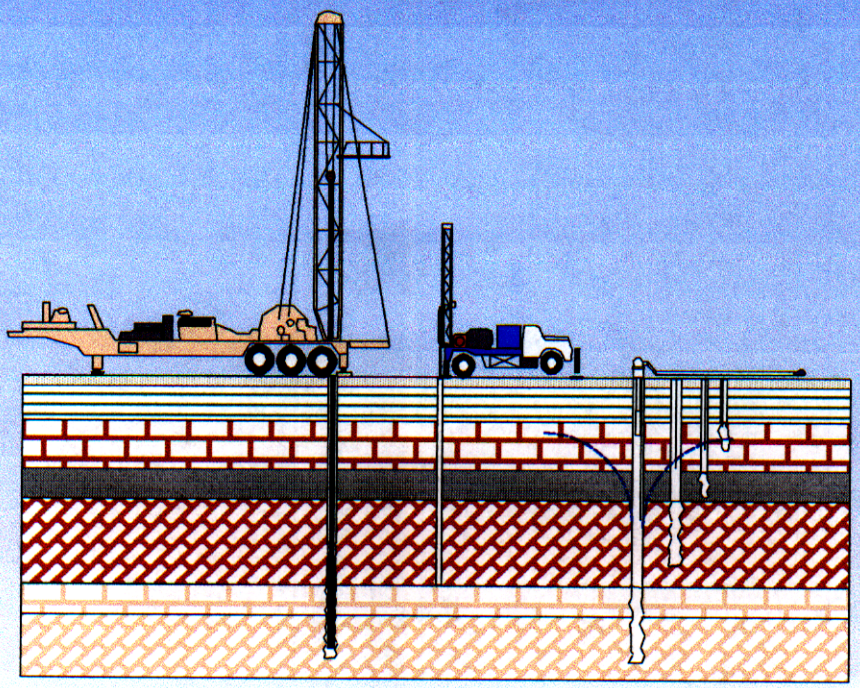
ROMP 5 CECIL WEBB
MONITOR WELL SITE
CHARLOTTE COUNTY, FLORIDA

VOLUME TWO

EXPLORATORY DRILLING AND TESTING



Geohydrologic Data Section
Resource Data Department
Southwest Florida Water Management District
March 1997

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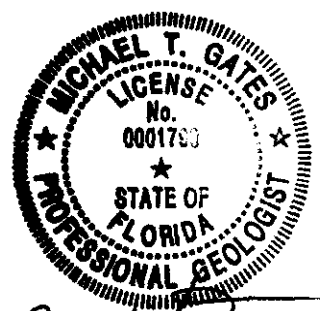
The geological evaluations and interpretations contained in the *ROMP 5 Exploratory Drilling and Testing Report* have been prepared by or approved by a Certified Professional Geologist in the State of Florida, in accordance with Chapter 492, Florida Statutes.



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VOLUME TWO

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March 1997

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1.0 INTRODUCTION

The ROMP 5 (WRAP S-2) Cecil Webb well site is one of seven 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 5 Well Site was obtained by the Southwest Florida Water Management District (SWFWMD) in December 1992 for construction of a multiple well monitor site. Drilling, testing, and monitor well construction at ROMP 5 was planned in several phases. The data collected during these phases is presented as a four volume report: Volume One - Core Drilling and Testing, Volume Two - Exploratory Drilling and Testing, Volume Three - Monitor Well Construction, and Volume Four - Aquifer Performance Testing.

The first phase, exploratory coring from land surface to 1,304 feet (ft) below land surface (bls), began June 1993 and was completed in December 1993. The next phase of work, deep exploratory drilling (below 1,304 ft bls) and testing and monitor well construction was initiated in February 1995. The exploratory drilling and testing was completed in June 1996 and monitor well construction was completed in September 1996. The last phase of work at ROMP 5, aquifer performance testing is scheduled to begin in 1997. This report, **Volume Two - Exploratory Drilling and Testing**, presents the data collected from the deep exploratory drilling and testing at ROMP 5.

2.0 SITE LOCATION

The ROMP 5 (WRAP S-2) Cecil Webb well site is located in Charlotte County, east of Punta Gorda (Figure 2). ROMP 5 is located within the Cecil M. Webb Wildlife Management Area in the northwest quarter of the northwest quarter of Section 3, Township 41 South, Range 25 East at latitude 26° 56' 44", longitude 81° 48' 29" (Figure 3). Land surface elevation at the well site is approximately 40 ft above the National Geodetic Vertical Datum of 1929 (NGVD).

3.0 DATA COLLECTION METHODS

Mud-rotary and reverse-air methods of drilling were utilized for the exploratory drilling and testing at ROMP 5. Mud-rotary was used until circulation was lost in a permeable zone or until ground-water sampling was required. A variety methods were utilized to collect the ground-water samples while drilling. All ground-water samples were collected in accordance with ROMP Water Quality Sampling Protocol.

3.1 DEEP EXPLORATORY DRILLING

Initial exploratory drilling at the ROMP 5 well site was performed with the District-owned Central Mine Exploration (CME) 75 core drilling rig. Continuous core was collected from land surface to 1,304 ft bls from June 1993 to December 1993. This phase of drilling and testing is presented in the ROMP 5 report: Volume One - Core Drilling and Testing.

Drilling and construction of the Avon Park/exploratory well was performed by the district-owned Speed Star 40 (SS-40) drill rig, from February 1995 to July 1995. The mud-rotary method of drilling was used to install the 12-inch steel casing to 1,080 ft bls. Below 450 ft bls aquifer head levels were above land surface(als), causing the well to flow. The weight of the drilling mud suppressed the potentiometric head levels allowing installation and grouting of the casing strings. The reverse-air method of drilling was used for exploratory drilling below the 12-inch steel casing at 1,080 ft bls. Flow from the well during exploratory drilling increased with depth from approximately 500 gallons per minute (gpm) at 1300 ft bls to nearly 2,000 gpm at 1,776 ft bls.

A 30-inch borehole was drilled using mud circulation from land surface to 40 ft bls and 24-inch diameter welded steel casing was installed and grouted to land surface. A 23-inch borehole was then drilled using mud circulation, from 40 ft bls to 220 ft bls and 18-inch welded steel casing was installed and grouted to land surface. A 17-inch borehole was then drilled using mud circulation from 220 ft bls to 1,080 ft bls and 12-inch diameter welded steel casing was installed and grouted to land surface. An 11-inch pilot hole was then advanced below the 12-inch casing using the reverse-air drilling method from 1,080 ft bls to 1,300 ft bls, the total depth previously drilled by the CME core drilling rig. Exploratory drilling and testing from 1,300 ft bls to 1,650 ft bls was conducted from June 1995 to July 1995. Ground-water

samples were collected at 30 ft to 60 ft intervals from 1,300 ft bls to 1,650 ft bls using various methods. Drill cuttings were collected at 10 ft intervals from 1,300 ft bls to 1,650 ft bls for lithologic description and stratigraphic correlation.

