTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 40% CALCILUTITE, MOLLUSKS, ECHINOID, FOSSIL MOLDS,
- 58.0- 60.0 SAND, DARK YELLOWISH BROWN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 0% CLAY,
- 60.0- 70.0 SHELL BED, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, UNCONSOLIDATED, 20% CALCILUTITE, 30% QUARTZ SAND, MOLLUSKS,
- 70.0- 80.0 SAND, DARK YELLOWISH BROWN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 0% CLAY, MOLLUSKS,
- 80.0- 110.0 SAND, VERY LIGHT ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% PHOSPHATIC SAND, MOLLUSKS,
- 110.0- 130.0 AS ABOVE,

PHOSPHATIC LLS
2645 . COLLIER CO. 1925, K30L, SEC 34DA

14000 SANDS, VERY LIGHT ORANGE, 22% POROSITY, INTERGRANULAR, GRAIN
SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR,
ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% PHOSPHATIC
SANDS, 1% CALCULITE, MOLLUSKS,

VERY COARSE CLARITE PEGGLES

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
0		CLAY SAND SAND CLAY CALCITE CALCITE	TAMIAMI FORMATION	SYSTEM AQUIFER	WATER
-25					TABLE
-50					AQUIFER
-75					TAMIAMI CONF. BEDS
-100		CALCITE CALCITE	HAWTHORN GROUP	SURFICIAL AQUIFER	LOWER
-125					TAMIAMI
-150					AQUIFER

WC2045

DEPTH SCALE (FEET) 2.000 6.000 10.000

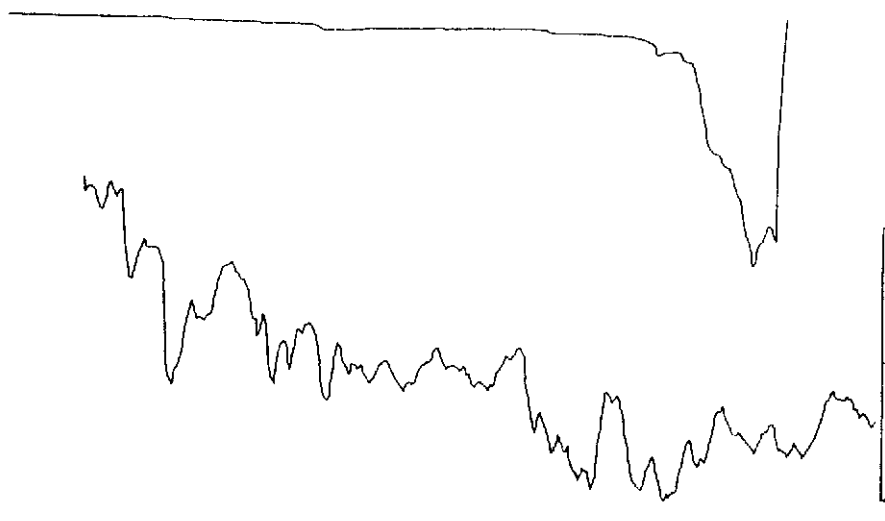
021-000058
HOLE DIAMETER CALLIPER (INCHES)

25.00
50.00
75.00
100.00
125.00
150.00
175.00



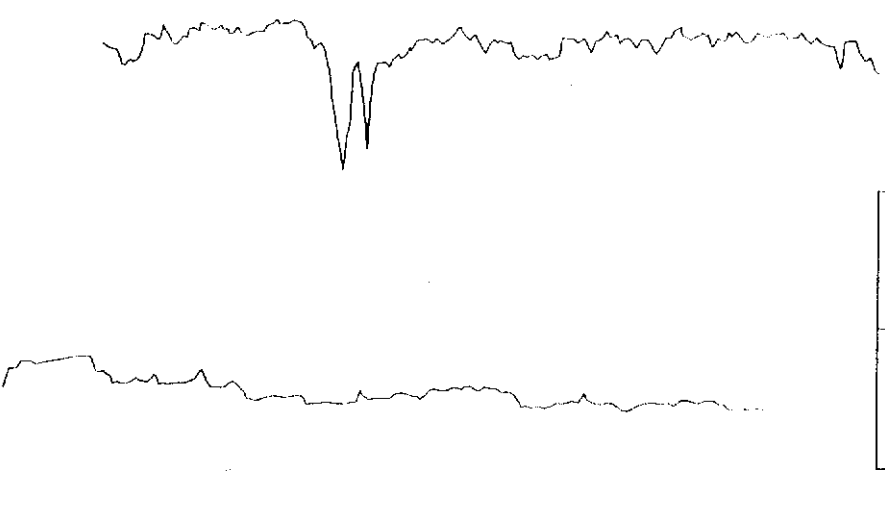
021-000058
16-IN NORMAL RES
OHM-METERS 50.00 100.00

021-000058
NEUTRON POROSITY
API 200.0 350.0 500.0



021-000058
NATURAL GRMMP
API 50.00 100.00

021-000058
SPONTANEOUS POT
MV 10.00 10.000



GEOPHYSICAL LOGS, COLLIER COUNTY, C-2045

W- 2046

COLLIER CO. T46S R28E SEC 3600 26 15 01 N 81 29 02 W
 TOTAL DEPTH- 200 FT. ELEV.- 15 FT. 20 SAMPLES- 0- 200 FT.
 COMPLETED- 84.01.01 DEPTH WORKED 200 FT.

WELL NAME-

SFMD C2J46-CATHERINE ISLAND

REMARKS-

DESCRIBED BY MIKE KNAPP (5-17-84), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0- 170.0 SURFICIAL AQUIFER SYSTEM
 0.0- 60.0 WATER TABLE AQUIFER
 60.0- 90.0 TAMiami CONFINING BEDS
 90.0- 170.0 LOWER TAMiami AQUIFER
 170.0- 1D UPPER HAWTHORN CONFINING ZONE

STRATIGRAPHIC FORMATIONS -

.0- 3.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 3.0- 170.0 TAMiami FORMATION
 170.0- 180.0 MIOCENE COARSE CLASTICS
 180.0- 200.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2046 . COLLIER CO. T46S, R28E, SEC 3600

0.0- 3.0 SAND, MODERATE LIGHT GRAY, 42% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% HEAVY MINERALS,
 3.0- 10.0 LIMESTONE, GRAYISH ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, INTERCRYSTALLINE, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 35% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS,
 10.0- 15.0 SHELL BED, VERY LIGHT ORANGE, 30% POROSITY, INTERGRANULAR, UNCONSOLIDATED, CALCILUTITE MATRIX, 20% QUARTZ SAND, MOLLUSKS, CORAL,
 15.0- 20.0 SANDSTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, 30% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
 20.0- 30.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 35% QUARTZ SAND, MOLLUSKS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

SHELL INTERMIXED

- 36.0- 40.0 LIMESTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
- 40.0- 50.0 SANDSTONE, VERY LIGHT ORANGE TO LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, 40% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
- 50.0- 60.0 AS ABOVE,
- 60.0- 75.0 SAND, OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 02% CLAY, 10% CALCILUTITE, 20% DOLOMITE, MOLLUSKS,
- 75.0- 90.0 AS ABOVE WITH SHELL
- 90.0- 100.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, CORAL,
- 100.0- 110.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, CORAL,
- 110.0- 120.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 70% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 02% QUARTZ SAND, MOLLUSKS, CORAL, FOSSIL MOLDS, BRYOZOA,
- GOOD DOROFFE
- 120.0- 130.0 AS ABOVE,

LITHOLOGIC LOG

W- 2048 . COLLIER CO. T48S, R28E, SEC 3600

- 130.0- 140.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 70% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 20% QUARTZ SAND, MOLLUSKS, CORAL, FOSSIL MOLDS, BRYOZOA,
- 140.0- 150.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 20% QUARTZ SAND, MOLLUSKS,
- SAMPLE IS A MIX OF ABOVE LITHO AND 150.
- 150.0- 170.0 AS ABOVE,
- 170.0- 180.0 SAND, LIGHT GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 10% LIMESTONE, FROSTED, MOLLUSKS,
- 180.0- 200.0 SAND, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, 05% PHOSPHATIC SAND, 05% CLAY, 10% DOLOMITE, MOLLUSKS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
0		SAND	TAMIAMI FORMATION	SYSTEM	WATER TABLE AQUIFER	
-25		SAND			TAMIAMI CONFINING BEDS	
-50		CALCITE CALCITE CALCITE				
-75		SAND SAND SAND SAND SAND		LOWER TAMIAMI AQUIFER		
-100		SAND SAND				
-125		SAND SAND				
-150		CALCITE CALCITE PHOSPHATE PHOSPHATE PHOSPHATE				
-175		CALCITE CALCITE PHOSPHATE PHOSPHATE PHOSPHATE			HAWTHORN GROUP	MIocene CRS. CL.
				UPPER CLASTIC		

WC2046

W- 2049C

COLLIER CO. T48S R27E SEC 33C
 TOTAL DEPTH- 52 FT. ELEV.- 15 FT.
 COMPLETED- 83.03.29 DEPTH WORKED

N
 SAMPLES- 0- 32 FT.
 52 FT.

WELL NAME-

CONTINUOUS CORE, MISSISSIPPI WELL C-2

REMARKS-

DESCRIBED AND CODED BY MIKE KNAPP (3-20-83), QUALITY (EXCELLENT)

HYDROGEOLOGIC UNITS

0.0- 50.0 WATER TABLE AQUIFER OF THE SURFICIAL AQUIFER SYSTEM
 50.0- 52.0 UPPER TAMiami CONFINING BEDS

STRATIGRAPHIC FORMATIONS -

.0- 5.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 5.0- 52.0 TAMiami FORMATION

LITHOLOGIC LOG

W- 2049C. COLLIER CO. T48S, R27E, SEC 33C

- .0- 5.0 SAND, WHITE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, ORGANIC MATRIX,
- 5.0- 12.0 LIMESTONE, VERY LIGHT ORANGE, 30% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CRYSTALS, BIOGENIC, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLMITE CEMENT, 03% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 12.0- 22.0 AS ABOVE,
- 22.0- 32.0 DOLMITE, GRAYISH ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, 12% CALCILUTITE, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,
- 32.0- 34.0 OYSTER BED (6 INCHES THICK)
- 34.0- 40.0 DOLMITE, GRAYISH ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,

LITHOLOGIC LOG

W- 20490. COLLIER CO. T48S, R27E, SEC 33C

- 40.0- 44.0 DOLOMITE, GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,
- 44.0- 46.0 LIMESTONE, PINKISH GRAY, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, MOLDIC, GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 20% DOLOMITE, MOLLUSKS, FOSSIL MOLDS,
- 46.0- 50.0 DOLOMITE, GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,
- 50.0- 52.0 DOLO-SILT, VERY LIGHT ORANGE TO LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, 10% CALCILUTITE, 10% DOLOMITE, MOLLUSKS,

W- 2050C

COLLIER CO. 149S R26B SEC 13DD
 TOTAL DEPTH- 32 FT. ELEV.- 12 FT. N
 COMPLETED- 83.03.29 DEPTH WORKED 32 FT. SAMPLES- 0- 32 FT. W

WELL NAME-

CONTINUOUS CORE, MISSIMER WELL C-3

REMARKS-

DESCRIBED AND CODED BY MIKE KNAPP (-20-83), QUALITY (EXCELLENT)

HYDROGEOLOGIC UNITS

- 0.0- 15.0 WATER TABLE AQUIFER OF THE SURFICIAL AQUIFER SYSTEM
- 15.0- 27.0 TAMiami CONFINING BEDS

STRATIGRAPHIC FORMATIONS -

- .0- 3.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
- 3.0- 32.0 TAMiami FORMATION

LITHOLOGIC LOG

W- 2050C. COLLIER CO. 149S, R26B, SEC 13DD

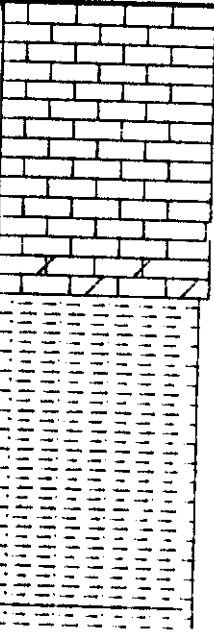
- .0- 3.0 NO RECOVERY-SURFICIAL SANDS
- 3.0- 11.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, MOLDIC, GRAIN TYPE: CRYSTALS, BIOGENIC, INTRACLASTS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
- 11.0- 12.0 LIMESTONE, GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, MOLDIC, GRAIN TYPE: CRYSTALS, BIOGENIC, INTRACLASTS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
- 12.0- 13.0 LIMESTONE, GRAYISH ORANGE, 20% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, MOLDIC, GRAIN TYPE: CRYSTALS, BIOGENIC, INTRACLASTS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

#- 20500.

COLLIER CO. T49S, R26B, SEC 13DD

- 13.0- 15.0 LIMESTONE, VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR, MOLLIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CRYSTALS, BIOGENIC, INTRACLASTS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLomite CEMENT, 25% DOLomite, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
- 15.0- 27.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 25% QUARTZ SAND, 15% CALCILUTITE, MOLLUSKS,
- 27.0- 32.0 DOLO-SILT, MODERATE GRAYISH GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, CLAY MATRIX, 25% QUARTZ SAND, 15% CALCILUTITE, 04% CLAY, MOLLUSKS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
				SYSTEM	UNIT
0					
-5		SAND	TAMIAMI	(PART)	WATER
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
SAND					
-10		SAND			TABLE
-15		SAND			AQUIFER
-20		CALCITE	FORMATION	AQUIFER	TAMIAMI
CALCITE					
CALCITE					
CALCITE					
CALCITE					
CALCITE					
CALCITE					
CALCITE					
CALCITE					
CALCITE					
-25		CALCITE			CONFINING
CALCITE					
CALCITE					
CALCITE					
CALCITE					
-30		CALCITE CLAY	(PART)	SURFICIAL	BEDS
CALCITE CLAY					
CALCITE CLAY					
CALCITE CLAY					
-35		CALCITE CLAY			

WC2050

W- 2051C

COLLIER CO. T495 R26E SEC 03AC N
 TOTAL DEPTH- FT. ELEV.- 13 FT. SAMPLES- 0- 37 FT.
 COMPLETED- 03.03.20 DEPTH WORKED 37 FT.

WELL NAME-

CONTINUOUS CORE, MISSIMER WELL C-1

REMARKS-

DESCRIBED AND CODED BY MIKE KNAPP (3-20-83), QUALITY (EXCELLENT)

HYDROGEOLOGIC UNITS

0.0- 27.0 WATER TABLE AQUIFER OF THE SURFICIAL AQUIFER SYSTEM
 27.0- 37.0 TAMiami CONFINING BEDS

STRATIGRAPHIC FORMATIONS -

0.0- 3.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 3.0- 37.0 TAMiami FORMATION

LITHOLOGIC LOG

W- 2051C. COLLIER CO. T495, R26E, SEC 03AC

0.0- 3.0 NO RECOVER SURFICIAL SAND

3.0- 17.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,

17.0- 20.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

20.0- 22.0 LIMESTONE, GRAYISH ORANGE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CRYSTALS, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,

22.0- 27.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, 25% QUARTZ SAND, MOLLUSKS,

LITHOLOGIC LOG

#- 20510. COLLIER CO. T49S, R26E, SEC 03AC

- 27.0- 32.0 DULC-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, FINE INDURATION, DULUMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 25% QUARTZ SAND, 02% CLAY, MOLLUSKS,
- 32.0- 37.0 AS ABOVE,

W- 20520

COLLIER CO. T48S R27E SEC 08DD
 TOTAL DEPTH- 40 FT. ELEV.- 15 FT. N
 COMPLETED- 03.03.20 DEPTH WORKED 40 FT. SAMPLES- 0- W 40 FT.

WELL NAME-

CONTINUOUS CORE, MISSIMER WELL C-4

REMARKS-

DESCRIBED AND CODED BY MIKE KNAPP (3-20-83), QUALITY (EXCELLENT)

HYDROGEOLOGIC UNITS

- 0.0- 5.0 WATER TABLE AQUIFER OF THE SURFICIAL AQUIFER SYSTEM
- 5.0- 30.1 TAMPAI CONFINING BEDS
- 30.1 40.0 LOWER TAMPAI AQUIFER

STRATIGRAPHIC FORMATIONS -

- 0.0- 2.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
- 2.0- 40.0 TAMPAI FORMATION

LITHOLOGIC LOG

W- 20520. COLLIER CO. T48S, R27E, SEC 08DD

- 0.0- 2.0 SAND, WHITE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, ORGANIC MATRIX,
- 2.0- 3.5 SANDSTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTE MATRIX, 35% CALCILUTE, MOLLUSKS,
- 3.5- 5.0 GRADES INTO A LIMESTONE
- 5.0- 6.5 SAND, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLMITE CEMENT, 10% CLAY, 15% DOLMITE,
- 6.5- 29.0 BULO-SILT, LIGHT OLIVE TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, 10% CALCILUTE, 10% DOLMITE,
- 29.0- 30.0 AS ABOVE,
- 30.0- 30.1 FRESH WATER MOLLUSKS

- 30.1- 30.3 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, SPARRY CALCITE CEMENT, 25% QUARTZ SAND, MOLLUSKS,
- 30.3- 40.0 LIMESTONE, LIGHT OLIVE, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
				(PART)	WATER TABLE AQUIFER
0			UNDIFF.	SYSTEM	TAMIAMI
-5	T T	DOLOMITE DOLOMITE DOLOMITE DOLOMITE DOLOMITE	TAMIAMI		
-10		CALCITE CALCITE CALCITE CALCITE CALCITE	FORMATION	AQUIFER	CONFINING BEDS
-15		CALCITE CALCITE CALCITE CALCITE CALCITE			
-20		CALCITE CALCITE CALCITE CALCITE CALCITE			
-25		CALCITE CALCITE CALCITE CALCITE CALCITE			
-30		SAND SAND SAND SAND SAND SAND SAND SAND			
-35		SAND SAND SAND SAND SAND SAND SAND SAND			
-40					

WC 2052

W- 2053

COLLIER CO. 149S R25E SEC 0900 26 13 10 N 81 48 06 W
 TOTAL DEPTH- 935 FT. ELEV.- 16 FT. 93 SAMPLES- 0- 935 FT.
 COMPLETED- 12-01-65 DEPTH WORKED 935 FT.

WELL NAME-

USGS C-574, 480 FT CASING

REMARKS-

DESCRIBED BY MIKE KNAPP (12-1-65), QUALITY (POOR)

HYDROGEOLOGIC UNITS

0.0- 245.0 SURFICIAL AQUIFER SYSTEM
 0.0- 100.0 WATER TABLE AQUIFER
 100.0- 140.0 TAMIAHI CONFINING BEDS
 140.0- 245.0 LOWER TAMIAHI PRODUCING ZONE
 245.0- 280.0 UPPER HAWTHORN CONFINING ZONE
 280.0- 290.0 SANDSTONE AQUIFER
 290.0- 340.0 MID-HAWTHORN CONFINING ZONE
 340.0- 620.0 MID-HAWTHORN AQUIFER?
 NOTE-SAMPLES FROM 430 TO 935 QUESTIONABLE

STRATIGRAPHIC FORMATIONS -

0.0- 20.0 UNDIFFERENTIATED SAND AND CLAY
 20.0- 245.0 TAMIAHI FORMATION
 245.0- 935.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2053 . COLLIER CO. 149S, R25E, SEC 0900

0.0- 10.0 SAND, WHITE, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, LOW SPHERICITY, UNCONSOLIDATED, SIX HEAVY MINERALS,
 10.0- 20.0 SAND, GRAYISH BROWN, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
 20.0- 30.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, BRYOZOA, FOSSIL MOLDS, FOSSIL FRAGMENTS,
 30.0- 40.0 AS ABOVE,
 40.0- 50.0 SAMPLE IS A MIXTURE OF SHELL (CHIONE SP) AND LYS FRAGS.

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

#- 2053 . COLLIER CO. T49S, R25E, SEC 0900

- 50.0- 60.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 30% POROSITY, INTERGRANULAR, MULDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% QUARTZ SAND, CORAL, MOLLUSKS, ECHINOID,
- 60.0- 70.0 AS ABOVE WITH MUCH SHELL
- 70.0- 80.0 AS ABOVE,
- 80.0- 90.0 LIMESTONE, VERY LIGHT ORANGE, 30% POROSITY, INTERGRANULAR, MULDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 65% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, CORAL, ECHINOID, FOSSIL MOLDS,
- 90.0- 100.0 AS ABOVE,
- 100.0- 110.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 12% QUARTZ SAND, MOLLUSKS,
- 110.0- 120.0 AS ABOVE,
- 120.0- 130.0 LIMESTONE, LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, MOLLUSKS,
- 130.0- 140.0 LIMESTONE, MODERATE LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MULDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 02% QUARTZ SAND, MOLLUSKS, CORAL,
- 140.0- 150.0 AS ABOVE,
- 150.0- 160.0 LIMESTONE, VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 10% QUARTZ SAND, MOLLUSKS,

LITHOLOGIC LOG

W- 2053 • COLLIER CO. T49S, R29E, SEC 0900

- 160.0- 170.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, 04% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS,
- 170.0- 190.0 AS ABOVE,
- 190.0- 200.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, 75% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, MOLLUSKS, BENTHONIC FORAMINIFERA, CORAL,
- 200.0- 230.0 AS ABOVE,
- 230.0- 240.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 240.0- 245.0 AS ABOVE,
- 245.0- 250.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% SILT, 05% QUARTZ SAND, 04% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 250.0- 260.0 AS ABOVE,
- 260.0- 270.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, ROUNDED, HIGH SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 30% DOLLOMITE, 02% PHOSPHATIC SAND,
- 270.0- 280.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 25% QUARTZ SAND, 02% PHOSPHATIC SAND,
- 280.0- 290.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 05% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS,
- 290.0- 300.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 08% PHOSPHATIC SAND, 02% QUARTZ SAND, BENTHONIC FORAMINIFERA,
- 300.0- 310.0 AS ABOVE,

LITHOLOGIC LOG

W- 2053 . COLLIER CO. T49S, R25E, SEC 6700

- 310.0- 320.0 SAND, OLIVE GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 15% DOLOMITE, 20% PHOSPHATIC SAND,
- 320.0- 330.0 AS ABOVE,
- 330.0- 340.0 SAND, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 10% DOLOMITE, 10% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 340.0- 350.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 32% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 03% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS, FOSSIL MOLDS,
- 350.0- 370.0 AS ABOVE,
- 370.0- 380.0 LIMESTONE, VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 15% DOLOMITE, 04% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 380.0- 390.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% DOLOMITE, 04% PHOSPHATIC SAND, BRYOZOA, WORM TRACES, MOLLUSKS,
- 390.0- 420.0 AS ABOVE,
- 420.0- 430.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% DOLOMITE, 02% PHOSPHATIC SAND, BRYOZOA, MOLLUSKS, FOSSIL FRAGMENTS,
- 430.0- 450.0 AS ABOVE,
- 450.0- 460.0 LIMESTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% DOLOMITE, 05% PHOSPHATIC SAND, 15% QUARTZ SAND, MOLLUSKS, BRYOZOA, BENTHONIC FORAMINIFERA,

LITHOLOGIC LOG

2053 • COLLIER CO. T49S, R20E, SEC 09E

- 460.0- 470.0 AS ABOVE,
- 470.0- 480.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% DOLOMITE, 30% QUARTZ SAND, 0% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 480.0- 495.0 AS ABOVE,
- 495.0- 505.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% DOLOMITE, 20% QUARTZ SAND, 0% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 505.0- 525.0 AS ABOVE,
- 525.0- 535.0 LIMESTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% DOLOMITE, 30% QUARTZ SAND, 0% PHOSPHATIC SAND, FOSSIL FRAGMENTS, MOLLUSKS, WORM TRACES,
- 535.0- 540.0 AS ABOVE,
- 540.0- 550.0 AS ABOVE,
- 550.0- 560.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 20% QUARTZ SAND, FOSSIL FRAGMENTS, MOLLUSKS,
- 560.0- 570.0 AS ABOVE,
AS ABOVE WITH MORE SAND (40%)
- 570.0- 590.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 10% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS,
- 590.0- 590.0 AS ABOVE,
- 590.0- 600.0 AS ABOVE WITH MORE SAND (40%)

- 600.0- 610.0 AS ABOVE,
- 610.0- 620.0 AS ABOVE,
- 620.0- 635.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% DOLOMITE, 10% QUARTZ SAND, MOLLUSKS,
- 635.0- 655.0 SAND, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 20% DOLOMITE, 02% CLAY, 05% PHOSPHATIC SAND, MOLLUSKS,
POOR SAMPLE
- 655.0- 695.0 SAND, VERY LIGHT ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% PHOSPHATIC SAND, 03% CALCILUTITE, MOLLUSKS, FOSSIL FRAGMENTS,
- 695.0- 715.0 DULL-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 35% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 715.0- 735.0 DULL-SILT, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 735.0- 755.0 AS ABOVE WITH V.C. PHOSPHATE
- 755.0- 775.0 AS ABOVE,
- 775.0- 795.0 DOLOMITE, GRAYISH ORANGE, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, LOW PERMEABILITY, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 20% QUARTZ SAND, 05% PHOSPHATIC SAND,
- 795.0- 815.0 AS ABOVE,
- 815.0- 835.0 AS ABOVE,
- 835.0- 855.0 DOLOMITE, GRAYISH ORANGE, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 20% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,

LITHOLOGIC LOG

W-205 • COLLIER CO. T49S, R25E, SEC 19E

- 855.0- 875.0 DULL-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 10% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS,
- 875.0- 895.0 SANDSTONE, YELLOWISH GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILLITE MATRIX, 02% PHOSPHATIC SAND, MOLLUSKS,
- 895.0- 905.0 DULL-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 05% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS,
- 905.0- 920.0 AS ABOVE,
- 920.0- 925.0 DULL-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 05% CLAY, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 925.0- 935.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
0			UNDIFF.			
-40		SAND	TAMIAMI	SYSTEM	WATER TABLE	
-80		SAND			AQUIFER	
-120		SAND		FORMATION	SURFICIAL	TAMIAMI CONFINING BED
-160		SAND	LOWER TAMIAMI			
-200		SAND	AQUIFER			
-240		SAND	HAWTHORN	SYSTEM	UPPER HAWTHORN CONF. ZONE	
-280		DOLOMITE DOLOMITE			SANDSTONE AQ.	
-320		PHOSPHATE DOLOMITE DOLOMITE			MID-HAWTHORN CONFINING ZONE	
-360		DOLOMITE DOLOMITE			MID-	
-400		DOLOMITE DOLOMITE				
-440		SAND DOLOMITE DOLOMITE				HAWTHORN
-480		SAND				AQUIFER
-520		SAND DOLOMITE				
-560		SAND DOLOMITE DOLOMITE				
-600		DOLOMITE SAND CLAY DOLOMITE DOLOMITE				
-640			GROUP	AQUIFER	LOWER	
-680		SAND CALCITE CALCITE			HAWTHORN	
-720		DOLOMITE DOLOMITE	INTERMEDIATE	CONFINING	ZONE	
-760		DOLOMITE DOLOMITE				
-800		SAND CALCITE CALCITE SAND SAND				
-840		PHOSPHATE				
-880		CLAY				
-920						

WC2053

W- 2054

COLLIER CO. T46S R29E SEC 31DB 26 26 02 N 81 27 01 W
 TOTAL DEPTH- 340 FT. ELEV.- 30 FT. 68 SAMPLES- 0- 340 FT.
 COMPLETED- 8+.02.01 DEPTH WORKED 340 FT.

WELL NAME-

USGS C632

REMARKS-

DESCRIBED BY MIKE KNAPP 2-1-84, SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0 150.0 SURFICIAL AQUIFER SYSTEM
 150.0 220.0 UPPER HAWTHORN CONFINING ZONE
 220.0 300.0 SANDSTONE AQUIFER

STRATIGRAPHIC FORMATIONS -

0.0- 20.0 UNDIFFERENTIATED SAND AND CLAY
 20.0- 150.0 MIOCENE COARSE CLASTICS
 150.0- 340.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2054 . COLLIER CO. T46S, R29E, SEC 31DB

0.0- 10.0 SAND, GRAYISH ORANGE, 42% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
 10.0- 20.0 SAND, VERY LIGHT ORANGE TO LIGHT GREENISH GRAY, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 0% CALCILUTITE, 0% HEAVY MINERALS, MULLUSKS,
 20.0- 30.0 SAND, VERY LIGHT ORANGE TO WHITE, 42% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, FROSTED,
 30.0- 80.0 SAMPLE ARE ALL SAND SAME AS ABOVE-FROSTED, ROUNDED, MARINE
 80.0- 100.0 SAND, VERY LIGHT ORANGE, 42% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, FROSTED,
 100.0- 130.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, 25% QUARTZ SAND, MULLUSKS,

MUCH SAND IN SAMPLE

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

- 135.0- 140.0 SAND, WHITE TO VERY LIGHT ORANGE, 42% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% LIMESTONE, MOLLUSKS,
- 140.0- 150.0 AS ABOVE,
- 150.0- 160.0 MULD-SILT, LIGHT GREENISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTE MATRIX, 25% CALCILUTE, 25% QUARTZ SAND, MOLLUSKS,
- 160.0- 180.0 SAND, VERY LIGHT ORANGE, 42% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
- 180.0- 190.0 SAND, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 20% SILT, 05% CLAY, 03% PHOSPHATIC SAND, MOLLUSKS,
- 190.0- 200.0 AS ABOVE,
- 200.0- 210.0 MULD-SILT, LIGHT GRAYISH GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 05% CLAY, 10% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS,
- 210.0- 220.0 AS ABOVE,
- 220.0- 230.0 LIMESTONE, LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, DOLomite CEMENT, SPARRY CALCITE CEMENT, 15% COARSE SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLD, FOSSIL FRAGMENTS,
- 230.0- 240.0 AS ABOVE - SANDIER (30%)
- 240.0- 250.0 AS ABOVE,
- 250.0- 260.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTE, BIOGENIC, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTE MATRIX, 05% QUARTZ SAND, MOLLUSKS,

LITHOLOGIC LOG

*- 2054 . COLLIER CO. T46S, R29E, SEC 3100

- 260.0- 270.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, CERAM, FOSSIL MOLDS,
- 270.0- 280.0 AS ABOVE-NO SAND
- 280.0- 290.0 AS ABOVE,
- 290.0- 300.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, MOLLUSKS,
- 300.0- 310.0 DOLO-SILT, LIGHT GREENISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 25% QUARTZ SAND, MOLLUSKS,
- 310.0- 320.0 AS ABOVE,
- 320.0- 340.0 SAND, LIGHT GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 02% CLAY, 25% DOLOMITE, MOLLUSKS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
25			UNDIFF.	SURFICIAL		
0		CALCITE CALCITE				
-25			MIOCENE			
-50			COARSE	AQUIFER		
-75			CLASTICS	SYSTEM		
-100						
-125		SAND SAND	HAWTHORN GROUP	SYSTEM	UPPER HAWTHORN CONFINING ZONE	
-150		SILT SILT			AQUIFER	SANDSTONE
-175		SAND SAND		CLASTIC		
-200		SAND SAND				
-225						
-250		SAND SAND				
-275		SAND SAND SAND SAND				
-300		DOLOMITE DOLOMITE DOLOMITE DOLOMITE		INTERMEDIATE		MID- HAWTHORN CONFINING ZONE
-325						

WC2054

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2055

COLLIER CO. T47S R29E SEC 01AC 26 25 09 N 81 22 37 W
 TOTAL DEPTH- 540 FT. ELEV.- 30 FT. 54 SAMPLES- 0- 540 FT.
 COMPLETED- 84.02.01 DEPTH WORKED 540 FT.

WELL NAME-

USGS 0681

REMARKS-

DESCRIBED BY MIKE KNAPP (2-1-84), SAMPLE QUALITY (FAIR)

HYDROGEOLOGIC UNITS

0.0 230.0 SURFICIAL AQUIFER SYSTEM
 0.0 50.0 WATER TABLE AQUIFER
 50.0 130.0 TAMiami CONFINING BEDS
 130.0 230.0 LOWER TAMiami AQUIFER / SANDSTONE AQUIFER
 230.0 490.0 MID-HAWTHORN CONFINING ZONE
 490.0 540.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

0.0- 30.0 TAMiami FORMATION
 30.0- 230.0 MIOCENE COARSE CLASTICS
 230.0- 540.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2055 COLLIER CO. T47S, R29E, SEC 01AC

0.0- 10.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 0% QUARTZ SAND, MOLLOSKS, CORAL, FOSSIL MOLDS,
 10.0- 20.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: VERY FINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 2% QUARTZ SAND, MOLLOSKS, FOSSIL MOLDS,
 20.0- 30.0 AS ABOVE,
 30.0- 40.0 SAND, WHITE TO VERY LIGHT ORANGE, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 15% CALCILUTITE, MOLLOSKS,
 40.0- 50.0 AS ABOVE-SOME PHOS (32%) AND A FEW CHIPS OF S/S

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

LITHOLOGIC LOG

#- 2099 • COLLIER CO. 147S, R29E, SEC 01AC

- 50.0- 60.0 SANDSTONE, VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 20% DOLomite, 10% CALCILUTITE, MOLLUSKS,
- 60.0- 70.0 AS ABOVE,
- 70.0- 80.0 AS ABOVE WITH POOR INDURATION
- 80.0- 90.0 SAND, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 0.5% CALCILUTITE,
- 90.0- 100.0 SAND, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, DIATOMS,
- 100.0- 110.0 AS ABOVE,
- 110.0- 120.0 SAND, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 0.2% CLAY, 15% DOLomite, 0.4% PHOSPHATIC SAND, MOLLUSKS, BRYCZOA,
- 120.0- 130.0 CLAY, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 40% QUARTZ SAND, 0.3% PHOSPHATIC SAND, MOLLUSKS,
- 130.0- 140.0 SAND, WHITE, 40% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 0.2% PHOSPHATIC SAND, 0.4% PHOSPHATIC GRAVEL, MOLLUSKS,
- 140.0- 150.0 AS ABOVE,
- 150.0- 160.0 AS ABOVE WITH POOR INDURATION-DOLUSILT (1%)
- 160.0- 170.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BILCENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND, MOLLUSKS,
- 170.0- 180.0 AS ABOVE,

LITHOLOGIC LOG

W- 2055 . COLLIER CO. T47S, R29E, SEC 01A0

- 180.0- 190.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MULDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 03% QUARTZ SAND, MULLUSKS, FOSSIL MOLDS,
- 190.0- 200.0 AS ABOVE,
- 200.0- 210.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND, MULLUSKS,
- 210.0- 220.0 SANDSTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 15% CALCILUTITE, 30% DOLOMITE, MULLUSKS,
- 220.0- 230.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MULDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 02% QUARTZ SAND, MULLUSKS,
- 230.0- 240.0 SANDSTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 10% DOLOMITE,
- 240.0- 250.0 AS ABOVE,
- 250.0- 260.0 AS ABOVE,
- 260.0- 270.0 AS ABOVE,
- 270.0- 280.0 AS ABOVE,
- 280.0- 290.0 280 TO 290 COARSE SANDS WITH DOLOMITE MATRIX (15%)
- 290.0- 300.0 AS ABOVE,
- 300.0- 310.0 SANDSTONE, VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, 25% DOLOMITE, 0.5% PHOSPHATIC SAND,
- 310.0- 320.0 AS ABOVE,
- 320.0- 340.0 AS ABOVE-POORLY INDURATED
- 340.0- 350.0 AS ABOVE-SAME GRANULE SIZE QUARTZ

LITHOLOGIC LOG

2055 • COLLIER CO. 1975, R29E, SEC 01AC

- 350.0- 360.0 AS ABOVE,
- 360.0- 370.0 CLAY, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, 15% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 370.0- 400.0 AS ABOVE,
- 400.0- 410.0 CLAY, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, 20% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 410.0- 440.0 AS ABOVE,
- 440.0- 460.0 CLAY, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, 30% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS,
- 460.0- 480.0 AS ABOVE,
- 480.0- 490.0 AS ABOVE-WITH PHOSPHATE KOBBLE
- 490.0- 500.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTE MATRIX, DOLomite CEMENT, 10% PHOSPHATIC SAND, MOLLUSKS,
- 500.0- 540.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
0		SAND SAND	TAMIAMI FORMATION	WATER TABLE AQUIFER		
-40		CALCITE CALCITE CALCITE DOLOMITE	GROUP	SURFICIAL AQUIFER SYSTEM		
-80		DOLOMITE			MIOCENE	CONFINING BEDS
-120		SAND			COARSE	LOWER TAMIAMI AQUIFER
-160		SAND SAND			CLASTICS	
-200		SAND CALCITE DOLOMITE	HAWTHORN	INTERMEDIATE AQUIFER SYSTEM		
-240		DOLOMITE DOLOMITE			UPPER	UPPER
-280		SAND			CLASTIC	HAWTHORN
-320		PHOSPHATE			UNIT	CONFINING
-360		PHOSPHATE PHOSPHATE SAND			LOWER CARBONATE UNIT	ZONE
-400		PHOSPHATE PHOSPHATE				MID-HAWTHORN AQUIFER
-440						
-480						
-520						

WC2055

W- 2056

COLLIER CO. T46S R29E SEC 100
 TOTAL DEPTH- 180 FT. ELEV.- 30 FT. 30 SAMPLES- N
 COMPLETED- 03.15.02 DEPTH WORKED 180 FT. W- 180 FT.

WELL NAME-

MISSIMER CO-153, SILVER STRAND FARMS-NORTH

REMARKS-

DESCRIBED BY MIKE KNAPP (6-18-04), QUALITY (POOR)

HYDROGEOLOGIC UNITS

0.0 95.0 SURFICIAL AQUIFER SYSTEM
 95.0 120.0 UPPER HAWTHORN CONFINING ZONE
 120.0 135.0 SANDSTONE AQUIFER

STRATIGRAPHIC FORMATIONS -

0.0- 30.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 30.0- 45.0 TAMPAI FORMATION
 45.0- 180.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2056 • COLLIER CO. T46S, R29E, SEC 100

0.0- 5.0 NO SAMPLE,
 5.0- 10.0 SAND, GRAYISH ORANGE, 20% PEROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGEL VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 10% CALCILUTE, 0% SPAR,
 10.0- 15.0 AS ABOVE,
 15.0- 20.0 SANDSTONE, GRAYISH ORANGE, 20% PEROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGEL VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 30% CALCILUTE, 1% SPAR, MOLLUSKS,
 20.0- 25.0 AS ABOVE,
 25.0- 30.0 AS ABOVE,
 30.0- 35.0 LIMESTONE, LIGHT GRAY TO VERY LIGHT ORANGE, 30% PEROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTE, 0% ALLEOCHEMICAL CONSTITUTION, GRAIN SIZE: MICROCRYSTALLINE, RANGEL MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTE MATRIX, 20% COARSE SAND, MOLLUSKS,
 35.0- 40.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 40.0- 45.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 0% ALLUCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% QUARTZ SAND, MOLLUSKS,
- 45.0- 50.0 SAND, VERY LIGHT ORANGE, 1% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 30% CALCILUTITE,
- 50.0- 55.0 SAND, LIGHT GRAY, 30% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% PHOSPHATIC SAND, 0% LIMESTONE, MOLLUSKS,
- 55.0- 60.0 AS ABOVE,
- 60.0- 65.0 AS ABOVE,
- 65.0- 70.0 AS ABOVE,
- 70.0- 75.0 SAND, LIGHT GRAY, 30% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO GRANULE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% PHOSPHATIC SAND,
- 75.0- 80.0 SAND, LIGHT GRAY, 30% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% PHOSPHATIC SAND,
- 80.0- 85.0 AS ABOVE BECOMING SLIGHTLY CEMENTED WITH MICRITE
- 85.0- 90.0 AS ABOVE,
- 90.0- 95.0 AS ABOVE (COARSE QUARTZ SAND)
- 95.0- 100.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, CALCITE CEMENT, 15% CLAY, 20% DOLOMITE, MOLLUSKS,
- 100.0- 110.0 AS ABOVE,
- 110.0- 120.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, CALCITE CEMENT, 0% CLAY, 20% DOLOMITE, MOLLUSKS,
- 120.0- 125.0 AS ABOVE,

- 120.0- 125.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, DOLLOMITE CEMENT, CALCILUTE MATRIX, 20% DOLLOMITE, 10% CALCILUTE, 05% PHOSPHATIC SAND, MOLLUSKS,
- 125.0- 130.0 AS ABOVE-POORLY INDURATED
- 130.0- 135.0 SANDSTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTE MATRIX, DOLLOMITE CEMENT, 30% CALCILUTE, 10% DOLLOMITE, 05% PHOSPHATIC SAND, MOLLUSKS,
- 135.0- 140.0 SAND, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, 05% CALCILUTE,
- 140.0- 165.0 SAND, VERY LIGHT ORANGE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, DOLLOMITE CEMENT, 15% CALCILUTE, 15% DOLLOMITE, 02% CLAY, 02% PHOSPHATIC SAND, MOLLUSKS,
- 165.0- 170.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTE MATRIX, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 170.0- 180.0 AS ABOVE,

W- 2057

COLLIER CO. 1485 R25E SEC 2400 26 16 22 N E1 45 15 W
 TOTAL DEPTH- 225 FT. ELEV.- 16 FT. 23 SAMPLES- 0- 225 FT.
 COMPLETED- 78.01.29 DEPTH WORKED 225 FT.

WELL NAME-

USGS CDOO, H2O SYSTEMS (DRILLED).

REMARKS-

DESCRIBED BY MIKE KNAPP (12-27-84), SAMPLE QUALITY ()

HYDROGEOLOGIC UNITS

0.0 125.0 SURFICIAL AQUIFER SYSTEM
 0.0 20.0 WATER TABLE AQUIFER
 20.0 54.0 UPPER TAMPAI CONFINING ZONE
 54.0 125.0 LOWER TAMPAI AQUIFER
 125.0 225.0 UPPER HAWTHORN CONFINING ZONE

STRATIGRAPHIC FORMATIONS -

0.0- 35.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 35.0- 125.0 TAMPAI FORMATION
 125.0- 140.0 MIOCENE COARSE CLASTICS
 140.0- 225.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2057 . COLLIER CO. 1485, R25E, SEC 2400

0.0- 5.0 SAND, LIGHT YELLOWISH ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% HEAVY MINERALS,
 5.0- 10.0 SAND, LIGHT YELLOWISH ORANGE TO VERY LIGHT ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% HEAVY MINERALS, 20% CALCILLITE, MOLLUSKS,
 10.0- 15.0 AS ABOVE,
 15.0- 24.0 SAND, LIGHT YELLOWISH ORANGE TO VERY LIGHT ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 20% CALCILLITE, MOLLUSKS,
 24.0- 35.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, PLUR INDURATION, CALCILLITE MATRIX, COLUMITE CEMENT, 40% CALCILLITE, MOLLUSKS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

- 50.0- 44.0 DULO-SILT, LIGHT YELLOWISH ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTE MATRIX, 20% CALCILUTE, 35% QUARTZ SAND, MOLLUSKS,
- 44.0- 51.0 AS ABOVE,
- 51.0- 54.0 AS ABOVE,
- 54.0- 65.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MULDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, CORAL, ECHINOID, FOSSIL MULLS,
- 65.0- 75.0 AS ABOVE,
- 75.0- 80.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MULDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTE, SKELETAL, CRYSTALS, 70% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, CORAL, ECHINOID, FOSSIL MULLS,
- 80.0- 92.0 AS ABOVE,
- 92.0- 95.0 AS ABOVE,
- 95.0- 110.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, DOLOMITE CEMENT, 20% CALCILUTE, 10% DOLOMITE, MOLLUSKS,
- 110.0- 115.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MULDIC, GRAIN TYPE: CALCILUTE, BIOGENIC, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MULLS,
- 115.0- 125.0 AS ABOVE,
- 125.0- 130.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MULDIC, GRAIN TYPE: CALCILUTE, BIOGENIC, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, MOLLUSKS, ECHINOID, FOSSIL FRAGMENTS, FOSSIL MULLS,

LITHOLOGIC LOG

2057 . COLLIER CO. 1905, R25c, SEC 2400

- 129.0- 133.0 SANDSTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% CALCILUTITE, 10% DOLOMITE, MOLLUSKS,
- 133.0- 135.0 AS ABOVE,
- 135.0- 140.0 AS ABOVE,
- 140.0- 145.0 BOLD-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 40% QUARTZ SAND, MOLLUSKS,
- 145.0- 163.0 AS ABOVE,
- 163.0- 170.0 BOLD-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 10% CALCILUTITE, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 170.0- 177.0 BOLD-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 25% QUARTZ SAND, MOLLUSKS,
- 177.0- 180.0 BOLD-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 15% QUARTZ SAND, 02% PHOSPHATIC SAND,
- 180.0- 187.0 BOLD-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CLAY, 05% CALCILUTITE, 05% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS,
- 187.0- 195.0 AS ABOVE,
- 195.0- 202.0 BOLD-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 10% QUARTZ SAND, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 202.0- 210.0 AS ABOVE,
- 210.0- 225.0 BOLD-SILT, MODERATE OLIVE BROWN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CLAY, 10% CALCILUTITE, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS,

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2000

COLLIER CO. T46S R20E SEC 20B0 26 26 40 N 01 31 01 W
 TOTAL DEPTH- 200 FT. ELEV.- 21 FT. 20 SAMPLES- 0- 200 FT.
 COMPLETED- 79.01.10 DEPTH WORKED 200 FT.

WELL NAME-

0505 0576, EDDIE MILLER (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (0-27-04), SAMPLE QUALITY (GOOD)

HYDROGEOLOGICAL UNITS

0.0 210.0 SURFICIAL AQUIFER SYSTEM
 0.0 55.0 WATER TABLE AQUIFER
 55.0 90.0 TAMiami CONFINING ZONE
 90.0 210.0 LOWER TAMiami AQUIFER

STRATIGRAPHIC FORMATIONS -

0.0- 10.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 10.0- 90.0 TAMiami FORMATION
 90.0- 210.0 MIOCENE COARSE CLASTICS
 210.0- 200.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2000 . COLLIER CO. T46S, R20E, SEC 20B0

0.0- 5.0 SHELL BED, WHITE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, UNCONSOLIDATED, 40% QUARTZ SAND, MOLLUSKS,
 5.0- 10.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 10% CALCILUTITE, MOLLUSKS,
 10.0- 20.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 25% CALCILUTITE, MOLLUSKS,
 20.0- 30.0 SANDSTONE, VERY LIGHT ORANGE TO GRAYISH BROWN, 15% POROSITY, INTERGRANULAR, MULLIC, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 30% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
 30.0- 40.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 40.0- 55.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, CORAL, FOSSIL MOLDS,
- 55.0- 65.0 DULO-SILT, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 10% QUARTZ SAND, MOLLUSKS,
- 65.0- 70.0 AS ABOVE,
- 70.0- 80.0 DULO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CLAY, 10% CALCILUTITE, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 80.0- 90.0 DULO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 10% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 90.0- 100.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 35% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 100.0- 110.0 SANDSTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% CALCILUTITE, 10% SPAR, MOLLUSKS,
- 110.0- 140.0 SANDSTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 05% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS,
- 140.0- 160.0 SAND, WHITE TO VERY LIGHT ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% PHOSPHATIC SAND, MOLLUSKS,
- 160.0- 170.0 AS ABOVE,
- 170.0- 180.0 SAND, WHITE TO LIGHT GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 05% PHOSPHATIC SAND, MOLLUSKS,

WELL INDURATED FRAGS OF S/S IN SAMPLE

LITHOLOGIC LOG

- 2058 . COLLIER CO. T46S, R28E, SEC 2880

180.0- 200.0 AS ABOVE,

200.0- 210.0 SAND, WHITE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE:
MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED,
MEDIUM SPHERICITY, UNCONSOLIDATED, 05% PHOSPHATIC SAND, 02%
CLAY, MOLLUSKS,

210.0- 220.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW
PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX,
CALCILUTITE MATRIX, 10% CALCILUTITE, 05% CLAY, 40% QUARTZ
SAND, MOLLUSKS,

220.0- 235.0 SANDSTONE, LIGHT GRAY, 20% POROSITY, INTERGRANULAR, GRAIN
SIZE: COARSE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR,
ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, SPARRY CALCITE
CEMENT, 20% SPAR, MOLLUSKS,

SAMPLE IS A MIXTURE OF SHELL, COARSE SAND AND SS.

235.0- 240.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW
PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE
MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 25% QUARTZ
SAND, 05% PHOSPHATIC SAND, MOLLUSKS,

COARSE SAND

240.0- 260.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
0	T T T T T T O T	CALCITE	UNDIFF.	WATER TABLE AQUIFER	
-25	[Pattern of dots and lines]	SAND SAND SAND SAND	TAMIAMI		
-50	[Pattern of vertical lines]	SAND SAND SAND SAND	FORMATION	TAMIAMI CONFINING BEDS	
-75	[Pattern of vertical lines]				
-100	T T	CALCITE CALCITE CALCITE CALCITE CALCITE	GROUP MIOCENE COARSE CLASTICS	LOWER TAMIAMI AQUIFER	
-125					
-150	P P	PHOSPHATE PHOSPHATE			
-175	[Pattern of vertical lines]				
-200	P [Pattern of vertical lines] P T T T T T T	PHOSPHATE PHOSPHATE CALCITE CALCITE	HAWTHORN UPPER CLASTIC	HAWTHORN CONFINING BEDS	
-225	[Pattern of vertical lines]	PHOSPHATE			
-250	[Pattern of vertical lines]				

WC2058

SOUTH FLORIDA WMO - LITHO LOG PRINTOUT

W- 2059

COLLIER CO. T46S R29E SEC 07AD 26 28 59 N 81 27 30 W
 TOTAL DEPTH- 410 FT. ELEV.- 42 FT. 40 SAMPLES- 0- 410 FT.
 COMPLETED- 75.10.22 DEPTH WORKED 410 FT.

WELL NAME-

USGS 531, NORTH OF IMMOKALEE, DRILLER (COASTAL CAISSENS)

REMARKS-

DESCRIBED BY MIKE KNAPP (06-26-84), QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0	96.0	SURFICIAL AQUIFER SYSTEM
0.0	15.0	WATER TABLE AQUIFER
15.0	35.0	TAMIAMI CONFINING BEDS
35.0	96.0	LOWER TAMIAMI AQUIFER
96.0	190.0	UPPER HAWTHORN CONFINING ZONE
190.0	250.0	SANDSTONE AQUIFER
250.0	390.0	MID-HAWTHORN CONFINING ZONE
390.0	410.0	MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

.0-	15.0	UNDIFFERENTIATED SAND, CLAY AND SHELLS
15.0-	35.0	TAMIAMI FORMATION
35.0-	96.0	MIOCENE COARSE CLASTICS
96.0-	410.0	HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2059 . COLLIER CO. T46S, R29E, SEC 07AD

0.0-	5.0	SAND, LIGHT GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
5.0-	10.0	SAND, DARK YELLOWISH ORANGE, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, CALCILUTITE MATRIX,
10.0-	15.0	AS ABOVE,
15.0-	20.0	SAND, DARK GRAYISH YELLOW, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 35% DOLOMITE, 15% CALCILUTITE,

DOLUSILT INTERMIXED

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

W- 2059 . COLLIER CO. T46S, R29E, SEC 07AD

- 20.0- 25.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 15% DOLOMITE, 10% QUARTZ SAND, MULLUSKS,
- 25.0- 30.0 AS ABOVE,
- 30.0- 35.0 AS ABOVE,
- 35.0- 50.0 SAND, WHITE TO LIGHT GRAY, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: FINE TO VERY COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, CALCILUTITE MATRIX, 05% CALCILUTITE, MOLLUSKS,
- 50.0- 60.0 AS ABOVE,
- 60.0- 65.0 SAND, VERY LIGHT GRAY, 30% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: FINE TO GRANULE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, CALCILUTITE MATRIX, 05% CALCILUTITE, 02% PHOSPHATIC SAND,
- 65.0- 70.0 SAND, VERY LIGHT GRAY, 30% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: FINE TO VERY COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, CALCILUTITE MATRIX, 05% CALCILUTITE,
- 70.0- 80.0 SAND, VERY LIGHT GRAY, 35% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: VERY COARSE, RANGE: COARSE TO GRANULE, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED,
- 80.0- 96.0 SAND, VERY LIGHT GRAY, 30% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: FINE TO VERY COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, CALCILUTITE MATRIX, 05% CALCILUTITE, 02% PHOSPHATIC SAND,
- 96.0- 110.0 SAND, YELLWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: COARSE, RANGE: FINE TO VERY COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 25% DOLOMITE, 05% CLAY, 02% PHOSPHATIC SAND, MULLUSKS,
- 110.0- 120.0 AS ABOVE,
- 120.0- 130.0 SAND, VERY LIGHT GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% DOLOMITE, 10% CALCILUTITE, 05% CLAY, 03% PHOSPHATIC SAND, MULLUSKS,

LITHOLOGIC LOG

#- 2059 . COLLIER CO. T46S, R29E, SEC 07AD

- 130.0- 140.0 AS ABOVE,
- 140.0- 150.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 30% QUARTZ SAND, MOLLUSKS,
- 150.0- 160.0 AS ABOVE,
- 160.0- 170.0 SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 30% DOLOMITE, 10% CALCILUTITE, 05% CLAY, MOLLUSKS,
- 170.0- 180.0 AS ABOVE,
- 180.0- 190.0 SAND, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 30% DOLOMITE, 10% CALCILUTITE, 10% CLAY,
- 190.0- 200.0 DOLOMITE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 200.0- 210.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, MOLLUSKS, FOSSIL MOLOS, CORAL, WORM TRACES,
- 210.0- 220.0 AS ABOVE,
- 220.0- 230.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% DOLOMITE, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 230.0- 240.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 15% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS,
- 240.0- 250.0 AS ABOVE,
- 250.0- 260.0 AS ABOVE,
- 260.0- 270.0 AS ABOVE,
- 270.0- 280.0 AS ABOVE,

LITHOLOGIC LOG

W- 2059 . COLLIER CO. 146S, R29E, SEC 07AD

- 280.0- 290.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 10% CLAY, 10% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 290.0- 300.0 AS ABOVE - COARSE SAND (CAVINGS?)
- 300.0- 320.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CALCILUTITE, 10% CLAY, 10% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 320.0- 340.0 AS ABOVE,
- 340.0- 350.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 10% CLAY, 25% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 350.0- 360.0 SAND, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 25% DOLOMITE, 05% CLAY, 05% CALCILUTITE, 05% PHOSPHATIC SAND, MOLLUSKS,
- 360.0- 370.0 AS ABOVE,
- 370.0- 380.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 10% PHOSPHATIC SAND, 15% QUARTZ SAND, MOLLUSKS,
- 380.0- 390.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 15% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS,
- 390.0- 400.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 25% DOLOMITE, 10% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, CORAL, FUSSIL MOLDS,
- 400.0- 410.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT			
			UNDIFF.	TAMIAMI FORMATION	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER		
25		CALCITE SAND					TAMIAMI CONF. BEDS	
0		CALCITE CALCITE CALCITE						
-25		CALCITE CALCITE		MIOCENE COARSE CLASTICS	SURFICIAL AQUIFER SYSTEM	LOWER TAMIAMI AQUIFER		
-50		CALCITE CALCITE CALCITE DOLOMITE DOLOMITE DOLOMITE						
-75		CALCITE CALCITE	GROUP		SYSTEM	UPPER HAWTHORN CONFINING ZONE		
-100		CALCITE CALCITE						
-125		CALCITE CALCITE						
-150		CALCITE CALCITE SAND SAND		UPPER			SANDSTONE AQUIFER	
-175								
-200								
-225		SAND SAND		CLASTIC				
-250		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE						MID- HAWTHORN CONFINING ZONE
-275								
-300		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE						
-325		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE						
-350		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE		LOWER CARBONATE		MID- HAWTHORN AQUIFER		
-375								

WC2059

SOUTH FLORIDA WMO - LITHO LOG PRINTOUT

W- 2060

COLLIER CO. T48S R27E SEC 07DB 26 18 41 N 81 38 32 W
 TOTAL DEPTH- 390 FT. ELEV.- 16 FT. 40 SAMPLES- 0- 390 FT.
 COMPLETED- 79.01.15 DEPTH WORKED 390 FT.

WELL NAME-

USGS C577, EDDIE MILLER (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (C6-27-84), QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0 200.0 SURFICIAL AQUIFER SYSTEM
 0.0 80.0 WATER TABLE AQUIFER
 80.0 110.0 UPPER TAMiami CONFINING ZONE
 110.0 200.0 LOWER TAMiami AQUIFER
 200.0 240.0 UPPER HAWTHORN CONFINING ZONE
 240.0 270.0 SANDSTONE AQUIFER
 270.0 360.0 MID-HAWTHORN CONFINING ZONE
 360.0 390.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 10.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 10.0- 200.0 TAMiami FORMATION
 200.0- 390.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2060 . COLLIER CO. T48S, R27E, SEC 07DB

.0- 5.0 SHELL BED, GRAYISH ORANGE, 30% POROSITY, INTERGRANULAR,
 UNCONSOLIDATED, 25% QUARTZ SAND, MOLLUSKS,
 5.0- 1.0 AS ABOVE,
 1.0- 15.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR,
 GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL
 CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE
 MATRIX, 20% QUARTZ SAND, MOLLUSKS,
 15.0- 20.0 SANDSTONE, GRAYISH BROWN, 20% POROSITY, INTERGRANULAR,
 POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY
 FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD
 INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20%
 CALCILUTITE, 10% SPAR, MOLLUSKS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

W- 2060 . COLLIER CU. T48S, R27E, SEC 07DB

- 20.0- 30.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH BROWN, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 30.0- 40.0 AS ABOVE,
- 40.0- 50.0 LIMESTONE, GRAYISH BROWN TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, CORAL, FOSSIL MOLDS, BRYOZOA,
- 50.0- 60.0 AS ABOVE,
- 60.0- 70.0 LIMESTONE, VERY LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, CORAL, DOLITES, FOSSIL MOLDS, BRYOZOA,
- 70.0- 80.0 AS ABOVE,
- 80.0- 90.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 90.0- 100.0 AS ABOVE,
- 100.0- 110.0 AS ABOVE,
- 110.0- 120.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,
- 120.0- 140.0 AS ABOVE,

LITHOLOGIC LOG

W- 2060 . COLLIER CO. T48S, R27E, SEC 07DB

- 140.0- 150.0 LIMESTONE, WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 0% QUARTZ SAND, MULLUSKS, FOSSIL MOLDS, BRYOZOA, CORAL,
- 150.0- 160.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND, MULLUSKS, FOSSIL MOLDS, BRYOZOA, CORAL,
- 160.0- 170.0 AS ABOVE,
- 170.0- 180.0 AS ABOVE,
- 180.0- 190.0 LIMESTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 40% QUARTZ SAND, MULLUSKS, CORAL, ECHINOID,
- 190.0- 200.0 AS ABOVE,
- 200.0- 210.0 SAND, YELLOWISH GRAY TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 25% DOLOMITE, 0% CLAY, MOLLUSKS,
- 210.0- 220.0 AS ABOVE,
- 220.0- 230.0 SAND, LIGHT GRAY, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 15% LIMESTONE, MOLLUSKS,
- 230.0- 240.0 AS ABOVE,
- 240.0- 250.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 35% QUARTZ SAND, MULLUSKS,
- MUCH LOOSE SAND IN SAMPLE

LITHOLOGIC LOG

4- 2060 . COLLIER CO. T48S, R27E, SEC 07DB

- 250.0- 260.0 SANDSTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% CALCILUTITE, 10% SPAR, MOLLUSKS,
- 260.0- 270.0 SHELL BED, VERY LIGHT ORANGE, 30% POROSITY, INTERGRANULAR, UNCONSOLIDATED, 40% QUARTZ SAND, MOLLUSKS,
- 270.0- 280.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 35% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS,
- 280.0- 290.0 AS ABOVE,
- 290.0- 300.0 SANDSTONE, GRAYISH BROWN, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% DOLOMITE, 10% CALCILUTITE, MOLLUSKS,
- 300.0- 310.0 SANDSTONE, GRAYISH BROWN TO GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% DOLOMITE, 10% CALCILUTITE, MOLLUSKS,
- 310.0- 320.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 40% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS,
- 320.0- 330.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% DOLOMITE, 10% CALCILUTITE, 03% PHOSPHATIC SAND, MOLLUSKS,
- 330.0- 340.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 10% CALCILUTITE, 25% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS,
- 340.0- 350.0 AS ABOVE,
- 350.0- 360.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% DOLOMITE, 10% CALCILUTITE, 05% PHOSPHATIC SAND, 02% PHOSPHATIC GRAVEL, MOLLUSKS,

LITHOLOGIC LOG

W- 2060 . COLLIER CO. T48S, R27E, SEC 07DB

360.0- 370.0 DOLOMITE, VERY LIGHT ORANGE TO GRAYISH BROWN, 15% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

370.0- 380.0 AS ABOVE,

380.0- 390.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT			
			UNDIFF.		SYSTEM			
0			TAMIAMI FORMATION		SYSTEM	WATER		
-25		SAND SAND				TABLE		
-50		SAND SAND				AQUIFER		
-75		SAND SAND			AQUIFER	TAMIAMI CONF. BEDS		
-100		PHOSPHATE PHOSPHATE				SURFICIAL	LOWER TAMIAMI AQUIFER	
-125		SAND SAND						
-150								
-175					HAWTHORN GROUP	UPPER CLASTIC	SYSTEM	UPPER HAWTHORN CONFINING ZONE
-200		DOLOMITE DOLOMITE						SANDSTONE AQUIFER
-225		CALCITE CALCITE					AQUIFER	MID- HAWTHORN CONFINING ZONE
-250		CALCITE CALCITE						
-275		CALCITE CALCITE CALCITE CALCITE						
-300		CALCITE CALCITE CALCITE CALCITE						
-325		CALCITE CALCITE						
-350		PHOSPHATE PHOSPHATE PHOSPHATE	INTERMEDIATE	MID- HAWTHORN AQUIFER				
-375				LOWER CARBONATE				

WC2060

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

4- 2061

COLLIER CO. T48S R29E SEC 23AA 26 17 40 N 81 23 54 W
 TOTAL DEPTH- 498 FT. ELEV.- 18 FT. 50 SAMPLES- 0- 498 FT.
 COMPLETED- 80.11.20 DEPTH WORKED 498 FT.

WELL NAME-

USGS C684, MIXON (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (6-27-84), QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0 170.0 SURFICIAL AQUIFER SYSTEM
 0.0 30.0 WATER TABLE AQUIFER
 30.0 50.0 UPPER TAMiami CONFINING ZONE
 50.0 170.0 LOWER TAMiami AQUIFER
 170.0 240.0 UPPER HAWTHORN CONFINING ZONE
 240.0 320.0 SANDSTONE AQUIFER
 320.0 400.0 MID-HAWTHORN CONFINING ZONE
 400.0 498.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 10.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 10.0- 60.0 TAMiami FORMATION
 60.0- 170.0 MIOCENE COARSE CLASTICS
 170.0- 498.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

4- 2061 . COLLIER CO. T48S, R29E, SEC 23AA

.0- 10.0 SAND, VERY LIGHT ORANGE TO WHITE, 32% POROSITY,
 INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO
 COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
 10.0- 15.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY,
 INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN
 TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 10% ALLOCHEMICAL
 CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE
 MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS,
 FOSSIL MOLDS,
 15.0- 20.0 AS ABOVE,
 20.0- 30.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR,
 MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC,
 CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN
 SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE,
 GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT,
 02% QUARTZ SAND, MOLLUSKS, ECHINUID, PLANT REMAINS, FOSSIL
 MOLDS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT

LITHOLOGIC LOG

W- 2061 . COLLIER CO. T48S, R29E, SEC 23AA

- 30.0- 40.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, MOLLUSKS, ECHINOID, BRYOZOA, FOSSIL MOLDS,
- 40.0- 50.0 AS ABOVE,
- 50.0- 60.0 LIMESTONE, VERY LIGHT ORANGE TO LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 60.0- 70.0 SAND, WHITE TO LIGHT GRAY, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 20% LIMESTONE, MOLLUSKS,
- 70.0- 100.0 AS ABOVE,
- 100.0- 120.0 SAND, LIGHT GRAY, 35% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% CALCILUTITE, FROSTED,
- 120.0- 140.0 AS ABOVE,
- 140.0- 160.0 SAND, LIGHT GRAY, 35% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% CALCILUTITE, FROSTED,
- 160.0- 170.0 SAND, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, 02% PHOSPHATIC SAND, 02% CALCILUTITE, 05% CLAY, 25% DOLOMITE, FROSTED,
- 170.0- 180.0 AS ABOVE,
- 180.0- 190.0 AS ABOVE,
- 190.0- 200.0 SAND, LIGHT GRAY, 35% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: COARSE, RANGE: VERY FINE TO GRANULE, ROUNDED, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% CALCILUTITE, 02% PHOSPHATIC SAND, FROSTED,

LITHOLOGIC LOG

W- 2061 . COLLIER CO. T48S, R29E, SEC 23AA

- 200.0- 220.0 SANDSTONE, VERY LIGHT ORANGE TO LIGHT GRAY, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 25% CALCILUTITE,
- 220.0- 230.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, 40% QUARTZ SAND,
- 230.0- 240.0 AS ABOVE,
- 240.0- 250.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND, MOLLUSKS,
- 250.0- 260.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, ECHINOID,
- 260.0- 270.0 AS ABOVE,
- 270.0- 280.0 AS ABOVE,
- 280.0- 300.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, MOLLUSKS,
- COARSE QUARTZ IN SAMPLE (40%)
- 300.0- 320.0 AS ABOVE,
- 320.0- 330.0 DOLO-SILT, VERY LIGHT ORANGE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 25% QUARTZ SAND, 10% SILT, 02% PHOSPHATIC SAND, MOLLUSKS,
- 330.0- 340.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 40% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 340.0- 360.0 AS ABOVE,

LITHOLOGIC LOG

W- 2061 • COLLIER CO. T48S, R29E, SEC 23AA

- 360.0- 380.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 10% CALCILUTITE, 10% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS,
- 380.0- 390.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 10% CALCILUTITE, 15% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS,
- 390.0- 400.0 AS ABOVE,
- 400.0- 420.0 LIMESTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% DOLOMITE, 05% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 420.0- 440.0 AS ABOVE,
- 440.0- 460.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, MODERATE INDURATION, CALCILUTITE MATRIX, 04% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS,
- 460.0- 480.0 AS ABOVE,
- 480.0- 490.0 DOLOMITE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 08% PHOSPHATIC SAND, 04% QUARTZ SAND, MOLLUSKS,
- 490.0- 498.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
0		SAND	UNDIFF.	SYSTEM	WATER TABLE AQUIFER	
-25			TAMIAMI FORMATION		TAMIAMI CONF. BEDS	
-50			GROUP	SURFICIAL	LOWER TAMIAMI AQUIFER	
-75						MIOCENE COARSE CLASTICS
-100						
-125						
-150		DOLomite DOLomite	HAWTHORN	AQUIFER	UPPER HAWTHORN CONFINING ZONE	
-175					UPPER	SANDSTONE
-225					SAND SAND SAND SAND	
-250					CLASTIC	AQUIFER
-275			SAND SAND SAND SAND			
-300		SILT SAND SILT SAND CALCITE CALCITE	LOWER	INTERMEDIATE	MID-HAWTHORN AQUIFER	
-325						SAND SAND SAND SAND PHOSPHATE PHOSPHATE
-350			CARBONATE			
-375						PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE
-400						
-425						PHOSPHATE PHOSPHATE PHOSPHATE
-450						
-475						PHOSPHATE PHOSPHATE

WC2061

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W- 2062

COLLIER CO. T48S R28E SEC 17CC 26 17 36 N 61 32 45 W
 TOTAL DEPTH- 460 FT. ELEV.- 16 FT. 46 SAMPLES- 0- 460 FT.
 COMPLETED- 80.11.20 DEPTH WORKED 460 FT.

