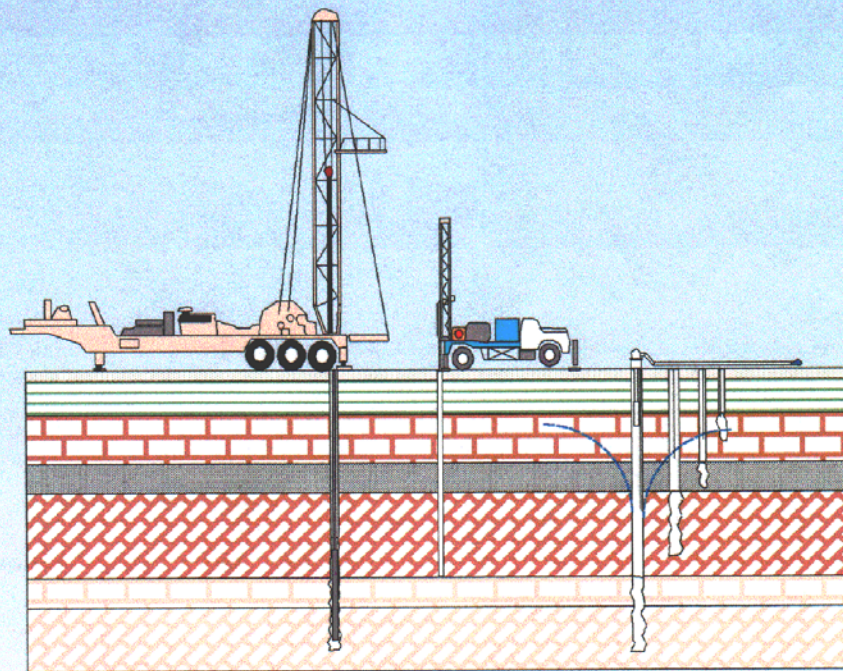


**ROMP 25 LILY
MONITOR WELL SITE
HARDEE COUNTY, FLORIDA**

PHASE TWO

**EXPLORATORY DRILLING AND MONITOR
WELL CONSTRUCTION**



**Geohydrologic Data Section
Resource Data Department
Southwest Florida Water Management District
November 1999**

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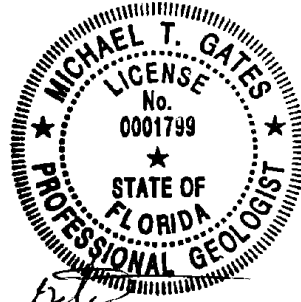
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The geological evaluations and interpretations contained in the *ROMP 25 Exploratory Drilling and Testing Report* have been prepared by or approved by a certified Professional Geologist in the State of Florida, in accordance with Chapter 492, Florida Statutes.



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Date: 11-10-1999

**ROMP 25 LILY
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- A. ROMP 25 Lithologic Log.

1.0 INTRODUCTION

The ROMP 25 (WRAP S-6) Lily well site is one of six Regional Observation and Monitor-Well Program (ROMP) well sites constructed for the Southern District Water Resource Assessment Project (SDWRAP). The SDWRAP is a long-term study of the ground-water systems in DeSoto County, Hardee County, and portions of Charlotte, Polk, and Sarasota Counties (Figure 1).

The ROMP 25 Well Site was obtained by the Southwest Florida Water Management District (SWFWMD) in February 1994 for construction of a multiple well monitor site. Drilling, testing, and monitor well construction at ROMP 25 was planned in three phases. The first phase involved core drilling from land surface to 1,048 feet below land surface (bls) to define the stratigraphy and hydrology of the site. This phase began December 1995 and was completed in May 1996. The results are presented in *ROMP 25 Phase One Core Drilling and Testing* (Gates, 1998). The exploratory drilling and monitor well construction phase of the project began in August 1996 and continued on an intermittent basis until March 1998. The last phase of the work, aquifer performance testing was completed in March of 1999. The aquifer performance data will be presented in *ROMP 25 Phase Three - Aquifer Performance Testing*.

2.0 SITE LOCATION

The ROMP 25 (WRAP S-6) Lily well site is located in Hardee County, southwest of Zolfo Springs, Florida (Figure 2). The well site is located on the south side of Roberts Road in the northeast quarter of Section 9, Township 36 South, Range 23 East at latitude $27^{\circ} 21' 59''$, longitude $82^{\circ} 00' 25.5''$ (Figure 3). Land surface elevation at the well site is approximately 85 feet above the National Geodetic Vertical Datum of 1929 (NGVD). Figure 4 presents the well site layout and monitor well locations.

3.0 DATA COLLECTION METHODS

Mud-rotary and reverse-air methods of drilling were used for the exploratory drilling and testing at ROMP 25. The mud-rotary method was used until circulation was lost or until ground-water

sampling was required. The reverse-air method was used for ground-water sampling and for drilling in highly permeable zones. Ground-water samples were either collected with a stainless steel bailer lowered through the drill rods, or directly from the reverse-air discharge hose during drilling. All ground-water samples were collected in accordance with ROMP Water Quality Sampling Protocol.

3.1 DEEP EXPLORATORY DRILLING

The deep exploratory drilling (below 1,048 feet bls) at ROMP 25 was completed in two phases. The first phase of drilling was performed by the SWFWMD-owned Speed Star SS-40 drill rig, from August 1996 to March 1997. The second phase was performed by Diversified Drilling Corporation in November of 1998. Diversified Drilling Corporation was contracted by the District to extend the total depth of the Avon Park well from 1,556 feet bls to 1,775 feet bls. The exploratory drilling was performed to determine the stratigraphy, permeable zones, ground-water quality, salt-water interface, and the top of the middle confining unit (evaporites). The exploratory drilling was performed during the construction of the Avon Park and Evaporite monitor wells.

3.1.1 Avon Park/Exploratory Well

The Avon Park/exploratory well (Figure 5) was the first well constructed during the exploratory drilling. Drilling on the Avon Park well began August 20, 1996. A 29-inch borehole was drilled from land surface to 84 feet bls using the mud-rotary method. Eighty-four feet of 24-inch welded steel casing was installed and grouted to land surface. A 23-inch borehole was then drilled from 84 feet bls to 300 feet bls using the mud-rotary method. Three-hundred feet of 18-inch welded steel casing was installed and grouted to land surface. A 17-inch borehole was then drilled from 300 feet bls to 960 feet bls using the mud-rotary method. Seven-hundred forty-two feet of 12-inch welded steel casing was installed and grouted from 960 to 218 feet bls. Reverse-air drilling with an 11-inch bit was used below 960 feet bls to allow ground-water sampling. Drill cuttings were collected continuously below 1,048 feet and ground-water samples were collected each time a new drill rod was added (approximately every 30 feet). Exploratory drilling continued in the Avon Park to a depth of 1,556 feet bls. In November 1998

Diversified Drilling Corporation drilled from 1,556 feet bls to 1,785 feet bls using the reverse air method. The drilling was performed to intercept the *highly permeable zone* (Wolansky, et.al, 1980) of the Avon Park Formation.

3.1.2 Evaporite/Exploratory Well

Drilling began on the Evaporite/Exploratory well (Figure 6) on October 23, 1996. A 29-inch borehole was drilled from land surface to 84 feet bls using the mud-rotary method. Eighty-four feet of 24-inch welded steel casing was installed and grouted to land surface. A 23-inch borehole was then drilled from 84 feet bls to 300 feet bls using the mud-rotary method. Three-hundred feet of 18-inch welded steel casing was installed and grouted to land surface. A 17-inch borehole was then drilled from 300 feet bls to 960 feet bls using the mud-rotary method. Nine-hundred and sixty feet of 12-inch welded steel casing was installed into the borehole and grouted to land surface. Reverse-air drilling with an 11-inch bit was used below 960 feet bls. Drill cuttings were collected continuously and ground-water samples were collected at approximate 30 feet intervals below 1,556 feet bls. At some point during drilling, the bottom 87 feet of 12-inch steel casing broke off and slid down the borehole. The 87 feet of fallen casing lodged in the borehole between 1140 feet bls and 1227 feet bls. Drilling continued without incident and the casing was left in place at 1140 - 1227 feet bls. Drilling with the 11-inch bit was stopped at 1,866 feet bls and an off-bottom packer test was performed from 1,654 to 1,866 feet bls. A smaller 7.875-inch bit was used to drill from 1,866 feet bls to 1,896 feet bls. A 4-inch diameter core barrel was used to collect a solid core sample of the evaporitic sediments from 1,896 feet bls to 1,911 feet bls. Exploratory drilling was terminated at 1,911 feet bls.

3.2 GROUND-WATER SAMPLING

Split ground-water samples were collected at approximate 30 feet intervals while performing the exploratory drilling from 1,048 ft to 1,911 feet bls to characterize the water quality of the Upper Floridan aquifer. One sample was analyzed in the field for temperature, specific conductance, pH, chloride, sulfate, and density. The other sample was delivered to the District Environmental Chemistry Laboratory for more extensive analyses. Chain-of-Custody forms

were used to track the samples. Results of the ground-water sample analyses are presented in Section 6.0.

Ground-water samples were collected either directly from the discharge line during drilling or using a wire-line bailer. Figure 7 presents a diagram of the wire-line bailer. One off-bottom packer test was performed to obtain a water quality sample from the 1,654 to 1,866 feet interval. Figure 8 presents a diagram of the off-bottom packer. Tables 1 and 2 present a summary of the field water quality analyses and the collection method for ground-water samples obtained during deep exploratory drilling at ROMP 25. Tables 3 and 4 present the laboratory results and method of collection for ground-water samples collected during exploratory drilling.

3.3 GEOPHYSICAL LOGGING

Downhole geophysical logs were collected on the both the Avon Park and Evaporite wells during exploratory drilling. The logs were collected using the SWFWMD-owned Century® digital geophysical logging equipment. Figure 9 presents a merged log of the caliper and multi-function tools that were run in the Evaporite/Exploratory well. This well, at the time of logging, had 12-inch steel casing from land surface to 870 feet bls and an open hole interval from 870 feet bls to 1,911 feet bls (the broken section of 12-inch casing is seen on the caliper log from 1140 feet bls to 1227 feet bls).

Logging was recorded from the bottom of the borehole to the top. The *highly permeable zone* of the Avon Park Formation is indicated on the caliper log from 1,690 feet bls to 1,780 feet bls. The flow zone is indicated on the temperature (TEMP) log and the fluid resistivity [RES(FL)] log by a shift in the log trace at approximately 1,760 feet bls. The TEMP log shows a decrease in fluid temperature as the tool encounters the flow zone. The RES(FL) log shows an increase in fluid resistivity as the tool encounters the fresher, less conductive fluid in the flow zone.

4.0 GEOLOGY

The ROMP 25 well site is located on the Wicomico terrace, within the DeSoto Plain physiographic province, a division of the Mid-Peninsular zone of the Floridan Peninsula (White, 1970). Located within the SWFWMD Peace River Basin, ROMP 25 is west of Horse Creek, a tributary of the Peace River. The elevation at ROMP 25 is approximately 85 ft NGVD. The stratigraphy was defined from descriptions of the core samples collected during wire-line coring from land surface to 1,048 ft bls and from the drill cuttings and core collected during rotary drilling from 1,048 ft bls to 1,911 ft bls. Figure 10 depicts the geology and hydrology described at the ROMP 25 well site. The lithologic log for ROMP 25 is presented in Appendix A.

4.1 UNDIFFERENTIATED SURFICIAL DEPOSITS

The Pliocene to Recent age undifferentiated surficial deposits are the uppermost geologic unit at the ROMP 25 well site. This unit is comprised of fine to medium grained, unconsolidated, quartz sand, with some interbedded silt, clay and organic matter. The undifferentiated surficial deposits extend from land surface to 45 feet bls.

4.2 PEACE RIVER FORMATION

The Peace River Formation is a lower Pliocene to Miocene age marine siliciclastic unit that lies unconformably below the undifferentiated surficial deposits. The Peace River Formation is part of the Hawthorn Group sediments described by Scott (1988). In the area of ROMP 25 the Peace River Formation is comprised of a thick sequence of inter-layered siliciclastics and carbonates extending from 45 feet bls to 107 feet bls. Quartz sand, sandy fossiliferous limestone, and interbedded phosphatic sand and clay make up the numerous beds within this unit.

4.3 ARCADIA FORMATION

The Arcadia Formation, middle-Miocene in age underlies the Peace River Formation and extends from 107 feet bls to 313 feet bls. The Arcadia Formation as described by Scott

(1988), consists primarily of limestone and dolostone, with some quartz sand, clay and phosphate grains. The Arcadia Formation, part of the Hawthorn Group sediments, includes the Tampa and Nocatee members in some areas of South Florida. In the area of ROMP 25 neither of these members were described. The Arcadia Formation is characterized by moderately indurated calcarenite, with interbedded clay, quartz sand, phosphatic sand and gravel, and some thin chert and dolostone lenses.

4.4 SUWANNEE LIMESTONE

The Suwannee Limestone is Oligocene in age and extends from 313 feet bls to 675 feet bls at the ROMP 25 well site. The Suwannee Limestone is distinguished from the overlying Arcadia Formation by the absence of phosphatic sediments. The Suwannee consists of a chalky, fossiliferous, calcarenite alternating with thin beds of clay and calcilutite. Permeable zones within the Suwannee are generally formed from fractures and fossil molds and casts. Mollusk and Foraminifera molds are very common.

4.5 OCALA LIMESTONE

Late Eocene in age, the Ocala Limestone extends from 675 feet bls to 976 feet bls at ROMP 25. The Ocala is a highly fossiliferous, fine-grained, poorly cemented shallow marine limestone. This limestone is predominantly a chalky, Foraminifera calcarenite or calcilutite with minor interbedded quartz sand and clay. Some thin dolostone lenses are also present. Common Foraminifera include *Lepidocyclina sp.* and *Nummulites sp.* Pelecypods, gastropods, milliolids, and echinoids are also common. In the ROMP 25 area the Ocala Limestone is generally of low permeability.

4.6 AVON PARK FORMATION

The Avon Park Formation is middle Eocene in age and extends from 976 feet bls to approximately 1,911 feet bls at the ROMP 25 wellsite. A thin bed of fine-grained, crystalline dolostone is present at the top of the Avon Park Formation near the Ocala Limestone contact. The Avon Park Formation is characterized by well indurated fossiliferous limestone and

dolostone and interbedded gypsum in the lower part of the formation. Well developed secondary porosity features are characteristic of the lower portions of the Avon Park Formation.

5.0 HYDROLOGY

The ROMP 25 well site hydrology was defined during initial wire-line coring and exploratory drilling. Aquifer systems were delineated from lithologic descriptions of permeable and non-permeable units, potentiometric levels, water quality data, and geophysical logs collected during drilling.

5.1 SURFICIAL AQUIFER SYSTEM

The surficial aquifer system (SAS) is an unconfined aquifer that extends from land surface to approximately 60 feet bls at the ROMP 25 well site. The SAS is comprised almost entirely of fine to medium grained quartz sands of the undifferentiated surficial deposits and Peace River Formation. The well sorted quartz sand, provide the high porosity and permeability of the SAS. The water level in the SAS ranges annually from two to six feet bls at ROMP 25. In May 1999 the water level of the surficial aquifer measured 6.2 feet bls (~ 80.2 feet NGVD).

5.2 INTERMEDIATE AQUIFER SYSTEM

The intermediate aquifer system (IAS) is a confined aquifer system that includes all transmissive and confining units between the overlying surficial aquifer and underlying UFA (Southeastern Geological Society, 1986). In the area of ROMP 25 the IAS is comprised of transmissive and confining units of the Peace River Formation and Arcadia Formation. Thickness of the IAS is approximately 253 feet and extends from 60 feet bls to 313 feet bls at the ROMP 25 well site.

Only one permeable zone was identified in the IAS at ROMP 25. The Arcadia Formation contained a poorly transmissive zone of calcilutite with moldic and intergranular porosity features from 107 to 145 feet bls. There were no significant permeable zones identified in the

Peace River Formation. In December 1998 the potentiometric surface of the IAS permeable zone measured 19.7 feet bls (66.0 feet NGVD).

5.3 UPPER FLORIDAN AQUIFER

The Upper Floridan aquifer in the vicinity of ROMP 25 extends from approximately 305 feet bls to approximately 1,840 feet bls. During core drilling, a water level drop of approximately 40 feet was noticed after drilling below 305 feet bls. This water level change occurred in the Arcadia Formation just above the Suwannee Limestone contact (313 feet bls). The base of the Upper Floridan aquifer occurs at approximately 1,840 feet bls in the Avon Park Formation and is formed by the middle confining unit. The Upper Floridan aquifer is comprised of the lower Arcadia Formation, Suwannee Limestone, Ocala Limestone, and Avon Park Formation.

Review of the lithologic and geophysical logs collected during coring indicate the permeable zones within the lower Arcadia and Suwannee Limestone occur between 305 and 400 feet bls. Below 400 feet bls, interbedded clay and less permeable calcilutite predominate. The lower Suwannee Limestone and the Ocala Limestone act as a semi-confining unit between the permeable zones in the upper Suwannee Limestone and the underlying Avon Park Formation.

Review of lithologic and geophysical logs collected during the deep exploratory drilling in the Avon Park Formation revealed relatively permeable beds of calcarenite and dolostone for the entire thickness of the Avon Park. The top of the *highly permeable dolostone zone* of the Upper Floridan Aquifer, previously mapped by Wolansky and others (1980) occurs at 1,690 feet bls. This highly fractured, transmissive zone extends from 1,690 feet bls to 1,785 feet bls. In May 1999 the potentiometric surface of the Upper Floridan aquifer measured 82.6 feet bls (3.5 feet NGVD).

5.4 MIDDLE CONFINING UNIT

In west-central Florida the middle confining unit is a low permeability unit that separates the predominantly freshwater Upper Floridan aquifer from the Lower Floridan aquifer containing salt-water (Ryder, 1985). The middle confining unit is comprised of evaporitic sediments with

very low transmissivities. At ROMP 25, the first evaporitic minerals were described at 1,790 feet bls in the Avon Park Formation. The evaporites appeared as interbedded crystals of gypsum in a dolostone matrix. Persistent beds of evaporite minerals were noted at 1,840 feet bls. Drilling continued to a total depth of 1,911 feet bls in the middle confining unit.

6.0 GROUND-WATER QUALITY

Ground-water samples were collected at 30 feet intervals from 1,058 ft to 1,556 ft bls while exploratory drilling in the Avon Park well and from 1,524 to 1,866 feet bls while drilling in the Evaporite monitor well. The results of ground-water quality samples collected during exploratory drilling are presented in Tables 1 through 4. Figure 11 presents graphs of the water quality trends during exploratory drilling. Water quality data previously collected while core drilling from land surface to 1,048 ft bls is presented in *Volume One - Core Drilling and Testing*.

Ground-water mineralization increased little with depth while drilling the Avon Park monitor well. Specific conductance values for ground-water samples collected while drilling increased from 1,854 umhos/centimeter (cm) at 1,058 ft bls to 2,430 umhos/cm at 1,556 ft bls (Table 3). Chloride concentrations remained at approximately 16 milligrams per liter (mg/l) for the same interval. Sulfate concentrations increased from 1,191 mg/l at 1,058 ft bls to 1,633 mg/l at 1,556 ft bls.

Ground-water samples collected while constructing the Evaporite monitor well also showed a minimal increase in mineralization with depth. Specific conductance values for ground-water samples increased from 2,310 umhos/cm at 1,524 feet bls to 2,680 umhos/cm at 1,866 feet bls. Chloride concentrations remained at approximately 16 mg/l for the same interval. Sulfate concentrations increased from 1,528 mg/l at 1,524 feet bls to 1,761 mg/l at 1,866 feet bls.

The results of the ground-water sampling indicate relatively low chloride concentrations exist for the entire Upper Floridan aquifer in this part of Hardee County. The salt-water interface (1,000 mg/l chloride isochlor) was not detected during drilling from land surface to the middle confining unit at 1,911 feet bls at ROMP 25.

7.0 MONITOR WELL CONSTRUCTION

Drilling and construction of the monitor wells at ROMP 25 was completed in three phases. The permanent surficial monitor well and the temporary dual zone IAS/UFA observation well were constructed during the coring phase of the project. The permanent Avon Park/UFA monitor well and the permanent Evaporite monitor well were constructed with the District-owned SS-40 drilling rig during the exploratory phase. The permanent Arcadia/IAS monitor well, permanent Suwannee/UFA monitor well, and the temporary Avon Park/UFA observation well were constructed by Diversified Drilling Corporation during the final phase of well construction at ROMP 25. All monitor well elevations were surveyed in May 1997 by the District Survey Section.

7.1 PERMANENT SURFICIAL AQUIFER MONITOR WELL

The permanent 4-inch surficial aquifer monitor well (Figure 12) was constructed in April 1996 using the District-owned CME drill rig. The construction details are presented in the *ROMP 25 Phase One - Core Drilling and Testing Report*. The survey point for the surficial monitor well is a notched black mark on the north side of the 4-inch casing. The elevation of the notch is 88.898 feet based on National Geodetic Vertical Datum (NGVD) of 1929.

7.2 PERMANENT ARCADIA/IAS MONITOR WELL

The permanent Arcadia monitor well (Figure 13) was constructed in February 1998 by the District contractor, Diversified Drilling, Inc. A 17-inch borehole was drilled from land surface to 84 feet bls using the mud-rotary drilling method. Eighty-four feet of 12-inch schedule 40 polyvinyl chloride (PVC) casing was installed in the borehole and pressure grouted in place. An 11.5-inch borehole was then drilled from 84 feet bls to 124 feet bls using the mud-rotary method. The reverse-air method of drilling was used to drill the 11.5-inch borehole from 124 feet bls to 147 feet bls. Eight-inch schedule 40 PVC 0.020-slot well screen was installed from 146 feet bls to 105 feet bls. Eight-inch schedule 40 PVC casing was installed from 105 to two feet above land surface. Six-twenty silica sand was installed from 147 feet bls to 99 feet bls. Bentonite pellets were installed from 99 feet bls to 95 feet bls. Portland cement grout was

installed in the annulus from 95 feet bls to land surface using the tremie-method of grouting. A locking steel cover and cement pad was installed around the well. The survey point for the Arcadia well is a notched black mark on the northwest edge of the 8-inch PVC casing. The elevation of the notch is 87.305 feet NGVD.