In June 1996 additional exploratory drilling was performed in the Avon Park well to determine the depth to seawater conditions. Exploratory drilling from 1,650 ft bls to 1,776 ft bls with a 5.675-inch bit was performed by the District subcontractor, Diversified Drilling, Inc. using a Speedstar 25 drilling rig. Ground-water samples were collected at 30 ft intervals and drill cuttings were collected at 10 ft intervals. Figure 4 presents the well configuration during the exploratory drilling at ROMP 5.

3.2 GROUND-WATER SAMPLING

Split ground-water samples were collected at 30 ft or 60 ft intervals while performing the exploratory drilling from 1,300 ft to 1,776 ft 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 samples analyses are presented in Section 6.0.

Four sampling methods were used to collect ground-water samples during exploratory drilling at the ROMP 5 well site: reverse-air drilling discharge, point-source bailer, packer tests, and geophysical thief sampling. Initial ground-water samples were collected from the reverse-air discharge line and/or using the point-source bailer to determine water quality. The geophysical thief sampler and packer tests were used to obtain more discrete samples. Tables 1, 2, and 3 present a summary of the field water quality analyses and the collection method for ground-water samples obtained during deep exploratory drilling at ROMP 5. Tables 4, and 5 present the laboratory results and method of collection for ground-water samples collected during exploratory drilling.

- Reverse-air samples are collected directly from the drilling discharge line, at the 30 ft or 60 ft sample interval. Before sample collection, the drill string is raised 20 ft off bottom and the borehole is purged by airlifting (reverse-air discharging) one volume of water

from the borehole. The rods are then lowered to near bottom and the sample collected directly from the discharge line while airlifting.

- Point-Source bailer samples are collected with a Timco™ 1.66-inch diameter, 10 ft, stainless steel bailer equipped with top and bottom check valves. Following airlifting (the borehole is purged using the method described above), the drill bit is lowered to near bottom. The bailer is then lowered through the drill rods to the bottom of the drill string and retrieved.

- In off-bottom packer tests, the lowermost portion of the borehole is isolated from above by an inflatable packer element. The isolated portion of the borehole is then airlifted and the ground-water sample from the isolated interval is collected directly from the discharge line.

- Geophysical thief samples are collected following removal of the drill string from the borehole. A stainless steel thief sampler is lowered on a wire-line to a specified depth in the borehole. At the specified depth, a valve in the thief sampler is opened electrically, allowing water to enter the chamber. The valve is then closed and the thief sampler retrieved.

Routine 30 ft or 60 ft ground-water samples were collected directly from the drilling discharge line or using the point source stainless steel bailer. The discharge water sample concentrations can be considered a mixture of waters transmitted from permeable zones in the borehole above the sampling point. The point source bailer samples may be more representative than the discharge samples due to a moderate level of control provided by the check ball system of the bailer, although these samples can also be affected by water contribution from up-hole permeable beds.

Geophysical thief samples were collected during most logging phases to obtain discrete ground-water samples at depth. Geophysical thief samples can be considered highly representative of ground-water quality within the borehole due to the effective sealing of the sample chamber and the high degree of control when the sample is collected. However, due to inter-borehole flow and disturbances from drilling, water sample ion concentrations within the borehole may be higher or lower than actual formation water.

Packer tests were conducted using a 4.25-inch TAM International, Inc. Inflatable Packer in a six-inch pilot hole. Packer test samples can be considered the most representative of actual formation water quality since the sample interval is physically isolated from the rest of the borehole and hydraulically stressed to yield the sample. However, packer test samples are the most difficult samples to collect due to borehole constraints, and the mechanical effort required to install and remove the packer.

3.3 GEOPHYSICAL LOGGING

Several suites of geophysical logs were run on the Avon Park exploratory well at various stages of well construction. In addition, some discrete water quality samples were collected with the geophysical thief sampler. Geophysical logs are used to delineate hydrogeological units, characterize water quality, pick packer setting points, and to calculate amounts of well construction materials. Table 6 presents a summary of the geophysical logs run during exploratory drilling at ROMP 5. Figure 5 presents selected geophysical logs run during exploratory drilling.

All logs were run with SWFWMD's digital geophysical logging equipment and are archived with the ROMP 5 File of Record. The geophysical logs run during exploratory drilling are identified below:

CALIPER	Three-arm caliper
GAM(NAT)	Natural Gamma
SP	Spontaneous Potential
RES	Single point resistance
RES(16N)	16" Normal resistivity
RES(64)	64" Normal resistivity
RES SUITE	Single point resistance (16", 64" Normal, laterlog)
RES(FL)	Fluid Resistivity
SP COND	Specific Conductance-fluid
TEMP	Temperature-fluid
IND	Induction
POR(SON)	Sonic Porosity
FLOW	Impeller-type flowmeter
THIEF	Thief sampler

4.0 GEOLOGY

4.1 PHYSIOGRAPHY

The ROMP 5 well site is located within the Gulf Coastal Lowlands physiographic province, a division of the Mid-Peninsular zone of the Floridan Peninsula (White, 1970). The well site is within the SWFWMD Peace River Basin and is located southeast of Shell Creek, a tributary to the Peace River. Well site elevation is approximately 40 ft NGVD.

4.2 STRATIGRAPHY

The ROMP 5 well site stratigraphy was defined from descriptions of the continuous lithologic core samples collected during core drilling from land surface to 1,304 ft bls and from the drill cuttings collected during rotary drilling from 1,300 ft bls to 1,776 ft bls. Figure 6 depicts the geology and hydrogeology described at the ROMP 5 well site. The lithologic log for ROMP 5 is presented in Appendix A.

4.2.1 Undifferentiated Surficial Deposits

The Pliocene to Recent age Undifferentiated Surficial deposits is the uppermost geologic unit at the ROMP 5 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 9 ft bls.

4.2.2 Caloosahatchee Formation

The Caloosahatchee Formation, Pliocene to Pleistocene in age, underlies the undifferentiated Surficial deposits and extends from 9 ft bls to 49 ft bls. The Caloosahatchee is comprised of a series of sand, shell, and limestone beds. The upper part of the formation is comprised of fine to medium grained, unconsolidated quartz sand, and mollusk and pelecypod shell beds (Dubar, 1962). Underlying the sand and shell beds are sequences of moldic, fossiliferous, calcilutite with interbedded sand and clay.