WELL NAME-

USGS C683, MIXSON (DRILLER)

REMARKS-

DESCRIBED BY MIKE KNAPP (6-27-84), QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0 150.0 SURFICIAL AQUIFER SYSTEM
 0.0 55.0 WATER TABLE AQUIFER
 55.0 65.0 UPPER TAMiami CONFINING ZONE
 65.0 150.0 LOWER TAMiami AQUIFER
 150.0 360.0 MID-HAWTHORN CONFINING ZONE
 320.0 460.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 17.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 17.0- 70.0 TAMiami FORMATION
 70.0- 150.0 MIOCENE COARSE CLASTICS
 150.0- 460.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W- 2062 . COLLIER CO. T48S, R28E, SEC 17CC

.0- 10.0 SAND, LIGHT BROWN, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
 10.0- 17.0 AS ABOVE,
 17.0- 20.0 LIMESTONE, GRAYISH BROWN, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, MULLUSKS, FOSSIL MOLDS,
 20.0- 55.0 AS ABOVE,
 55.0- 65.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 05% QUARTZ SAND, MULLUSKS,
 65.0- 70.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% QUARTZ SAND, MULLUSKS, FOSSIL MOLDS, CORAL,

THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

LITHOLOGIC LOG

W-2062 . COLLIER CO. T43S, R28E, SEC 1700

- 70.0- 80.0 SANDSTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 20% CALCILUTITE, 25% DOLomite, MOLLUSKS,
- 80.0- 90.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLLIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
- 90.0- 100.0 SANDSTONE, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 25% CALCILUTITE, 10% DOLomite, MOLLUSKS,
- 100.0- 120.0 AS ABOVE,
- 120.0- 135.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 20% DOLomite, 10% CALCILUTITE, 05% PHOSPHATIC SAND, MOLLUSKS,
- 135.0- 140.0 LIMESTONE, GRAYISH BROWN, 20% POROSITY, INTERGRANULAR, MOLLIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, MOLLUSKS, PLANT REMAINS, FOSSIL MOLDS,
- 140.0- 150.0 AS ABOVE,
- 150.0- 160.0 DOLU-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 05% QUARTZ SAND,
- 160.0- 177.0 AS ABOVE,
- 177.0- 187.0 SAND, WHITE TO VERY LIGHT ORANGE, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 03% CALCILUTITE, MOLLUSKS,
- 187.0- 200.0 DOLU-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 10% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,

LITHOLOGIC LOG

W- 2062 . COLLIER CO. T48S, R28E, SEC 17CC

- 200.0- 220.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 10% CALCILUTITE, 20% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,
- 220.0- 240.0 AS ABOVE,
- 240.0- 250.0 DOLO-SILT, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% PHOSPHATIC SAND, 02% PHOSPHATIC GRAVEL, 04% QUARTZ SAND, 10% CALCILUTITE, MOLLUSKS,
- 250.0- 260.0 AS ABOVE,
- 260.0- 270.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 04% PHOSPHATIC SAND, 10% QUARTZ SAND, 10% CALCILUTITE, MOLLUSKS,
- 270.0- 280.0 AS ABOVE,
- 280.0- 300.0 AS ABOVE,
- 300.0- 320.0 DOLO-SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 05% QUARTZ SAND, MOLLUSKS,
- 320.0- 340.0 LIMESTONE, YELLOWISH GRAY TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, MOLLUSKS, CORAL, FOSSIL MOLDS,
- 340.0- 360.0 AS ABOVE,
- 360.0- 380.0 DOLOMITE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EHDREDAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% CALCILUTITE, MOLLUSKS, FOSSIL MOLLUS,
- 380.0- 385.0 DOLOMITE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, 50-90% ALTERED, EHDREDAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% CALCILUTITE, 03% PHOSPHATIC SAND, MOLLUSKS,
- 385.0- 400.0 AS ABOVE,

LITHOLOGIC LOG

W- 2062 . COLLIER CO. T48S, R28E, SEC 1700

400.0- 420.0 DOLomite, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, 50-90% ALTERED, Euhedral, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 20% CALCILUTITE, 05% PHOSPHATIC SAND, 15% QUARTZ SAND, MOLLUSKS,

420.0- 440.0 AS ABOVE,

440.0- 460.0 LIMESTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 30% DOLomite, 10% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
0			UNDIFF.	SYSTEM	WATER TABLE AQUIFER
-25			TAMIAMI FORMATION		
-50			TAM. CONF. BEDS		
-75		SAND SAND	GROUP	AQUIFER	LOWER TAMIAMI AQUIFER
-100		CALCITE CALCITE			
-125		DOLMITE DOLMITE			
-150		PHOSPHATE PHOSPHATE PHOSPHATE	HAWTHORN	SURFICIAL	
-175		SAND SAND			
-200		MIOCENE COARSE CLASTICS			
-225		SAND SAND SAND PHOSPHATE PHOSPHATE PHOSPHATE	GROUP	SYSTEM	HAWTHORN CONFINING BEDS
-250		PHOSPHATE PHOSPHATE			
-275		UPPER CLASTIC			
-300		SAND SAND	HAWTHORN	AQUIFER	
-325		SAND SAND SAND			
-350		LOWER CARBONATE			
-375		PHOSPHATE PHOSPHATE PHOSPHATE	HAWTHORN	INTERMEDIATE	MID. HAWTHORN AQUIFER
-400		PHOSPHATE PHOSPHATE PHOSPHATE			
-425		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE			
-450					

WC2062

W- 2063

COLLIER CO. T50S R25E SEC 12 26 08 16 N 81 45 23 W
 TOTAL DEPTH- 60 FT. ELEV.- 7 FT. 12 SAMPLES- 0- 60 FT.
 COMPLETED- 79.02.27 DEPTH WORKED 60 FT.

WELL NAME-

USGS S90, NAPLES, MARVIN MILLER (DRILLEP)

REMARKS-

DESCRIBED BY MIKE KNAPP (06-26-84)

HYDROGEOLOGIC UNITS

0.0 60.0 SURFICIAL AQUIFER SYSTEM (PARTIAL)
 0.0 17.0 WATER TABLE AQUIFER
 17.0 30.0 UPPER TAMiami CONFINING ZONE
 30.0 60.0 LOWER TAMiami AQUIFER (PART)

STRATIGRAPHIC FORMATIONS -

.0- 5.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 5.0- 60.0 TAMiami FORMATION

LITHOLOGIC LOG

W- 2063 . COLLIER CO. T50S, R25E, SEC 12

0.0- 5.0 SAND, DARK YELLOWISH BROWN, 40% POROSITY, INTERGRANULAR,
 GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR,
 MEDIUM SPHERICITY, UNCONSOLIDATED,

5.0- 7.0 LIMESTONE, GRAYISH ORANGE, 12% POROSITY, INTERGRANULAR,
 GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15%
 ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE,
 RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION,
 CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 25% QUARTZ SAND,
 MOLLUSKS, ECHINOID,

7.0- 10.0 LIMESTONE, GRAYISH BROWN, 20% POROSITY, INTERGRANULAR,
 MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC,
 CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN
 SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE,
 GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT,
 15% QUARTZ SAND, MOLLUSKS, CORAL, ECHINOID, FOSSIL MOLDS,

10.0- 15.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH BROWN, 20% POROSITY,
 INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN
 TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL
 CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE
 MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS,
 CORAL, ECHINOID, FOSSIL MOLDS,

15.0- 17.0 AS ABOVE,

LITHOLOGIC LOG

W- 2063 . COLLIER CO. T50S, R25E, SEC 12

- 17.0- 25.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND, MOLLUSKS,
- 25.0- 30.0 AS ABOVE,
- 30.0- 35.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 15% QUARTZ SAND, MOLLUSKS,
- 35.0- 38.0 AS ABOVE,
- 38.0- 40.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, CORAL, ECHINOID, FOSSIL MOLDS,
- 40.0- 42.0 AS ABOVE,
- 42.0- 44.0 LIMESTONE, MODERATE LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, CORAL,
- 44.0- 46.0 LIMESTONE, LIGHT GRAY, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, CORAL,
- 46.0- 48.0 AS ABOVE,
- 48.0- 50.0 AS ABOVE,
- 50.0- 52.0 AS ABOVE,
- 52.0- 60.0 LIMESTONE, VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS, CORAL, ECHINOID,

08.10.03.LITHD.
08.10.03.USER,KNAPP,,
08.10.03.ABSC, B.
08.10.03.CHARGE,306,8760.
08.10.03.ROUTE,OUTPUT,DEF,UC=PR,FC=SM.
08.10.04. ROUTE COMPLETE.
08.10.04.GET,CLITHD2,WC2063.
08.10.04.CLITHD2,WC2063.
08.10.06. CM LWA+1 = 263708, LOADER USED 447008
08.10.07. STOP
08.10.07. 37600 MAXIMUM EXECUTION FL.
08.10.07. 0.916 CP SECCNDS EXECUTION TIME.
08.10.07.EXIT.
08.10.08.UEAD, 0.002KLNS.
08.10.08.UEPF, 0.015KUNS.
08.10.08.UEMS, 2.609KUNS.
08.10.08.UECP, 1.930SECS.
08.10.08.AESR, 4.571UNITS.
08.10.08.\$OUT(* /DP=E)
08.10.08. NO FILES PROCESSED.
08.10.08.\$DAYFILE(OUTPUT, JT=D)
08.22.58.UCLP, AA, 013, 0.192KLNS.

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
5			UNDIFF.	SYSTEM	WATER
0			TAMIAMI		TABLE
-5		SAND SAND SAND SAND SAND SAND SAND			AQUIFER
-10			TAMIAMI	CONFINING BEDS	TAMIAMI
-15		SAND SAND SAND SAND SAND SAND SAND			
-20					
-25		SAND SAND SAND SAND SAND			
-30			FORMATION	AQUIFER	LOWER
-35		SAND SAND			
-40		PHOSPHATE PHOSPHATE SAND SAND	SURFICIAL	AQUIFER	TAMIAMI
-45					
-50		SAND SAND SAND SAND SAND SAND SAND			
-55					

WC2063

W-HE008

HENDRY CO. 1445 R29E SEC 16BC 26 38 45 N 61 26 12 W
 TOTAL DEPTH- 380 FT. ELEV.- 25 FT. 36 SAMPLES- 0- 380 FT.
 COMPLETED- 04.01.25 DEPTH WORKED 380 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GEOLOGIST
 CALIPHER
 ELECTRIC
 GAMMA
 LATER LOG

WELL NAME-

RTA-6 DRILLED BY ALVIN WELSTER (SFWMD); MUD ROTARY; SEARS RD & SP29

REMARKS-

DESCRIBED BY SCOTT BURNS (6-15-84), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0 40.0 WATER TABLE AQUIFER
 40.0 140.0 UPPER HAWTHORN CONFINING ZONE
 140.0 180.0 SANDSTONE AQUIFER
 180.0 370.0 MID HAWTHORN CONFINING ZONE
 370.0 380.0 MID HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

.0- 20.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 20.0- 40.0 TAMPA FORMATION
 40.0- 380.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W-HE008 HENDRY CO. 1445 R29E SEC 16BC

0.0- 10.0 SANDSTONE, GRAYISH BROWN, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, LOW SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, CLAY MATRIX, 20% CALCILUTE, 15% CLAY, IRON STAIN, NO FOSSILS
 10.0- 20.0 SANDSTONE, VERY LIGHT GRAY TO YELLOWISH GRAY, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, LOW SPHERICITY, MODERATE INDURATION, CALCILUTE MATRIX, SPARKY CALCITE CEMENT, 40% CALCILUTE, 10% SPARK, NO FOSSILS
 20.0- 30.0 CALCILUTE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTE, INTRACLASTIC, 25% ALLOCHEMICAL CONSTITUENTS, RANGE: CRYPTOCRYSTALLINE TO CRYPTOCRYSTALLINE, POOR INDURATION, 40% QUARTZ SAND, 14% PHOSPHATIC SAND, NO FOSSILS

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

- 30.0- 40.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLLIC, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO FINE, LOW SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, CLAY MATRIX, 1% CALCILUTE, 10% CLAY, 0.3% PHOSPHATIC SAND, IRON STAIN, MOLLUSKS,
OSTREA FRAGMENTS
- 40.0- 50.0 CLAY, YELLOWISH GRAY, 10% POROSITY, LOW PERMEABILITY, POOR INDURATION, 0.5% QUARTZ SAND, 0.2% PHOSPHATIC SAND, IRON STAIN, PLASTIC, NO FOSSIL,
- 50.0- 60.0 AS ABOVE,
- 60.0- 70.0 SILT, LIGHT OLIVE GRAY, 10% POROSITY, LOW PERMEABILITY, BENTHONIC FORAMINIFERA,
- 70.0- 80.0 CLAY, OLIVE GRAY, 10% POROSITY, LOW PERMEABILITY, POOR INDURATION, PLASTIC, BENTHONIC FORAMINIFERA, DIATOMS,
- 80.0- 90.0 AS ABOVE,
- 90.0- 100.0 CLAY, LIGHT OLIVE, 10% POROSITY, LOW PERMEABILITY, POOR INDURATION, 10% QUARTZ SAND, 0.4% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 100.0- 110.0 AS ABOVE,
- 110.0- 120.0 SAND, MODERATE GRAYISH GREEN, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: MEDIUM TO GRANULE, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 40% SILT, 0.2% PHOSPHATIC GRAVEL, FOSSIL FRAGMENTS,
- 120.0- 130.0 SILT, GRAYISH OLIVE TO WHITE, 12% POROSITY, LOW PERMEABILITY, POOR INDURATION, 35% QUARTZ SAND, 20% DOLomite,
0.2% QUARTZ GRAVEL
- 130.0- 140.0 AS ABOVE,
- 140.0- 150.0 LIMESTONE, YELLOWISH GRAY TO VERY LIGHT GRAY, 15% POROSITY, INTERGRANULAR, VUGULAR, GRAIN TYPE: CALCILUTE, INTRACLASIS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO GRANULE, MODERATE INDURATION, CALCILUTE MATRIX, DOLomite CEMENT, 20% QUARTZ SAND, 20% CLAY, 10% DOLomite,
- 150.0- 160.0 AS ABOVE WITH LESS SILT
- 160.0- 170.0 LIMESTONE, WHITE, 17% POROSITY, VUGULAR, INTERGRANULAR, GRAIN TYPE: CALCILUTE, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, 0.5% QUARTZ SAND, 10% DOLomite,

LITHOLOGIC LOG

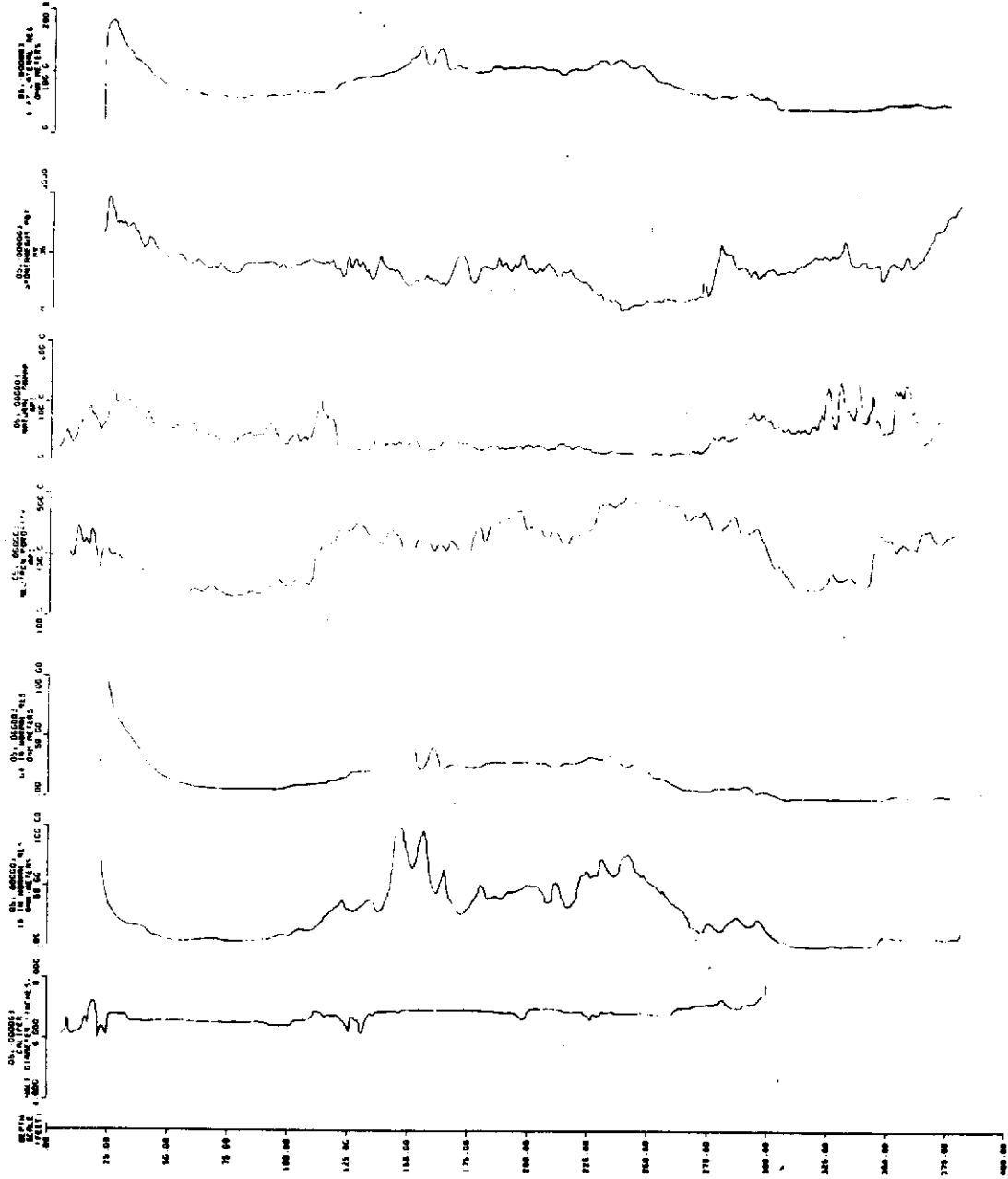
W-HECGB . HENDRY CL. 1445, R29E, SEC 1000

- 170.0- 180.0 LIMESTONE, WHITE, 12% POROSITY, VUGULAR, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO GRANULE, POOR INDURATION, 15% QUARTZ SAND, 20% DOLOMITE, CHALKY.
- 180.0- 190.0 CALCILUTITE, YELLOWISH GRAY TO WHITE, 10% POROSITY, PIN POINT VUGS, GRAIN TYPE: CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, 30% DOLOMITE, 30% QUARTZ SAND, CHALKY, NO FOSSIL,
- MED. GRAINED SUBANGULAR SAND
- 190.0- 200.0 AS ABOVE,
- 200.0- 220.0 NO SAMPLE,
- 220.0- 230.0 CALCILUTITE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: CRYPTOCRYSTALLINE TO MEDIUM, MODERATE INDURATION, 20% QUARTZ SAND, 02% PHOSPHATIC SAND, 15% DOLOMITE, CHALKY, NO FOSSIL,
- 2% QTZ GRANULES
- 230.0- 240.0 AS ABOVE,
- 240.0- 250.0 CALCILUTITE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: CRYPTOCRYSTALLINE TO GRANULE, POOR INDURATION, 40% QUARTZ SAND, 15% DOLOMITE, NO FOSSIL,
- 5% QTZ GRAVEL
- 250.0- 270.0 CALCILUTITE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, POOR INDURATION, 40% QUARTZ SAND, 20% DOLOMITE,
- 270.0- 290.0 SILT, YELLOWISH GRAY, 08% POROSITY, LOW PERMEABILITY, POOR INDURATION, 25% QUARTZ SAND, 50% CALCILUTITE, 25% CLAY, 01% PHOSPHATIC SAND, PLASTIC, NO FOSSIL,
- 290.0- 300.0 SILT, YELLOWISH GRAY, 08% POROSITY, LOW PERMEABILITY, POOR INDURATION, 15% QUARTZ SAND, 30% PHOSPHATIC SAND, 35% CLAY, 45% CALCILUTITE,
- 300.0- 310.0 SANDSTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, PIN POINT VUGS, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% DOLOMITE, 10% PHOSPHATIC SAND,
- 310.0- 330.0 CLAY, LIGHT OLIVE GRAY, 08% POROSITY, LOW PERMEABILITY, POOR INDURATION, 02% PHOSPHATIC SAND, POOR SAMPLE, PLASTIC,

LITHOLOGIC LOG

W-HE008 • HENRY CO. T44S, R29E, SEC 1000

- 330.0- 340.0 CLAY, GREENISH GRAY, POROSITY, LOW PERMEABILITY, POOR INDURATION, 03% PHOSPHATIC SAND, PLASTIC,
- 340.0- 360.0 CLAY, GREENISH GRAY, POROSITY, LOW PERMEABILITY, POOR INDURATION, 25% LIMESTONE, 03% PHOSPHATIC SAND, PLASTIC, FOSSIL FRAGMENTS,
- 360.0- 370.0 CLAY, GREENISH GRAY, POOR INDURATION, 30% CALCILUTITE, 04% PHOSPHATIC SAND,
- 370.0- 380.0 CALCILUTITE, WHITE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO GRANULE, POOR INDURATION, 25% DOLOMITE, 05% PHOSPHATIC SAND, FOSSIL FRAGMENTS,



GEOPHYSICAL LOGS, HENDRY COUNTY, HE008

SEOUTH FLORIDA WMO - LITHO LOG PRINTOUT

W-HE010

HENDRY CO. 1455 R28E SEC 0600 26 35 18 N 81 33 28 W
 TOTAL DEPTH- 260 FT. ELEV.- 26 FT. 24 SAMPLES- 0- 260 FT.
 COMPLETED- 05.82 DEPTH WORKED 260 FT.

WELL NAME-

H-M-120 DRILLED BY MISSIMER & ASSOC. MUD ROTARY; TURNER CORP NORTH SITE

REMARKS-

DESCRIBED BY SCOTT BURNS (6-18-64), SAMPLE QUALITY (FLOR)

HYDROGEOLOGIC UNITS

0.0 20.0 WATER TABLE AQUIFER
 20.0 159.0 UPPER HAWTHORN CONFINING ZONE
 159.0 189.0 SANDSTONE AQUIFER
 189.0 260.0 MID HAWTHORN CONFINING ZONE

STRATIGRAPHIC FORMATIONS -

0.0- 5.0 UNDIFFERENTIATED SAND AND CLAY
 5.0- 20.0 TAMPA MI FORMATION
 20.0- 260.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W-HE010 . HENDRY CO. 1455, R28E, SEC 0600

0.0- 5.0 SAND, LIGHT BROWN, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: FINE TO COARSE, ANGULAR, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, IRON CEMENT, 10% HEAVY MINERALS,
 5.0- 15.0 LIMESTONE, LIGHT BROWN TO VERY LIGHT ORANGE, 20% POROSITY, VUGULAR, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, SKELETAL CAST, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, 20% QUARTZ SAND, 40% DOLOMITE, IRON STAIN,
 15.0- 20.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, 30% DOLOMITE, 10% QUARTZ SAND, CHALKY,
 20.0- 25.0 NO SAMPLE,
 25.0- 30.0 SILT, GRAYISH OLIVE, 0% POROSITY, LOW PERMEABILITY, POOR INDURATION, 40% DOLOMITE, 20% CLAY, 30% CALCILUTITE, 10% QUARTZ SAND, CALCAREOUS, PLASTIC, POOR SAMPLE, BENTHONIC FORAMINIFERA, DIATOMS,
 30.0- 40.0 SILT, GRAYISH OLIVE, 0% POROSITY, LOW PERMEABILITY, POOR INDURATION, 30% DOLOMITE, 30% CALCILUTITE, 20% CLAY, 15% QUARTZ SAND, CALCAREOUS, PLASTIC, POOR SAMPLE, BENTHONIC FORAMINIFERA, DIATOMS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

LITHOLOGIC LOG

W-HEU10 . HENRY CO. T45S, R28E, SEC 0600

- 40.0- 60.0 CLAY, GRAYISH OLIVE, 08% POROSITY, LOW PERMEABILITY, POOR INDURATION, 20% QUARTZ SAND, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 60.0- 72.0 CLAY, GRAYISH OLIVE, 08% POROSITY, LOW PERMEABILITY, POOR INDURATION, 35% QUARTZ SAND, 03% PHOSPHATIC SAND,
15% RECRYSTALIZED SHELL FRAGMENT
- 72.0- 85.0 CLAY, GRAYISH OLIVE, 08% POROSITY, LOW PERMEABILITY, 20% QUARTZ SAND, 20% DOLomite, BENTHONIC FORAMINIFERA,
DOLomite, GREY, WELL LITIFIED, HIGHLY RECRYSTALIZED; SAND VERY FINE TO FINE, SUBANGULAR
- 85.0- 90.0 AS ABOVE WITH 10% FROSTED QTZ GRANULES
- 90.0- 100.0 SILT, MODERATE GRAYISH GREEN TO MODERATE LIGHT GRAY, 12% POROSITY, INTERGRANULAR, POOR INDURATION, 45% QUARTZ SAND, 30% DOLomite, 25% CALCILUTITE, CALCAREOUS, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 100.0- 110.0 SAND, MODERATE GRAYISH GREEN, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLomite CEMENT, 30% DOLomite, FROSTED,
MATRIX (DOLomite 30%) IS DOLOSILT
- 110.0- 125.0 SILT, GRAYISH OLIVE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 20% DOLomite, 35% QUARTZ SAND, CALCAREOUS,
- 125.0- 135.0 SAND, GRAYISH OLIVE, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 35% SILT, FOSSIL FRAGMENTS,
5% WHITE ALLUSK FRAGMENTS
- 135.0- 145.0 AS ABOVE WITH INCREASE PERCENTAGE OF FROSTED QTZ GRANULES (2
- 145.0- 159.0 SAND, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO GRANULE, ANGULAR, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLomite CEMENT, 30% SILT, 10% DOLomite, FROSTED,
- 159.0- 170.0 DOLomite, VERY LIGHT ORANGE TO YELLOWISH GRAY, 14% POROSITY, MOLDIC, VUGULAR, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, SUBHEDRAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, 30% LIMESTONE, 10% QUARTZ SAND, FLATY, FOSSIL FRAGMENTS,

LITHOLOGIC LOG

*HEG10 . HENRY CO. T45S, R26E, SEC 16LC

- 170.0- 183.0 AS ABOVE,
- 183.0- 189.0 DOLomite, VERY LIGHT ORANGE TO MODERATE YELLOWISH BROWN, 15% POROSITY, PULVIC, VUGULAR, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, SUBHEDRAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: CRIPIDOCRYSTALLINE TO MICROCRYSTALLINE, GOOD INDURATION, 10% QUARTZ SAND, 30% LIMESTONE, FOSSIL FRAGMENTS,
- 189.0- 197.0 CLAY, LIGHT OLIVE GRAY, POROSITY, NONE OBSERVED, POOR INDURATION, 20% LIMESTONE, 10% QUARTZ SAND, 02% PHOSPHATIC SAND, CALCAREOUS, PLASTIC, POOR SAMPLE,
- 197.0- 205.0 LIMESTONE FRAGMENTS IN SAMPLE MAY BE CAVINGS FROM ABOVE
NO SAMPLE,
- 205.0- 217.0 CLAY, LIGHT OLIVE GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 30% LIMESTONE, 20% QUARTZ SAND, CALCAREOUS, PLASTIC, POOR SAMPLE, FOSSIL FRAGMENTS, PLANT REMAINS,
- 217.0- 228.0 CLAY, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 30% CALCILUTE, 20% QUARTZ SAND, 01% PHOSPHATIC SAND, CHALKY, PLASTIC, NO FOSSIL,
- 228.0- 242.0 AS ABOVE WITH 30% WELL INDURATED DOLomite, POSSIBLY A STRINGER OR CAVINGS. 35% SUBANGULAR SAND
- 242.0- 252.0 CLAY, GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 30% QUARTZ SAND, 30% CALCILUTE, 03% PHOSPHATIC SAND, CALCAREOUS, PLASTIC, NO FOSSIL,
- 252.0- 260.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT					
25		HEAVY MIN SAND SAND SAND	TAMIAMI FORMATION		SURFICIAL AQUIFER SYSTEM					
0			HAWTHORN GROUP	UPPER	SYSTEM	UPPER				
-25	CLASTIC	AQUIFER					HAWTHORN			
-50								CONFINING ZONE		
-75										
-100										
-125										
-150									SANDSTONE AQUIFER	
-175										INTERMEDIATE
-200										
-225										

WHE010

SCOTT FLORIDA WMO - LITHO LOG PRINTOUT

W-HE011

HENDRY CO. T45S R28E SEC 1000 26 34 30 N 81 30 30 W
 TOTAL DEPTH- 200 FT. ELEV.- 32 FT. 20 SAMPLES- 0- 200 FT.
 COMPLETED- 73. . DEPTH WORKED 200 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

ELECTRIC

WELL NAME-

HE-570 DRILLED BY USGS, MUD ROTARY; 4.5 MI WEST SR29, 1 MI NORTH CHURCH RD

REMARKS-

DESCRIBED BY SCOTT BURNS (6-26-64) SAMPLE QUALITY (GLCC)

HYDROGEOLOGIC UNITS

0.0 20.0 WATER TABLE AGLIFER
 20.0 175.0 UPPER HAWTHORN CONFINING ZONE
 175.0 200.0 SANDSTONE AGLIFER

STRATIGRAPHIC FORMATIONS -

.0- 13.0 UNDIFFERENTIATED SAND AND CLAY
 13.0- 20.0 TAMiami FORMATION
 20.0- 200.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W-HE011 . HENDRY CO. T45S, R28E, SEC 1000

0.0- 4.0 SAND, LIGHT GRAY, 25% POROSITY, INTERGRANULAR, GRAIN SIZE:
 FINE, RANGE: VERY FINE TO FINE, SUB-ANGULAR, MEDIUM
 SPHERICITY, UNCONSOLIDATED, 02% LIMONITE, PLANT REMAINS,
 4.0- 13.0 SAND, VERY LIGHT ORANGE, 25% POROSITY, INTERGRANULAR, GRAIN
 SIZE: FINE, RANGE: VERY FINE TO FINE, SUB-ANGULAR, MEDIUM
 SPHERICITY, UNCONSOLIDATED, NO FOSSIL,
 13.0- 15.0 SANDSTONE, MODERATE YELLOWISH BROWN, 15% POROSITY,
 INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: FINE TO MEDIUM,
 SUB-ANGULAR, MEDIUM SPHERICITY, FOUR INDURATION, CALCILUTE
 MATRIX, SPARKY CALCITE CEMENT, 15% CALCILUTE, 02% SPARK,
 02% LIMESTONE, FOSSIL FRAGMENTS,
 15.0- 20.0 LIMESTONE, WHITE, 13% POROSITY, FINE POINT VOGS, MUDIC,
 INTERGRANULAR, GRAIN TYPE: CALCILUTE, 02% ALLOCHEMICAL
 CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE:
 CRYPTOCRYSTALLINE TO MICROCRYSTALLINE, GOOD INDURATION, 02%
 DOLomite, 02% SPARK, 10% QUARTZ SAND, FOSSIL FRAGMENTS,
 FOSSIL MULLS.

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT

- 20.0- 30.0 SILT, YELLOWISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 20% QUARTZ SAND, 25% DOLOMITE, 03% PHOSPHATIC SAND, 30% CALCILUTITE, CALCAREOUS, PLASTIC, FOSSIL FRAGMENTS,
3% APATITE CRYSTALS
- 30.0- 40.0 AS ABOVE,
- 40.0- 50.0 SILT, VERY LIGHT GRAY, 00% POROSITY, INTERGRANULAR, PIN POINT VUGS, LOW PERMEABILITY, POOR INDURATION, 20% QUARTZ SAND, 30% DOLOMITE, 03% PHOSPHATIC SAND, CALCAREOUS, PLASTIC, FOSSIL FRAGMENTS,
- 50.0- 60.0 DOLOMITE, WHITE, 10% POROSITY, INTERGRANULAR, PIN POINT VUGS, 50-90% ALTERED, SUBHEDRAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, 30% CALCILUTITE, 20% QUARTZ SAND, FOSSIL FRAGMENTS,
- 60.0- 65.0 SILT, YELLOWISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 35% QUARTZ SAND, 20% CALCILUTITE, 03% PHOSPHATIC SAND, CALCAREOUS, PLASTIC, FOSSIL FRAGMENTS,
- 65.0- 80.0 SAND, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: MEDIUM TO VERY COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 15% CALCILUTITE, FOSSIL, NO FOSSIL,
- 80.0- 100.0 AS ABOVE,
AS ABOVE,
POORLY SORTED, VERY FINE TO VERY COARSE
- 100.0- 120.0 SANDSTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 25% CALCILUTITE, FOLDED, PLANT REMAINS,
- 120.0- 137.0 AS ABOVE,
1% ROUNDED LT. GRANULES
AS ABOVE,
- 137.0- 148.0 SANDSTONE, YELLOWISH GRAY TO WHITE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, LOW SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 30% CALCILUTITE, PLANT REMAINS,
- 148.0- 157.0 AS ABOVE,

LITHOLOGIC LOG

W-HE011 • HENDRY CO. T403, R28E, SEC 1000

- 157.0- 165.0 AS ABOVE,
- 165.0- 175.0 SILT, YELLOWISH GRAY, 08% POROSITY, INTERGRANULAR, FIN POINT VUGS, POOR INDURATION, CALCILUTE MATRIX, 35% QUARTZ SAND, 30% CALCILLITE, 30% DOLomite, NO FOSSIL,
- 175.0- 185.0 DOLomite, VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, FIN POINT VUGS, 90-100% ALTERED, EHEDRAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 185.0- 195.0 CLAY, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 40% DOLomite, 05% QUARTZ SAND, CHALKY, FOSSIL FRAGMENTS,
- 195.0- 200.0 DOLomite, VERY LIGHT ORANGE, 12% POROSITY, FIN POINT VUGS, MULDIC, INTERGRANULAR, EHEDRAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, FOSSIL FRAGMENTS, FOSSIL FLLOS,

7

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT
25		CALCITE SAND SAND SAND	UNDIFF.	SURFICIAL AQUIFER SYSTEM
0			TAMIAMI F.	
-25		SAND SAND SAND SAND	HAWTHORN	UPPER HAWTHORN
-50		CALCITE CALCITE CALCITE CALCITE		
-75				
-100			GROUP	CONFINING ZONE
-125		CALCITE CALCITE		
-150		CALCITE CALCITE SAND SAND SAND		
-175				SANDSTONE AQUIFER

WHE011

W-HE012

HENDRY CO. 45S 28E Sec 30
 TOTAL DEPTH- 240 FT. ELEV.- 27 FT. 26 38 40 N 81 20 45 W
 COMPLETED- . . . DEPTH MARKED 240 FT. 29 SAMPLES- 0- 240 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GEOLOGIST

WELL NAME-

DRILLED BY MISSIMER & ASSOC; MLD ROTARY; TURNER CORP. SOUTH

REMARKS-

DESCRIBED BY SCOTT BURNS (7-3-84) SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

- 0.0 100.0 SURFICIAL ALLIFER SYSTEM
- 0.0 40.0 WATER TABLE ALLIFER
- 40.0 60.0 CONFINING ZONE
- 60.0 100.0 INTERMEDIATE AQUIFER
- 100.0 150.0 UPPER HAWTHORN CONFINING ZONE
- 150.0 180.0 SANDSTONE AQUIFER
- 180.0 240.0 MID HAWTHORN CONFINING ZONE

STRATIGRAPHIC FORMATIONS -

- .0- 20.0 UNDIFFERENTIATED SAND AND CLAY
- 20.0- 85.0 TAMiami FORMATION
- 85.0- 240.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W-HE012 . HENDRY CO. T44S, R30E, SEC 20A8

- .0- 10.0 SAND, MODERATE BROWN, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 15% CALCILUTE, 02% LIMONITE, PLANT REMAINS,
- 10.0- 15.0 SANDSTONE, GRAYISH BROWN, 20% POROSITY, INTERGRANULAR, FIN POINT VUGS, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, 20% CALCILUTE, 10 FOSSIL,
- 15.0- 20.0 SANDSTONE, GRAYISH BROWN TO WHITE, 18% POROSITY, INTERGRANULAR, FIN POINT VUGS, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTE MATRIX, 25% CALCILUTE, 25% LIMESTONE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT

LITHOLOGIC LOG

W-HEC12 . HENDRY CO. 45S 28E Sec 30

- 20.0- 30.0 LIMESTONE, WHITE TO GRAYISH BROWN, 15% POROSITY, INTERGRANULAR, PIN POINT VUGS, GRAIN TYPE: CALCILUTITE, INTRACLASTIC, SKELETAL, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO GRANULE, MODERATE INDURATION, CALCILUTITE MATRIX, 35% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
POORLY SORTED SUBANGULAR SAND FINE TO COARSE GRAINED
- 30.0- 35.0 AS ABOVE,
- 35.0- 40.0 LIMESTONE, VERY LIGHT GRAY TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, PIN POINT VUGS, GRAIN TYPE: CALCILUTITE, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY COARSE, MODERATE INDURATION, 35% QUARTZ SAND, 20% SILT, FOSSIL FRAGMENTS,
OSTREA FRAGMENTS
- 40.0- 50.0 SILT, LIGHT OLIVE, 08% POROSITY, LOW PERMEABILITY, POOR INDURATION, 30% CALCILUTITE, 30% DOLOMITE, 10% CLAY, 05% QUARTZ SAND, CALCAREOUS, PLASTIC, OOLITES, DIATOMS,
- 50.0- 60.0 AS ABOVE WITH 3% SILT SIZE PHOSPHORITE
- 60.0- 70.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, PIN POINT VUGS, MOLDIC, GRAIN TYPE: CALCILUTITE, INTRACLASTIC, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: CRYPTOCRYSTALLINE TO MEDIUM, GOOD INDURATION, 20% DOLOMITE, 20% QUARTZ SAND, 01% PHOSPHATIC SAND, FOSSIL MOLDS,
- 70.0- 75.0 AS ABOVE WITH LARGE PELECYPOD FRAGMENTS AND MOLDS
HIGHLY RECRYSTALLIZED
- 75.0- 85.0 DOLOMITE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, 90-100% ALTERED, EHDHEDRAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, 35% QUARTZ SAND, 20% CALCILUTITE, 02% PHOSPHATIC GRAVEL, REEFAL, FOSSIL MOLDS, FOSSIL FRAGMENTS, VERTEBRATE,
HIGHLY RECRYSTALLIZED OSTREA FRAGMENTS; 5% Gtz. PEBBLES
- 85.0- 95.0 SAND, VERY LIGHT GRAY TO MODERATE GRAY, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: COARSE, RANGE: VERY FINE TO GRANULE, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 20% DOLOMITE, 01% PHOSPHATIC GRAVEL, FROSTED, REEFAL, FOSSIL FRAGMENTS, SHARK TEETH, CRUSTACEA,
SHELL FRAGMENTS ANAGONIDIC; BARNACLES, OSTREA, & PELECYPODS
- 95.0- 100.0 SAND, LIGHT GRAY TO WHITE, 17% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, REEFAL, FROSTED, FOSSIL FRAGMENTS, CRUSTACEA,

25% ARAGONITIC SHELL FRAGMENTS AND BARNACLES

100.0- 110.0 SAND, MODERATE GRAYISH GREEN, 38% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, SUB-ANGULAR, HIGH SPHERICITY, POOR INDURATION, DOLUMITE CEMENT, CLAY MATRIX, 10% CLAY, 10% DOLUMITE, FOSSIL FRAGMENTS,

15% SHELL FRAGMENTS; CLAY AND DOLUSILT MATRIX

110.0- 120.0 SAND, OLIVE GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO FINE, SUB-ANGULAR, HIGH SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLUMITE CEMENT, 10% CLAY, 10% DOLUMITE, FOSSIL FRAGMENTS,

120.0- 130.0 AS ABOVE,

130.0- 140.0 SAND, GRAYISH OLIVE GREEN, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLUMITE CEMENT, 10% CLAY, 10% DOLUMITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,

2% GIZ GRANULES

140.0- 150.0 AS ABOVE,

150.0- 160.0 DOLUMITE, YELLOWISH GRAY, 15% POROSITY, MOLDIC, PIN POINT VUGS, POSSIBLY HIGH PERMEABILITY, 90-100% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, 30% CALCILUTE, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL MOLDS,

160.0- 165.0 DOLUMITE, YELLOWISH GRAY TO LIGHT GRAY, 15% POROSITY, MOLDIC, PIN POINT VUGS, POSSIBLY HIGH PERMEABILITY, 90-100% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, 30% CALCILUTE, 30% QUARTZ SAND, 03% PHOSPHATIC SAND, FOSSIL MOLDS, FOSSIL FRAGMENTS,

165.0- 175.0 DOLUMITE, YELLOWISH GRAY, 20% POROSITY, MOLDIC, PIN POINT VUGS, POSSIBLY HIGH PERMEABILITY, 90-100% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, 20% CALCILUTE, 30% QUARTZ SAND, 01% PHOSPHATIC SAND, FOSSIL FRAGMENTS, FOSSIL MOLDS, WORM TRACES,

175.0- 180.0 AS ABOVE,

180.0- 190.0 SILT, GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 40% CALCILUTE, 30% DOLUMITE, 10% QUARTZ SAND, CALCAREOUS, PLASTIC, FOSSIL FRAGMENTS,

190.0- 200.0 AS ABOVE,

LITHOLOGIC LOG

W-HEC12 . HENRY CO. 45S 28E Sec 30

- 205.0- 211.0 CALCILUTITE, VERY LIGHT GRAY, 06% POROSITY, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, 25% DOLomite, 45% CALCILUTITE, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, PLASTIC,
- 211.0- 215.0 SILT, GREENISH GRAY, 06% POROSITY, LOW PERMEABILITY, POOR INDURATION, 25% DOLomite, 45% CALCILUTITE, 02% PHOSPHATIC SAND, 10% QUARTZ SAND, CALCAREOUS, PLASTIC, FOSSIL FRAGMENTS,
MOLLUSK FRAGMENTS HIGHLY REPLACED WITH DOLomite
- 215.0- 225.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 75% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: CRYPTOCRYSTALLINE TO MEDIUM, POOR INDURATION, 20% DOLomite, 30% CALCILUTITE, 20% QUARTZ SAND, CALCAREOUS, FROSTED, FOSSIL FRAGMENTS,
- 225.0- 235.0 CALCILUTITE, WHITE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: CRYPTOCRYSTALLINE TO FINE, POOR INDURATION, 20% DOLomite, 20% QUARTZ SAND, FOSSIL FRAGMENTS,
- 235.0- 240.0 SILT, GREENISH GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 10% DOLomite, 40% CALCILUTITE, 15% QUARTZ SAND, 03% PHOSPHATIC SAND, CALCAREOUS, NO FOSSIL,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT		
25		CALCITE CALCITE	UNDIFF.	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER	
0			SILT SAND SAND SAND SAND SAND CALCITE CALCITE CALCITE		TAMIAMI	TAMIAMI CONFINING BEDS
-25					FORMATION	LOWER TAMIAMI AQUIFER
-50						MIocene CRS. CL.
-75		DOLOMITE DOLOMITE DOLOMITE DOLOMITE	GROUP	SYSTEM	UPPER HAWTHORN CONFINING ZONE	
-100					DOLOMITE DOLOMITE	
-125		SAND SAND SAND	HAWTHORN	AQUIFER	SANDSTONE AQUIFER	
-150					SAND SAND	
-175		SAND SAND SAND SAND SAND SAND	CLASTIC	INTERMEDIATE	MID- HAWTHORN CONFINING ZONE	
-200						
-225						

WHE012

SOUTH FLORIDA WML - LITHO LOG PRINTOUT

W-HE013

HENDRY CO. T45S R29E SEC 20BB 26 33 32 N 81 26 10 W
 TOTAL DEPTH- 380 FT. ELEV.- 34 FT. 37 SAMPLES- 0- 380 FT.
 COMPLETED- 01.16.84 DEPTH WORKED 380 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

ELECTRIC
 GAMMA
 LATERLOG
 NEUTRON

WELL NAME-

RTA-5 DRILLED BY ALVIN WLESTER (SPWMD) MOD ROTARY; SR29 & CHURCH RD

REMARKS-

DESCRIBED BY SCOTT BURNS (6-15-84), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0	25.0	WATER TABLE AQUIFER
25.0	40.0	TAMIAMI CONFINING BEDS
40.0	90.0	LOWER TAMIAMI AQUIFER
20.0	155.0	UPPER HAWTHORN CONFINING ZONE
155.0	190.0	SANDSTONE AQUIFER
190.0	335.0	MID HAWTHORN CONFINING ZONE
335.0	380.0	MID HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

0.0-	10.0	UNDIFFERENTIATED SAND, CLAY AND SHELLS
10.0-	25.0	TAMIAMI FORMATION
25.0-	90.0	MIOCENE COARSE CLASTICS
90.0-	380.0	HAWTHORN FORMATION *

LITHOLOGIC LOG

W-HE013 HENDRY CO. T45S, R29E, SEC 20BB

0.0-	10.0	SANDSTONE, GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, PIN POINT VUGS, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 25% CALCILUTITE, 10% SPARK, 0% PHOSPHATIC SAND, NO FOSSIL.
10.0-	20.0	LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, PIN POINT VUGS, GRAIN TYPE: CALCILUTITE, INTRACLASTS, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, 40% QUARTZ SAND, 10% SPARK, 12% PHOSPHATIC SAND, NO FOSSIL.
20.0-	30.0	SILT, VERY LIGHT GRAY, POROSITY, NONE OBSERVED, STREAKED, 0% QUARTZ SAND, 15% CLAY, 20% DOLLOMITTE, IRON STAIN, CALCAREOUS, PLASTIC.

ELECTRIC LOGS INDICATE CONTACT OF SILT AND LIMESTONE AT 25.0'

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 30.0- 40.0 AS ABOVE,
- 40.0- 50.0 SAND, YELLOWISH GRAY TO LIGHT GRAY, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: VERY COARSE, RANGE: FINE TO GRANULE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 25% CALCILUTITE, 15% DOLomite, FROSTED, FOSSIL FRAGMENTS, PLANT REMAINS,
- 50.0- 60.0 NO SAMPLE,
- 60.0- 70.0 SAND, YELLOWISH GRAY TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO GRANULE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED, 10% CALCILUTITE, 0% PHOSPHATIC GRAVEL, FROSTED,
- 70.0- 80.0 SAND, GRAYISH OLIVE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO GRANULE, ANGULAR, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 15% CLAY, NO FOSSIL,
- 80.0- 90.0 AS ABOVE W/ LARGE MOLLUSK FRAG. 15% MICRITE CEMENT, 10% QUARTZ GRANULES
- 90.0- 100.0 SAND, LIGHT OLIVE GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: VERY COARSE, RANGE: MEDIUM TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 35% DOLomite, 0% PHOSPHATIC GRAVEL, FROSTED, FOSSIL FRAGMENTS, 35% MOLLUSK FRAG REPLACED W/ DOLomite
- 100.0- 110.0 AS ABOVE,
- 110.0- 120.0 AS ABOVE WITH 30% MICRITE CEMENT
- 120.0- 130.0 SAND, VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 20% CALCILUTITE, FROSTED, FOSSIL FRAGMENTS,
- 130.0- 140.0 SANDSTONE, WHITE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 25% CALCILUTITE, 15% DOLomite,
- 140.0- 150.0 SANDSTONE, LIGHT GREENISH YELLOW, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 20% CALCILUTITE, 10% CLAY,

LITHOLOGIC LOG

W-HE013 • HENRY CO. 1955, R29E, SEC 20B8

- 150.0- 160.0 LIMESTONE, WHITE, 12% POROSITY, PIN POINT VUGS, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, 20% ALLUCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: CRYPTOCRYSTALLINE TO FINE, MODERATE INDURATION, 15% QUARTZ SAND, 20% DOLOMITE,
- ELECTRIC LOGS INDICATE LMS/SS CONTACT OCCURS AT 155FT
- 160.0- 170.0 AS ABOVE,
- 170.0- 180.0 DOLOMITE, MODERATE ORANGE PINK, 12% POROSITY, PIN POINT VUGS, INTERGRANULAR, SUBHEDRAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE, GOOD INDURATION, 15% CALCILUTITE, 10% SPAR,
- 180.0- 190.0 AS ABOVE,
- 190.0- 200.0 SILT, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, MODERATE INDURATION, 40% CALCILUTITE, 30% DOLOMITE, 15% LIMESTONE, 05% QUARTZ SAND, CALCAREOUS, CHALKY, NO FOSSIL,
- 200.0- 210.0 AS ABOVE,
- 210.0- 220.0 SILT, VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 30% QUARTZ SAND, 35% CALCILUTITE, 25% DOLOMITE, CALCAREOUS, CHALKY, NO FOSSIL,
- 220.0- 230.0 AS ABOVE,
- 230.0- 240.0 AS ABOVE,
- 240.0- 250.0 AS ABOVE WITH 5% SHELL FRAG.
- 250.0- 260.0 LIMESTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 75% ALLUCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: CRYPTOCRYSTALLINE TO GRANULE, POOR INDURATION, 35% QUARTZ SAND, 20% DOLOMITE, 02% PHOSPHATIC SAND,
- 260.0- 270.0 SANDSTONE, YELLOWISH GRAY, GRAIN SIZE: VERY COARSE, RANGE: MEDIUM TO GRANULE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% DOLOMITE, 30% CALCILUTITE, 02% PHOSPHATIC SAND,
- 270.0- 280.0 LIMESTONE, YELLOWISH GRAY, 13% POROSITY, INTERGRANULAR, PIN POINT VUGS, GRAIN TYPE: CALCILUTITE, 45% ALLUCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: CRYPTOCRYSTALLINE TO GRANULE, MODERATE INDURATION, 45% QUARTZ SAND, 20% DOLOMITE, 02% PHOSPHATIC SAND,

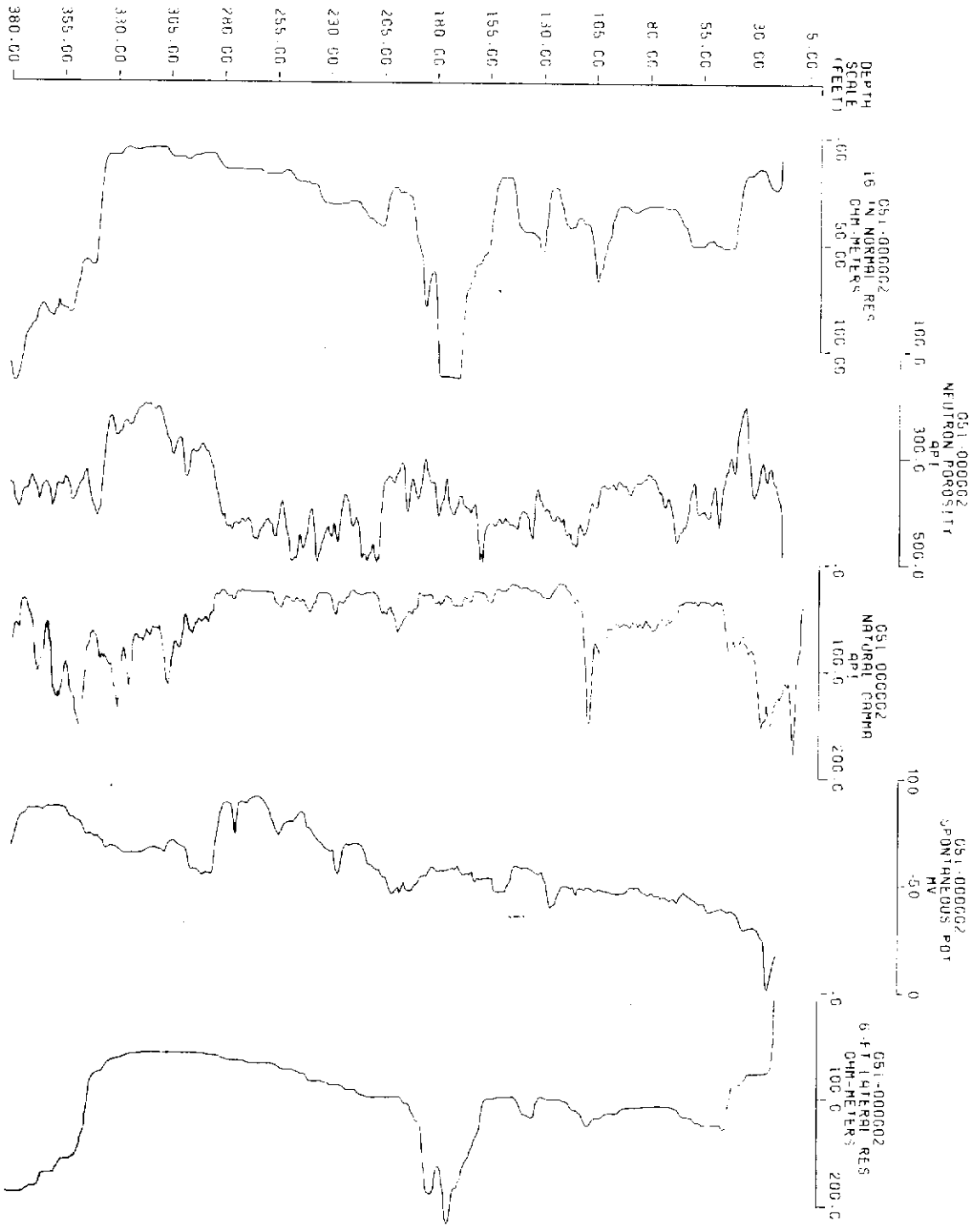
LITHOLOGIC LOG

W-HE015 • HENDEY CO. T455, R29E, SEC 20EB

- 260.0- 290.0 SILT, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, POOR INDURATION, 20% QUARTZ SAND, 25% CALCILUTITE, 02% PHOSPHATIC SAND,
- 290.0- 300.0 CLAY, LIGHT OLIVE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, 45% QUARTZ SAND, 03% PHOSPHATIC SAND, PLASTIC,
- 300.0- 310.0 AS ABOVE WITH PHOSPHATIC GRAVEL
- 310.0- 320.0 CLAY, LIGHT OLIVE, 08% POROSITY, LOW PERMEABILITY, POOR INDURATION, 20% QUARTZ SAND, 15% LIMESTONE, 08% PHOSPHATIC SAND, PLASTIC,
- 320.0- 330.0 AS ABOVE WITH 02% PHOSPHATIC GRANULES
- 330.0- 340.0 LIMESTONE, VERY LIGHT GRAY TO LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO GRANULE, MODERATE INDURATION, 25% CLAY, 20% QUARTZ SAND, 08% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- ELECTRIC LOGS INDICATE OOLUSIL/LMS CONTACT OCCURS AT 335 FT
- 340.0- 360.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIOGENIC, 70% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY COARSE, RANGE: MICROCRYSTALLINE TO GRANULE, MODERATE INDURATION, 15% QUARTZ SAND, 08% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 360.0- 370.0 AS ABOVE,
- 370.0- 380.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT		
			UNDIFF. TAMIAMI FORMATION		SURFICIAL AQUIFER SYSTEM		
25				MIocene COARSE CLASTICS	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER	
0		CALCITE CALCITE SAND SAND DOLOMITE DOLOMITE				TAMIAMI CONFINING BEDS	
-25		CALCITE CALCITE				LOWER TAMIAMI AQUIFER	
-50			HAWTHORN GROUP	UPPER CLASTIC	SYSTEM	UPPER HAWTHORN CONFINING ZONE	
-75							
-100		DOLOMITE DOLOMITE CALCITE CALCITE SAND SAND					SANDSTONE AQUIFER
-125							
-150			HAWTHORN	CLASTIC	AQUIFER	MID- HAWTHORN CONFINING ZONE	
-175		SAND SAND SAND SAND					
-200		DOLOMITE DOLOMITE DOLOMITE DOLOMITE DOLOMITE DOLOMITE DOLOMITE SAND SAND					
-225							
-250							
-275		PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE					
-300			LOWER CARBONATE	INTERMEDIATE	MID- HAWTHORN AQUIFER		
-325							
-350							

WHE013



GEOPHYSICAL LOGS, HENDRY COUNTY, HE013

SOUTH FLORIDA WMO - LITHO LOG PRINTOUT

W-LE011

LEE CO. T475 R200 SEC 19BB 20 22 15 N 81 44 15 W
 TOTAL DEPTH- 505 FT. ELEV.- 15 FT. 20 SAMPLES- 0- 505 FT.
 COMPLETED- . . . DEPTH WORKED FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GAMMA
 ELECTRIC

WELL NAME-

USGS ECO-MOBILE LIL.

REMARKS-

SAMPLES WORKED BY FIRE KNAPP (1-19-61), QUALITY FAIR.

HYDROGEOLOGIC UNITS

- 0.0- 80.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 40.0 WATER TABLE AQUIFER
- 40.0- 50.0 TAMPAI CONFINING BEDS
- 50.0- 60.0 LOWER TAMPAI AQUIFER
- 60.0- 90.0 UPPER HAWTHORN CONFINING ZONE
- 90.0- 295.0 SANDSTONE AQUIFER
- 295.0- 340.0 MID-HAWTHORN CONFINING ZONE
- 340.0- 420.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

- 0.0- 10.0 UNDIFFERENTIATED SAND AND CLAY
- 10.0- 60.0 SCHUPLER LIMESTONE MEMBER OF TAMPAI FORMATION
- 60.0- 505.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W-LE011 .

LEE CO. T475, R200, SEC 19BB

- 0.0- 10.0 SANDSTONES, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTE MATRIX, CLAY MATRIX, 30% CALCILUTE, 20% CLAY, MOLLUSKS,
- 10.0- 20.0 LIMESTONES, VERY LIGHT ORANGE TO GRAYISH BROWN, 10% POROSITY, INTERGRANULAR, MOLLUSK, GRAIN TYPE: CALCILUTE, CRYSTALS, 0% ALLOCYCLICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE, GOOD INDURATION, CALCILUTE MATRIX, COLOMITE CEMENT, 30% COLOMITE, FOSSIL MOUNDS, MOLLUSKS,
- 20.0- 30.0 AS ABOVE,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

W-LE011 .

LEE CO. T47S, R26E, SEC 1988

- 30.0- 40.0 LIMESTONE, VERY LIGHT ORANGE, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CRYSTALS, CALCILUTITE, BICGENIC, 12% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, GOOD INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, SPARRY CALCITE CEMENT, 22% DOLMITE, 03% QUARTZ SAND, MOLLUSKS, FESSIL MOLDS,
MICA (3%) LOOSE IN SAMPLE
- 40.0- 50.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH BROWN, 10% POROSITY, INTERGRANULAR, MOLDIC, LOW PERMEABILITY, GRAIN TYPE: CRYSTALS, CALCILUTITE, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE, GOOD INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, SPARRY CALCITE CEMENT, 30% DOLMITE, MOLLUSKS, BENTHONIC FORAMINIFERA, FESSIL MOLDS,
- 50.0- 60.0 DOLMITE, VERY LIGHT ORANGE TO GRAYISH BROWN, 13% POROSITY, INTERGRANULAR, MOLDIC, 50-50% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, 35% CALCILUTITE, 06% QUARTZ SAND, 01% MICA,
- 60.0- 75.0 CLAY, LIGHT OLIVE, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, MOD INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 12% CLAY, 15% CALCILUTITE, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS,
MICA (1%) AND PYRITE (1%)
- 75.0- 90.0 AS ABOVE,
- 90.0- 100.0 LIMESTONE, LIGHT OLIVE GRAY, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CRYSTALS, CALCILUTITE, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE, GOOD INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, SPARRY CALCITE CEMENT, 30% DOLMITE, 15% QUARTZ SAND, MOLLUSKS, ECHINGID,
- 100.0- 120.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CRYSTALS, CALCILUTITE, SKELETAL, 02% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, 30% DOLMITE, 04% QUARTZ SAND, MOLLUSKS, FESSIL MOLDS,
- 120.0- 135.0 AS ABOVE,
- 135.0- 150.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, 15% CALCILUTITE, 10% DOLMITE, 02% MICA, MOLLUSKS,
- 150.0- 165.0 SAMPLES AT 165, 180, AND 195 AS ABOVE.

- 165.0- 225.0 DOLOMITE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, 50-90% ALTERED, EHDHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 35% CALCILUTITE, 15% QUARTZ SAND, MOLLUSKS,
- 225.0- 240.0 SANDSTONE, YELLOWISH GRAY, 14% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% DOLOMITE, 15% CALCILUTITE, 02% MICA, MOLLUSKS,
- 240.0- 265.0 AS ABOVE,
- 265.0- 280.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, 20% ALLECHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% DOLOMITE, 03% QUARTZ SAND, MOLLUSKS, BRYOZOA,
- 280.0- 295.0 SANDSTONE, LIGHT OLIVE, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 20% DOLOMITE, 10% CALCILUTITE, 10% SPAR, 01% PHOSPHATIC SAND, MOLLUSKS,
- 295.0- 310.0 SANDSTONE, LIGHT OLIVE TO GRAYISH OLIVE, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 02% CLAY, 02% MICA, 10% CALCILUTITE, 03% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA,
- SAMPLE IS A MIXTURE OF LIMESTONE, DOLOMITE, CLAY, AND MICA.
- 310.0- 325.0 AS ABOVE WITH SOME VERY COARSE PHOSPHATE GRAINS.
- 325.0- 345.0 SANDSTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, CALCILUTITE MATRIX, DOLOMITE CEMENT, 05% CLAY, 10% DOLOMITE, 10% CALCILUTITE, 01% PHOSPHATIC SAND, MOLLUSKS,
- MICA (1%)
- 345.0- 360.0 DOLOMITE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, 50-90% ALTERED, EHDHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 15% QUARTZ SAND, 01% PHOSPHATIC SAND, FOSSIL MOLLUSKS, MOLLUSKS,

LITHOLOGIC LOG

W-12011 .

LEE CL. 147S, R20E, SEC 19EB

- 360.0- 370.0 DOLOMITE, VERY LIGHT ORANGE-TO GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, EUMEDIAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, FOSSIL MOLS, MOLLUSKS,
- 370.0- 390.0 AS ABOVE,
- 390.0- 400.0 AS ABOVE WITH SOME SAND (2%)
- 400.0- 420.0 DOLOMITE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 13% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUMEDIAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 35% CALCILUTITE, 22% QUARTZ SAND, FOSSIL MOLS, MOLLUSKS,
- 420.0- 430.0 DOLOMITE, LIGHT OLIVE, 14% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUMEDIAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 20% CALCILUTITE, 03% CLAY, 01% PHOSPHATIC SAND, 10% QUARTZ SAND,
- 430.0- 450.0 SAMPLE IS A MIXTURE OF ABOVE TWO LITHES. (CAVINGS?)
- 450.0- 460.0 AS ABOVE,
- 460.0- 480.0 AS ABOVE WITH VERY COARSE PHOS. (3%)
- 480.0- 490.0 SAMPLES AT 490, 510, AND 520 SAME AS 430.
- 490.0- 540.0 DOLO-SILT, LIGHT OLIVE TO GRAYISH OLIVE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 08% CLAY, 25% CALCILUTITE, 12% PHOSPHATIC SAND, SHARK TEETH,
- 540.0- 550.0 AS ABOVE,
- 550.0- 570.0 DOLOMITE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUMEDIAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 35% CALCILUTITE, 05% PHOSPHATIC SAND, FOSSIL MOLS,
- 570.0- 580.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT								
0		CLAY CLAY	UNDIFF.	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER							
-25			TAMIAMI FORMATION		TAMIAMI CONF. BEDS							
-50			SAND SAND SAND SAND		L. TAMIAMI AQUIFER							
-75		SAND SAND SAND	GROUP	SYSTEM	UPPER HAWTHORN CONFINING ZONE							
-100					SAND SAND SAND	SANDSTONE						
-125					CALCITE CALCITE CALCITE							
-150					SAND SAND SAND SAND SAND SAND		UPPER					
-175					SAND SAND SAND SAND SAND SAND		CLASTIC					
-200					SAND SAND SAND SAND SAND							
-225					CALCITE CALCITE CALCITE							
-250					P							
-275					CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE			AQUIFER				
-300					CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE CALCITE							
-325					SAND SAND SAND							
-350					SAND SAND SAND				MID- HAWTHORN CONFINING ZONE			
-375									SAND SAND SAND	HAWTHORN	AQUIFER	MID- HAWTHORN AQUIFER
-400												SAND SAND SAND
-425												PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE
-450	PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE	LOWER HAWTHORN CONFINING ZONE										
-475	PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE											
-500	PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE											
-525	PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE											
-550	PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE											
-575	PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE											
			LOWER									

LEO11

SOUTH FLORIDA WAD - LITHO LOG PRINTOUT

W-LEG200

LEE CD. T46S R26E SEC 1500 26 28 41 N 81 48 02 W
 TOTAL DEPTH- 310 FT. ELEV.- 25 FT. 25 SAMPLES- 0-- 310 FT.
 COMPLETED- 81.08.19 DEPTH WORKED 0 310 FT.

WELL NAME-

BUREAU OF GEOLOGY W14072, CORE, DRILLED BY JUSTIN HODGES

REMARKS-

WORKED BY MIKE KNAPP, 12-21-80, QUAL. (G500).

INTERVAL FROM 0-17 IS FROM W14071.

HYDROGEOLOGIC UNITS

- 0.0- 60.0 SURFICIAL AQUIFER SYSTEM
- 0.0- 30.0 WATER TABLE AQUIFER
- 30.0- 55.0 TAMPAI CONFINING BEDS
- 55.0- 60.0 LOWER TAMPAI AQUIFER
- 60.0- 94.0 UPPER HAWTHORN CONFINING ZONE
- 94.0- 173.0 SANDSTONE AQUIFER
- 173.0- 230.0 MID-HAWTHORN CONFINING ZONE
- 230.0- 310.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

- 0- 17.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
- 17.0- 60.0 TAMPAI FORMATION
- 60.0- 310.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W-LEG200.

LEE CD. T46S, R26E, SEC 1500

- 0.0- 2.0 SAND, LIGHT BROWN, 32% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 0% CLAY,
- 2.0- 7.0 AS ABOVE,
- 9.5- 11.0 SAND, LIGHT BROWN, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, 0.2% CLAY,
- 11.0- 12.0 SAND, VERY LIGHT GRAY, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 0.1% CLAY, 0.4% CALCILUTITE,
- 12.0- 15.0 AS ABOVE,
- 15.0- 16.5 SAND, VERY LIGHT GRAY, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 0.2% CALCILUTITE, 0.1% CLAY, MOLLUSKS,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

- 16.5- 17.0 LITHO GRADES INTO A LESS CALCAREOUS SAND (NO SHELL)
- 17.0- 20.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 10% CLAY, FOSSIL MOLLS,
- 20.0- 25.0 LIMESTONE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILLTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, FOSSIL MOLLS, MOLLUSKS,
- 25.0- 30.0 AS ABOVE,
- 30.0- 35.0 SAND, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 08% CLAY, MOLLUSKS,
- 35.0- 40.0 AS ABOVE,
- 40.0- 45.0 AS ABOVE,
- 45.0- 50.0 SAND, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 40% CALCILUTITE, 04% CLAY, MOLLUSKS,
- 50.0- 55.0 AS ABOVE,
- 55.0- 60.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIDDENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILLTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, 20% CLAY, 20% DOLOMITE, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 60.0- 65.0 CLAY, GRAYISH OLIVE, 06% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 30% CALCILUTITE, 15% QUARTZ SAND, 01% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, SPICULES, PLANKTONIC FORAMINIFERA,
- 65.0- 68.0 CLAY, GRAYISH OLIVE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 30% CALCILUTITE, 12% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, PLANKTONIC FORAMINIFERA,
- 68.0- 72.0 AS ABOVE,

- 92.0- 94.0 DULC-SILT, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLUMITE CEMENT, CLAY MATRIX, CALCILUTITE MATRIX, 30% CALCILUTITE, 30% CLAY, BENTHONIC FORAMINIFERA, MOLLUSKS, SHARK TEETH,
CLAY, LIGHT OLIVE GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX,
- 94.0- 100.0 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, SKELETAL, BIOGENIC, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 12% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 100.0- 105.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND,
- 105.0- 108.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, 45% QUARTZ SAND,
- 108.0- 113.0 AS ABOVE,
- 113.0- 118.0 SHELL BED, WHITE TO VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, POOR INDURATION, CALCILUTITE MATRIX, 30% QUARTZ SAND, MOLLUSKS,
- 118.0- 120.0 SANDSTONE, WHITE, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 35% CALCILUTITE, FOSSIL MOLDS, MOLLUSKS,
- 120.0- 125.0 SANDSTONE, WHITE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% CALCILUTITE, 20% SPAR, FOSSIL MOLDS, MOLLUSKS,
- 125.0- 128.0 AS ABOVE,
- 128.0- 132.0 SANDSTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, DOLUMITE CEMENT, 15% CALCILUTITE, 15% DOLUMITE, 02% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,

- 132.0- 140.0 SANDSTONE, YELLOWISH GRAY, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 18% CALCILUTITE, 12% CLAY, 01% PHOSPHATIC SAND, MOLLUSKS,
- 140.0- 145.0 SANDSTONE, YELLOWISH GRAY TO VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 25% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS, CORAL,
- 148.0- 152.0 SANDSTONE, VERY LIGHT ORANGE, 16% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 25% CALCILUTITE, FOSSIL MOLDS, MOLLUSKS,
- 152.0- 165.0 SAND, LIGHT OLIVE, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, UNCONSOLIDATED, 01% CALCILUTITE, 01% CLAY,
- 165.0- 173.0 SANDSTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, 20% CALCILUTITE, 01% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 173.0- 210.0 NO SAMPLE,
- 210.0- 215.0 SAND, LIGHT OLIVE GRAY, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 01% CALCILUTITE, 02% CLAY, NO FOSSIL,
- 215.0- 215.0 SAND, GRAYISH OLIVE, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 01% CALCILUTITE, 20% CLAY, 03% PHOSPHATIC SAND, MOLLUSKS,
- 215.0- 225.0 SAND, GRAYISH OLIVE, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, HIGH SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 04% CALCILUTITE, 05% CLAY, 03% PHOSPHATIC SAND, 04% PHOSPHATIC GRAVEL, MOLLUSKS,
- 225.0- 230.0 CLAY, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 40% CALCILUTITE, 20% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS,

LITHOLOGIC LOG
W-LEU20C.