7.3 PERMANENT SUWANNEE/UFA MONITOR WELL

The permanent Suwannee well (Figure 14) was constructed from January to March, 1998 by the District contractor, Diversified Drilling, Inc. A 23-inch borehole was drilled from land surface to 84 feet bls using the mud-rotary method of drilling. Eighty-four feet of 18-inch welded steel casing was installed in the borehole and pressure grouted in place. A 17-inch borehole was then drilled from 84 feet bls to 300 feet bls using the mud-rotary method. Three-hundred and two feet of 12-inch schedule 40 PVC was installed in the borehole and pressure grouted in place. An 11-inch borehole was then drilled from 300 feet bls to a total depth of 676 feet bls using the reverse-air method of drilling. This well was lined with 6-inch schedule 40 PVC from 297 feet bls to two feet above land surface in August 1999 after completion of the aquifer performance test (APT). A locking steel cover and cement pad was installed around the well. The survey point for the Suwannee well is a notched black mark on the north edge of the 12-inch PVC well casing. The elevation of the notch is 87.623 feet NGVD.

7.4 TEMPORARY AVON PARK/UFA OBSERVATION WELL

The temporary Avon Park well (Figure 15) was constructed in February and March 1998 by the District contractor, Diversified Drilling, Inc. The well was constructed on a temporary easement located approximately 500 feet west of the permanent easement. A 17.5-inch borehole was drilled from land surface to 84 feet bls using the mud-rotary method. Eighty-four feet of 12-inch PVC casing was installed into the borehole and pressure grouted to land surface. An 11.5-inch borehole was drilled from 84 feet bls to 300 feet bls using the mud-rotary method. Three hundred feet of 8-inch PVC casing was installed and pressure grouted to land surface. A 7.625-inch borehole was drilled from 300 feet bls to 855 feet bls using the mud-rotary method. The reverse-air method of drilling was used for drilling the 7.625-inch borehole from 855 feet bls to 960 feet bls. A 5.625-inch borehole was drilled from 960 feet bls to 1,568 feet

bls using the reverse-air method. Nine-hundred and seventy-five feet of 2-inch PVC casing was installed and tremie grouted to land surface. Shale packers were attached to the PVC casing at 970 and 971 feet bls. Bentonite pellets were installed from 970 feet bls to 960 feet bls prior to tremie grouting. This well will be grouted to land surface and abandoned following the Avon Park APT.

7.5 PERMANENT AVON PARK/UFA MONITOR WELL

Well construction for the permanent Avon Park well (Figure 5) is described in Section 3.1.1. A cement pad and locking steel cover was installed around the well. The survey point for the Avon Park well is a notched black mark on the north edge of the 18-inch steel casing. The elevation of the notch is 86.804 feet NGVD. This well is scheduled to be lined with 6-inch PVC and tremie grouted from 960 feet bls to land surface in 2000. Figure 16 present a diagram of the permanent Avon Park well with the PVC liner installed.

7.6 PERMANENT EVAPORITE MONITOR WELL

Well construction for the permanent Evaporite well is described in Section 3.1.2. The survey point for the Evaporite well is a notched black mark on the north edge of the 6-inch PVC casing. The elevation of the notch is 88.482 feet NGVD. Figure 17 presents the as-built diagram for the permanent Evaporite well.

8.0 SUMMARY

The deep exploratory drilling and monitor well construction at ROMP 25 began in August 1996 and was completed in March 1998. Previous core drilling to a depth of 1,048 feet bls was performed from December 1995 to May 1996. Deep exploratory drilling and testing below 1,048 was performed to define the stratigraphy and hydrology of the Floridan aquifer. Drilling to a total depth of 1,911 feet bls was performed to determine the top of the middle Floridan confining unit. Drill cuttings were collected and archived for lithologic description. Ground-water samples were collected at approximately 30 ft intervals for water quality profiling with depth.

The results of the ground-water sampling and geophysical logging performed during exploratory drilling indicate the highly permeable zone of the Upper Floridan zone occurs from 1,690 ft bls to 1,785 ft bls. The salt-water interface was not encountered during drilling to 1,911 feet bls. Chloride concentrations did not exceed 19 mg/l. Specific conductance of the ground-water at 1,866 was 2,680 umhos/cm.

Permanent monitor wells were constructed to monitor the surficial, intermediate, and Floridan aquifers. A 4-inch surficial monitor well, an 8-inch intermediate aquifer monitor well, a 6-inch Suwannee/UFA monitor well, a 6-inch Avon Park/UFA monitor well, and a 6-inch Evaporite/middle confining unit monitor well are located on the permanent easement.

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TABLES

Table 1. Field Analyses of ROMP 25 Groundwater Samples Collected During Exploratory Drilling (12" Steel casing 0-960' bis Avon Park well)¹

Date (D/M/Y)	Time	Sample Depth (ft bls)	Specific Cond. (umohs)	Water Temp (celcius)	Water Density (g/cm ³)	CL	SO4	pH	Sample Collection Method	Split to Lab ?
26-Sep-1996	1230	1058	1860	30.1	NA	NA	NA	7.62	Discharge	Y
30-Sep-1996	1430	1090	1928	30.4	NA	NA	NA	6.88	Discharge	Y
30-Sep-1996	1630	1120	1810	30.2	NA	NA	NA	9.01	Discharge	Y
30-Sep-1996	1700	1120	2120	29.4	NA	NA	NA	8.60	Bailer	Y
30-Sep-1996	1855	1151	1880	30.5	NA	NA	NA	9.86	Discharge	Y
1-Oct-1996	800	1151	2880	29.0	NA	NA	NA	11.20	Bailer	Y
1-Oct-1996	1045	1182	1940	30.0	NA	NA	NA	8.90	Bailer	Y
1-Oct-1996	1420	1213	1891	29.1	NA	NA	NA	9.96	Bailer	Y
1-Oct-1996	1750	1244	1937	30.8	NA	NA	NA	7.65	Bailer	Y
2-Oct-1996	1510	1307	2060	30.9	NA	NA	NA	8.39	Bailer	Y
2-Oct-1996	1710	1339	2220	31.3	NA	NA	NA	7.96	Discharge	Y
2-Oct-1996	725	1370	2200	31.2	NA	NA	NA	7.93	Discharge	Y
3-Oct-1996	1010	1401	2280	31.3	NA	NA	NA	7.71	Discharge	Y
3-Oct-1996	1230	1431	2260	31.6	NA	NA	NA	7.60	Discharge	Y
8-Oct-1996	1500	1464	2520	31.4	NA	NA	NA	7.48	Discharge	Y
9-Oct-1996	800	1494	2300	29.5	NA	NA	NA	7.13	Bailer	Y
9-Oct-1996	1000	1525	2440	31.2	NA	NA	NA	7.50	Discharge	Y
9-Oct-1996	1305	1556	2460	31.4	NA	NA	NA	7.49	Discharge	Y

¹ All concentrations reported in mg/l unless otherwise noted

NA - Not Analyzed

Table 2. Field Analyses of ROMP 25 Groundwater Samples Collected During Exploratory Drilling (12" Steel casing 0-870' bis Evaporite Well)¹

Date (D/M/Y)	Time	Sample Depth (ft bls)	Specific Cond. (umohs)	Water Temp (celcius)	Water Density (g/cm ³)	CL	SO4	pH	Sample Collection Method	Split to Lab ?
12-Dec-1996	900	1524	NA	NA	NA	NA	NA	NA	Discharge	Y
12-Dec-1996	1230	1555	NA	NA	NA	NA	NA	NA	Discharge	Y
12-Dec-1996	1510	1587	NA	NA	NA	NA	NA	NA	Discharge	Y
16-Dec-1996	1500	1581	2580	28.5	NA	NA	NA	7.71	Bailer	Y
16-Dec-1996	1830	1618	2680	30.4	NA	NA	NA	7.52	Bailer	Y
17-Dec-1996	1210	1650	2730	30.7	NA	NA	NA	7.32	Bailer	Y
19-Dec-1996	830	1681	2710	27.8	NA	NA	NA	7.35	Bailer	Y
8-Jan-1997	1450	1712	2720	28.6	NA	NA	NA	7.36	Bailer	Y
9-Jan-1997	815	1743	2740	29.0	NA	NA	NA	7.34	Bailer	Y
14-Jan-1997	830	1772	2710	26.2	NA	NA	NA	7.37	Bailer	Y
15-Jan-1997	1410	1806	2720	30.6	NA	NA	NA	7.26	Bailer	Y
16-Jan-1997	800	1837	2710	29.4	NA	NA	NA	7.21	Bailer	Y
16-Jan-1997	1100	1866	2620	32.0	NA	NA	NA	7.47	Discharge	Y
16-Jan-1997	1330	1866	2720	30.9	NA	NA	NA	7.19	Bailer	Y
27-Jan-1997	1850	1654-1866	2690	30.1	NA	NA	NA	7.53	Packer Test	Y

¹ All concentrations reported in mg/l unless otherwise noted

NA - Not Analyzed

r25explwg.wb3

Table 3 Laboratory Analyses of Ground-water Samples Collected During Exploratory Drilling in Avon Park well (12" Steel Casing 0-960' bis)¹

Date (M/D/Y)	Time	Depth (ft bis)	Specific Cond. (umhos)	Water Density	CL	SO ₄	pH	Br	TDS	Ca	Mg	Bicarb as (CaCO ₃)	K	Na	Si	Fe (ug/l)	Total Hardness (CaCO ₃)	ION %	Sample Collection Method
28-Sep-1996	1230	1058	1854	1.0018	16	1191	8.1	0.0	1652	263	118	122	4	14	11	26	1143	-7.33	Discharge
30-Sep-1996	1430	1090	1927	1.0018	16	1247	8.1	0.0	1827	279	115	115	5	17	10	15	1170	-7.73	Discharge
30-Sep-1996	1630	1120	1809	1.0014	12	924	9.7	0.0	1681	313	70	12	6	16	9	18	1070	5.97	Discharge
30-Sep-1996	1700	1120	2050	1.0017	13	1146	8.6	0.0	2023	325	124	42	5	15	11	13	1322	4.68	Bailer
30-Sep-1996	1855	1151	1896	1.0016	15	1089	10.3	0.0	1745	399	32	13	7	16	6	11	1128	1.5	Discharge
1-Oct-1996	800	1151	2940	1.0021	16	1259	11.8	0.0	2122	519	0	30	7	16	3	22	1297	-9.52	Bailer
1-Oct-1996	1045	1182	1939	1.0018	15	1274	9.3	0.0	1803	310	102	18	5	14	10	15	1194	-4.71	Bailer
1-Oct-1996	1420	1213	1920	1.0018	15	1228	10.3	0.0	1835	433	11	14	8	17	6	26	1126	-5.71	Bailer
1-Oct-1996	1750	1244	1937	1.0017	16	1125	7.7	0.0	1835	269	116	125	3	12	10	33	1199	-2.82	Bailer
2-Oct-1996	1510	1307	2020	1.0017	14	1168	8.0	0.0	1965	349	97	25	5	14	12	19	1271	2.54	Bailer
2-Oct-1996	1710	1339	2190	1.0019	13	1242	7.9	0.0	2149	390	104	73	4	13	11	20	1402	2.41	Discharge
2-Oct-1996	1725	1370	2200	1.0019	13	1293	7.9	0.0	2143	385	108	73	4	13	11	30	1406	2.88	Discharge
3-Oct-1996	1010	1401	2310	1.0020	14	1363	7.7	0.0	2196	410	100	85	4	14	10	23	1436	-1.2	Discharge
3-Oct-1996	1230	1431	2240	1.0020	14	1343	7.9	0.0	2156	394	114	105	3	13	10	30	1453	-0.61	Discharge
8-Oct-1996	1500	1464	2460	1.0026	18	1804	7.7	0.0	2571	510	103	109	3	13	9	71	1698	-7.12	Discharge
9-Oct-1996	800	1484	2280	1.0022	18	1571	7.3	0.0	2309	418	114	51	4	14	10	291	1513	-4.45	Bailer
9-Oct-1996	1000	1525	2400	1.0024	16	1647	7.7	0.0	2419	470	112	107	3	13	10	24	1635	-4.51	Discharge
9-Oct-1996	1305	1556	2430	1.0024	16	1633	7.7	0.0	2062	486	110	109	3	13	10	47	1667	-3.23	Discharge

¹ All concentrations reported in mg/l unless otherwise noted
NA - Not Analyzed

Table 4 Laboratory Analyses of Ground-water Samples Collected During Exploratory Drilling in Evaporite well (12" Steel Casing 0-870' bis)¹

Date (M/D/Y)	Time	Depth (ft bis)	Specific Cond. (umhos)	Water Density	CL	SO ₄	pH	Br	TDS	Ca	Mg	Bicarb as (CaCO ₃)	K	Na	Si	Fe (ug/l)	Total Hardness (CaCO ₃)	ION %	Sample Collection Method
12-Dec-1996	900	1524	2310	1.0022	16	1528	7.5	0.0	2299	469	97	69	4	14	10	61	1570	-2.02	Discharge
12-Dec-1996	1230	1555	2220	1.0021	15	1479	7.9	1.0	2172	479	77	45	4	13	9	31	1513	-1.59	Discharge
12-Dec-1996	1510	1587	2330	1.0023	15	1560	7.6	0.0	2321	481	98	67	3	15	10	25	1609	-1.68	Discharge
16-Dec-1996	1500	1581	2550	1.0024	15	1733	7.3	0.0	2541	451	96	86	3	14	7	1641	1521	-9.89	Bailer
16-Dec-1996	1830	1618	2660	1.0025	16	1760	7.5	0.0	2702	485	95	120	3	13	10	228	1602	9.18	Bailer
17-Dec-1996	1210	1650	2660	1.0026	15	1783	7.3	0.0	2732	493	93	122	2	13	9	1223	1613	-9.42	Bailer
19-Dec-1996	830	1681	2670	1.0026	15	1791	7.3	0.0	2690	495	90	119	2	13	9	2433	1606	-9.69	Bailer
8-Jan-1997	1450	1712	2600	1.0026	16	1736	7.3	0.0	2734	601	91	122	3	13	9	1818	1880	-0.87	Bailer
9-Jan-1997	815	1743	2670	1.0026	15	1755	7.1	0.0	2740	602	91	115	3	12	8	2342	1886	-0.72	Bailer
14-Jan-1997	830	1772	2630	1.0026	14	1755	7.2	0.0	2749	588	92	123	3	13	8	1473	1847	-2.06	Bailer
15-Jan-1997	1410	1806	2276	1.0027	14	1767	7.2	0.0	2767	585	93	123	2	13	8	2276	1869	-1.67	Bailer
16-Jan-1997	800	1837	2700	1.0027	14	1776	7.2	0.0	2826	604	95	123	3	12	8	2505	1899	-1.20	Bailer
16-Jan-1997	1100	1866	2650	1.0026	14	1796	7.3	0.0	2729	583	93	126	3	12	8	65	1864	-1.88	Discharge
16-Jan-1997	1330	1866	2680	1.0027	15	1761	7.2	0.0	2774	596	94	125	3	14	8	579	1875	-1.58	Bailer
27-Jan-1997	1850	1654-1866	2660	1.0023	19	1412	7.9	0.0	2726	579	92	123	3	13	8	161	1825	7.57	Packet

¹ All concentrations reported in mg/l unless otherwise noted

FIGURES

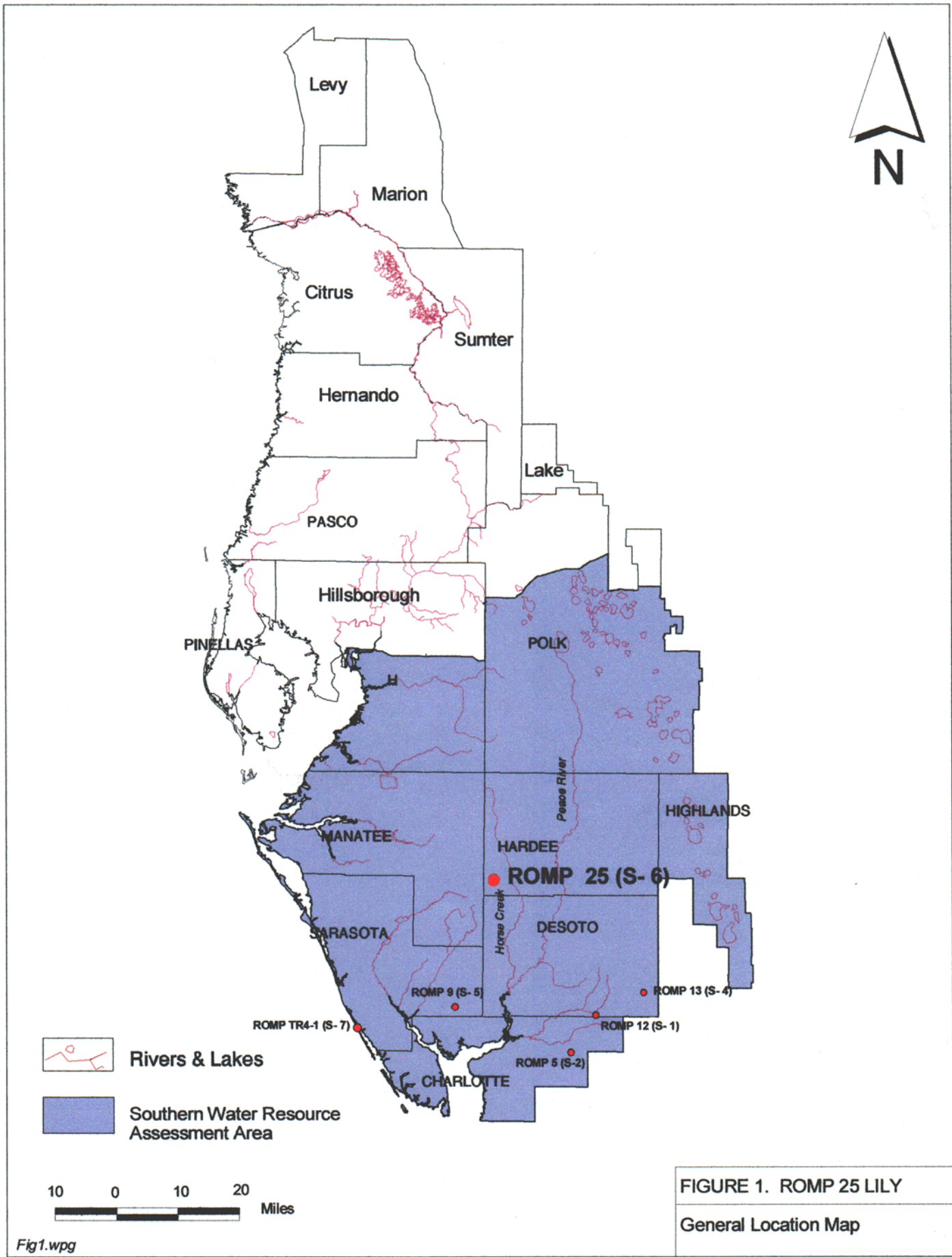
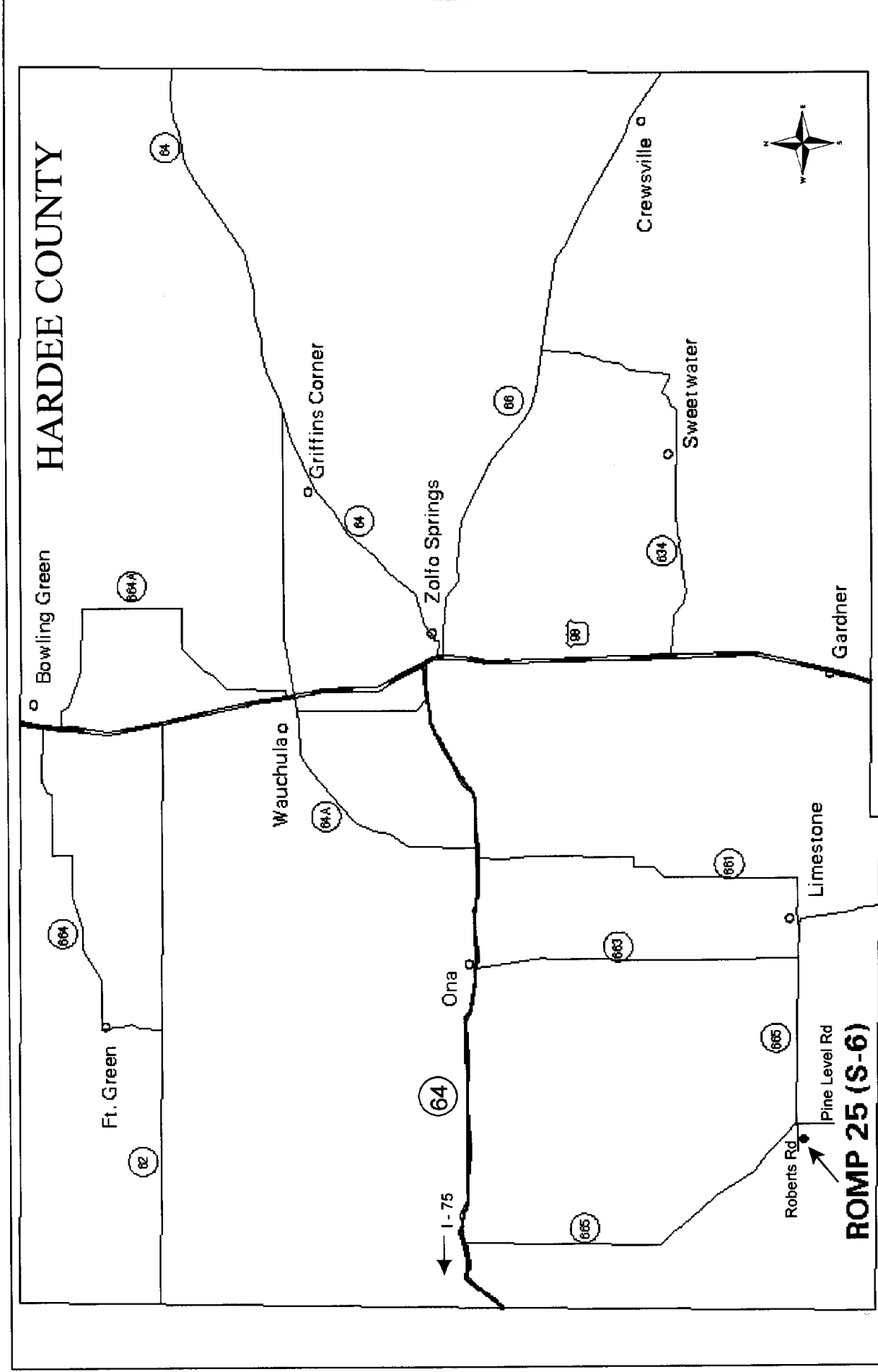