4.2.3 Tamiami Formation

The Tamiami Formation underlies the Caloosahatchee Formation and extends from 49 ft bls to 128 ft bls. Highly permeable sequences of interbedded quartz and phosphatic sands, and fossiliferous limestone are present from 49 ft bls to 84 ft bls. These beds overly a thick sequence of low permeability clay extending from 84 ft bls to 128 ft bls. This unit termed the Venice Clay, a name first used by Joyner and Sutcliffe (1976), is comprised of dark greenish-gray, plastic, clay, with minor amounts of interbedded quartz sand. In the area of ROMP 5 the Venice Clay forms the confining unit between the surficial and intermediate aquifers.

4.2.4 Peace River Formation

The Peace River Formation is a lower Pliocene to Miocene age marine silicalastic unit that lies unconformably below the Venice Clay. The Peace River Formation is part of the Hawthorn Group sediments described by Scott (1988). In the area of ROMP 5 the Peace River Formation is comprised of a thick sequence of siliclastic sediments extending from 128 ft bls to 432 ft bls. Alternating beds of quartz and phosphatic sand, interbedded clay, sandstone, and sandy, fossiliferous limestone make up the numerous high and low permeability beds within this unit.

4.2.4 Arcadia Formation

The Arcadia Formation, middle-Miocene in age underlies the Peace River Formation. 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 5 the Arcadia extends from 432 ft bls too 711 ft bls. The Tampa Member was not present but the primarily siliclastic Nocatee Member was described from 508 ft bls to 561 ft bls. The upper part of the Arcadia Formation is characterized by moderately indurated calcarenite, with interbedded quartz sand, phosphatic sand and gravel, and some clay and dolostone. Foram, mollusk, and echinoid molds are common and account for the high permeability in the upper part of the unit. The Nocatee Member contains beds of low permeability clay, limestone, and dolostone with interbedded quartz and phosphatic sand. Below the Nocatee Member, the lower part of the Arcadia Formation consists

primarily of thin beds of dolostone, limestone, and clay interbedded with minor amounts of quartz and phosphatic sand. Dolostone is the predominate carbonate in the lower part of the formation and exhibits low porosity and permeability.

4.2.5 Suwannee Limestone

The Suwannee Limestone is Oligocene in age and extends from 711 ft bls to 989 ft bls at the ROMP 5 well site. The Suwannee Limestone is distinguished from the overlying Arcadia Formation by the absence of phosphatic sediments. The Suwannee consists of a chalky, fossliferous, limestone alternating with thin beds of clay, dolostone, and quartz sand. Limestone beds are primarily sandy, clayey calcarenite, poor to moderate induration with varying permeability. Several distinct beds of unconsolidated quartz sand and thin beds of quartz sandstone were noted during coring.

4.2.6 Ocala Limestone

Eocene in age, the Ocala Limestone extends from 989 ft bls to 1,080 ft bls at ROMP 5. The Ocala is a highly fossiliferous, fine-grained, poorly cemented shallow marine limestone. The limestone is predominantly a chalky, foraminiferal 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 5 area the Ocala Limestone is generally of low permeability.

4.2.7 Avon Park Formation

The Avon Park Formation is Eocene in age and extends from 1,080 ft bls to more than 1,776 ft bls in the vicinity of ROMP 5. Drilling was terminated at 1,776 ft at the ROMP 5 well site. The Avon Park Formation is characterized by alternating beds of well indurated, fossiliferous limestone and dolostone. A thick sequence (1,080 ft bls to 1,114 ft bls) of fine-grained, fractured dolostone is present at the top of the Avon Park Formation near the Ocala Limestone contact. A medium-grained well indurated calcarenite alternating with thin beds of dolostone and clay is present from 1,114 ft bls to approximately 1,350 ft bls. The top of the *highly permeable dolomite zone* of the Upper Floridan aquifer, previously mapped by Wolansky and others (1980), occurs at 1,350 ft bls. This zone of

highly fractured and solution riddled dolostone is present from 1,350 ft bls to 1, 400 ft bls. Drill cuttings collected while drilling in this zone exhibited well developed secondary porosity features. This secondary porosity is indicated on the caliper log (Figure 5). Between 1,400 ft bls and 1,650 ft bls the Avon Park Formation consists of alternating beds of hard but somewhat less permeable limestone and dolostone. Fractured, permeable dolostone is again encountered from 1,650 ft bls to the bottom of the borehole at 1,776 ft bls. Secondary porosity in this zone is not as well developed as the 1,350 to 1,400 ft bls zone, as evidenced by the caliper log.

5.0 HYDROLOGY

The ROMP 5 well site hydrogeology was defined during initial wireline coring and exploratory drilling. Aquifer systems were delineated from lithologic descriptions of permeable and non-permeable units and from potentiometric levels recorded during drilling.

5.1 SURFICIAL AQUIFER SYSTEM

The surficial aquifer system is an unconfined aquifer that extends from land surface to approximately 84 ft bls at the ROMP 5 well site. Sediments of the undifferentiated surficial deposits, Caloosahatchee Formation, and Tamiami Formation comprise the surficial aquifer. The base of the aquifer is formed by the relatively impermeable clays of the Venice Clay Formation. The water level in the surficial aquifer ranges from less than one ft bls to five ft bls. Ground-water samples were not collected from the surficial aquifer during this phase of drilling.

5.2 INTERMEDIATE AQUIFER SYSTEM

The intermediate aquifer system is a confined aquifer system located between the overlying surficial aquifer system and the underlying Upper Floridan Aquifer System. In the area of ROMP 5 the intermediate aquifer system is comprised of a series of transmissive and confining units of the Peace River Formation and Arcadia Formation. The intermediate aquifer system is approximately 470 ft thick and extends from 130 ft bls to 600 ft bls at the ROMP 5 well site.

In some areas of Charlotte County three separate permeable artesian zones have been described within the intermediate aquifer system (Sutcliffe, 1975). At ROMP 5 two permeable zones were delineated within the intermediate aquifer system. The third permeable zone, sometimes described as lying just above the Venice Clay but separated hydraulically from the surficial aquifer (Barr, 1996), was not identified at ROMP 5. The first or upper permeable zone is located within the Peace River Formation and extends from 130 ft bls to 230 ft bls. The second or lower permeable zone is located within the Arcadia Formation and Nocatee Member sediments and extends from 450 ft bls to 600 ft bls. The potentiometric surface in the upper permeable zone ranges from 5 ft bls to 10 ft bls. The potentiometric surface of the lower permeable zone ranges from about 10 ft als to 15 ft als. Ground-water samples were not collected from the intermediate aquifer system during this phase of drilling.