LEE CO. T46S, R26E, SEC 1500

- 230.0- 232.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 00% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 10% CLAY, 20% QUARTZ SAND, 03% PHOSPHATIC SAND,
- 232.0- 235.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, 00% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, POOR INDURATION, CALCILUTITE MATRIX, 03% QUARTZ SAND,
- 235.0- 242.0 LIMESTONE, WHITE, 13% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 242.0- 248.0 AS ABOVE,
- 248.0- 250.0 CLAY, YELLOWISH GRAY, 00% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, CALCILUTITE MATRIX, 30% CALCILUTITE, 02% PHOSPHATIC SAND, ESTRACODS, BENTHONIC FORAMINIFERA,
- 250.0- 295.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 50% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 01% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS, BENTHONIC FORAMINIFERA, CERAL,
- LIMESTONE IS A COQUINA OF MOLLUSKS - GOOD POROSITY
- 295.0- 295.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLD,
- 295.0- 300.0 LIMESTONE, LIGHT OLIVE, 08% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 15% CLAY, 01% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS,
- 300.0- 310.0 LIMESTONE, YELLOWISH GRAY, GRAIN TYPE: CALCILUTITE, BIOGENIC, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 15% CLAY, 12% QUARTZ SAND, 03% PHOSPHATIC SAND,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT	
			HAWTHORN GROUP	TAMIAMI FORMATION	SURFICIAL AQUIFER SYSTEM	WATER TABLE AQUIFER
0		CLAY CLAY				
-25		CALCITE		TAMIAMI FORMATION		TAMIAMI CONFINING BEDS
-50		CLAY DOLOMITE SAND SAND SAND SAND				L. TAMIAMI AQUIFER
-75		CALCITE SAND				UPPER HAWTHORN CONFINING ZONE
-100		SAND SAND CALCITE CALCITE CALCITE		UPPER		SANDSTONE
-125		CALCITE				AQUIFER
-150		CALCITE		CLASTIC		
-175						MID- HAWTHORN CONFINING ZONE
-200		PHOSPHATE PHOSPHATE PHOSPHATE SAND SAND SAND CALCITE				
-225						
-250				LOWER		MID- HAWTHORN AQUIFER
-275				CARBONATE		
-300		SAND SAND				

WLE020

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

#- 0270

LEE CO. T46S R27E SEC 88B 26 29 00 N 81 37 57 W
 TOTAL DEPTH- 382 FT. ELEV.- 26 FT. 20 SAMPLES- 0- 382 FT.
 COMPLETED- 82.03.08 DEPTH WORKED 302 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GAMMA
 ELECTRIC

WELL NAME-

CORKSCREW #1, CORE, JUSTIN FOLGES DRILLER, BUREAU OF GEOLOGY

REMARKS-

DESCRIBED AND CODED BY MINE KNAPP (9-82), SAMPLE QUALITY (EXCELLENT),
 X-RAY DIFFRACTOGRAM ANALYSIS CONDUCTED BY UNIVERSITY OF SOUTH FLORIDA.

HYDROGEOLOGIC UNITS

0.0- 15.0 WATER TABLE AQUIFER
 15.0- 20.0 TAMiami CONFINING BEDS
 20.0- 99.0 LOWER TAMiami AQUIFER
 99.0-138.0 UPPER HAWTHORN CONFINING ZONE
 138.0-246.0 SANDSTONE AQUIFER
 246.0-332.0 MID-HAWTHORN CONFINING ZONE
 332.0-382.0 MID-HAWTHORN AQUIFER

X-RAY DIFFRACTOGRAM RESULTS (SELECTED INTERVALS)

77 FT.- %CO₂ = 43.3, IF AS CaCO₃ = 98.6%
 CALCITE/DOLomite RATIO 3.5:1, CALC. 78% - DOLO. 22%
 82 FT.- %CO₂ = 43.0, IF AS CaCO₃ = 98.0%
 CALCITE/DOLomite RATIO 1.4:1, CALC. 53.0% - DOLO. 42.0%
 110 FT.- %CO₂ = 18.8%, IF AS CaCO₃ = 42.6%
 CLAY ANALYSIS <2 MICRON FRACTION - PRINCIPAL COMPONENT IS
 MONTMORILLONITE WITH MINOR (<5%) KALLINITE AND ILLITE. A
 VERY MINOR PHASE OF POSSIBLE CLINOPTILOHITE IS PRESENT.
 230 FT.- %CO₂ = 6.2%, IF AS CaCO₃ 14.2%
 CLAY ANALYSIS <2 MICRON FRACTION - PRINCIPAL COMPONENT IS
 MONTMORILLONITE WITH MINOR (<5%) KALLINITE AND ILLITE.

STRATIGRAPHIC FORMATIONS -

0.0- 35.0 UNDIFFERENTIATED SAND AND CLAY
 35.0- 99.0 TAMiami FORMATION
 99.0- 382.0 HAWTHORN FORMATION*

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

W- 0270.

LEE CO. T46S, R27E, SEC 6BB

- 0.0- 1.0 SAND, MODERATE BROWN, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 01% CLAY, NO FOSSIL,
- 1.0- 2.0 SAND, MODERATE BROWN, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% CALCILUTITE, 01% CLAY, NO FOSSIL,
- 2.0- 3.0 SAND, DARK BROWN TO DARK GRAY, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, NO FOSSIL,
- 3.0- 4.0 SAND, GREENISH GRAY TO DARK YELLOWISH ORANGE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, MOTTLED, 04% CLAY, 04% CALCILUTITE, NO FOSSIL,
- 4.0- 4.5 SAND, GRAYISH YELLOW TO LIGHT OLIVE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, CALCILUTITE MATRIX, MOTTLED, STREAKED, 05% CLAY, 05% CALCILUTITE, NO FOSSIL,
- 4.5- 6.0 SAND, YELLOWISH GRAY TO LIGHT GRAY, 14% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 02% CLAY, 02% CALCILUTITE, NO FOSSIL,
- 6.0- 7.0 SAND, YELLOWISH GRAY TO WHITE, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, 15% CALCILUTITE, 01% HEAVY MINERALS, MOLLUSKS,
INTERMIXED SHELL (15%), *CHIONE CANCELATA*
- 7.0- 8.0 LIMESTONE, GRAYISH ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, COLUMITE CEMENT, INTERBEDDED, 25% COLUMITE, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLLUSKS,
INTERBEDDED WITH QUARTZ SAND
- 8.0- 9.0 SANDSTONE, GRAYISH ORANGE, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 30% CALCILUTITE, 02% CLAY, MOLLUSKS,
BECOME LESS SANDY TOWARDS BOTTOM

- 9.0- 10.0 LIMESTONE, GRAYISH ORANGE, 11% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DELOMITIC CEMENT, 10% DELOMITIC, 40% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 10.0- 10.5 AS ABOVE,
- 10.5- 11.0 SAND, YELLOWISH GRAY TO GRAYISH ORANGE, 14% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 30% CALCILUTITE, 02% CLAY, MOLLUSKS,
- 11.0- 12.0 SANDSTONE, WHITE TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC,
- 12.0- 15.0 SANDSTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 13% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 30% CALCILUTITE, 02% CLAY, CALCAREOUS, MOLLUSKS, FOSSIL FRAGMENTS,
- UNCONSOLIDATED MICRITIC 412 SAND IN INTERVAL
- 15.0- 16.0 SANDSTONE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 30% CALCILUTITE, CALCAREOUS, MOLLUSKS, FOSSIL FRAGMENTS,
- 16.0- 17.0 AS ABOVE,
- 17.0- 18.0 SAND, WHITE, 16% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 15% CALCILUTITE, CHALKY, MOLLUSKS, FOSSIL FRAGMENTS,
- 18.0- 20.0 AS ABOVE,
- 20.0- 22.0 SANDSTONE, WHITE TO VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 20% CALCILUTITE, CALCAREOUS, CHALKY, MOLLUSKS, FOSSIL FRAGMENTS,
- 22.0- 24.0 AS ABOVE,
- 24.0- 25.0 NO SAMPLE,

LITHOLOGIC LOG

W- 0270.

LEE CO. T46S, R27E, SEC 86B

- 25.0- 29.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 16% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 35% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 29.0- 30.0 AS ABOVE,
- 30.0- 35.0 SANDSTONE, VERY LIGHT ORANGE TO WHITE, 16% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 30% CALCILUTITE, CHALKY, MOLLUSKS, FOSSIL FRAGMENTS,
- 35.0- 35.0 NO SAMPLE,
- 35.0- 36.2 DOLOMITE, GRAYISH ORANGE TO DARK YELLOWISH BROWN, 14% POROSITY, INTERGRANULAR, MOLDIC, INTERCRYSTALLINE, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, DOLOMITE CEMENT, 25% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS,
- EXTINCT PLEISTOCENE MOLLUSK REPORTED BY J. MEEDER AT 35FT.
- 36.2- 36.5 LIMESTONE, LIGHT GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 65% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 65% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 36.5- 42.0 LIMESTONE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CRYSTALS, CALCILUTITE, SKELETAL, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, SPARKY CALCITE CEMENT, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% DOLOMITE, 20% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- LOST CIRC. AT 41FT. DUE TO HIGH PERM. AND CHANNEL PORO.
- 42.0- 44.0 LIMESTONE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 65% QUARTZ SAND, CHALKY, MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS,
- 44.0- 46.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 65% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,

VERY HIGH PERM.&POROSITY AT 46' -LARGE (30MM) MOLDS

- 40.0- 47.5 DOLOMITE, DARK YELLOWISH BROWN, 10% POROSITY, INTERCRYSTALLINE, MOLDIC, VUGULAR, 50-90% ALTERED, EUMEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 10% SPAR, MOLLUSKS, FOSSIL MOLDS,
- 47.5- 50.0 LIMESTONE, GRAYISH BROWN TO VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIGGENIC, SKELETAL, CRYSTALS, 70% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, SPARKY CALCITE CEMENT, 02% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL MOLDS,
CALCITE CRYSTALS LINING FOSSIL MOLDS
- 50.0- 51.5 LIMESTONE, GRAYISH BROWN TO VERY LIGHT ORANGE, 16% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CRYSTALS, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, CALCILUTITE MATRIX, INTERBEDDED, 35% DOLOMITE, MOLLUSKS, CORAL, FOSSIL MOLDS,
- 51.5- 54.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 02% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS,
- 54.0- 55.0 LIMESTONE, GRAYISH BROWN TO LIGHT OLIVE GRAY, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIGGENIC, CRYSTALS, CALCILUTITE, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 35% DOLOMITE, FOSSIL MOLDS, MOLLUSKS,
- 55.0- 56.0 DOLOMITE, GRAYISH BROWN, 12% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUMEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, CALCILUTITE MATRIX, 10% SPAR, 20% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
FRESH WATER MOLLUSKS
- 56.0- 57.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIGGENIC, SKELETAL, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, CALCILUTITE MATRIX, MOLLUSKS, BRYOZOA,

LITHOLOGIC LOG

W- 0270.

LEE CO. T40S, R27E, SEC 888

- 57.0- 58.0 DOLMITE, LIGHT GRAY TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUCEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
- 58.0- 62.0 LIMESTONE, VERY LIGHT ORANGE, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, SPARRY CALCITE CEMENT, 25% DOLMITE, MOLLUSKS, FOSSIL MOLDS,
DOLMITE INTERBEDDED
- 62.0- 63.0 AS ABOVE WITH SAND (10%)
- 63.0- 64.0 AS ABOVE,
- 64.0- 65.0 DOLMITE, GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUCEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
LARGE MOLLUSK CASTS AND MOLDS
- 65.0- 67.0 AS ABOVE,
- 67.0- 70.5 DOLMITE, LIGHT OLIVE BROWN, 16% POROSITY, MOLDIC, VUGULAR, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, EUCEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLMITE CEMENT, SPARRY CALCITE CEMENT, 15% SPAR, MOLLUSKS, FOSSIL MOLDS,
PSYCHRODONT OYSTER AT 68FT.
- 70.5- 75.0 AS ABOVE,
- 75.0- 77.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLMITE CEMENT, 30% DOLMITE, MOLLUSKS, FOSSIL MOLDS,
- 77.0- 79.0 AS ABOVE,
- 79.0- 82.0 DOLMITE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 17% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, EUCEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLMITE CEMENT, SPARRY CALCITE CEMENT, CALCILUTITE MATRIX, 10% SPAR, 20% CALCILUTITE, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,

LITHOLOGIC LOG

W- 027C.

LEE CO. T46S, R27E, SEC 8BB

- 82.0- 86.0 AS ABOVE WITH MANY MOLLUSKS CASTS AND MOLDS
- 86.0- 87.0 AS ABOVE,
- 87.0- 88.0 LIMESTONE, MODERATE DARK GRAY, 12% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLomite CEMENT, 30% DOLomite, 15% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 88.0- 89.0 AS ABOVE WITH MORE SAND (35%) - POOR INDURATION
- 89.0- 92.0 AS ABOVE,
- 92.0- 95.0 AS ABOVE,
- 95.0- 99.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, CALCILUTITE MATRIX, MOLLUSKS,
- LITTLE RECOVERY
- 99.0- 102.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 10% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS,
- 102.0- 106.0 AS ABOVE,
- 106.0- 108.0 AS ABOVE,
- 108.0- 109.0 SAND, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 15% CALCILUTITE, 02% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 109.0- 110.0 CLAY, GRAYISH OLIVE TO OLIVE GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CLAY MATRIX, 05% CLAY, 02% QUARTZ SAND, 04% CALCILUTITE, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, FLERILUS SP., ELPHIDIUM SP.
- 110.0- 110.5 AS ABOVE,

LITHOLOGIC LOG

W- 0270.

LEE CO. T46S, R27E, SEC 888

- 116.5- 117.0 SAND, DARK YELLOWISH BROWN TO WHITE, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, INTERBEDDED, 25% DOLOMITE, 20% CALCILUTITE, 10% PHOSPHATIC SAND, MOLLUSKS, SHARK TEETH,
- 117.0- 119.0 CLAY, GRAYISH OLIVE, 06% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, MASSIVE, 05% CLAY, DIATOMS,
- 119.0- 119.2 SAND, DARK YELLOWISH BROWN, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: COARSE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, INTERBEDDED, 25% DOLOMITE, 25% PHOSPHATIC SAND, SHARK TEETH,
- 119.2- 120.0 CLAY, GRAYISH OLIVE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, MASSIVE, 02% QUARTZ SAND, DIATOMS,
- 120.0- 122.0 AS ABOVE,
- 122.0- 126.0 AS ABOVE WITH MANY DIATOMS (DIPLONEIS SP.)
- 126.0- 131.0 AS ABOVE,
- 131.0- 131.2 LIMESTONE, WHITE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, SKELETAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, INTERBEDDED, 05% PHOSPHATIC SAND, 02% QUARTZ SAND, CHALKY, MOLLUSKS, BRYOZOA,
- 131.2- 135.0 CLAY, GRAYISH OLIVE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, MASSIVE, 05% QUARTZ SAND, DIATOMS, BENTHONIC FORAMINIFERA,
MANY DIATOMS
- 135.0- 136.0 CLAY, GRAYISH OLIVE, 09% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, DIATOMS, BENTHONIC FORAMINIFERA, PLANKTONIC FORAMINIFERA,
- 136.0- 136.2 SAND, DARK YELLOWISH BROWN TO VERY LIGHT ORANGE, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 08% PHOSPHATIC SAND, 04% LIMESTONE, MOLLUSKS, FOSSIL MOLDS,
- 136.2- 137.0 CLAY, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, 25% QUARTZ SAND, 05% CALCILUTITE, 04% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS,

LITHOLOGIC LOG

W- 027C.

LEE CO. T40S, R27E, SEC 88B

- 137.0- 138.0 SAND, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 25% DOLOMITE, 04% PHOSPHATIC SAND, 10% CALCILUTITE, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 138.0- 138.6 DOLOMITE, YELLOWISH GRAY TO LIGHT OLIVE, 15% POROSITY, INTERGRANULAR, VUGULAR, INTERCRYSTALLINE, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, 10% QUARTZ SAND, 05% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 138.6- 147.0 LIMESTONE, VERY LIGHT GRAY, 25% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 00% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: COARSE TO MICROCRYSTALLINE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 04% PHOSPHATIC SAND, 15% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS, BRYOZOA,
- 147.0- 150.0 SANDSTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 03% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 150.0- 151.0 AS ABOVE,
- 151.0- 152.0 AS ABOVE VERY GOOD MOLDIC POROSITY
- 152.0- 155.0 LIMESTONE, YELLOWISH GRAY, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 15% DOLOMITE, 40% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 155.0- 157.0 AS ABOVE,
- 157.0- 158.0 SANDSTONE, YELLOWISH GRAY, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 15% CALCILUTITE, 15% DOLOMITE, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 158.0- 160.0 AS ABOVE WITH MODERATE INDURATION
- 160.0- 162.0 AS ABOVE,

- 162.0- 164.0 SANDSTONE, DARK GRAYISH YELLOW, 16% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% CALCILLITE, 10% DOLOMITE, 01% PHOSPHATIC SAND, FOSSIL MOLDS,
- 164.0- 172.0 SANDSTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% CALCILLITE, 10% DOLOMITE, 01% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 172.0- 177.0 SANDSTONE, VERY LIGHT ORANGE TO WHITE, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MOD INDURATION, CALCILUTITE MATRIX, 05% CALCILUTITE, FOSSIL MOLDS,
LITTLE RECOVERY DUE WEAK CEMENTATION
- 177.0- 187.0 NO RECOVERY-DRILLER REPORTS CLEAN SANDS
- 187.0- 189.0 SANDSTONE, VERY LIGHT ORANGE, 16% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, 05% CALCILUTITE, 04% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 189.0- 190.0 SANDSTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% DOLOMITE, 10% CALCILLITE, 05% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 190.0- 192.0 NO RECOVERY-DRILLER REPORTS SILTY SAND
- 192.0- 194.0 SANDSTONE, YELLOWISH GRAY TO VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% DOLOMITE, 10% CALCILLITE, 05% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 194.0- 198.0 CLAY, LIGHT OLIVE GRAY, 15% POROSITY, INTERGRANULAR, MODERATE INDURATION, DOLOMITE CEMENT, 35% QUARTZ SAND, 05% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
LARGE MOLLUSK SHELLS INTERBEDDED
- 198.0- 199.0 AS ABOVE,

LITHOLOGIC LOG

W- 0270.

LEE CO. T46S, R27E, SEC 6E8

- 199.0- 200.0 DOLOMITE, LIGHT GRAY TO YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 35% QUARTZ SAND, 03% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 200.0- 202.0 AS ABOVE,
- 202.0- 204.0 AS ABOVE, SPARKY CALCITE LINING FOSSIL MOLDS.
- 204.0- 207.0 SANDSTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% DOLOMITE, 15% CALCILUTITE, 01% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 207.0- 211.0 DOLOMITE, LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 30% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS,
- 211.0- 213.0 SANDSTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% DOLOMITE, 10% CALCILUTITE, 01% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 213.0- 217.0 NO RECOVERY-DRILLER REPORTS WEAKLY CEMENTED QTZ SANDS.
- 217.0- 221.0 SAND, VERY LIGHT ORANGE TO WHITE, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 05% CALCILUTITE, 05% DOLOMITE, 01% PHOSPHATIC SAND,
- 221.0- 222.0 DOLOMITE, WHITE TO VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 20% QUARTZ SAND, FOSSIL MOLDS, MOLLUSKS,
- 222.0- 227.0 AS ABOVE,
- 227.0- 232.0 SANDSTONE, YELLOWISH GRAY, 25% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% DOLOMITE, 05% CALCILUTITE, 03% PHOSPHATIC SAND,
- 232.0- 240.0 NO RECOVERY-DRILLER REPORTS QUARTZ SANDS

LITHOLOGIC LOG

0270.

LEE CO. T40S, R27E, SEC 888

- 246.0- 249.0 CLAY, OLIVE GRAY, 05% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, MASSIVE, 15% DOLOMITE, 12% SILT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND,
- 249.0- 255.0 AS ABOVE-TFIN SEAMS OF SAND INTERBEDDED
- 255.0- 258.0 SAND, LIGHT OLIVE GRAY, 12% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 10% DOLOMITE, 02% CLAY, 01% PHOSPHATIC SAND,
- 258.0- 262.0 NO RECOVERY-DRILLER REPORTS QUARTZ SANDS
- 262.0- 265.0 DOLOMITE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, 50-90% ALTERED, EHDRAAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 08% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 265.0- 305.0 NO RECOVERY-DRILLER REPORTS SANDS AND SILTS.
- 305.0- 308.0 PHOSPHATE, DARK YELLOWISH BROWN, 32% POROSITY, INTERGRANULAR, UNCONSOLIDATED, PHOSPHATE CEMENT, 05% DOLOMITE, PHOSPHATIC GRAVEL,
- RUDDLE BED-PHOSPHATE RANGES FROM .5 TO 1.0 INCH DIAM.
- 308.0- 310.0 CLAY, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 05% CALCILUTITE, 05% PHOSPHATIC GRAVEL, 02% PHOSPHATIC SAND, 05% QUARTZ SAND,
- 310.0- 311.0 CLAY, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 05% PHOSPHATIC SAND, 30% QUARTZ SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, CORAL, FOSSIL FRAGMENTS,
- 311.0- 315.0 DOLOMITE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, 50-90% ALTERED, EHDRAAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 25% QUARTZ SAND, 08% PHOSPHATIC SAND, FOSSIL FRAGMENTS,
- 315.0- 320.0 AS ABOVE,
- 320.0- 352.0 CLAY, GRAYISH OLIVE, 06% POROSITY, INTERGRANULAR, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 05% PHOSPHATIC GRAVEL, 05% PHOSPHATIC SAND, 15% QUARTZ SAND, MOLLUSKS,

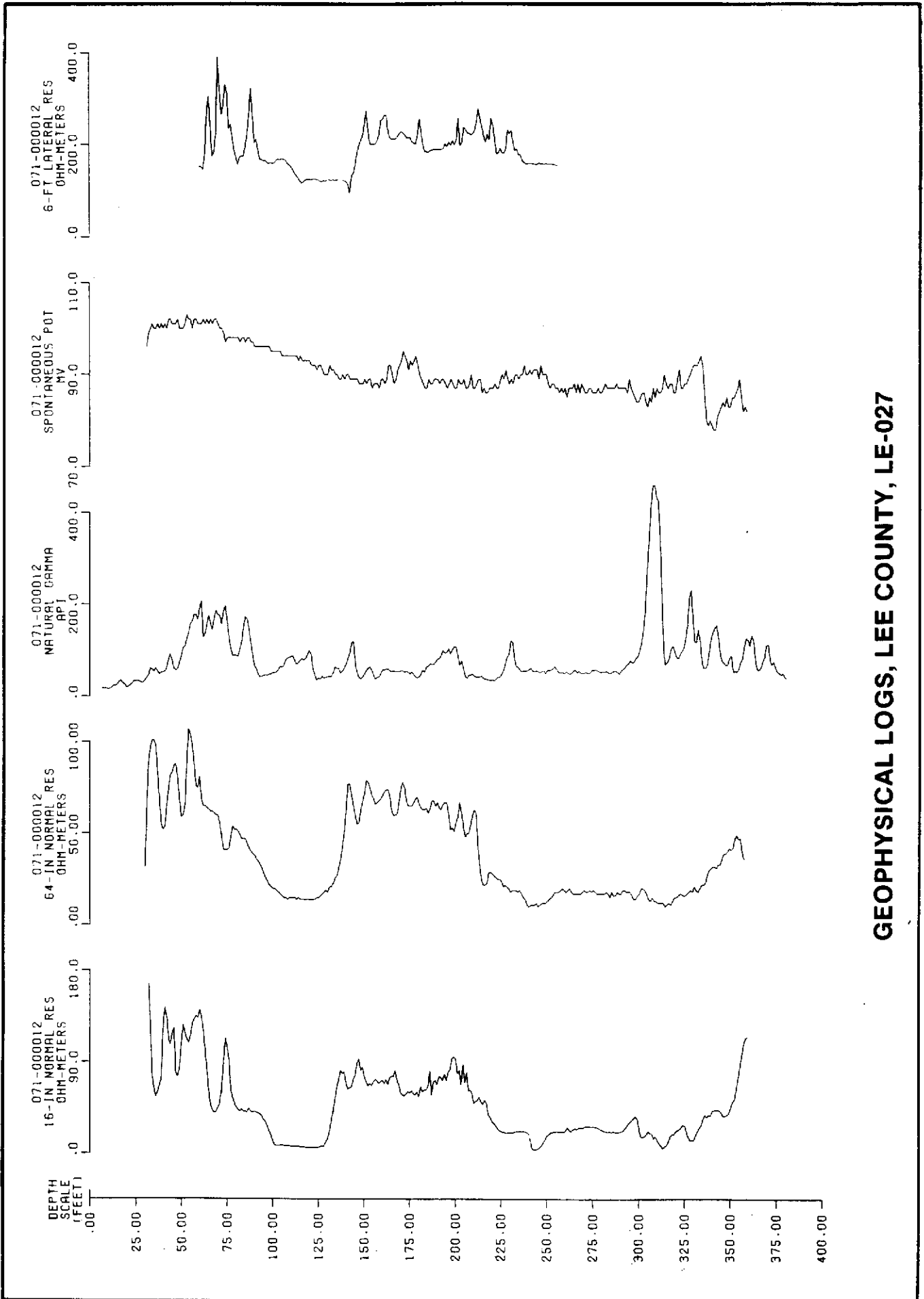
- 332.0- 335.0 DOLOMITE, VERY LIGHT ORANGE TO WHITE, 18% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% CALCILLITE, 05% SPAR, 08% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 335.0- 337.0 AS ABOVE,
- 337.0- 339.0 CLAY, VERY LIGHT ORANGE TO GRAYISH OLIVE, 08% POROSITY, INTERGRANULAR, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 20% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 339.0- 342.0 AS ABOVE WITH V.C. PHOSPHATE
- 342.0- 347.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL MOLDS, MOLLUSKS,
- 347.0- 352.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 352.0- 355.0 AS ABOVE,
- 355.0- 359.0 SANDSTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 35% DOLOMITE, 10% CALCILLITE, 05% PHOSPHATIC SAND, MOLLUSKS,
- 359.0- 357.0 CLAY, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 25% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS,
- 357.0- 359.0 AS ABOVE WITH INTERBEDDED OYSTER SHELLS
- 359.0- 362.0 AS ABOVE,
- 362.0- 367.0 LIMESTONE, VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% DOLOMITE, 01% PHOSPHATIC SAND, 01% QUARTZ SAND, CORAL, MOLLUSKS, FOSSIL MOLDS,

MANY WELL PRESERVED CORALS

- 367.0- 372.0 AS ABOVE-CLQUINA OF MOLLUSKS
- 372.0- 377.0 DOLOMITE, GRAYISH ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EHDREDAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
- 377.0- 378.0 LIMESTONE, VERY LIGHT ORANGE, 16% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 40% DOLOMITE, MOLLUSKS, FOSSIL MOLDS, CORAL,
- 378.0- 380.0 AS ABOVE WITH PHOSPHATE (3%)
- 380.0- 381.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 16% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 40% DOLOMITE, 01% PHOSPHATIC SAND, SPECKLED, MOLLUSKS, FOSSIL MOLDS,
- 381.0- 382.0 AS ABOVE,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION	HYDROGEOLOGIC UNIT	
25	T - - T - -	CLAY SAND CLAY CALCITE CALCITE	UNDIFFERENTIATED	SURFICIAL AQUIFER SYSTEM	WATERTABLE AQUIFER
0					TAM. CONF. BEDS
-25	[Brick pattern]	CALCITE SAND SAND	TAMIAMI FORMATION	SURFICIAL AQUIFER SYSTEM	LOWER TAMIAMI AQUIFER
-50					[Brick pattern]
-75	[Dotted pattern]	CLAY	GROUP	SYSTEM	UPPER HAWTHORN CONFINING ZONE
-100					[Dotted pattern]
-125	[Sandstone pattern]	CALCITE CALCITE CALCITE	UPPER	SYSTEM	SANDSTONE AQUIFER
-150					
-175	[Sandstone pattern]	CALCITE SAND SAND CALCITE CALCITE	CLASTIC	AQUIFER	MID- HAWTHORN CONFINING ZONE
-200					
-225	[Sandstone pattern]	DOLOMITE SAND	HAWTHORN	INTERMEDIATE	MID- HAWTHORN AQUIFER
-250					
-275	[Sandstone pattern]	CALCITE DOLOMITE	LOWER CARBONATE	INTERMEDIATE	MID- HAWTHORN AQUIFER
-300					
-325	[Sandstone pattern]	CALCITE DOLOMITE	LOWER CARBONATE	INTERMEDIATE	MID- HAWTHORN AQUIFER
-350					

LEO27



GEOPHYSICAL LOGS, LEE COUNTY, LE-027

SOUTH FLORIDA WMO - LITHO LOG PRINTOUT

W- 026

LEE CO. T44S R26E SEC 15 26 38 34 N 81 41 50 W
 TOTAL DEPTH- 770 FT. ELEV.- 30 FT. 65 SAMPLES- 0- 770 FT.
 COMPLETED- 82.04.00 DEPTH WORKED 770 FT.

WELL NAME-

BUCKINGHAM #1, CONTINUOUS CORE, DRILLED BY JUSTIN HODGES (DNR).

REMARKS-

DESCRIBED BY MIKE KNAPP (AUG-SEPT 1982), SAMPLE QUALITY-EXCELLENT.

HYDROGEOLOGIC UNITS

0.0- 21.0 SURFICIAL AQUIFER SYSTEM
 21.0- 56.0 UPPER HAWTHORN CONFINING ZONE
 56.0- 104.0 SANDSTONE AQUIFER
 104.0- 214.0 MID-HAWTHORN CONFINING ZONE
 214.0- 590.0 MID-HAWTHORN AQUIFER
 590.0- 591.0 LOWER HAWTHORN CONFINING ZONE
 591.0- 732.0 LOWER HAWTHORN/TAMPA PRODUCING ZONE
 732.0- TO SWANNEE AQUIFER

REMARKS-THE SWANNEE LIMESTONE WAS PICKED ON A DECREASE IN SAND AND PHOSPHATE. THIS UNIT, HOWEVER, DOES NOT RESEMBLE THE THE CHARACTERISTIC SWANNEE BEDS IN CENTRAL AND NORTHERN FLORIDA. IT IS VERY SANDY (UP TO 20%) IN THIS CORE AND MAY BE A MIOCENE UNIT. THE TAMPA FORMATION, ALTHOUGH RECOGNIZED ON THIS LOG, IS INCLUDED IN THE HAWTHORN FORMATION BECAUSE OF THE HIGH PERCENTAGES OF PHOSPHATE PRESENT. THE FLORIDAN AQUIFER SYSTEM IS RECOGNIZED AT THE TOP OF THE LOWER HAWTHORN/TAMPA PRODUCING ZONE.

STRATIGRAPHIC FORMATIONS -

0.0- 6.5 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 6.5- 21.0 TAMPA FORMATION
 21.0- 591.0 HAWTHORN FORMATION *
 591.0- 732.0 TAMPA LIMESTONE
 732.0- 744.0 SWANNEE LIMESTONE

LITHOLOGIC LOG

W- 026 .

LEE CO. T44S, R26E, SEC 15

0.0- 2.0 SAND, MODERATE LIGHT GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED, ORGANICS,
 2.0- 3.0 SAND, LIGHT GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,
 3.0- 4.0 SAND, MODERATE DARK GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, UNCONSOLIDATED,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

#- 026 .

LEE CO. T44S, R26E, SEC 15

- 4.0- 0.0 SAND, YELLOWISH GRAY, 32% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, UNCONSOLIDATED,
- 0.0- 0.5 AS ABOVE,
- 0.5- 0.0 LIMESTONE, LIGHT YELLOWISH ORANGE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, 15% QUARTZ SAND, MOLLUSKS,
- 0.0- 9.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS,
- 9.0- 17.0 LIMESTONE, WHITE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO FINE, POOR INDURATION, CALCILUTITE MATRIX, 03% QUARTZ SAND, CHALKY, MOLLUSKS, FOSSIL FRAGMENTS,
- 17.0- 19.0 AS ABOVE,
- 19.0- 21.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, INTRACLASTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, 30% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS, SHARK TEETH, FOSSIL FRAGMENTS,
BECOMES MORE PHOSPHATIC TOWARDS BOTTOM.
- 21.0- 22.0 SAND, LIGHT YELLOWISH ORANGE, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 35% CALCILUTITE, 02% CLAY, 06% PHOSPHATIC SAND, MOLLUSKS,
- 22.0- 23.0 SAND, GREENISH GRAY TO MODERATE YELLOWISH BROWN, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 10% CALCILUTITE, 02% PHOSPHATIC SAND, MOLLUSKS, SHARK TEETH,
- 23.0- 24.5 CLAY, GRAYISH ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, CLAY MATRIX, MOTILED, 02% CLAY, 15% QUARTZ SAND, 10% SILT,
- 24.5- 26.0 SHELL BED, LIGHT GRAY TO VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, UNCONSOLIDATED, 10% QUARTZ SAND, MOLLUSKS,
MUSTLY OYSTERS AND CHIENE SP.

- 26.0- 27.3 CLAY, YELLOWISH GRAY TO LIGHT OLIVE GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, MOTTLED, 15% CLAY, 02% QUARTZ SAND, 15% SILT, 20% CALCILUTITE, FOSSIL FRAGMENTS,
- 27.3- 28.5 CLAY, GRAYISH OLIVE, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, MOTTLED, 15% CLAY, 05% QUARTZ SAND, 15% SILT, 20% CALCILUTITE, BENTHONIC FORAMINIFERA,

MANY BENTHICS BULIMINA SP., RETALIA SP.
- 28.5- 29.2 SAND, MODERATE GRAYISH GREEN, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, DOLOMITE CEMENT, INTERBEDDED, 03% CLAY, 10% DOLOMITE, 10% CALCILUTITE, 04% PHOSPHATIC SAND, MOLLUSKS,
- 29.2- 30.0 CLAY, YELLOWISH GRAY TO LIGHT OLIVE GRAY, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 15% CLAY, 05% CALCILUTITE, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 30.0- 34.0 SAND, VERY LIGHT ORANGE TO WHITE, 14% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% CALCILUTITE, 35% DOLOMITE, 04% PHOSPHATIC SAND, NO FOSSIL,

CLAY BLEBS
- 34.0- 35.0 AS 34 FEET
- 35.0- 39.0 SAND, YELLOWISH GRAY, 14% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, 05% CLAY, 20% DOLOMITE, 04% PHOSPHATIC SAND, CALCAREOUS, NO FOSSIL,
- 39.0- 43.0 AS ABOVE WITH MOLLUSK FRAGS. AND MORE PHOS. (7%).
- 43.0- 44.0 AS ABOVE,
- 44.0- 45.0 CLAY, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 20% QUARTZ SAND, 02% PHOSPHATIC SAND, 05% CLAY,

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LEE CO. T44S, R26E, SEC 15

- 45.0- 47.0 SAND, YELLOWISH GRAY, 14% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 10% CLAY, 25% DOLOMITE, 02% PHOSPHATIC SAND, MOLLUSKS,
- 47.0- 49.0 NO RECOVERY-DRILLER REPORTS SOFT CLAY.
- 49.0- 52.0 CLAY, GRAYISH OLIVE GREEN, 08% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% DOLOMITE, 10% CALCILUTITE, 08% QUARTZ SAND, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS, OSTRACOIDS,
- 52.0- 52.5 GRADES INTO UNDERLYING SANDSTONE.
- 52.5- 53.0 SANDSTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 35% DOLOMITE, 10% CALCILUTITE, 03% CLAY, FOSSIL FRAGMENTS,
- 53.0- 54.0 DOLOMITE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, 50-90% ALTERED, EHDORAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 35% QUARTZ SAND, 01% PHOSPHATIC SAND,
- 54.0- 55.0 SANDSTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 25% DOLOMITE, 20% CALCILUTITE, 05% CLAY, FOSSIL FRAGMENTS,
- 55.0- 56.0 LIMESTONE, VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 25% DOLOMITE, 25% QUARTZ SAND,
- LOST CIRCULATION
- 56.0- 56.0 LIMESTONE, VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, FOSSIL MOLS, MOLLUSKS,
- 58.0- 59.0 AS ABOVE WITH VERY HIGH POROSITY AND PERMEABILITY.

- 59.0- 60.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, SKELETAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, 20% QUARTZ SAND, 94% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 60.0- 61.0 AS ABOVE,
- 61.0- 62.0 LIMESTONE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, SKELETAL, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 15% QUARTZ SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
- 62.0- 63.0 AS ABOVE,
- 65.0- 64.0 LIMESTONE, YELLOWISH GRAY, 14% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 30% DOLOMITE, 6% QUARTZ SAND, 62% PHOSPHATIC SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
- 69.0- 71.0 LIMESTONE, YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 30% DOLOMITE, 25% QUARTZ SAND, 63% PHOSPHATIC SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
- 71.0- 72.0 LOST CIRCULATION-DRILLER REPORTS CAVITY
- 72.0- 74.0 AS 69 TO 71 FEET.
- 74.0- 76.0 LIMESTONE, VERY LIGHT ORANGE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 20% DOLOMITE, 35% QUARTZ SAND, 61% PHOSPHATIC SAND, FOSSIL MOLDS,
- 76.0- 76.0 SANDSTONE, VERY LIGHT ORANGE TO GRAYISH BROWN, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, HIGH SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 20% CALCILUTITE, 20% DOLOMITE, 62% PHOSPHATIC SAND, MOLLUSKS,
- 78.0- 80.0 NO RECOVERY-DRILLER REPORTS CLAY, SHELL, AND SAND.

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- 80.0- 81.0 LIMESTONE, YELLOWISH GRAY TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, CRYSTALS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 55% DOLOMITE, 35% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, FOSSIL MOLDS,
- 81.0- 82.0 AS ABOVE,
- 82.0- 87.0 SAND, YELLOWISH GRAY, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO VERY COARSE, SUB-ANGULAR, ROUND, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 25% DOLOMITE, 65% CLAY, 08% PHOSPHATIC SAND, 01% PHOSPHATIC GRAVEL, MOLLUSKS, QUARTZITE GRANULES
- 87.0- 88.0 SAND, YELLOWISH GRAY TO LIGHT OLIVE GRAY, 18% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 20% CALCILUTITE, 02% CLAY, 02% PHOSPHATIC SAND, MOLLUSKS,
- 88.0- 90.0 DOLOMITE, DARK GRAY TO DARK YELLOWISH BROWN, 15% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 04% PHOSPHATIC SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS, PHOSPHATE LINING FOSSIL MOLDS.
- 90.0- 91.0 DOLOMITE, GRAYISH ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% CALCILUTITE, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 91.0- 92.0 AS ABOVE,
- 92.0- 94.0 LIMESTONE, GRAYISH ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 35% DOLOMITE, 04% QUARTZ SAND, HIGH RECRYSTALLIZATION, COQUINA, MOLLUSKS, FOSSIL MOLDS,
- 94.0- 97.0 AS ABOVE,

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LEE CL. T44S, R26E, SEC 15

- 97.0- 101.0 LIMESTONE, GRAYISH BROWN, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE, 55% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, DOLomite CEMENT, 25% DOLomite, HIGH RECRYSTALLIZATION, OBOLINA, MOLLUSKS, FOSSIL MOLDS,
FRIABLE LIMESTONE
- 101.0- 101.3 LIMESTONE, WHITE, 10% POROSITY, INTERCRYSTALLINE, LOW PERMEABILITY, GRAIN TYPE: CRYSTALS, CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, SPARRY CALCITE CEMENT, DOLomite CEMENT, CALCILUTITE MATRIX, 25% DOLomite, MOLLUSKS,
- 101.3- 103.5 DOLomite, MODERATE YELLOWISH BROWN, 14% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% CALCILUTITE, 10% QUARTZ SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
- 103.5- 104.0 DOLomite, WHITE TO VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 25% CALCILUTITE, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 104.0- 106.0 CLAY, WHITE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 25% CALCILUTITE, 10% SILT, 02% CLAY, MOLLUSKS,
- 106.0- 106.0 AS ABOVE WITH BLEBS OF PHOSPHATIC SAND AT 107 FT.
- 106.0- 109.0 AS ABOVE,
- 109.0- 112.0 AS ABOVE,
- 112.0- 114.0 CLAY, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 10% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 114.0- 116.0 CLAY, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 35% CALCILUTITE, 01% CLAY, 03% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 116.0- 116.0 AS ABOVE,
- 118.0- 120.0 AS ABOVE,

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LEE CO. T44S, R26E, SEC 15

- 120.0- 122.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIGGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% DOLOMITE, 01% PHOSPHATIC SAND, 03% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 122.0- 124.0 SLIGHTLY SANDY CARBONATE MUD
- 124.0- 129.0 AS ABOVE,
- 129.0- 132.0 AS ABOVE,
- 132.0- 134.0 LIMESTONE, WHITE TO YELLOWISH GRAY, 10% PEROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIGGENIC, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 03% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 134.0- 136.0 LIMESTONE, GRAYISH ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIGGENIC, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 40% DOLOMITE, 20% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 136.0- 140.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIGGENIC, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 05% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS,
- 140.0- 142.0 AS ABOVE,
- 142.0- 146.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIGGENIC, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 15% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS,
- 146.0- 148.0 AS ABOVE,
- 148.0- 148.5 CLAY, GRAYISH CLAYE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% DOLOMITE, 10% QUARTZ SAND, 01% PHOSPHATIC SAND, 01% MICA, FOSSIL FRAGMENTS,

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LEE CO. T44S, R26E, SEC 15

- 148.5- 150.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 35% DOLOMITE, 05% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 150.0- 152.0 SAND, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, 05% CLAY, 10% DOLOMITE, 04% PHOSPHATIC SAND,
- 152.0- 154.0 CLAY, GRAYISH OLIVE, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 15% CLAY, 06% QUARTZ SAND, 01% PHOSPHATIC SAND, 01% MICA, BENTHONIC FORAMINIFERA, MOLLUSKS,
TEXTULARIA SP.
- 154.0- 158.0 AS ABOVE,
- 158.0- 163.0 SAND, GRAYISH OLIVE, 14% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, INTERBEDDED, 15% DOLOMITE, 05% CLAY, 06% PHOSPHATIC SAND, 02% MICA, MOLLUSKS, FOSSIL FRAGMENTS,
SHELL BEDS INTERBEDDED - ROUND DOLOMITE PEBBLES (160').
- 163.0- 165.0 CLAY, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, INTERBEDDED, 10% CLAY, 04% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 165.0- 172.0 CLAY, GRAYISH OLIVE GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, 20% CLAY, 01% QUARTZ SAND, 01% PHOSPHATIC SAND, MOLLUSKS,
- 172.0- 180.0 CLAY, GRAYISH OLIVE GREEN, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, 01% PHOSPHATIC SAND, 20% DOLOMITE, BENTHONIC FORAMINIFERA, MOLLUSKS, SHARK TEETH,
- 180.0- 182.0 AS ABOVE,
- 182.0- 188.0 SAND, GRAYISH OLIVE GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, 10% CLAY, 10% DOLOMITE, 10% PHOSPHATIC SAND, MOLLUSKS, SHARK TEETH,

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- 188.0- 190.0 SAND, GRAYISH OLIVE GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, 10% CLAY, 05% DOLOMITE, 15% PHOSPHATIC SAND, 02% PHOSPHATIC GRAVEL, MOLLUSKS, SHARK TEETH,
- 190.0- 194.0 CLAY, GRAYISH OLIVE GREEN, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, DISTURBED, 10% CLAY, 10% QUARTZ SAND, 08% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL FRAGMENTS,
- 194.0- 197.0 AS ABOVE,
- 197.0- 199.0 CLAY, YELLOWISH GRAY, 05% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CLAY MATRIX, DISTURBED, 20% CLAY, 06% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 199.0- 207.0 SAND, YELLOWISH GRAY TO LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, 04% CLAY, 04% DOLOMITE, 15% PHOSPHATIC SAND, MOLLUSKS,
- 207.0- 207.5 SAND, YELLOWISH GRAY TO LIGHT GREENISH YELLOW, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, DOLOMITE CEMENT, 05% DOLOMITE, 04% PHOSPHATIC SAND, MOLLUSKS,
- 207.5- 210.0 CLAY, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 06% PHOSPHATIC SAND, 06% QUARTZ SAND, MOLLUSKS,
- 210.0- 214.0 AS ABOVE WITH PHOS. LIMESTONE INTERBEDDED.,
- 214.0- 217.0 LIMESTONE, VERY LIGHT GRAY TO YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 65% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, 02% QUARTZ SAND, 02% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MLLDS, FOSSIL FRAGMENTS,
- DRILLER REPORTS WELL FLOW (5-10GPM)
- 217.0- 222.0 OYSTER BED
- 222.0- 224.0 CLAY, LIGHT GREENISH YELLOW, 10% POROSITY, INTERGRANULAR, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, INTERBEDDED, 15% CALCILUTITE, 05% CLAY, 04% PHOSPHATIC SAND, 04% QUARTZ SAND, MOLLUSKS, BRYOZOA, CORAL,

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- 224.0- 227.0 LIMESTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% DOLOMITE, 04% PHOSPHATIC SAND, 03% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 227.0- 232.0 LIMESTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 05% DOLOMITE, 10% PHOSPHATIC SAND, 20% QUARTZ SAND, MOLLUSKS,
- 232.0- 237.0 AS ABOVE,
- 237.0- 247.0 LIMESTONE, LIGHT OLIVE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CRYSTALS, SKELETAL, 75% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO VERY COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, INTERBEDDED, 05% CLAY, 15% DOLOMITE, 06% QUARTZ SAND, 04% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, CORAL, CRUSTACEA,
OYSTER BED TO 242'.
- 247.0- 252.0 AS ABOVE, BUT MODERATELY INDURATED, OYSTER BEDS
- 252.0- 257.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 257.0- 264.0 AS ABOVE,
- 264.0- 269.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 15% DOLOMITE, 10% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, FOSSIL FRAGMENTS,
- 269.0- 271.0 LIMESTONE, YELLOWISH GRAY TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 20% DOLOMITE, 10% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 271.0- 275.0 DRILLER REPORTS CAVITY - GOOD FLOW (300GPM)

- 273.0- 282.0 LIMESTONE, YELLOWISH GRAY, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIGENIC, CALCILUTITE, SKELETAL, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 20% DOLOMITE, 10% QUARTZ SAND, 15% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 282.0- 290.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 15% DOLOMITE, 06% PHOSPHATIC SAND, 10% QUARTZ SAND, BRYOZOA, MOLLUSKS, FOSSIL MOLDS,
CAVITIES AT 285'.
- 290.0- 300.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, FOSSIL FRAGMENTS,
- 300.0- 302.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 10% DOLOMITE, 20% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 302.0- 307.0 CLAY, GREENISH GRAY, 14% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 02% CLAY, 50% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 307.0- 308.0 AS ABOVE,
- 308.5- 310.0 CLAY, YELLOWISH GRAY, 14% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, BIODURATED, 04% CLAY, 10% QUARTZ SAND, 10% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 310.0- 319.0 CLAY, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, INTERBEDDED, 05% CLAY, 15% CALCILUTITE, MOLLUSKS, BENTHONIC FORAMINIFERA,
PHOSPHATE AND QUARTZ SAND INTERBEDDED
- 319.0- 321.0 AS ABOVE,

- 321.0- 326.0 CLAY, LIGHT OLIVE TO YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILLTITE, 05% QUARTZ SAND, 03% PHOSPHATIC SAND, MOLLUSKS, BRYOZEA,
BRYOZUAN BILHERM
- 326.0- 327.0 CLAY, LIGHT OLIVE, 16% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 05% PHOSPHATIC SAND, 20% QUARTZ SAND, BRYOZUA, FOSSIL FRAGMENTS,
- 327.0- 329.0 CLAY, LIGHT GREENISH GRAY, 14% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 02% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS, BRYOZUA,
- 329.0- 332.0 AS ABOVE,
- 332.0- 335.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 15% DOLOMITE, 03% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS, BRYOZUA,
- 335.0- 337.0 AS ABOVE,
- 337.0- 342.0 AS ABOVE WITH MORE PHOSPHATE (07%)
- 342.0- 345.0 LIMESTONE, VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 15% DOLOMITE, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, ECHINOID, BRYOZUA, FOSSIL FRAGMENTS,
- 345.0- 352.0 LIMESTONE, LIGHT OLIVE GRAY, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% DOLOMITE, 25% PHOSPHATIC SAND, 25% QUARTZ SAND, MOLLUSKS,
- 352.0- 362.0 AS ABOVE,
- 362.0- 367.0 LIMESTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 10% PHOSPHATIC SAND, 20% QUARTZ SAND, MOLLUSKS,

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- 367.0- 368.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, CRYSTALS, BICGENIC, 10% ALLEOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, BICTURBATED, 20% DOLOMITE, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS,
- 368.0- 371.0 LIMESTONE, YELLOWISH GRAY, 18% POROSITY, INTERGRANULAR, MOLLIC, GRAIN TYPE: CALCILUTITE, BICGENIC, CRYSTALS, 20% ALLEOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 35% DOLOMITE, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, ECHINOID,
- 371.0- 375.0 LIMESTONE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BICGENIC, CRYSTALS, 10% ALLEOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 35% DOLOMITE, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS,
- 375.0- 376.0 DOLOMITE, GRAYISH BROWN, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 12% PHOSPHATIC SAND, 08% QUARTZ SAND, MOLLUSKS,
- 376.0- 377.0 AS ABOVE WITH LARGE MOLLUSK MOLDS
- 377.0- 382.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BICGENIC, 10% ALLEOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 03% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- 382.0- 392.0 AS ABOVE,
- 392.0- 397.0 AS ABOVE WITH MORE PHOSPHATE (07%)
- 397.0- 407.0 LIMESTONE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BICGENIC, 25% ALLEOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, CLAY MATRIX, 35% DOLOMITE, 01% CLAY, 03% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, BRYZOZEA,

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LEE CO. T44S, R26E, SEC 15

- 407.0- 709.0 LIMESTONE, WHITE TO LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: CALCILUTITE, BIGGENIC, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% DOLOMITE, 10% PHOSPHATIC SAND, 04% QUARTZ SAND, MOLLUSKS, ECHINOID, BRYOZOA,
- 709.0- 412.0 AS ABOVE WITH MORE PHOSPHATE (10%)
- 412.0- 415.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIGGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% DOLOMITE, 12% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS,
- 415.0- 417.0 AS ABOVE WITH HEAVY PHOSPHATE CONCENTRATION AT +16.
- 417.0- 425.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIGGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 10% DOLOMITE, 14% PHOSPHATIC SAND, 20% QUARTZ SAND, MOLLUSKS,
- 425.0- 429.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, SKELETAL, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% DOLOMITE, 05% PHOSPHATIC SAND, 02% QUARTZ SAND, MOLLUSKS, BRYOZOA, FOSSIL FRAGMENTS,
- 429.0- 430.0 AS ABOVE WITH LESS ALLOCHEMS-PHOSPHATIC SAND INTERBEDS
- 430.0- 431.0 CLAY, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 04% PHOSPHATIC SAND, 04% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS,
- INTERBEDS OF HIGHLY PHOSPHATIC SANDS.
- 431.0- 433.0 AS ABOVE,
- 433.0- 435.0 CLAY, MODERATE OLIVE BROWN, 15% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, CLAY MATRIX, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% DOLOMITE, 04% CALCILUTITE, MOLLUSKS,
- 435.0- 440.0 AS ABOVE,

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- 440.0- 442.0 CLAY, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 05% CLAY, 10% PHOSPHATIC SAND, 05% QUARTZ SAND, FOSSIL FRAGMENTS,
- 442.0- 443.0 AS ABOVE,
- 443.0- 445.0 CLAY, LIGHT OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 02% CLAY, 08% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, BRYOZOA, BRYOZOAN EILHERM
- 445.0- 446.0 CLAY, LIGHT GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 15% CALCILUTITE, 02% CLAY, 10% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, BRYOZOA, SHARK TEETH, FOSSIL FRAGMENTS,
- 446.0- 450.0 LIMESTONE, WHITE TO LIGHT GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 10% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 450.0- 452.0 LIMESTONE, MODERATE LIGHT GRAY, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, INTRACLASTS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 20% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS,
- 452.0- 457.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 20% DOLOMITE, 08% PHOSPHATIC SAND, 04% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
PHOSPHATIC SAND INTERBEDDED
- 457.0- 463.0 AS ABOVE,
- 463.0- 465.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, INTRACLASTS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, 30% DOLOMITE, 03% PHOSPHATIC SAND, 01% QUARTZ SAND, BRYOZOA, MOLLUSKS,

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LEE CO. 144S, R20E, SEC 15

- 465.0- 467.0 DOLOMITE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUMEDIAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 03% PHOSPHATIC SAND, 01% QUARTZ SAND, BRYOZOA, MOLLUSKS,
- 467.0- 469.0 DOLOMITE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUMEDIAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 01% PHOSPHATIC SAND, 01% QUARTZ SAND, BRYOZOA, MOLLUSKS,
- 469.0- 473.0 AS ABOVE,
- 473.0- 475.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLLIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 40% DOLOMITE, 01% PHOSPHATIC SAND, 01% QUARTZ SAND, BRYOZOA, MOLLUSKS, FOSSIL MOLDS,
- 475.0- 478.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 40% DOLOMITE, 08% PHOSPHATIC SAND, 04% QUARTZ SAND, BRYOZOA, MOLLUSKS,
- 478.0- 477.0 AS ABOVE WITH ZONED LAYERING OF HIGH % OF PHOSPHATE
- 477.0- 479.0 AS ABOVE,
- 479.0- 481.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MOLLIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 60% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 35% DOLOMITE, 08% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS, FOSSIL FRAGMENTS, BRYOZOA,
- 481.0- 483.0 AS ABOVE,
- 483.0- 485.0 DOLOMITE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUMEDIAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 15% CALCILUTITE, 02% PHOSPHATIC SAND, 01% QUARTZ SAND, BRYOZOA, MOLLUSKS,

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LEE CO. T44S, R26E, SEC 15

- 485.0- 495.0 DOLOMITE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 08% PHOSPHATIC SAND, 10% QUARTZ SAND, BRYOZOA, MOLLUSKS,
- 495.0- 496.0 AS ABOVE,
- 496.0- 500.0 DOLOMITE, WHITE TO MODERATE LIGHT GRAY, 10% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 10% PHOSPHATIC SAND, 10% QUARTZ SAND, BRYOZOA, MOLLUSKS,
- 500.0- 505.0 AS ABOVE WITH MORE PHOSPHATE (20%)
- 505.0- 506.0 DOLOMITE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 15% PHOSPHATIC SAND, 20% QUARTZ SAND, BRYOZOA, MOLLUSKS,
- 506.0- 514.0 AS ABOVE WITH INCREASING SAND AND PHOSPHATE %'S.
- 514.0- 523.0 DOLOMITE, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 05% PHOSPHATIC SAND, 08% QUARTZ SAND, BRYOZOA, MOLLUSKS,
- 523.0- 524.0 CLAY, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 25% CALCILUTITE, 15% PHOSPHATIC SAND, 15% QUARTZ SAND, MOLLUSKS,
- 524.0- 526.0 DOLOMITE, WHITE TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUBEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 30% CALCILUTITE, 02% PHOSPHATIC SAND, 01% QUARTZ SAND, MOLLUSKS, BRYOZOA,
- 526.0- 530.0 CLAY, GREENISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, MODERATE INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 30% CALCILUTITE, 01% PHOSPHATIC SAND, 02% CLAY, 05% SILT, MOLLUSKS,
- 530.0- 532.0 CLAY, DARK GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 10% CLAY, 02% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS,
- 532.0- 536.0 AS ABOVE WITH HIGHLY PHOSPHATIC DOLOMITE AT 536.

LITHOLOGIC LOG

028

LEE CL. T44S, R28E, SEC 15

- 538.0- 540.0 DOLMITE, YELLOWISH GRAY TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 35% CALCILUTITE, 07% PHOSPHATIC SAND, 03% QUARTZ SAND, MOLLUSKS, BRYZOA,
- 540.0- 541.5 DOLMITE, YELLOWISH GRAY TO DARK GREENISH GRAY, 12% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, MOLDIC, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 14% PHOSPHATIC SAND, 02% QUARTZ SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLS, BRYZOA,
- 541.5- 554.0 DOLMITE, YELLOWISH GRAY, 15% POROSITY, INTERGRANULAR, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 45% CALCILUTITE, 05% PHOSPHATIC SAND, 05% QUARTZ SAND, MOLLUSKS, BRYZOA, FOSSIL FRAGMENTS,
- 554.0- 556.0 GRADES INTO UNDERLYING LITHOLOGY
- 556.0- 560.0 CLAY, LIGHT OLIVE GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, MODERATE INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 05% CLAY, 10% CALCILUTITE, 01% PHOSPHATIC SAND, BRYZOA, MOLLUSKS,
- 560.0- 561.0 CLAY, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, MODERATE INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE,
- 561.0- 565.0 CLAY, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, LOW PERMEABILITY, MODERATE INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 01% PHOSPHATIC SAND, BRYZOA, MOLLUSKS,
- 565.0- 568.0 DOLMITE, YELLOWISH GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, ECHEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, DOLMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 01% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLS,
- 568.0- 572.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 14% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 35% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, DOLMITE CEMENT, SPARKY CALCITE CEMENT, 30% DOLMITE, MOLLUSKS, FOSSIL FRAGMENTS, BRYZOA,
- 572.0- 574.0 AS ABOVE,

LITHOLOGIC LOG

#- 028 .

LEE CL. T44S, R26E, SEC 15

- 574.0- 575.0 DOLOMITE, LIGHT OLIVE GRAY, 14% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUCEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARKY CALCITE CEMENT, 20% CALCILUTITE, 02% PHOSPHATIC SAND, BRYOZOA, MOLLUSKS,
- 575.0- 579.0 DOLOMITE, VERY LIGHT ORANGE TO GRAYISH BROWN, 16% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUCEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
- DRILLER REPORTS INCREASE FLOW AT 576'-WATER SAMPLE
- 579.0- 582.0 AS ABOVE WITH CLAY BED 580.
- 582.0- 585.0 CLAY, YELLOWISH GRAY TO GREENISH GRAY, 12% POROSITY, INTERGRANULAR, LLW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 15% CALCILUTITE, 02% PHOSPHATIC SAND, SHARK TEETH,
- 585.0- 591.0 DOLOMITE, YELLOWISH GRAY, 12% POROSITY, INTERGRANULAR, 50-90% ALTERED, EUCEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 01% PHOSPHATIC SAND, HIGH RECRYSTALLIZATION,
- 591.0- 597.0 LIMESTONE, VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 00% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: VERY FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 02% QUARTZ SAND, BRYOZOA, MOLLUSKS, BENTHONIC FORAMINIFERA, FOSSIL MOLDS,
- 597.0- 600.0 DOLOMITE, YELLOWISH GRAY TO LIGHT OLIVE GRAY, 12% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EUCEDRAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
- 600.0- 609.0 LIMESTONE, YELLOWISH GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 02% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS,

SUKITES, QUINQUELOCULINA SP., PHOS. OCCURS IN THIN SEAMS

LITHOLOGIC LOG

W- 028 .

LEE CO. T44S, R26E, SEC 15

609.0- 612.0 LIMESTONE, VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIGGENIC, CRYSTALS, SKELETAL, 75% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MEDIUM, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 0.1% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, CORAL, MOLLUSKS, FOSSIL MOLDS, ECHINOID,

DRILLER REPORTS INCREASE FLOW AT 612'-WATER SAMPLE

612.0- 617.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIGGENIC, CRYSTALS, SKELETAL, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 15% DOLOMITE, 0.2% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,

617.0- 627.0 LIMESTONE, VERY LIGHT ORANGE, 18% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 0.2% PHOSPHATIC SAND, 0.2% QUARTZ SAND, ECHINOID, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS,

627.0- 632.0 AS ABOVE WITH ARCHIAS SP. AND SURITES

632.0- 637.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 0.2% PHOSPHATIC SAND, 0.2% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS, ECHINOID,

637.0- 644.0 AS ABOVE,

644.0- 647.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, DOLOMITE CEMENT, 10% DOLOMITE, 0.2% PHOSPHATIC SAND, 0.2% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS, ECHINOID,

DRILLER REPORTS INCREASED FLOW

647.0- 652.0 AS ABOVE,

LITHOLOGIC LOG

W- 020 .

LEE CO. T44S, R20E, SEC 15

- 652.0- 657.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 13% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% PHOSPHATIC SAND, 02% QUARTZ SAND, BENTHONIC FORAMINIFERA, ECHINOID, MOLLUSKS, FOSSIL MOLDS, CORAL,
MANY SURITES
- 657.0- 662.0 AS ABOVE WITH MORE PHOSPHATE (8%) AND QTZ SAND (8%)
- 662.0- 667.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 09% PHOSPHATIC SAND, 10% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, ECHINOID, FOSSIL MOLDS, BRYOZOA,
- 667.0- 670.0 AS ABOVE,
- 670.0- 672.0 LIMESTONE, VERY LIGHT ORANGE TO VERY LIGHT GRAY, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 02% PHOSPHATIC SAND, 02% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 672.0- 672.0 AS ABOVE,
- 673.0- 677.0 LIMESTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 01% PHOSPHATIC SAND, 03% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 677.0- 682.0 AS ABOVE WITH MORE PHOSPHATE (7%) AND QTZ SAND (10%)
- 682.0- 685.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 00% PHOSPHATIC SAND, 07% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 685.0- 687.0 SANDSTONE, LIGHT GRAY, 15% POROSITY, INTERGRANULAR, GRAIN SIZE: FINE, RANGE: VERY FINE TO MEDIUM, SUB-ANGULAR, ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 30% CALCILUTITE, 05% SPAR, 00% PHOSPHATIC SAND, MOLLUSKS, FOSSIL FRAGMENTS,

APPEARS REWORKED AND/OR WEATHERED

- 687.0- 692.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 40% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% PHOSPHATIC SAND, 02% QUARTZ SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS, BRYOZOA,
DRILLER REPORTS INCREASED FLOW 682 TO 692.
- 692.0- 694.0 AS ABOVE,
- 694.0- 699.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 40% QUARTZ SAND, 05% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS,
- 699.0- 702.0 LIMESTONE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 04% QUARTZ SAND, 04% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS,
- 702.0- 707.0 LIMESTONE, VERY LIGHT ORANGE TO LIGHT GRAY, 14% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 25% QUARTZ SAND, 06% PHOSPHATIC SAND, MOLLUSKS, BENTHONIC FORAMINIFERA,
- 707.0- 709.0 AS ABOVE,
- 709.0- 710.0 GRADES INTO UNDERLYING LITHO
- 710.0- 715.0 DOLOMITE, VERY LIGHT GRAY TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, LOW PERMEABILITY, 50-90% ALTERED, EUCHEMICAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 03% QUARTZ SAND, 01% PHOSPHATIC SAND, HIGH RECRYSTALLIZATION,

- 715.0- 717.0 DOLOMITE, LIGHT GRAY, 14% POROSITY, INTERGRANULAR, MOLDIC, 50-90% ALTERED, EMBEDDED, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, CALCILUTITE MATRIX, 20% CALCILUTITE, 1% QUARTZ SAND, 0% PHOSPHATIC SAND, HIGH RECRYSTALLIZATION, MOLLUSKS, FOSSIL MOLDS,
- 717.0- 722.5 LIMESTONE, VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 10% DOLOMITE, 20% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, ECHINOID, FOSSIL FRAGMENTS, FOSSIL MOLDS, CRUSTACEA,
- 722.5- 723.0 LIMESTONE, LIGHT GRAY TO VERY LIGHT ORANGE, 14% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, 30% DOLOMITE, 35% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, BRYOZEA,
- 723.0- 729.0 AS ABOVE WITH MORE SAND (45%)
- 729.0- 732.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 14% POROSITY, INTERGRANULAR, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 15% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLOMITE CEMENT, SPARRY CALCITE CEMENT, LAMINATED, 10% DOLOMITE, 10% QUARTZ SAND, MOLLUSKS,
- DRILLER REPORTS INCREASED FLOW AT 732'
- 732.0- 733.0 AS ABOVE WITH LENSE OF DOLOMITE AT 733'
- 733.0- 737.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, BRECCIATED, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 737.0- 742.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIGGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 0% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,

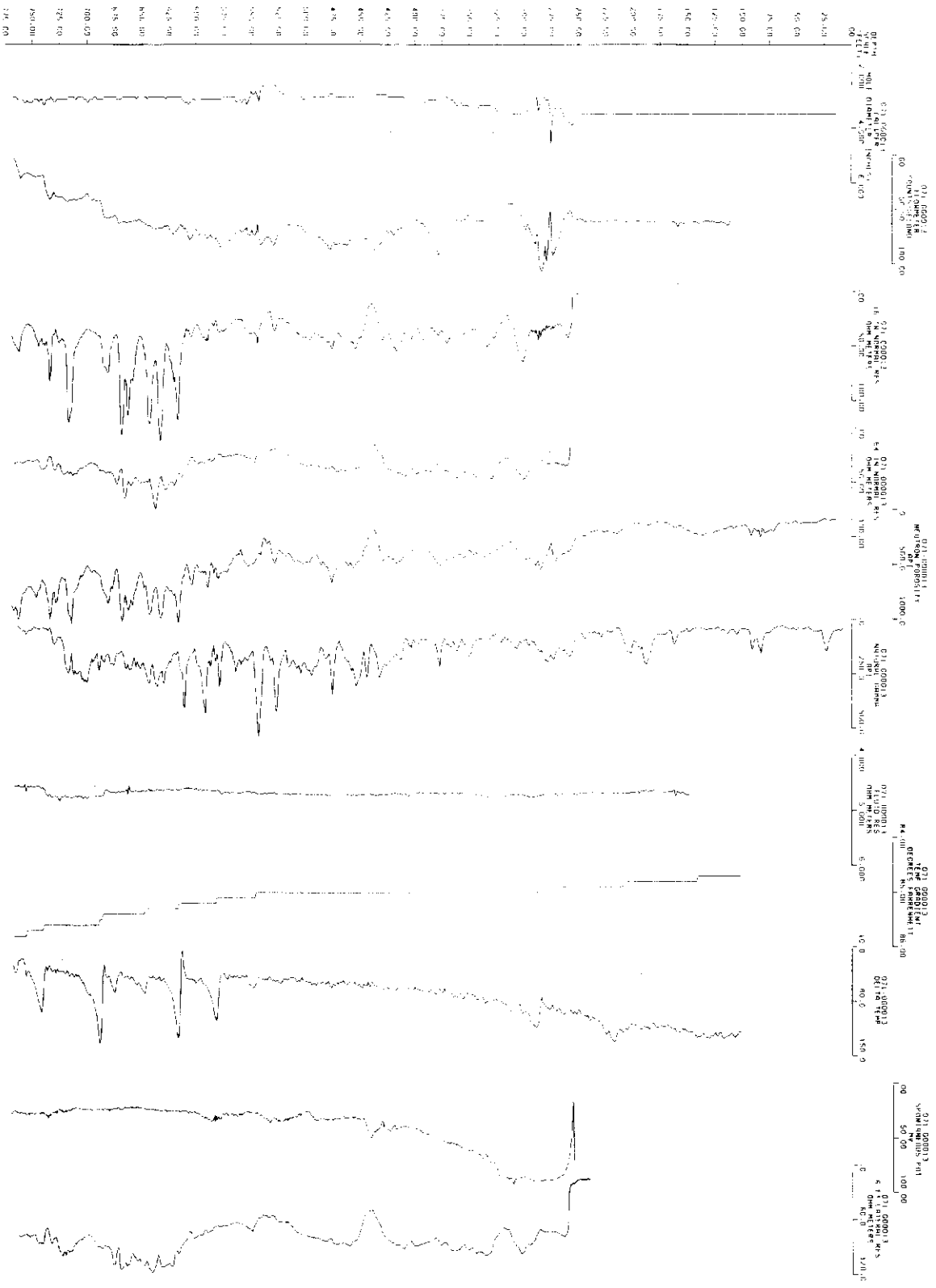
LITHOLOGIC LOG

W- 026 .

LEE CO. T44S, R26E, SEC 15

- 742.0- 747.0 LIMESTONE, VERY LIGHT ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS, 25% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, BRECCIATED, LAMINATED, 15% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 747.0- 752.0 AS ABOVE-DRILLER REPORTS VERY SOFT L/S AT 752'-NO REC.
- 752.0- 758.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: BIOGENIC, CALCILUTITE, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, MODERATE INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND, MOLLUSKS,
- 758.0- 766.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, GOOD INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, SPARRY CALCITE CEMENT, 10% DOLomite, 10% QUARTZ SAND, MOLLUSKS,
- 766.0- 768.0 LIMESTONE, WHITE, 10% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO VERY FINE, POOR INDURATION, CALCILUTITE MATRIX, 10% QUARTZ SAND,
- 768.0- 769.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 12% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, SPARRY CALCITE CEMENT, 10% DOLomite, 12% QUARTZ SAND, MOLLUSKS,
- 769.0- 767.0 LIMESTONE, VERY LIGHT ORANGE TO GRAYISH ORANGE, 15% POROSITY, INTERGRANULAR, GRAIN TYPE: CALCILUTITE, BIOGENIC, 05% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, 20% QUARTZ SAND, MOLLUSKS,
- 767.0- 770.0 LIMESTONE, VERY LIGHT ORANGE, 15% POROSITY, INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, MODERATE INDURATION, CALCILUTITE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,

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GEOPHYSICAL LOGS, LEE COUNTY, LE-028

SOUTH FLORIDA WMD - LITHO LOG PRINTOUT

W-22035
 LEE CO. 1975 R202 SEC 36 26 20 15 N E1 39 53 W
 TOTAL DEPTH- 400 FT. ELEV.- 20 FT. 46 SAMPLES- 0- 460 FT.
 COMPLETED- 07.20.65 DEPTH WORKED 400 FT.