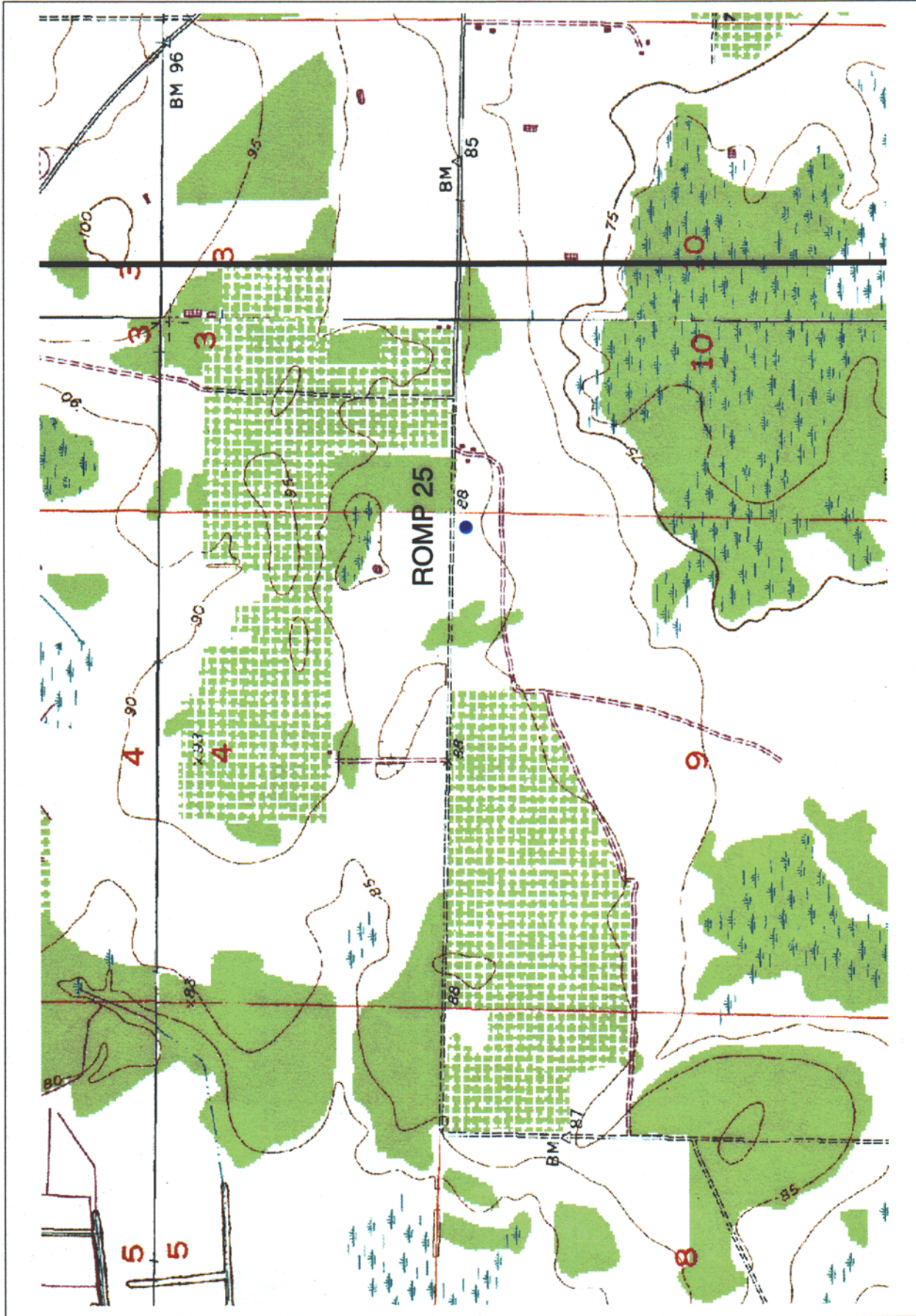
FIGURE 1. ROMP 25 LILY
General Location Map



Miles

FIGURE 2. ROMP 25 LILY

Project Location Map



Hardee County
 Edgeville Quadrangle
 S9 T36S R23E
 Latitude: 27° 21' 59" N
 Longitude: 82° 00' 25.5" W
 Elevation: ~85' NGVD

0.3 0 0.3 0.6 Miles



FIGURE 3. ROMP 25 LILY

Well Site Location Map



GRADED DIRT ROAD
(PRIVATE)

TO CR 675

ROBERTS ROAD

ACCESS EASEMENT

200 Feet

TEMPORARY SATELLITE SITE

Temporary Avon Park OB well

200 Feet

Barbed-wire fence

115 Feet

PERMANENT WELL SITE

120 Feet

200 Feet

TEMPORARY CONSTRUCTION EASEMENT

Temporary Arcadia/Suwannee dual zone OB wells (former core hole)

203 Feet

Barbed-wire fence

115 Feet

6-inch PVC Evaporite well

12-inch PVC Suwannee/UFA well

18-inch steel Avon Park/UFA well

8-inch PVC Arcadia/AS well

4-inch PVC Surficial well (former auger hole)

205 Feet

DRAINAGE DITCH

Well Elevations:

UID

UID	Well Elevations:
WEL 2188 16710	6" Evaporite (Notch =88.482')
WEL 2188 17312	12" Suwannee (Notch =87.623')
WEL 2188 17258	18" Avon Park (Notch=86.804'
WEL 2188 17313	8" Arcadia (Notch=87.305')
WEL 2188 16710	4" Surficial (Notch=88.898')