5.3 UPPER FLORIDAN AQUIFER

The Upper Floridan aquifer in the vicinity of ROMP 5 extends from approximately 710 ft bls to greater than 1,776 ft bls. The top of the Upper Floridan aquifer coincides with the top of the Oligocene Age Suwannee Limestone at approximately 710 ft bls. The base of the Upper Floridan aquifer typically is marked by a transition from massive dolostone of the Avon Park Formation, to beds of vertically persistent, intergranular evaporites termed "middle confining unit" by Ryder (1985).

The Upper Floridan aquifer is comprised of the Suwannee Limestone, Ocala Limestone, and Avon Park Formation. The low permeability beds of the Ocala Limestone act as a semi-confining unit between the transmissive beds of the overlying Suwannee Limestone and the underlying Avon Park Formation.

Exploratory drilling in the Avon Park section of the Upper Floridan Aquifer revealed moderately permeable beds of calcarenite and dolostone from 1,080 ft bls to 1,350 ft bls. The top of the highly permeable dolostone zone of the Upper Floridan Aquifer, previously mapped by Wolansky and others (1980) occurs at 1,350 ft bls. A highly transmissive flow zone extends from 1,350 ft bls to 1, 400 ft bls. Caliper logs (Figure 5) and borehole video indicate this area is comprised of highly fractured, cavernous, dolostone. Permeable dolostone and limestone persists from 1,400 ft bls to 1,775 ft bls but fracturing is less prominent than the 1,350 to 1,400 ft zone (Figure 5). The evaporative sediments

indicative of the middle confining unit of the Floridan Aquifer System were not encountered during exploratory drilling at ROMP 5.

Potentiometric maps prepared by Metz and Stelman (1994 and 1995) indicate the potentiometric surface of the Upper Floridan Aquifer in the area of ROMP 5 ranges from approximately 48 ft NGVD in September to 50 ft NGVD in May (Figures 7 and 8).

6.0 GROUND-WATER QUALITY

Ground-water samples were collected from the Upper Floridan aquifer at 30 ft to 60 ft intervals from 1,300 ft to 1,775 ft bls while exploratory drilling at the ROMP 5 well site. The results of ground-water quality samples collected during exploratory drilling at ROMP 5 are presented in Tables 1 through 5. Water quality data previously collected while drilling from land surface to 1,300 ft bls is presented in Volume One - Core Drilling and Testing.

Ground-water mineralization increased slowly with depth from 1,300 ft bls to 1,650 ft bls. Specific conductance values for samples collected with the point-source bailer increased from 3,450 umhos/centimeter (cm) at 1,311 ft bls to 4,790 umhos/cm at 1,620 ft bls (Table 4). Chloride concentrations increased from 946 milligrams per liter (mg/l) at 1,311 ft bls to 1,360 mg/l at 1,620 ft bls. Sulfate concentrations increased from 272 mg/l at 1,311 ft bls to 309 mg/l at 1,620 ft bls. Below 1,650 ft bls ground-water quality degrades rapidly. Specific conductance values increased from 19,360 umhos/cm at 1,674 ft bls to 38,740 umhos/cm at 1,768 ft bls (Table 4). Chloride concentrations increased from 6,760 mg/l at 1,674 ft bls to 13, 580 mg/l at 1,768 ft bls. Sulfate concentrations increased from 885 mg/l to 2,078 mg/l at 1,768 ft bls. Figure 9 presents a graph of the water quality trend during exploratory drilling.

The results of the ground-water sampling indicate the poor quality water is located below the uppermost highly permeable zone (1,350 ft bls to 1,400 ft bls) at the ROMP 5 site. The 1,000 mg/l chloride isochlor occurs in the highly permeable zone. Water quality begins to degrade rapidly below 1, 650 ft bls and is approaching seawater concentrations at 1, 768 ft bls.

7.0 HYDRAULIC DATA

During drilling the Avon Park Formation/Upper Floridan exploratory well flowed up to 2,000 gpm from the open hole interval of 1,080 ft bls to 1,775 ft bls. The potentiometric surface in the exploratory well while drilling from 1,650 ft bls to 1,768 ft bls in June 1996 varied from 9.50 ft als to 9.80 ft als. A limited step-flow test was performed on the well in December 1995 from the open hole interval of 1,080 - 1,650 ft bls. A 12-inch standpipe was installed on the well and a transducer was installed inside the well. A 6-inch valve was installed on a side outlet of the well. Static water level prior to the test was 11.43 ft als. At the beginning of the test the 6-inch valve was opened allowing the well to flow at 600 gpm through a 6-inch discharge hose. The resulting change in head inside the well was recorded by the pressure transducer. Head levels inside the well were approximately 8.4 ft als while flowing at 600 gpm. Later, the 6-inch discharge hose was removed, allowing the well to flow at 1,000 gpm. Head levels inside the well were approximately 6.2 ft als while flowing at 1,000 gpm. A specific capacity of 194 gpm/ft was calculated for the well. Figures 10 and 11 presents the drawdown and recovery phases of the flow test.

In June 1996 with the borehole open to 1,738 ft bls, an off-bottom packer test was performed in the Avon Park Formation. A 4-inch TAM inflatable packer was installed in the 5.675-inch open hole at 1,690 ft bls. The test interval of 1,690 ft bls to 1,738 ft bls was pumped by airlifting at 26 gpm for 110 minutes. One ground-water sample was collected from the discharge line for analyses. Laboratory results from the sample analyses are presented in Table 6. The drawdown and recovery for the tested zone were measured by a transducer and recorded with a datalogger. Figure 12 presents the drawdown and recovery curves for the packer test. The test results show the zone to be highly permeable.

The major zone of ground-water flow was identified in the highly fractured dolostone interval from 1,350 ft bls to 1,400 ft bls. Another flow zone is located in the somewhat lesser fractured dolostone from 1,650 ft bls to 1,776 ft bls. During video logging of the borehole, upward vertical flow from the 5.625-inch borehole into the 11-inch borehole was observed.

Aquifer performance tests are planned for the surficial aquifer, upper and lower permeable zones of the intermediate aquifer, and the Suwannee limestone zone of the Upper Floridan aquifer in 1997 at the ROMP 5 well site. The results of these tests will be presented in ROMP 5 report: Volume Four - Aquifer Performance Testing.