OTHER GEOPHYSICAL LOGS AVAILABLE -

GAMMA
 CALIPHER
 ELECTRIC
 NEUTRON

WELL NAME-
 000 SOUTH, 22035, SPIND-DRILLER (ALVIN WOODRIF)
 REMARKS-
 DESCRIBED BY MIKE KNAPP (1-10-64), SAMPLE QUALITY (GOOD)

HYDROGEOLOGIC UNITS

0.0 100.0 SURFICIAL AQUIFER SYSTEM
 0.0 00.0 WATER TABLE AQUIFER
 90.0 100.0 LOWER TAMPA AQUIFER
 100.0 270.0 UPPER HAWTHORN CONFINING ZONE
 270.0 320.0 SANDSTONE AQUIFER
 320.0 410.0 MID-HAWTHORN CONFINING ZONE
 410.0 400.0 MID-HAWTHORN AQUIFER

STRATIGRAPHIC FORMATIONS -

0.0- 10.0 UNDIFFERENTIATED SAND, CLAY AND SHELLS
 10.0- 100.0 TAMPA FORMATION
 100.0- 100.0 MIOCENE COARSE CLASTICS
 100.0- 400.0 HAWTHORN FORMATION *

LITHOLOGIC LOG

W-22035 . LEE CO. 1975, R202, SEC 36
 0.0- 10.0 SAND, LIGHT GRAY, 35% POROSITY, INTERGRANULAR, GRAIN SIZE:
 MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM
 SPHERICITY, UNCONSOLIDATED,
 10.0- 10.0 SHELL BED, MODERATE ORANGE PINK TO WHITE, 30% POROSITY,
 INTERGRANULAR, UNCONSOLIDATED, 20% QUARTZ SAND, 15%
 CALCILUTITE, MOLLUSKS,
 10.0- 20.0 SANDSTONE, MODERATE ORANGE PINK, 25% POROSITY,
 INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE:
 MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED,
 MEDIUM SPHERICITY, GOOD INDURATION, CALCILUTITE MATRIX, 40%
 CALCILUTITE, MOLLUSKS, CORAL,

* THE MIOCENE COARSE CLASTICS, HAWTHORN FORMATION AND TAMPA LIMESTONE ARE CONSIDERED
 A PART OF THE HAWTHORN GROUP IN THIS REPORT.

LITHOLOGIC LOG

W-LEU33

LEE CO. 1973, K20E, SEC 36

- 20.0- 30.0 SHELL BED, MODERATE ORANGE PINK TO WHITE, 30% POROSITY, INTERGRANULAR, UNCONSOLIDATED, 10% QUARTZ SAND, 20% CALCILUTE, MOLLUSKS, CORAL,
- 30.0- 40.0 SANDSTONE, MODERATE ORANGE PINK TO WHITE, 30% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTE MATRIX, 20% CALCILUTE, MOLLUSKS,
- 40.0- 50.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLLIC, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 20% QUARTZ SAND, MOLLUSKS, CORAL, FOSSIL MOLDS,
- 50.0- 60.0 AS ABOVE,
- 60.0- 65.0 LIMESTONE, MODERATE LIGHT GRAY TO YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, MOLLIC, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 65.0- 80.0 CLAY, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, BULLMITE CEMENT, CALCILUTE MATRIX, 20% CALCILUTE, 10% SILT, 10% QUARTZ SAND, MOLLUSKS,
- 80.0- 95.0 AS ABOVE,
- 95.0- 100.0 LIMESTONE, LIGHT GRAY, 20% POROSITY, INTERGRANULAR, MOLLIC, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 10% QUARTZ SAND, 0.2% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS,
- 100.0- 110.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLLIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 0.2% QUARTZ SAND, 0.2% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, CORAL, FOSSIL MOLDS,
- 110.0- 130.0 AS ABOVE - PURE SAND (20%)

- 130.0- 140.0 LIMESTONE, VERY LIGHT ORANGE, 20% POROSITY, INTERGRANULAR, MOLLUSC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE, 5% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: FINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 2% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, ERYOZOA, PLANT REMAINS, FOSSIL MOLDS,
- 140.0- 150.0 AS ABOVE,
- 150.0- 160.0 SANDSTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, MOLLUSC, POSSIBLY HIGH PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 4% CALCILUTITE, MOLLUSKS, FOSSIL MOLDS,
- 160.0- 170.0 AS ABOVE (LARGE SHELL CEMENTED IN MATRIX)
- 170.0- 180.0 SANDSTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 20% POROSITY, INTERGRANULAR, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, MODERATE INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 4% CALCILUTITE, MOLLUSKS,
- 180.0- 190.0 SANDSTONE, VERY LIGHT ORANGE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLUMITE CEMENT, 25% CALCILUTITE, 20% DOLUMITE, MOLLUSKS,
- 190.0- 200.0 SAND, VERY LIGHT ORANGE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, DOLUMITE CEMENT, CLAY MATRIX, 0% CLAY, 20% DOLUMITE, 20% CALCILUTITE, 0% PHOSPHATIC SAND, MOLLUSKS,
- 200.0- 210.0 LIMESTONE, WHITE TO VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN TYPE: CALCILUTITE, BIOGENIC, 10% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, POOR INDURATION, CALCILUTITE MATRIX, 5% QUARTZ SAND, MOLLUSKS,
- 210.0- 220.0 AS ABOVE,
- 220.0- 230.0 SAND, VERY LIGHT ORANGE TO YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, 4% CALCILUTITE, MOLLUSKS,
- 230.0- 240.0 AS ABOVE (LARGE SHELL FRAGS)

LITHOLOGIC LOG

#-LE023

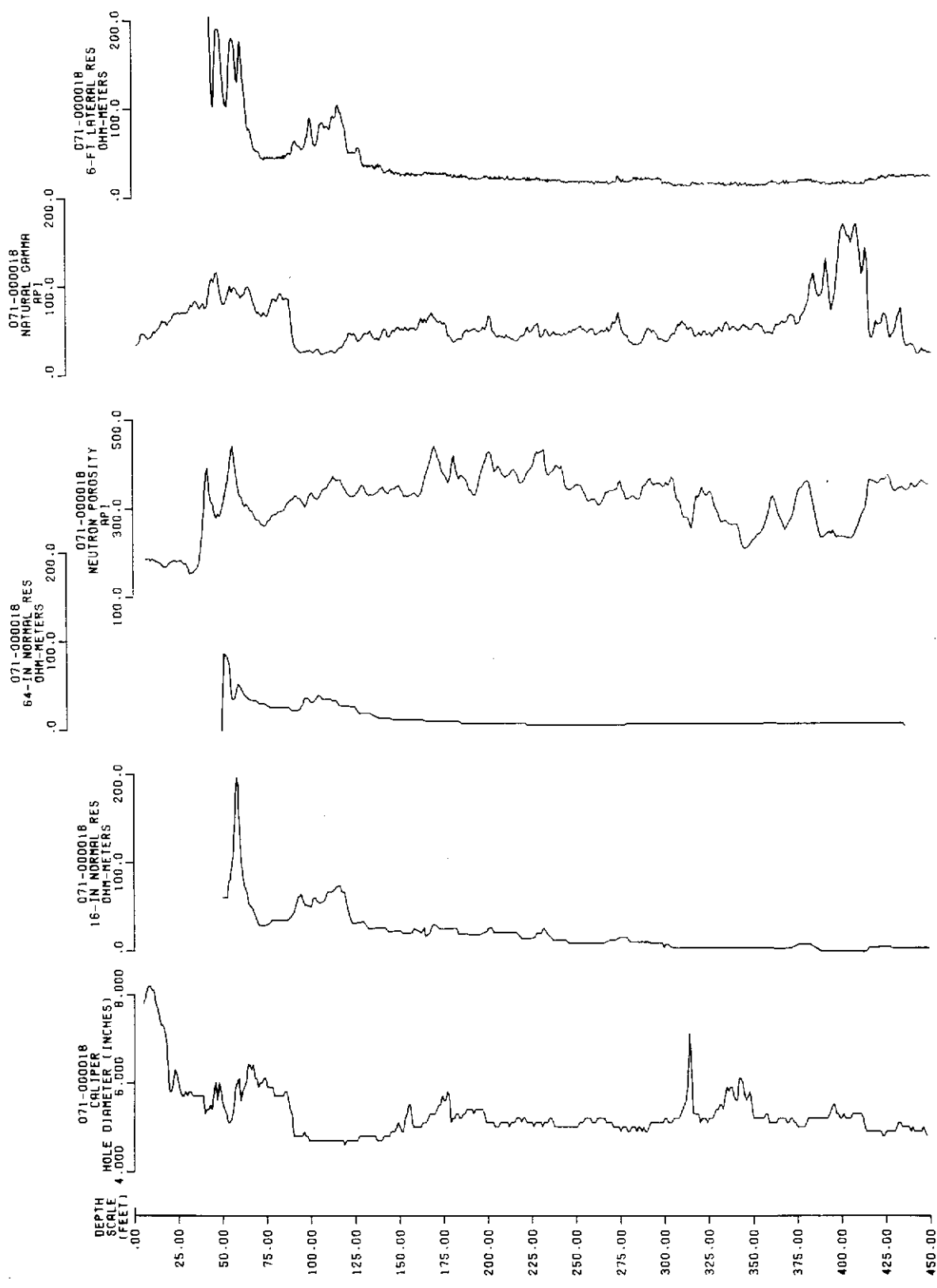
LEE CO. T47S, R26E, SEC 36

- 240.0- 250.0 AS ABOVE,
- 250.0- 260.0 SAND, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, GRAIN SIZE: MEDIUM, RANGE: VERY FINE TO COARSE, SUB-ANGULAR, ROUNDED, MEDIUM SPHERICITY, POOR INDURATION, CALCILUTITE MATRIX, CLAY MATRIX, 10% CALCILUTITE, 0% PHOSPHATIC SAND, 0% CLAY, MOLLUSKS,
- 260.0- 270.0 AS ABOVE,
- 270.0- 280.0 LIMESTONE, VERY LIGHT ORANGE, 10% POROSITY, INTERGRANULAR, MEDIUM, GRAIN TYPE: DIAGENIC, CALCILUTITE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTITE MATRIX, DOLomite CEMENT, 20% DOLomite, 0% PHOSPHATIC SAND, 0% QUARTZ SAND, 0% PHOSPHATIC GRAVEL, MOLLUSKS, FOSSIL MOLDS,
- 280.0- 290.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 10% POROSITY, INTERGRANULAR, MEDIUM, GRAIN TYPE: DIAGENIC, CALCILUTITE, CRYSTALS, 30% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTITE MATRIX, SPARKY CALCITE CEMENT, 0% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS, FOSSIL MOLDS, BRACHIOZOA,
- 290.0- 300.0 AS ABOVE,
- 300.0- 310.0 DOLomite, LIGHT OLIVE GRAY, 10% POROSITY, INTERGRANULAR, INTERCRYSTALLINE, PIN POINT VUGS, 50-90% ALTERED, EUCORAL, GRAIN SIZE: VERY FINE, RANGE: VERY FINE TO MICROCRYSTALLINE, GOOD INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 0% QUARTZ SAND, 0% PHOSPHATIC SAND, MOLLUSKS,
- 310.0- 320.0 CLAY, GREENISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, 10% CALCILUTITE, 0% QUARTZ SAND, MOLLUSKS,
- 320.0- 330.0 AS ABOVE,
- 330.0- 340.0 CLAY, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 0% CLAY, 30% QUARTZ SAND, 0% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 340.0- 350.0 AS ABOVE,
- 350.0- 360.0 AS ABOVE-LESS SAND (0%) - PLANKTIC
- 360.0- 370.0 CLAY, YELLOWISH GRAY, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLomite CEMENT, CALCILUTITE MATRIX, CLAY MATRIX, 0% CLAY, 20% QUARTZ SAND, 0% PHOSPHATIC SAND, BENTHONIC FORAMINIFERA, MOLLUSKS,
- 370.0- 380.0 AS ABOVE-INCREASE PHOSPHATE (0%)

- 380.0- 390.0 CLAY, GRAYISH OLIVE, 10% POROSITY, INTERGRANULAR, LOW PERMEABILITY, POOR INDURATION, DOLOMITE CEMENT, CALCILUTE MATRIX, CLAY MATRIX, 05% CLAY, 10% PHOSPHATIC SAND, 05% PHOSPHATIC GRAVEL, 25% QUARTZ SAND, MOLLUSKS,
- 390.0- 400.0 PHOSPHATE COBBLE
- 400.0- 410.0 AS ABOVE,
- 410.0- 420.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 15% POROSITY, INTERGRANULAR, MOLDIC, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO MEDIUM, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, DOLOMITE CEMENT, 20% DOLOMITE, 05% PHOSPHATIC SAND, 10% QUARTZ SAND, MOLLUSKS, FOSSIL MOLDS,
- 420.0- 430.0 AS ABOVE,
- 430.0- 440.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 20% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, CORAL, FOSSIL MOLDS,
- 440.0- 450.0 AS ABOVE,
- 450.0- 460.0 LIMESTONE, VERY LIGHT ORANGE TO WHITE, 20% POROSITY, INTERGRANULAR, MOLDIC, POSSIBLY HIGH PERMEABILITY, GRAIN TYPE: BIOGENIC, CALCILUTE, CRYSTALS, 45% ALLOCHEMICAL CONSTITUENTS, GRAIN SIZE: MICROCRYSTALLINE, RANGE: MICROCRYSTALLINE TO COARSE, GOOD INDURATION, CALCILUTE MATRIX, SPARRY CALCITE CEMENT, 05% QUARTZ SAND, 05% PHOSPHATIC SAND, MOLLUSKS, BRYOZOA, CORAL, FOSSIL MOLDS,

DEPTH (FT. NGVD)	COLUMN	ACCESSORY MINERALS	FORMATION		HYDROGEOLOGIC UNIT			
0		CALCITE SAND SAND	UNDIFF.	TAMIAMI FORMATION	SYSTEM	WATER TABLE AQUIFER		
-25								
-50		SAND SILT SILT SILT				AQUIFER	TAMIAMI CONFINING BEDS	
-75		SAND SAND SAND SAND			SURFICIAL	LOWER TAMIAMI AQUIFER		
-100								
-125								
-150		DOLOMITE DOLOMITE CALCITE CALCITE		MIocene COARSE CLASTICS	SYSTEM	UPPER HAWTHORN CONFINING ZONE		
-175								
-200								
-225		CALCITE CALCITE	GROUP	UPPER	SYSTEM	UPPER HAWTHORN CONFINING ZONE		
-250		SAND SAND						
-275								
-300		CALCITE CALCITE CALCITE CALCITE	HAWTHORN	CLASTIC	AQUIFER	SANDSTONE AQUIFER		
-325		CLAY CLAY						
-350		CLAY CLAY CLAY CLAY PHOSPHATE PHOSPHATE PHOSPHATE PHOSPHATE						
-375		PHOSPHATE PHOSPHATE			INTERMEDIATE	MID- HAWTHORN CONFINING ZONE		
-400								
-425		SAND SAND		LOWER CARBONATE				MID- HAWTHORN AQUIFER
-450								

LEO33



GEOPHYSICAL LOGS, LEE COUNTY, LE-033

APPENDIX II-1

INTRODUCTION

Introduction

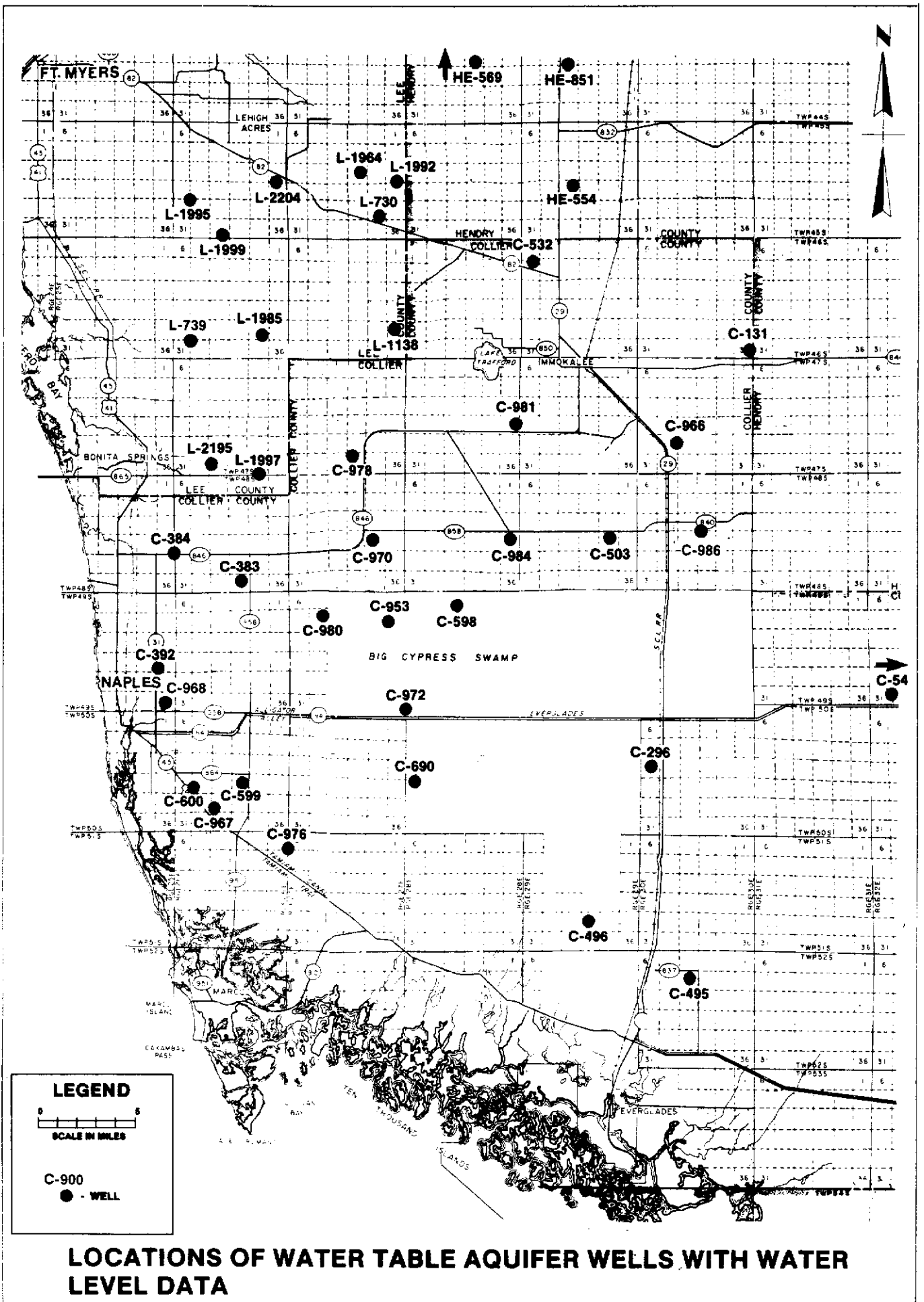
The data collected for use in the Water Level section was obtained from several sources and is presented here within the following pages.

The actual water level data for the water level maps in the text were obtained from the USGS in Ft. Myers. These data were collected at the end of each month from several wells scattered throughout the study area. The locations of each well and their accompanying water levels for the end of the dry (April, 1984) and wet (October, 1984) seasons are presented here (Appendix II-2).

Wells from each aquifer were chosen from selected sections within the study area to depict monthly water level fluctuations since 1976. These monthly water level fluctuations are drawn as hydrographs and are presented here and within the text. Locations maps accompany each set of hydrographs (Appendix II-8).

Rainfall and evaporation data were collected from several stations owned and maintained by the SFWMD. The rainfall data presented were taken from a few selected stations within the study area. These data are shown using bar graphs depicting total monthly rainfall since 1976. The evaporation data are presented in tables with an accompanying monthly evaporation summary index. The locations of the rainfall and evaporation stations are also presented here (Appendix II-22).

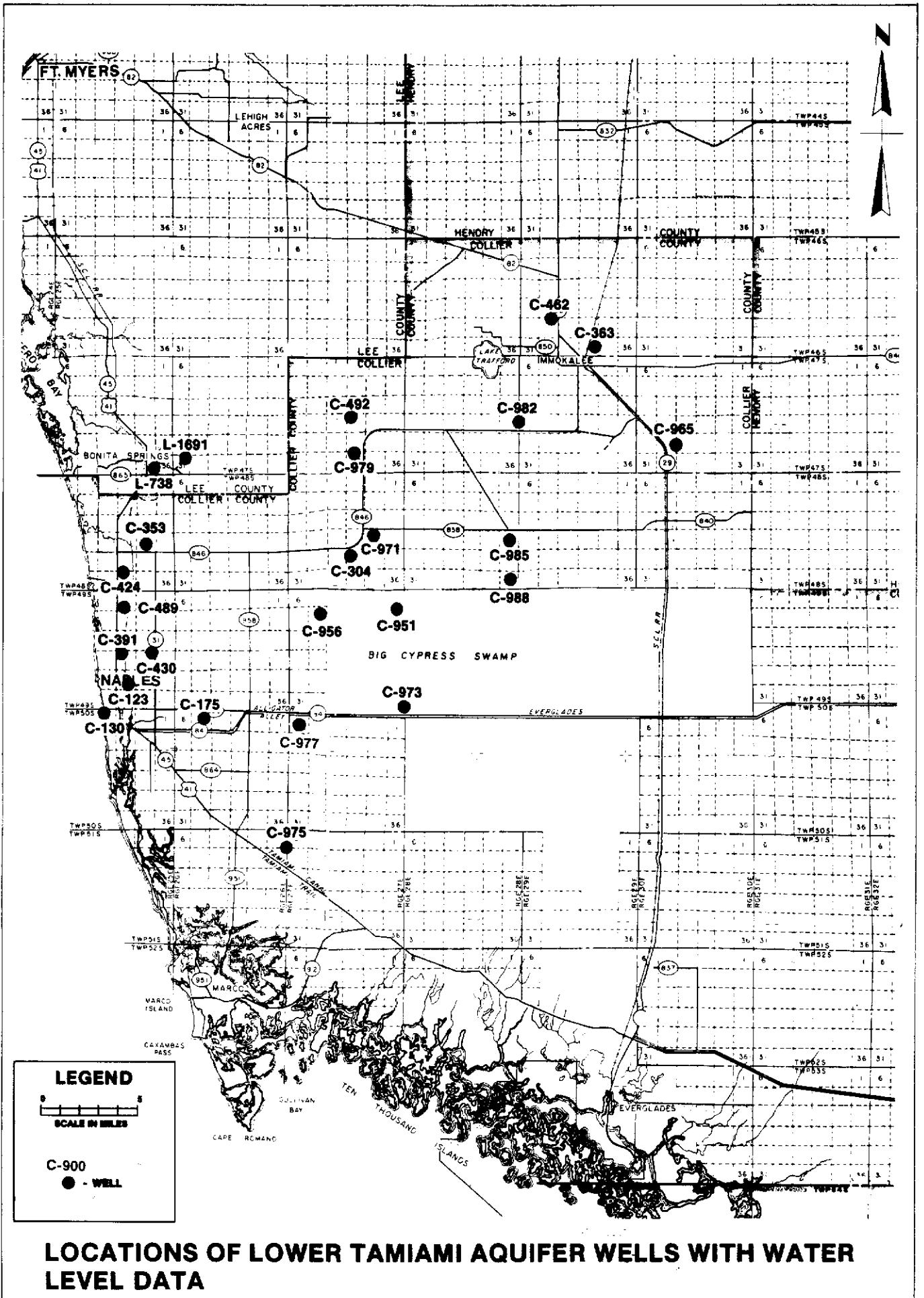
APPENDIX II-2
WATER LEVEL DATA



APPENDIX

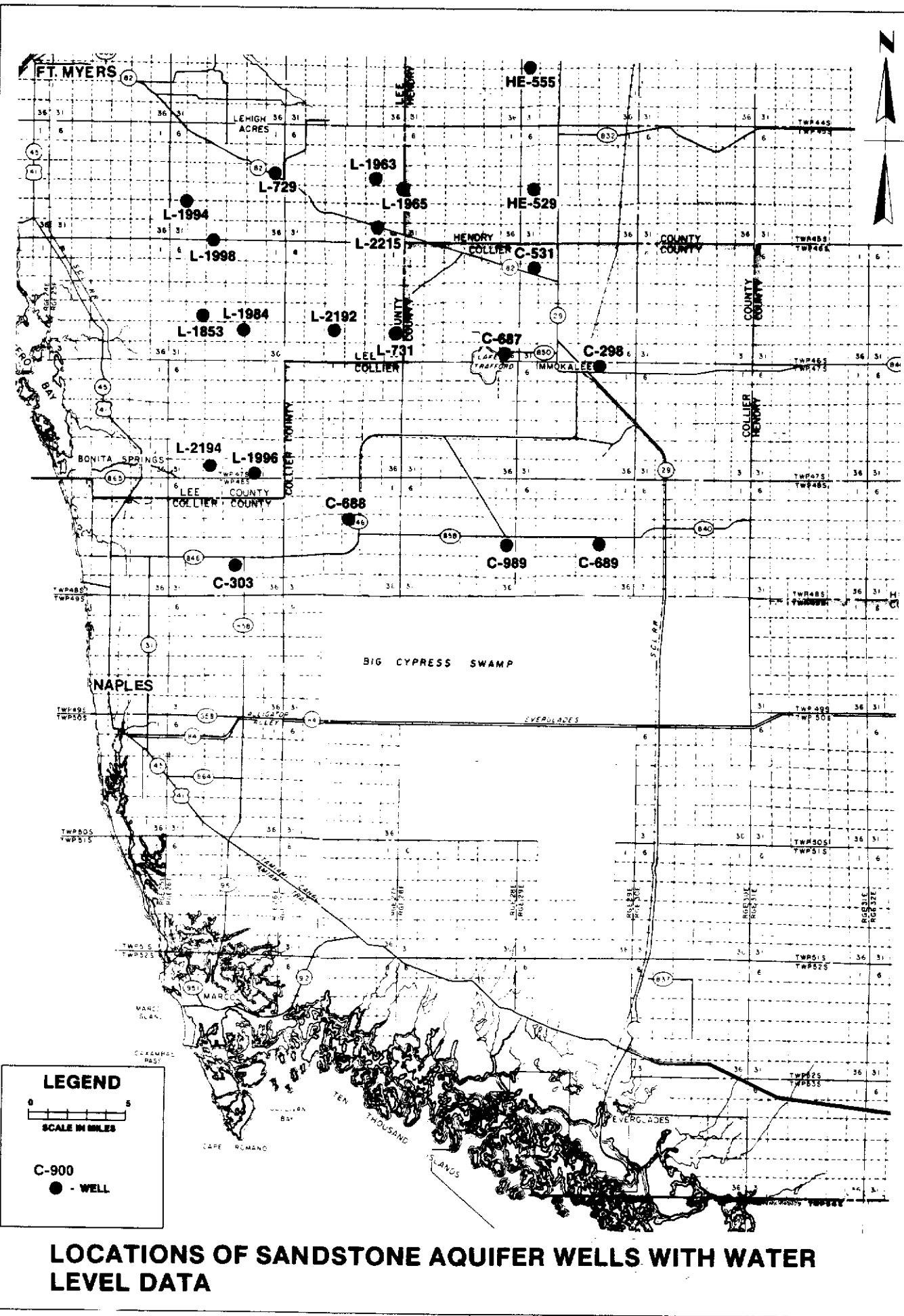
WATER LEVELS
END OF DRY AND WET SEASONS
WATER TABLE AQUIFER

<u>USGS WELL NO.</u>	<u>APRIL (1984) (END OF DRY)</u>	<u>OCTOBER (1984) (END OF WET)</u>	<u>DIFFERENCE</u>
C-54	10.30	10.90	0.60
C-131	20.87	25.05	4.18
C-296	9.15	11.22	2.07
C-383	8.05	10.45	2.40
C-384	6.46	8.46	2.00
C-392	5.68	6.96	1.28
C-495	3.10	4.98	1.88
C-496	5.62	6.97	1.35
C-503	14.07	14.06	-0.01
C-532	36.42	38.16	1.74
C-598	9.22	13.22	4.00
C-599	5.39	7.43	2.04
C-600	2.72	3.17	0.45
C-690	4.54	6.95	2.41
C-953	--	7.47	--
C-966	--	18.97	--
C-967	--	2.78	--
C-968	--	5.56	--
C-970	--	11.14	--
C-972	--	7.63	--
C-976	--	9.18	--
C-978	--	16.32	--
C-980	--	7.67	--
C-981	--	14.30	--
C-984	--	21.58	--
C-986	--	13.59	--
L-730	26.33	27.13	0.08
L-739	16.63	15.80	-0.83
L-1138	21.95	22.21	0.26
L-1964	24.68	25.60	0.92
L-1985	14.13	15.60	1.47
L-1992	22.72	23.32	0.61
L-1995	22.25	22.97	0.72
L-1997	10.08	11.83	1.75
L-1999	23.57	22.64	-0.93
L-2195	9.70	10.66	0.96
L-2204	25.29	25.82	0.53
HE-554	30.20	30.05	-0.15
HE-569	22.36	--	--
HE-851	25.43	26.07	0.64



APPENDIX
WATER LEVELS
END OF DRY AND WET SEASONS
LOWER TAMiami AQUIFER

<u>USGS WELL NO.</u>	<u>APRIL (1984) (END OF DRY)</u>	<u>OCTOBER (1984) (END OF WET)</u>	<u>DIFFERENCE</u>
C-123	-4.25	1.39	5.64
C-130	1.41	1.90	0.49
C-175	5.23	7.52	2.29
C-304	6.73	10.28	3.55
C-353	-1.92	2.04	3.96
C-363	30.57	31.47	0.90
C-391	-2.94	0.73	3.67
C-424	-1.98	1.68	3.66
C-430	2.76	5.34	2.58
C-462	33.25	33.63	0.38
C-489	-1.55	1.29	2.84
C-492	16.50	17.27	0.77
C-951	--	7.41	--
C-956	--	7.96	--
C-965	--	20.18	--
C-971	--	12.94	--
C-973	--	7.93	--
C-975	--	4.88	--
C-977	--	9.13	--
C-979	--	14.63	--
C-982	--	18.17	--
C-985	--	15.31	--
C-988	--	13.84	--
L-738	0.23	1.36	1.13
L-1691	0.52	4.54	4.02



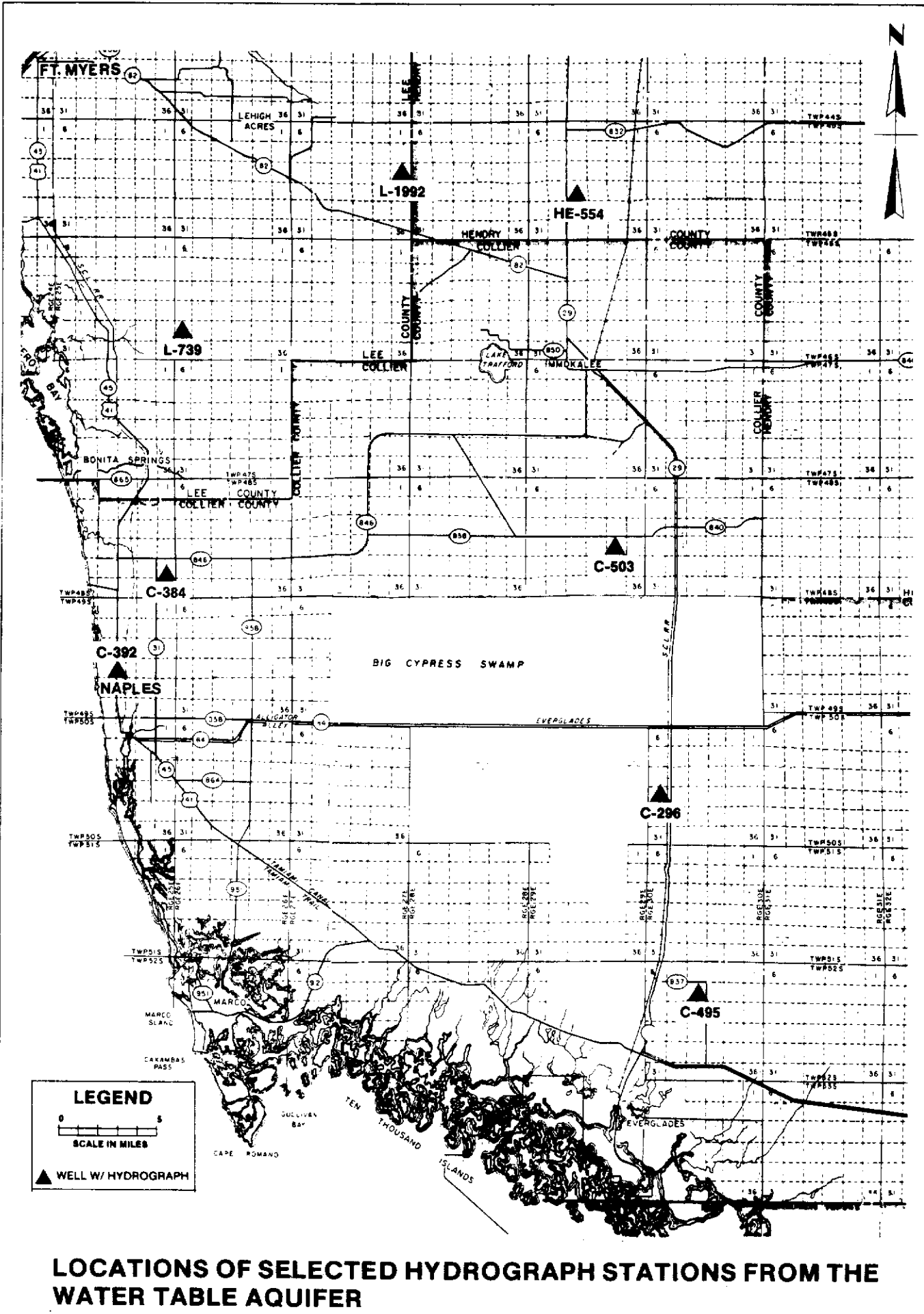
LOCATIONS OF SANDSTONE AQUIFER WELLS WITH WATER LEVEL DATA

APPENDIX

WATER LEVELS
END OF DRY AND WET SEASONS
SANDSTONE AQUIFER

<u>USGS WELL NO.</u>	<u>APRIL (1984) (END OF DRY)</u>	<u>OCTOBER (1984) (END OF WET)</u>	<u>DIFFERENCE</u>
C-298	21.60	24.25	2.65
C-303	3.47	7.81	4.34
C-531	20.90	22.70	1.80
C-687	3.01	6.41	3.40
C-688	9.08	13.56	4.48
C-689	12.49	11.06	1.43
C-989	--	7.86	--
L-729	17.30	17.39	0.09
L-731	13.22	12.89	-0.33
L-1853	7.23	13.29	6.06
L-1963	17.51	19.56	2.05
L-1965	16.89	22.99	6.10
L-1984	8.34	9.30	0.96
L-1994	15.58	16.06	0.48
L-1996	3.90	8.27	4.37
L-1998	-18.47	-8.08	10.39
L-2192	12.89	15.33	2.44
L-2194	2.07	7.52	5.45
L-2215	18.17	22.48	4.31
HE-529	29.63	30.92	1.29
HE-555	21.76	23.56	1.80

APPENDIX II-3
WATER LEVEL HYDROGRAPHS FROM
SELECTED MONITOR WELLS



LEGEND

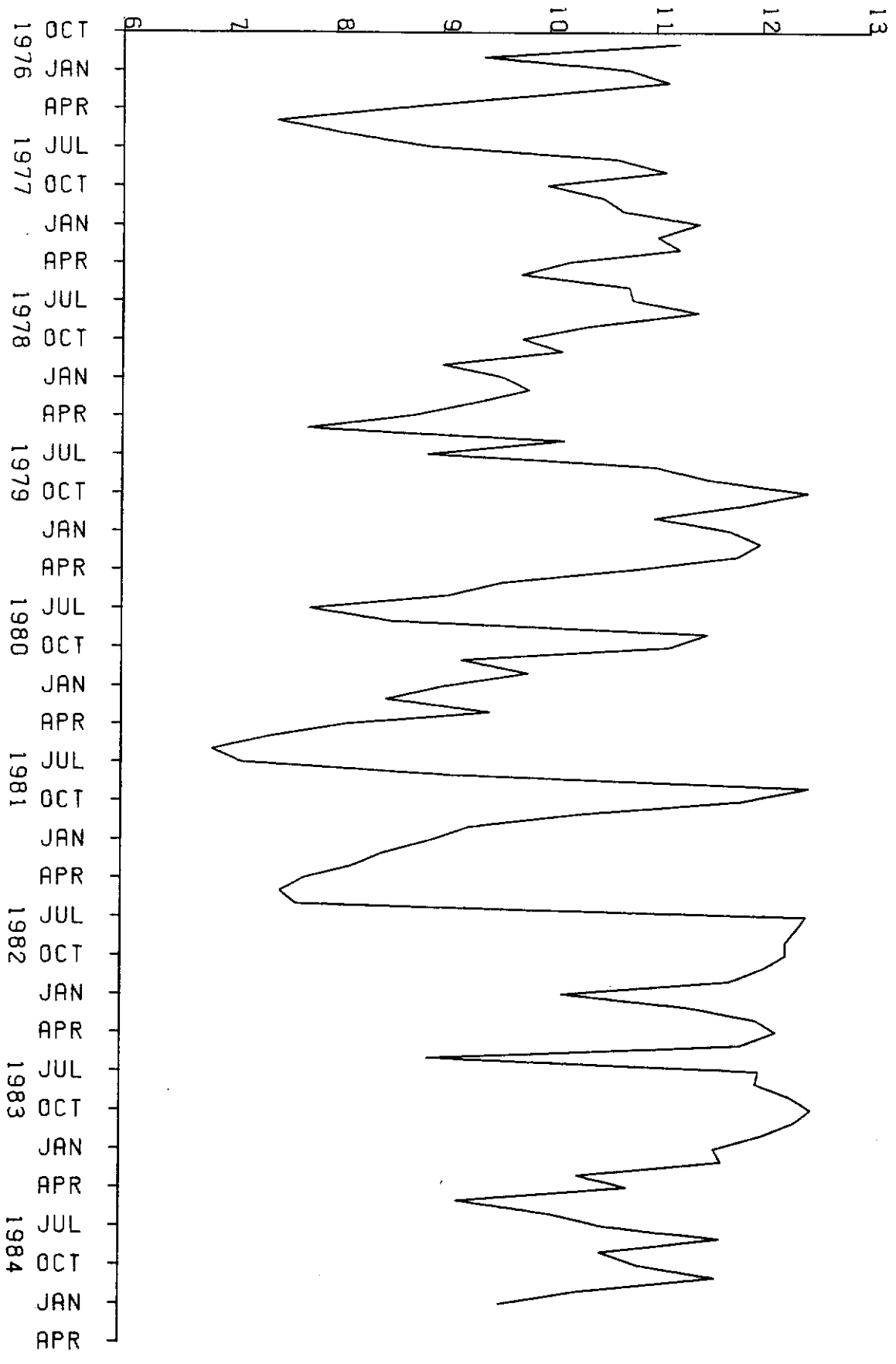
0 5
SCALE IN MILES

▲ WELL W/ HYDROGRAPH

LOCATIONS OF SELECTED HYDROGRAPH STATIONS FROM THE WATER TABLE AQUIFER

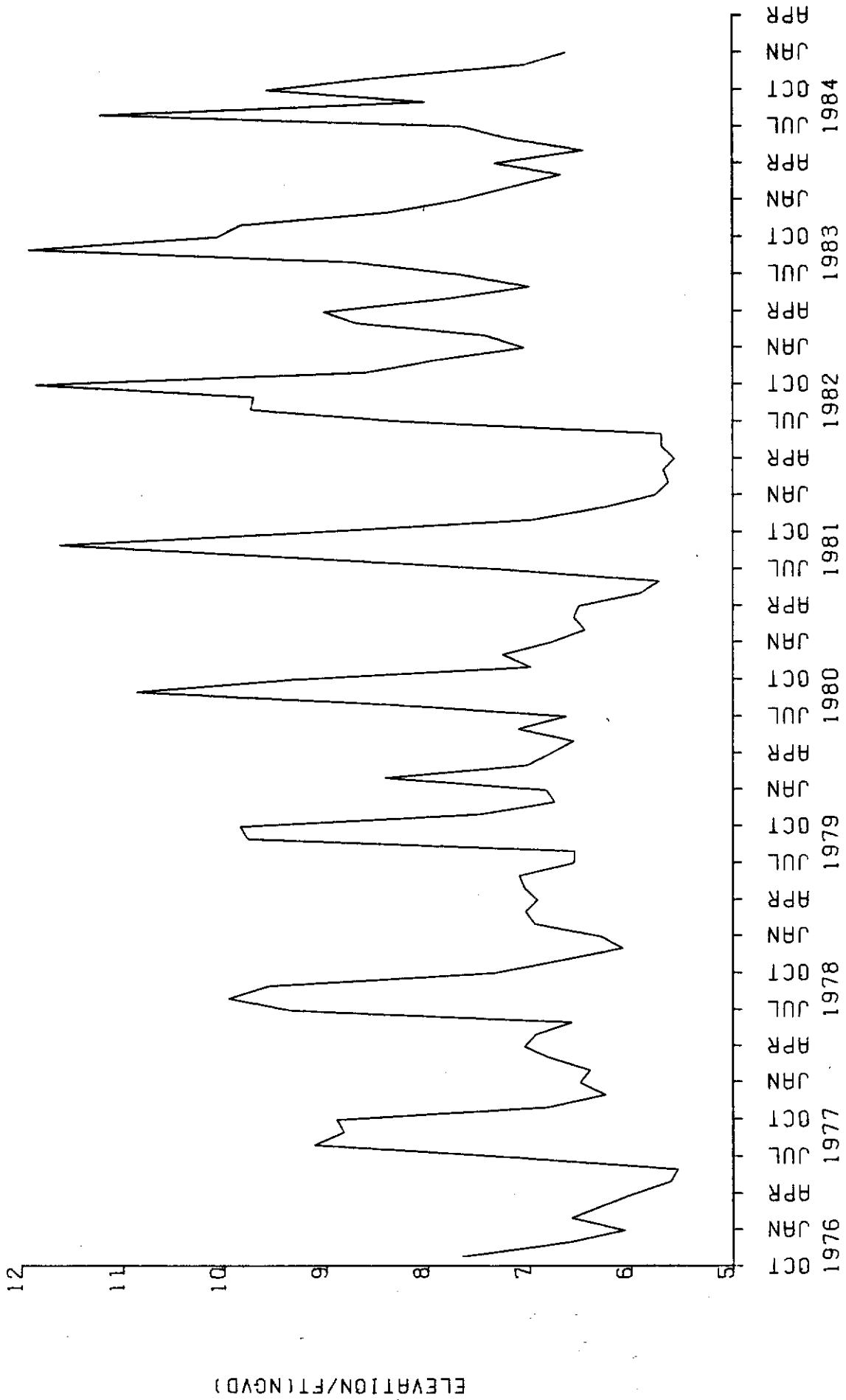
ELEVATION/FT (NGVD)

C-296 260640 812043



HYDROGRAPH OF THE WATER TABLE AQUIFER / COLLIER COUNTY 76-84

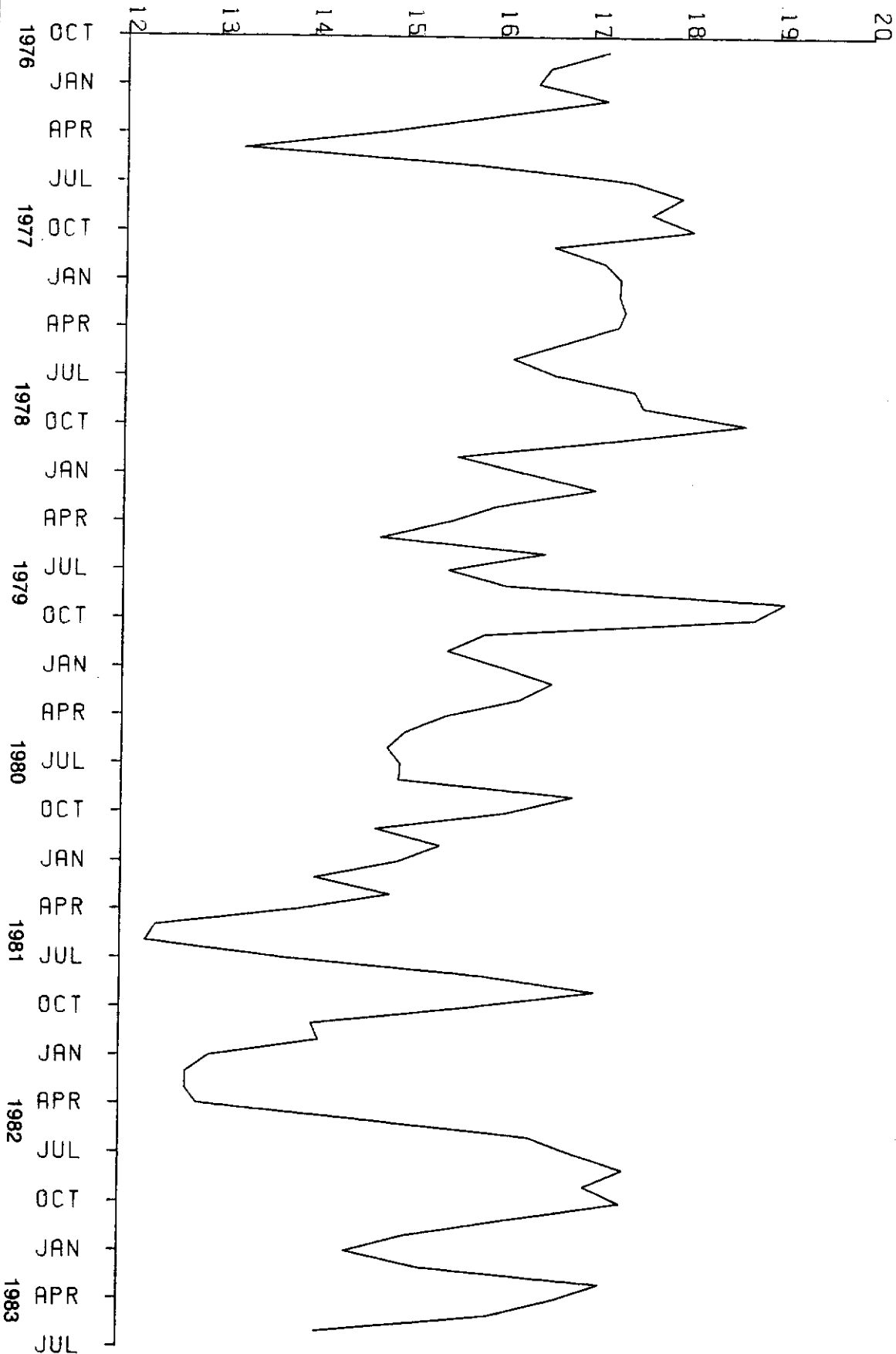
C-384 261620 814507



HYDROGRAPH OF THE WATER TABLE AQUIFER / COLLIER COUNTY 76-84

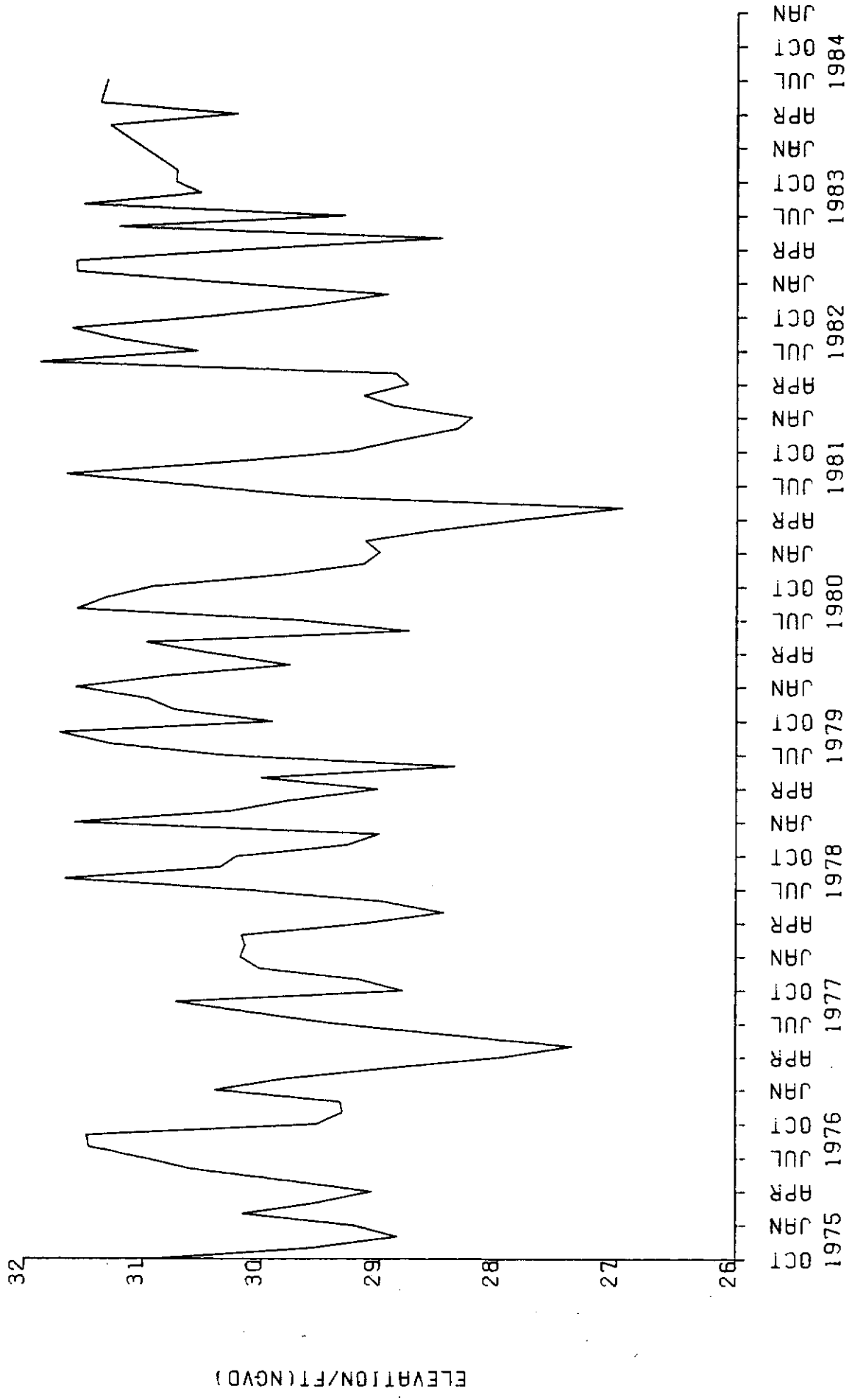
ELEVATION/FT (NGVD)

C-503 261741 812354



HYDROGRAPH OF THE WATER TABLE AQUIFER / COLLIER COUNTY 76-83

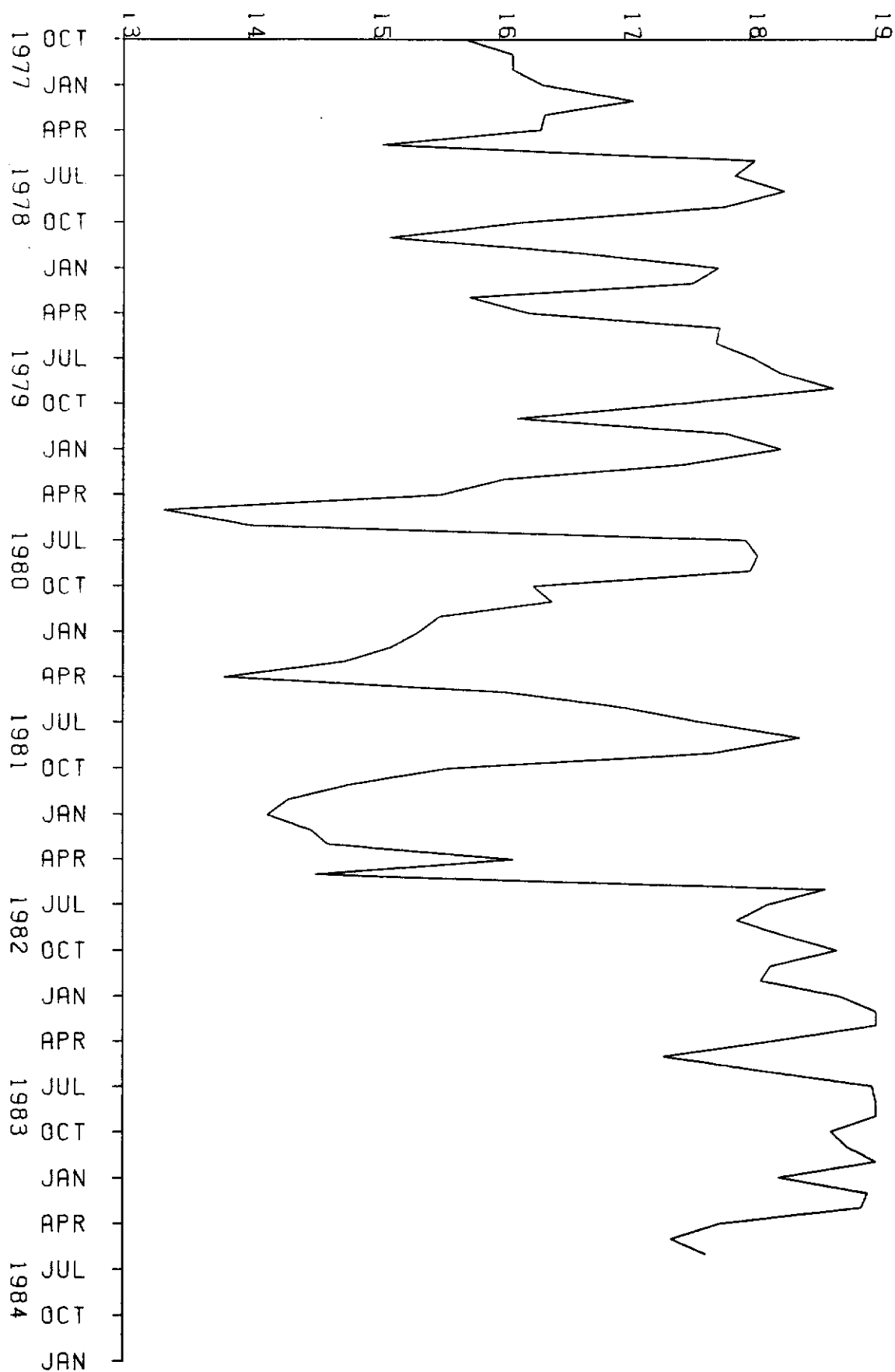
HE-554 263310 812509



HYDROGRAPH OF THE WATER TABLE AQUIFER / HENDRY COUNTY 75-84

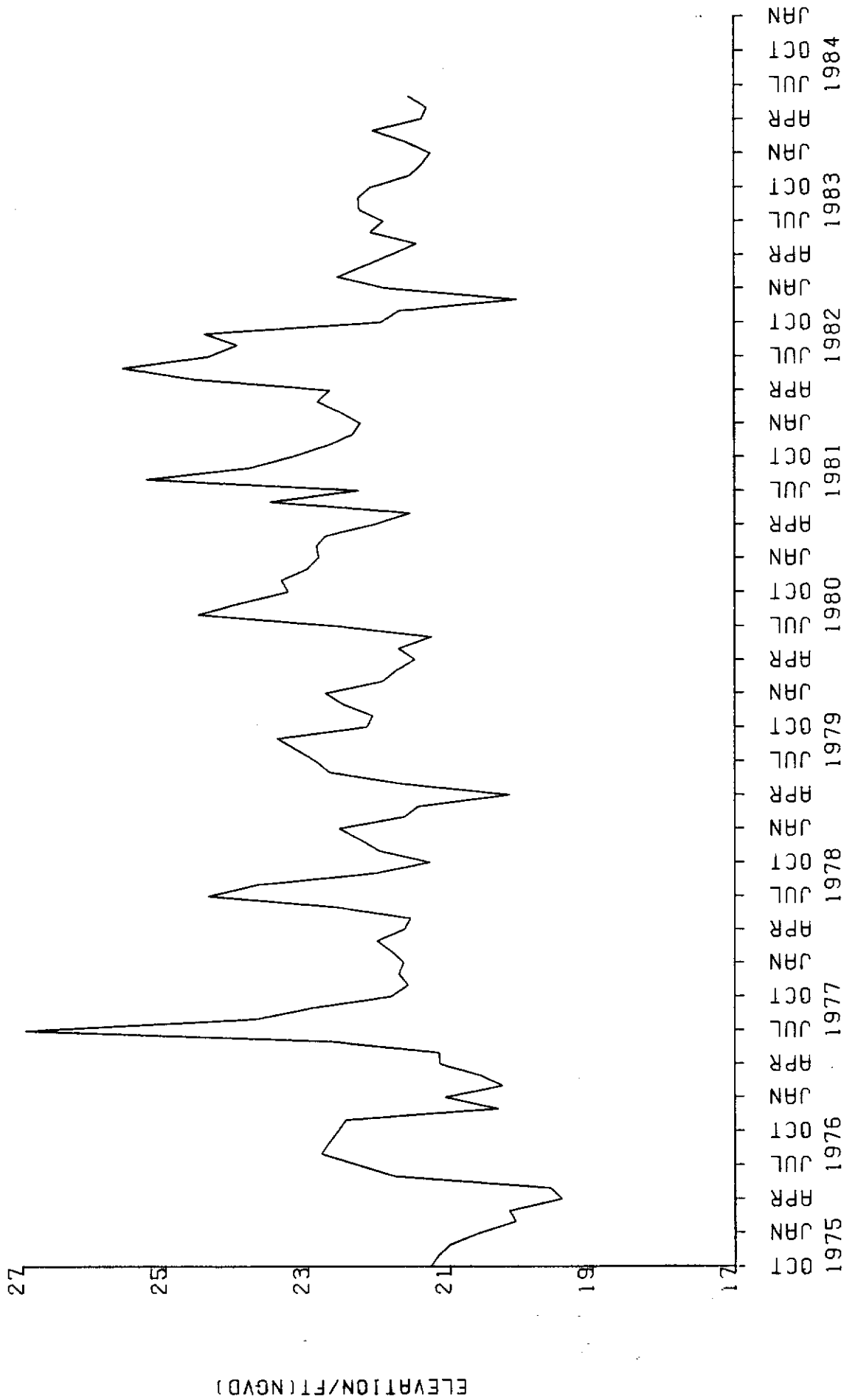
ELEVATION/FT(NGVD)

L-739 262657 814435

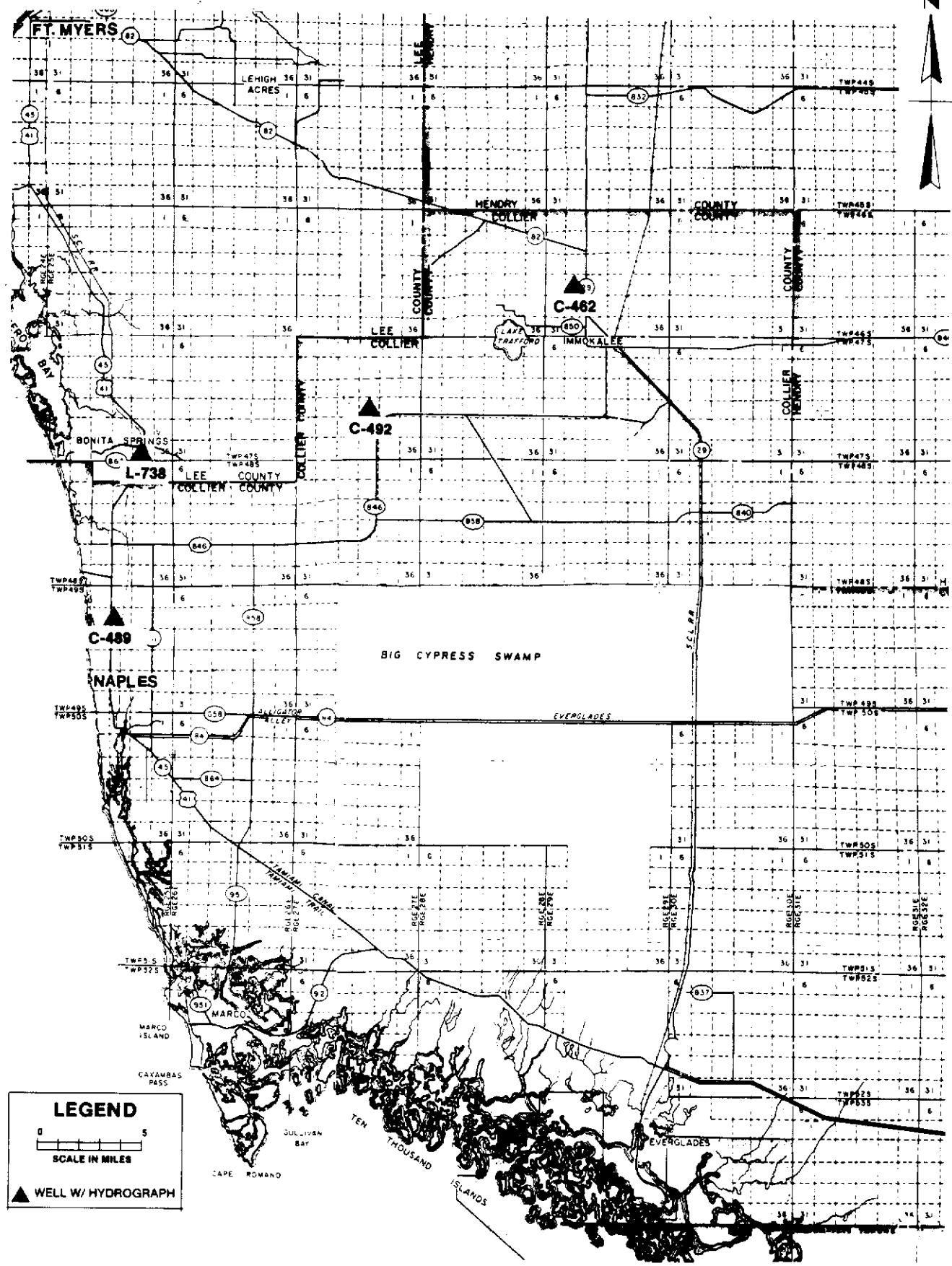


HYDROGRAPH OF THE WATER TABLE AQUIFER / COLLIER COUNTY 75-84

L-1992 263353 813358



HYDROGRAPH OF THE WATER TABLE AQUIFER / COLLIER COUNTY 75-84



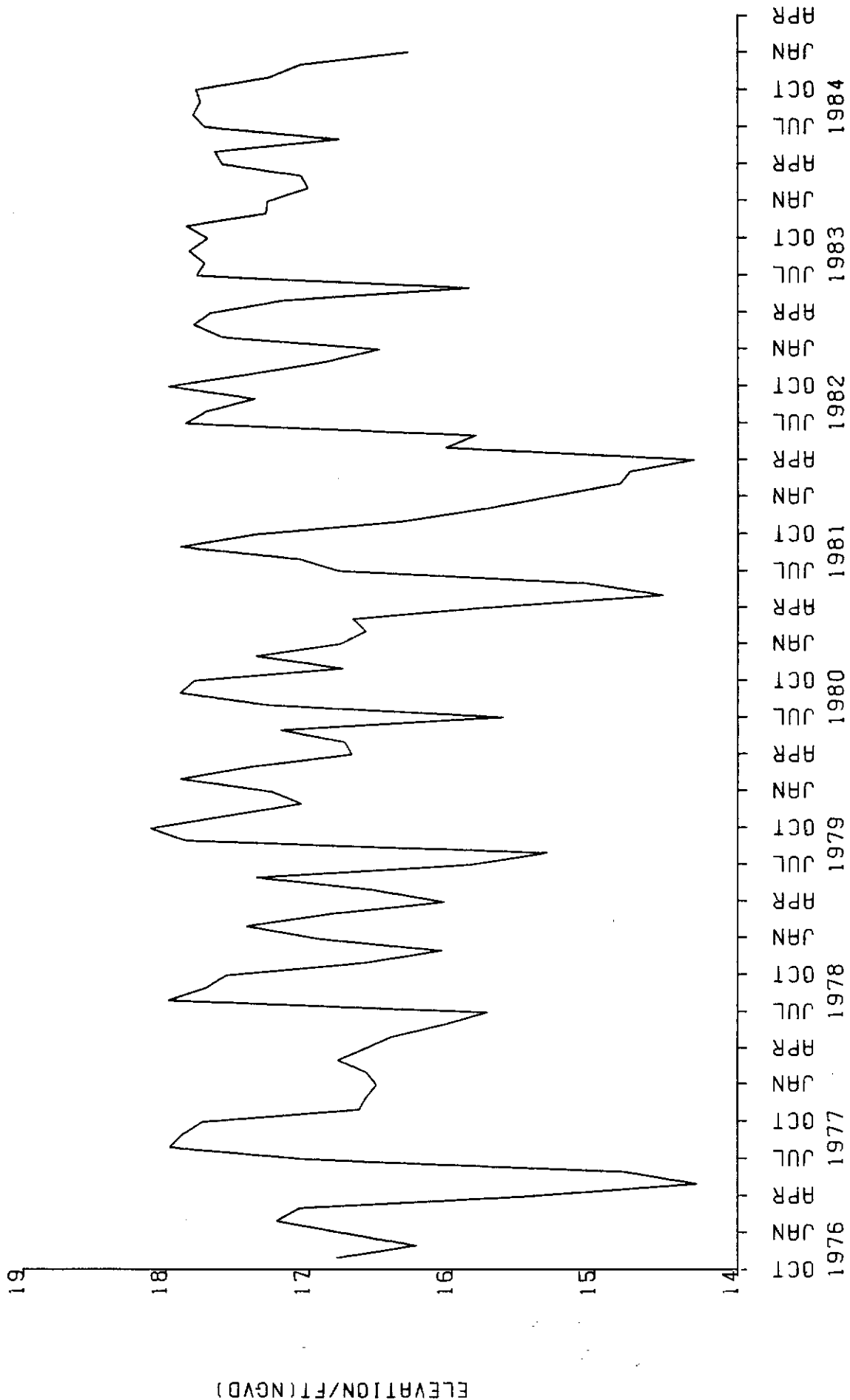
LEGEND

0 5
SCALE IN MILES

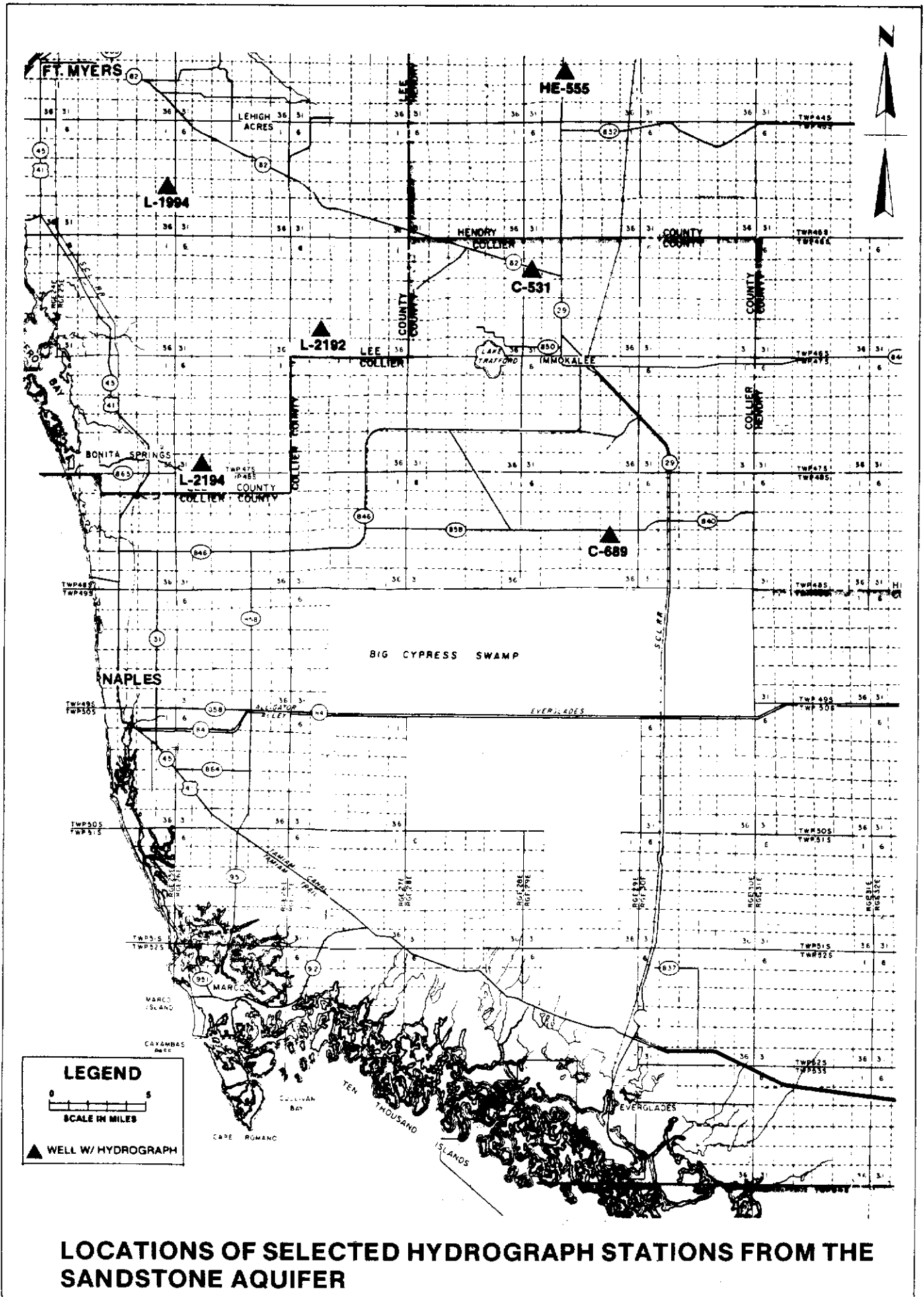
▲ WELL W/ HYDROGRAPH

LOCATIONS OF SELECTED HYDROGRAPH STATIONS FROM THE LOWER TAMIAMI AQUIFER

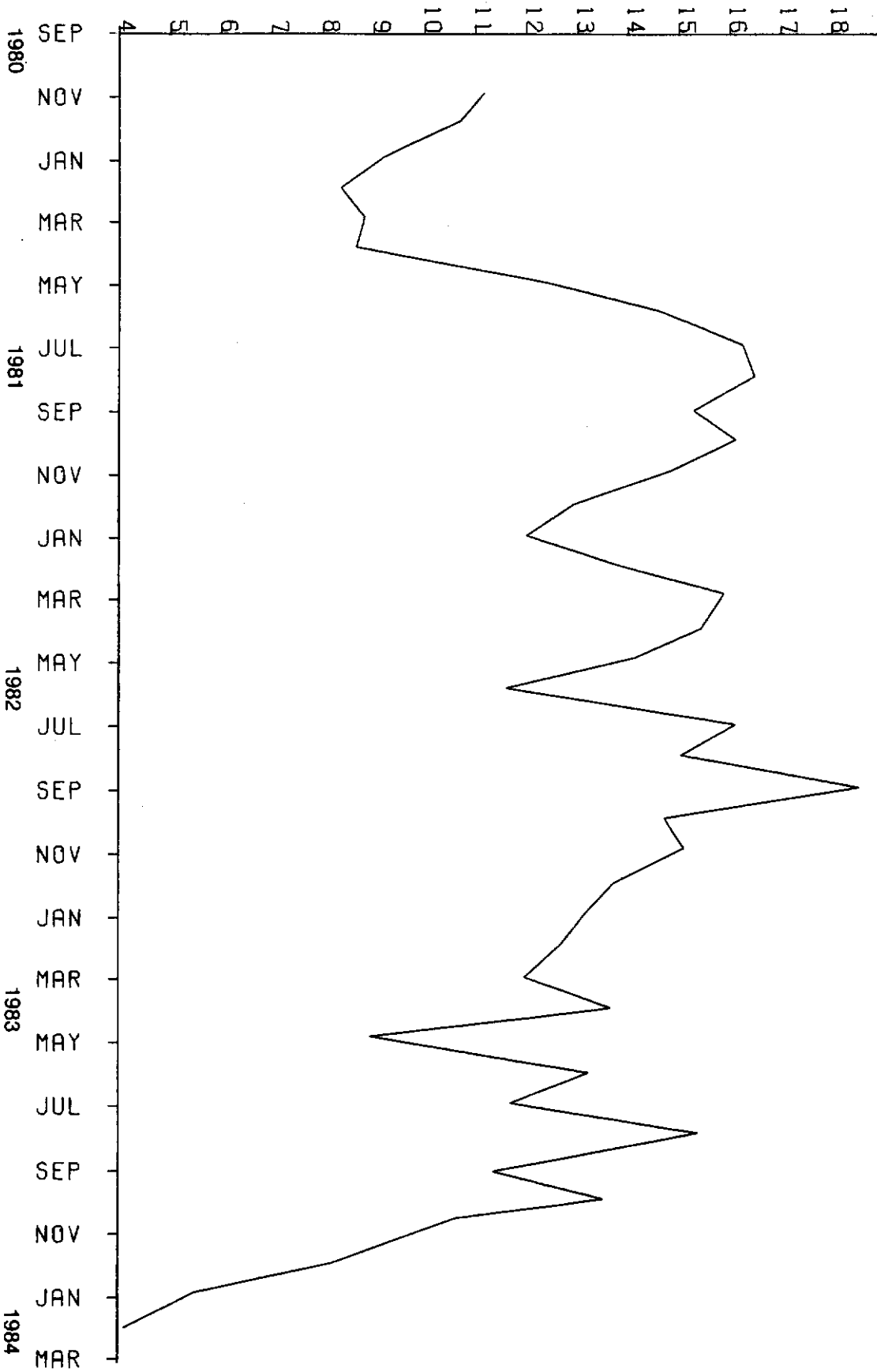
C-492 262223 813620



HYDROGRAPH OF THE LOWER TAMIAMI AQUIFER / COLLIER COUNTY 76-84



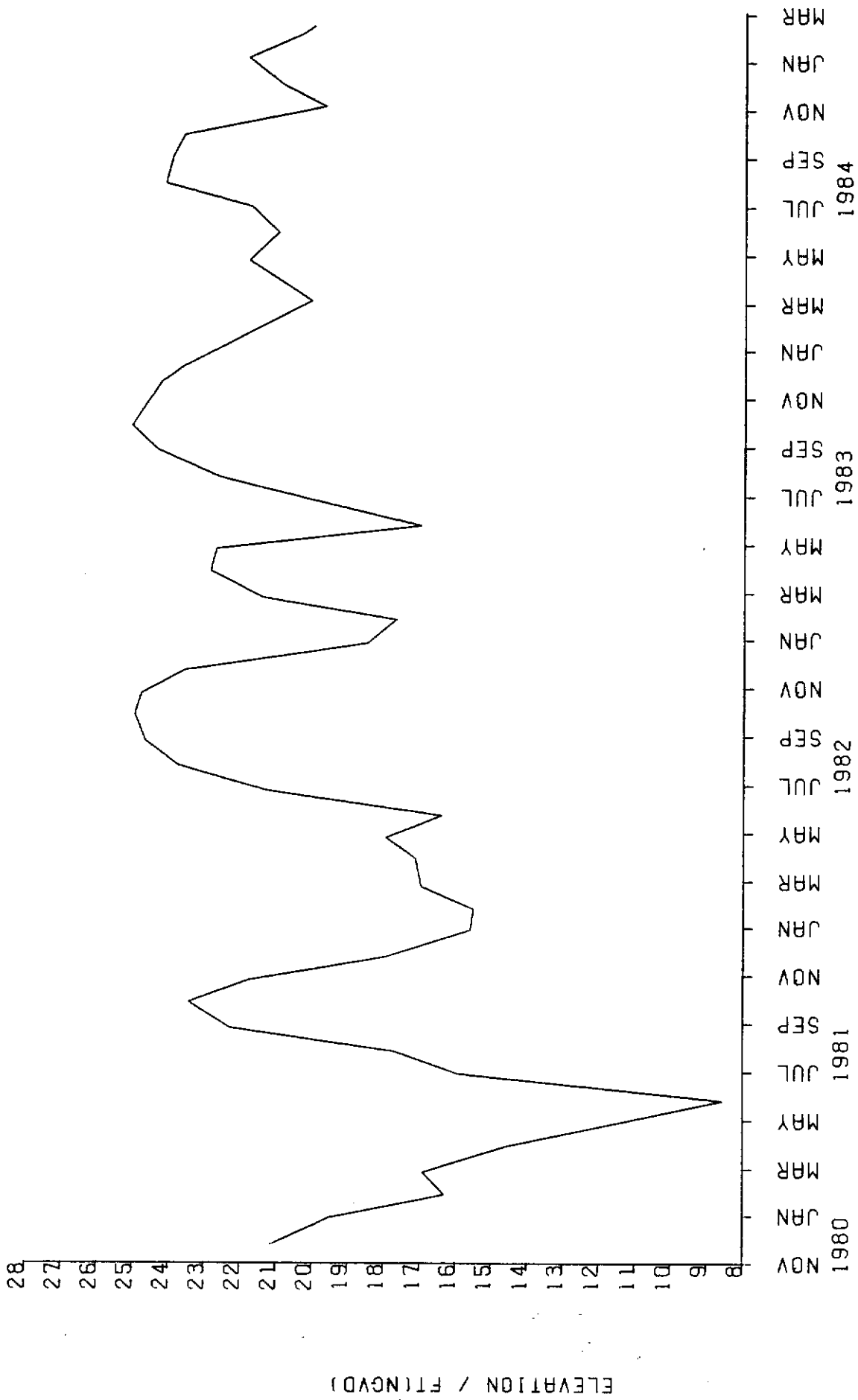
ELEVATION / FT(NGVD)