District Parcel No. 20-20-065

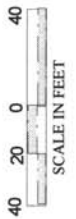


FIGURE 4. ROMP 25 LILY

Monitor Well Site Diagram

Wellsite.wpg

Water Level 51.65' bls
10-13-98

UID # WEL 2188 17258
WCP # 624893.01

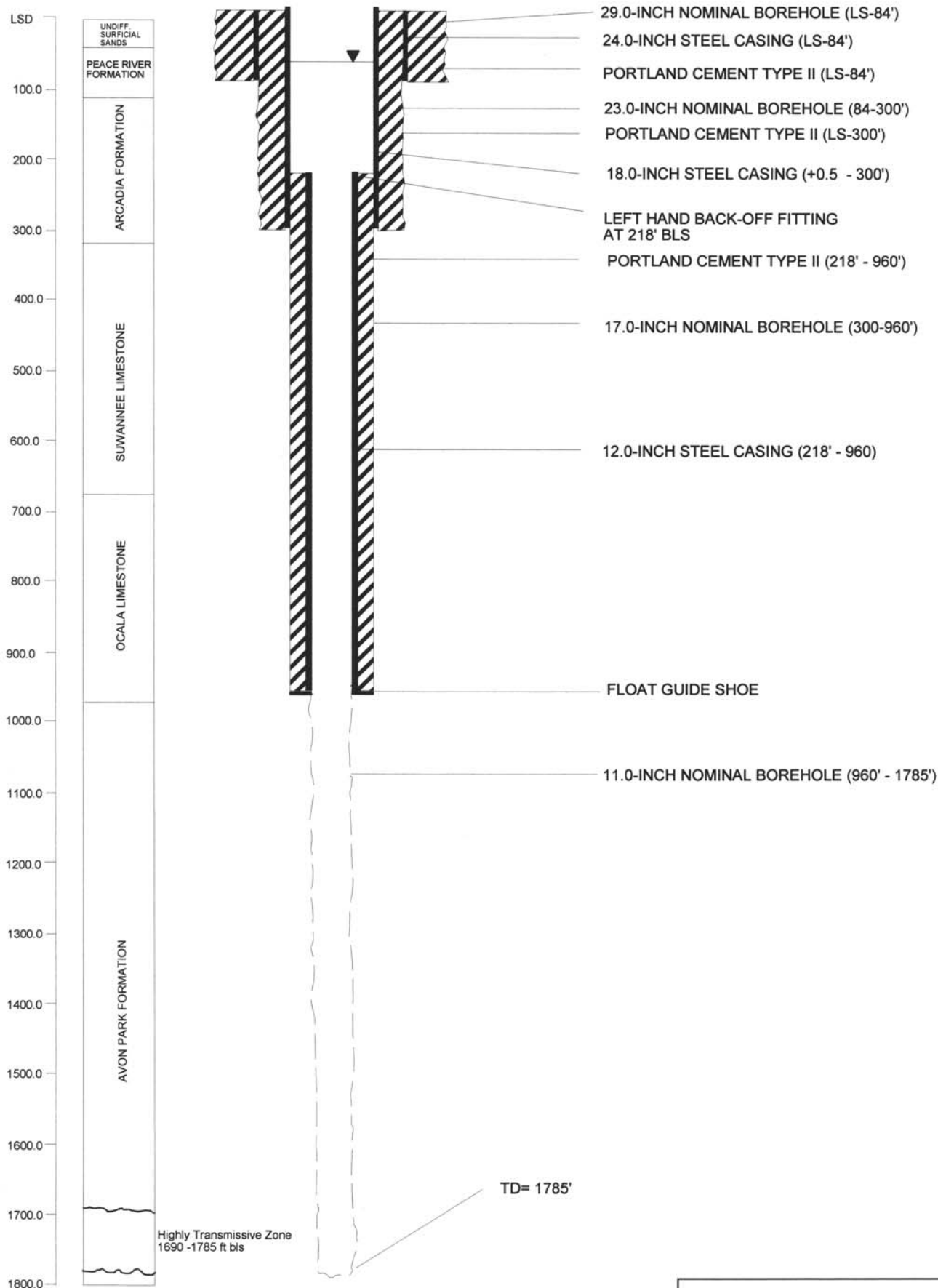


FIGURE 5. ROMP 25 LILY

Avon Park/Upper Floridan Monitor Well
During Exploratory Drilling

WATER LEVEL: 39 FEET BLS
IN MAY 1999

UID # WEL 2188 16870
WCP # 592605.01

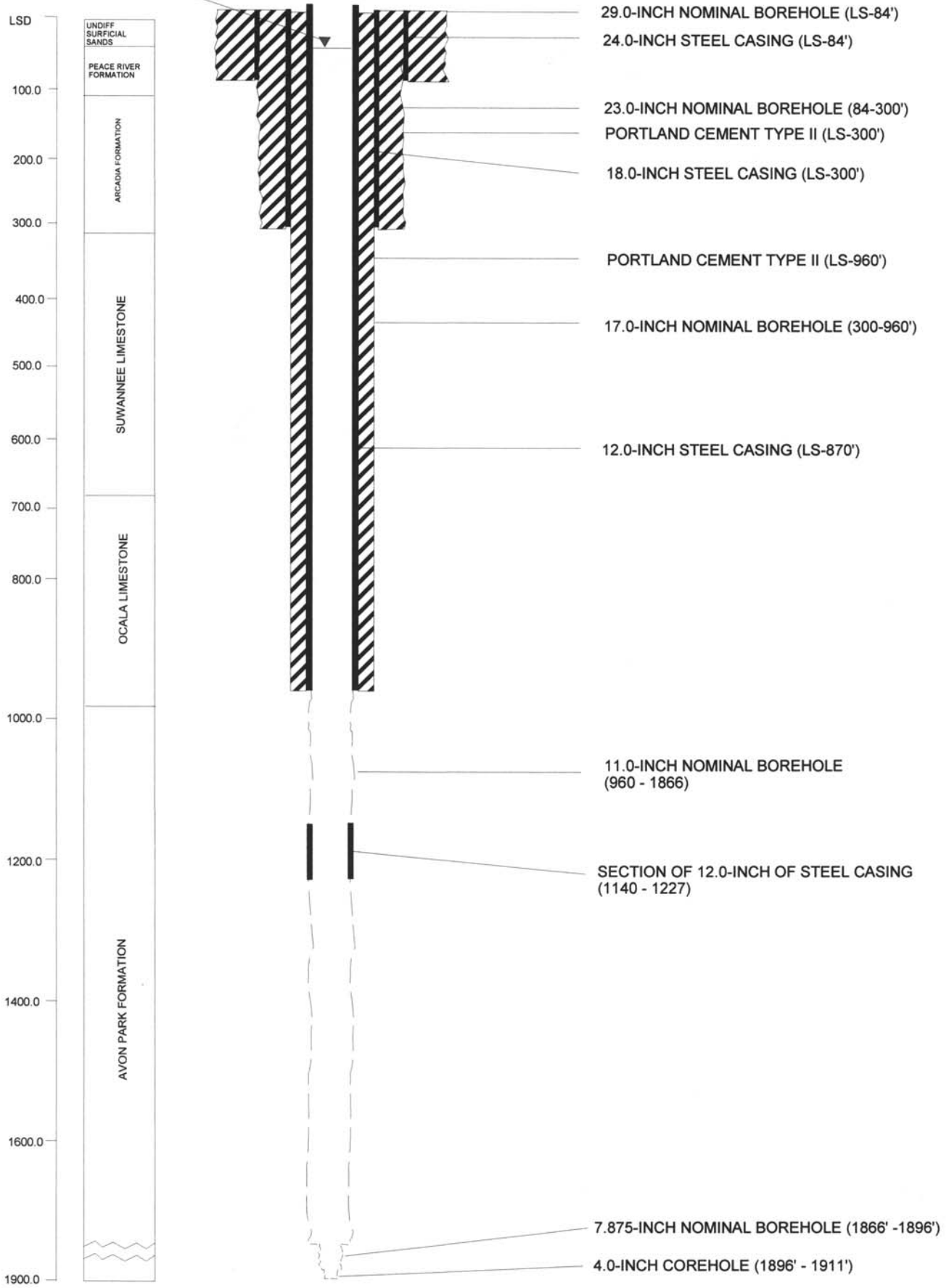


FIGURE 6. ROMP 25 LILY

Evaporite Monitor Well During
Exploratory Drilling

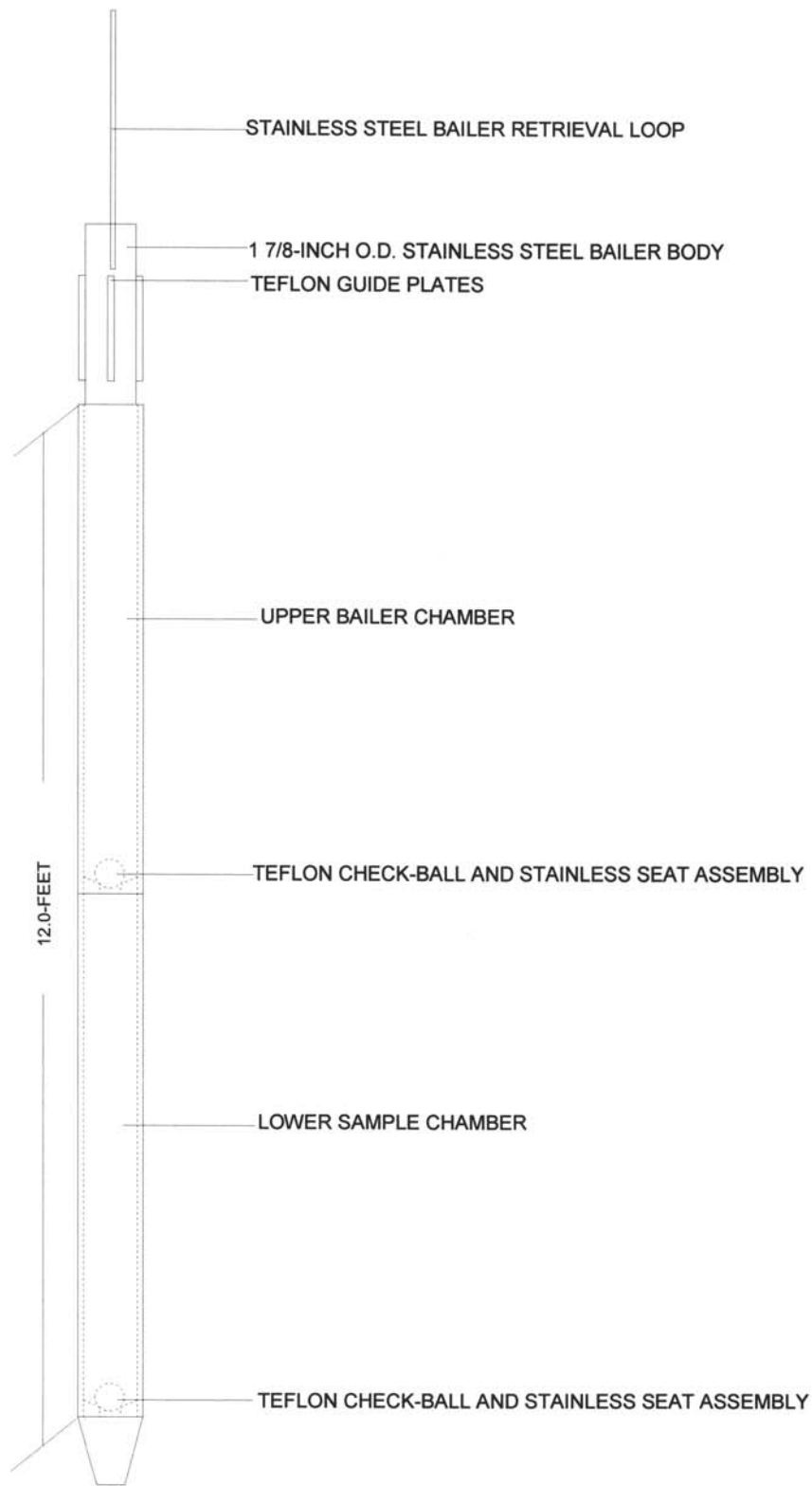


FIGURE 7. ROMP 25 LILY

Wire Line Bailer Diagram

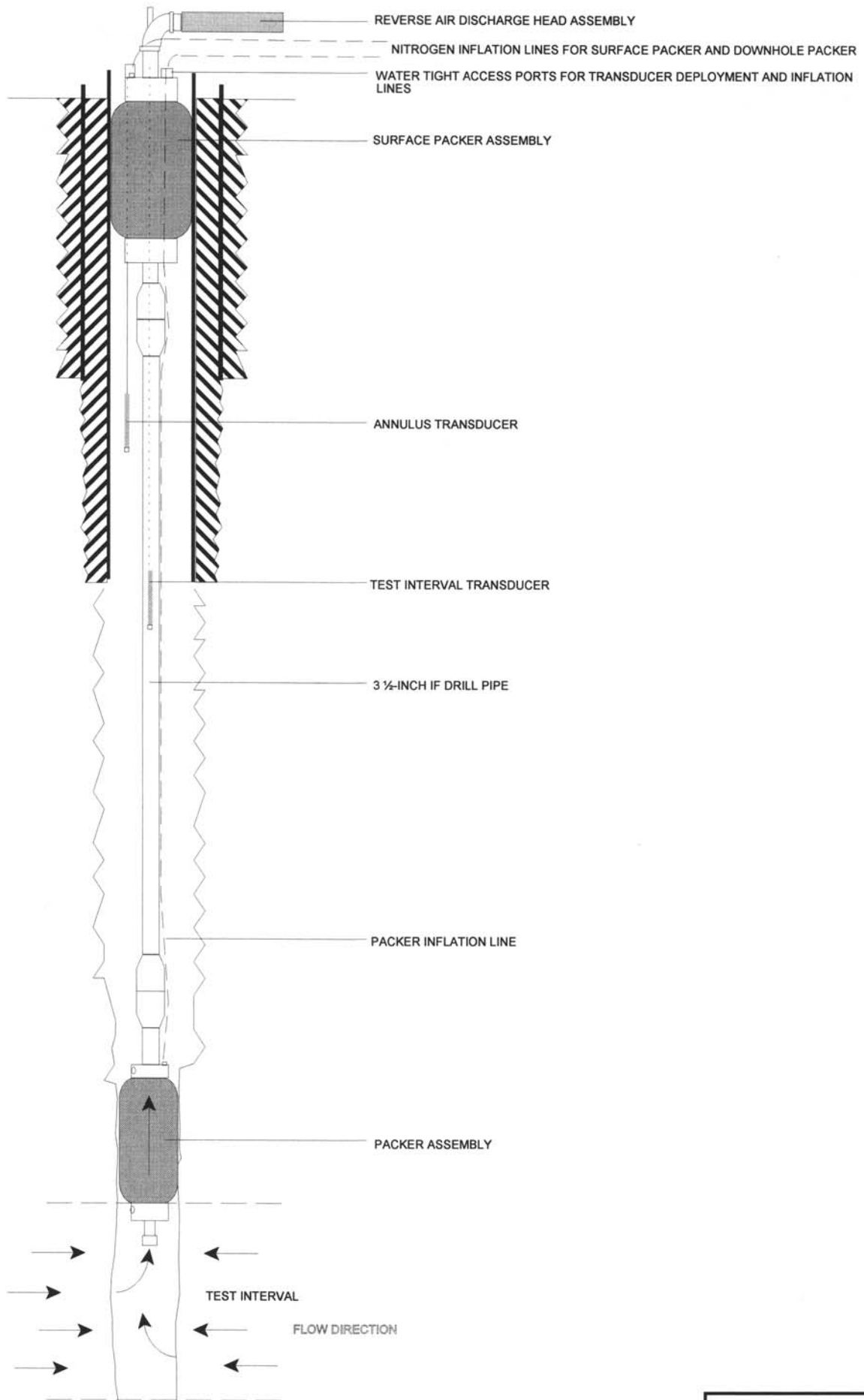


FIGURE 8. ROMP 25 LILY
Off-Bottom Packer

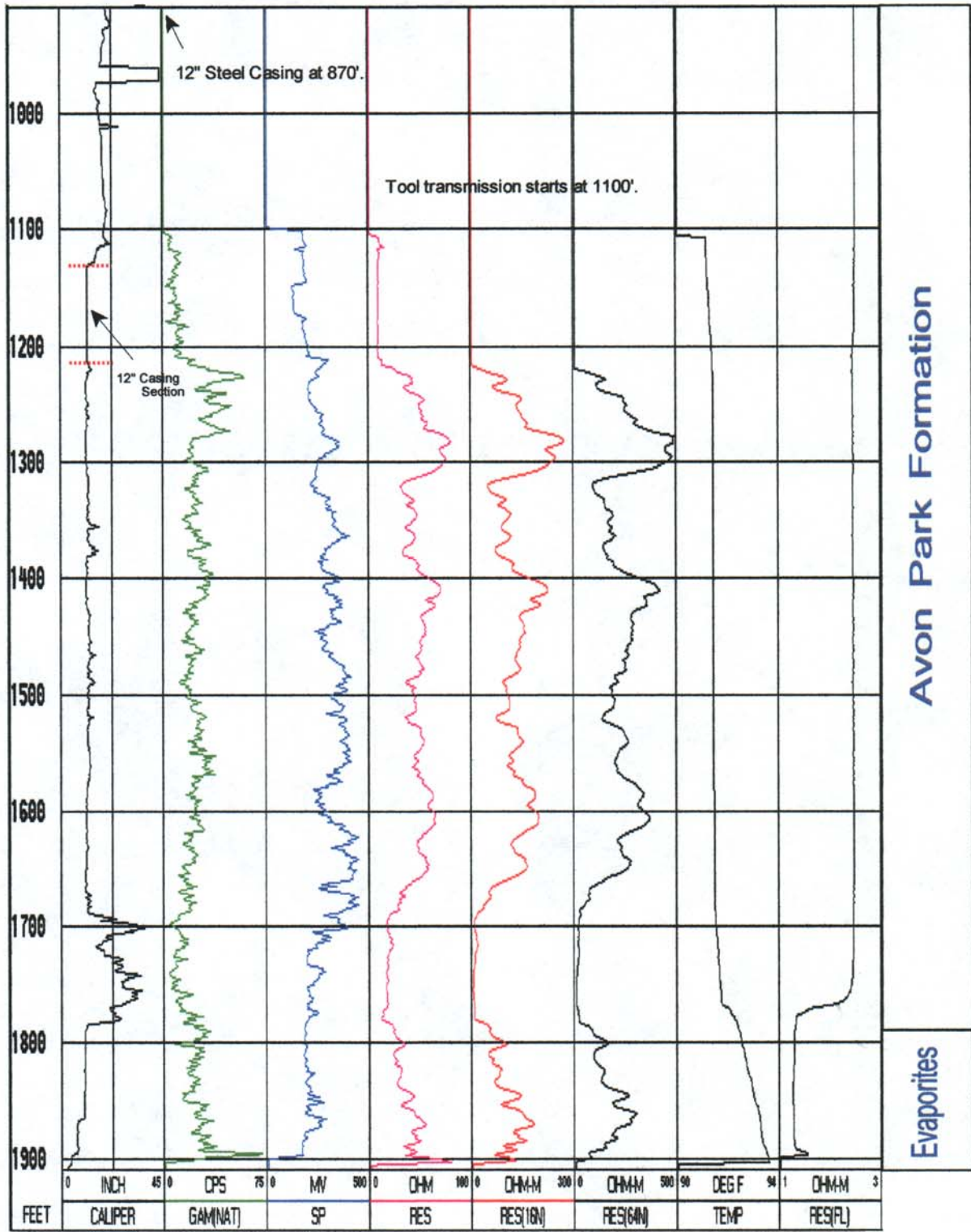
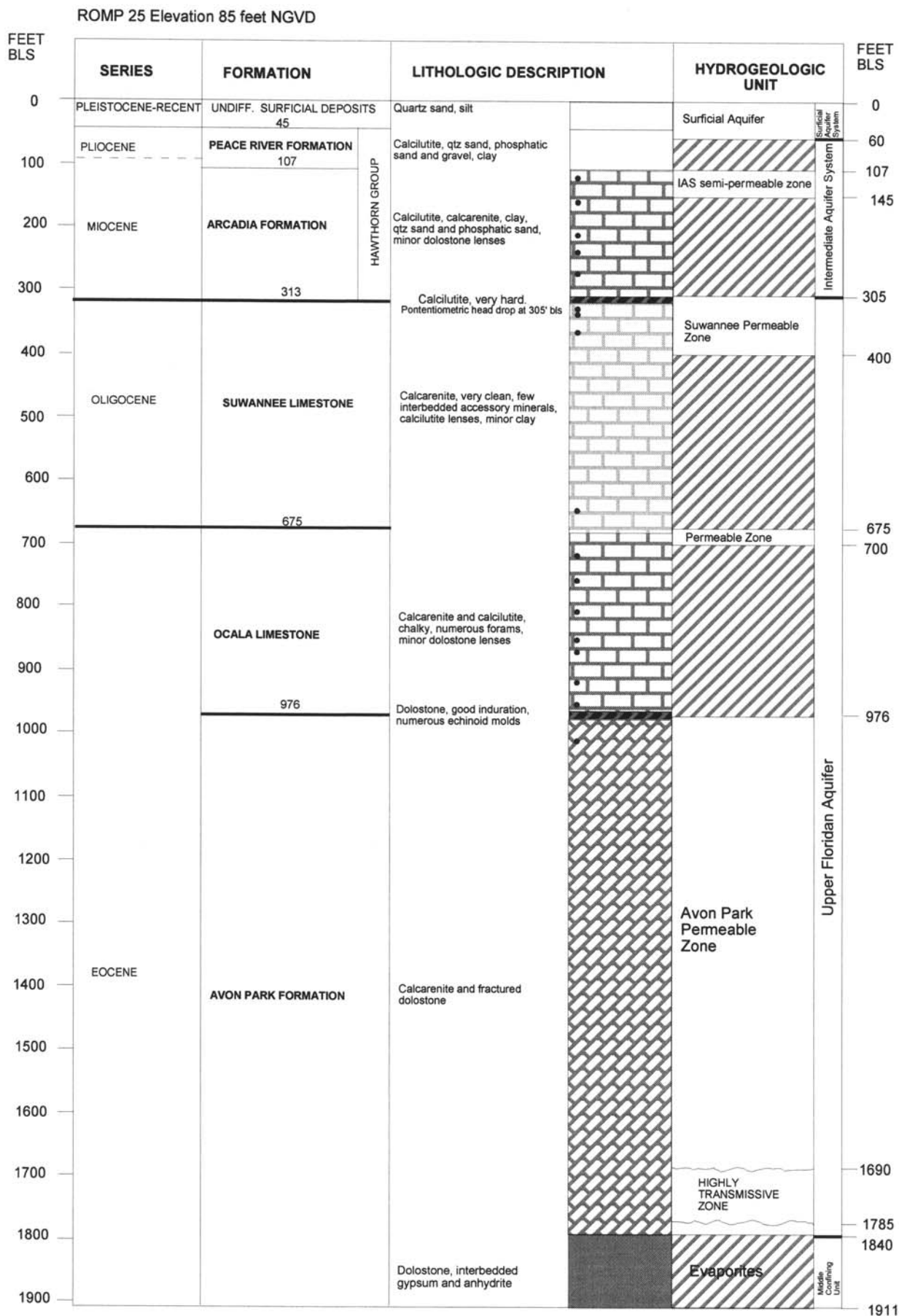


FIGURE 9. ROMP25 LILY
 Geophysical Logs Run
 During Exploratory Drilling

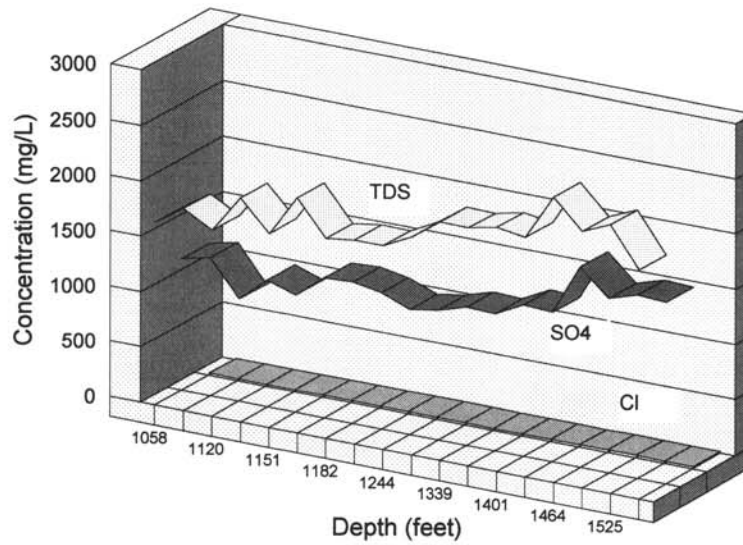


• Permeameter sample locations (collected during coring phase)

FIGURE 10. ROMP 25 LILY

Diagram of Site Hydrogeology

R25 Exploratory Drilling Water Quality Avon Park Well



R25 Exploratory Drilling Water Quality Evaporite Well

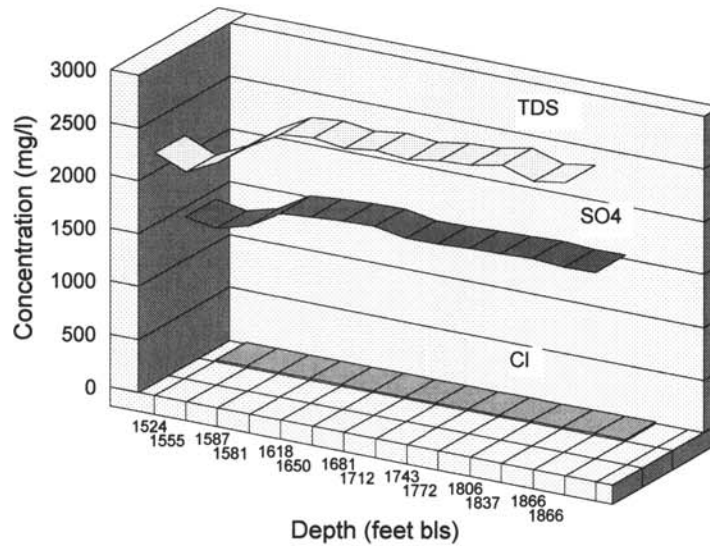


FIGURE 11. ROMP 25 LILY

Graph of Water Quality During
Exploratory Drilling

Latitude: 27 21' 58.95989
Longitude: 82 00' 25.42978
Elevation: 88.898 (notched black mark)

UID # WEL 2188 16710
WCP # 573462.01

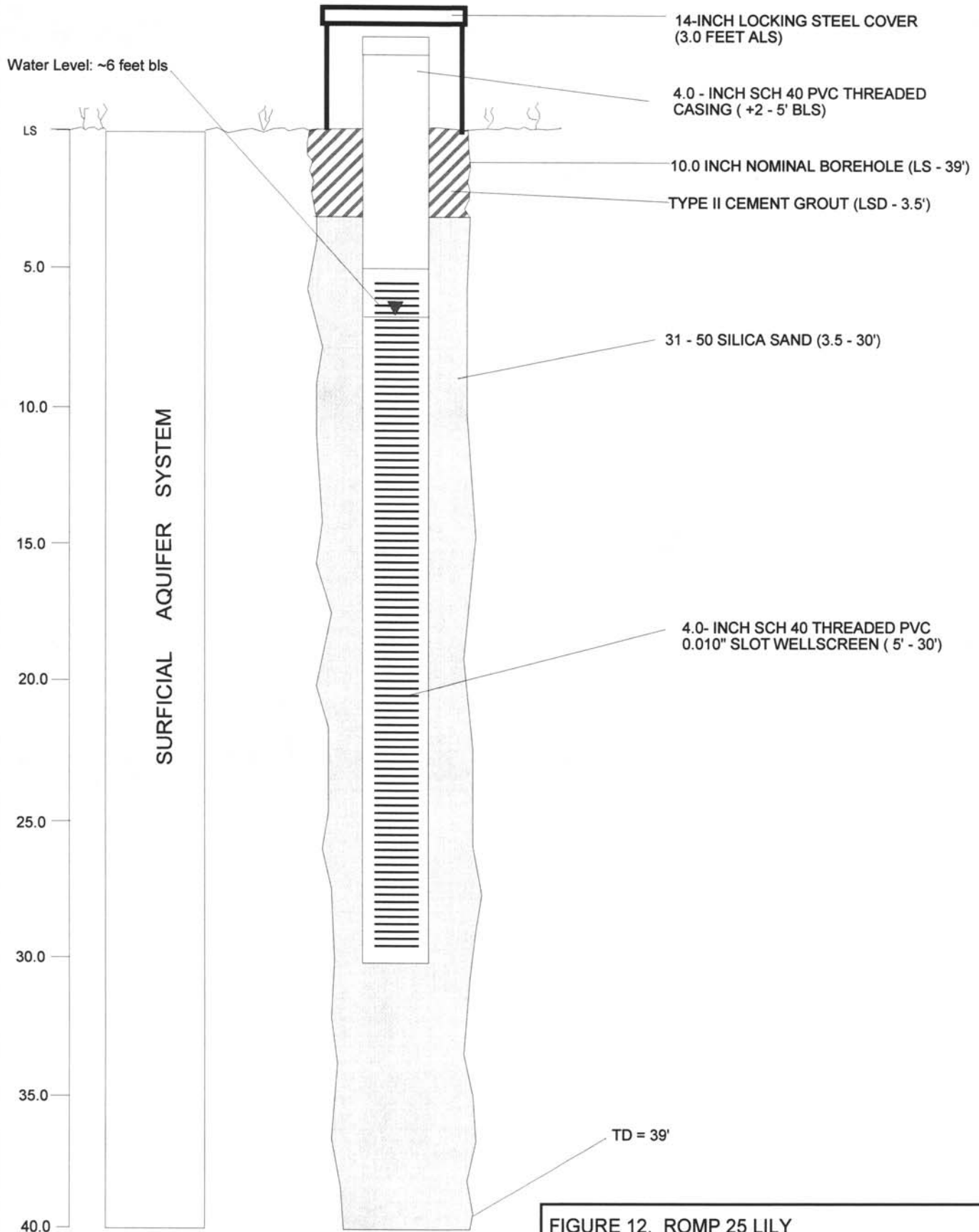


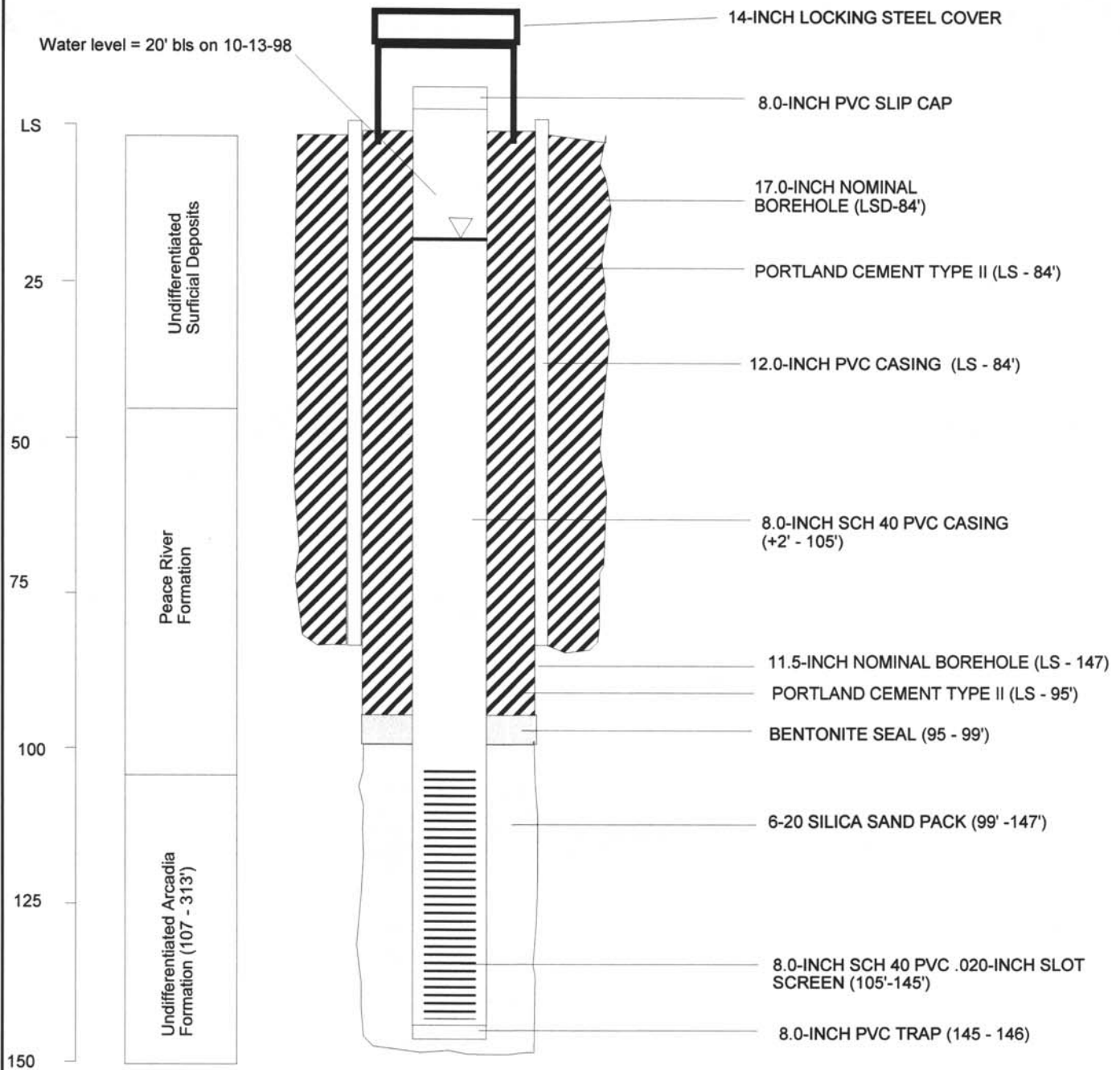
FIGURE 12. ROMP 25 LILY

Diagram of Permanent Surficial Aquifer Monitor Well

Latitude: 27° 21' 59.10846"
Longitude: 82° 00' 25.38807"
Elevation: 87.305' (notched black mark)

NOTE: Well has low specific capacity,
makes less that 5 gpm.

UID # WEL 2188 17313
WCP # 601920.01



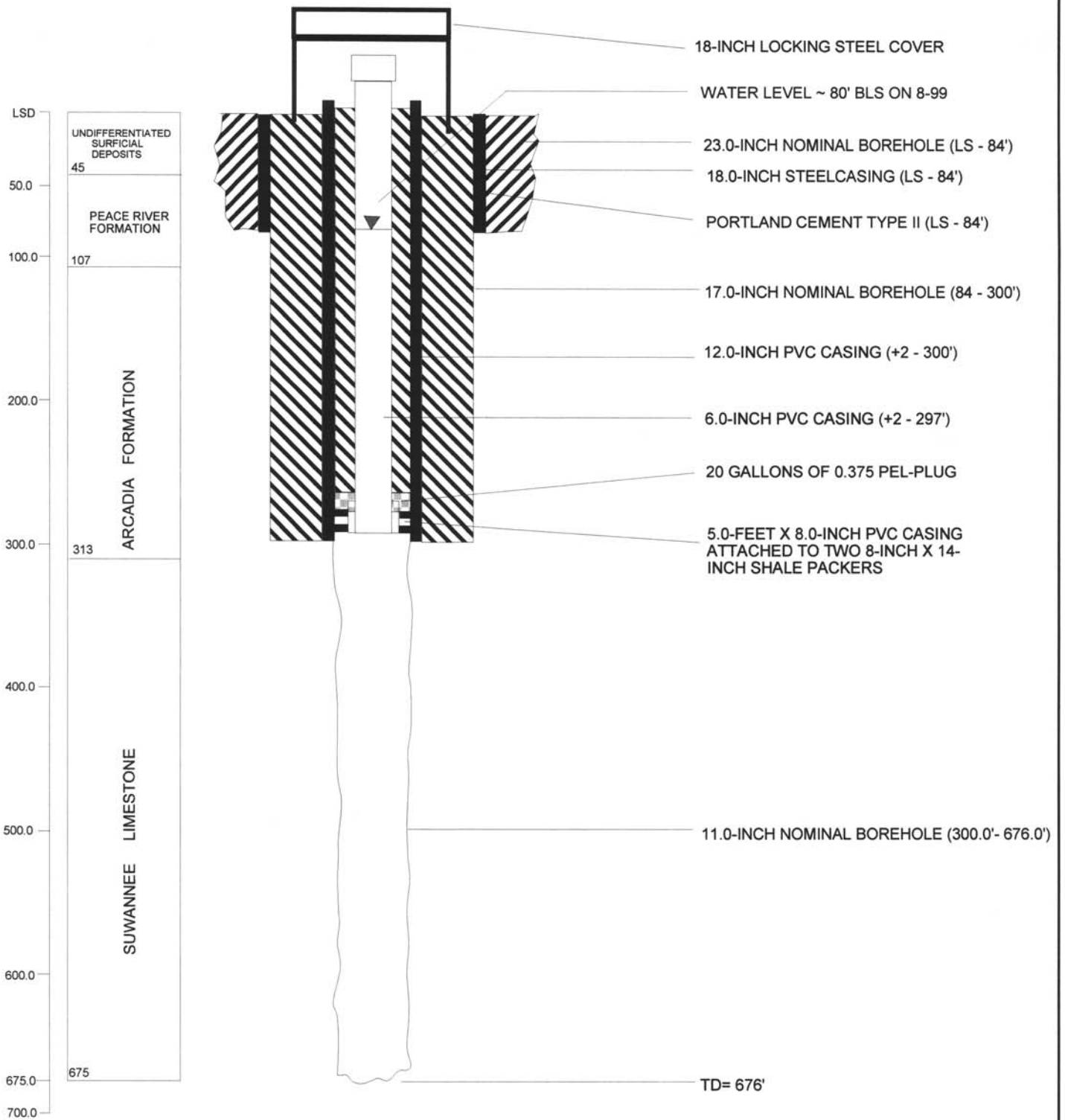
Start: 2-5-98
Completed: 2-11-98

FIGURE 13. ROMP 25 LILY

Diagram of Permanent Arcadia/IAS Monitor Well

Latitude: 27 21' 59.45680"
Longitude: 82 00' 25.42163"
Elevation: 87.623' (Notched black mark)