8.0 SUMMARY

Construction and testing of the Avon Park Formation/Upper Floridan aquifer monitor at the ROMP 5 well site began in February 1995. Exploratory drilling and testing from 1,300 ft bls to 1,650 ft bls was performed from June to July 1995. Additional drilling and testing from 1,650 ft bls to 1,776 ft bls was performed in June 1996. Drill cutting 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 on the exploratory well indicate the highly permeable zone of the Upper Floridan zone occurs from 1,350 ft bls to 1,400 ft bls. Ground-water samples collected indicate the 1,000 mg/l chloride isochlor occurs in this zone. Rapid mineralization of the ground-water occurs below 1,650 ft bls. Specific conductance of the ground-water at 1,768 ft bls was measured at 38,740 umhos/cm. Evaporitic sediments were not detected at the termination of drilling at 1,768 ft bls.

Following all drilling and testing the 5.625-inch 11-inch borehole was back-plugged with cement grout from 1,768 ft bls to 1,400 ft bls. A 6- inch PVC liner was installed inside the 12-inch steel casing from 1,350 ft bls to 3 ft above land surface. A 6-inch x 12-inch cement basket installed on the PVC at 1,350 ft bls allowed grouting inside the 11-inch open hole. Cement grout was installed from 1,350 ft bls to land surface. Figure 13 presents the as-built diagram for the Avon Park Formation/Upper Floridan aquifer monitor well.

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TABLES

Table 1. Field Analyses of ROMP 5 Bailer Samples Collected During Exploratory Drilling*

Date (M-D-Y)	Time	Depth (ft bls)	Specific Cond (umhos)	H20 Temp (celsius)	H20 Density (g/cm3)	Cl (mg/l) (hach)	SO4 (mg/l) (hach)	pH
6-13-95	830	1311	3470	30.5	0.9995	>1000	300	N/A
7-5-95	1245	1376	3490	32.0	N/A	1360	450	7.80
7-12-95	1715	1437	3800	31.9	N/A	1500	N/A	8.01
7-17-95	1200	1500	3640	23.3	N/A	N/A	N/A	7.01
7-19-95	1010	1560	3710	31.8	N/A	1700	N/A	7.71
7-19-95	1535	1620	5300	32.1	N/A	2250	N/A	7.67
7-19-95	1715	1650	40707	32.1	N/A	20007	N/A	7.75
6-6-96	1110	1674	18530	32.6	N/A	7500	1000	N/A
6-6-96	1345	1708	30000	32.5	N/A	8500	1000	N/A
6-6-96	1205	1768	42000	32.5	N/A	13000	1200	N/A

* All concentrations reported in mg/l unless otherwise noted

12" Steel casing extends to 1,080 ft bls

? Poor sample

N/A Not analyzed

Table 2. Field Analyses of ROMP 5 Geophysical Thief Samples Collected During Exploratory Drilling *

Date (M-D-Y)	Time	Depth (ft bls)	Specific Cond (umhos)	H20 Temp (umhos)	H20 Density (g/cm3)	Cl (mg/l) (hach)	SO4 (mg/l) (hach)	pH
7-25-95	930	1350	3690	N/A	N/A	N/A	N/A	N/A
7-25-95	1030	1500	4250	N/A	N/A	N/A	N/A	N/A
7-25-95	1130	1550	11980	N/A	N/A	N/A	N/A	N/A
7-25-95	1230	1650	14540	N/A	N/A	N/A	N/A	N/A

* All concentrations reported in mg/l unless otherwise noted

r5.wb2

12" Steel casing extends to 1080 ft bls

N/A Not analyzed

Table 3. Field Analyses of ROMP 5 Discharge Samples Collected During Exploratory Drilling*

Date (M/D/Y)	Time	Depth (ft bls)	Specific Cond (umhos)	H20 Temp (umhos)	H20 Density (g/cm3)	Cl (mg/l) (hach)	SO4 (mg/l) (hach)	pH
6-11-96	1325	1690-1738**	31000	35.2	N/A	9000	1000	N/A
6-13-96	1120	1776	45000	34.0	N/A	15000	N/A	N/A

* All concentrations reported in mg/l unless otherwise noted

r5.wb2

** Off bottom packer test

12" Steel casing extends to 1080 ft bls

N/A Not analyzed

Table 4. Laboratory Analyses of ROMP 5 Bailer Samples Collected During Exploratory Drilling*

Date (M-D-Y)	Time	Depth (ft bls)	Specific Cond. (umhos)	Water Density (g/cm3)	Cl	SO4	pH	Br	TDS	Ca	Mg	Bicarb as (CaCO3)	K	Na	Si	Fe (ug/l)	Total Hardness (CaCO3)	ION %
6-13-95	830	1311	3450	1.0015	946	272	9.5	4.5	2087	146	46	9	18	444	3.87	19	554	-3.42
7-5-95	1245	1376	3520	1.0016	906	261	7.8	3.7	1847	133	79	99	13.0	484	9.24	138	657	2.27
7-12-95	1715	1437	3820	1.0017	1076	306	8.0	2.6	2120	126	91	104	13.0	487	9.28	133	689	-4.74
7-17-95	1200	1500	3720	1.0017	945	257	7.9	1.8	2136	134	92	98	13.0	491	2.69	29	713	2.82
7-19-95	1010	1560	3730	1.0017	974	254	7.8	1.6	2125	134	94	100	12.0	508	4.18	167	722	2.88
7-19-95	1535	1620	4790	1.0022	1360	309	7.3	3.2	2868	162	114	78	15	675	5.81	260	874	0.91
7-19-95	1715	1650	41307	1.0019	10977	276	7.6	1.7	2471	144	100	106	14	571	5.83	336	771	2.27
6-6-96	1110	1674	19360	1.0098	6760	885	7.1	20.0	12910	635	498	74	60	3430	7.1	3354	3636	3.35
6-6-96	1345	1708	27780	1.011	8600	1235	6.9	27.0	17060	347	283	68	36	4275	5.9	5370	2032	-8.35
6-12-96	1205	1768	38740	1.0193	13580	2078	7.5	40.0	23770	977	828	82	159	7220	6.1	858	5849	0.94

* All concentrations reported in mg/l unless otherwise noted

? poor sample

Note: 12" Steel casing extends to 1,080 ft bls

N/A Not analyzed

rt5.wb2

Table 5. Laboratory Analyses of ROMP 5 Geophysical Thief Samples Collected During Exploratory Drilling*