HYDROGRAPH OF THE SANDSTONE AQUIFER / COLLIER COUNTY 80-84

C-689 261740 0812354

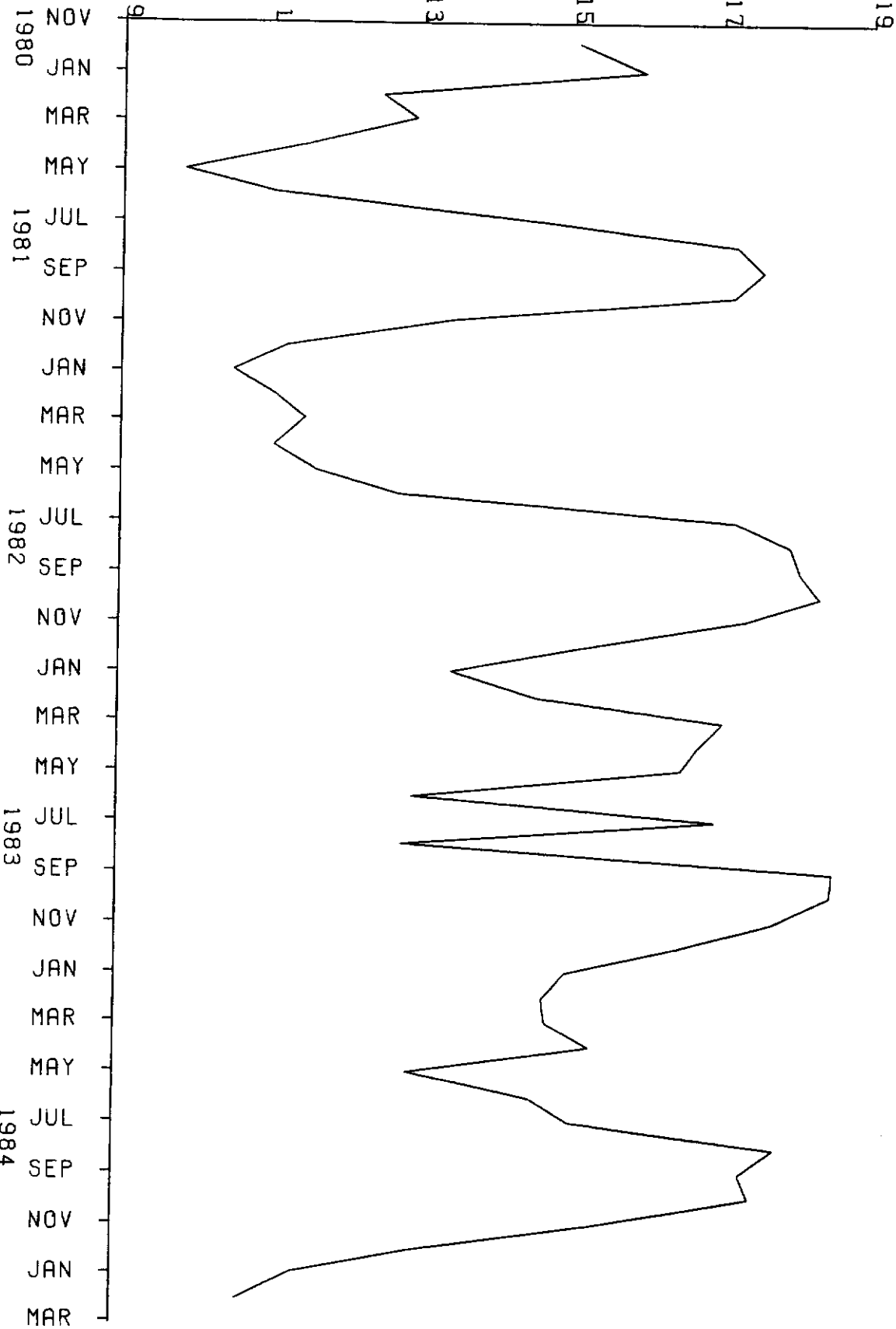
HE-555 263845 0812607



HYDROGRAPH OF THE SANDSTONE AQUIFER / HENDRY COUNTY 80-84

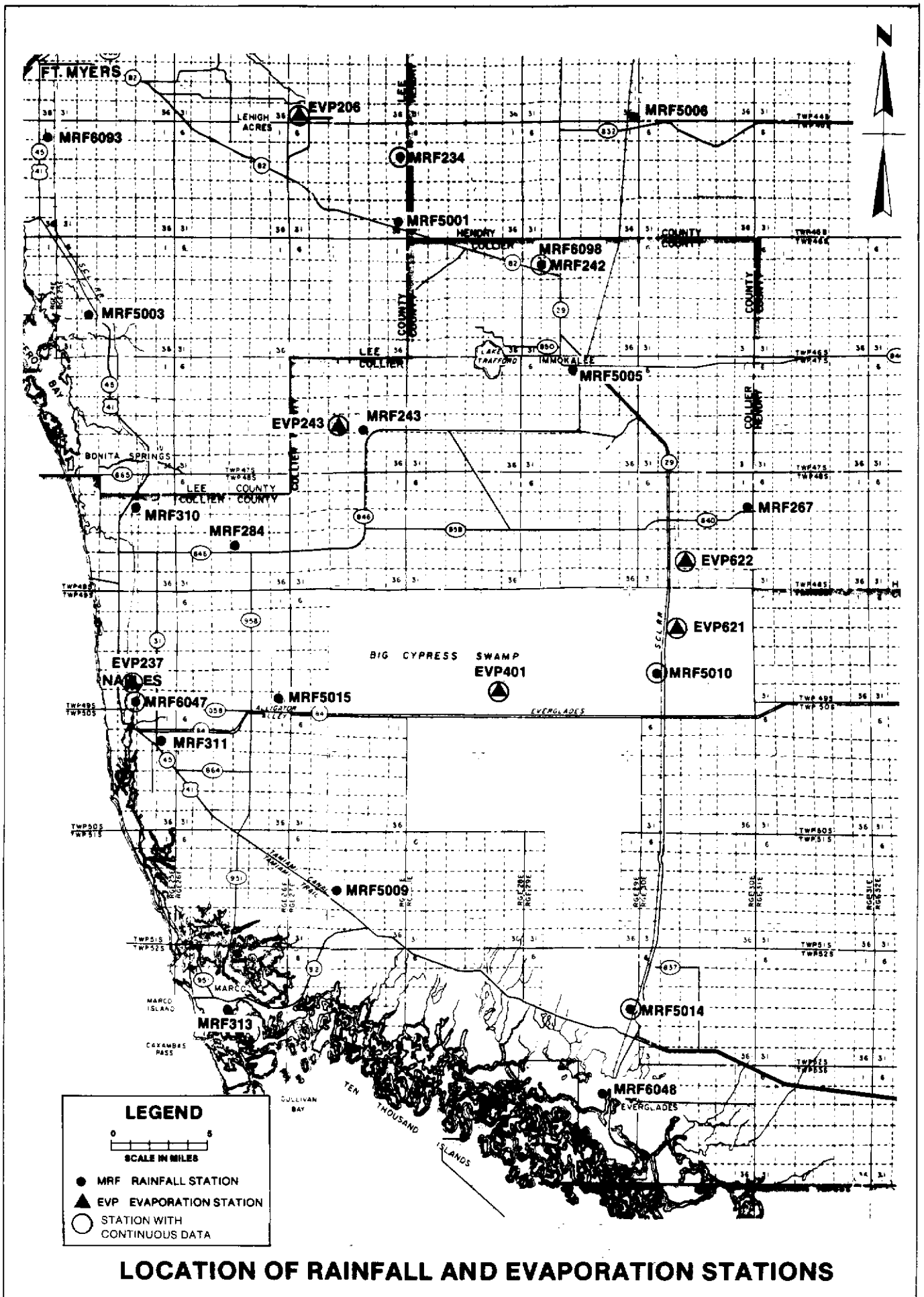
ELEVATION/FT (NGVD)

L-2192 262659 0813825

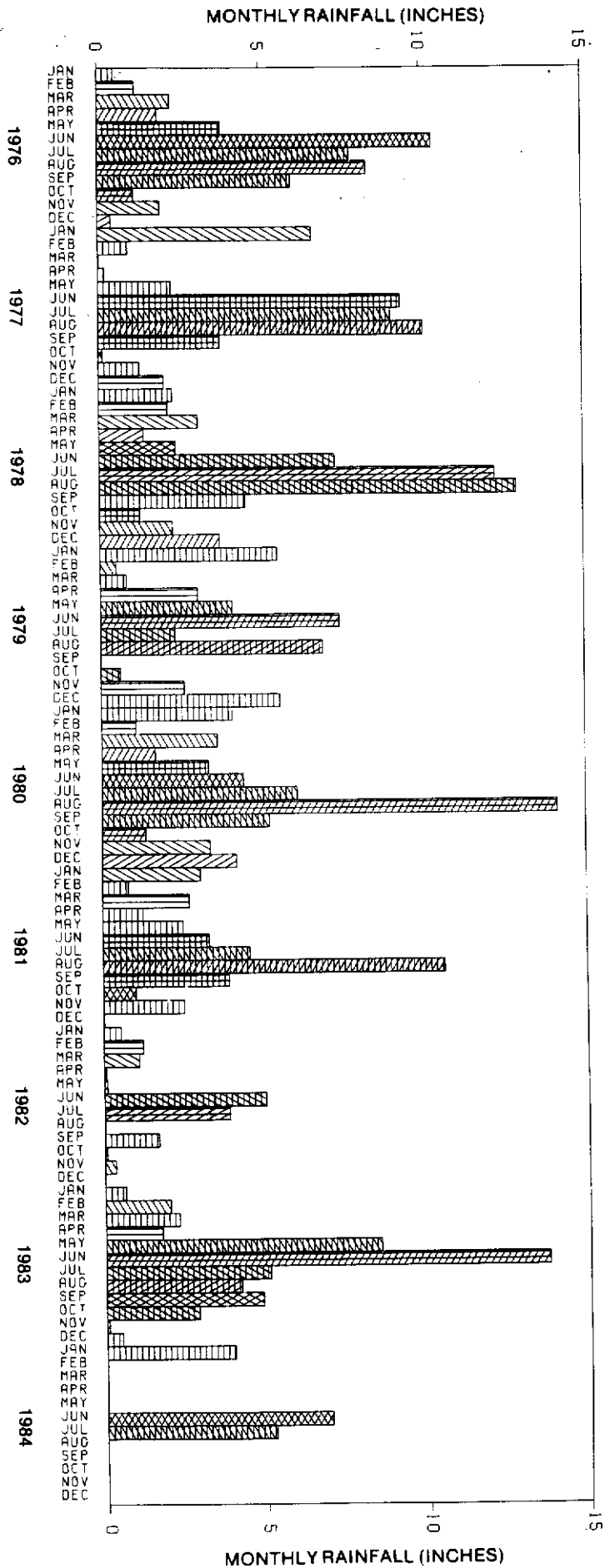


HYDROGRAPH OF THE SANDSTONE AQUIFER / LEE COUNTY 80-84

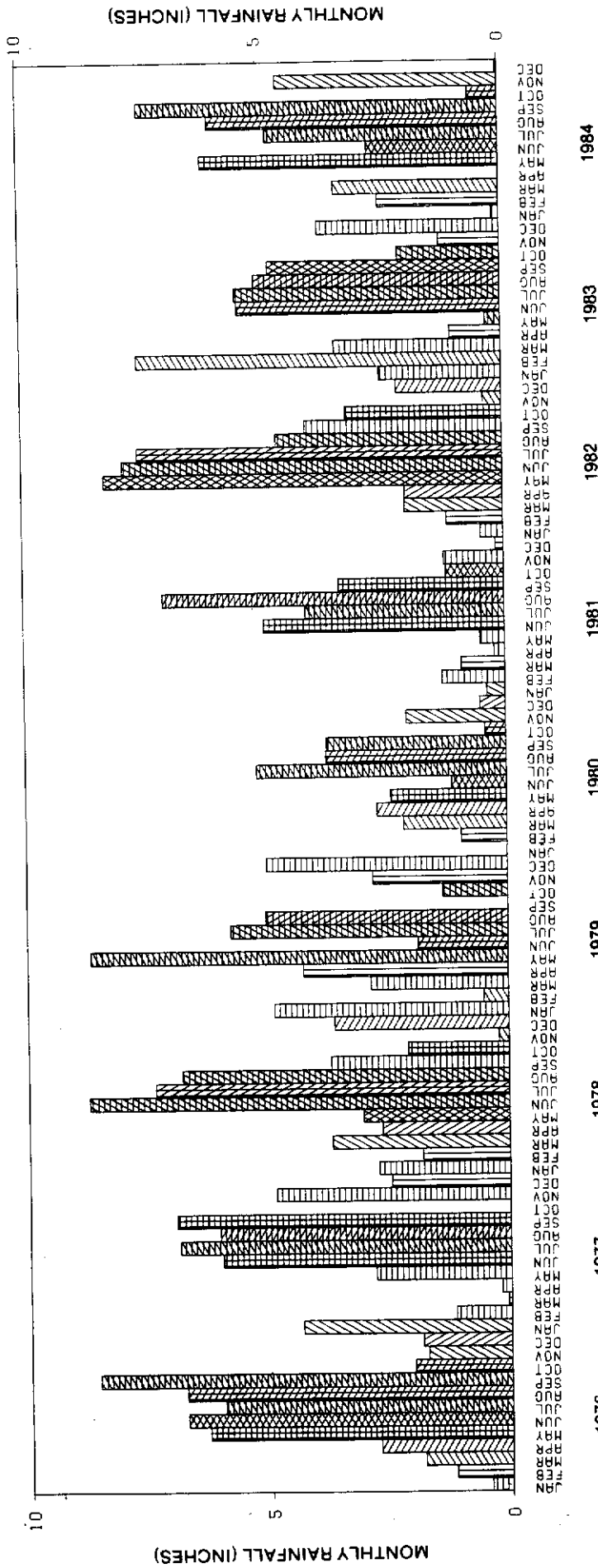
APPENDIX II-4
RAINFALL AND EVAPORATION DATA



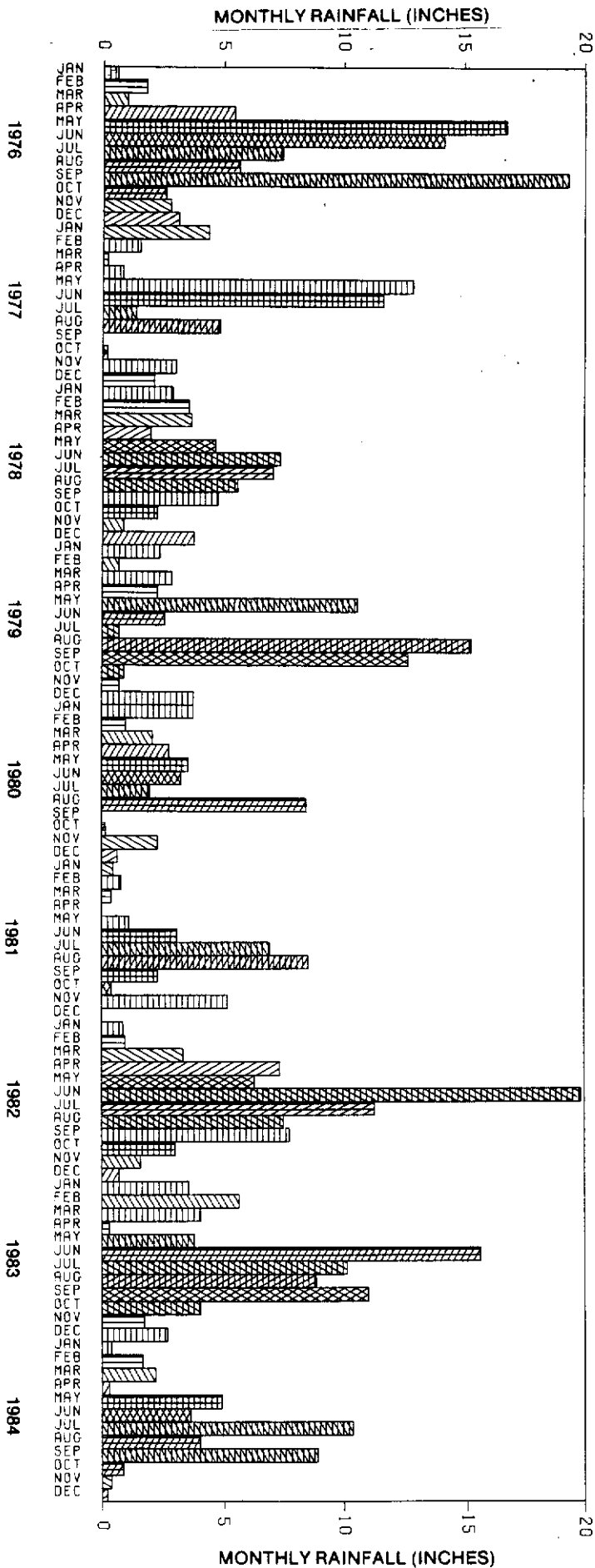
MONTHLY RAINFALL MRF234 / LEE COUNTY 1976-1983



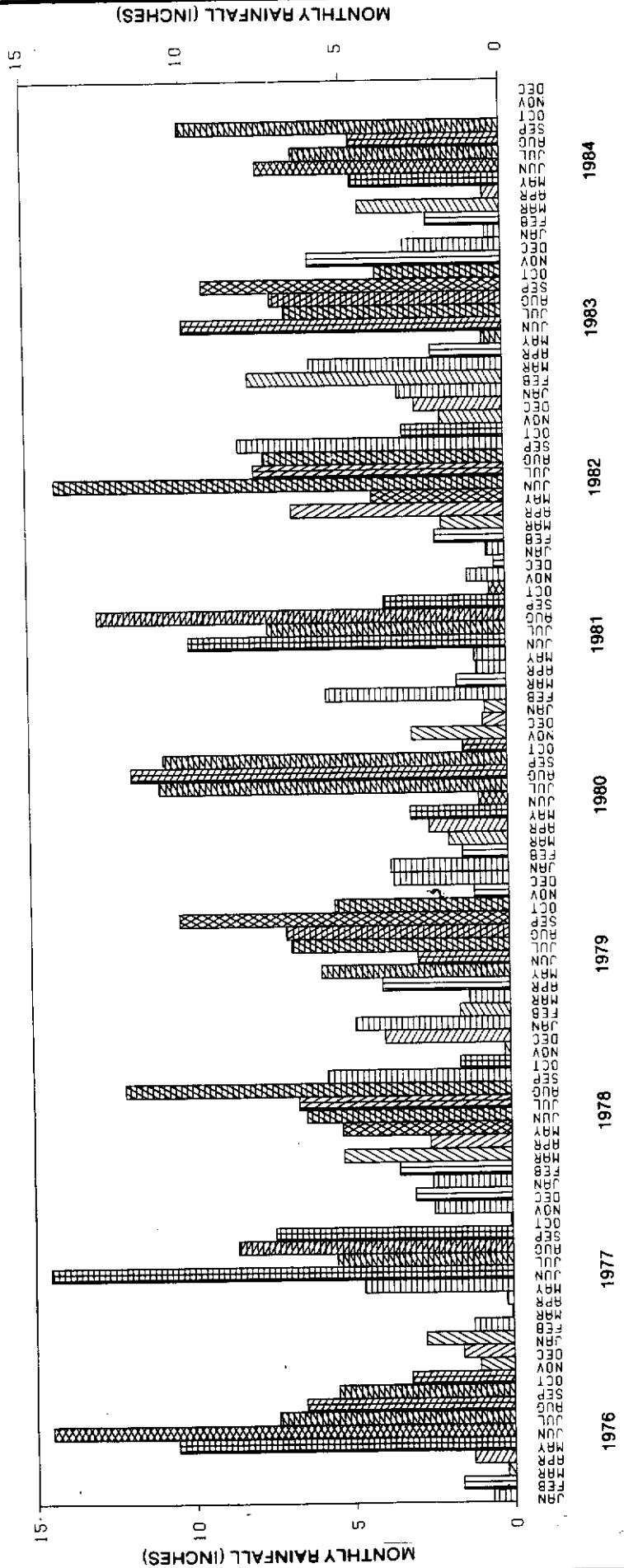
MONTHLY RAINFALL MRF242 / COLLIER COUNTY 1976-1984



MONTHLY RAINFALL MRF5010 / COLLIER COUNTY 1976-1984



MONTHLY RAINFALL MRF6047 / COLLIER COUNTY 1976-1984



MONTHLY EVAPORATION SUMMARY
EVP 206
LEHIGH ACRES I - CLASS A PAN - LEE COUNTY - S31 T44 R27

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1978	.00F	.00F	.00F	.00F	.00F	.00F	.00F	4.49M	5.57	5.04	4.20	3.91	23.21M
1979	3.89M	3.67	5.63	7.10	6.30M	8.49	7.16	6.63M	4.56M	4.79	3.68	2.49M	64.39M
1980	4.02	4.18	5.53M	6.80M	7.78	8.18	7.48	5.60M	5.65M	5.32	3.30	3.07	66.91M
1981	3.27	4.29	6.08	7.03M	8.74M	6.51M	7.59	5.90M	4.69	4.81	3.76	3.37	66.04M
1982	3.69M	4.31	5.98	6.69	7.03M	6.52M	7.31	5.99	4.51	4.32	3.27	2.86M	62.48M
1983	2.45M	3.08M	6.63	5.90X	7.46A	5.07M	6.72M	5.67M	4.55	4.25M	3.37	2.82	57.97M
1984	2.42M	3.97	5.06M	6.51	7.74	7.74	5.62M	6.49	5.64	5.78	4.39	3.56	64.92M
YRS.	2	5	4	4	3	3	4	2	5	6	7	5	0
AVG.	3.65	4.08	6.08	6.55	7.66	8.14	7.39	6.24	4.99	5.01	3.71	3.35	.00

MONTHLY EVAPORATION SUMMARY
EVP 237
CARIBBEAN GARDENS - CLASS A PAN - COLLIER COUNTY - S27 T49 R25

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1978	.00M	.00M	.00M	6.47M	7.22	6.25M	4.93	6.51M	7.08	5.40	4.02	2.88	50.76M
1979	--	--	--	--	--	--	--	--	--	--	--	--	--
1980	--	--	--	--	--	--	--	--	--	--	--	--	--
1981	3.22	5.82	6.10	8.21	8.63M	8.22M	7.58M	6.71M	6.04	5.78	4.31	3.46	74.08M
1982	3.99	4.82	6.21M	7.49M	8.14M	7.39	6.24	7.13	5.55M	5.07M	4.10M	4.12	70.25M
1983	2.87	4.15M	6.96	7.04	8.06	7.36	6.90	6.44	5.28M	5.05	2.89M	.00F	63.00M
YRS.	3	2	2	2	2	2	3	2	2	3	2	3	0
AVG.	3.36	5.32	6.53	7.63	7.64	7.38	6.02	6.79	6.56	5.41	4.17	3.49	.00

MONTHLY EVAPORATION SUMMARY
 EVP 243
 CORKSCREW SANCTUARY - COLLIER COUNTY - S21 T47 R27

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1974	.00F	.00F	.00F	.00F	.00F	3.13M	5.23	6.05	5.32	5.55	3.83	3.16	32.27M
1975	3.69	4.34	6.32	7.71	7.85	7.32	6.40	6.22	5.25	4.79	4.01	3.47	67.37
1976	3.62	4.30	6.10	7.53	7.00	5.81	6.61	5.74	5.28	5.07	3.29	2.62	62.97
1977	2.88	3.55	5.78M	7.53M	7.54M	6.24M	6.31M	5.04M	.00F	.00F	.00F	.00F	44.87M
YRS.	3	3	2	2	2	2	3	3	3	3	3	3	2
AVG.	3.40	4.06	6.21	7.62	7.43	6.57	6.08	6.00	5.28	5.14	3.71	3.08	65.17

MONTHLY EVAPORATION SUMMARY
 EVP 401
 GOLDEN GATE WATER PLANT - COLLIER COUNTY - S28 T49 R26

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1978	.00M	.00M	.00M	8.20	7.57M	8.23M	8.05M	.37M	.00M	.00M	.00M	1.64M	34.06M
YRS.	0	0	0	1	0	0	0	0	0	0	0	0	0
AVG.	.00	.00	.00	8.20	.00	.00	.00	.00	.00	.00	.00	.00	.00

MONTHLY EVAPORATION SUMMARY
 EVP 621
 MILES CITY TOWER - COLLIER COUNTY - S17 T49 R30

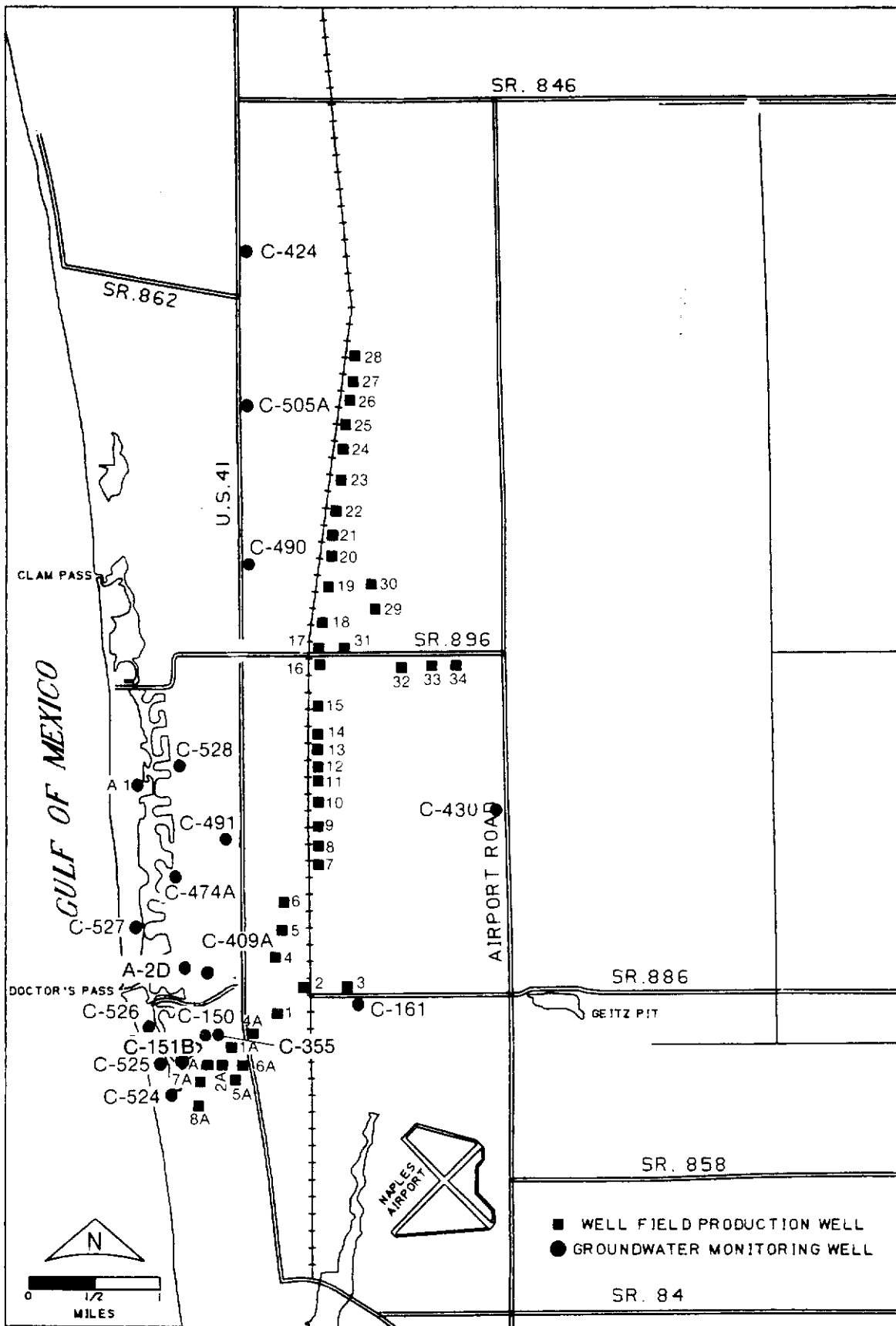
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1956	.00M	.00M	.00M	.00M	.00M	.00M	.00M	.00M	.00M	.00M	2.01E	2.30	4.31M
1957	3.74E	4.29E	6.09M	8.75E	.00M	4.35E	2.37E	4.81	3.24	3.77	3.26	2.63	47.30M
1958	2.76E	2.54	3.56	5.70	6.16E	6.06	6.61	5.39	6.35	5.10E	3.23	3.05	56.51
1959	2.79	4.02	4.98	5.83	5.99E	5.81E	2.75	4.36E	4.81E	5.37E	3.98	2.92	53.61
1960	3.52	3.81	5.77E	5.44E	6.84E	5.41	5.96E	5.26E	2.19M	4.56E	3.30E	2.50	54.56M
1961	2.34	3.48	5.77E	10.61E	8.34E	.00M	.00M	.00M	.00M	.00M	.00M	.00M	30.54M
YRS.	5	5	4	5	4	4	4	4	3	4	5	5	2
AVG.	3.03	3.63	5.02	7.27	6.83	5.41	4.42	4.96	4.80	4.70	3.16	2.68	55.06

MONTHLY EVAPORATION SUMMARY
 EVP 622
 SUNNILAND - COLLIER COUNTY - S29 T48 R30

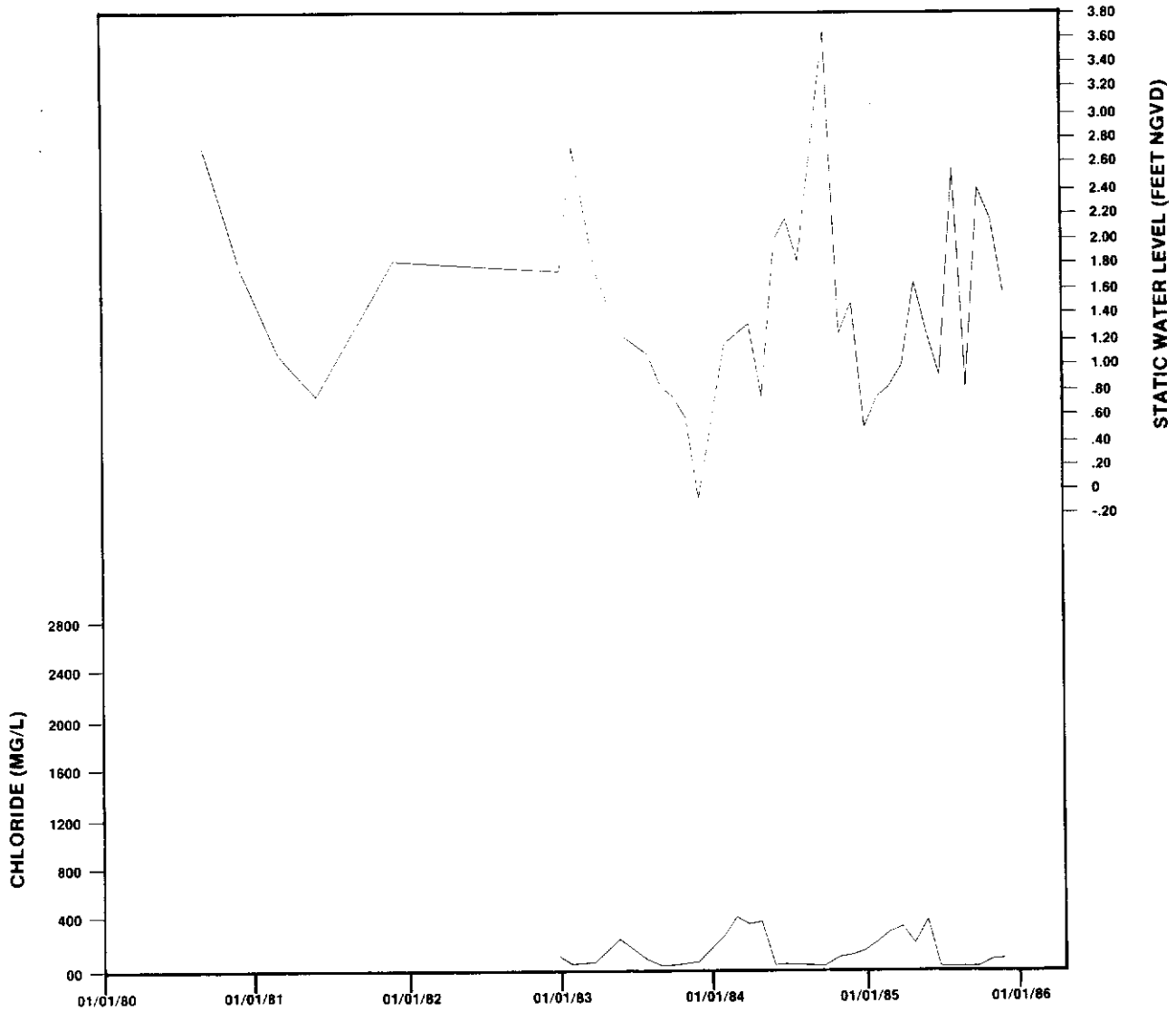
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1952	.00M	.00M	.00M	.00M	.00M	.00M	.00M	.00M	.00M	.00M	.00M	2.93	6.37M
1953	3.10	4.04	5.98	7.04	8.46	6.05E	.00M	5.19	4.03	3.98	3.00	3.00	53.87M
1954	3.14	4.00E	5.49	5.90	6.79E	6.23E	5.53E	6.19E	4.62E	4.51E	3.15	2.77	58.32
1955	3.12	3.54	5.98	6.57E	8.11E	6.48E	5.73	6.27	5.26E	4.43	3.38E	2.93E	61.80
1956	2.90E	4.50E	6.46	7.27	7.31	7.06E	.00M	.00M	.00M	.00M	.00M	.00M	35.50M
YRS.	4	4	4	4	4	4	2	3	3	4	3	4	2
AVG.	3.07	4.02	5.98	6.70	7.67	6.46	5.63	5.88	4.64	4.09	3.18	2.91	60.06

APPENDIX II-5

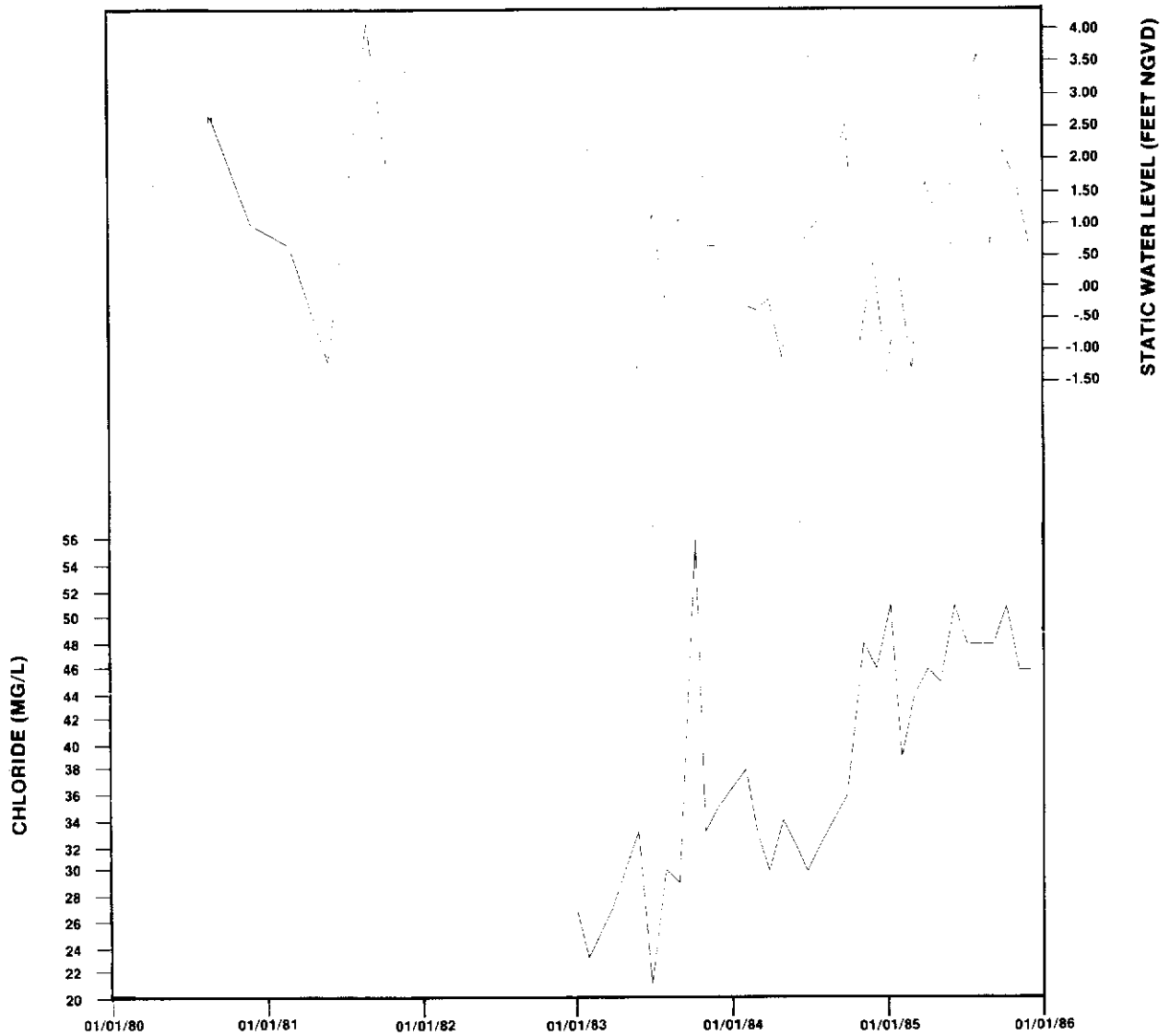
**WATER LEVEL AND CHLORIDE DATA FOR THE
CITY OF NAPLES COASTAL RIDGE WELLFIELD SWIMM PROGRAM**



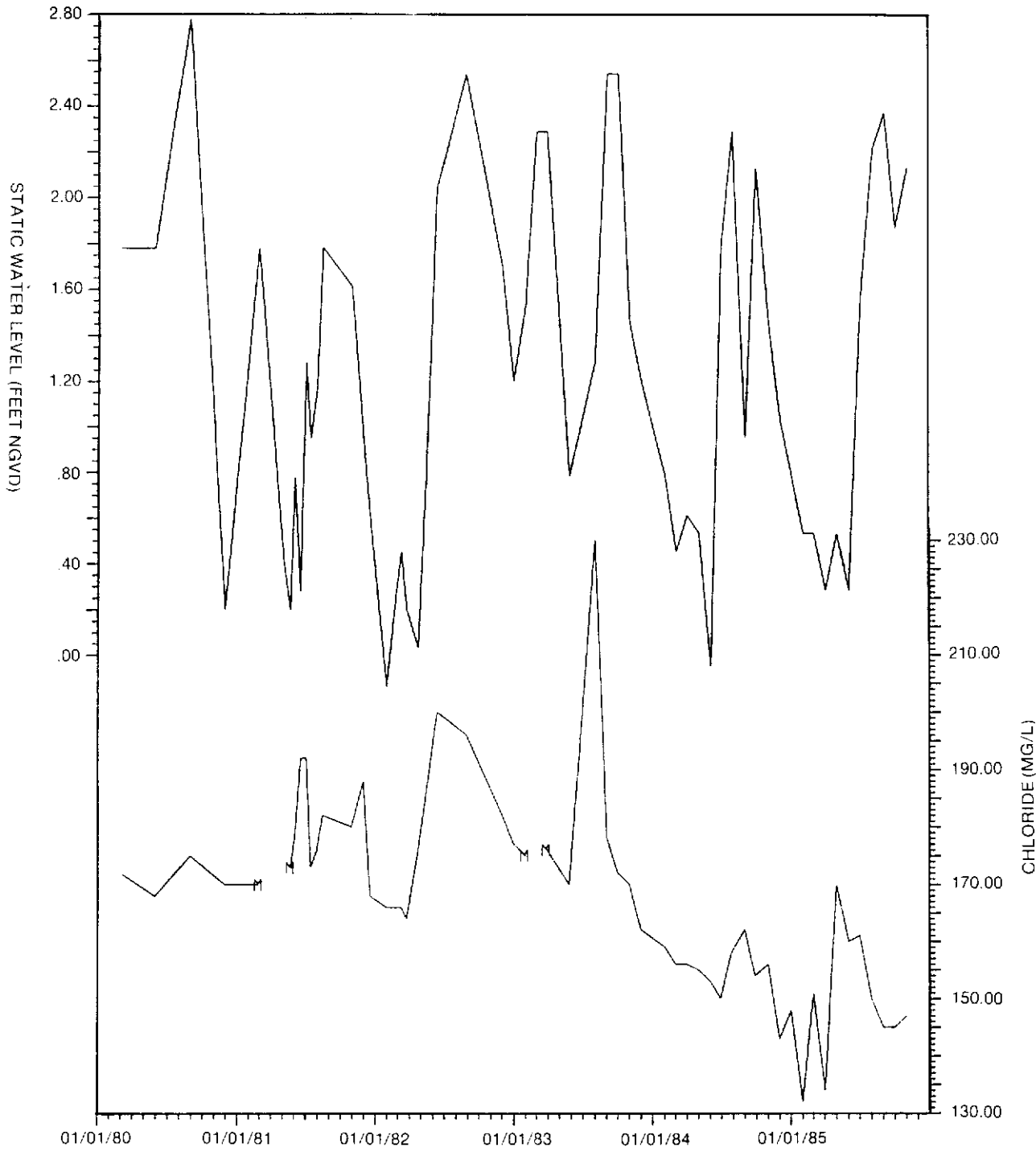
OBSERVATION AND PRODUCTION WELL LOCATIONS FOR THE CITY OF NAPLES COASTAL RIDGE SWIMM PROGRAM



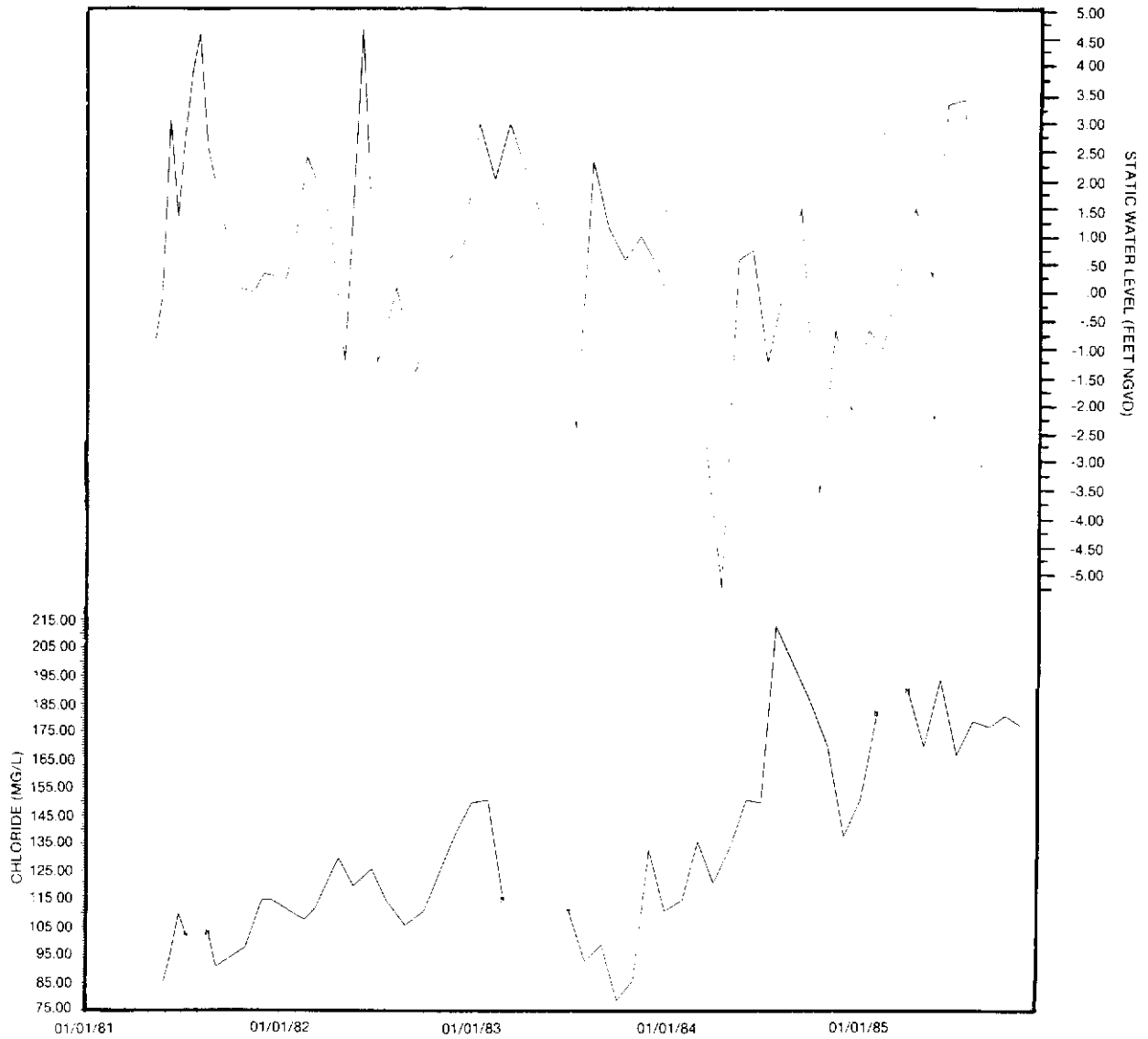
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL A-1 (Lower Tamiami Aquifer)



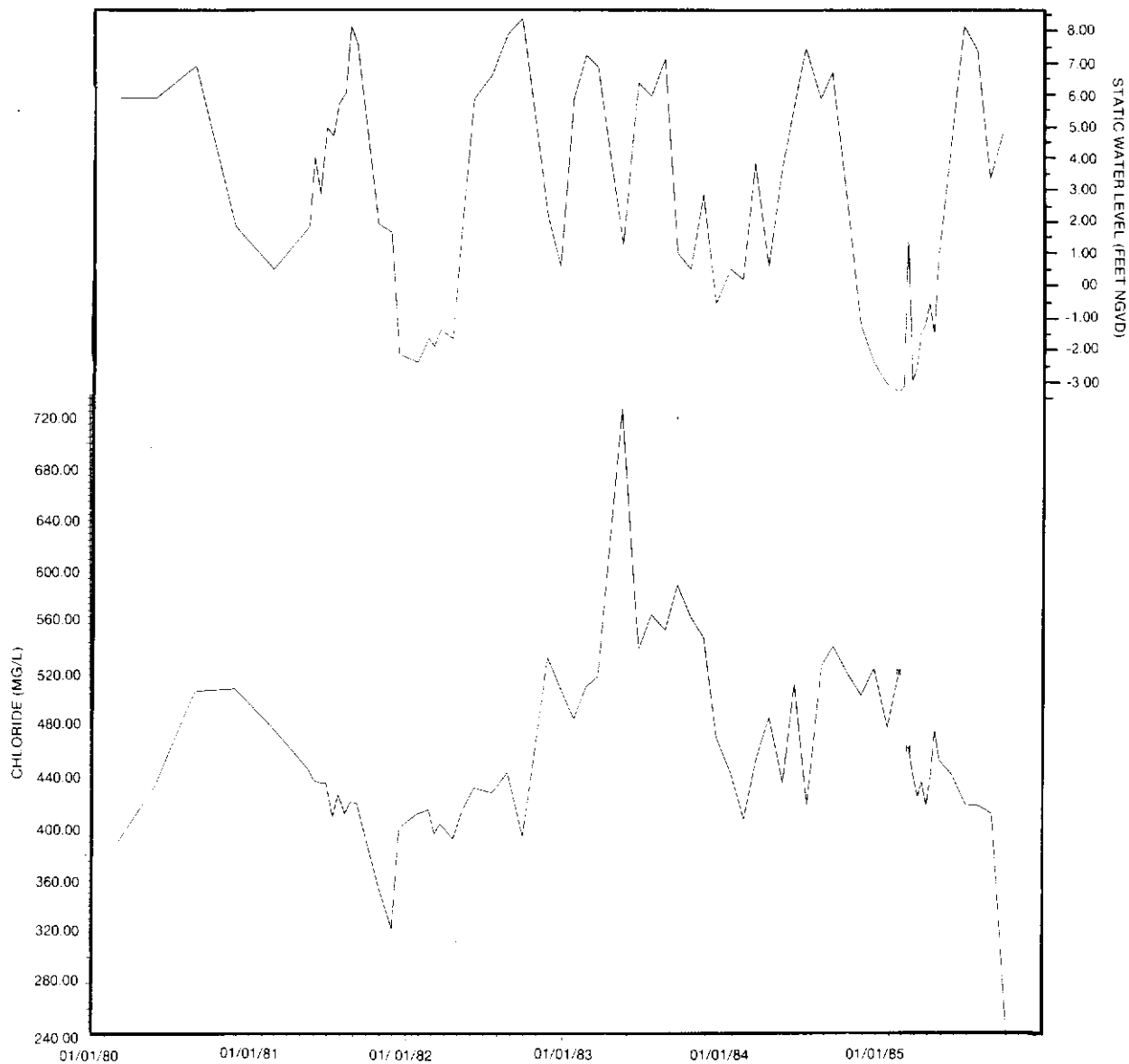
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL A-2D (Lower Tamiami Aquifer)



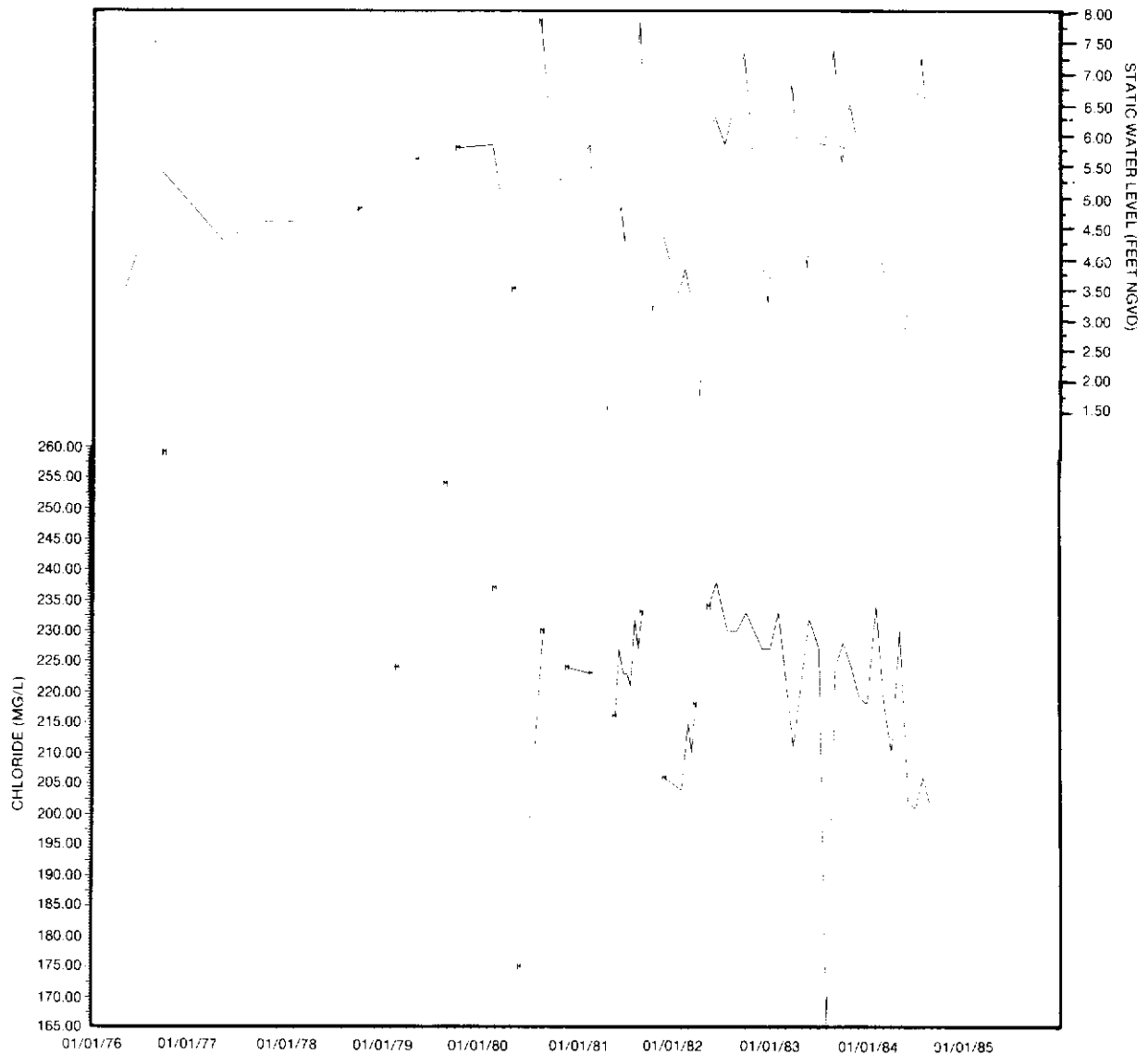
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-161 (Lower Tamiami Aquifer)



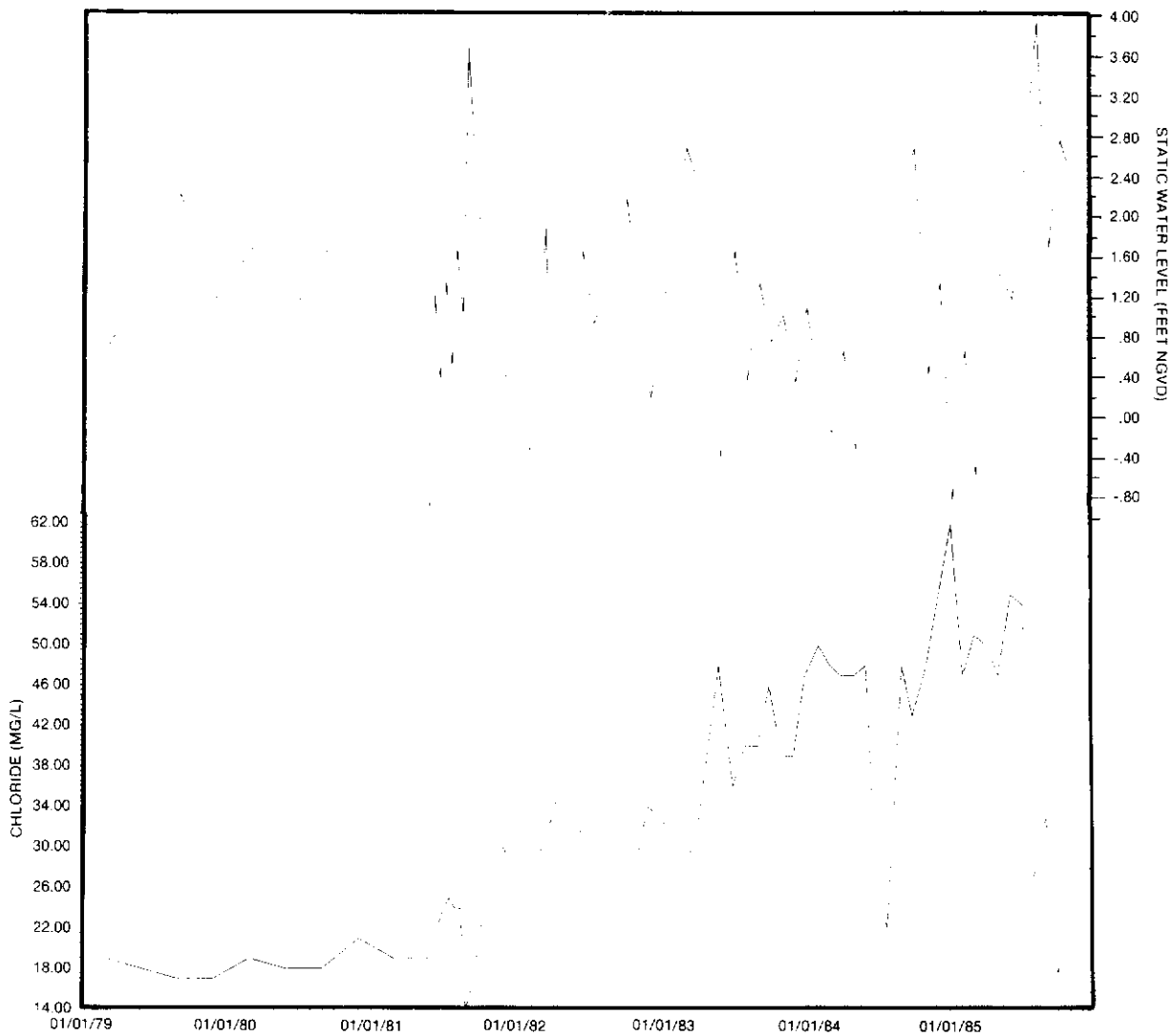
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-355 (Lower Tamiami Aquifer)



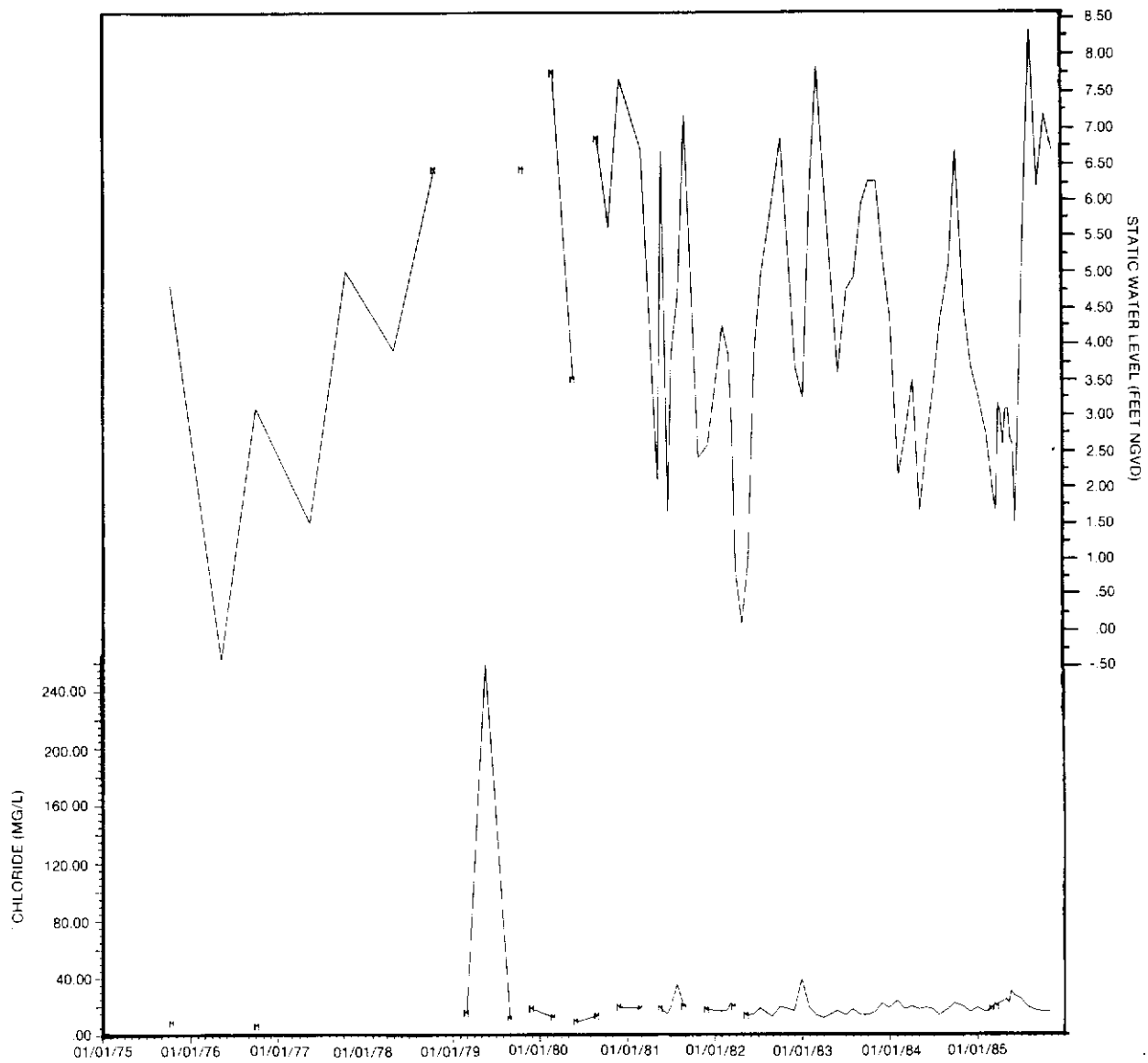
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-424 (Lower Tamiami Aquifer)