SWFWMD UID # 17312
SWFWMD WCP # 601705.01

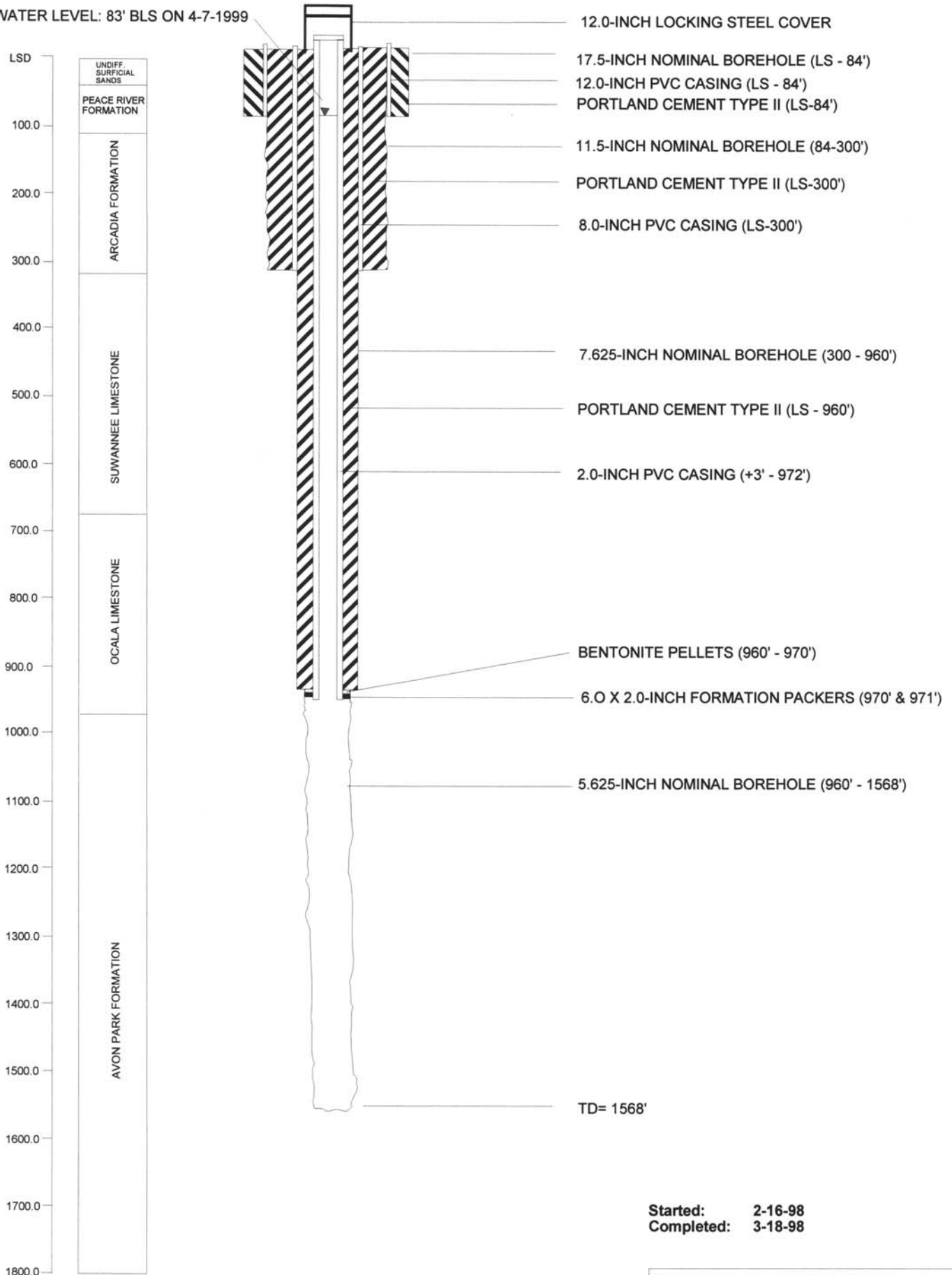


Start: 1-22-98
Completed: 3-9-98
6-inch liner: 8-99

FIGURE 14. ROMP 25 LILY

Diagram of Permanent
Suwannee/UFA Monitor Well

WATER LEVEL: 83' BLS ON 4-7-1999



Started: 2-16-98
Completed: 3-18-98

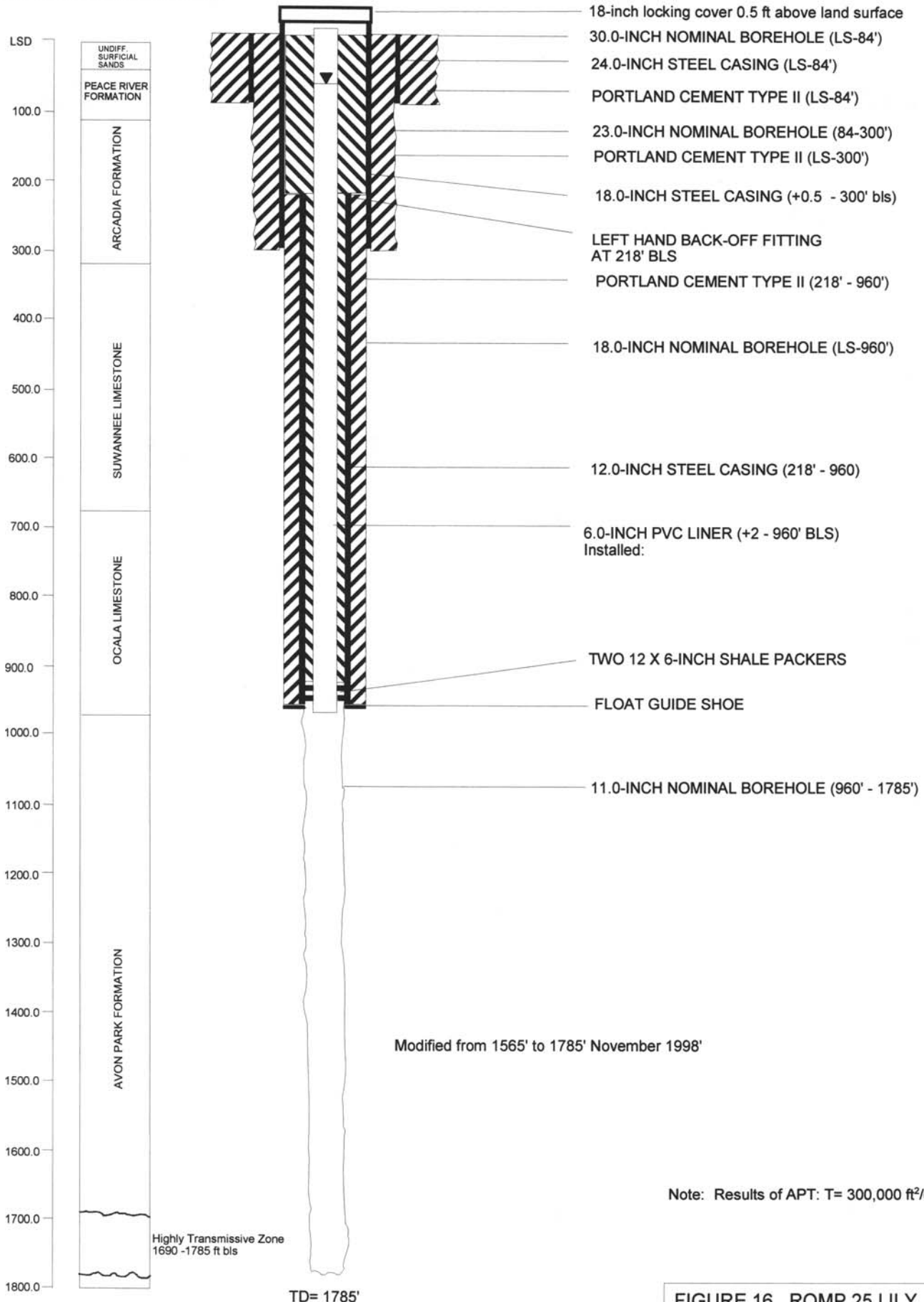
FIGURE 15. ROMP 25 LILY

Diagram of Temporary
Avon Park/UFA Observation Well

Latitude: 27 21' 59.24967"
 Longitude: 82 00' 25.31182"
 Elevation: 86.804' (notched black mark)

Water Level 51.65' bls on 10-13-98

SWFWMD UID# WEL 2188 17258
 SWFWMD WCP# 612441.01



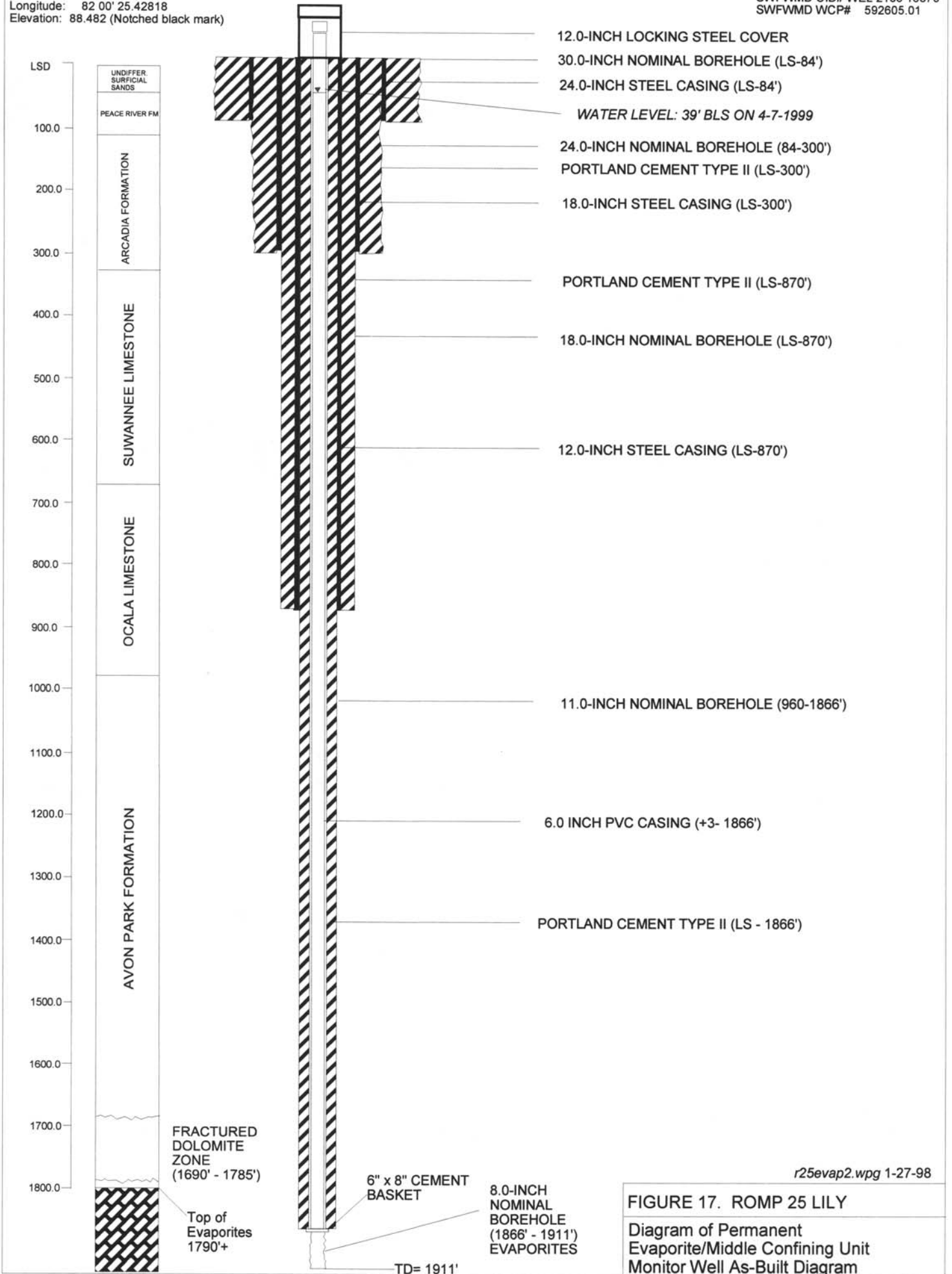
Note: Results of APT: T= 300,000 ft²/day

FIGURE 16. ROMP 25 LILY

Diagram of Permanent Avon Park/UFA Monitor Well (after liner installation)

Latitude: 27 21' 59.64853"
 Longitude: 82 00' 25.42818
 Elevation: 88.482 (Notched black mark)

SWFWMD UID# WEL 2188 16870
 SWFWMD WCP# 592605.01



r25evap2.wpg 1-27-98

FIGURE 17. ROMP 25 LILY

Diagram of Permanent
 Evaporite/Middle Confining Unit
 Monitor Well As-Built Diagram

APPENDIX A
ROMP 25 LITHOLOGIC LOG

LITHOLOGIC WELL LOG PRINTOUT

SOURCE - FGS

WELL NUMBER: W-17608

COUNTY - HARDEE

TOTAL DEPTH: 1911 FT.

LOCATION: T.36S R.23E S.09 NE

SAMPLES - NONE

LAT = 27D 21M 59S

LON = 82D 00M 26S

COMPLETION DATE: 06/19/97

ELEVATION: 85 FT

OTHER TYPES OF LOGS AVAILABLE - CALIPER, ELECTRIC, FLUID COND., GAMMA

OWNER/DRILLER: SWFWMD ROMP 25 DRILLED BY TIM LOHNER AND GEORGE DEGROOT

WORKED BY: DOUG RAPPUHN AND TED GATES (SWFWMD GEOLOGIST'S);

WIRE LINE ROTARY CORING FROM 0 FT. TO 1048 FT. BLS - COREHOLE #1

AVON PARK WELL EXPLORATORY CUTTINGS FROM 1048 FT. TO 1556 FT. BLS

EVAPORITE WELL EXPLORATORY CUTTINGS FROM 1556 FT. TO 1911 FT. BLS

CUTTINGS NOT DESCRIBED BETWEEN 1765 - 1911 FT.

FGS GEOLOGISTS REPORT THAT TOP OF OCALA MAY BE AS DEEP AS 693 FT. BLS

0.0	-	45.0	090UDSC	UNDIFFERENTIATED SAND AND CLAY
45.0	-	107.0	122PCRV	PEACE RIVER FM.
107.0	-	313.0	122ARCA	ARCADIA FM.
313.0	-	675.0	123SWNN	SUWANNEE LIMESTONE
675.0	-	976.0	124OCAL	OCALA GROUP
976.0	-	1911.0	124AVPK	AVON PARK FM.
0	-	0.6		SAND AND SHELL DRILLPAD.
0.6-		1.6		SAND; GRAYISH BROWN TO DARK YELLOWISH BROWN 35% POROSITY: INTERGRANULAR GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO MEDIUM ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; HIGH SPHERICITY UNCONSOLIDATED ACCESSORY MINERALS: ORGANICS-08%, IRON STAIN-02% OTHER FEATURES: VARIEGATED CONTAINS ROOTLETS AND ORGANICS. VARIABLY IRON-STAINED.
1.6-		2		SAND; WHITE TO VERY LIGHT ORANGE 40% POROSITY: INTERGRANULAR GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO MEDIUM ROUNDNESS: SUB-ROUNDED TO SUB-ANGULAR; MEDIUM SPHERICITY UNCONSOLIDATED OTHER FEATURES: SUCROSIC VERY CLEAN, MODERATELY WELL-SORTED QUARTZ SAND. WATER TABLE AT 2FT. BLS.
2	-	4		NO SAMPLES WET SAND, DROPPED OUT OF AUGERS.
4	-	11.4		SAND; GRAYISH BROWN TO DARK BROWN 30% POROSITY: INTERGRANULAR GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; MEDIUM SPHERICITY UNCONSOLIDATED ACCESSORY MINERALS: ORGANICS-14%, SILT-04%, IRON STAIN-02% BED AT 10.8 - 11.4 CONTAINS 6-8% IRON AND IS SLIGHTLY CEMENTED.
11.4-		14		SAND; MODERATE BROWN TO GRAYISH BROWN 35% POROSITY: INTERGRANULAR GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; MEDIUM SPHERICITY UNCONSOLIDATED ACCESSORY MINERALS: SILT-08%, IRON STAIN-03%
14	-	17		SAND; DARK BROWN TO DARK YELLOWISH BROWN 35% POROSITY: INTERGRANULAR GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY POOR INDURATION CEMENT TYPE(S): IRON CEMENT ACCESSORY MINERALS: SILT-08%, IRON STAIN-04%

- 17 - 25 SAND; MODERATE BROWN TO MODERATE BROWN
40% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; MEDIUM SPHERICITY
UNCONSOLIDATED
ACCESSORY MINERALS: SILT-05%, IRON STAIN-02%
- 25 - 30 SAND; DARK BROWN TO BLACK
40% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
ROUNDNESS: SUB-ROUNDED TO SUB-ANGULAR; MEDIUM SPHERICITY
UNCONSOLIDATED
ACCESSORY MINERALS: IRON STAIN-06%, SILT-04%
ALTHOUGH GENERALLY IRON-STAINED, UNIT CONTAINS 10-15%
COARSE, ROUNDED, UNSTAINED QUARTZ SAND.
- 30 - 35 SAND; GRAYISH BROWN TO LIGHT BROWN
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; MEDIUM SPHERICITY
UNCONSOLIDATED
ACCESSORY MINERALS: SILT-04%, IRON STAIN-02%
LIKELY CONTAINS INTERBEDDED MEDIUM-COARSE ROUNDED QUARTZ
SAND AND SLIGHTLY IRON-CEMENTED VERY FINE TO MEDIUM QUARTZ
SAND.
- 35 - 37 SAND; GRAYISH BROWN TO GRAYISH BROWN
45% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY
UNCONSOLIDATED
ACCESSORY MINERALS: IRON STAIN-03%, SILT-02%
GENERALLY CLEAR QUARTZ SAND WITH INTERBEDS OF IRON-CEMENTED
VERY FINE QUARTZ SAND.
- 37 - 40 SAND; VERY LIGHT ORANGE TO GRAYISH BROWN
40% POROSITY: INTERGRANULAR
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; MEDIUM SPHERICITY
ACCESSORY MINERALS: SILT-06%, IRON STAIN-01%
AUGER BLADE SAMPLE FROM 39 FT. CONTAINED 10% WHITE SILT
(NONCALCAREOUS). CONTAINS SOME IRON-CEMENTED GRAINS.
- 40 - 45 SAND; LIGHT GRAY TO GRAYISH ORANGE PINK
40% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ROUNDED TO SUB-ANGULAR; MEDIUM SPHERICITY
UNCONSOLIDATED
ACCESSORY MINERALS: LIMESTONE-01%, IRON STAIN-01%
FOSSILS: MOLLUSKS, CRUSTACEA, SHARKS TEETH
CLEAN WELL-SORTED SAND WITH (REWORKED?) CRAB SHELL
FRAGMENT, SHARK TOOTH AND OPERCULUM. TRACE ROUNDED
LIMESTONE FRAGMENTS. BASE OF UNDIFFERENTIATED SURFICIAL
DEPOSITS.
- 45 - 47 SAND; LIGHT GRAY TO GRAYISH ORANGE PINK
40% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; MEDIUM SPHERICITY
UNCONSOLIDATED
ACCESSORY MINERALS: LIMESTONE-09%, PHOSPHATIC SAND-01%
FOSSILS: SHARKS TEETH
CONTAINS INCREASED PERCENT OF ROUNDED LIMESTONE FRAGMENTS
AND A SMALL PERCENT OF LEACHED ROUNDED PHOSPHATIC SAND. TOP
OF HAWTHORN DEPOSITS.
- 47 - 51 SAND; MODERATE GRAY
45% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; MEDIUM SPHERICITY
UNCONSOLIDATED
CEMENT TYPE(S): IRON CEMENT
ACCESSORY MINERALS: LIMESTONE-35%, PHOSPHATIC SAND-06%

OTHER FEATURES: SPECKLED
FOSSILS: WORM TRACES, FOSSIL FRAGMENTS
QUARTZ SAND WITH SUBSTANTIAL PERCENT OF WORN LIMESTONE
FRAGMENTS AND INTERBEDDED CALCILUTITE. PHOSPHATE IS BOTH
LEACHED AND UNLEACHED.

- 51 - 55 SAND; DARK GRAY TO LIGHT GRAY
45% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: COARSE; RANGE: FINE TO VERY COARSE
ROUNDNESS: ROUNDED TO SUB-ROUNDED; HIGH SPHERICITY
UNCONSOLIDATED
ACCESSORY MINERALS: PHOSPHATIC SAND-35%, CALCILUTITE-04%
LIMESTONE-02%
OTHER FEATURES: SPECKLED
FOSSILS: SHARKS TEETH
COARSE, WELL-ROUNDED PHOSPHATE-RICH QUARTZ SAND.
CALCILUTITE TRACES MAY PROVIDE SLIGHT INSITU CEMENTING OF
UNIT. BOTTOM OF SURFICIAL AQUIFER SYSTEM.
- 55 - 60 CALCILUTITE; DARK GRAY TO LIGHT GRAY
18% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE, BIOGENIC
05% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: PHOSPHATIC SAND-25%, QUARTZ SAND-20%
DOLOMITE-02%
OTHER FEATURES: SPECKLED
FOSSILS: MOLLUSKS
UPPERMOST CARBONATE. RICH IN ROUNDED QUARTZ, PHOSPHATIC
SANDS. TOP OF INTERMEDIATE AQUIFER SYSTEM.
- 60 - 65 PHOSPHATE; DARK GRAY TO LIGHT GRAY
POROSITY: INTERGRANULAR; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-25%, QUARTZ SAND-06%
A CONCENTRATION OF ROUNDED PHOSPHATE GRANULES (4MM) WITH
LESSER CALCILUTITE MATRIX.
- 65 - 70 CALCILUTITE; MODERATE DARK GRAY
14% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE; 05% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-25%, PHOSPHATIC GRAVEL-15%
PHOSPHATIC SAND-05%, QUARTZ SAND-03%
OTHER FEATURES: SPECKLED
CLAYEY CALCILUTITE WITH MUCH PHOSPHATIC SAND.
- 70 - 77 CALCILUTITE; OLIVE GRAY TO DARK GRAY
POROSITY: LOW PERMEABILITY, INTERGRANULAR
GRAIN TYPE: CALCILUTITE; 05% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-40%, PHOSPHATIC SAND-04%
QUARTZ SAND-02%
VERY CLAYEY CALCILUTITE. CLAY IS DISSEMINATED AND AS
STREAKS.
- 77 - 82 CLAY; LIGHT OLIVE GRAY
POROSITY: LOW PERMEABILITY; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
ACCESSORY MINERALS: CALCILUTITE-15%, QUARTZ SAND-08%
PHOSPHATIC SAND-03%
OTHER FEATURES: PARTINGS

VARIABLY CALCAREOUS CLAY CONTAINING SAND STRINGERS AND
BURROW FILL.