Date (M-D-Y)	Time	Depth (ft bls)	Specific Cond. (umhos)	Water Density (g/cm3)	Cl	SO4	pH	Br	TDS	Ca	Mg	Bicarb as (CaCO3)	K	Na	Si	Fe (ug/l)	Total Hardness (CaCO3)	ION %
7-25-95	730	1650	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-25-95	930	1350	N/A	N/A	983	260	N/A	N/A	2108	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-25-95	1030	1500	N/A	N/A	1145	287	N/A	N/A	2411	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-25-95	1130	1550	12450	1.005	4007	627	7.6	14	6738	342	235	86	30	1785	8.51	57	1822	-5.37
7-25-95	1230	1650	15560	1.007	4836	751	7.5	18	2868	436	298	84	38	2230	7.89	61	2316	-3.18

* All concentrations reported in mg/l unless otherwise noted

Note: 12" Steel casing extends to 1,080 ft bls

N/A Not analyzed

rt5.wb2

Table 6. Laboratory Analyses of ROMP 5 Discharge Samples Collected During Exploratory Drilling*

Date (M-D-Y)	Time	Depth (ft bls)	Specific Cond. (umhos)	Water Density (g/cm3)	Cl	SO4	pH	Br	TDS	Ca	Mg	Bicarb as (CaCO3)	K	Na	Si	Fe (ug/l)	Total Hardness (CaCO3)	ION %
6-11-96	1325	1690-1738**	27180	1.0134	9470	1295	7.6	27.0	16660	796	631	94	83	4640	6.6	419	4586	-1.09
6-13-96	1120	1775	25560	1.0209	13920	2240	7.6	60.0	27430	981	930	100	226	8180	5.5	210	6279	5

* All concentrations reported in mg/l unless otherwise noted

Note: 12" Steel casing extends to 1,080 ft bls

**Off-bottom packer test

N/A Not analyzed

rt5.wb2

Table 7. ROMP 5 Geophysical Logs Run During Exploratory Drilling in Avon Park Well.

Logging Date	Open Hole Interval (Ft dls)	Well Construction Status	Log Type
7-24-95	1,080-1,650	11" open hole logged for water quality 12" steel casing to 1,080'	Caliper, SP, GAM (NAT), RES (OHM), Lateral, TEMP, RES (FL), Induction, Thief Samples
12-19-95	1,080-1,650	11" open hole logged for flow test 12" steel casing to 1,080'	SP, GAM (NAT), RES (OHM), Lateral, TEMP, RES (FL), Flow Log
6-13-96	1,080-1,776	6" pilot hole drilled by diversified, hole obstructed-logged to 1,722' 12" steel casing to 1,080	Caliper,GAM (NAT), RES (OHM), TEMP, RES(FL), Induction