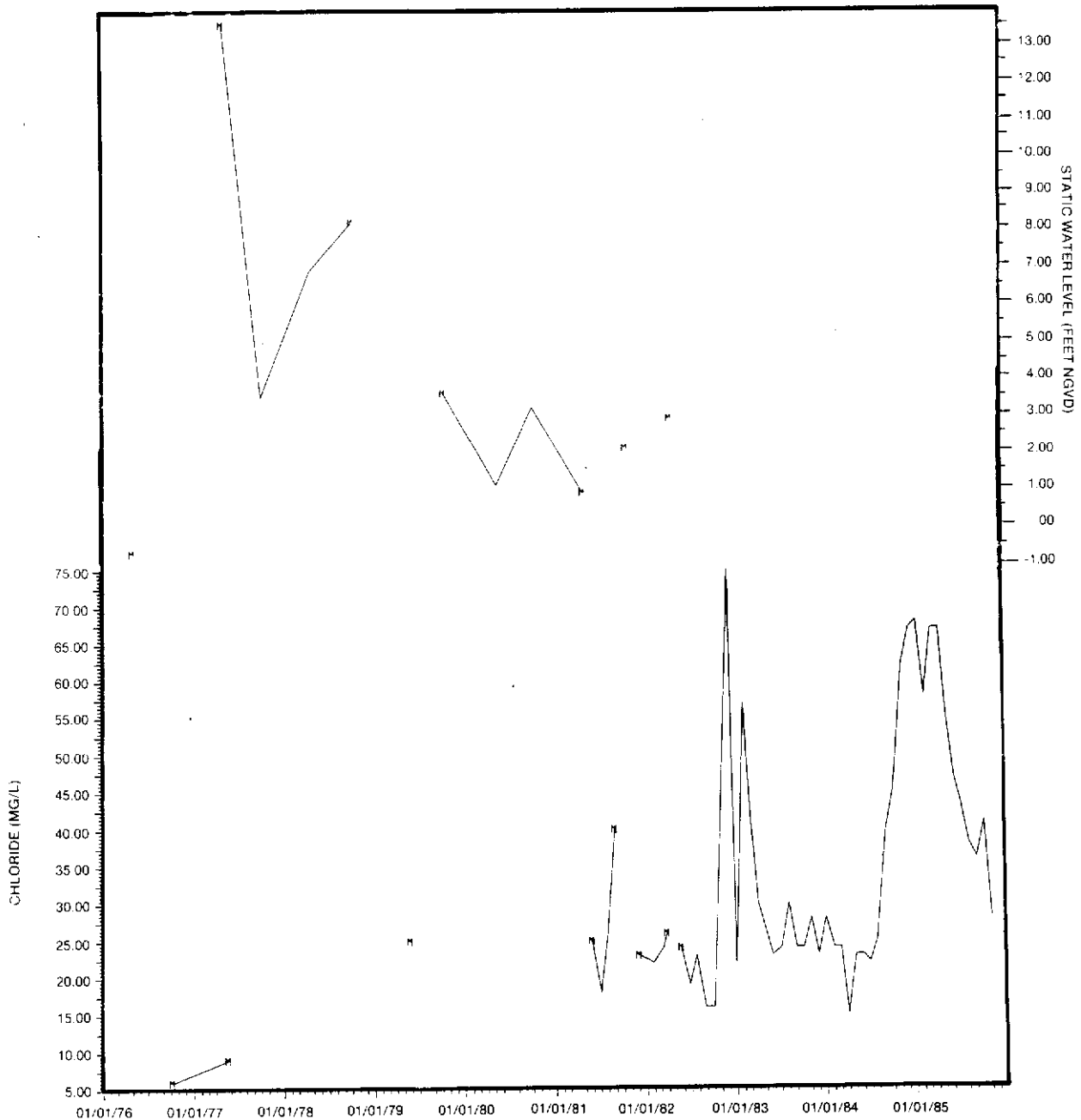
**WATER LEVEL AND CHLORIDE CONCENTRATION FOR
WELL C-430 (Lower Tamiami Aquifer)**



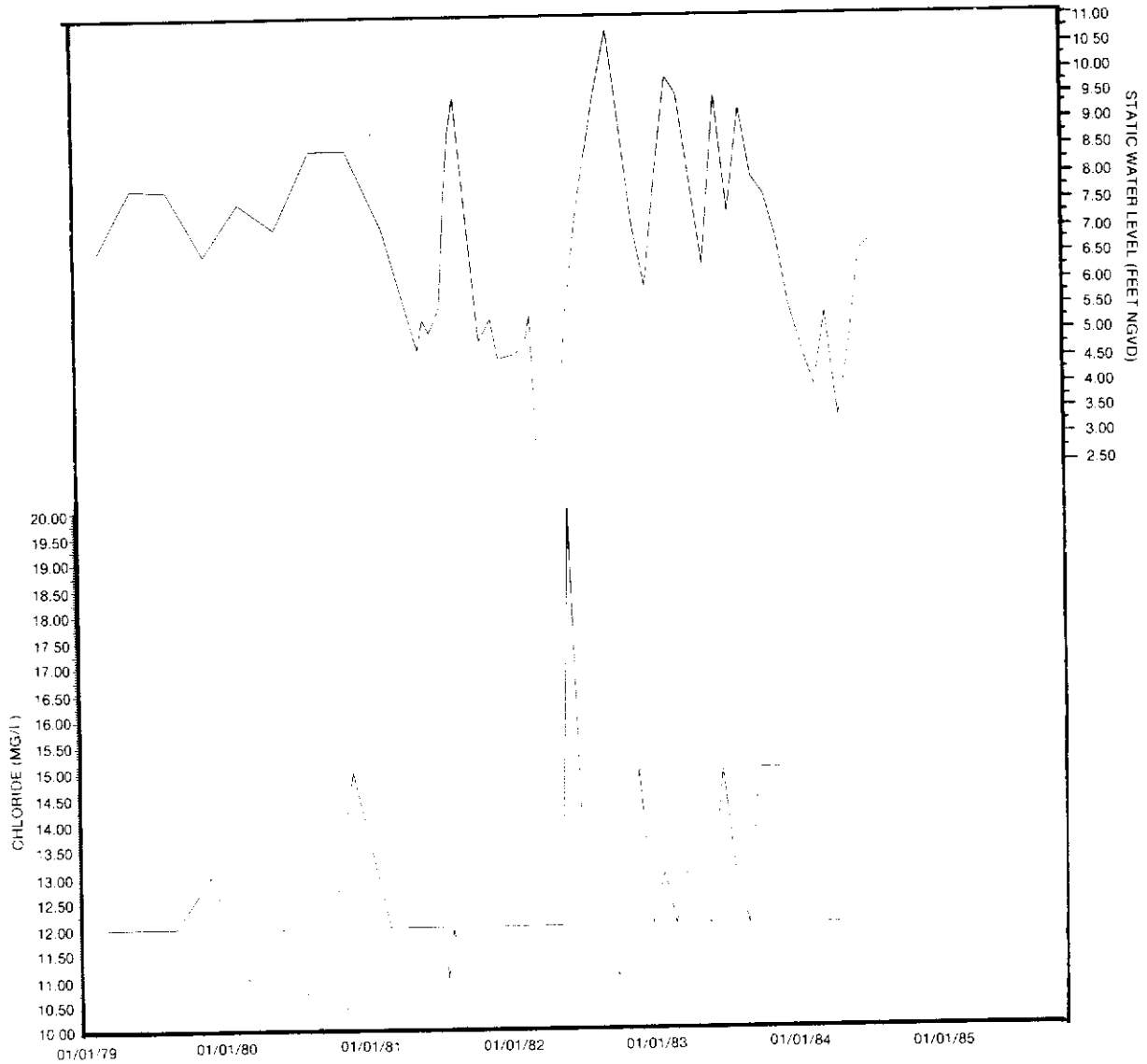
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-474A (Lower Tamiami Aquifer)



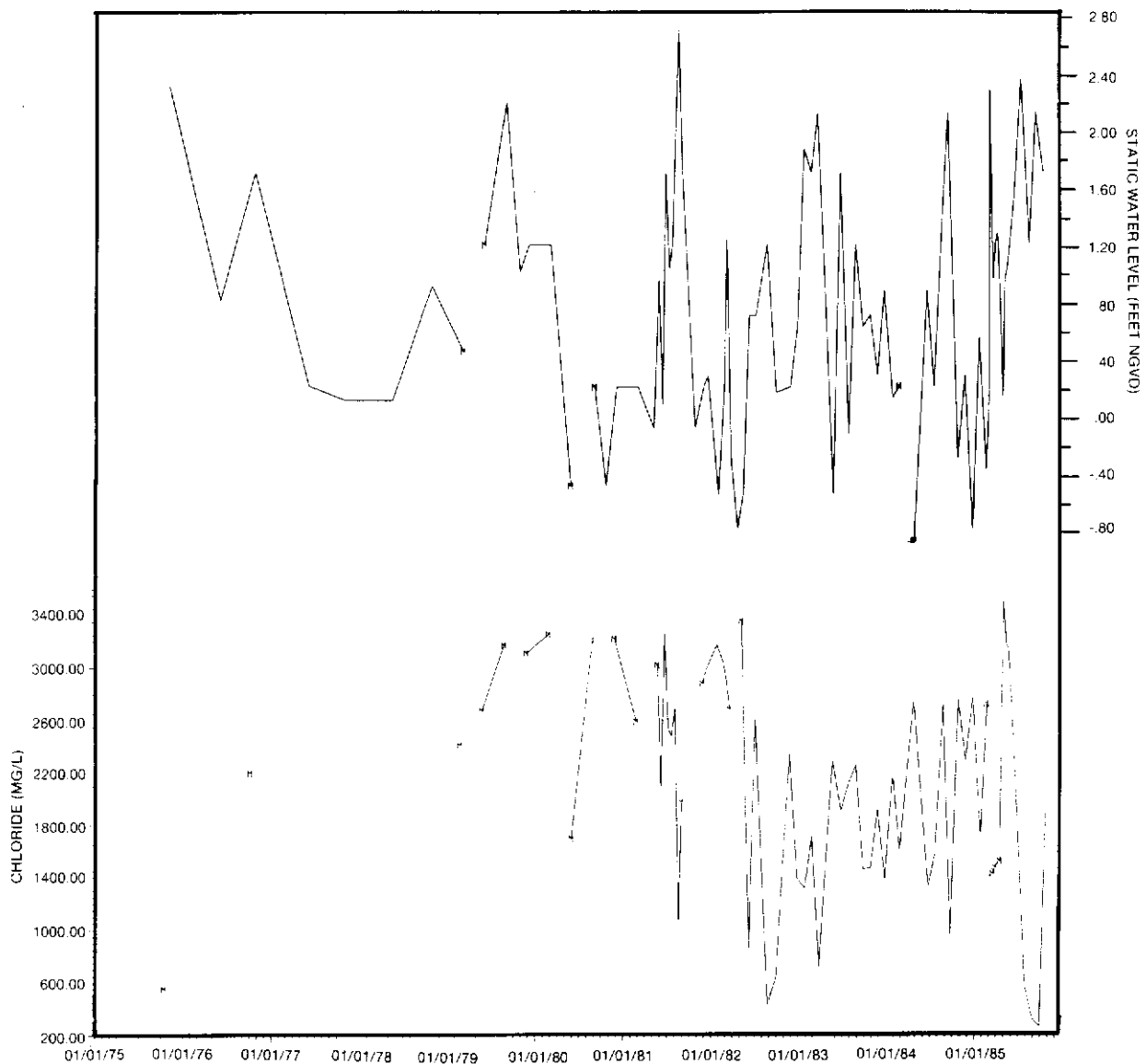
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-490 (Lower Tamiami Aquifer)



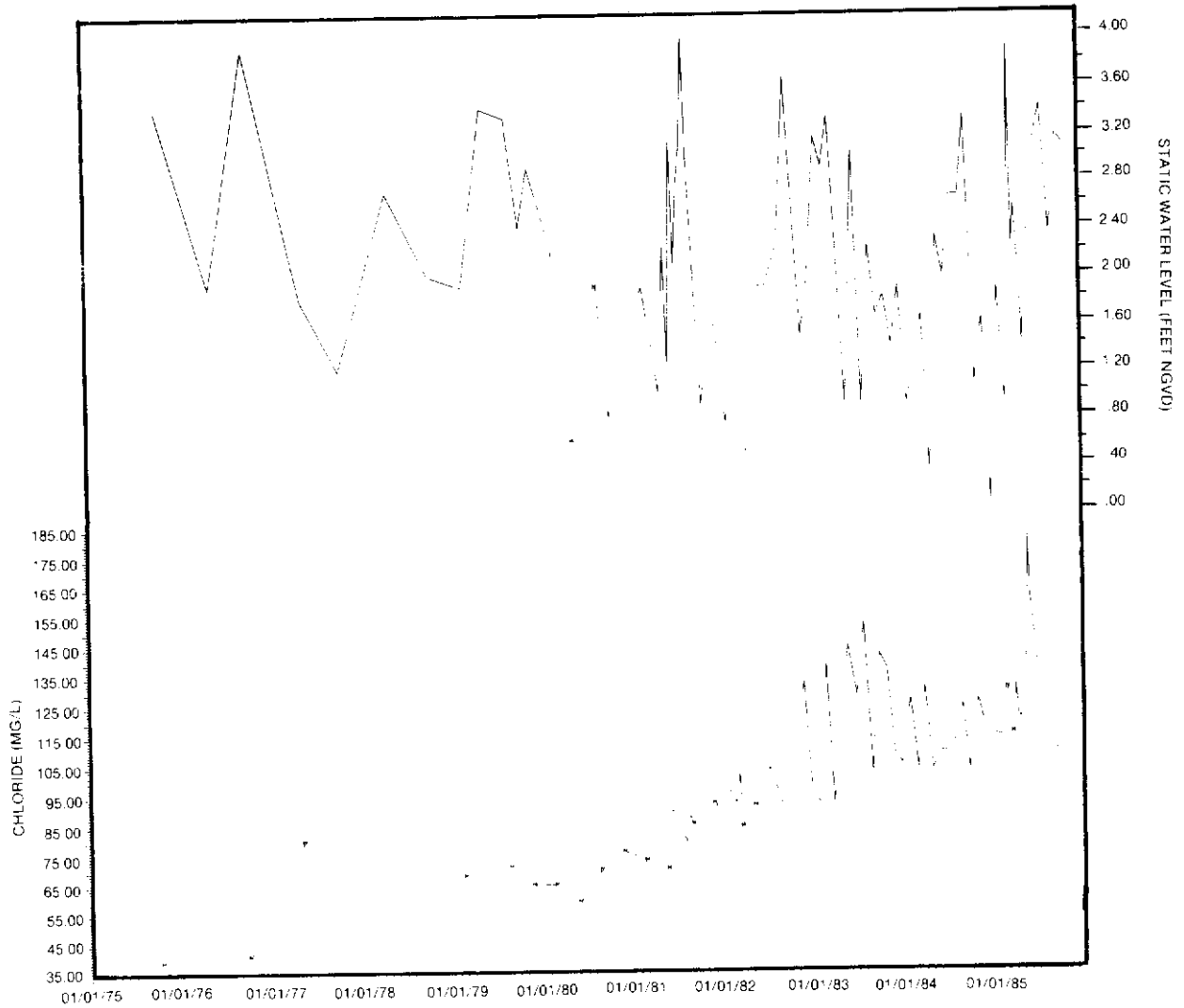
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-491 (Lower Tamiami Aquifer)



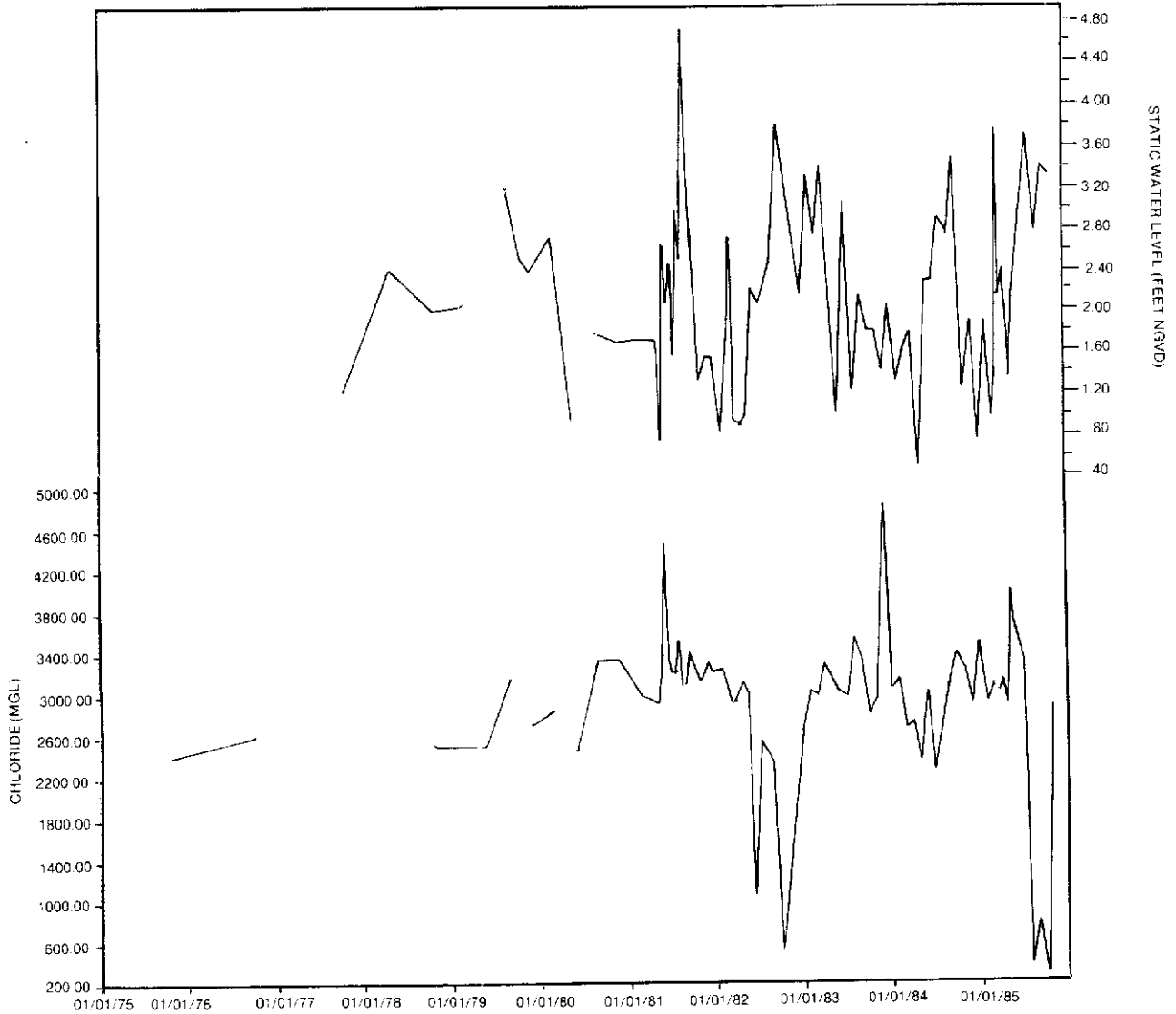
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-505A (Lower Tamiami Aquifer)



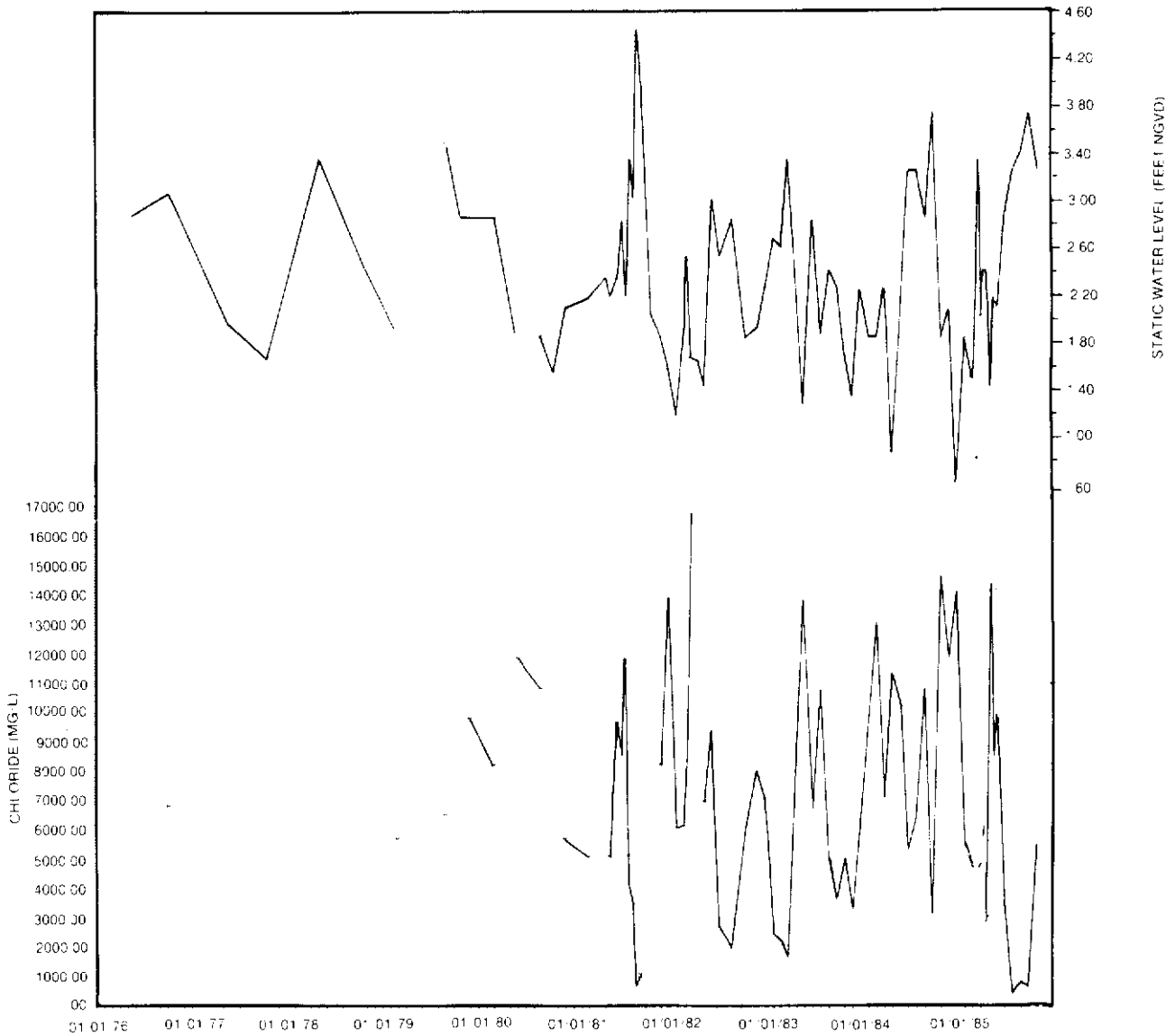
**WATER LEVEL AND CHLORIDE CONCENTRATION FOR
WELL C-524 (Lower Tamiami Aquifer)**



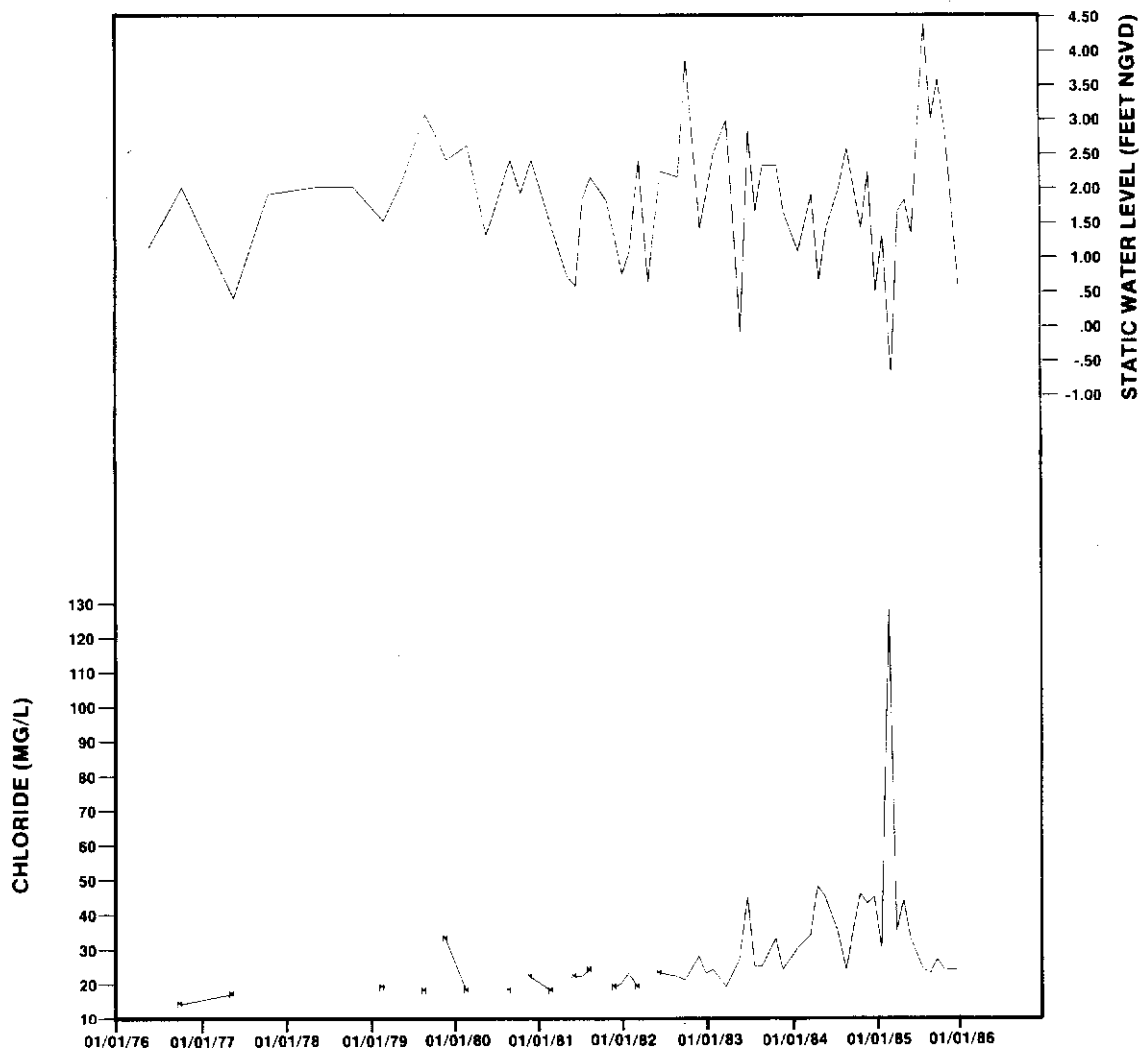
**WATER LEVEL AND CHLORIDE CONCENTRATION FOR
WELL C-525 (Lower Tamiami Aquifer)**



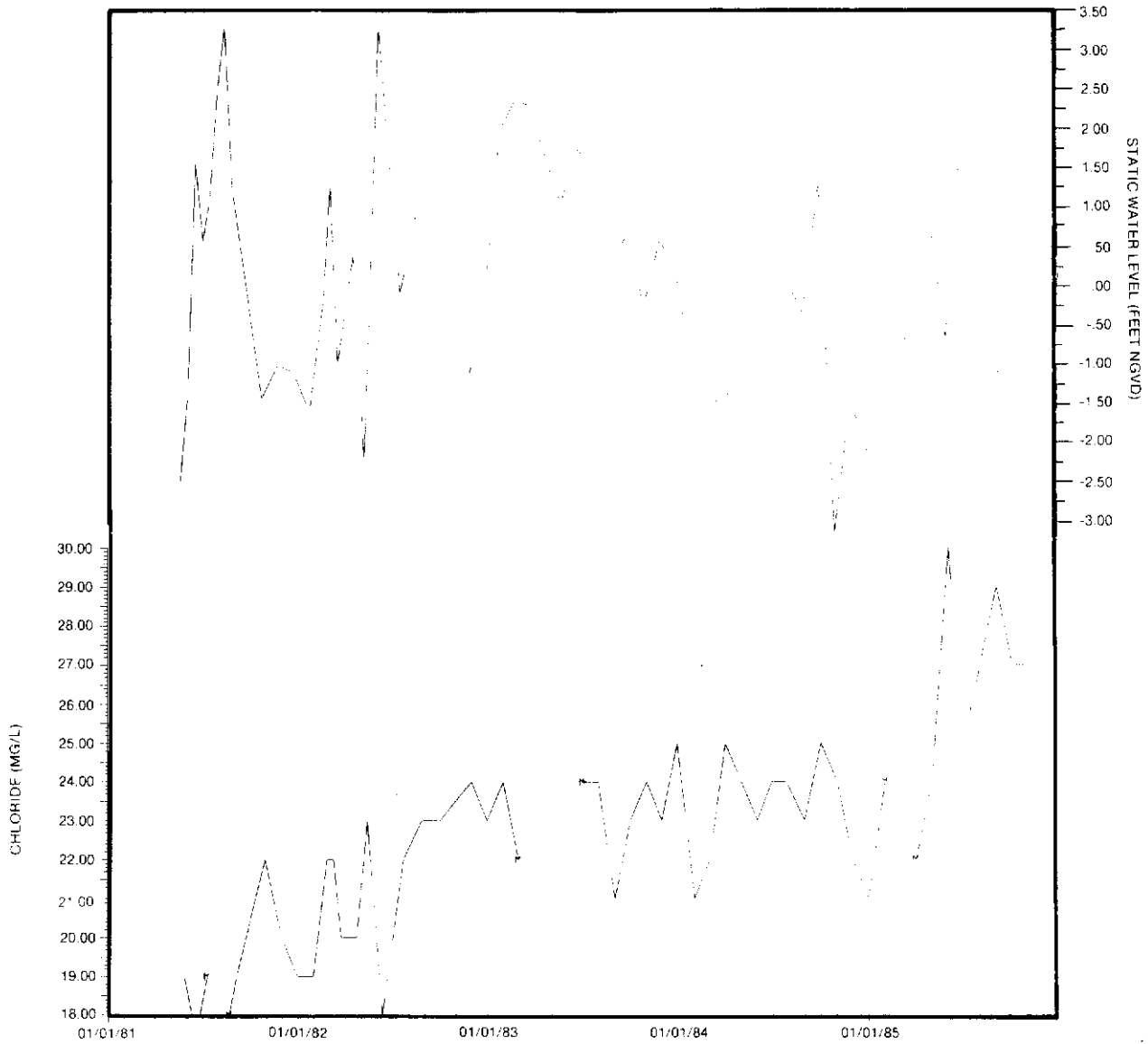
**WATER LEVEL AND CHLORIDE CONCENTRATION FOR
WELL C-526 (Lower Tamiami Aquifer)**



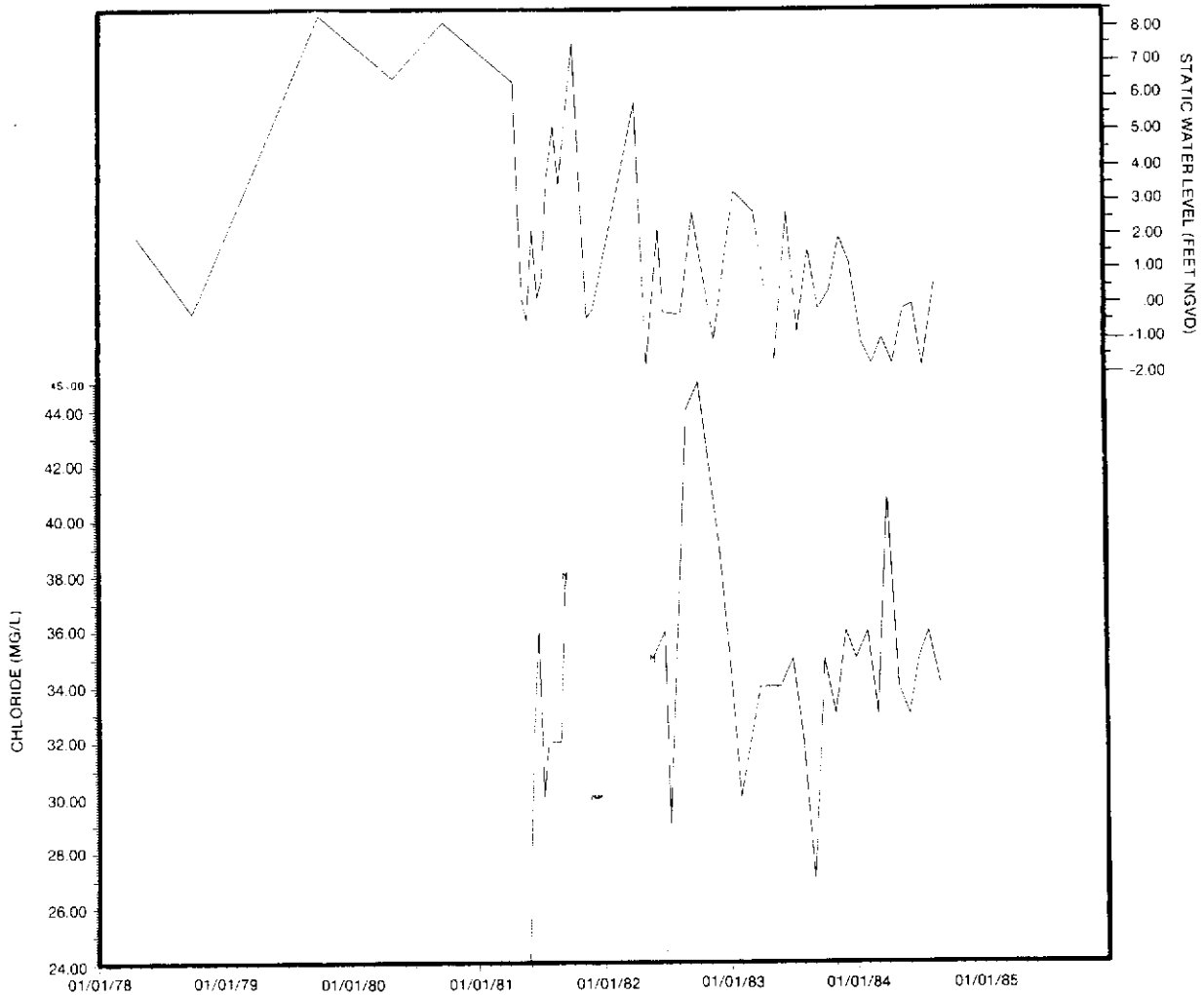
WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-527 (Lower Tamiami Aquifer)



WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-528 (Lower Tamiami Aquifer)



**WATER LEVEL AND CHLORIDE CONCENTRATION FOR
WELL C-151B (Water Table Aquifer)**



WATER LEVEL AND CHLORIDE CONCENTRATION FOR WELL C-409A (Water Table Aquifer)

APPENDIX III-1

INTRODUCTION

Introduction

The data used in the Water Quality section was collected from USGS and SFWMD wells. The complete water quality analyses came from the District's Chemistry Laboratory except for a select few that were completed by the USGS within the 1982 water year.

The data used to construct the chloride concentration and conductivity maps are presented here. Along with April 1984 values, known maximum and minimum values are presented to show the relationship between past and present chloride concentrations and conductivities. The beginning of record column indicates when the data collection began for each station. In most cases, water quality data was measured semi-annually or annually and many stations were not sampled regularly since the well was constructed. This explains the narrow range of values for many stations. Those wells with an identification number above 900 were not sampled until 1984; therefore, in most cases, only one value is presented.

The data summarized here may not represent all the available data collected for each station from all sources but represents all data available at the U. S. Geological Survey, Ft. Myers Field Station. Earlier water quality data is available in the USGS's archive files in Reston, Virginia.



APPENDIX III-2

WATER QUALITY DATA FROM SELECTED MONITOR WELLS

WATER QUALITY
WATER TABLE AQUIFER

Well No.	Latitude	Longitude	LOCATION	Beginning of Record	# of Samples	CHLORIDE (mg/l)		CONDUCTIVITY (umhos/cm)	
						Maximum	Minimum	Maximum	Minimum
C-8	25°56'37"	81°21'38"		1946	15	81	27	62	720
C-54	26°10'18"	80°53'02"		1951	15	38	10	20	300
C-131	26°25'21"	81°01'19"		1952	17	85	24	80	850
C-296	26°06'40"	81°20'43"		1959	16	/50	24	215	1280
C-319	26°15'24"	81°48'04"		1959	1	98	19	98	530
C-321	26°14'35"	81°47'25"		1959	1	24	19	24	340
C-322	26°12'40"	81°48'04"		1959	2	24	20	20	340
C-383	26°15'30"	81°41'21"		1963	22	55	8	18	500
C-384	26°16'20"	81°45'05"		1963	22	30	6	8	395
C-392	26°11'24"	81°47'30"		1964	37	69	24	44	900
C-409	26°10'24"	81°48'01"		1964	28	26	26	26	810
C-446	26°04'49"	81°41'15"		1968	1	250	42	106	430
C-450	26°09'13"	81°41'13"		1968	17	98	12	18	1680
C-475	26°11'11"	81°48'01"		1969	1	30	30	30	490
C-495	25°57'53"	81°18'43"		1970	14	78	12	14	1080
C-496	26°01'11"	81°24'39"		1970	11	90	22	40	750
C-503	26°17'40"	81°23'54"		1972	15	42	15	38	500
C-532	26°29'28"	81°27'29"		1975	5	30	4	18	550
C-598	26°14'17"	81°30'54"		1980	8	56	20	24	800
C-599	26°06'30"	81°41'14"		1980	9	175	14	24	1440
C-600	26°05'49"	81°44'19"		1980	9	92	70	65	950
C-960	26°06'29"	81°32'36"		1984	8	118	80	84	1160
C-966	26°21'36"	81°20'42"		1984	1	16	16	16	440
C-966	26°13'47"	81°35'12"		1984	1	50	50	50	420
C-967	26°05'40"	81°39'16"		1984	1	80	80	80	720
C-968	26°03'34"	81°39'16"		1984	1	6	6	6	420
C-970	26°17'21"	81°35'13"		1984	1	10	10	10	760
C-972	26°08'43"	81°32'42"		1984	1	24	24	24	510
C-976	26°09'15"	81°38'59"		1984	1	140	140	140	550
C-978	26°21'21"	81°35'55"		1984	1	6	6	6	700
C-980	26°13'43"	81°38'48"		1984	1	6	6	6	950
C-981	26°21'58"	81°28'34"		1984	1	36	36	36	650
C-984	26°17'33"	81°28'55"		1984	1	36	36	36	575
C-986	26°12'00"	81°20'49"		1984	1	62	62	62	530
L-730	26°31'27"	81°35'16"		1968	9	20	4	6	670
L-739	26°26'57"	81°44'35"		1968	4	34	25	34	380
L-1138	26°27'03"	81°34'02"		1970	2	38	36	36	570
L-1964	26°33'44"	81°36'17"		1974	3	64	32	44	290
L-1985	26°27'13"	81°41'47"		1974	3	36	28	30	720
L-1992	26°33'53"	81°33'58"		1974	2	26	22	22	620
L-1995	26°32'51"	81°45'28"		1975	2	30	28	28	590
L-1997	26°19'54"	81°41'01"		1975	3	40	32	36	700
L-1999	26°30'41"	81°43'31"		1974	3	30	22	30	430
L-2195	26°19'57"	81°43'22"		1974	7	40	22	21	440
L-2204	26°33'29"	81°39'43"		1975	2	30	16	26	650
HE-554	26°33'10"	81°25'09"		1975	7	25	10	14	420
HE-569	26°39'30"	81°30'15"		1975	1	58	58	58	510

WATER QUALITY
LOWER TAMMAMI AQUIFER

Well No.	LOCATION		Beginning of Record	# of Samples	CHLORIDE (mg/l)		April 1984	# of Samples	CONDUCTIVITY (umhos/cm)		April 1984
	Latitude	Longitude			Maximum	Minimum			Maximum	Minimum	
C-123	26°10'03"	81°48'37"	1952	42	46	8	20	19	470	65	400
C-130	26°09'02"	81°48'04"	1952	42	350	114	139	25	1500	640	1006
C-161	26°10'23"	81°47'07"	1957	30	685	128	128	19	1500	780	770
C-175	26°09'12"	81°43'47"	1958	9	1750	1300	1460	7	5200	4450	5000
C-304	26°16'35"	81°36'13"	1959	7	45	39	42	6	680	610	610
C-353	26°16'25"	81°46'42"	1960	34	460	280	370	22	2900	1850	1950
C-363	26°25'56"	81°24'26"	1961	2	23	6	6	1	130	130	130
C-391	26°11'24"	81°47'33"	1964	36	26	10	16	30	600	229	420
C-409A	26°10'24"	81°48'01"	1965	25	90	20	22	20	435	410	420
C-424	26°15'24"	81°48'04"	1965	33	750	180	410	24	2900	1300	1420
C-430	26°11'46"	81°46'07"	1965	34	355	40	175	22	1240	880	1160
C-459	26°14'03"	81°47'07"	1968	1	40	40	40	1	990	990	990
C-460	26°14'05"	81°46'55"	1968	35	180	10	12	22	1700	520	770
C-462	26°27'25"	81°26'13"	1968	14	48	8	28	8	540	170	250
C-472A	26°09'25"	81°47'52"	1973	30	57	28	50	22	610	155	580
C-474A	26°11'14"	81°48'23"	1973	32	40	12	34	22	500	340	400
C-489	26°13'30"	81°47'33"	1965	30	34	8	26	29	445	275	305
C-490	26°12'43"	81°48'03"	1971	33	130	6	8	24	340	90	310
C-491	26°11'17"	81°48'01"	1971	32	40	6	16	20	440	220	285
C-492	26°22'23"	81°36'20"	1970	15	460	10	46	9	1220	640	640
C-505A	26°14'14"	81°48'03"	1973	31	20	4	6	22	450	265	285
C-506A	26°12'33"	81°48'33"	1973	35	92	8	8	24	440	330	350
C-515	26°13'46"	81°48'02"	1973	35	12	12	12	1	365	365	365
C-516	26°11'56"	81°47'58"	1973	1	20	20	20	1	250	250	250
C-524	26°09'48"	81°48'33"	1973	35	3600	100	1460	25	9700	810	5100
C-525	26°10'02"	81°48'37"	1973	35	352	42	165	25	930	450	930
C-526	26°10'18"	81°48'41"	1973	33	3400	2400	2840	23	9600	7600	9400
C-527	26°10'48"	81°48'48"	1973	32	10450	1240	10450	23	32000	4100	30600
C-528	26°12'00"	81°48'30"	1973	34	40	12	16	25	465	380	385
C-951	26°13'47"	81°35'12"	1984	1	36	36	36	1	630	630	630
C-956	26°13'43"	81°38'48"	1984	1	56	56	56	1	770	770	770
C-965	26°21'36"	81°20'42"	1984	1	254	254	254	1	920	920	920
C-971	26°17'21"	81°35'13"	1984	1	30	30	30	1	580	550	565
C-973	26°08'43"	81°32'42"	1984	1	134	134	134	1	880	880	880
C-975	26°03'04"	81°39'14"	1984	1	160	160	160	1	1160	1160	1160
C-977	26°09'15"	81°38'59"	1984	1	30	30	30	1	790	790	790
C-979	26°21'21"	81°35'55"	1984	1	20	20	20	1	450	450	450
C-982	26°21'58"	81°28'34"	1984	1	38	38	38	1	560	560	560
C-985	26°17'33"	81°28'55"	1984	1	38	38	38	1	650	650	650
C-988	26°14'44"	81°28'49"	1984	1	46	46	46	1	690	690	690
L-738	26°20'22"	81°46'42"	1973	2	230	220	230	2	1020	1000	1000
L-1691	26°20'24"	81°45'50"	1973	8	78	32	78	8	780	300	700

WATER QUALITY
SANDSTONE AQUIFER

Well No.	Latitude	Longitude	LOCATION	Beginning of Record	# of Samples	CHLORIDE (mg/l)		April 1984	# of Samples	CONDUCTIVITY (umhos/cm)		April 1984
						Maximum	Minimum			Maximum	Minimum	
C-298	26°25'07"	81°23'52"		1959	8	89	38	62	7	720	410	410
C-303	26°16'22"	81°04'23"		1959	8	1100	615	615	7	3300	2180	2180
C-531	26°29'28"	81°02'29"		1975	5	48	32	48	5	740	680	680
C-687	26°25'54"	81°28'38"		1981	7	110	56	56	7	860	460	620
C-688	26°18'02"	81°35'48"		1981	6	45	42	42	6	780	620	780
C-689	26°17'40"	81°23'54"		1981	6	92	85	88	6	820	730	730
C-989	26°17'33"	81°28'55"		1984	1	180	180	180	1	1260	1260	1260
L-729	26°33'35"	81°39'43"		1968	2	68	40	40	2	710	500	500
L-731	26°27'03"	81°34'02"		1968	8	37	20	20	8	490	380	380
L-1853	26°07'06"	81°43'54"		1973	2	22	6	22	2	420	360	360
L-1963	26°33'44"	81°36'17"		1974	3	170	150	150	3	1100	1010	1010
L-1965	26°33'53"	81°33'58"		1974	2	300	195	195	2	1420	1180	1180
L-1984	26°27'13"	81°41'46"		1974	3	26	26	26	3	640	560	600
L-1994	26°32'51"	81°45'28"		1975	2	80	78	80	2	760	700	700
L-1998	26°30'41"	81°43'31"		1976	2	64	52	52	2	700	560	560
L-2192	26°26'59"	81°38'25"		1975	5	160	50	50	5	1120	600	600
L-2194	26°19'57"	81°43'22"		1975	2	82	80	80	2	810	760	760
HE-529	26°31'27"	81°35'16"		1975	2	46	36	36	2	740	590	590
HE-555	26°33'10"	81°25'09"		1976	1	40	40	40	1	650	650	650
	26°38'45"	81°26'07"		1976	1	180	180	180	1	1380	1380	1380

WATER QUALITY
MID HAWTHORN & FLORIDAN AQUIFER SYSTEM AQUIFERS

Well No.	Latitude	Longitude	LOCATION	Beginning of Record	# of Samples	CHLORIDE (mg/l)		April 1984	# of Samples	CONDUCTIVITY (umhos/cm)		April 1984
						Maximum	Minimum			Maximum	Minimum	
C-39	25°48'50"	81°21'47"		1951	13	1958	1250	1840	11	7000	5200	6900
C-258	26°25'04"	81°02'54"		1959	8	1040	950	1000	6	5400	3750	3850
C-269	25°56'25"	81°28'12"		1959	12	551	330	520	11	2700	2100	2250
C-308	26°09'19"	81°05'59"		1959	14	2000	1740	1800	9	8000	6060	6750
C-311	25°54'37"	81°02'154"		1959	16	520	385	440	11	2700	2000	2240
C-445A	25°51'27"	81°23'09"		1967	11	1000	230	1000	8	2900	2050	2900
C-575	26°13'10"	81°048'07"		1979	23	1450	1040	1150	23	5500	3400	4200
C-684	26°17'40"	81°023'54"		1980	8	224	150	200	8	4700	3200	3700
C-948	26°13'47"	81°035'17"		1984	1	180	180	180	1	1700	1700	1700
C-955	26°13'47"	81°035'17"		1984	1	30	30	30	1	580	580	565
C-963	26°02'12"	81°035'55"		1984	1	135	135	135	1	930	930	930
C-974	26°09'41"	81°032'42"		1984	1	2050	2050	2050	1	7000	7000	7000
C-983	26°21'58"	81°28'34"		1984	1	660	660	660	1	4200	4200	4200
C-987	26°03'09"	81°27'26"		1984	1	680	680	680	1	3000	3000	3000

APPENDIX IV-1

INTRODUCTION

Introduction

Information regarding Collier County community planning areas, service area information (e.g.; populations, water plants, per capita use per month, etc.), projected populations (up to the year 2000), and household and resident populations were provided by the Utility Division of Collier County; specifically Thomas T. Crandall, Utilities Administrator, and are presented here in Appendix IV-3. In addition, well construction specifications, installation dates, and pump capacities were provided by the same for both the City of Naples Coastal Ridge and East Golden Gate wellfields.

Information from permitted public water suppliers, agricultural, recreational, and aesthetic groundwater users within the Naples area were provided by the SFWMD's Water Use Planning Division. This information is provided in Appendix IV-14 in tabular form. This table depicts water use from the lower Tamiami aquifer for the months of September and October, 1984 and April and May, 1985 for all the permitted users within the aforementioned area. Included are estimates of water use in gpd, number of hours the pumps were in operation, and the capacity of each well for each permitted user.

Appendix IV-36 portrays the analytical analyses used to determine the aquifer parameters from aquifer pumping test data. Each figure displays all the data points, match points, and calculations of aquifer parameters for each well tested. The wells are labeled as C-2030-I, where the letter C means Collier County, the number is a SFWMD identification for each exploration site, and the letter following the number represents the aquifer that was being tested (i.e., S - water table, I - lower Tamiami, D - Sandstone, m -mid-Hawthorn).

The title under each figure is followed by a /(name); the name represents the method used to analytically analyze the data. The Boulton method was used

for unsteady-state flow in unconfined aquifers with delayed yield and in semi-confined aquifers; the Hantush method was used for unsteady-state flow in semi-confined aquifers; the Jacob method was used for steady-state and unsteady-state flow in semi-confined aquifers; the Stallman method was used in the case of aquifers limited by one or more boundaries; and the Jacob recovery method was used where insufficient data was collected during the drawdown phase of a pumping test (e.g., pump may have inadvertently shut-off). In several cases, more than one method of analysis was used in order to verify the calculated aquifer parameters for each site. Further information describing the above-mentioned methods can be found in Kruseman and DeRidder, 1970.

APPENDIX IV-2
COLLIER COUNTY PLANNING AREAS
AND POPULATION PROJECTIONS



Board of County Commissioners
COLLIER COUNTY GOVERNMENT COMPLEX
Utility Division
Courthouse Complex
Bldg. F - 5th Floor
Naples, FL 33962-4967

February 28, 1985

Mr. Scott Burns
South Florida Water Management
District
3301 Gun Club Road
West Palm Beach, Fl. 33402

Re: County Regional Water System - Water Use Information

Dear Mr. Burns:

As stated in our telephone conversation of this date, our report regarding your request for water use information is enclosed.

The remainder of the information you requested will be forwarded to you as soon as it has been completed, hopefully by the end of next week.

If you have any questions regarding the above, please do not hesitate to contact this office.

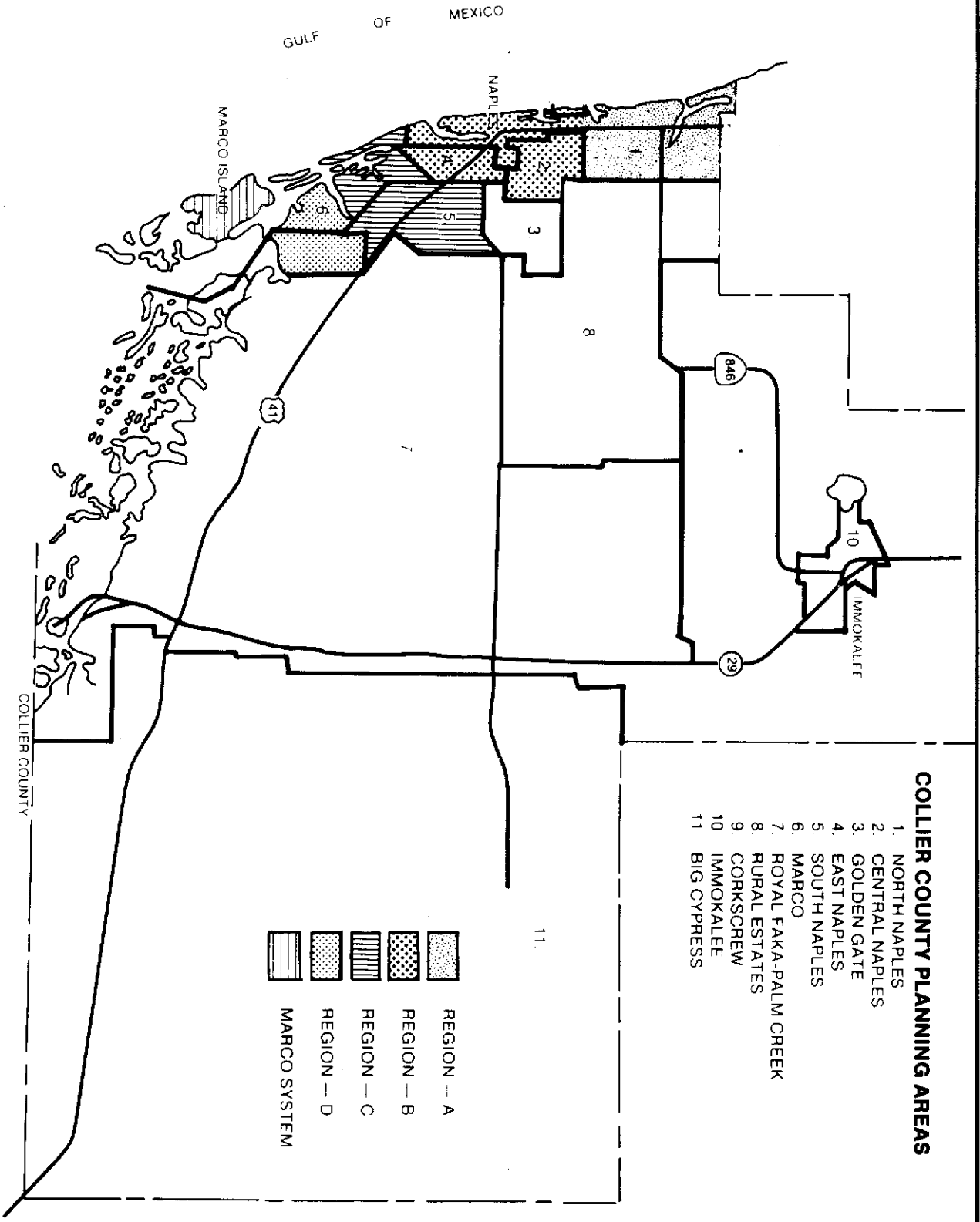
Very truly yours,

Thomas T. Crandall
Utilities Administrator

TTC/bp






cc: John F. Madajewski
Shannon Howell

COLLIER COUNTY COMMUNITY PLANNING AREAS



COLLIER COUNTY PLANNING AREAS

1. NORTH NAPLES
2. CENTRAL NAPLES
3. GOLDEN GATE
4. EAST NAPLES
5. SOUTH NAPLES
6. MARCO
7. ROYAL FAKA-PALM CREEK
8. RURAL ESTATES
9. CORKSREW
10. IMMOKALEE
11. BIG CYPRESS

- | | |
|---|--------------|
|  | REGION - A |
|  | REGION - B |
|  | REGION - C |
|  | REGION - D |
|  | MARCO SYSTEM |

COLLIER COUNTY
SERVICE AREA INFORMATION SHEET

SERVICES AREAS	AREA A	AREA B	AREA C	AREA D
POPULATION	16,815	44,625	9,132	2,722
FUTURE POPULATION	1990-22,778	1990-54,527	1990-12,371	1990-no
	1995-27,893	1995-63,081	1995-15,149	1995-infor.
WATER PLANTS	Naples Supp.	Naples 30M.G.D Water Plant	COUNTY 4M.G.D Water Plant	No Plant County Supp.
FUTURE PLANTS	8M.G.D Plant Proposed	No Expansion	8M.G.D Plant Proposed	No Plants Proposed
WELLS	None	See Naples Information	5 wells 12 in. 1 m.g.d.	None
FUTURE WELLS	8 wells 12 in. 1 m.g.d.	On information	10 wells Same as above	None
METERED CONNECTIONS	4,840	13,028	2,808	1,089
FUTURE CONNECTIONS	1990-6,500	1990-15,918	1990-3,800	1990-NO
	1995-8,000	1995-18,416	1995-4,600	1995-infor.
	2000-9,700	2000-21,207	2000-5,600	2000-avail.
PER CAPITA USE PER-MONTH	4100/capita gal	8000/capita gal	9500/capita gal	7200/capita gal

COLLIER COUNTY

COMUNIT

HOUSING UNIT PROJECTIONS PER COMMUNITY DISTRICT
APRIL 1, 1984

COMMUNITY	1984		1985	1990	1995	2000
NORTH NAPLES	8346	HIGH	9163	12527	15411	18662
		MEDIUM	8732	11432	13510	15763
CENTRAL NAPLES	7300	HIGH	8015	10957	13480	16323
		MEDIUM	7637	10000	11817	13787
EAST NAPLES	8375	HIGH	9195	12570	15465	18727
		MEDIUM	8762	11472	13557	15818
SOUTH NAPLES	5469	HIGH	6005	8209	10099	12229
		MEDIUM	5722	7491	8853	10329
GOLDEN GATE	4476	HIGH	4914	6718	8265	10009
		MEDIUM	4683	6131	7246	8454
RURAL ESTATES	1412	HIGH	1550	2119	2607	3157
		MEDIUM	1477	1934	2286	2667
ROYAL FAKAPALM	1610	HIGH	1768	2416	2973	3600
		MEDIUM	1684	2205	2606	3041
CORKSCREW	767	HIGH	842	1151	1416	1715
		MEDIUM	802	1051	1242	1449
IMMOKALEE	4780	HIGH	5248	7174	8826	10688
		MEDIUM	5001	6548	7738	9028
MARCO	10395	HIGH	11413	15602	19195	23244
		MEDIUM	10875	14239	16827	19633
BIG CYPRESS	168	HIGH	184	252	310	376
		MEDIUM	176	230	272	317
UNINCORPORATED	53098	HIGH	58298	79696	98046	118730
		MEDIUM	55551	72733	85954	100286
EVERGLADES CITY	292	HIGH	315	410	492	583
		MEDIUM	303	380	439	503
CITY OF NAPLES	12726		12833	13177	13514	13839
SEASONAL OR MIGRATORY	1016		992	992	992	992
COLLIER (TOTAL)	67132	HIGH	72438	94275	113044	134144
		MEDIUM	69679	87282	100899	115620

Source: Collier County Planning Department

COLLIER COUNTY

COMPROJ

POPULATION PROJECTIONS PER COMMUNITY DISTRICT
APRIL 1, 1984

COMMUNITY	1984		1985	1990	1995	2000
NORTH NAPLES	15371	HIGH	16815	22778	27893	33657
		MEDIUM	16051	20842	24531	28528
CENTRAL NAPLES	11806	HIGH	12915	17495	21424	25851
		MEDIUM	12328	16008	18841	21912
EAST NAPLES	12469	HIGH	13640	18477	22627	27303
		MEDIUM	13020	16907	19899	23142
SOUTH NAPLES	8348	HIGH	9132	12371	15149	18279
		MEDIUM	8717	11319	13323	15494
GOLDEN GATE	10167	HIGH	11122	15066	18450	22262
		MEDIUM	10616	13786	16226	18870
RURAL ESTATES	4244	HIGH	4643	6289	7701	9293
		MEDIUM	4432	5755	6773	7877
ROYAL FAKAPALM	3997	HIGH	4372	5923	7253	8752
		MEDIUM	4174	5420	6379	7418
CORKSCREW	2522	HIGH	2759	3737	4577	5522
		MEDIUM	2633	3420	4025	4681
IMMOKALEE	12388	HIGH	13552	18357	22480	27125
		MEDIUM	12936	16797	19770	22992
MARCO	8439	HIGH	9232	12505	15314	18478
		MEDIUM	8812	11443	13468	15663
BIG CYPRESS	320	HIGH	350	474	581	701
		MEDIUM	334	434	511	594
UNINCORPORATED	90071	HIGH	98531	133473	163449	197224
		MEDIUM	94053	122129	143745	167171
EVERGLADES CITY	534	HIGH	576	750	899	1067
		MEDIUM	554	694	803	920
CITY OF NAPLES	17920		18071	18555	19030	19487
SEASONAL OR MIGRATORY	922		922	922	922	922
COLLIER (TOTAL)	109447	HIGH	118100	153700	184300	218700
		MEDIUM	113600	142300	164500	188500

Note: These projections are based on the University of Florida, State and County estimates of April 1, 1984.

The 1984 population and housing unit counts for each community, the City of Naples and Everglades City were derived from a combination of U.S. Census figures and County data.

The high and medium rates of increase in Collier County's population as estimated by the University of Florida, were applied to the base populations of each community to obtain the projections.

Collier County Planning Department

COLLIER COUNTY

CDMPOP84

COLLIER COUNTY HOUSEHOLDS AND RESIDENT POPULATION: APRIL 1, 1984

COMMUNITY	HOUSING TYPE	NUMBER OF HOUSING UNITS 1984	ESTIMATED PERCENT OCCUPIED YEAR-ROUND	NUMBER OCCUPIED HOUSING UNITS 1984 (1)	AVERAGE NUMBER OF PERSONS PER OCCUPIED UNIT 1984 (2)	ESTIMATED 1984 RESIDENT POPULATION	PERCENT OF TOTAL POPULATION
NORTH NAPLES	S.F.	4451					
	DUP.	688					
	M.F.	2414					
	M.H.	793					
	TOTAL	8346	0.7205	6013	2.56	15371	0.14
CENTRAL NAPLES	S.F.	2137					
	DUP.	358					
	M.F.	4255					
	M.H.	550					
	TOTAL	7300	0.7021	5126	2.30	11806	0.11
EAST NAPLES	S.F.	3014					
	DUP.	806					
	M.F.	3318					
	M.H.	1237					
	TOTAL	8375	0.6901	5779	2.16	12469	0.11
SOUTH NAPLES	S.F.	1501					
	DUP.	338					
	M.F.	1397					
	M.H.	2233					
	TOTAL	5469	0.6333	3464	2.41	8348	0.08
GOLDEN GATE	S.F.	2770					
	DUP.	386					
	M.F.	829					
	M.H.	491					
	TOTAL	4476	0.8172	3658	2.78	10167	0.09
RURAL ESTATES	S.F.	1400					
	DUP.						
	M.F.						
	M.H.	12					
	TOTAL	1412	0.9428	1331	3.19	4244	0.04

(1) Rounded off to nearest whole unit

(2) Rounded off to nearest 1/10

COLLIER COUNTY

COMPOP84

COLLIER COUNTY HOUSEHOLDS AND RESIDENT POPULATION: APRIL 1, 1984

COMMUNITY	HOUSING TYPE	NUMBER OF HOUSING UNITS 1984	ESTIMATED PERCENT OCCUPIED YEAR-ROUND	NUMBER OCCUPIED HOUSING UNITS 1984 (1)	AVERAGE NUMBER OF PERSONS PER OCCUPIED UNIT 1984 (2)	ESTIMATED 1984 RESIDENT POPULATION	PERCENT OF TOTAL POPULATION
ROYAL	S.F.	341					
FAKAPALM	DUP.	12					
	M.F.	440					
	M.H.	817					
	TOTAL	1610	0.7648	1231	3.25	3997	0.04
CORKSCREW	S.F.	381					
	DUP.	6					
	M.F.	8					
	M.H.	372					
	TOTAL	767	0.9193	705	3.58	2522	0.02
IMMOKALEE	S.F.	2153					
	DUP.	278					
	M.F.	887					
	M.H.	1462					
	TOTAL	4780	0.8801	4207	2.94	12388	0.11
MARCO ISLAND	S.F.	2957					
	DUP.	138					
	M.F.	7084					
	M.H.	216					
	TOTAL	10395	0.3680	3825	2.21	8439	0.08
BIG CYPRESS	S.F.	69					
	DUP.						
	M.F.	7					
	M.H.	92					
	TOTAL	168	0.8242	138	2.31	320	.00
	UNINCORPORATED	53098	0.6682	35478	2.54	90071	0.82
	EVERGLADES CITY	292	0.5700	166	3.21	534	.00
	CITY OF NAPLES†	12726	0.6770	8616	2.08	17920	0.16
	SEASONAL UNITS**	1016				922	0.01
	COLLIER (TOTAL)	67132	0.6761	44260	2.42	109447	1.00

(1) Rounded off to nearest whole unit

(2) Rounded off to nearest 1/10

†Includes group housing and guest homes. Population estimate is April 1, 1984

**In the 1980 Census Data vacant units intended for seasonal occupancy and vacant units held for migratory labor are excluded because of the difficulty of obtaining characteristic data for them. However, they are included in the total counts.

Source: COLLIER COUNTY PLANNING DEPARTMENT

CITY OF NAPLES

COASTAL RIDGE WELL FIELD EQUIPMENT AND CONSTRUCTION

Well Number	Installation Date (Yr)	Well Diameter (inches)	Total Depth	Rated Capacity	Motor Horsepower	Motor Manufacturer	Pump Manufacturer
1	1958	8	90	350	7.5	Fairbanks-Morse	Fairbanks-Morse
2	1958	8	87	350	7.5	Fairbanks-Morse	Fairbanks-Morse
3	1958	8	89	350	7.5	Fairbanks-Morse	Fairbanks-Morse
4	1962	8	82	350	7.5	U. S. Motors	U. S. Pumps
5	1962	8	82	350	7.5	U. S. Motors	U. S. Pumps
6	1962	8	82	350	7.5	U. S. Motors	U. S. Pumps
7 ¹	1964	8	89	350 ³	10.0	Continental	Peerless
8 ¹	1964	8	80	350 ³	25.0	Diesel	Peerless
9 ¹	1964	8	87	350 ³	10.0	U. S. Motors	U. S. Pumps
10 ¹	1964	8	87	350 ³	25.0	Continental	Peerless
11	1965	8	87	350	15	U. S. Motors	U. S. Pumps
12	1965	8	83	350	15	U. S. Motors	U. S. Pumps
13	1965	8	83	350	15	U. S. Motors	U. S. Pumps
14	1965	8	83	350	15	U. S. Motors	U. S. Pumps
15	1965	8	83	350	15	U. S. Motors	U. S. Pumps
16	1968	10	80	350	20	Franklin	Worthington
17	1969	8	85	350	20	Franklin	Peerless
18	1969	8	85	350	20	Franklin	Peerless
19	1969	8	85	350	20	Franklin	Peerless
20	1969	8	85	350	20	Franklin	Peerless
21	1969	8	85	350	20	Franklin	Peerless
22 ²	1969	8	85	350	20	Franklin	Peerless
23 ²	1971	8	85	350	20	Franklin	National
24 ²	1971	8	85	350	20	Franklin	National
25 ²	1971	8	85	350	20	Franklin	National
26 ²	1971	8	85	350	20	Franklin	National
27 ²	1971	8	85	350	20	Franklin	National
28 ²	1971	8	85	350	20	Franklin	National
29	1974	8	Unknown	350	30	Franklin	Peerless
30	1974	8	Unknown	350	30	Franklin	Peerless
31	1974	8	Unknown	350	30	Franklin	Peerless
32	1974	8	Unknown	350	30	Franklin	Peerless

CITY OF NAPLES

COASTAL RIDGE WELL FIELD EQUIPMENT AND CONSTRUCTION CON'T.

Well Number	Installation Date (Yr)	Well Diameter (inches)	Total Depth	Rated Capacity	Motor Horsepower	Motor Manufacturer	Pump Manufacturer
33	1974	8	Unknown	350	30	Franklin	Peerless
34	1974	8	Unknown	350	30	Franklin	Peerless
1A	1953	6	95.6	350	15	Allis-Chalmers	Allis-Chalmers
2A	New Well	8	85	350	15	Deming	Deming-Crane Co.
	1976						
3A	1954	6	76	350	15	Deming 1967	Deming-Crane Co.
4A	1956	6	73	350	7.5	Allis-Chalmers	Allis-Chalmers
5A	1956	6	Unknown	350	10.0	Allis-Chalmers	Allis-Chalmers
6A	1968	10	95	350	10.0	Franklin	Worthington
7A	1968	10	85	350	10.0	Franklin	Worthington
8A	1968	10	86	350	10.0	Franklin	Worthington
WP #2	1968	8	95	350	47.5	Ford Diesel	Gorman-Rupp

- 1 New auxiliary engine installed in 1983.
- 2 The motors for these wells replaced in 1983. Auxiliary generator power was installed in 1984.
- 3 500 gpm capacity, set at 350 gpm.

CITY OF NAPLES

EAST GOLDEN GATE WELL FIELD EQUIPMENT AND CONSTRUCTION

Well Number	Installation Date (Yr)	Well Diameter (inches)	Total Depth	Rated Capacity (gpm)	Motor Horsepower	Motor Manufacturer	Pump Manufacturer
1	1978	14	71	500	40	U. S. Motors	Goulds
2	1978	14	93	500	40	U. S. Motors	Goulds
3	1978	14	80	500	40	U. S. Motors	Goulds
4	1978	14	81	700	50	U. S. Motors	Goulds
5	1978	14	98	900	60	U. S. Motors	Goulds
6	1978	14	101	700	50	U. S. Motors	Goulds
7	1978	14	109	900	60	U. S. Motors	Goulds
8	1978	14	133	900	60	U. S. Motors	Goulds
9	1978	14	82	700	50	U. S. Motors	Goulds
10	1978	14	131	700	50	U. S. Motors	Goulds
11	1981	14	112	600	40	U. S. Motors	Goulds
12	1981	14	100	700	50	U. S. Motors	Goulds
13	1981	14	100	700	50	U. S. Motors	Goulds
14	1981	14	80	700	50	U. S. Motors	Goulds
15	1981	14	70	N/A	N/A	N/A	N/A
16	1981	14	137	1,000	60	U. S. Motors	Goulds
17	1981	14	117	1,000	60	U. S. Motors	Goulds
18	1981	14	100	1,000	60	U. S. Motors	Goulds

Note: Well No. 15 was constructed but not equipped because of poor yield.

COLLIER COUNTY GOLDEN GATE WELL FIELD

Well Number	Installation Date (Yr)	Well Diameter	Total Depth	Rated Capacity	Motor Horsepower	Motor Manufacturer	Motor Manufacturer
1	1984	12 in.	100	700 gpm	40	Siemens-Allis	Goulds
2	1984	12 in.	100	700 gpm	40	Siemens-Allis	Goulds
3	1984	12 in.	100	700 gpm	40	Siemens-Allis	Goulds
4	1984	12 in.	100	700 gpm	40	Siemens-Allis	Goulds
5	1984	12 in.	100	700 gpm	40	Siemens-Allis	Goulds

APPENDIX IV-3

**ESTIMATED WATER USE OF THE LOWER TAMiami AQUIFER
IN THE NAPLES AREA**

MEMORANDUM

TO: William Scott Burns, Hydrogeologist, Groundwater Division

FROM: Raymond Burgess, Water Resource Engineer
Water Use Planning Division

DATE: August 27, 1985

SUBJECT: Data for the Coastal Ridge Flow Model in Collier County

The well flow data was acquired by communicating with the well user or compiling the data from information on the permit using data acquired from similar operations to estimate pumpage.