- 82 - 85 CALCILUTITE; LIGHT OLIVE GRAY TO LIGHT GRAY
16% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE, BIOGENIC
15% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-07%, PHOSPHATIC SAND-03%
- 85 - 91 CALCILUTITE; YELLOWISH GRAY TO VERY LIGHT GRAY
14% POROSITY: INTERGRANULAR, MOLDIC
GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELTAL CAST
35% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED, MOTTLED
ACCESSORY MINERALS: CLAY-20%, PHOSPHATIC SAND-10%
QUARTZ SAND-03%, PHOSPHATIC GRAVEL-01%
OTHER FEATURES: SPECKLED, PARTINGS
MEDIUM RECRYSTALLIZATION
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS
UNIT GRADES SOFTER WITH DEPTH. VARIABLY PHOSPHATIC. CLAY IS
IN STREAKS, BLEBS, AND DISSEMINATED. A FEW 1-2 CM PHOSPHATE
CLASTS. CONTAINS HARDER ALTERED OR DOLOMITIC INCLUSIONS.
- 91 - 93 CALCILUTITE; LIGHT OLIVE TO YELLOWISH GRAY
POROSITY: NOT OBSERVED, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE; 05% ALLOCHEMICAL CONSTITUENTS
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MOTTLED
ACCESSORY MINERALS: CLAY-35%, PHOSPHATIC SAND-14%
QUARTZ SAND-01%
OTHER FEATURES: SPECKLED, MEDIUM RECRYSTALLIZATION
PARTINGS, GRANULAR
SOFT VERY CLAYEY PHOSPHATIC CALCILUTITE.
- 93 - 96.5 NO SAMPLES
PROBABLY PHOSPHATIC AND QUARTZ SAND (POORLY CONSOLIDATED).
- 96.5- 101.3 CLAY; DARK GREENISH GRAY
POROSITY: NOT OBSERVED, LOW PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: STREAKED
ACCESSORY MINERALS: CALCILUTITE-07%, PHOSPHATIC SAND-07%
QUARTZ SAND-02%
OTHER FEATURES: PARTINGS
UPPER 1-5 FT. CONTAINS THIN INTERBEDS OF SOMEWHAT
CALCAREOUS PHOSPHATIC SANDY OLIVE CLAY. 98 - 101.3 FT IS
PURE DARK GREEN CLAY.
- 101.3- 103 CALCILUTITE; YELLOWISH GRAY
14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE; 05% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: NODULAR, MOTTLED
ACCESSORY MINERALS: CLAY-40%, PHOSPHATIC SAND-08%
QUARTZ SAND-02%
OTHER FEATURES: VARIEGATED, MEDIUM RECRYSTALLIZATION
VERY CLAYEY PHOSPHATIC CALCILUTITE. CLAY IS DISSEMINATED IN
MATRIX AND ALSO AS INFILL AROUND ROUNDED CLASTS OF
PHOSPHATIC CALCILUTITE.
- 103 - 107 CALCILUTITE; YELLOWISH GRAY
12% POROSITY: INTERGRANULAR, LOW PERMEABILITY

- GRAIN TYPE: CALCILUTITE; 10% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 ACCESSORY MINERALS: CLAY-30%, PHOSPHATIC SAND-10%
 QUARTZ SAND-02%
 OTHER FEATURES: MUDDY
 FOSSILS: MOLLUSKS
 SEMI-SOFT PHOSPHATIC CLAYEY CALCILUTITE WITH MINOR
 LIMESTONE STRINGERS AND BIVALVE CASTS. A RESIDUUM? UNIT
 RUBBELIZED ON CORING. BOTTOM OF PEACE RIVER FORMATION.
- 107 - 113.2 CALCILUTITE; VERY LIGHT GRAY TO LIGHT GRAY
 16% POROSITY: MOLDIC, INTERGRANULAR
 GRAIN TYPE: CALCILUTITE, BIOGENIC
 30% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: PHOSPHATIC SAND-12%, CLAY-08%
 QUARTZ SAND-04%
 OTHER FEATURES: PARTINGS
 FOSSILS: FOSSIL MOLDS, MOLLUSKS, CORAL
 TOP OF A VERTICALLY PERSISTENT LIMESTONE SECTION WITH LOWER
 PERCENT OF CLAY. TOP 1 FT. OF UNIT SHOWS INFILL OF QUARTZ
 AND PHOSPHATIC SAND (IN DESICCATION CRACKS?). THIN, MUDDY
 LENSES 108 - 110 FT. MORE VERY FINE PHOSPHATE 111 - 113 FT.
 AND SMALL MOLDS 111 - 113 FT.
- 113.2- 115 CALCILUTITE; LIGHT GRAY TO MODERATE LIGHT GRAY
 18% POROSITY: MOLDIC, INTERGRANULAR
 GRAIN TYPE: CALCILUTITE, BIOGENIC
 30% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: MOTTLED
 ACCESSORY MINERALS: PHOSPHATIC SAND-10%, QUARTZ SAND-04%
 OTHER FEATURES: VARIEGATED, SPECKLED, POOR SAMPLE
 FOSSILS: FOSSIL MOLDS, MOLLUSKS
 VARIEGATED DARK AND LIGHT GRAY. DARKER SECTIONS ARE HARDER
 AND MAY BE DOLOMITIC. STARFISH ARM MOLD AT 113.9 FT.
- 115 - 115.5 CHERT; MODERATE DARK GRAY
 POROSITY: NOT OBSERVED; GOOD INDURATION
 CEMENT TYPE(S): SILICIC CEMENT
 OTHER FEATURES: GRANULAR
 FOSSILS: FOSSIL FRAGMENTS
- 115.5- 118 CALCILUTITE; VERY LIGHT GRAY TO LIGHT GRAY
 14% POROSITY: INTERGRANULAR, MOLDIC
 GRAIN TYPE: CALCILUTITE, BIOGENIC
 25% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: MOTTLED, STREAKED
 ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC SAND-05%
 PHOSPHATIC GRAVEL-01%
 OTHER FEATURES: VARIEGATED
 FOSSILS: FOSSIL MOLDS, MOLLUSKS
 CONTAINS SOFT CLAYEY STREAKS AND INFILLED BURROWS.
- 118 - 123.1 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT GRAY
 16% POROSITY: INTERGRANULAR
 GRAIN TYPE: CALCILUTITE, BIOGENIC
 55% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
 GOOD INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: PHOSPHATIC SAND-07%, QUARTZ SAND-02%

OTHER FEATURES: CHALKY, SPECKLED

- 123.1- 125.5 CALCILUTITE; LIGHT GRAY
08% POROSITY: PIN POINT VUGS, VUGULAR
GRAIN TYPE: CALCILUTITE; 01% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
ACCESSORY MINERALS: PHOSPHATIC GRAVEL-02%
PHOSPHATIC SAND-01%, DOLOMITE- %
OTHER FEATURES: CHALKY, LOW RECRYSTALLIZATION
FOSSILS: MOLLUSKS
VERY HARD, FEATURELESS. DOLOMITIC?
- 125.5- 128.5 CALCILUTITE; MODERATE LIGHT GRAY TO VERY LIGHT GRAY
14% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE; 10% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-25%, PHOSPHATIC SAND-10%
OTHER FEATURES: GRANULAR, SPECKLED, PARTINGS
- 128.5- 133.2 CALCILUTITE; YELLOWISH GRAY TO VERY LIGHT GRAY
16% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE, BIOGENIC
05% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-06%, PHOSPHATIC SAND-05%
OTHER FEATURES: CHALKY, SPECKLED
FOSSILS: CORAL, FOSSIL FRAGMENTS
- 133.2- 138.2 CALCILUTITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
14% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE; 05% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-25%, QUARTZ SAND-12%
PHOSPHATIC SAND-08%
OTHER FEATURES: SPECKLED, PARTINGS, CHALKY
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS
CLAYEY CALCILUTITE IRREGULARLY BEDDED WITH OR INFILLED
AROUND QUARTZ - PHOSPHATIC SANDY CALCILUTITE.
- 138.2- 143 CALCILUTITE; LIGHT OLIVE GRAY TO GRAYISH GREEN
10% POROSITY: LOW PERMEABILITY, INTERGRANULAR
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-30%, QUARTZ SAND-12%
PHOSPHATIC SAND-08%
OTHER FEATURES: SPECKLED, PARTINGS
CONTAINS SOME SOFTER BEDS.
- 143 - 160 CALCILUTITE; LIGHT OLIVE GRAY TO LIGHT GRAY
12% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: MOTTLED
ACCESSORY MINERALS: CLAY-25%, QUARTZ SAND-20%
PHOSPHATIC SAND-05%
UNIT BECOMES SLIGHTLY LESS CALCAREOUS AND MORE CLAYEY AND

QUARTZ SANDY BELOW 150 FT. CHERT INCLUSION AT 151.8 FT.

- 160 - 163 CLAY; LIGHT OLIVE GRAY TO DARK GREENISH GRAY
10% POROSITY: LOW PERMEABILITY, INTERGRANULAR
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-30%, QUARTZ SAND-15%
PHOSPHATIC SAND-10%, PHOSPHATIC GRAVEL-02%
OTHER FEATURES: SPECKLED
IRREGULARLY BEDDED OR INFILLED OLIVE CLAY AND CLAYEY
QUARTZ-PHOSPHATE SANDY CALCILUTITE. RUBBLY.
- 163 - 168.2 CALCILUTITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
12% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE; 10% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-20%, CHERT-06%
PHOSPHATIC SAND-06%, QUARTZ SAND-02%
OTHER FEATURES: CHALKY
DISSEMINATED AND INTERBEDDED CLAY FACTION. CHERT AS
INCLUSIONS AT 163 FT. AND 164.5 FT.
- 168.2- 175.5 CLAY; LIGHT OLIVE GRAY TO OLIVE GRAY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
ACCESSORY MINERALS: PHOSPHATIC SAND-01%
A CLEAN WAXY OLIVE CLAY CONTAINING SOME VEINLETS OF VERY
FINE ORGANIC SAND OR DARK MINERAL.
- 175.5- 188 CALCILUTITE; LIGHT OLIVE GRAY TO OLIVE GRAY
15% POROSITY: INTERGRANULAR, MOLDIC
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: CLAY-15%, PHOSPHATIC GRAVEL-05%
QUARTZ SAND-03%, CLAY-02%
OTHER FEATURES: SPECKLED, MUDDY, FOSSILIFEROUS
FOSSILS: MOLLUSKS
CLAY IS DISSEMINATED AND AS INFILL. CHERT INCLUSION AT 181
FT. DOLOMITIC LENSES AT 184 FT., 185 FT.
- 188 - 191 SANDSTONE; LIGHT OLIVE GRAY TO OLIVE GRAY
10% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO SUB-ROUNDED; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: CALCILUTITE-15%, PHOSPHATIC SAND-30%
PHOSPHATIC GRAVEL-02%, CLAY-01%
OTHER FEATURES: CALCAREOUS, FROSTED, SPECKLED
FOSSILIFEROUS
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
QUARTZ SANDSTONE, ABUNDANT PHOSPHATIC SAND AND GRAVEL.
NUMEROUS CALCAREOUS AND PHOSPHATIC FOSSILS, SHELLS AND
TEETH IN CALCAREOUS CLAY MATRIX.
- 191 - 193 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
05% POROSITY: INTERGRANULAR, MOLDIC
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-03%
CLAY-01%
OTHER FEATURES: SPECKLED, MUDDY, FOSSILIFEROUS

FOSSILS: ECHINOID, MOLLUSKS

- 193 - 194.3 DOLOSTONE; LIGHT OLIVE GRAY TO OLIVE GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-02%
PHOSPHATIC GRAVEL-01%, CLAY-01%
OTHER FEATURES: SPECKLED
DOLOSTONE, LITTLE QUARTZ. PHOSPHATIC SAND. FEWER FOSSILS.
- 194.3- 198.2 DOLOSTONE; LIGHT OLIVE GRAY TO OLIVE GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-02%
PHOSPHATIC GRAVEL-02%, CLAY-03%
OTHER FEATURES: MEDIUM RECRYSTALLIZATION
FOSSILS: MOLLUSKS
- 198.2- 199.5 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
02% POROSITY: INTERGRANULAR, MOLDIC
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
CLAY MATRIX
ACCESSORY MINERALS: CLAY-20%, QUARTZ SAND-03%
PHOSPHATIC SAND-02%
FOSSILS: SHARKS TEETH, MOLLUSKS
- 199.5- 204.7 CLAY; LIGHT OLIVE GRAY TO OLIVE GRAY
01% POROSITY: NOT OBSERVED; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX, DOLOMITE CEMENT
CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-03%, PHOSPHATIC SAND-02%
DOLOMITE-02%
OTHER FEATURES: CALCAREOUS, DOLOMITIC, MUDDY, FOSSILIFEROUS
FOSSILS: ECHINOID, MOLLUSKS, BENTHIC FORAMINIFERA
CLAY WITH INTERBEDDED FORAM FRAGMENTS, SOME INTERBEDDED
DOLOSTONE AND SOME QUARTZ AND PHOSPHATIC SAND.
- 204.7- 210.8 CLAY; LIGHT OLIVE GRAY TO OLIVE GRAY
02% POROSITY: MOLDIC; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, DOLOMITE CEMENT
CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-03%, CALCILUTITE-02%
PHOSPHATIC SAND-02%, QUARTZ SAND-02%
OTHER FEATURES: CALCAREOUS, DOLOMITIC, MUDDY
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA
- 210.8- 217 DOLOSTONE; LIGHT OLIVE GRAY
02% POROSITY: MOLDIC, LOW PERMEABILITY; 10-50% ALTERED
SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-03%, QUARTZ SAND-01%
PHOSPHATIC SAND-01%, PHOSPHATIC GRAVEL-01%
OTHER FEATURES: SPECKLED

- 217 - 218 CLAY; LIGHT OLIVE GRAY TO OLIVE GRAY
 02% POROSITY: MOLDIC, LOW PERMEABILITY; POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: DOLOMITE-02%, QUARTZ SAND-02%
 PHOSPHATIC SAND-02%, QUARTZ SAND-02%
 OTHER FEATURES: DOLOMITIC, MUDDY
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA
 CLAY, DOLOMITIC, ABUNDANT PHOSPHATIC GRAVEL.
- 218 - 233 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 05% POROSITY: INTERGRANULAR, MOLDIC, FRACTURE
 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: LIMESTONE-05%, QUARTZ SAND-01%
 PHOSPHATIC SAND-01%
 OTHER FEATURES: CALCAREOUS
 FOSSILS: MOLLUSKS
- 233 - 233.9 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 02% POROSITY: MOLDIC, LOW PERMEABILITY, FRACTURE
 MODERATE INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: DOLOMITE-20%, QUARTZ SAND-05%
 CALCILUTITE-05%
 OTHER FEATURES: CALCAREOUS
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA
- 233.9- 234.6 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 02% POROSITY, LOW PERMEABILITY, FRACTURE; POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-10%, QUARTZ SAND-01%
 PHOSPHATIC GRAVEL-01%
 OTHER FEATURES: CALCAREOUS
- 234.6- 238 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 02% POROSITY: INTERGRANULAR, LOW PERMEABILITY, FRACTURE
 POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: QUARTZ SAND-20%, PHOSPHATIC SAND-15%
 OTHER FEATURES: BROWN ANHYDRITE CRYSTALS
 LOW RECRYSTALLIZATION, CALCAREOUS
- 238 - 246.9 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 01% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
 POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-10%, QUARTZ SAND-05%
 PHOSPHATIC SAND-03%, CALCITE-01%
 OTHER FEATURES: CALCAREOUS, FOSSILIFEROUS
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, ORGANICS
- 246.9- 248.4 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 01% POROSITY: INTERGRANULAR, LOW PERMEABILITY
 POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: PHOSPHATIC SAND-10%, QUARTZ SAND-05%
 CALCILUTITE-02%, PHOSPHATIC GRAVEL-02%
 OTHER FEATURES: CALCAREOUS, SPECKLED, FOSSILIFEROUS
 FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

- CLAY, CALCAREOUS, PHOSPHATIC SAND AND GRAVEL. SOME QUARTZ SAND. MOLLUSK FRAGMENTS ARE CALCAREOUS.
- 248.4- 263 CLAY; LIGHT OLIVE GRAY TO GREENISH GRAY
01% POROSITY: FRACTURE, LOW PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-05%, PHOSPHATIC SAND-03%
PHOSPHATIC GRAVEL-01%, QUARTZ SAND-01%
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA
- 263 - 267.8 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: SKELETAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-15%, PHOSPHATIC SAND-03%
PHOSPHATIC GRAVEL-01%, QUARTZ SAND-01%
OTHER FEATURES: CHALKY
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
CALCARENITE, SOFT, FOSSILIFEROUS (SORITES-FORAM)
INTERBEDDED CLAY, PHOSPHATIC SAND AND GRAVEL, MINOR QUARTZ SAND.
- 267.8- 269 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
02% POROSITY: FRACTURE, LOW PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-05%, PHOSPHATIC SAND-03%
PHOSPHATIC GRAVEL-01%, QUARTZ SAND-01%
OTHER FEATURES: CALCAREOUS, CHALKY
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
- 269 - 270.1 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, FRACTURE
10-50% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX
CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, PHOSPHATIC SAND-03%
PHOSPHATIC GRAVEL-01%, QUARTZ SAND-01%
OTHER FEATURES: PARTINGS, FOSSILIFEROUS
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
FOSSIL MOLDS
DOLOSTONE, FRACTURES, SOME CLAY INFILLED, INTERBEDDED
PHOSPHATIC SAND AND GRAVEL, MOLDIC.
- 270.1- 278 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
08% POROSITY: FRACTURE
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: MEDIUM TO COARSE
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: PHOSPHATIC SAND-05%, QUARTZ SAND-05%
PHOSPHATIC GRAVEL-01%, CLAY-03%
OTHER FEATURES: GRANULAR, SPECKLED, WEATHERED
FOSSILIFEROUS
FOSSILS: MOLLUSKS, FOSSIL MOLDS
- 278 - 280 CALCILUTITE; WHITE TO YELLOWISH GRAY
05% POROSITY: FRACTURE, INTERGRANULAR, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
MODERATE INDURATION

- CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%
 CLAY-01%
 OTHER FEATURES: CHALKY, FOSSILIFEROUS
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL MOLDS
- 280 - 283.4 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
 02% POROSITY: FRACTURE; POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: PHOSPHATIC SAND-05%, QUARTZ SAND-05%
 PHOSPHATIC GRAVEL-02%, CALCILUTITE-02%
 CLAY, GREEN, INTERBEDDED.
- 283.4- 284.3 CALCARENITE; WHITE TO YELLOWISH GRAY
 05% POROSITY: INTERGRANULAR, MOLDIC, FRACTURE
 GRAIN TYPE: BIOGENIC, PELLET, SKELTAL CAST
 GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: PHOSPHATIC SAND-01%, QUARTZ SAND-01%
 CALCITE-01%
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, SHARKS TEETH
 FOSSIL MOLDS
- 284.3- 292.8 CALCARENITE; WHITE TO YELLOWISH GRAY
 05% POROSITY: INTERGRANULAR, MOLDIC, FRACTURE
 GRAIN TYPE: BIOGENIC, PELLET, SKELTAL CAST
 GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: PHOSPHATIC SAND-01%, QUARTZ SAND-01%
 CALCITE-01%
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, SHARKS TEETH
 VERTEBRATE
- 292.8- 294.1 CLAY; WHITE TO YELLOWISH GRAY
 01% POROSITY: FRACTURE; POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-02%, PHOSPHATIC SAND-01%
 QUARTZ SAND-01%, PHOSPHATIC GRAVEL-01%
 FOSSILS: MOLLUSKS
- 294.1- 296.8 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 03% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
 GRAIN TYPE: BIOGENIC, PELLET
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-05%
 PHOSPHATIC GRAVEL-01%, CLAY-01%
 OTHER FEATURES: MUDDY, WEATHERED, FOSSILIFEROUS
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, ECHINOID
 OSTRACODS
- 296.8- 298 CALCARENITE; GRAYISH BROWN TO LIGHT OLIVE GRAY
 04% POROSITY: INTERGRANULAR, FRACTURE
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; POOR INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-10%
 PHOSPHATIC GRAVEL-03%, CLAY-03%
 OTHER FEATURES: GRANULAR, SPECKLED, FOSSILIFEROUS
 FOSSILS: CORAL, MOLLUSKS, WORM TRACES
 CALCARENITE, SANDY, VERY WEATHERED MOLLUSK FRAGMENTS.

- 298 - 298.8 CLAY; OLIVE GRAY TO DARK GREENISH GRAY
 01% POROSITY: FRACTURE; POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
 ACCESSORY MINERALS: QUARTZ SAND-15%, PHOSPHATIC GRAVEL-10%
 PHOSPHATIC GRAVEL-02%, CALCILUTITE-01%
 OTHER FEATURES: CALCAREOUS, FOSSILIFEROUS
 FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
- 298.8- 303.8 CALCILUTITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 03% POROSITY: FRACTURE, INTERGRANULAR
 GRAIN TYPE: BIOGENIC, CALCILUTITE
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
 ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC GRAVEL-10%
 PHOSPHATIC GRAVEL-01%, CLAY-01%
 OTHER FEATURES: PARTINGS, SPECKLED, WEATHERED
 FOSSILIFEROUS
 FOSSILS: ECHINOID, MOLLUSKS, FOSSIL FRAGMENTS
- 303.8- 308.8 CALCILUTITE; YELLOWISH GRAY TO LIGHT GREENISH GRAY
 01% POROSITY: INTERGRANULAR, LOW PERMEABILITY
 GRAIN TYPE: CALCILUTITE
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
 GOOD INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: INTERBEDDED, MASSIVE
 ACCESSORY MINERALS: PHOSPHATIC SAND-07%, QUARTZ SAND-05%
 PHOSPHATIC GRAVEL-01%, CALCITE-01%
 OTHER FEATURES: HIGH RECRYSTALLIZATION, PARTINGS, SPECKLED
 FOSSILIFEROUS
 FOSSILS: ECHINOID, MOLLUSKS, FOSSIL MOLDS
 CALCILUTITE, VERY HARD, NUMEROUS FILLED IN MOLDS-SOME
 CALCITE REPLACED. SOME ORGANICS.
- 308.8- 313 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 10% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
 GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: PHOSPHATIC SAND-03%, QUARTZ SAND-02%
 CLAY-02%
 OTHER FEATURES: GRANULAR, CHALKY
 FOSSILS: ECHINOID, MOLLUSKS, FOSSIL MOLDS
- 313 - 333 CALCARENITE;
 10% POROSITY: INTERGRANULAR, MOLDIC
 POSSIBLY HIGH PERMEABILITY
 GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
 GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
 POOR INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CLAY-03%
 OTHER FEATURES: CHALKY
 FOSSILS: ECHINOID, MOLLUSKS, FOSSIL MOLDS
 CALCARENITE, VERY CLEAN, VERY MINOR ORGANICS, POORLY
 INDURATED SUWANNEE LIMESTONE.
- 333 - 341 CALCARENITE;
 10% POROSITY: INTERGRANULAR, MOLDIC
 POSSIBLY HIGH PERMEABILITY
 GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
 GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX

FOSSILS: FOSSIL FRAGMENTS
CALCARENITE, CREAM-COLORED, VERY CLEAN, FEW INTERBEDDED
MINERALS, TYPICAL SUWANNEE LIMESTONE CORE.