Exglog.wpd

FIGURES

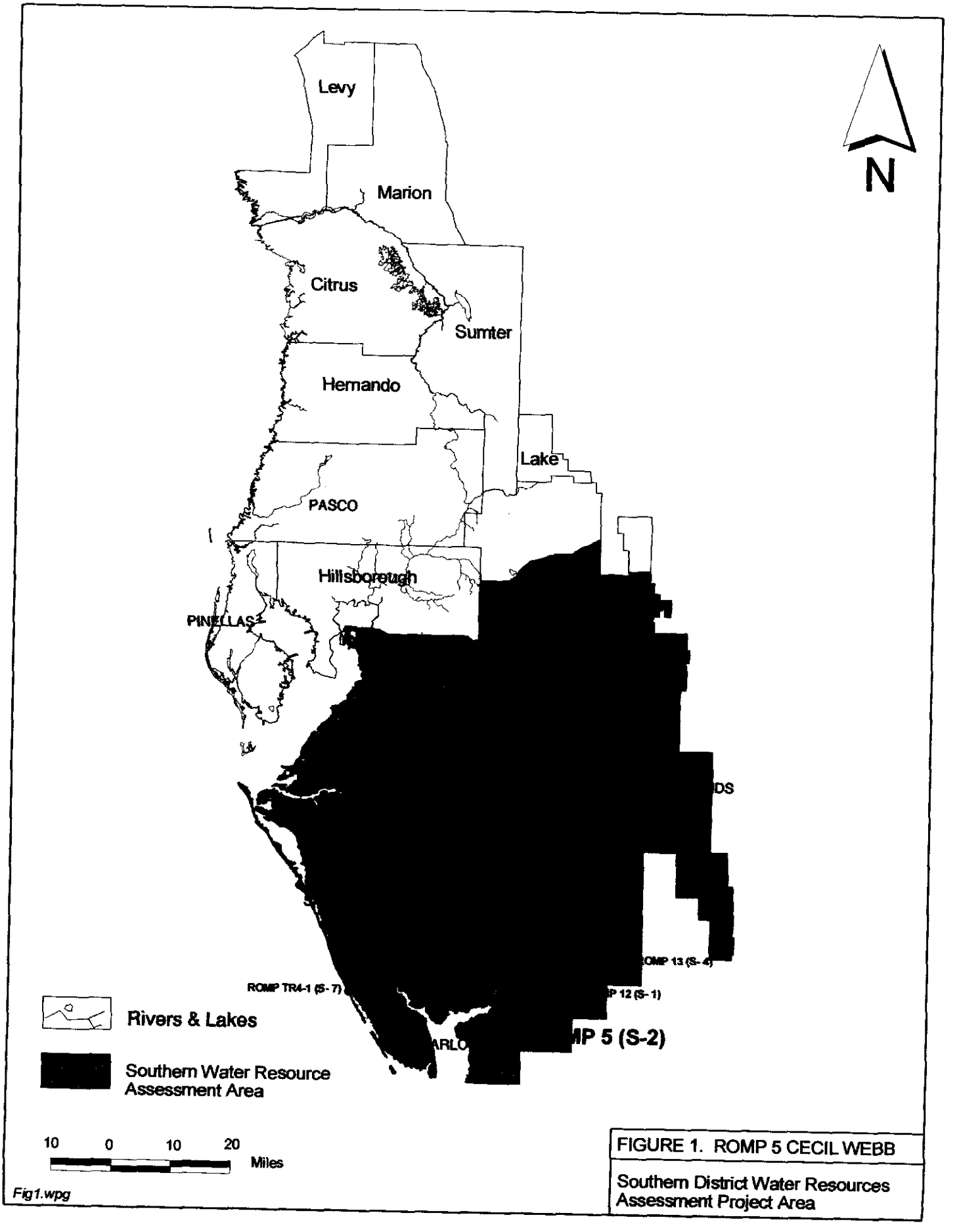


FIGURE 1. ROMP 5 CECIL WEBB

Southern District Water Resources Assessment Project Area

Fig1.wpg

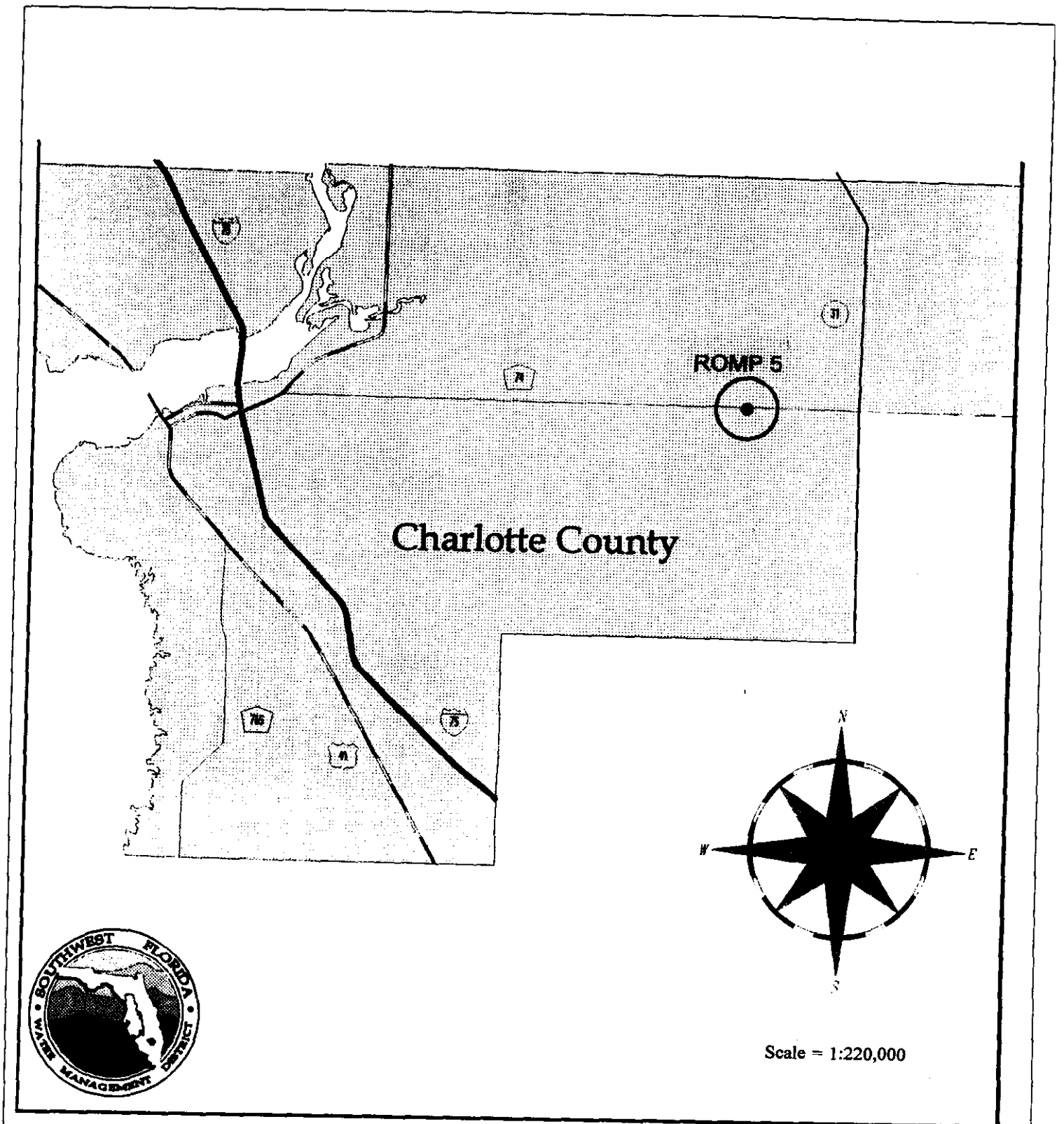
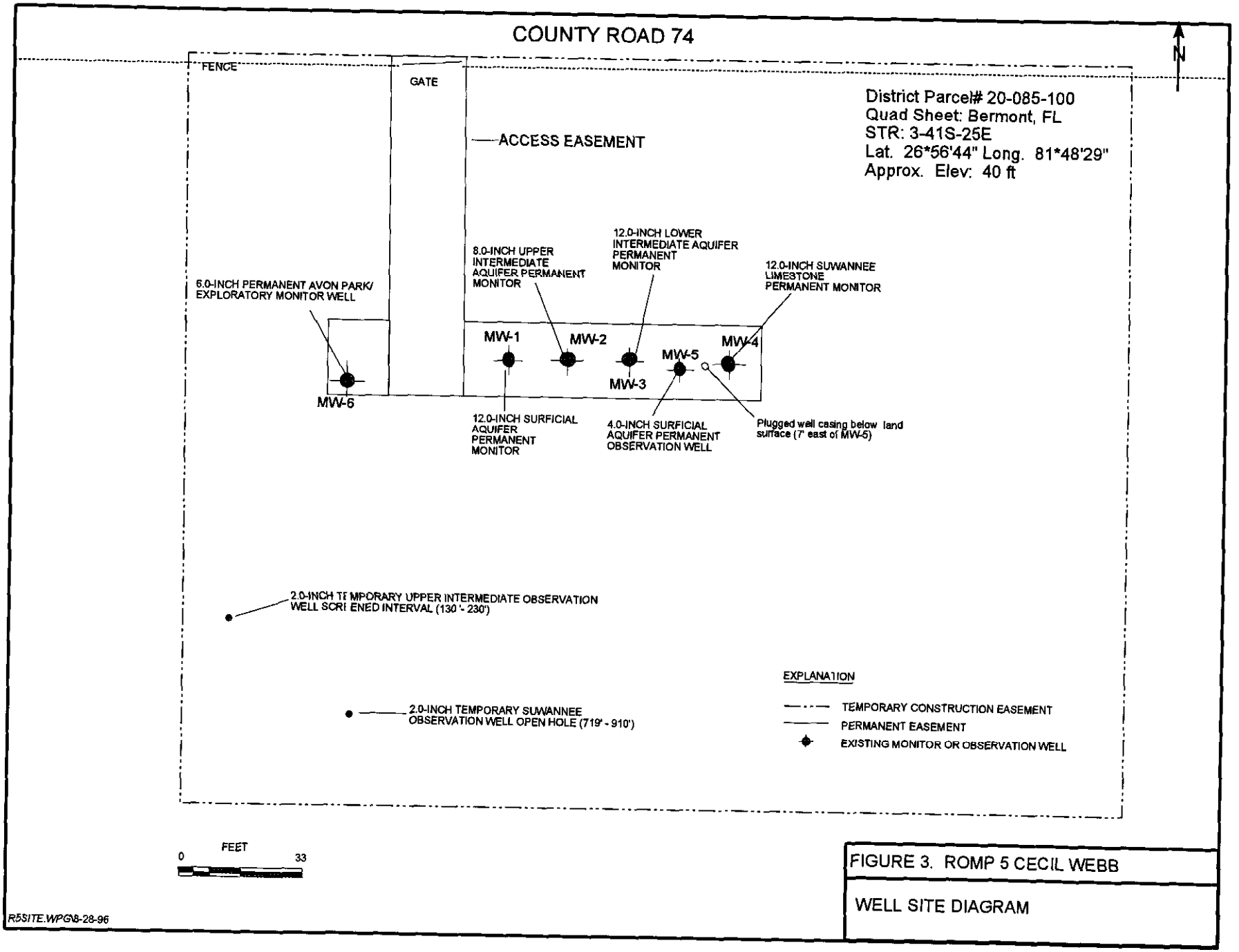