The well size or sizes and the flow, as indicated by the user, and the total hours of operation of the pumpage was used to determine the gallons pumped per day. If the user expressed the pumpage in gallons per month the total gallons per month was divided by 30 and expressed in GPD.

When the user expressed his total pumpage for wells for a given production area and he could not specify the well or wells used to supply the pumpage, the total pumpage was divided between each of the wells in the area when the GPM pumpage of the wells were known.

The procedure for acquiring the pumpage and type of usage is expressed following the data on the chart.

We are attaching a suggestive list for the District's consideration.

We will be available to present our raw data and explain the procedure for acquiring the data. We have acquired the best available data for past well pumpage. The reliability is questionable. In the future when it is known that a model study is to be done, we suggested that we would be given the opportunity to collect the flow data up front. However, we realize that this could not be done in this model study.

Most of the users did not have recorded information and much of the pumpage data was from their memory of crops grown, and in what specific area and the pumps used to provide water for their production.

This Division was pleased to be asked to assist with gathering the pumpage data.

RB:kh

Some suggestions the District might want to consider in the future:

When the well flow is indicated on the permit, secure the actual GPM from the installed system.

Request a yearly pumpage use from each well and the specific area the water is applied.

If a permit or modification is applied for and approved, stipulate a given time for the permit to be active. (There were several installations of wells which were applied for and were never drilled or used. I gave you a list of them. Trying to find those installations were very difficult).

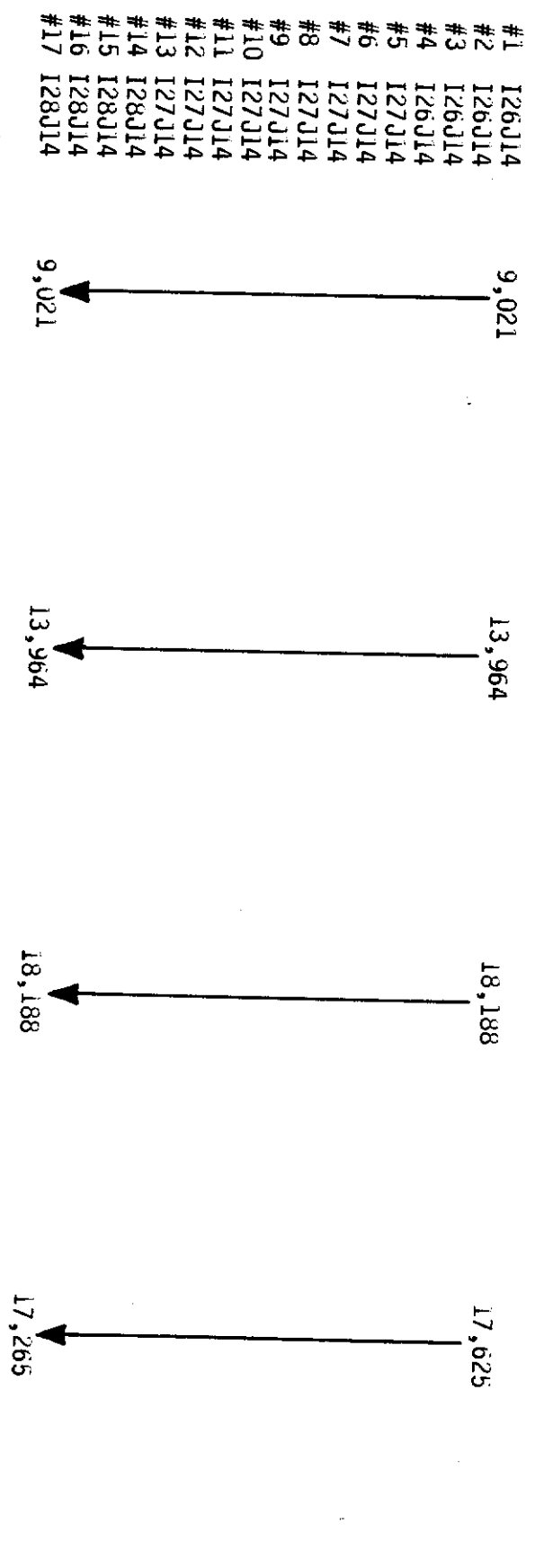
We feel that data collection of the well pumpage would be advantageous to determine the available water for usage. This work should begin soon, in order that the data would be available for immediate and future studies.

AGRICULTURAL AND RECREATIONAL WATER USERS FROM THE LOWER TAMiami AQUIFER
IN THE NAPLES AREA

Well	1984		1985	
	Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped

PERMIT NO.: 11-00008	NAME: NAPLES BATH & TENNIS			
	300	6" #1	116J12	
	45,000	2.5	45,000	2.5
	0.02"/day		0.02"/day	
	Landscaping and tennis court. 80A		90,000	5.0
	The data was calculated from the permit.		0.04"/day	
			90,000	5.0
			0.04"/day	

PERMIT NO.: 11-00015 NAME: THE GLADES INC.

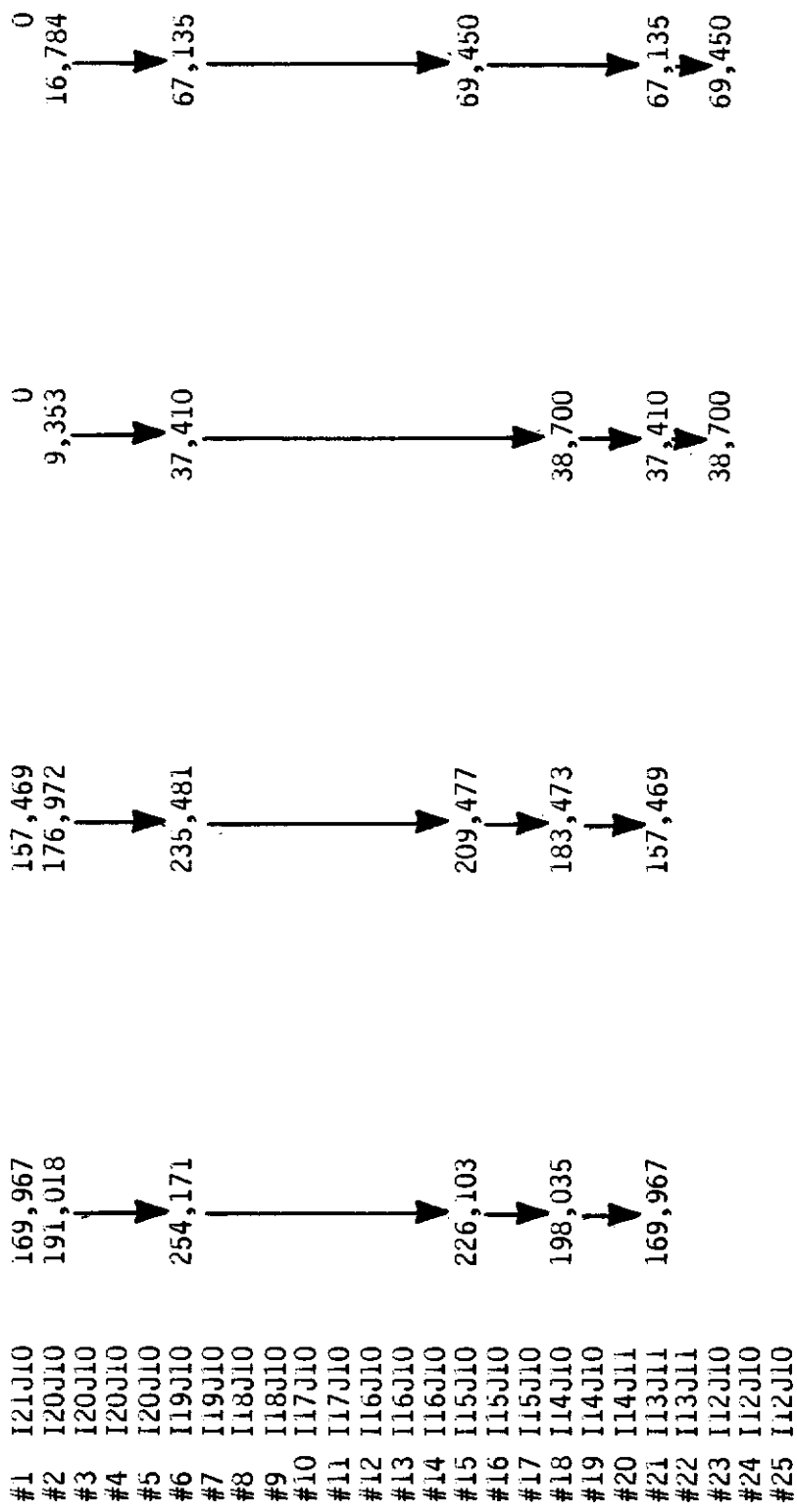


RESOURCE CONTROL

- #1 I26J14
- #2 I26J14
- #3 I26J14
- #4 I26J14
- #5 I27J14
- #6 I27J14
- #7 I27J14
- #8 I27J14
- #9 I27J14
- #10 I27J14
- #11 I27J14
- #12 I27J14
- #13 I27J14
- #14 I28J14
- #15 I28J14
- #16 I28J14
- #17 I28J14

Well	1984		1985	
	Sept.	Oct.	April	May
GPM	GPD	GPD	GPD	GPD
Size	Hrs. Pumped	Hrs. Pumped	Hrs. Pumped	Hrs. Pumped
No.				
Grid				

PERMIT NO.: 11-00017 NAME: NAPLES, CITY OF



RESOURCE CONTROL

Well
 GPM Size No. Grid
 1984
 1985

Well No.	Grid	Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped	April GPD	Hrs. Pumped	May GPD	Hrs. Pumped
#26	111J10	212,089		196,475		3,741		67,135	
#27	111J10	0		0		0		0	
#28	118J10	0		0		0		0	
#29	119J10	0		0		0		0	
#30	119J10	0		0		0		0	
#31	119J10	0		0		0		0	
#32	115J11	0		0		0		0	
#33	115J11	0		0		0		0	
#34	115J11	0		0		0		0	
#35	122J9	254,171		235,481		0		0	
#36	122J9	0		0		0		0	
#37	122J9	0		0		0		0	
#38	122J9	0		0		0		0	
#39	122J9	0		0		0		0	
#40	122J9	0		0		0		0	
#41	122J9	0		0		0		0	
#42	122J9	0		0		0		0	
#43	123J9	254,171		235,481		0		0	
#44	122J9	0		0		0		0	
#45	122J9	0		0		0		0	
#46	122J9	0		0		0		0	

PERMIT NO.: 11-00020 NAME: THE GLADES INC.

Well No.	Grid	Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped	April GPD	Hrs. Pumped	May GPD	Hrs. Pumped
#1	126J13	167,403		320,645		388,908		672,857	
#2	126J13	0		0		0		0	
#3	126J13	0		0		0		0	
#4	126J13	0		0		0		0	
#5	126J13	0		0		0		0	
#6	126J13	0		0		0		0	
#7	126J13	0		0		0		0	
#8	126J13	0		0		0		0	
#9	127J13	0		0		0		0	
#10	127J13	0		0		0		0	

1984

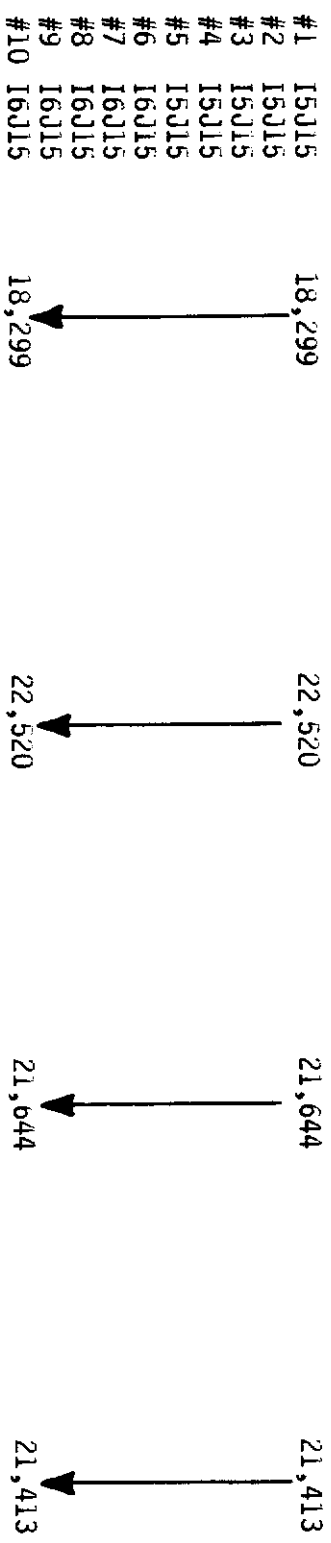
1985

Well	1984		1985	
	Sept. GPD	Hrs. Pumped	April GPD	May GPD
#11 I27J13	TOTAL PREVIOUS PAGE	0.14"/day	0.03"/day	0.06"/day
#12 I27J13				
#13 I27J13				
#14 I27J13				
#15 I27J13				
#16 I27J13				
#17 I27J13				
Based on Water Shortage data. 435A Could not determine which well or wells were used for the pumpage. The data was supplied on a total daily bases and not by wells.				
PERMIT NO.: 11-00019 NAME: HIGH POINT COUNTRY CLUB				
500 8" #1 I18J8	674	.1	1,276	1,381
300 6" #2 I18J8				
Based on Water Shortage data. 15A. An interview with the Superintendent. These figures are accurate because they were derived from metering readings. He stated he only pumped once or twice each month.				
PERMIT NO.: 11-00030 NAME: HOLE-IN-THE-WALL GOLF CLUB				
520 8" #1 I18J10	456,168	12.0	533,333	535,734
104 3" #2 I18J10				
Based on Water Shortage data. 180A				

2-28

Well	GPM	Size	No.	Grid	1984		1985	
					Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped

PERMIT NO.: 11-00052 NAME: PELICAN BAY IMP. DISTRICT



PERMIT NO.: 11-00053 NAME: RIVIERA GOLF CLUB

Well	GPM	Size	No.	Grid	1984 Sept GPD	1984 Oct GPD	1984 April GPD	1984 May GPD
850	10"	#1	I28J16		249,748	278,070	172,072	364,323

Turf - sprinkler irrigation 85A
 The monthly pumpage was supplied by the user. The total was divided by 30 (30 days/mo.) for each of the four months - GPD.

PERMIT NO.: 11-00054 NAME: MOORINGS GOLF CLUB

Well	GPM	Size	No.	Grid	1984 Sept GPD	1984 Oct GPD	1984 April GPD	1984 May GPD
50	2"	#1	I20J8		0	233,000	242,748	185,920
50	2"	#2	I20J8		0	233,000	242,748	185,920
50	2"	#3	I20J8		0	233,000	242,748	185,920
350	4"	#4	I20J8		0	233,000	242,748	185,920

Based on Water Shortage data. 38A
 The report gave the water pumped per day for the total of all wells.

1984

1985

Well	1984		1985	
	GPM	Grid	April GPD	May GPD

PERMIT NO.: 11-00057 NAME: WILDERNESS COUNTRY CLUB

Well	GPM	Grid	Sept. GPD	Oct. GPD	April GPD	May GPD	Hrs. Pumped	Hrs. Pumped
375	8"	#1 I19J10	358,328	449,952	158,571	248,582	5.3	6.7
375	8"	#2 I20J10					2.3	3.7
375	8"	#3 I20J10					0.34"/day	0.54"/day

Based on Water Shortage data. 170A.

PERMIT NO.: 11-00058 NAME: IMPERIAL GOLF CLUB

Well	GPM	Grid	Sept. GPD	Oct. GPD	April GPD	May GPD	Hrs. Pumped	Hrs. Pumped
500	8"	#1 I4J12	432,000	432,000	720,000	720,000	14.4	24.0

Golf course - sprinkler irrigation. 260A

Repeat attempts to acquire data was fruitless. Estimated from pumpage and hours the pump could or should be operating per day. An 8" well capacity of 600 GPM x 60 min. x 12 hrs/day in September and October and 20 hrs/day in April and May was used to estimate the GPD. The ground was pumped into a lake for irrigating the landscape.

PERMIT NO.: 11-00063 NAME: NAPLES GOLF & BEACH CLUB

Well	GPM	Grid	Sept. GPD	Oct. GPD	April GPD	May GPD	Hrs. Pumped	Hrs. Pumped
750	4"	#1 I23J8	700,400	774,000	324,129	540,968	5.2	2.4
750	6"	#2 I23J8					5.7	4.0
750	6"	#3 I23J8					0.11"/day	0.19"/day
750	6"	#4 I23J8						
750	8"	#5 I23J8						

Based on Water Shortage data. 107A

Wells #1 and #2 uses the same pump 750 GPM (pumping alternator)
 Wells #3 & #4 uses the same pump 750 GPM (pumping alternator)
 Well #5 uses 750 GPM pump.

1984

1985

Well	GPM	Size	No.	Grid	1984		1985	
					Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped

PERMIT NO.: 11-00064 NAME: COUNTRY CLUB OF NAPLES

200	6"		#1	I16J10	101,667	0.7	120,581	0.9	390,000	2.8	314,516	2.2
1050	8"		#2	I16J10								
1050	8"		#3	I16J10								

0.03"/day

0.04"/day

0.12"/day

0.10"/day

Golf course and landscaping - sprinkler irrigation system - The pumps discharge water into lakes to be used for irrigation water. 119A
 September and October mailed in on form, April (22 days) and May called in pumpage. Data collected during field interview.

PERMIT NO.: 11-00070 NAME: MANATEE FRUIT CO. (LANDMARK FARMS)

800	8"		#1	I8J14	0	0.0	480,000	10.0	480,000	10.0	0	0.0
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82-N

Vegetables - Flood irrigation 24A
 GPD calculated from well pumpage and hours operated for October and April.

PERMIT NO.: 11-00071 NAME: REGENCY (MANATEE FRUIT CO.)

1200	10"		#1	I10J11	1,200,000	17.0	1,200,000	17.0	1,200,000	17.0	1,200,000	17.0
1000	8"		#2	I10J11	600,000	10.0	600,000	10.0	600,000	10.0	600,000	10.0
1000	8"		#3	I10J12	600,000	10.0	600,000	10.0	600,000	10.0	600,000	10.0
1000	8"		#4	I10J12	200,000	3.3	600,000	10.0	800,000	13.3	200,000	3.3
1000	8"		#5	I10J12	200,000	3.3	600,000	10.0	800,000	13.3	200,000	3.3

Vegetables - Flood irrigation 233A
 Pumpage expressed in hours, calculated in GPD.

0.63"/day

0.44"/day

1984

1985

Well	1984		1985	
	Sept. GPD	Hrs. Pumped	April GPD	May GPD

PERMIT NO.: 11-00086 NAME: COLLIER DEV. CORP.

400 6" #1 I29J13	0	0.0	120,000	0
600 8" #2 I29J14	0	0.0	120,000	60,000
1000 8" #3 I29J14	0	0	400,000	200,000
			0.20"/day	0.08"/day

Vegetable - Flood irrigation 120A
 There were no vegetables grown in September and October. In April the fields were flooded approximately twice weekly for an average of 5 hours/day for #1, 3 to 3½ hours/day for #2 and 6.7 hrs/day for #3 well. In May less water was required and the pump #1 was not used and the No. 2 well was used only 1½ to 2 hrs/day and pump #3 was used 3.4 hours/day.

PERMIT NO.: 11-00087 NAME: REGENCY (COLLIER DEV. CORP).

800 8" #1 I10J1D	0	0.0	160,000	0
			0.20"/day	

Vegetables - Flood irrigation 30A
 The pumpage was expressed in hours of pumpage/month. Using pumpage rate and hours in operation the data is expressed in GPD.

PERMIT NO.: 11-00089 NAME: M.R. COLLIER (JOHNSON FARMS)

1000 8" #1 I7J9	80,000	1.3	400,000	200,000
600 8" #2 I7J9	0	0.0	120,000	60,000
400 6" #3 I8J9	0	0.0	80,000	40,000
	0.02"/day		0.13"/day	0.065"/day

Vegetable - Flood irrigation 175A
 The GPM pump capacity and hours of operation were used to determine the GPD application. Little usage of irrigation during September and October. Probably Pump #1 delivered 4,000 GPD on September and 6,000 GPD in October 1984.
 Pump #1 was operated approximately 200 hours in April and 100 hours in May.
 Pump #2 was operated approximately 100 hours in April and 50 hours in May.
 Pump #3 operated approximately 100 hours in April and was not operated in May.

GPM	Well Size	No.	Grid	1984			1985		
				Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped	April GPD	Hrs. Pumped

PERMIT NO.: 11-00096 NAME: PINEMOOD DEVELOPERS (PINEMOODS)

600	6"	#1	I17J12	45,000	1.2	45,000	1.2	90,000	2.2	90,000	2.2
				0.02"/day		0.02"/day		0.04"/day		0.04"/day	

Lawn irrigation - sprinkler system 80A
 Data requested on 80/09/85 but received no reply.
 Data was estimated as follows: The 6" well should produce 600 GPM (from permit file).
 The data was compiled by using 67% of data reported from Country Club of Naples.

PERMIT NO.: 11-00117 NAME: NFV CORP.

800	8"	#1	I11J14	0	0	0	0.0	1,152,000	24.0	576,000	15 day/24 hr.
400	8"	#2	I11J15	0	0	0	0.0	422,400	22 day/24 hr.	192,000	10 day/24 hr.
800	8"	#3	I11J16	0	0	1,152,000	24.0	0	0.0	0	0.0
800	8"	#4	I11J16	0	0	0	0.0	0	0.0	0	0.0
800	8"	#5	I11J18	0	0	0	0.0	0	0.0	0	0.0
800	8"	#6	I11J19	0	0	0	0.0	0	0.0	0	0.0
800	8"	#7	I12J18	0	0	0	0.0	0	0.0	0	0.0
800	8"	#8	I12J19	0	0	0	0.0	0	0.0	0	0.0
800	8"	#9	I12J19	0	0	0	0.0	0	0.0	0	0.0
600	8"	#10	I13J18	0	0	864,000	24.0	0	0.0	0	0.0
800	8"	#11	I14J18	0	0	0	0.0	0	0.0	0	0.0
800	8"	#12	I14J18	0	0	1,152,000	24.0	0	0.0	0	0.0
800	8"	#13	I14J18	0	0	0	0.0	0	0.0	0	0.0
1000	14"	#14	I14J19	0	0	0	0.0	0	0.0	0	0.0
1000	14"	#15	I15J19	0	0	0	0.0	0	0.0	0	0.0

Tomatoes - Flood irrigation (225A, Fall '84) (90A Spring '85)
 Canal water was used for some irrigation in September and October. The GPM pumpage and hours in operation per day/month. The data is expressed in GPD.

1984

1985

GPM	Well Size	No.	Grid	1984		1985	
				Sept. GPD	Hrs. Pumped	April GPD	Hrs. Pumped
PERMIT NO.: 11-00118 NAME: PBA TEMPLE GROVE							
65	2"	#1	11,700	3.0	11,700	3.0	11,700
65	2"	#2	11,700	3.0	11,700	3.0	11,700
65	2"	#3	11,700	3.0	11,700	3.0	11,700
65	2"	#4	11,700	3.0	11,700	3.0	11,700
700	6"	#5	378,000	9.0	756,000	18.0	756,000
65	2"	#6	11,700	3.0	11,700	3.0	11,700
65	2"	#7	11,700	3.0	11,700	3.0	11,700
65	2"	#8	11,700	3.0	11,700	3.0	11,700
65	2"	#9	11,700	3.0	11,700	3.0	11,700
65	2"	#10	11,700	3.0	11,700	3.0	11,700
65	2"	#11	11,700	3.0	11,700	3.0	11,700
65	2"	#12	11,700	3.0	11,700	3.0	11,700
65	2"	#13	11,700	3.0	11,700	3.0	11,700
1000	8"	#14	180,000	3.0	360,000	6.0	360,000
				0.09"/day	0.18"/day	0.18"/day	0.18"/day

Citrus and Avocados - Low volume and flood irrigation systems 230A
 The low volume GPD were determined by pump GPM and hours ran/day/mo. The flood system GPD were determined by well capacity x hours/day x % time operated per day divided by 30 days.

PERMIT NO.: 11-00125 NAME: STALLINGS, ROYCE O.

800	8"	#1	192,000	4.0	144,000	3.0	288,000
800	8"	#2	192,000	4.0	144,000	3.0	288,000
200	8"	#3	0	0.0	0	0.0	0
				0.13"/day	0.96"/day	0.19"/day	0.06"/day

Trees - Drip and Flood irrigation systems. 110A
 The drip is not in operation. Well #3 was not used. The GPM capacity of the pumps and the hours in operation per day provided the GPD usage of water.

Well	GPM	Size	No.	Grid	1984		1985	
					Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped

PERMIT NO.: 11-00126 NAME: D. T. FARMS

1000	8"	#1	I10J15	0	0.0	400,000	2.5	0	0.0	0	0.0
1000	8"	#2	I10J15	0	0.0	0	0.0	0	0.0	0	0.0

Vegetables 60A
Flood system
Used #1 pump for 200 hrs in October, 1984.
He expressed pumpage at 1,000 GPM.
1000 gpm x 60 min x 200 hrs = 400,000 GPD
No crops were grown in this area in 1985.

PERMIT NO.: 11-000150 NAME: U.S. HOME CORP (LAKEWOOD C.C.)

400	6"	#1	I28J14	0	0.0	0	0.0	381,428	8.0	0	0.0
400	6"	#2	I28J14	0	0.0	0	0.0	0	0.0	0	0.0

Golf course - sprinkler irrigation. 53A
Wells used for recharging lake. Pumped 2,670,000 gallons first week of April, then he shut his pumps off.

PERMIT NO.: 11-00157 NAME: MANATEE FRUIT CO. (D.T. FARMS, INC.)

500	6"	#1	I8J14	0	0.0	300,000	10.0	0	0.0	0	0.0
700	8"	#2	I9J13	140,000	3.3	210,000	5.0	140,000	3.3	0	0.0
700	8"	#3	I9J14	0	0.0	0	0	0	0.0	0	0.0
800	8"	#4	I9J14	560,000	11.6	720,000	15.0	160,000	3.3	0	0.0
700	8"	#5	I9J14	490,000	11.6	630,000	15.0	0	0.0	0	0.0

Vegetable
Flood System 282A
The well number and the number of hours operated was given and the calculations were obtained and so indicated for month.

1985

1984

Well	1984		1985										
	GPM	Size	No.	Grid									
PERMIT NO.: 11-00164 NAME: HARVEY BROS. FARM													
600	8"	#1	110J19	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#2	110J19	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#3	110J19	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#4	110J20	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#5	110J20	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#6	111J21	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#7	111J22	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#8	17J20	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#9	17J20	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#10	17J20	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#11	17J21	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#12	17J21	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#13	18J21	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#14	18J21	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#15	19J19	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#16	19J19	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#17	19J19	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#18	19J20	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
600	8"	#19	19J20	113,684	3.2	181,894	5.0	181,894	5.0	682,105	18.9	7,578	0.2
			0.31"/day		0.32"/day		0.63"/day		0.11/day				

Tomatoes - Potatoes
Flood System

He could not indicate what wells were used each month, however, he indicated how many wells were used and the number of hours of pumpage. The total water withdrawn was divided between the 19 wells. The average pumpage was 600 GPM.
600 gpm x 60 min x 12 hrs x 5 wells ÷ 19 wells = 113,684 GPD per well for September 1985 for 252A

600 x 60 x 12 x 8 ÷ 19 = 181,894 GPD /well for October 1984 for 404A.
600 x 60 x 24 x 15 ÷ 19 = 682,105 GPD/well for April 1985 for 758A.

Used little water in May probably 140,000 to 150,000 GPD total from all wells for 510A.

Well

1984

1985

GPM	Size	No.	Grid	1984		1985					
				Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped	April GPD	Hrs. Pumped	May GPD	Hrs. Pumped
PERMIT NO.: 11-00167 NAME: WYNDEMERE HOLDINGS, INC.											
500	10"	#1	118J16	0	0.0	0	0.0	0	0.0	0	0.0
500	10"	#2	118J16	0	0.0	0	0.0	0	0.0	0	0.0

Based on Water Shortage data. 232A. The permittee was able to refill takes from surface water. No groundwater was used.

PERMIT NO.: 11-00170 NAME: PELICAN NURSERY

200	4"	#1	114J13	6,000	0.5	6,000	0.5	6,000	0.5	6,000	0.5
200	4"	#2	114J13	19,375	1.6	25,574	2.2	33,018	2.8	37,208	3.1
500	6"	#3	114J13	38,750	1.3	51,508	1.7	66,036	2.2	74,417	2.5
500	6"	#4	114J13	38,750	1.3	51,508	1.7	66,036	2.2	74,417	2.5
200	6"	#5	114J13	19,375	1.6	25,754	2.2	33,018	2.8	37,208	3.1
500	6"	#6	114J13	38,750	1.3	51,508	1.7	66,036	2.2	74,417	2.5

Nursery - sprinkler, flood and low volume irrigation systems. 21A
 The GPM of each well and the time in operation was used to determine the GPD. #1 well is used for bldgs. The monthly pumpage was supplied by the user.

PERMIT NO.: 11-00175 NAME: G.A. SUTHERLAND (S&M FARM)

500	6"	#1	112J13	300,000	10.0	300,000	10.0	0	0.0	0	0.0
500	6"	#2	112J13	0	0.0	0	0.0	0	0.0	0	0.0
500	6"	#3	112J13	0	0.0	0	0.0	0	0.0	0	0.0

Vegetables - Flood 24A
 Grew vegetables 1984 used 300 hrs each month. Calculated from pump capacity for hours in operation expressed in GPD.
 No crops grown in 1985 irrigation season.

1985

1984

Well GPM Size No. Grid	1984			1985		
	Sept. GPD	Hrs. Pumped	Oct. GPD	April GPD	Hrs. Pumped	May GPD

PERMIT NO.: 11-00176 NAME: D.L. STONEBURNERS (STONEY CITRUS GROVE)

700 8" #1 I12J14	22,400	0.5	14,000	504,000	12.0	504,000	12.0
700 8" #2 I12J14	22,400	0.5	14,000	504,000	12.0	504,000	12.0
		0.007"/day	0.004"/day	0.16"/day		0.16"/day	

Citrus-flood irrigation-twice weekly as required. 230A
Wells expressed in GPM x hours operated per month. The results is given in GPD.

PERMIT NO.: 11-00180 NAME: A. L. LEINWEBER

800 8" #1 I6J21	0	0.0	0	54,857	1.1	54,857	1.1
				0.10"/day		0.10"/day	

Nursery - sprinkler and hand application 20A

Did not use any irrigation in September and October. Operated his pump approximately 8 hours per week in April and May.

PERMIT NO.: 11-00183 NAME: D.R.H. INC.

800 8" #1 I6J22	0	0.0	0	68,571	1.4	68,571	1.4
				0.10"/day		0.10"/day	

Vegetables - Flood irrigation 25A

Did not use any irrigation in September and October. Operated his pump approximately 10 hours per week in April and May.

Well	1984		1985	
	Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped

PERMIT NO.: 11-00193 NAME: MANCHESTER INVEST. INC.

- #1 13J18 Construction not begun
- #2 13J18
- #3 14J18
- #4 14J18
- #5 14J18

PERMIT NO.: 11-00196 NAME: MANCHESTER INVEST. INC.

- #1 123J21 Construction not begun

PERMIT NO.: 11-00199 NAME: MANLEY-KENT FARMS, INC.

800 8" #1 114J14 400,000 8.3 400,000 8.3 400,000 8.3 400,000 8.3
 0.12"/day 0.12"/day 0.12"/day 0.12"/day
 Vegetables - Flood irrigation system 120A
 GPD derived GPM pumpage x 250 hours per month for each of the four months.

PERMIT NO.: 11-00200 NAME: THE MOORINGS, INC.

50 2" #1 116J10 37,617 3.1 44,615 3.7 144,300 12.0 116,370 9.6
 50 2" #2 117J10
 50 2" #3 117J10
 50 2" #4 117J10
 0.03"/day 0.04"/day 0.12"/day 0.10"/day

Landscaping - 44A sprinkler irrigation takes recharged by wells. The pump capacity x hours per day in operation to determine the GPD for each pump at 37% of data reported from Country Club of Naples.

1984

1985

Well	1984		1985	
	Sept. GPD	Hrs. Pumped	April GPD	Hrs. Pumped

PERMIT NO.: 11-00210 NAME: WHISPERING PINES INC. (WINDSTAR)

80	4"	#1	I29J12				
80	4"	#2	I29J12				
80	4"	#3	I29J12				
80	4"	#4	I29J12				
80	4"	#5	I29J12	40,000	0.8	50,000	1.0
80	4"	#6	I29J12				
80	4"	#7	I29J12				
80	4"	#8	I29J12				
80	4"	#9	I29J12				
80	4"	#10	I29J12				

54.16A

The user pumped surface to irrigate his landscape and golf course with only supplementing the water requirement with ground water. The data submitted by permittee by request during the study.
*Did not pump from aquifer due to threat of salt water intrusion.

PERMIT NO.: 11-00221 NAME: U.S. HOME CORP.

		#1	I24J15	0	0.0	0	0.0
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Did not use any groundwater for irrigation.

PERMIT NO.: 11-00243 NAME: C.M.C. DEV. CORP (PAVILION SHOPPING CENTER)

80	4"	#1	I9J8	19,200	4.0	19,200	4.0
				0.03"/day		0.03"/day	
				28,000	6.0	28,000	6.0
				0.0047"/day		0.0047"/day	

Landscaping - sprinkler irrigation 21.82A
Usage of GPM from pump and operating four hours/day in September and October and 6 hours/day in April and May.

1984

1985

Well	GPM	Size	No.	Grid	1984		1985	
					Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped

PERMIT NO.: 11-00245 NAME: SMALLWOOD LANDSCAPING

500	6"	#1	I13J12	5,820	0.2	8,728	0.3	11,637	0.4	11,637	0.4
				0.07"/day		0.11"/day		0.14"/day		0.14"/day	

Nursery - sprinkler irrigation 3A
 The GPD were calculated from the pumpage capacity, the acreage involved in the operation, data from permit and pumpage based from other nurseries. These calculations were done without assistance from the user.

PERMIT NO.: 11-00257 NAME: D.H. MCCONVILLE (TREE PLATEAU CO. INC.)

#1	I7J23	New operation was not in operation
#2	I7J23	
#3	I7J23	
#4	I7J23	
#5	I7J23	

PERMIT NO.: 11-00260 NAME: COMMUNITY SCHOOL OF NAPLES, INC.

RESOURCE CONTROL #1 I25J14 #2 I15J14

PERMIT NO.: 11-00265 NAME: DEV. CORP OF AMERICA

55	2"	#1	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#2	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#3	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#4	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#5	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#6	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#7	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#8	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#9	I20J22	3,300	1.0	3,300	1.0	3,300	1.0	3,300	1.0

1984

1985

Well	GPM	Size	No.	Grid	1984		1985		
					Sept. GPD	Hrs. Pumped	April GPD	Hrs. Pumped	May GPD
55	2"	#10	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#11	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#12	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#13	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#14	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#15	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#16	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#17	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#18	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#19	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#20	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#21	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#22	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#23	I20J22	3,300	1.0	3,300	1.0	3,300	1.0
55	2"	#24	I20J22	3,300	1.0	3,300	1.0	3,300	1.0

0.07"/day
 We estimated irrigation one hour per day with 3300 gals/day per pump. 41.41A
 The permit did not supply too much assistance with the estimation.

PERMIT NO.: 11-00270 NAME: WIGGINS BAY ASSOC. LTD.
 #1 I4J7 Not developed

PERMIT NO.: 11-00312 NAME: NAPLES LAND YACHT HARBOR INC.
 #1 I27J11 Not using these wells
 #2 I27J11
 #3 I27J11
 #4 I27J11

400 6" #5 I27J11 0 0.0 0 0.0 120,000 5.0 112,000 4.7
 0.07"/day 0.22"/day 0.07"/day 0.21"/day

Landscaping - sprinkler irrigation. 20A
 One - four pumps are not used any more. Pump #5 has a pumping capacity of 400 GPM and was not in operation in September and October, 1984. It was used in April (150 hrs) and May (140 hrs).
 The GPD was derived from pump cap. and operational hours.

Well	GPM	Size	No.	Grid	1984		1985	
					Sept. GPD	Hrs. Pumped	Oct. GPD	Hrs. Pumped

PERMIT NO.: 11-00319 NAME: H.M. BUCKLEY & SONS, INC.

250	6"	#1	112J12		Backup pump									
300	6"	#2	112J12		4,800	0.2	4,800	0.2	9,600	0.5	9,600	0.5		
40	2"	#3	112J12		4,800	2.0	4,800	2.0	9,600	4.0	9,600	4.0		
40	2"	#4	112J12		Backup pump	0.06"/day		0.06"/day		0.12"/day		0.12"/day		

Nursery - sprinkler irrigation 6.1A
 Pumps #1 and #4 are back up pumps. The GPD was calculated by nursery from expressed hours of pumpage and pump GPM.

PERMIT NO.: 11-00078 NAME: EDEN ISLAND NURSERY

113J12 Out of Business

APPENDIX IV-4

ANALYTICAL ANALYSES OF PUMPING TEST DATA

CONSTANTS

Q = 75 GPM

r = 100 ft.

MATCH POINT

$L(u,v) = 1$ $s = 0.9$ ft.

$1/u = 1$ $t = 0.42$ min.

$v = 0.15$ Δ

AQUIFER PARAMETERS

$$T = \frac{Q}{4\pi s} L(u,v) = 1.3 \times 10^3 \text{ GPD/ft}$$

$$S = \frac{4Ttu}{r^2} = 1.5 \times 10^{-4}$$

$$\frac{K'}{b'} = 4T \frac{v^2}{r^2} = 1.2 \times 10^{-2} / \text{day}$$

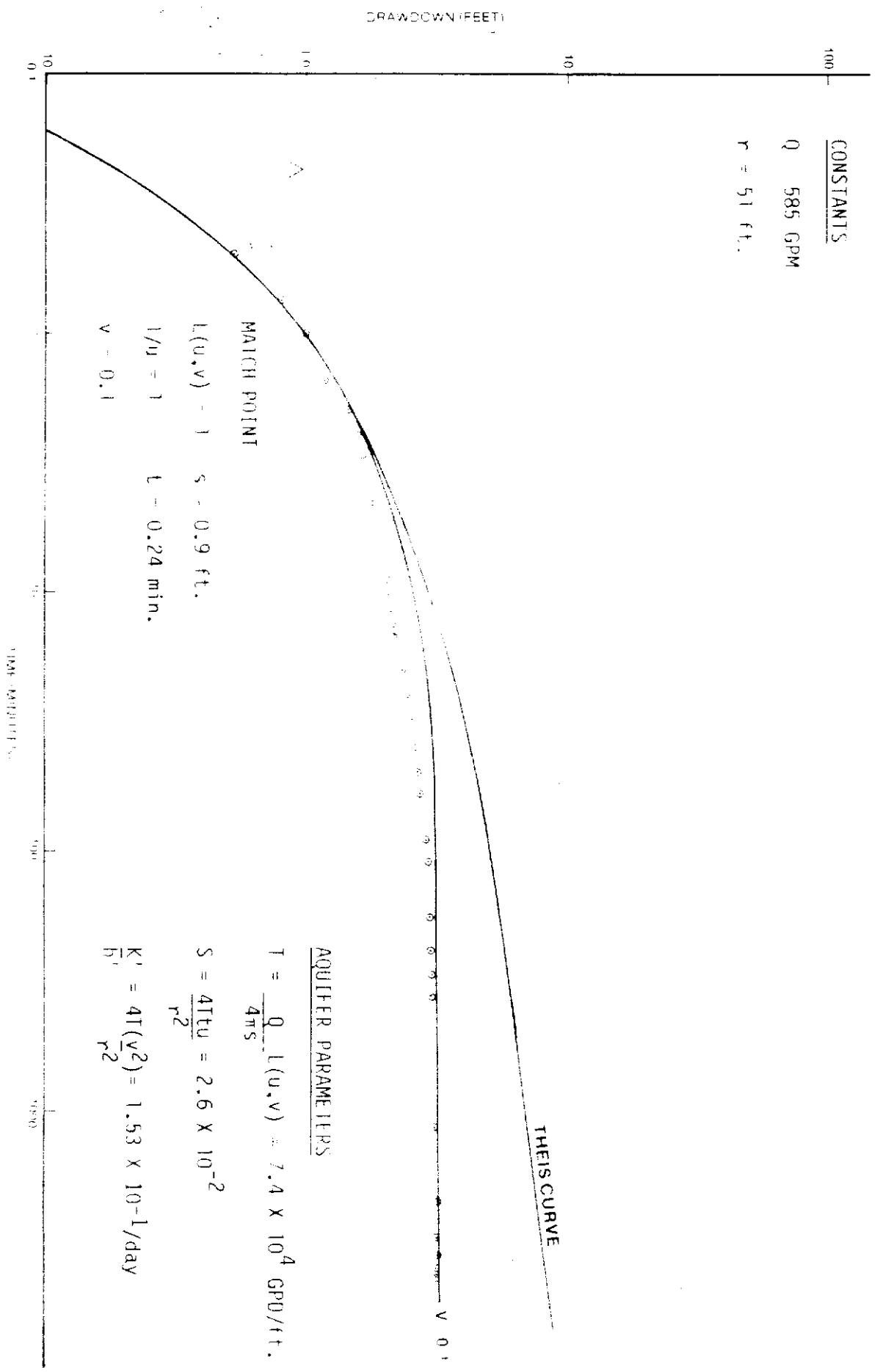
THIS CURVE

v 0.35

100
10
1.0
DRAWDOWN (FEET)
1.0
10
100
1000
TIME (MINUTES)

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2032-D/HANTUSH METHOD

CONSTANTS
 Q = 585 GPM
 r = 51 ft.



MATCH POINT
 $L(u,v) = 1$ $s = 0.9$ ft.
 $1/u = 1$ $t = 0.24$ min.
 $v = 0.1$

AQUIFER PARAMETERS
 $T = \frac{Q}{4\pi s} L(u,v) = 7.4 \times 10^4$ GPD/ft.
 $S = \frac{4Tuv}{r^2} = 2.6 \times 10^{-2}$
 $K' = \frac{4T(\frac{v^2}{h'})}{r^2} = 1.53 \times 10^{-1}$ /day

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2032-1/HANTUSH METHOD

CONSTANTS

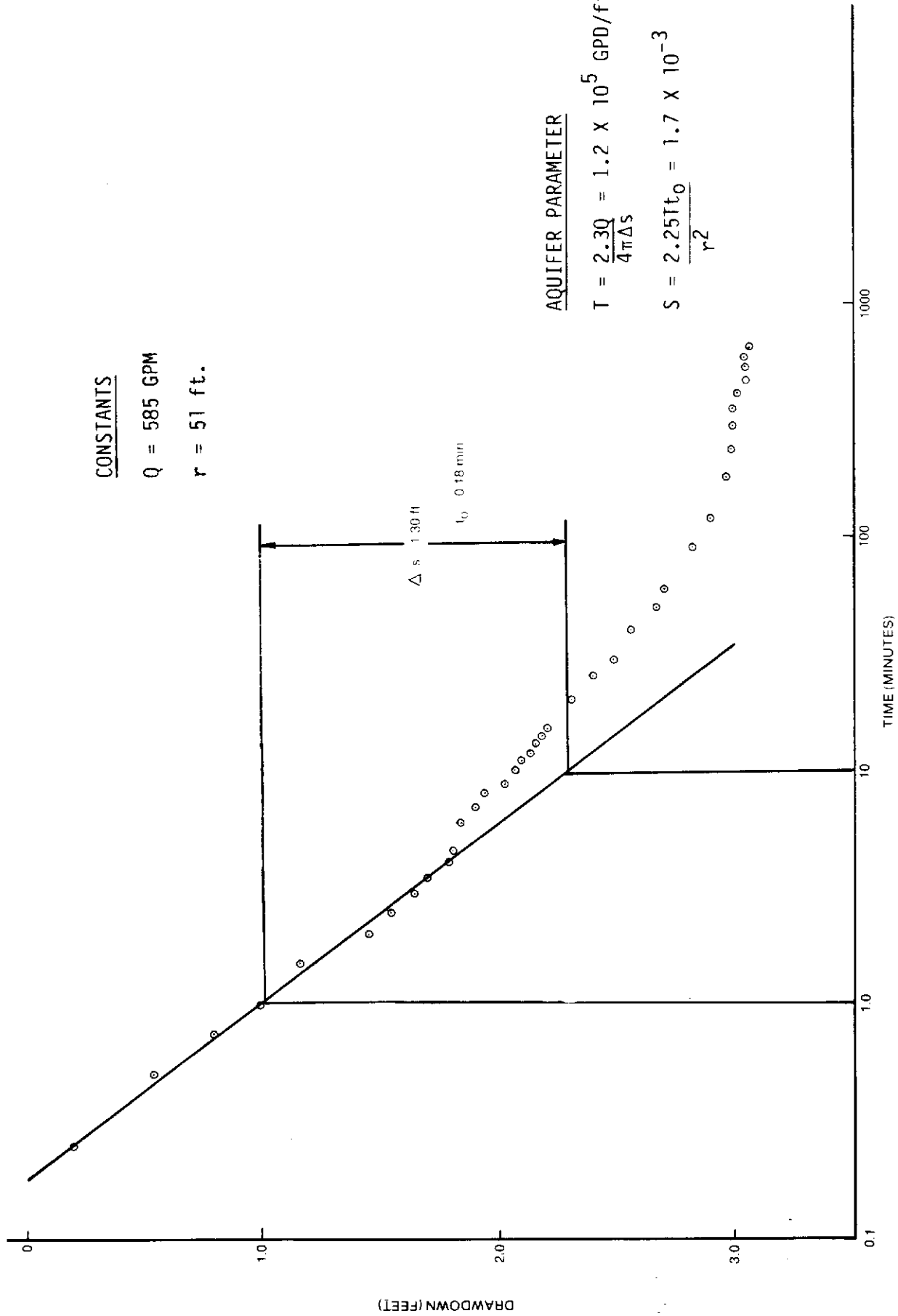
Q = 585 GPM

r = 51 ft.

AQUIFER PARAMETER

$$T = \frac{2.3Q}{4\pi\Delta s} = 1.2 \times 10^5 \text{ GPD/ft.}$$

$$S = \frac{2.25Tt_0}{r^2} = 1.7 \times 10^{-3}$$



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2032-1/JACOB METHOD

CONSTANTS

Q = 175 GPM

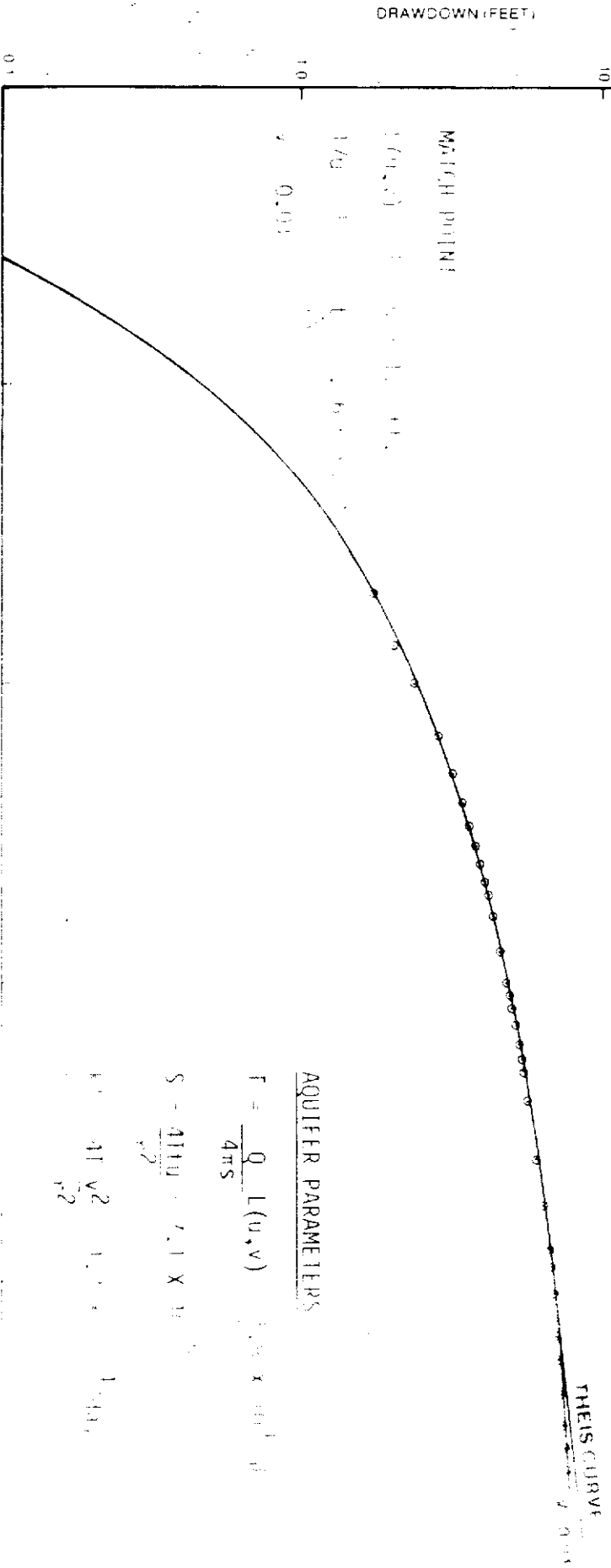
r = 75 FT.

MATCH POINT

$W(u,v) = 0.011$

$1/u = 1.0$

$v = 0.01$



AQUIFER PARAMETERS

$$r = \frac{Q}{4\pi s} L(u,v) = 75 \times 0.011 \times 1.0 = 0.825 \text{ FT.}$$

$$S = \frac{4110}{v^2} = 7.1 \times 10^{-4}$$

$$K = \frac{4110}{41 v^2} = 1.2 \times 10^{-4} \text{ FT.}^2/\text{DAY}$$

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2032 M. HANTUSH METHOD

CONSTANTS

Q = 500 GPM

r = 73 ft.

THIS CURVE

V = 0.05

MATCH POINT

$L(u,v) = 1$ $s = 0.23$ ft.

$1/u = 1$ $t = 0.10$ min.

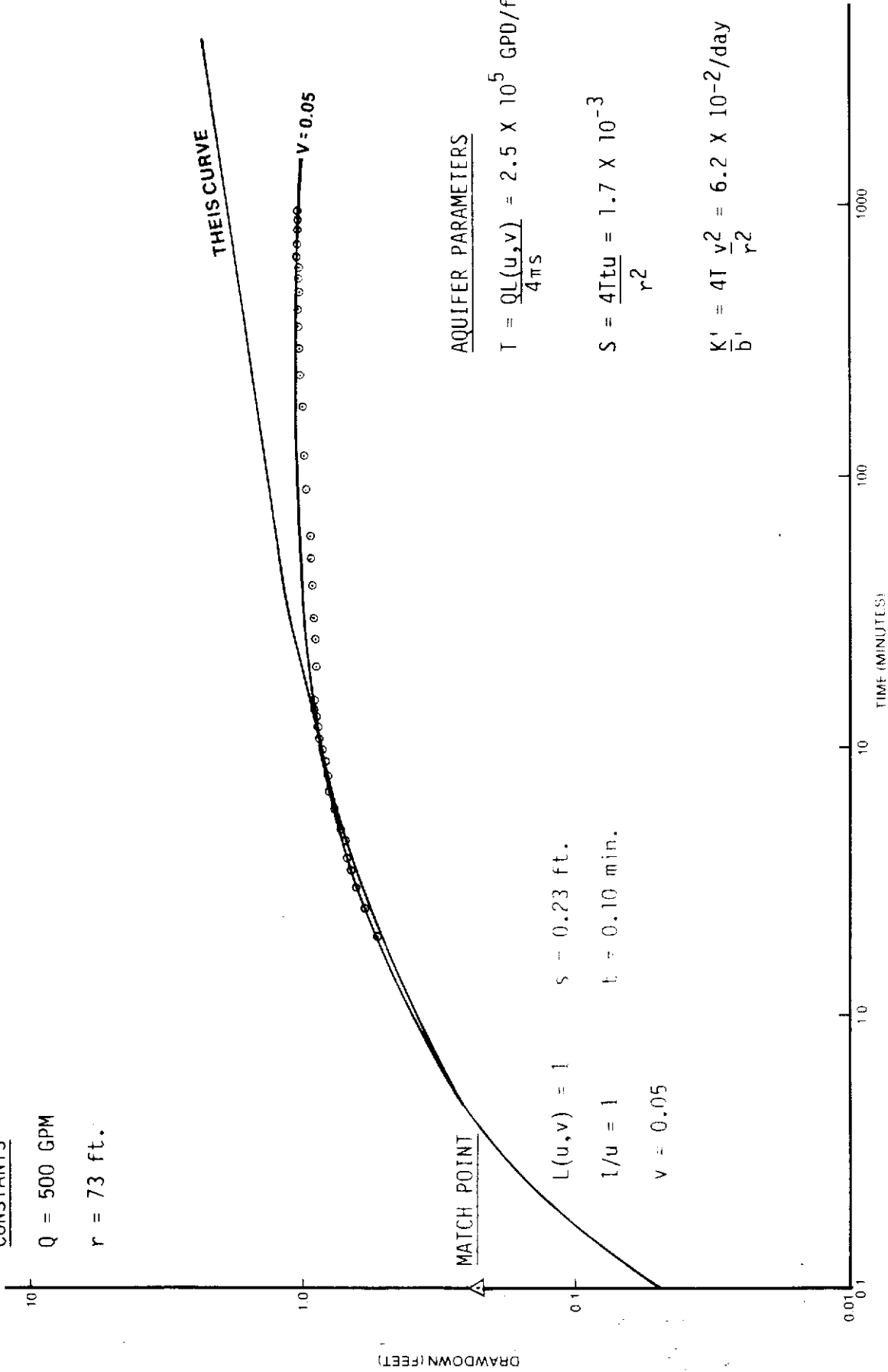
$v = 0.05$

AQUIFER PARAMETERS

$$T = \frac{QL(u,v)}{4\pi s} = 2.5 \times 10^5 \text{ GPD/ft.}$$

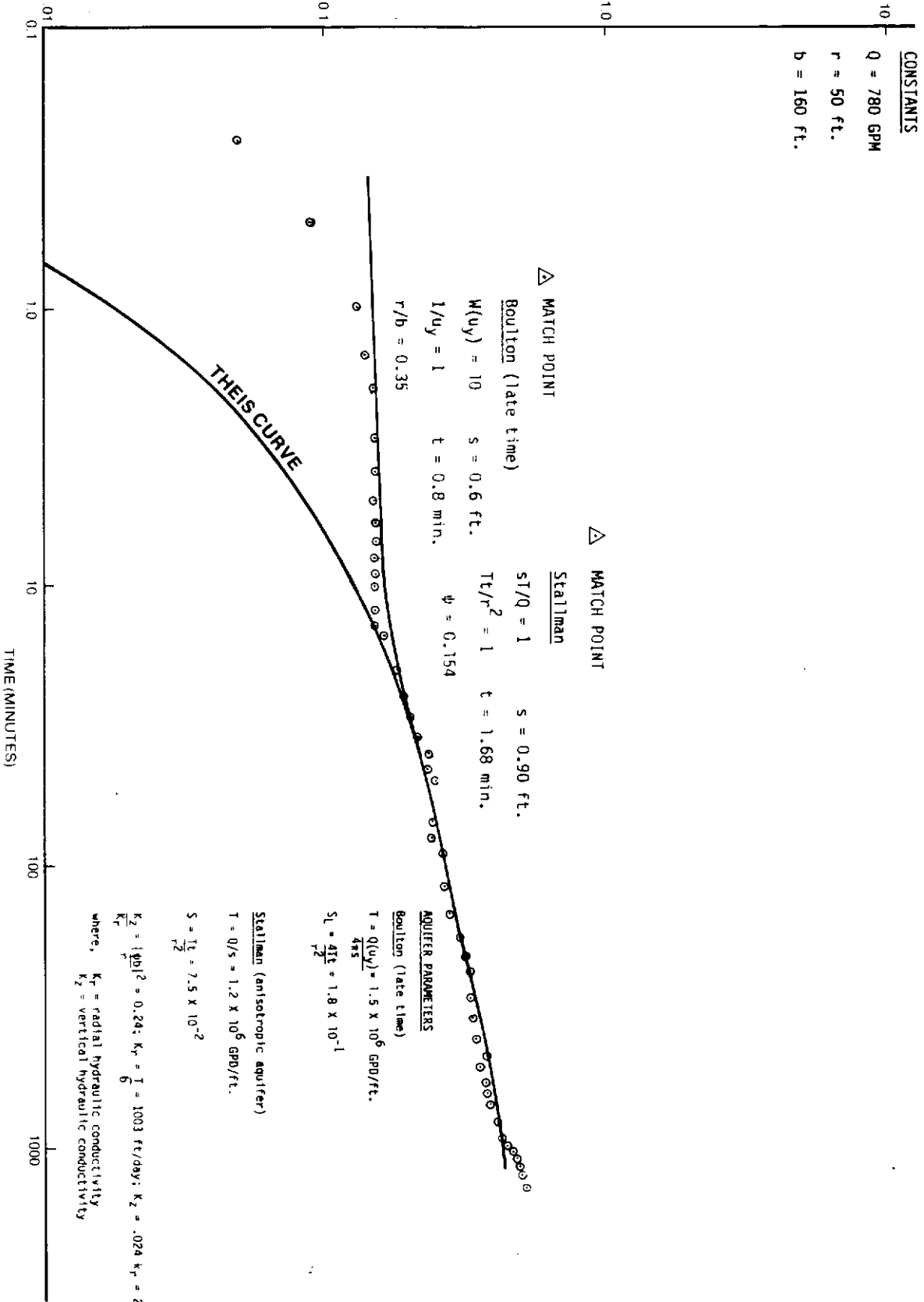
$$S = \frac{4Ttu}{r^2} = 1.7 \times 10^{-3}$$

$$\frac{K'}{b'} = 4T \frac{v^2}{r^2} = 6.2 \times 10^{-2} / \text{day}$$



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2032-S/HANTUSH METHOD (r = 73 ft.)

DRAWDOWN (FEET)



CONSTANTS

Q = 780 GPM
 r = 50 ft.
 b = 160 ft.

△ MATCH POINT △ MATCH POINT
Boulton (late time) Stallman

$M(u_y) = 10$ $s = 0.6$ ft. $sT/Q = 1$ $s = 0.90$ ft.
 $1/u_y = 1$ $t = 0.8$ min. $Tc/r^2 = 1$ $t = 1.68$ min.
 $r/b = 0.35$ $\psi = 0.154$

AQUIFER PARAMETERS

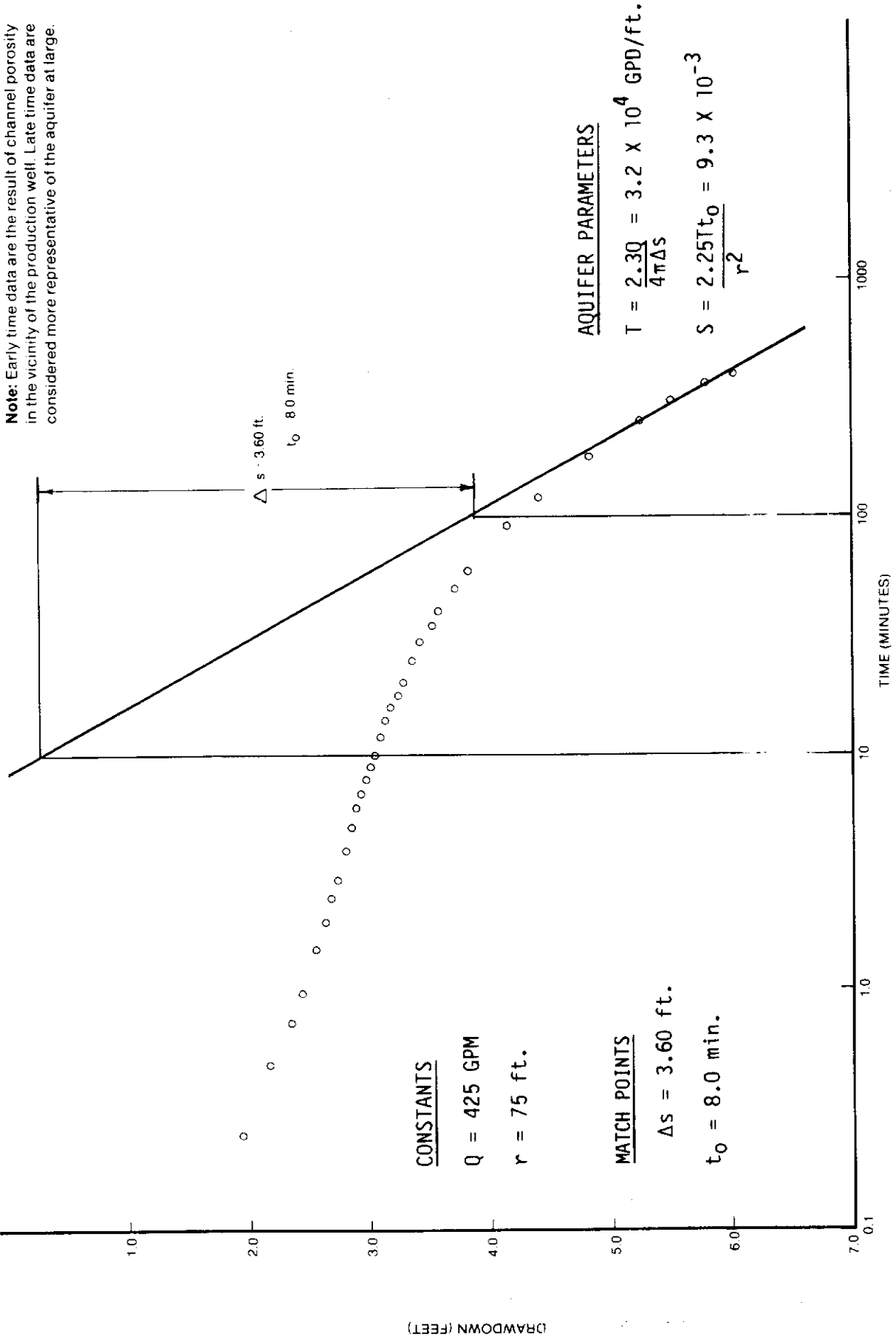
Boulton (late time)
 $T = \frac{Q(u_y)}{4\pi s} = 1.5 \times 10^6$ GPD/ft.
 $S_1 = \frac{4Tt}{r^2} = 1.8 \times 10^{-1}$

Stallman (anisotropic aquifer)
 $T = Q/s = 1.2 \times 10^6$ GPD/ft.
 $S = Tt = 7.5 \times 10^{-2}$

$K_z = \frac{QD}{r} = 0.24$; $K_r = \frac{T}{6} = 1003$ ft./day; $K_z = 0.024$ $K_r = 244$ ft./day
 where, K_r = radial hydraulic conductivity
 K_z = vertical hydraulic conductivity

**ANALYSIS OF PUMPING TEST DATA FROM
 WELL C-2033-I/BOULTON AND STALLMAN METHODS**

Note: Early time data are the result of channel porosity in the vicinity of the production well. Late time data are considered more representative of the aquifer at large.



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2033-M/JACOB METHOD

DRAWDOWN (FEET)

10

CONSTANTS
Q = 425 GPM
r = 75 ft.

△

MATCH POINT

ST/Q = 1

s = 18.0 ft.

Tt/r²s = 1

t = 16.0 min.

ψ = 0.154

THIS CURVE

AQUIFER PARAMETERS

T = $\frac{Q}{s} = 3.4 \times 10^4$ GPD/ft.

S = $\frac{Tt}{r^2} = 9.0 \times 10^{-3}$



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2033-M/STALLMAN METHOD

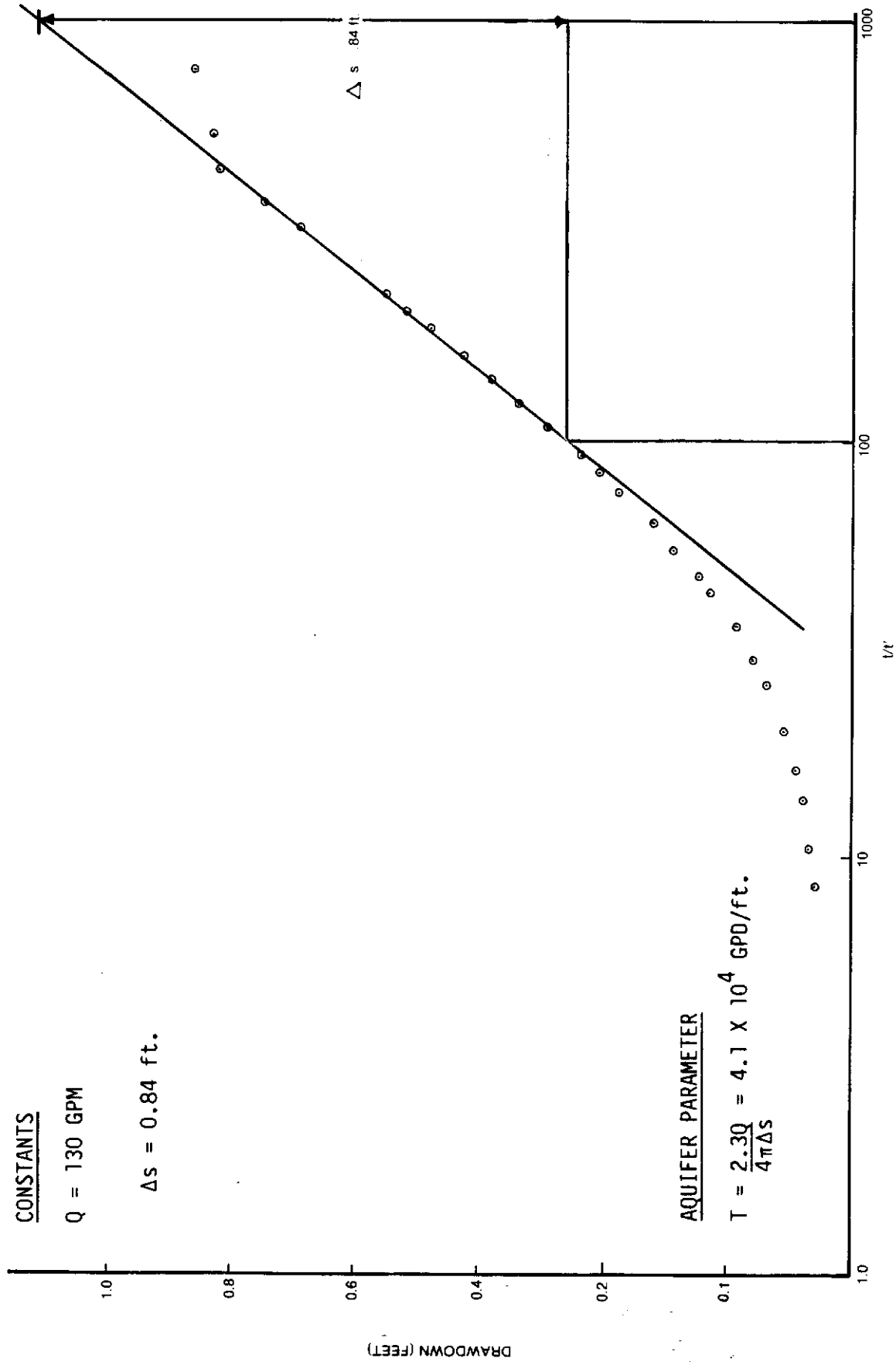
CONSTANTS

Q = 130 GPM

$\Delta s = 0.84$ ft.