- 341 - 348.6 CALCILUTITE;
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO FINE; UNCONSOLIDATED
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-15%
OTHER FEATURES: CHALKY, MUDDY
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
- 348.6- 353 CALCILUTITE;
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-01%
OTHER FEATURES: CHALKY
FOSSILS: ORGANICS
- 353 - 373.3 CALCARENITE;
03% POROSITY: INTERGRANULAR, FRACTURE
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: FINE; RANGE: CRYPTOCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: DOLOMITE-01%
OTHER FEATURES: CHALKY
FOSSILS: CORAL, MOLLUSKS, ECHINOID
- 373.3- 377 CALCARENITE;
10% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
FOSSILS: CORAL
- 377 - 382.5 CALCILUTITE;
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-01%
OTHER FEATURES: CHALKY
FOSSILS: MOLLUSKS, WORM TRACES
- 382.5- 390.5 CALCARENITE;
05% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-04%
OTHER FEATURES: CHALKY
FOSSILS: ECHINOID, MOLLUSKS, BENTHIC FORAMINIFERA
CALCARENITE, FRACTURED, RUBBLE. SOME INTERBEDDED GREEN
CLAY.
- 390.5- 402.1 CALCARENITE;
10% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC

MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCITE-02%
FOSSILS: ECHINOID, MOLLUSKS, BENTHIC FORAMINIFERA, CORAL
CALCARENITE, MOLDIC, NUMEROUS MOLLUSK MOLDS. APPEARS VERY
PERMEABLE.

- 402.1- 403 CALCILUTITE;
02% POROSITY: FRACTURE, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
UNCONSOLIDATED
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-30%
FOSSILS: MOLLUSKS, FOSSIL MOLDS
- 403 - 405 CLAY;
01% POROSITY: FRACTURE, LOW PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: CALCAREOUS, CHALKY
- 405 - 413 CALCILUTITE;
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, CHERT-05%
OTHER FEATURES: CHALKY
FOSSILS: MOLLUSKS, FOSSIL MOLDS
CALCILUTITE, RUBBLE. LARGE DOLOMITIC CHERT NODULE AT 412
FT.
- 413 - 418 CLAY;
01% POROSITY: FRACTURE, LOW PERMEABILITY; UNCONSOLIDATED
CEMENT TYPE(S): CLAY MATRIX
ACCESSORY MINERALS: CALCILUTITE-05%
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS
- 418 - 419 CALCARENITE;
05% POROSITY: INTERGRANULAR, FRACTURE
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO FINE; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY
FOSSILS: FOSSIL MOLDS
- 419 - 422.6 CLAY;
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-05%
OTHER FEATURES: CHALKY, CALCAREOUS
FOSSILS: FOSSIL MOLDS, MOLLUSKS
- 422.6- 429 CALCARENITE;
05% POROSITY: INTERGRANULAR, FRACTURE
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CLAY-05%
OTHER FEATURES: CHALKY

- FOSSILS: MOLLUSKS, ECHINOID, BENTHIC FORAMINIFERA
- 429 - 433 CLAY;
02% POROSITY: FRACTURE, LOW PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-05%
OTHER FEATURES: CHALKY, CALCAREOUS
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA
- 433 - 438.5 CALCARENITE;
10% POROSITY: INTERGRANULAR, FRACTURE
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-10%, DOLOMITE-03%
OTHER FEATURES: CHALKY
FOSSILS: MOLLUSKS, ECHINOID, BENTHIC FORAMINIFERA
FOSSIL MOLDS
CALCARENITE, MOLDIC, INTERBEDDED CLAY LENSES. SOME
DOLOSTONE.
- 438.5- 478.1 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: GRANULAR, MEDIUM RECRYSTALLIZATION
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL MOLDS, CORAL
CALCARENITE, MOLDIC, HIGHLY PERMEABLE, POSSIBLE FAULT
SURFACE AT 447.5 FT.
- 478.1- 482.6 CLAY; WHITE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
UNCONSOLIDATED
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-10%
OTHER FEATURES: CALCAREOUS, CHALKY
- 482.6- 489 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS
- 489 - 493 CLAY; WHITE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
UNCONSOLIDATED
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-10%
OTHER FEATURES: CALCAREOUS, CHALKY
- 493 - 518.6 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
ACCESSORY MINERALS: CALCITE-01%, CLAY-05%
FOSSILS: CORAL, ECHINOID, MOLLUSKS, BENTHIC FORAMINIFERA
CALCARENITE, FOSSILIFEROUS, MOLDIC. SOME UNCONSOLIDATED
CALCAREOUS CLAY LENSES.

- 518.6- 523.6 CLAY; WHITE TO YELLOWISH GRAY
01% POROSITY: INTERGRANULAR, LOW PERMEABILITY
UNCONSOLIDATED
ACCESSORY MINERALS: CALCILUTITE-05%
OTHER FEATURES: CALCAREOUS, CHALKY
- 523.6- 535 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, FRACTURE
GRAIN TYPE: BIOGENIC, SKELETAL, SKELETAL CAST
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY, GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
- 535 - 568 CLAY; WHITE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
UNCONSOLIDATED
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-25%
OTHER FEATURES: CALCAREOUS, CHALKY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS
CLAY, CALCAREOUS, INTERLAYERED WITH CALCARENITE LENSES.
- 568 - 576 CALCARENITE; YELLOWISH GRAY TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: FINE; RANGE: VERY FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%, ORGANICS-01%
OTHER FEATURES: GRANULAR, MUDDY, WEATHERED
FOSSILS: MOLLUSKS, ECHINOID, BENTHIC FORAMINIFERA
FOSSIL FRAGMENTS
CALCARENITE, INCREASING ORGANICS CONTENT, INTERBEDDED GRAY
CLAY LENSES. VERY WEATHERED.
- 576 - 593 CLAY; LIGHT GRAY TO YELLOWISH GRAY
01% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE- %
OTHER FEATURES: CALCAREOUS
- 593 - 620.5 CALCARENITE; YELLOWISH GRAY TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, VUGULAR
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-10%, ORGANICS-03%
OTHER FEATURES: GRANULAR, SUCROSIC, FOSSILIFEROUS
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
CALCARENITE, FOSSILIFEROUS, VERY WEATHERED, INTERLAYERED
WITH CALCAREOUS CLAY ZONES.
- 620.5- 623 CALCARENITE; YELLOWISH GRAY TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CLAY-05%, ORGANICS-03%
OTHER FEATURES: SUCROSIC, WEATHERED, GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
- 623 - 639 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT GRAY
06% POROSITY: INTERGRANULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
80% ALLOCHEMICAL CONSTITUENTS

- GRAIN SIZE: VERY FINE; RANGE: FINE TO MICROCRYSTALLINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED, GRADED BEDDING
 ACCESSORY MINERALS: CALCILUTITE-20%, ORGANICS-01%
 OTHER FEATURES: GRANULAR
 FOSSILS: ORGANICS, WORM TRACES, MOLLUSKS
 INTERBEDDED GRANULAR VERY FINE CALCARENITE AND POORLY
 INDURATED GRAINY CALCILUTITE. MAY DISPLAY FINING-UPWARD
 SEQUENCES. ORGANIC SPECKS AND ALTERED CALCARENITE GRAINS
 ARE COMMON.
- 639 - 640 CALCARENITE; VERY LIGHT ORANGE
 24% POROSITY: INTERGRANULAR, MOLDIC
 GRAIN TYPE: SKELETAL, BIOGENIC, CALCILUTITE
 95% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: FINE; RANGE: MEDIUM TO MICROCRYSTALLINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-05%
 OTHER FEATURES: FOSSILIFEROUS, GRANULAR
 FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS, WORM TRACES
- 640 - 644.5 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT GRAY
 16% POROSITY: INTERGRANULAR
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 90% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: FINE TO MICROCRYSTALLINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: CROSS-BEDDED, BANDED
 ACCESSORY MINERALS: CALCILUTITE-10%, ORGANICS-01%
 OTHER FEATURES: GRANULAR
 FOSSILS: ORGANICS, FOSSIL FRAGMENTS
 GRANULAR VERY FINE CALCARENITE, FAINTLY CROSS-BEDDED WITH
 SLIGHTLY ALTERED LAMINAE. ORGANIC SPECKS COMMON.
- 644.5- 662 CALCARENITE; VERY LIGHT ORANGE
 22% POROSITY: INTERGRANULAR
 GRAIN TYPE: SKELETAL, BIOGENIC, CALCILUTITE
 85% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: FINE; RANGE: MEDIUM TO MICROCRYSTALLINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-15%
 OTHER FEATURES: FOSSILIFEROUS, GRANULAR
 FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS
 INTERBEDDED FINE SKELETAL/GRANULAR PACKSTONE AND POORLY
 CONSOLIDATED GRAINY CALCILUTITE. HARD, THIN CALCILUTITE
 STRINGERS AT 659 FT. VARIABLY PERMEABLE.
- 662 - 668.5 LIMESTONE; VERY LIGHT ORANGE TO WHITE
 20% POROSITY: MOLDIC, INTERGRANULAR
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL CAST
 45% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: MEDIUM; RANGE: MEDIUM TO MICROCRYSTALLINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-55%, CALCARENITE-45%
 OTHER FEATURES: FOSSILIFEROUS, LOW RECRYSTALLIZATION
 FOSSILS: FOSSIL MOLDS, MOLLUSKS, FOSSIL FRAGMENTS
 VARIABLY HARD, VARIABLY MOLDIC.
- 668.5- 674.5 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT ORANGE
 14% POROSITY: INTERGRANULAR
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 60% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MICROCRYSTALLINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-40%

OTHER FEATURES: GRANULAR
FOSSILS: FOSSIL FRAGMENTS
VERY FINE CALCARENITE.

674.5- 678 CALCILUTITE; WHITE
12% POROSITY: LOW PERMEABILITY, INTERGRANULAR
GRAIN TYPE: CALCILUTITE, BIOGENIC
05% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: VERY FINE TO MICROCRYSTALLINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
OTHER FEATURES: CHALKY
CHALKY, POOR TO MODERATELY INDURATED. (OCALA TYPE?)

678 - 683 NO SAMPLES
CUTTINGS COLLECTED THROUGH INTERVAL SUGGEST POORLY
INDURATED VERY FINE CALCARENITE, BUT MAY CONSIST OF
PREVIOUS CHALKY CALCILUTITE.

683 - 686 SHELL BED; LIGHT GRAY TO WHITE
40% POROSITY: POSSIBLY HIGH PERMEABILITY, MOLDIC
INTERGRANULAR; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-25%
OTHER FEATURES: FOSSILIFEROUS, SPLINTERY
MEDIUM RECRYSTALLIZATION
FOSSILS: MOLLUSKS
PERMEABLE BED OF RECRYSTALLIZED OYSTER SHELL WITH INTERBEDS
OF POORLY PERMEABLE, WHITE, POOR TO MEDIUM INDURATED
CALCILUTITE. (OCALA TYPE?).

686 - 687 LIMESTONE; VERY LIGHT ORANGE TO WHITE
20% POROSITY: MOLDIC, INTERGRANULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
45% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-55%
OTHER FEATURES: FOSSILIFEROUS, MEDIUM RECRYSTALLIZATION
FOSSILS: MOLLUSKS, FOSSIL MOLDS
MOLLUSK MOLDS AND CASTS IN HARD SOMEWHAT RECRYSTALLIZED
LIMESTONE. SOME RECRYSTALLIZED OYSTER SHELLS. SUWANNEE-TYPE
LITHOLOGY.

687 - 708.5 CALCARENITE; YELLOWISH GRAY
14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
55% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-45%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: FOSSIL MOLDS, BENTHIC FORAMINIFERA
OCALA TYPE LITHOLOGY ALTHOUGH TRACES OF MOLLUSK MOLDS. VERY
FEW LEPIDOCYCLINA NEAR BOTTOM OF INTERVAL.

708.5- 713.8 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, FRACTURE, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-30%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

713.8- 717.9 CALCARENITE; VERY LIGHT ORANGE TO MODERATE GRAY
10% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE

GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; UNCONSOLIDATED
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-45%, CLAY-05%
 OTHER FEATURES: CHALKY
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

717.9- 743 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
 10% POROSITY: INTERGRANULAR, FRACTURE, PIN POINT VUGS
 GRAIN TYPE: BIOGENIC, CALCILUTITE
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
 POOR INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-45%
 OTHER FEATURES: CHALKY
 FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
 VERY WEATHERED LEPIDOCYCLINA FRAGMENTS. ALSO MOLLUSK MOLDS.

743 - 748 LIMESTONE; VERY LIGHT ORANGE TO WHITE
 05% POROSITY: INTERGRANULAR, FRACTURE, PIN POINT VUGS
 GRAIN TYPE: BIOGENIC, CALCILUTITE
 GRAIN SIZE: VERY FINE; RANGE: CRYPTOCRYSTALLINE TO FINE
 POOR INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-40%
 OTHER FEATURES: CHALKY
 FOSSILS: FOSSIL FRAGMENTS
 VERY FINE-GRAINED, NEARLY WHITE IN COLOR. VERY WEATHERED.

748 - 754 CALCARENITE; VERY LIGHT ORANGE
 10% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
 GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
 GRAIN SIZE: VERY FINE; RANGE: CRYPTOCRYSTALLINE TO COARSE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-25%, QUARTZ SAND-02%
 CALCITE-01%
 OTHER FEATURES: CHALKY, REEFAL, FOSSILIFEROUS
 FOSSILS: ECHINOID, MOLLUSKS, BENTHIC FORAMINIFERA
 FOSSIL MOLDS

754 - 783 CALCARENITE; VERY LIGHT ORANGE
 05% POROSITY: FRACTURE, PIN POINT VUGS
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
 POOR INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-25%, PHOSPHATIC SAND-01%
 OTHER FEATURES: CHALKY
 FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
 VERY FINE-GRAINED NUMEROUS FORAMS. VERY WEATHERED.

783 - 788 SILT; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 20% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
 UNCONSOLIDATED
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: PHOSPHATIC SAND-20%
 OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED

788 - 793.5 LIMESTONE; YELLOWISH GRAY
 03% POROSITY: FRACTURE, LOW PERMEABILITY
 GRAIN TYPE: BIOGENIC, CALCILUTITE
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: MASSIVE
 ACCESSORY MINERALS: CALCILUTITE-40%
 OTHER FEATURES: CHALKY
 FOSSILS: MOLLUSKS, ECHINOID, BENTHIC FORAMINIFERA

793.5- 832 CALCARENITE; YELLOWISH GRAY

- 14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 60% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-40%
 OTHER FEATURES: FOSSILIFEROUS, CHALKY
 FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
 VERY FINE CALCARENITE WITH MUCH CALCILUTITE MATRIX.
 VARIABLE CONCENTRATION OF NUMMULITES AND LEPIDOCYCLINA
 CRYSTALLINE SKELETONS (10-30% OF UNIT).
- 832 - 834 CALCILUTITE; YELLOWISH GRAY
 10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
 GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL
 15% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCARENITE-15%, CLAY-05%
 OTHER FEATURES: CHALKY, FOSSILIFEROUS
 FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
 THIN BED CONTAINS MINOR CLAY FRACTION. TIGHT. FEWER
 NUMMULITES AND LEPIDOCYCLINA.
- 834 - 852 CALCARENITE; YELLOWISH GRAY
 14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 70% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-30%
 OTHER FEATURES: FOSSILIFEROUS, CHALKY
 FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
 SIMILAR TO INTERVAL NEAR 832. 10-30% NUMMULITES AND
 LEPIDOCYCLINA SKELETONS (CRYSTALLINE).
- 852 - 855.5 CALCARENITE; YELLOWISH GRAY
 10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 55% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-45%
 OTHER FEATURES: CHALKY, FOSSILIFEROUS
 FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
 SOME FAINT BANDING. CRYSTALLINE NUMMULITES AND
 LEPIDOCYCLINA SKELETONS. A FEW GRAY DOLOMITIC(?) SKELETONS
 INCORPORATING ORGANIC SPECKS.
- 855.5- 863.5 CALCARENITE; YELLOWISH GRAY
 14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 75% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-25%
 OTHER FEATURES: FOSSILIFEROUS, CHALKY
 FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
 GENERALLY 15-25% SKELETAL FRAGMENTS (NUMMULITES AND
 LEPIDOCYCLINA). TRACES OF IRREGULAR GRAY BANDING IN MATRIX.
- 863.5- 878 CALCARENITE; YELLOWISH GRAY
 16% POROSITY: INTERGRANULAR, LOW PERMEABILITY
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 75% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
 MODERATE INDURATION

CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-25%, ORGANICS-01%
OTHER FEATURES: FOSSILIFEROUS, CHALKY
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS, ORGANICS
SIMILAR TO PREVIOUS INTERVAL BUT CONTAINS 2% ALTERED
(DOLOMITIC?) SKELETAL FRAGMENTS. ALTERED FRAGMENTS OFTEN
CONTAIN ORGANIC SPECKS.

878 - 883 CALCARENITE; YELLOWISH GRAY
12% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
60% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BANDED
ACCESSORY MINERALS: CALCILUTITE-40%
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
UNIT CONTAINS LESS FORAMS. FAINT GRAY BANDING MAY INDICATE
MINOR DOLOMITIZATION.

883 - 901 CALCARENITE; YELLOWISH GRAY
16% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
60% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-40%
OTHER FEATURES: FOSSILIFEROUS, CHALKY
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
CONTAINS CRYSTALLINE FORAM TESTS (LEPIDOCYCLINA AND
NUMMULITES) IN CONCENTRATIONS OF 20-35%. APPROXIMATELY 1-2%
OF FORAMS ARE ALTERED TO GRAY COLORED.

901 - 908 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
12% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
55% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-45%
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
FORAM SKELETONS ARE CHALKIER AND COMPOSE APPROXIMATELY
10-20% OF UNIT. MOSTLY LEPIDOCYCLINA. ROCK MATRIX DARKENS
SLIGHTLY.

908 - 928 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
05% POROSITY: FRACTURE
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-40%
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
VERY LARGE FORAMS, LEPIDOCYCLINA COMPRISING 25% OF MATRIX.

928 - 932.5 CALCILUTITE; YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE, SKELETAL
10% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
FEWER LARGE FORAMS, MATRIX GRAINS FINER, BECOMING

OOLOMITIC.

- 932.5- 934 LIMESTONE; YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-30%
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
SLIGHTLY LARGER GRAIN SIZE, NUMMULITES INCREASING, DARKER.
- 934 - 939.5 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
05% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
10-50% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-30%
OTHER FEATURES: CALCAREOUS, CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
- 939.5- 941.2 CALCILUTITE; YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE, SKELETAL, SKELTAL CAST
90% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
- 941.2- 944 CALCILUTITE; YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, FRACTURE
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
90% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
- 944 - 949 CALCILUTITE; YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
90% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
- 949 - 959 CALCILUTITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: DOLOMITE-05%
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
CALCILUTITE, VERY FINE-GRAINED, DOLOMITIC, NUMEROUS
NUMMULITES, FEWER LEPIDOCYCLINA.
- 959 - 965.5 DOLOSTONE; LIGHT OLIVE GRAY TO MODERATE OLIVE BROWN
15% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
10-50% ALTERED; SUBHEDRAL

- GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: MASSIVE
 ACCESSORY MINERALS: FELDSPAR-01%
 OTHER FEATURES: SUCROSIC, CRYSTALLINE, FOSSILIFEROUS
 FOSSILS: BENTHIC FORAMINIFERA
 DOLOSTONE, CRYSTALLINE, NUMEROUS MOLDS. APPEARS HIGHLY
 PERMEABLE.
- 965.5- 966 LIMESTONE; YELLOWISH GRAY TO DARK GRAYISH YELLOW
 05% POROSITY: FRACTURE
 GRAIN TYPE: BIOGENIC; 95% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
 ACCESSORY MINERALS: DOLOMITE-05%
 OTHER FEATURES: DOLOMITIC
- 966 - 968 CLAY; WHITE TO YELLOWISH GRAY
 03% POROSITY: FRACTURE, LOW PERMEABILITY; UNCONSOLIDATED
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-30%
 OTHER FEATURES: CALCAREOUS
 CALCAREOUS CLAY, UNCONSOLIDATED.
- 968 - 969.5 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 03% POROSITY: FRACTURE, LOW PERMEABILITY; 10-50% ALTERED
 ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: MASSIVE
 ACCESSORY MINERALS: LIMESTONE-05%
 OTHER FEATURES: CALCAREOUS, FOSSILIFEROUS
 FOSSILS: FOSSIL MOLDS
 DOLOSTONE, HARD LENS, GRADES INTO A CALCAREOUS CLAY.
- 969.5- 970 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 02% POROSITY: FRACTURE, LOW PERMEABILITY; POOR INDURATION
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: LIMESTONE-03%, DOLOMITE-02%
 OTHER FEATURES: CALCAREOUS
- 970 - 974 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
 15% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
 GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
 50% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
 POOR INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CLAY-05%
 FOSSILS: BENTHIC FORAMINIFERA, ECHINOID, FOSSIL FRAGMENTS
 FOSSIL MOLDS
- 974 - 976 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
 02% POROSITY: FRACTURE, LOW PERMEABILITY; UNCONSOLIDATED
 CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-30%
 OTHER FEATURES: CALCAREOUS
- 976 - 981.4 DOLOSTONE; LIGHT OLIVE GRAY TO OLIVE GRAY
 20% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
 50-90% ALTERED; EUHEDRAL
 GRAIN SIZE: FINE; RANGE: VERY FINE TO COARSE
 GOOD INDURATION

CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: LIMESTONE-02%
OTHER FEATURES: CRYSTALLINE
FOSSILS: ECHINOID
DOLOMITE, CRYSTALLINE NUMEROUS ECHINOID MOLDS, CASTS AND
FRAGMENTS. TOP OF AVON PARK FORMATION AT 976 FT. BLS.