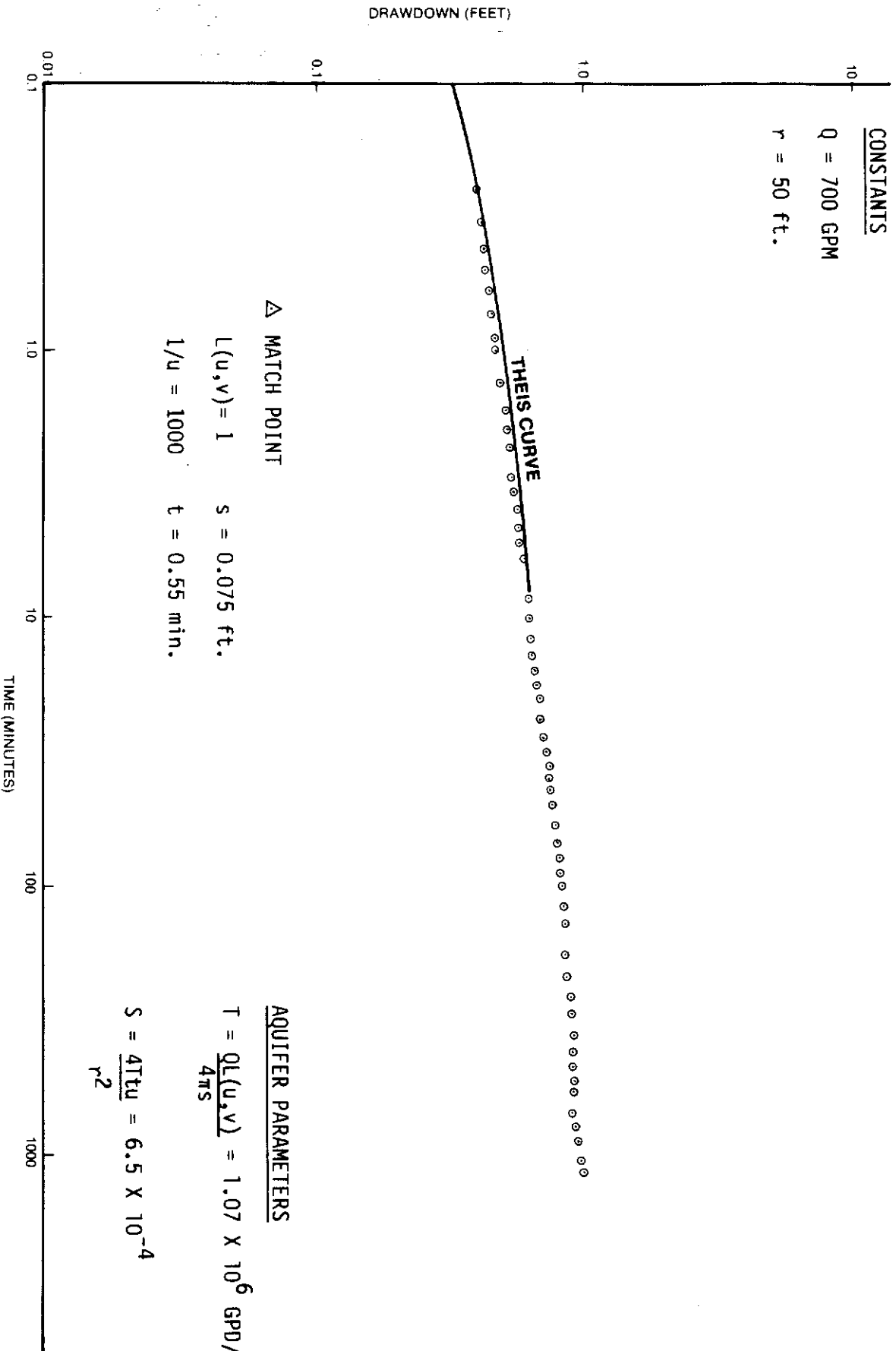
AQUIFER PARAMETER

$$T = \frac{2.3Q}{4\pi\Delta s} = 4.1 \times 10^4 \text{ GPD/ft.}$$



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2034-1/JACOB RECOVERY METHOD

CONSTANTS
 Q = 700 GPM
 r = 50 ft.



△ MATCH POINT

$L(u, v) = 1$ $s = 0.075$ ft.
 $1/u = 1000$ $t = 0.55$ min.

AQUIFER PARAMETERS

$T = \frac{QL(u, v)}{4\pi s} = 1.07 \times 10^6$ GPD/ft.
 $S = \frac{4Ttu}{r^2} = 6.5 \times 10^{-4}$

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2034-S/HANTUSH METHOD

CONSTANTS

Q = 700 GPM

r = 77 ft.

THIS CURVE

AQUIFER PARAMETER

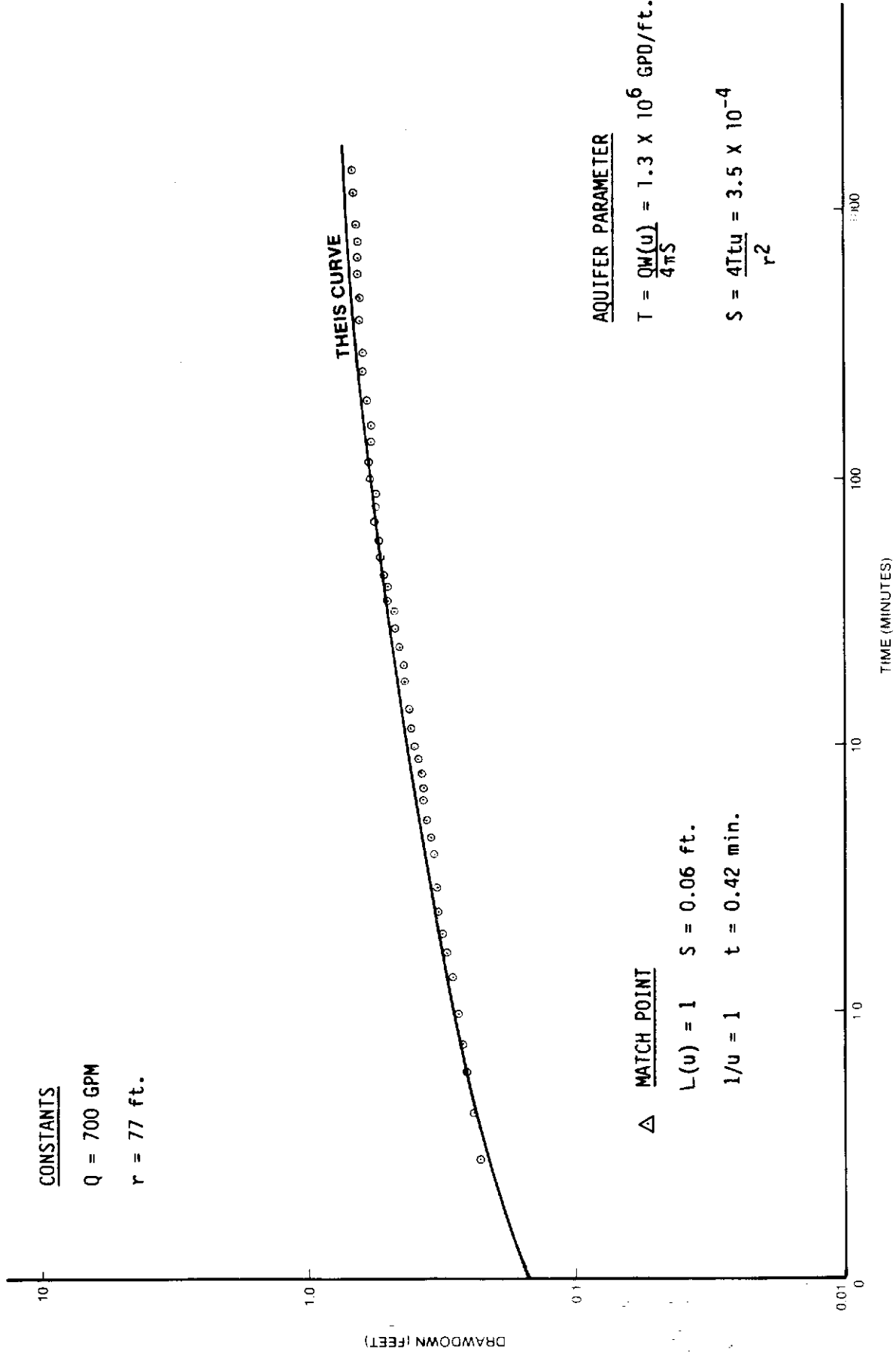
$$T = \frac{QW(u)}{4\pi S} = 1.3 \times 10^6 \text{ GPD/ft.}$$

$$S = \frac{4Ttu}{r^2} = 3.5 \times 10^{-4}$$

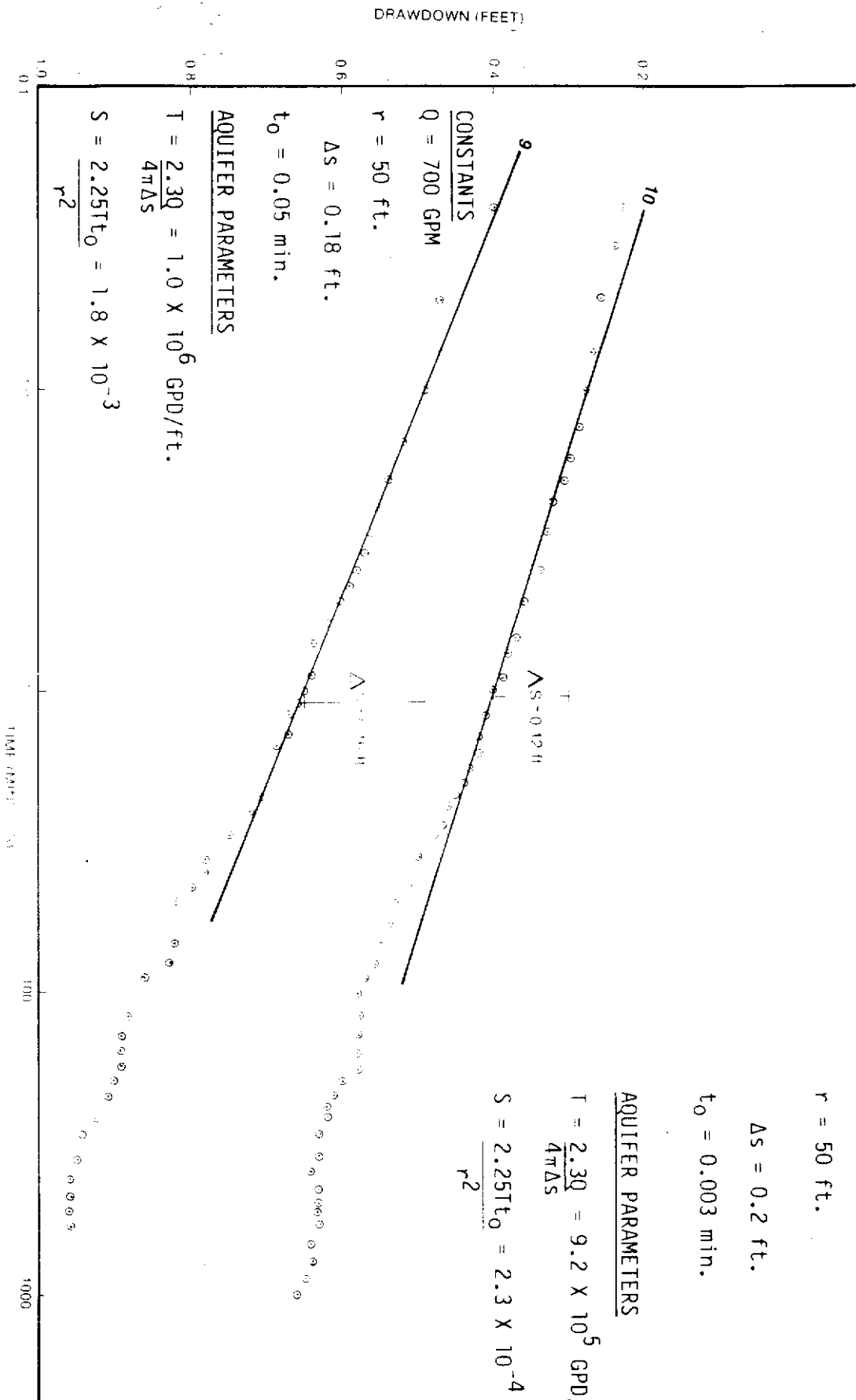
MATCH POINT

$$L(u) = 1 \quad S = 0.06 \text{ ft.}$$

$$1/u = 1 \quad t = 0.42 \text{ min.}$$



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2034-S/HANTUSH METHOD



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2034-S/JACOB METHOD

CONSTANTS

Q = 700 GPM

r = 50 ft.

AS = 0.2 ft.

t₀ = 0.003 min.

AQUIFER PARAMETERS

T = $\frac{2.30}{4\pi AS} = 9.2 \times 10^5$ GPD/ft.

S = $\frac{2.25t_0}{r^2} = 2.3 \times 10^{-4}$

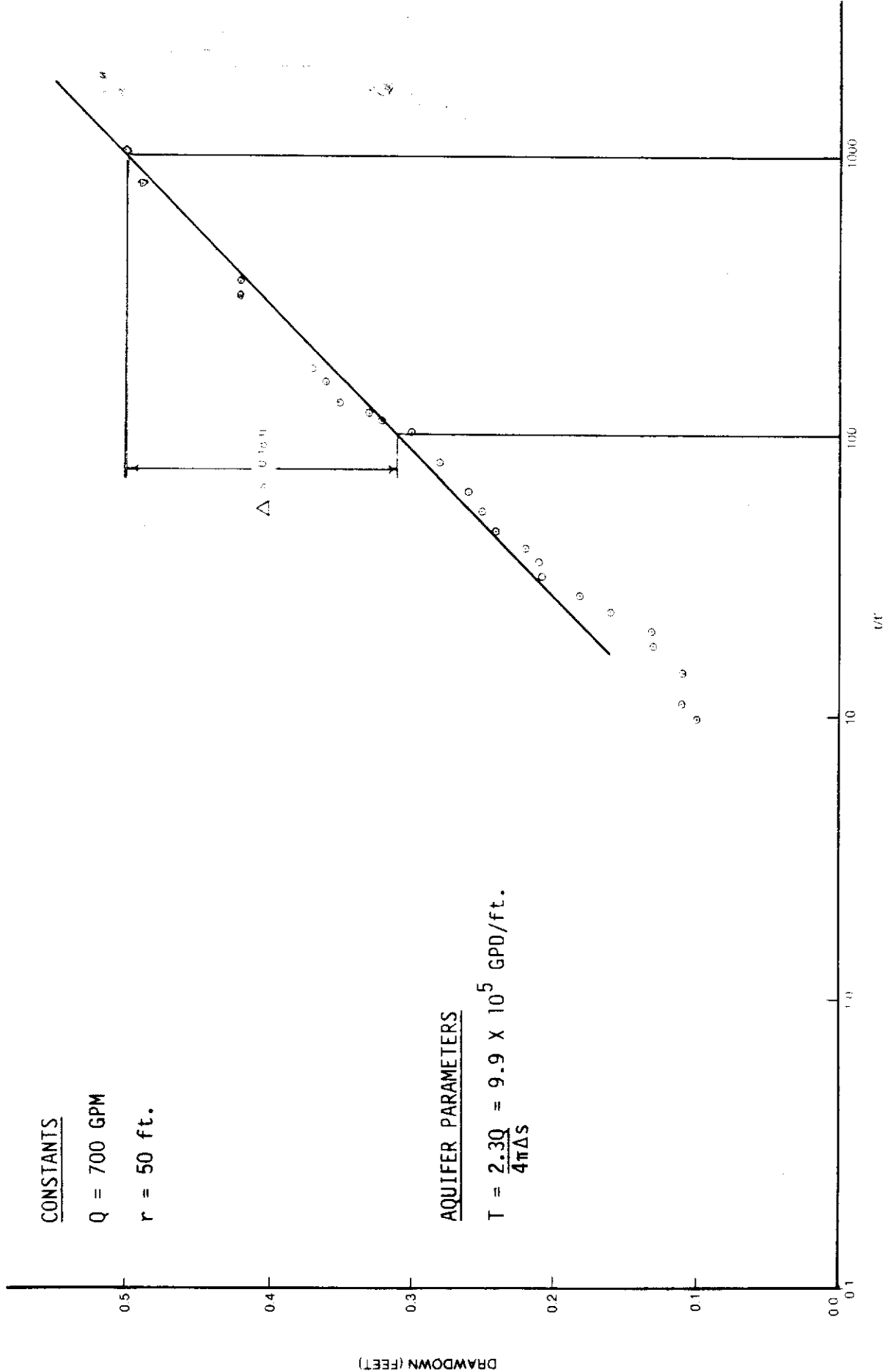
CONSTANTS

Q = 700 GPM

r = 50 ft.

AQUIFER PARAMETERS

$$T = \frac{2.3Q}{4\pi\Delta s} = 9.9 \times 10^5 \text{ GPD/ft.}$$



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2034-S/JACOB RECOVERY METHOD (r = 50 ft.)

DRAWDOWN (FEET)

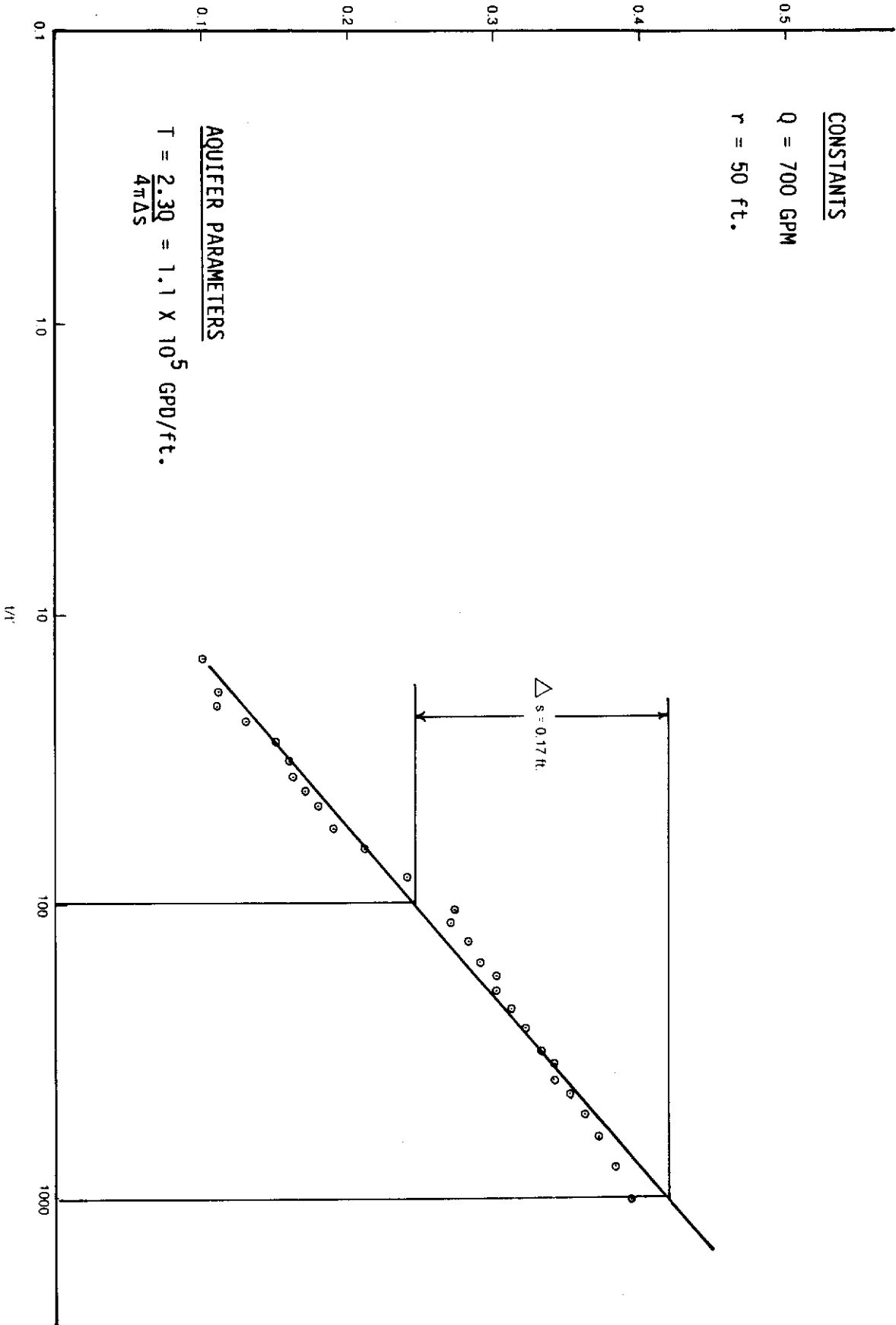
CONSTANTS

Q = 700 GPM

r = 50 ft.

AQUIFER PARAMETERS

$$T = \frac{2.3Q}{4\pi\Delta s} = 1.1 \times 10^5 \text{ GPD/ft.}$$

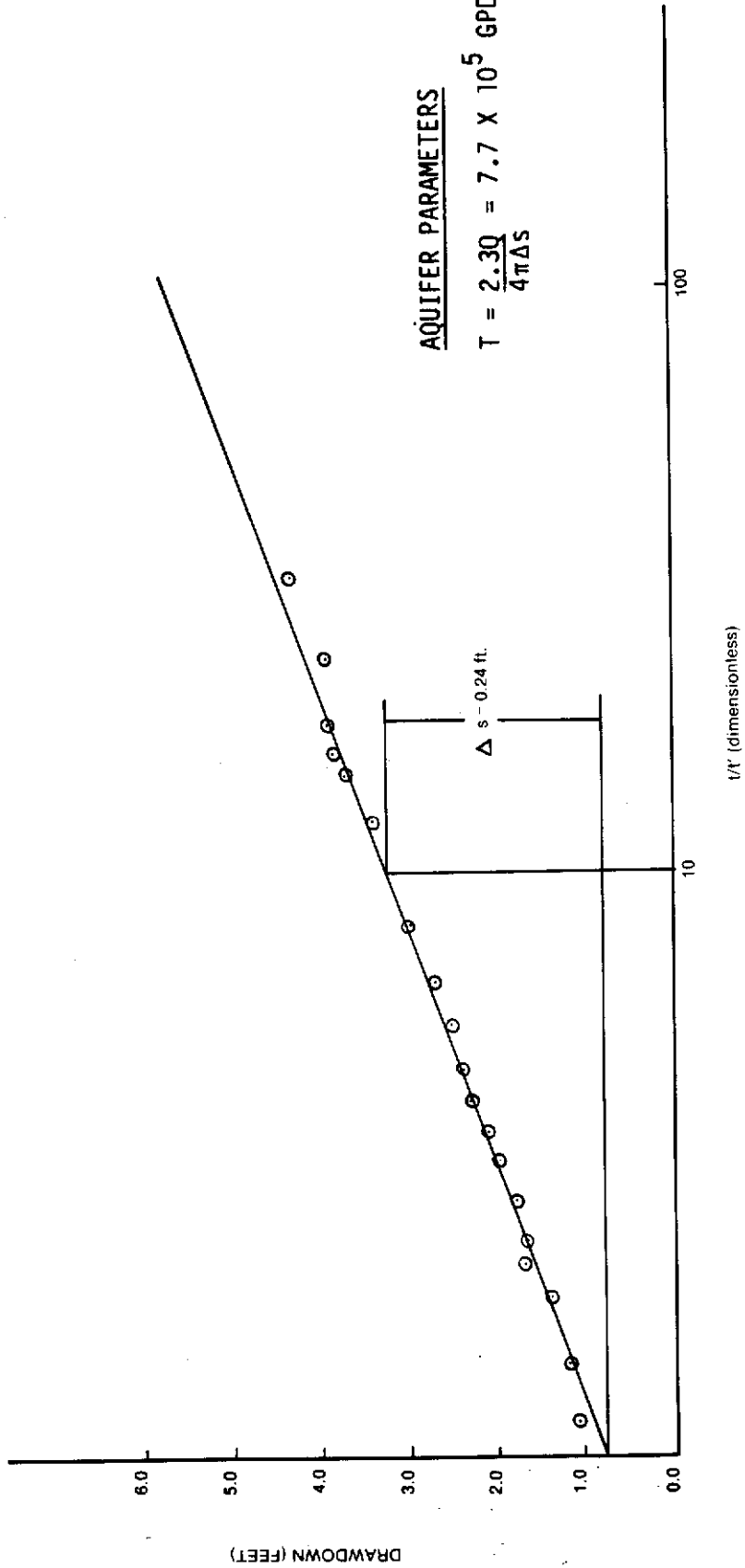


**ANALYSIS OF PUMPING TEST DATA FROM
WELL C-2034-S/JACOB RECOVERY METHOD (r = 77 ft.)**

CONSTANTS

Q = 700 GPM

r = 50 ft.

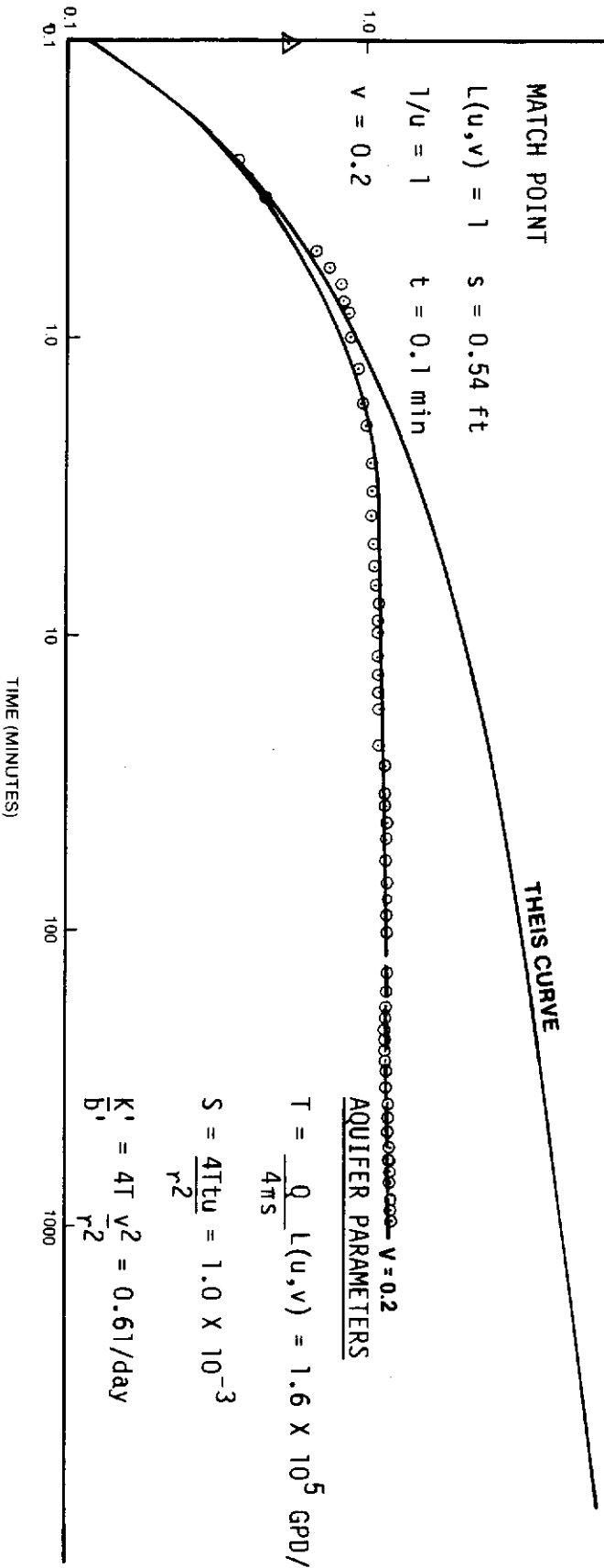


ANALYSIS OF PUMPING TEST DATA FROM WELL C-2034-S/JACOB PUMPED WELL RECOVERY

DRAWDOWN (FEET)

CONSTANTS
 Q = 755 GPM
 r = 75 ft

MATCH POINT
 L(u,v) = 1 S = 0.54 ft
 1/u = 1 t = 0.1 min
 v = 0.2



AQUIFER PARAMETERS
 V = 0.2

$$T = \frac{Q}{4\pi S} L(u,v) = 1.6 \times 10^5 \text{ GPD/ft}$$

$$S = \frac{4Ttu}{r^2} = 1.0 \times 10^{-3}$$

$$K' = \frac{4T}{b} \frac{v^2}{r^2} = 0.61/\text{day}$$

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2035-I/HANTUSH METHOD

CONSTANTS

Q = 1233 GPM
 r = 50 ft.
 b = 50 ft.

MATCH POINT

△ Stallman

$sT/Q = 1$ $s = 0.54$ ft.
 $Tt/r^2S = 1$ $t = 0.82$ min.
 $\psi = 0.154$

Boulton (late time)

$W(u_y) = 1$ $s = 0.08$ ft.
 $1/u_y = 1$ $t = 1.3$ min.
 $r/b = 0.8$

DRAWDOWN (FEET)

THEIR CURVE

AQUIFER PARAMETERS

Stallman (anisotropic aquifer)

$I = Q/s = 3.3 \times 10^6$ GPD/ft.

$S = \frac{Tt}{r^2} = 1.0 \times 10^{-1}$

$K_z = \frac{[qb]^2}{r} = 0.23$

$K_r = \frac{I}{b} = 8.82 \times 10^3$ ft/day;

$K_z = .023$ $k_r = 203$ ft/day

where, K_r = radial hydraulic conductivity
 K_z = vertical hydraulic conductivity

Boulton

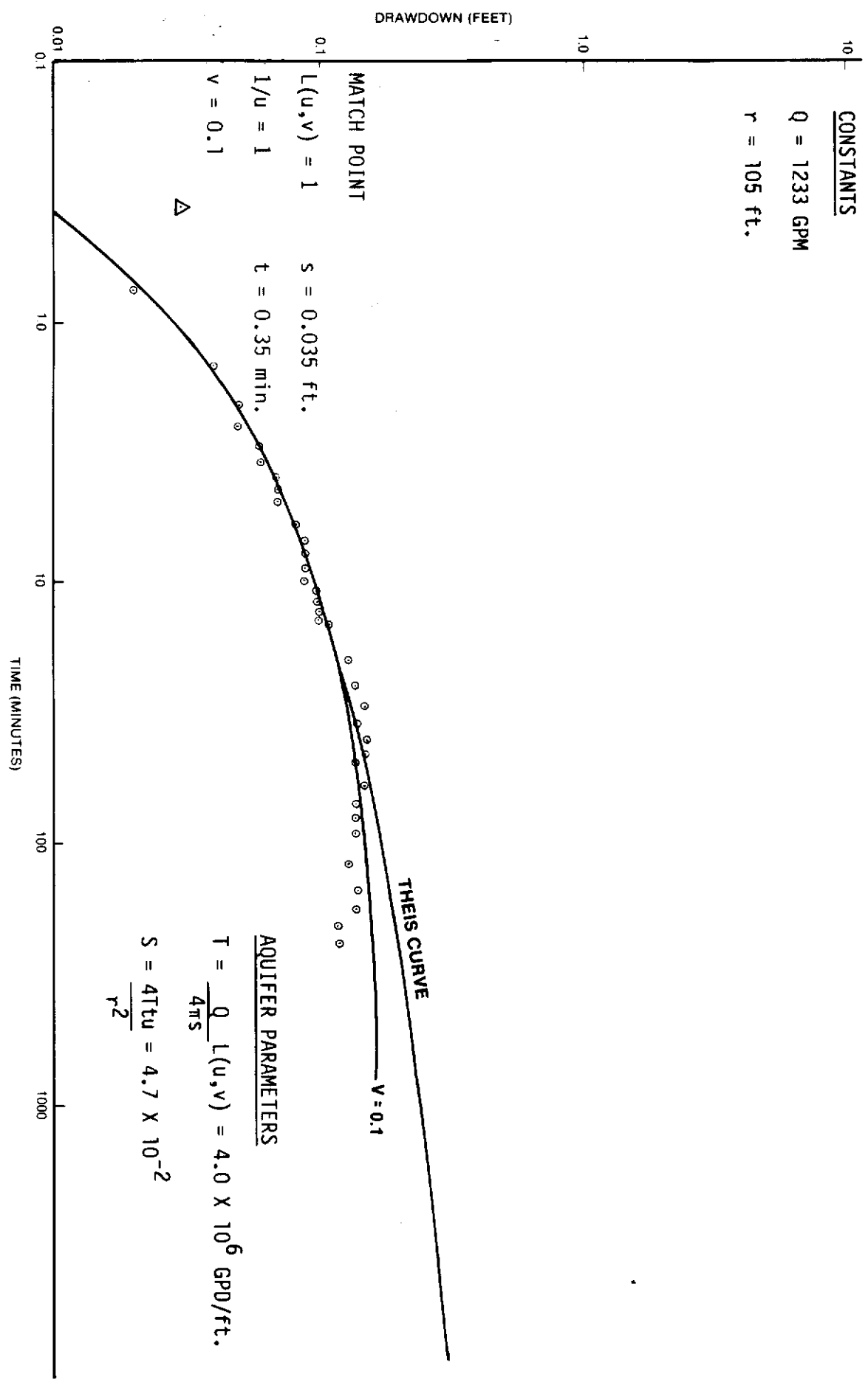
$T = \frac{Q}{4\pi s} W(u_y) = 1.8 \times 10^6$ GPD/ft

$S_y = \frac{4Ttu_y}{r^2} = 3.4 \times 10^{-1}$

TIME (MINUTES)

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2035-S/BOULTON AND STALLMAN METHODS

CONSTANTS
 $Q = 1233 \text{ GPM}$
 $r = 105 \text{ ft.}$



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2035-S/HANTUSH METHOD

CONSTANTS

Q = 490 GPM
 r = 75 ft.
 b = 57 ft.

MATCH POINT

Stallman
 $Tt/r^2S = 1$ $s = 0.76$ ft.
 $sT/Q = 1$ $t = 5.0$ min.
 $\psi = 0.154$

△

AQUIFER PARAMETERS

Stallman (anisotropic aquifer)

$T = \frac{Q}{S} = 9.3 \times 10^5$ GPD/ft.

$S = \frac{Tt}{r^2} = 7.7 \times 10^{-2}$

$\frac{K_z}{K_r} = \frac{[qb]^2}{r} = 0.014$; $K_r = \frac{T}{b} = 2177$ ft./day; $K_z = 0.014 K_r = 30.5$ ft./day

where, K_r = radial hydraulic conductivity
 K_z = vertical hydraulic conductivity

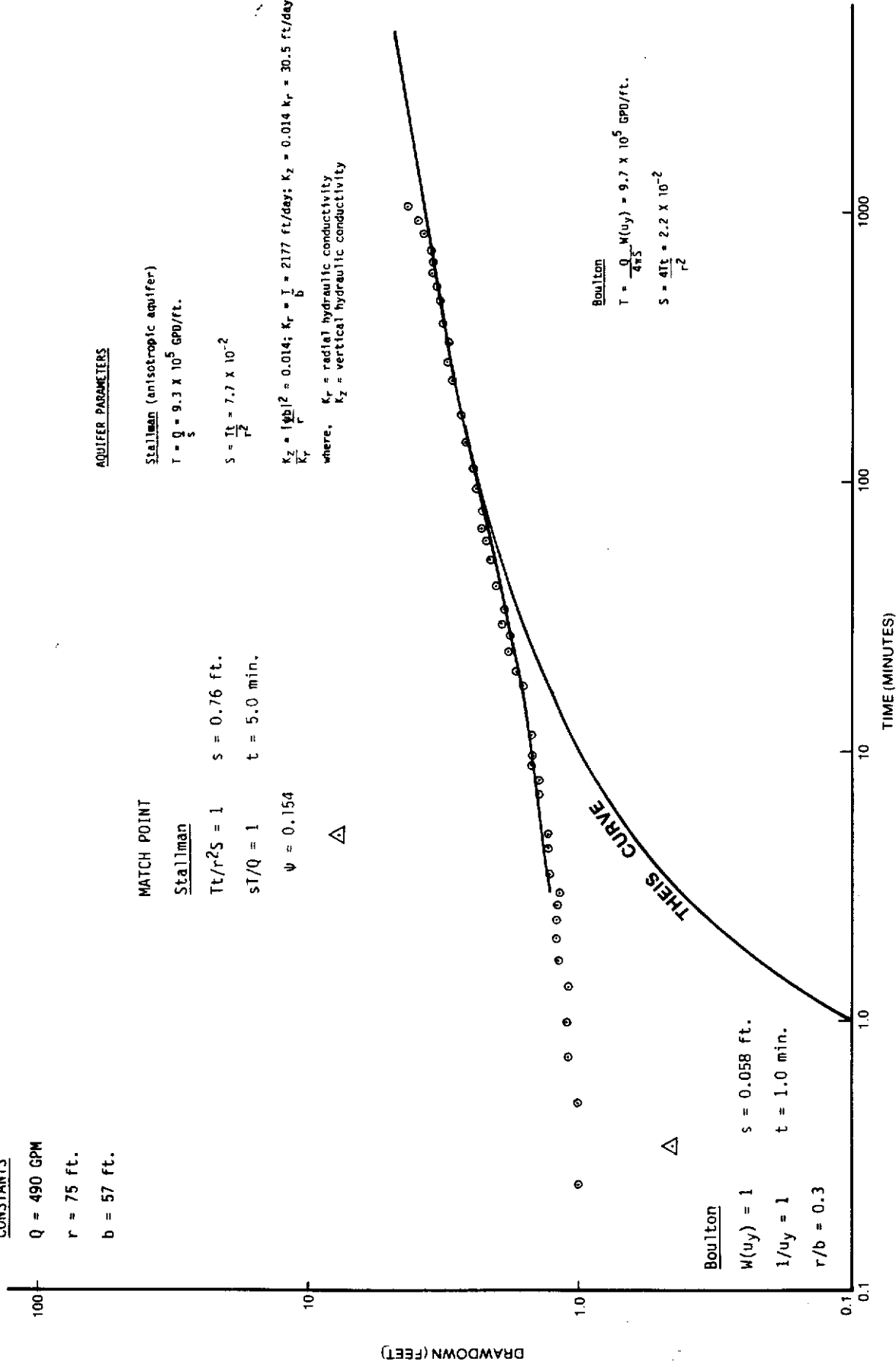
Boulton

$T = \frac{Q}{4\pi S} W(u_y) = 9.7 \times 10^5$ GPD/ft.

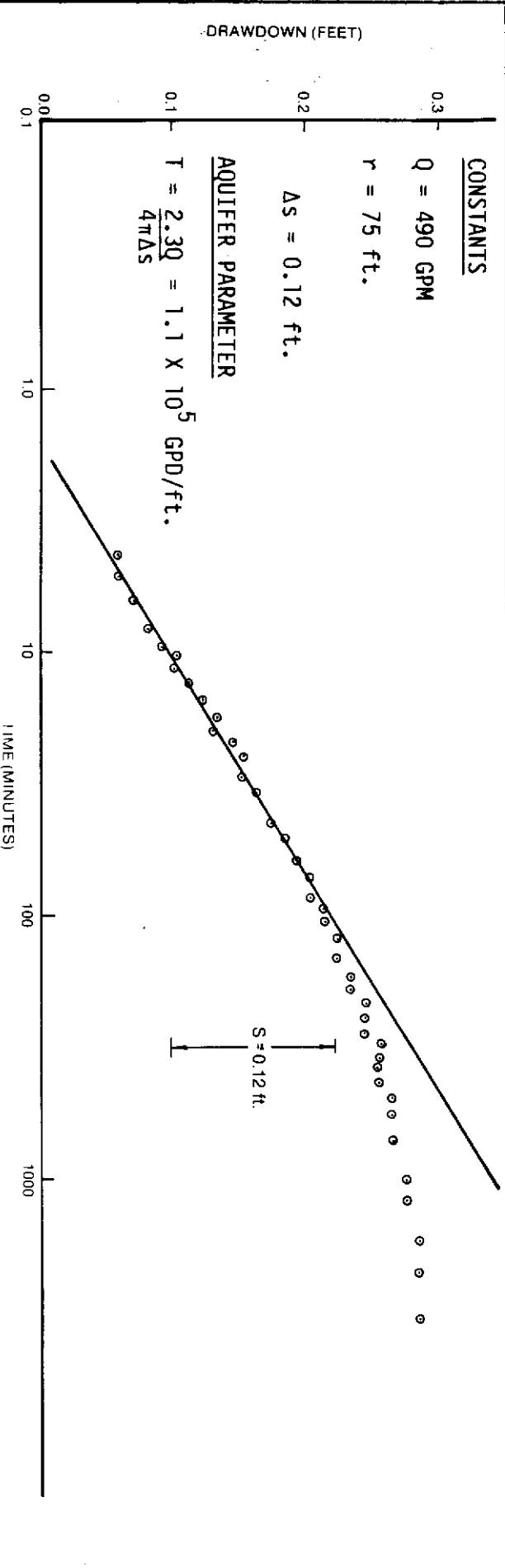
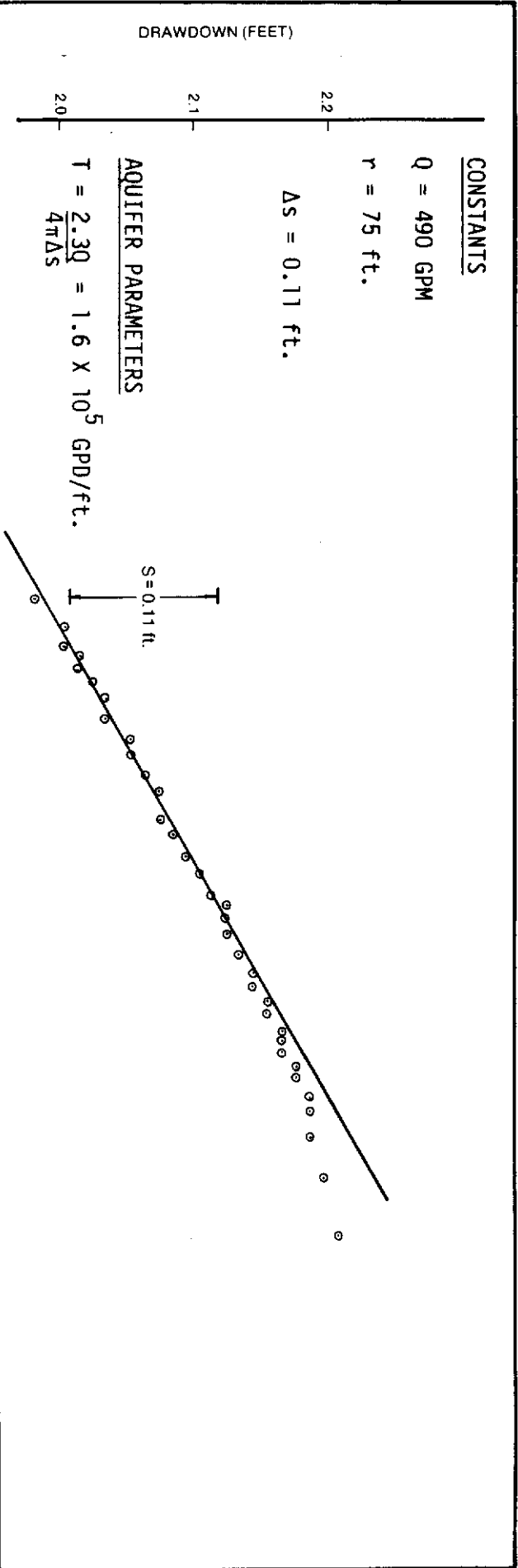
$S = \frac{4Tt}{r^2} = 2.2 \times 10^{-2}$

Boulton

$W(u_y) = 1$ $s = 0.058$ ft.
 $1/u_y = 1$ $t = 1.0$ min.
 $r/b = 0.3$



**ANALYSIS OF PUMPING TEST DATA FROM
 WELL C-2037-S/BOULTON AND STALLMAN METHODS**



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2037-S/JACOB RECOVERY METHOD

CONSTANTS

Q = 500 GPM

r = 105 ft.

DRAWDOWN (FEET)

MATCH POINT

$L(u,v) = 1$ $s = 0.15$ ft.

$1/u = 1$ $t = 8.6$ min. Δ

$v = 0.07$

THIS CURVE
 $v = 0.07$

AQUIFER PARAMETERS

$$T = \frac{Q}{4\pi s} L(u,v) = 3.8 \times 10^5 \text{ GPD/ft.}$$

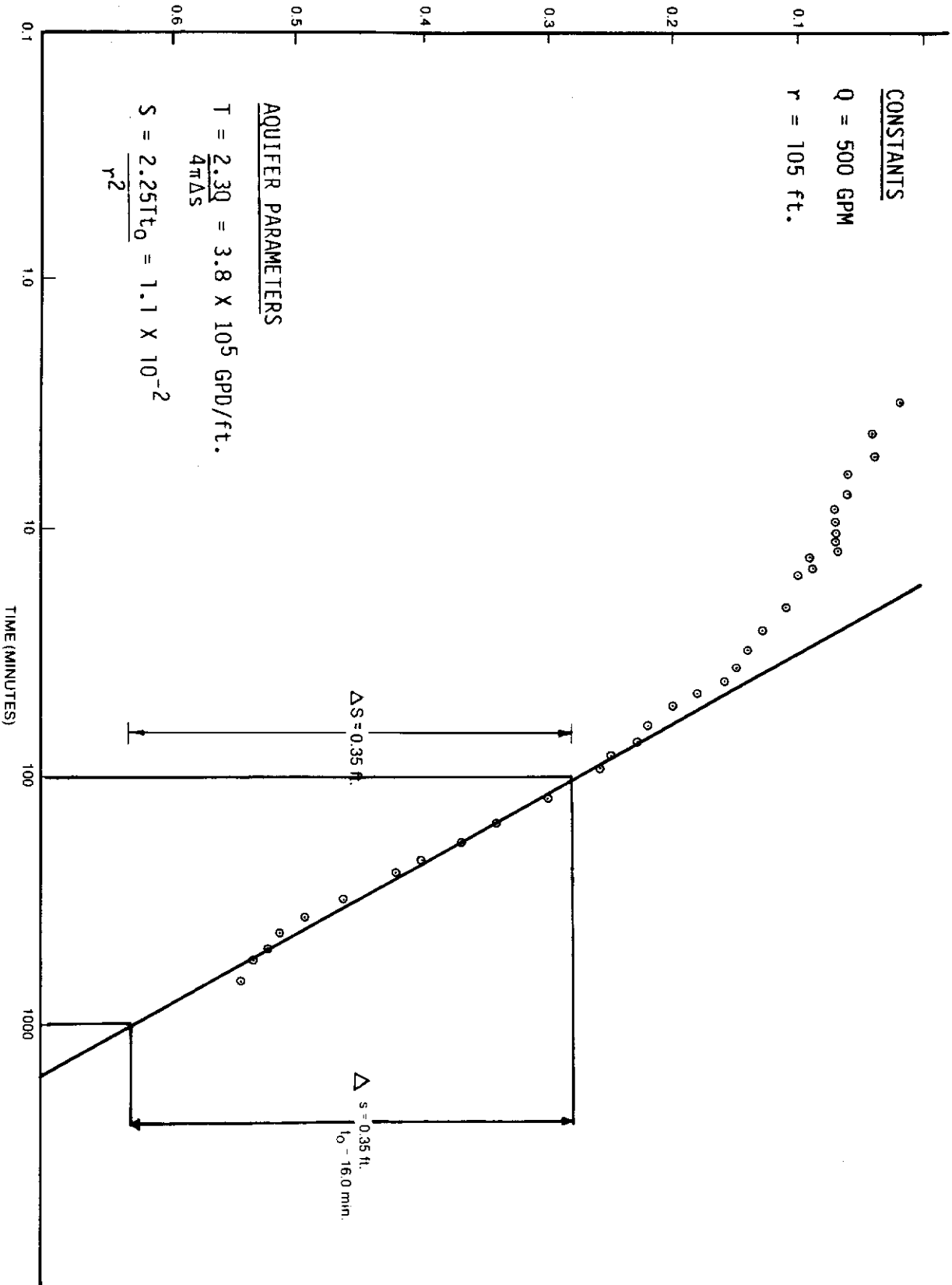
$$S = \frac{4Ttu}{r^2} = 1.1 \times 10^{-1}$$

$$K' \frac{b'}{r^2} = 4T \frac{v^2}{r^2} = 9.0 \times 10^{-2} / \text{day}$$

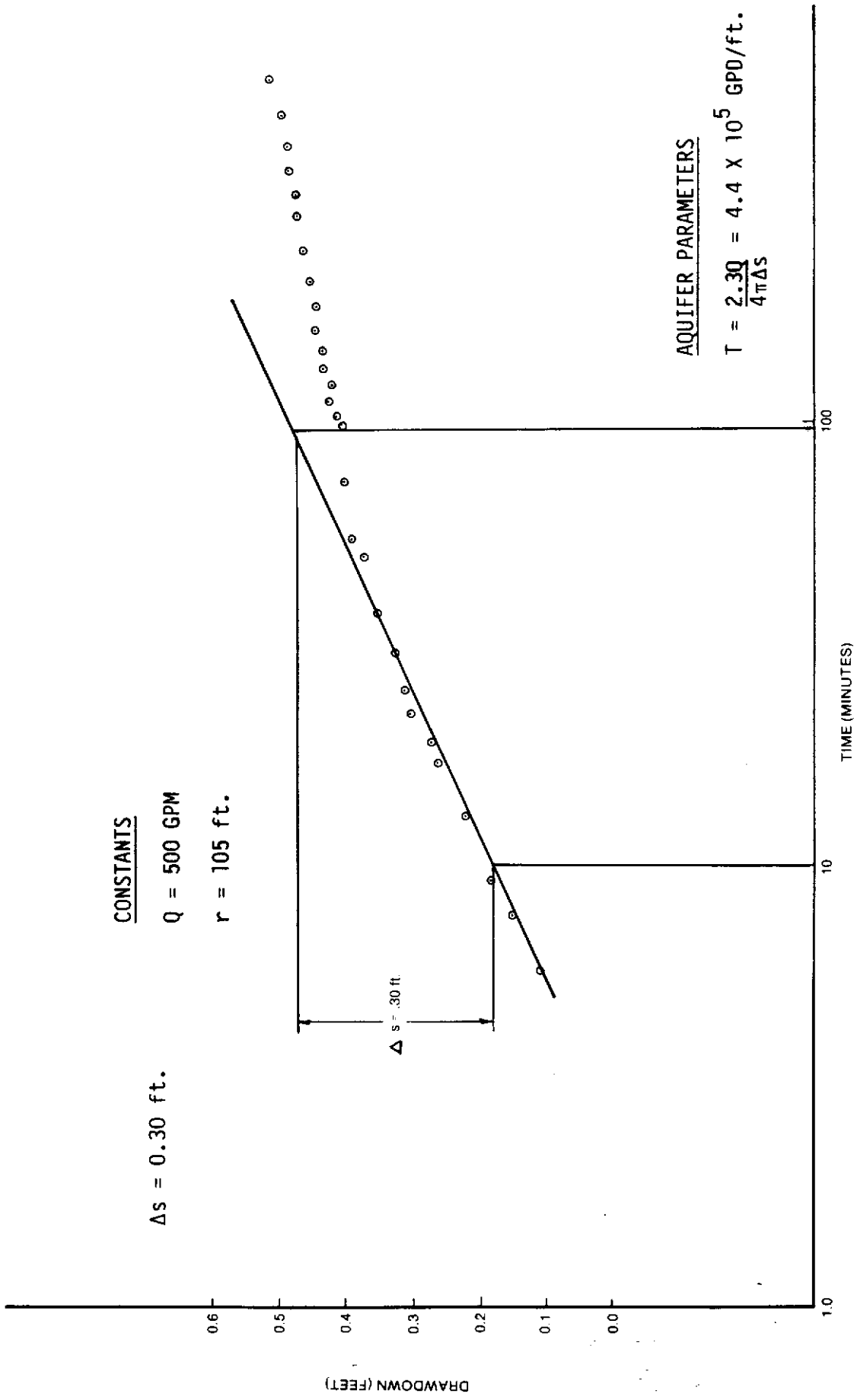
TIME (MINUTES)

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2038-1/HANTUSH METHOD

DRAWDOWN (FEET)

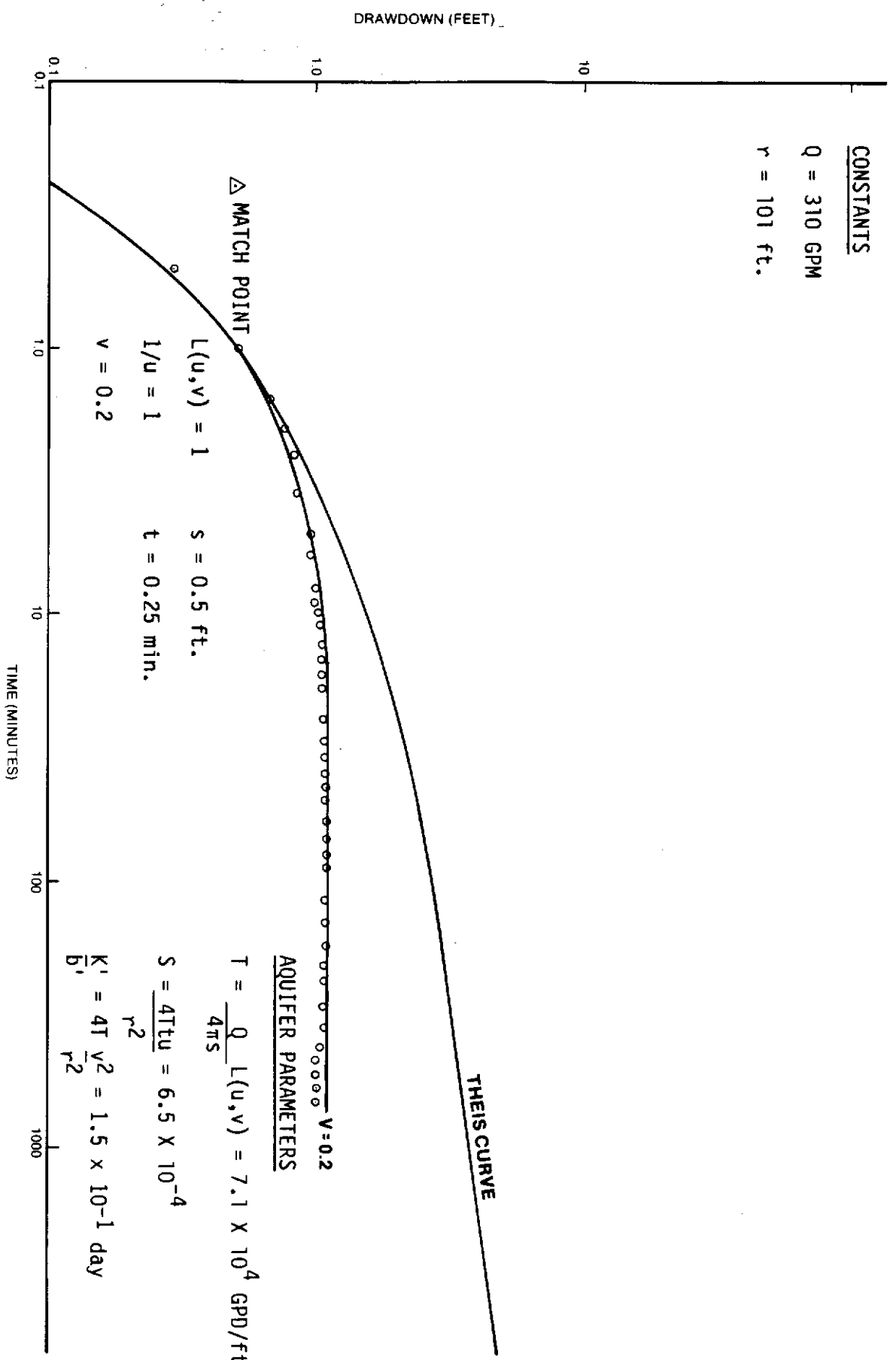


ANALYSIS OF PUMPING TEST DATA FROM WELL C-2038-1/JACOB METHOD



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2038-1/JACOB RECOVERY METHOD

CONSTANTS
 $Q = 310$ GPM
 $r = 101$ ft.



$L(u, v) = 1$
 $1/u = 1$
 $v = 0.2$
 $s = 0.5$ ft.
 $t = 0.25$ min.

AQUIFER PARAMETERS
 $T = \frac{Q}{4\pi s} L(u, v) = 7.1 \times 10^4$ GPD/ft.
 $S = \frac{4Ttu}{r^2} = 6.5 \times 10^{-4}$
 $K' = 4T \frac{v^2}{b'} = 1.5 \times 10^{-1}$ day

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2038-S/HANTUSH METHOD

CONSTANTS

Q = 935 GPM

r = 98 ft.

DRAWDOWN (FEET)

THIS CURVE

V = 0.02

AQUIFER PARAMETERS

$$T = \frac{Q}{4\pi s} L(u, v) = 1.85 \times 10^5 \text{ GPD/ft}$$

$$S = \frac{4Ttu}{r^2} = 1.1 \times 10^{-4}$$

$$\frac{K'}{b'} = 4T \frac{v^2}{r^2} = 4.1 \times 10^{-3} / \text{day}$$

△ MATCH POINT

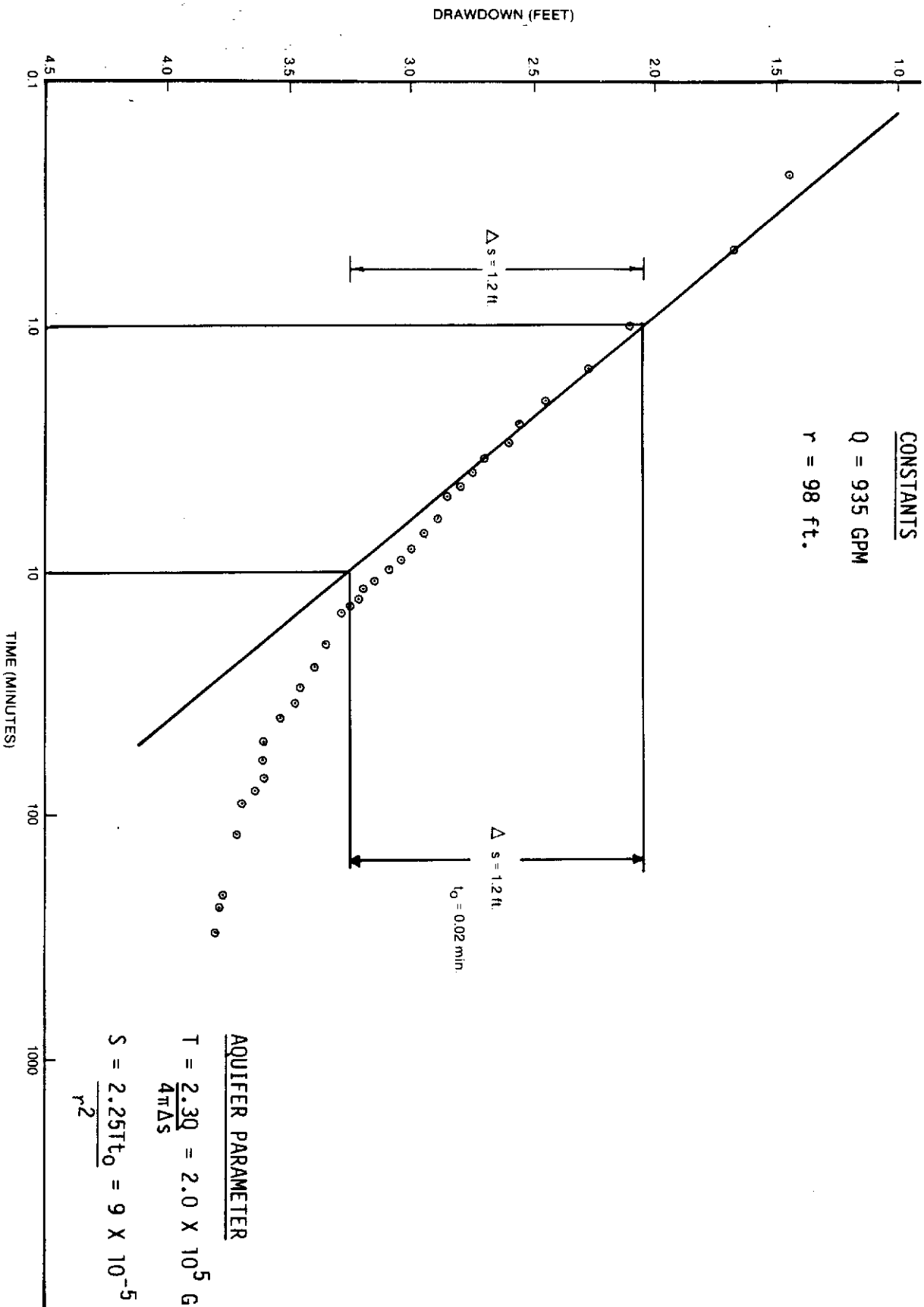
L(u, v) = 1 s = 0.58 ft.

1/u = 1 t = 0.16 min.

v = 0.02

TIME (MINUTES)

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2046-1/HANTUSH METHOD



CONSTANTS

$Q = 935 \text{ GPM}$
 $r = 98 \text{ ft.}$

AQUIFER PARAMETER

$$T = \frac{2.30}{4\pi\Delta s} = 2.0 \times 10^5 \text{ GPD/ft.}$$

$$S = \frac{2.25Tl_0}{r^2} = 9 \times 10^{-5}$$

ANALYSIS OF PUMPING TEST DATA FROM WELL C-2046-1/JACOB METHOD

CONSTANTS

Q = 245 GPM

r = 147 ft.

b = 57 ft.

MATCH POINT

△ Stallman

$Tt/r^2S = 1 \quad s = 4.2 \text{ ft.}$

$sT/Q = 1 \quad t = 31 \text{ min.}$

$\phi = 0.154$

MATCH POINT

△ Boulton (late time)

$W(u_y) = 1 \quad s = 0.32 \text{ ft.}$

$1/u_y = 1 \quad t = 6.2 \text{ min.}$

$r/b = 0.2$

AQUIFER PARAMETERS

Stallman (unconfined anisotropic aquifer)

$T = Q = 8.4 \times 10^4 \text{ GPD/ft.}$

$S = \frac{Tt}{r^2} = 1.1 \times 10^{-2}$

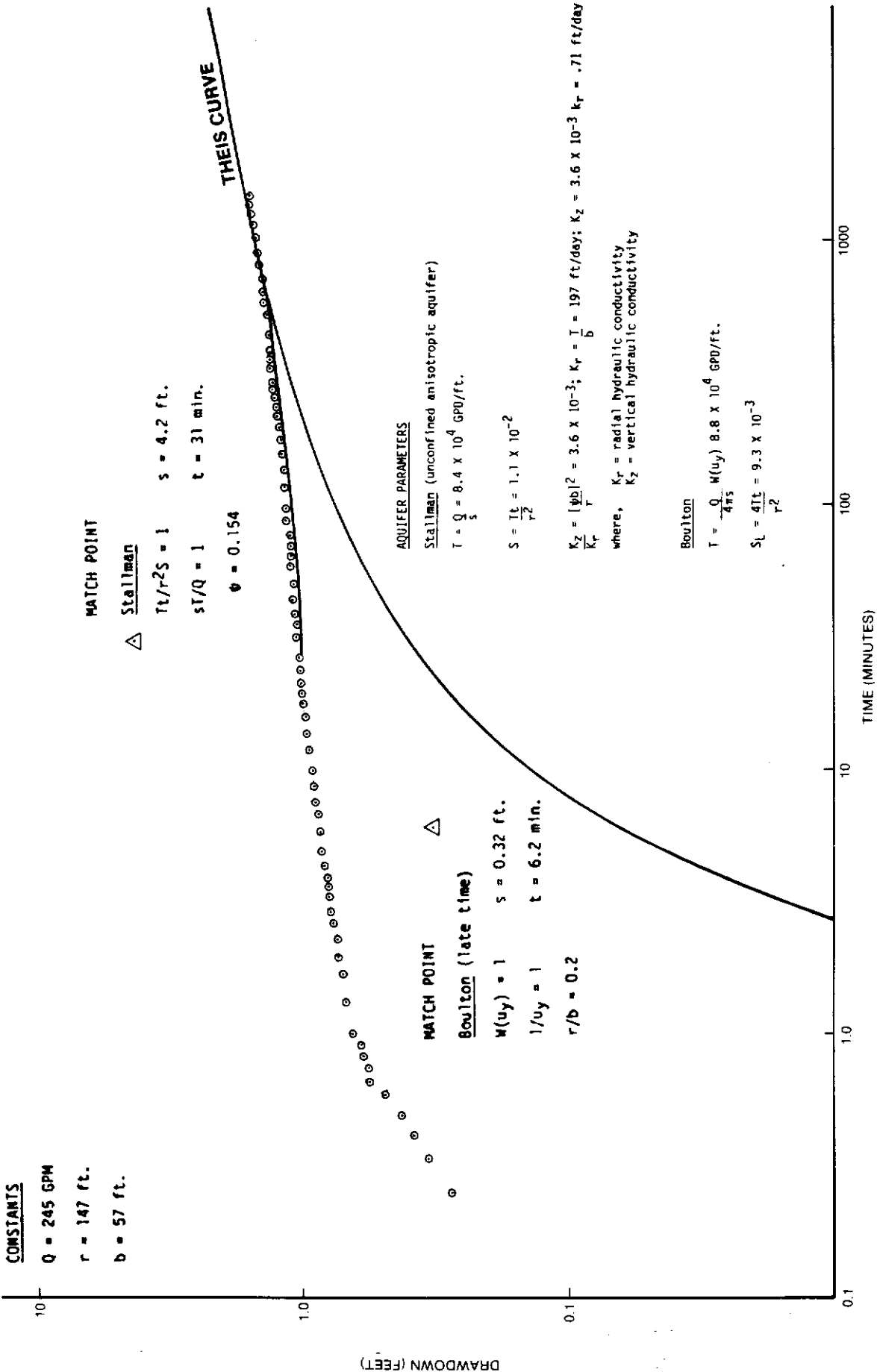
$\frac{K_z}{K_r} = \left(\frac{\phi b}{r}\right)^2 = 3.6 \times 10^{-3}; K_r = \frac{T}{b} = 197 \text{ ft/day}; K_z = 3.6 \times 10^{-3} K_r = .71 \text{ ft/day}$

where, K_r = radial hydraulic conductivity
 K_z = vertical hydraulic conductivity

Boulton

$T = \frac{Q}{4\pi s} W(u_y) = 8.8 \times 10^4 \text{ GPD/ft.}$

$S_L = \frac{4Tt}{r^2} = 9.3 \times 10^{-3}$



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2046-S/BOULTON AND STALLMAN METHODS

DRAWDOWN (FEET)

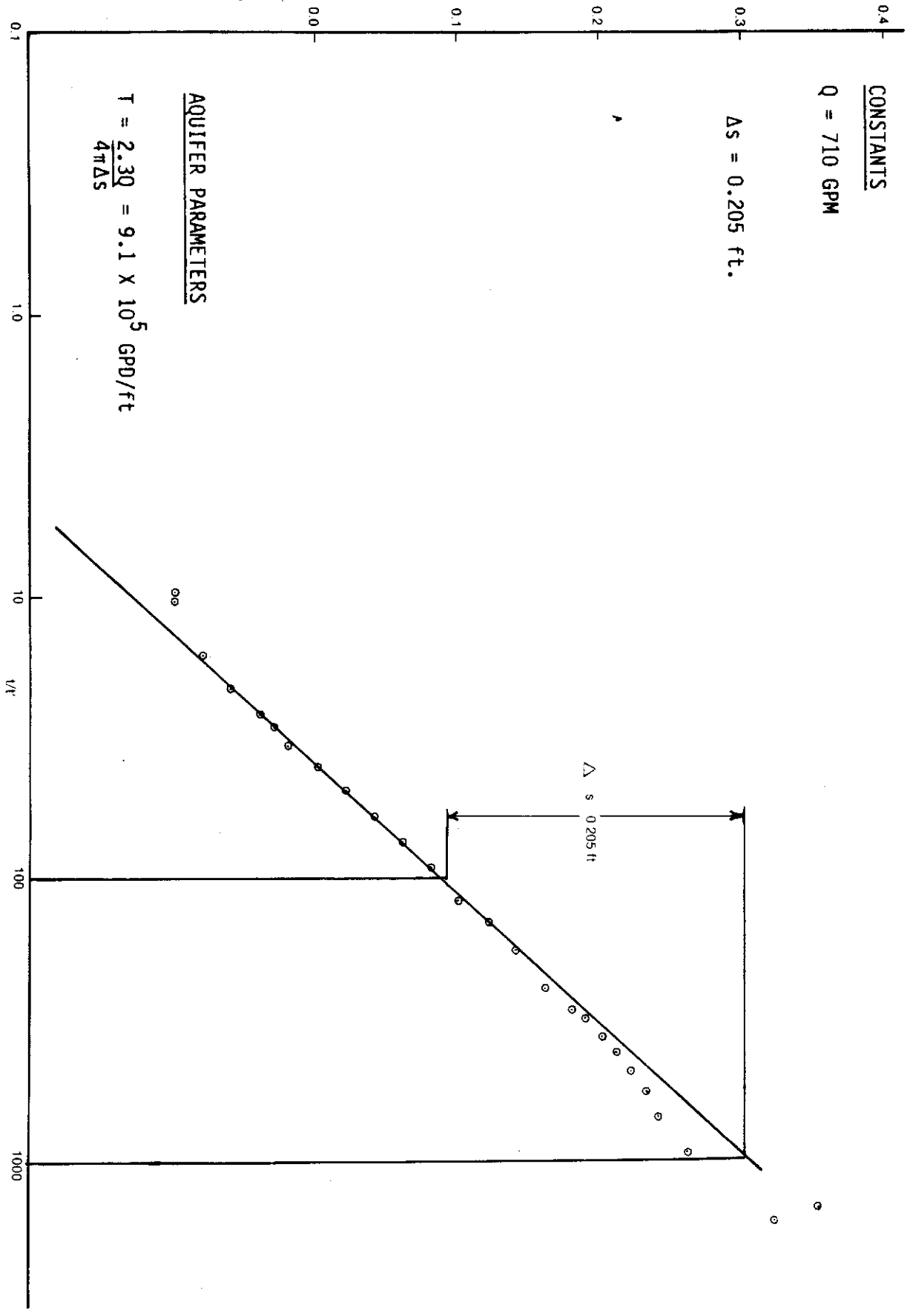
0.4

CONSTANTS
Q = 710 GPM

$\Delta s = 0.205$ ft.

AQUIFER PARAMETERS

T = $2.30 \frac{Q}{4\pi\Delta s} = 9.1 \times 10^5$ GPD/ft



ANALYSIS OF PUMPING TEST DATA FROM WELL C-2084-S/JACOB RECOVERY METHOD