- 981.4- 988 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
25% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
80% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: FINE; RANGE: VERY FINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-15%, CALCITE-05%
OTHER FEATURES: DOLOMITIC, GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA
CALCARENITE, SOME INTERBEDDED DOLOSTONE, NUMEROUS LIMESTONE
AND CALCITE ECHINOID MOLDS.
- 988 - 992 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
30% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
90% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: DOLOMITE-02%
OTHER FEATURES: GRANULAR, FOSSILIFEROUS
FOSSILS: ECHINOID, MOLLUSKS, BENTHIC FORAMINIFERA
CALCARENITE, VERY FOSSILIFEROUS, NUMEROUS ECHINOID MOLDS.
MATRIX IS MADE UP OF FORAM AND ECHINOID FRAGMENTS. APPEARS
HIGHLY PERMEABLE.
- 992 - 996 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
05% POROSITY: FRACTURE, LOW PERMEABILITY; 10-50% ALTERED
ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-25%, CALCITE-02%
OTHER FEATURES: BROWN ANHYDRITE CRYSTALS
LOW RECRYSTALLIZATION
FOSSILS: ECHINOID
- 996 - 1027 CALCARENITE; VERY LIGHT ORANGE
20% POROSITY: INTERGRANULAR
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE
70% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: FINE; RANGE: MEDIUM TO VERY FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED, NODULAR
ACCESSORY MINERALS: CALCILUTITE-30%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: FOSSIL FRAGMENTS
SOME ROUNDED CLASTS OR LENSOLDS OF CALCILUTITE.
- 1027 - 1030 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
12% POROSITY: LOW PERMEABILITY, INTERGRANULAR
0-10% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: STREAKED
ACCESSORY MINERALS: CALCARENITE-25%, CALCILUTITE-10%
OTHER FEATURES: CALCAREOUS, VARIEGATED

- 1030 - 1033 CALCARENITE; VERY LIGHT ORANGE
 16% POROSITY: INTERGRANULAR
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 60% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-40%
 OTHER FEATURES: GRANULAR, CHALKY
 FOSSILS: FOSSIL FRAGMENTS
- 1033 - 1034.5 CALCILUTITE; YELLOWISH GRAY
 08% POROSITY: LOW PERMEABILITY, VUGULAR
 GRAIN TYPE: CALCILUTITE, BIOGENIC
 10% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: BANDED, MOTTLED
 ACCESSORY MINERALS: SILT-SIZE DOLOMITE-25%, LIMESTONE- 2%
 LIMONITE-2 %
 OTHER FEATURES: DOLOMITIC, PARTINGS, STROMATAL
 FOSSILS: ORGANICS
 VERY WELL INDURATED, IRREGULARLY BANDED BED CONTAINING THIN
 ORGANIC PARTINGS. ORGANIC LAMINAE AT TOP.
- 1034.5- 1038.5 CALCARENITE; VERY LIGHT ORANGE
 16% POROSITY: INTERGRANULAR
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 60% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-40%
 OTHER FEATURES: GRANULAR, CHALKY
 FOSSILS: FOSSIL FRAGMENTS
- 1038.5- 1042.5 CALCARENITE; GRAYISH ORANGE TO VERY LIGHT ORANGE
 18% POROSITY: INTERGRANULAR
 GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
 75% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-25%
 OTHER FEATURES: GRANULAR, CHALKY, PARTINGS
 FOSSILS: FOSSIL FRAGMENTS
 GRAINY FINE-GRAINED CALCARENITE WITH THIN INTERBEDS OF
 GRAINY CALCILUTITE.
- 1042.5- 1048 CALCARENITE; GRAYISH ORANGE
 26% POROSITY: INTERGRANULAR
 GRAIN TYPE: PELLET, SKELETAL, BIOGENIC
 95% ALLOCHEMICAL CONSTITUENTS
 GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-05%
 OTHER FEATURES: GRANULAR
 FOSSILS: WORM TRACES, FOSSIL FRAGMENTS
 HARD, BRITTLE MODERATELY WELL-SORTED PELLETAL GRAINSTONE.
 END OF CORE.
- 1048 - 1058 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH ORANGE
 18% POROSITY: INTERGRANULAR
 GRAIN TYPE: BIOGENIC, CALCILUTITE, PELLET
 GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED

ACCESSORY MINERALS: CALCILUTITE-20%, DOLOMITE-05%
 OTHER FEATURES: GRANULAR
 FOSSILS: FOSSIL FRAGMENTS
 FINE-GRAINED CALCARENITE WITH LESSER INTERBEDS OF LIMESTONE
 AND GRANULAR DOLOSTONE. LOW PERMEABILITY. SOMEWHAT SOFT.
 INITIAL GROUP OF CUTTINGS DESCRIPTION IS FROM PERMANENT
 AVON PARK MONITOR. CEMENT FRAGMENTS ARE SEEN IN THE
 CUTTINGS IN MODERATE CONCENTRATIONS THROUGH 1090 FT.

1058 - 1070 LIMESTONE; VERY LIGHT ORANGE
 14% POROSITY: LOW PERMEABILITY, INTERGRANULAR
 GRAIN TYPE: CALCILUTITE, BIOGENIC
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-80%, CALCARENITE-20%
 FOSSILS: FOSSIL FRAGMENTS

1070 - 1120 CALCARENITE; GRAYISH ORANGE TO VERY LIGHT ORANGE
 20% POROSITY: INTERGRANULAR
 GRAIN TYPE: SKELETAL, BIOGENIC
 GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-15%
 OTHER FEATURES: GRANULAR, FOSSILIFEROUS
 FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA
 GRANULAR CALCARENITE. DICTYOCONUS. NOT A BIG WATER
 PRODUCER. UPPER 10 - 20 FT. ARE SOFTER, SLIGHTLY FINER
 GRAINED THAN REST.

1120 - 1130 CALCARENITE; VERY LIGHT ORANGE
 16% POROSITY: INTERGRANULAR
 GRAIN TYPE: CALCILUTITE, BIOGENIC
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-35%
 FOSSILS: FOSSIL FRAGMENTS
 SOMEWHAT HARDER THAN CALCARENITES ABOVE. 1125 - 1130 FT. IS
 VERY FINE-GRAINED.

1130 - 1133 DOLOSTONE; GRAYISH BROWN TO DARK YELLOWISH BROWN
 10% POROSITY: LOW PERMEABILITY; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 NO APPARENT WATER PRODUCTION FROM BED.

1133 - 1145 CALCARENITE; GRAYISH ORANGE TO VERY LIGHT ORANGE
 20% POROSITY: INTERGRANULAR
 GRAIN TYPE: SKELETAL, BIOGENIC, CALCILUTITE
 GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
 MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-25%
 OTHER FEATURES: GRANULAR
 FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA
 VERY GRANULAR SKELETAL CALCARENITE. DICTYOCONUS. DOLOMITE
 IS PROBABLY FALLING FROM OVERLYING BED.

1145 - 1156 LIMESTONE; VERY LIGHT ORANGE
 14% POROSITY: INTERGRANULAR
 GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
 CEMENT TYPE(S): CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCARENITE-25%
 OTHER FEATURES: CHALKY, GRANULAR
 FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA

CALCILUTITIC LIMESTONE WITH LESSER AMOUNTS FINE
CALCARENITE.

- 1156 - 1182 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH ORANGE
18% POROSITY: INTERGRANULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-35%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: FOSSIL FRAGMENTS
FINE TO VERY FINE-GRAINED CALCARENITE. TRACE AMOUNTS OF
GRAY LIMESTONE.
- 1182 - 1190 LIMESTONE; LIGHT GRAY
14% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: DOLOMITE-05%, ORGANICS-02%
OTHER FEATURES: CHALKY, SPECKLED
FOSSILS: MILIOLIDS
DOLOMITIC PERCENT IS AS TRACE DOLOMITE GRAINS.
- 1190 - 1207 CALCARENITE; GRAYISH ORANGE
20% POROSITY: INTERGRANULAR
GRAIN TYPE: SKELETAL, BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-15%, DOLOMITE-10%
OTHER FEATURES: GRANULAR, FOSSILIFEROUS, DOLOMITIC
FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA
GRANULAR CALCARENITE. CONTAINS DOLOMITIC GRAINS.
DICTYOCONUS. NOT MUCH PERMEABILITY.
- 1207 - 1218 LIMESTONE; LIGHT GRAY TO GRAYISH ORANGE
16% POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCARENITE-40%, DOLOMITE-05%
OTHER FEATURES: CHALKY, GRANULAR
FOSSILS: FOSSIL FRAGMENTS
GRAY CALCILUTITIC LIMESTONE WITH SUBEQUAL BEDS GRANULAR
SKELETAL CALCARENITE.
- 1218 - 1228 DOLOSTONE; DARK YELLOWISH BROWN
30% POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
50-90% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
OTHER FEATURES: CRYSTALLINE
HARD, DARK CRYSTALLINE DOLOMITE. UNIT/SEQUENCE OF DOLOSTONE
BEDS MAKES SUBSTANTIAL WATER. TOP OF AVON PARK FRACTURED
DOLOSTONES.
- 1228 - 1247 DOLOSTONE; LIGHT OLIVE GRAY TO MODERATE BROWN
35% POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
10-50% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
OTHER FEATURES: CRYSTALLINE, VARIEGATED
OLIVE-COLORED CRYSTALLINE DOLOSTONE WITH SOME BROWN
(ORGANIC?) STREAKING. WATER PRODUCER.

- 1247 - 1307 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
 35% POROSITY; FRACTURE, POSSIBLY HIGH PERMEABILITY
 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: STREAKED
 OTHER FEATURES: CRYSTALLINE, LOW RECRYSTALLIZATION
 BROWN DOLOSTONE. SHOWS SMALL AMOUNTS RECRYSTALLIZATION ON
 CUTTINGS. SOME DARK STREAKING.
- 1307 - 1344 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
 35% POROSITY; FRACTURE, POSSIBLY HIGH PERMEABILITY
 PIN POINT VUGS; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO VERY FINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: STREAKED
 ACCESSORY MINERALS: ORGANICS-01%
 OTHER FEATURES: CRYSTALLINE
 HARD BROWN VERY FINE-GRAINED DOLOSTONE. SOME ORGANIC
 COATINGS ON CUTTINGS. PRODUCES FETID ODOR ON PUMPING.
 TRACES OF OXIDE IRON SPECKS.
- 1344 - 1359 DOLOSTONE; GRAYISH BROWN TO MODERATE BROWN
 POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
 PIN POINT VUGS; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE; RANGE: CRYPTOCRYSTALLINE TO FINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 OTHER FEATURES: CRYSTALLINE, GRANULAR
- 1359 - 1370 DOLOSTONE; GRAYISH BROWN TO MODERATE BROWN
 POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
 PIN POINT VUGS; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 ACCESSORY MINERALS: ORGANICS-01%
 OTHER FEATURES: CRYSTALLINE, GRANULAR
- 1370 - 1380 DOLOSTONE; DARK YELLOWISH BROWN TO GRAYISH BROWN
 POROSITY: POSSIBLY HIGH PERMEABILITY, PIN POINT VUGS
 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 ACCESSORY MINERALS: ORGANICS-04%
 OTHER FEATURES: CRYSTALLINE, GRANULAR
 FOSSILS: ORGANICS
 ORGANICS ARE AS STREAKS, SPECKS, AND INTERSTITIAL.
- 1380 - 1421 DOLOSTONE; MODERATE YELLOWISH BROWN TO GRAYISH ORANGE
 POROSITY: POSSIBLY HIGH PERMEABILITY; 10-50% ALTERED
 ANHEDRAL
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-15%, ORGANICS-02%
 QUARTZ-01%
 OTHER FEATURES: CRYSTALLINE, GRANULAR, CALCAREOUS
 FOSSILS: ORGANICS
 INTERBEDDED MICROCRYSTALLINE VERY FINE-GRAINED CALCAREOUS
 DOLOSTONE AND SLIGHTLY ORGANIC VERY FINE-GRAINED DOLOSTONE.
 SOME OF ORGANIC UNIT APPEARS TO BE BRECCIATED OR CONTAINS
 RIP-UP CLASTS. MINOR SECONDARY QUARTZ IN VUGS.
- 1421 - 1431 DOLOSTONE; GRAYISH ORANGE TO MODERATE YELLOWISH BROWN
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE; RANGE: CRYPTOCRYSTALLINE TO FINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX

ACCESSORY MINERALS: CALCILUTITE-15%, ORGANICS-02%
 QUARTZ-01%
 OTHER FEATURES: GRANULAR, CALCAREOUS
 FOSSILS: ORGANICS

1431 - 1441 DOLOSTONE; MODERATE YELLOWISH BROWN TO GRAYISH BROWN
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-10%, ORGANICS-01%
 OTHER FEATURES: GRANULAR

1441 - 1451 DOLOSTONE; MODERATE YELLOWISH BROWN
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: FINE; RANGE: CRYPTOCRYSTALLINE TO FINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 ACCESSORY MINERALS: CALCILUTITE-05%, ORGANICS-02%
 OTHER FEATURES: GRANULAR
 FOSSILS: ORGANICS

1451 - 1484 DOLOSTONE; MODERATE YELLOWISH BROWN TO GRAYISH ORANGE
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-15%, QUARTZ-01%
 ORGANICS-01%
 OTHER FEATURES: CALCAREOUS, GRANULAR
 FOSSILS: ORGANICS

1484 - 1499 DOLOSTONE; MODERATE YELLOWISH BROWN TO DARK YELLOWISH BROWN
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE; RANGE: CRYPTOCRYSTALLINE TO FINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 ACCESSORY MINERALS: CALCILUTITE-05%, ORGANICS-02%
 QUARTZ-01%
 OTHER FEATURES: GRANULAR
 FOSSILS: ORGANICS

1499 - 1506 DOLOSTONE; GRAYISH ORANGE TO VERY LIGHT ORANGE
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-20%
 SUBEQUAL INTERBEDS OF TAN, CRYSTALLINE DOLOSTONE AND
 CREAM-COLORED CALCAREOUS ORTHOCRYSTALLINE DOLOMITE.

1506 - 1514 DOLOSTONE; MODERATE YELLOWISH BROWN
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE; RANGE: CRYPTOCRYSTALLINE TO FINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 ACCESSORY MINERALS: CALCILUTITE-10%, ORGANICS-01%
 OTHER FEATURES: GRANULAR

1514 - 1525 DOLOSTONE; GRAYISH ORANGE TO VERY LIGHT ORANGE
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 ACCESSORY MINERALS: CALCILUTITE-20%, QUARTZ-02%
 ORGANICS-01%
 GOLDEN TAN VERY FINE-GRAINED DOLOMITE WITH LESSER
 INTERBEDDED PALE CALCAREOUS ORTHOCRYSTALLINE DOLOSTONE.
 FREQUENT QUARTZ PSUEDOMORPHS AFTER RHOMBIC DOLOMITE.

1525 - 1540 DOLOSTONE; MODERATE YELLOWISH BROWN TO GRAYISH ORANGE

POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 ACCESSORY MINERALS: CALCILUTITE-10%, ORGANICS-03%
 QUARTZ-01%
 OTHER FEATURES: GRANULAR

1540 - 1556 DOLOSTONE; MODERATE YELLOWISH BROWN TO GRAYISH ORANGE
 POROSITY: INTERGRANULAR; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 SEDIMENTARY STRUCTURES: INTERBEDDED
 ACCESSORY MINERALS: CALCILUTITE-10%, QUARTZ-03%
 ORGANICS-02%
 OTHER FEATURES: GRANULAR
 INTERBEDDED GOLDEN BROWN VERY FINE GRANULAR DOLOMITE AND
 ORGANIC STREAKED/SPECKED CALCAREOUS PALE DOLOSTONE. QUARTZ
 PSUEDOMORPHS AFTER RHOMBIC DOLOMITE ON SURFACES OF THE PALE
 DOLOSTONE.

1556 - 1560 DOLOSTONE; GRAYISH ORANGE
 POROSITY: INTERCRYSTALLINE; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-20%, QUARTZ-15%
 OTHER FEATURES: CALCAREOUS, GRANULAR
 GRANULAR CALCAREOUS DOLOMITE WITH MUCH SECONDARY QUARTZ.

1560 - 1575 DOLOSTONE; MODERATE YELLOWISH BROWN TO DARK YELLOWISH BROWN
 POROSITY: INTERCRYSTALLINE; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
 GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT
 ACCESSORY MINERALS: CALCILUTITE-10%, ORGANICS-03%
 QUARTZ-02%
 FOSSILS: ORGANICS
 CRYSTALLINE LIGHT BROWN DOLOMITE. GRAY AND CREAM-COLORED
 CALCAREOUS FRAGMENTS (MORE IN UPPER 5 FT.).

1575 - 1595 DOLOSTONE; MODERATE YELLOWISH BROWN
 POROSITY: INTERCRYSTALLINE; 10-50% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-10%, QUARTZ-02%
 ORGANICS-02%
 FOSSILS: ORGANICS
 CRYSTALLINE GOLDEN BROWN DOLOMITE WITH MINOR SECONDARY
 QUARTZ AND ORGANIC COATINGS.

1595 - 1623 DOLOSTONE; GRAYISH ORANGE TO MODERATE YELLOWISH BROWN
 12% POROSITY: LOW PERMEABILITY, INTERGRANULAR
 INTERCRYSTALLINE; 0-10% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE
 RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
 CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
 ACCESSORY MINERALS: CALCILUTITE-20%, QUARTZ-03%
 ORGANICS-03%
 OTHER FEATURES: CALCAREOUS
 FOSSILS: ORGANICS
 CALCAREOUS DOLOSTONE. LIGHTLY BUT VARIABLY SPECKLED WITH
 ORGANICS. MINOR VUG-FILL, VEINLETS, AND EUHEDRAL SURFACE
 COATINGS OF QUARTZ.

1623 - 1633 DOLOSTONE; VERY LIGHT ORANGE TO GRAYISH ORANGE
 12% POROSITY: LOW PERMEABILITY, INTERGRANULAR
 0-10% ALTERED; ANHEDRAL
 GRAIN SIZE: MICROCRYSTALLINE

RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-40%, QUARTZ-01%
ORGANICS-01%
OTHER FEATURES: CALCAREOUS, LOW RECRYSTALLIZATION
COMPACT VERY CALCAREOUS DOLOSTONE.

- 1633 - 1638 CALCARENITE; GRAYISH ORANGE TO GRAYISH BROWN
15% POROSITY: LOW PERMEABILITY, INTERGRANULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE
60% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
ACCESSORY MINERALS: DOLOMITE-20%, CALCILUTITE-25%
QUARTZ-06%, ORGANICS-02%
OTHER FEATURES: DOLOMITIC, GRANULAR
FOSSILS: ORGANICS
VARIABLY DOLOMITIC CALCARENITE WITH MINOR AMOUNTS OF QUARTZ
AS VEINLETS AND DRUSY COATINGS.
- 1638 - 1660 DOLOSTONE; GRAYISH ORANGE
15% POROSITY: LOW PERMEABILITY, PIN POINT VUGS
0-10% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-15%, QUARTZ-02%
OTHER FEATURES: CALCAREOUS, LOW RECRYSTALLIZATION
- 1660 - 1665 DOLOSTONE; GRAYISH ORANGE
12% POROSITY: LOW PERMEABILITY, INTERGRANULAR
0-10% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-15%, QUARTZ-08%, SHALE-02%
OTHER FEATURES: CALCAREOUS, GRANULAR
FOSSILS: ORGANICS
CALCAREOUS DOLOSTONE CONTAINING DRUSY QUARTZ ON SOME
SURFACES. LAMINATED ORGANICS IN SOME OF THE DOLOSTONE.
- 1665 - 1686 DOLOSTONE; GRAYISH ORANGE
15% POROSITY: LOW PERMEABILITY, PIN POINT VUGS
0-10% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
ACCESSORY MINERALS: CALCILUTITE-15%, QUARTZ-02%
ORGANICS-02%
OTHER FEATURES: CALCAREOUS, GRANULAR
FOSSILS: ORGANICS
CALCAREOUS DOLOSTONE. DOME ORGANIC LAMILLAE.
- 1686 - 1701 CALCILUTITE; VERY LIGHT ORANGE
12% POROSITY: LOW PERMEABILITY, INTERGRANULAR
PIN POINT VUGS
GRAIN TYPE: CALCILUTITE, BIOGENIC
25% ALLOCHEMICAL CONSTITUENTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
ACCESSORY MINERALS: SILT-SIZE DOLOMITE-20%, QUARTZ-02%
ORGANICS-01%
OTHER FEATURES: DOLOMITIC, LOW RECRYSTALLIZATION
FOSSILS: ORGANICS
MODERATELY INDURATED DOLOMITIC CALCILUTITE. TRACE AMOUNTS
ORGANIC LAMELLAE. DREDGING ZONE. LOW PERMEABILITY RESPONSE
DURING DRILLING.
- 1701 - 1742 DOLOSTONE; VERY LIGHT ORANGE TO GRAYISH ORANGE
15% POROSITY: INTERGRANULAR, PIN POINT VUGS

LOW PERMEABILITY; 0-10% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO MEDIUM; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-20%, ORGANICS-01%
OTHER FEATURES: CALCAREOUS, GRANULAR
FOSSILS: FOSSIL MOLDS, ORGANICS
CALCAREOUS DOLOSTONE, VARIABLY GRANULAR INTERBEDDED WITH
OOLOMITIC VUGULAR CALCARENITE. SOME ORGANIC VARVES.

1742 - 1765 DOLOSTONE; VERY LIGHT ORANGE TO GRAYISH BROWN
15% POROSITY: LOW PERMEABILITY, PIN POINT VUGS
INTERGRANULAR; 0-10% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-30%, ORGANICS-02%
OTHER FEATURES: CALCAREOUS, LOW RECRYSTALLIZATION, GRANULAR
FOSSILS: FOSSIL MOLDS, ORGANICS
INTERBEDDED PALE CALCILUTITIC DOLOMITE, DOLOMITIC
CALCARENITE WITH INTERSTITIAL CALCITE, AND ORGANIC-RICH
DOLOMITIC CALCARENITE. MINOR BLACK CHERT AT 1765 FT.

1765 - 1911 CUTTINGS NOT DESCRIBED

1911 TOTAL DEPTH