FIGURE 2. ROMP 5 CECIL WEBB

General Location Map


COUNTY ROAD 74
N
FENCE
GATE
ACCESS EASEMENT
District Parcel# 20-085-100
Quad Sheet: Bermont, FL
STR: 3-41S-25E
Lat. 26*56'44" Long. 81*48'29"
Approx. Elev: 40 ft
6.0-INCH PERMANENT AVON PARK/ EXPLORATORY MONITOR WELL
8.0-INCH UPPER INTERMEDIATE AQUIFER PERMANENT MONITOR
12.0-INCH LOWER INTERMEDIATE AQUIFER PERMANENT MONITOR
12.0-INCH SUWANNEE LIMESTONE PERMANENT MONITOR
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
12.0-INCH SURFICIAL AQUIFER PERMANENT MONITOR
4.0-INCH SURFICIAL AQUIFER PERMANENT OBSERVATION WELL
Plugged well casing below land surface (7' east of MW-5)
2.0-INCH TEMPORARY UPPER INTERMEDIATE OBSERVATION WELL SCREENED INTERVAL (130 - 230')
2.0-INCH TEMPORARY SUWANNEE OBSERVATION WELL OPEN HOLE (719' - 910')
EXPLANATION
TEMPORARY CONSTRUCTION EASEMENT
PERMANENT EASEMENT
EXISTING MONITOR OR OBSERVATION WELL
FEET
0
33
R5SITE.WPG\8-28-96
FIGURE 3. ROMP 5 CECIL WEBB
WELL SITE DIAGRAM

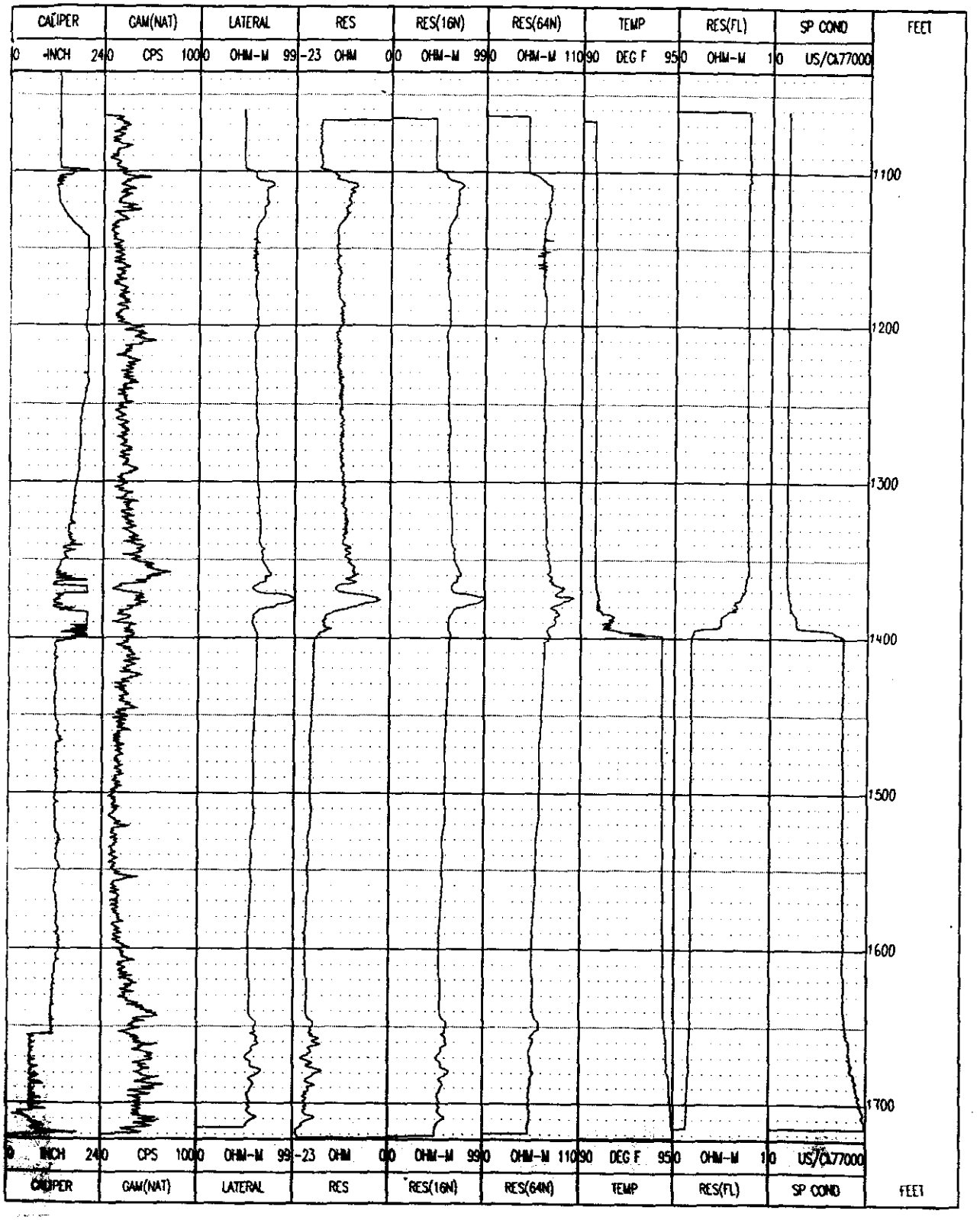


FIGURE 5. ROMP 5 CECIL WEBB

Selected Geophysical Logs Run During Exploratory Drilling

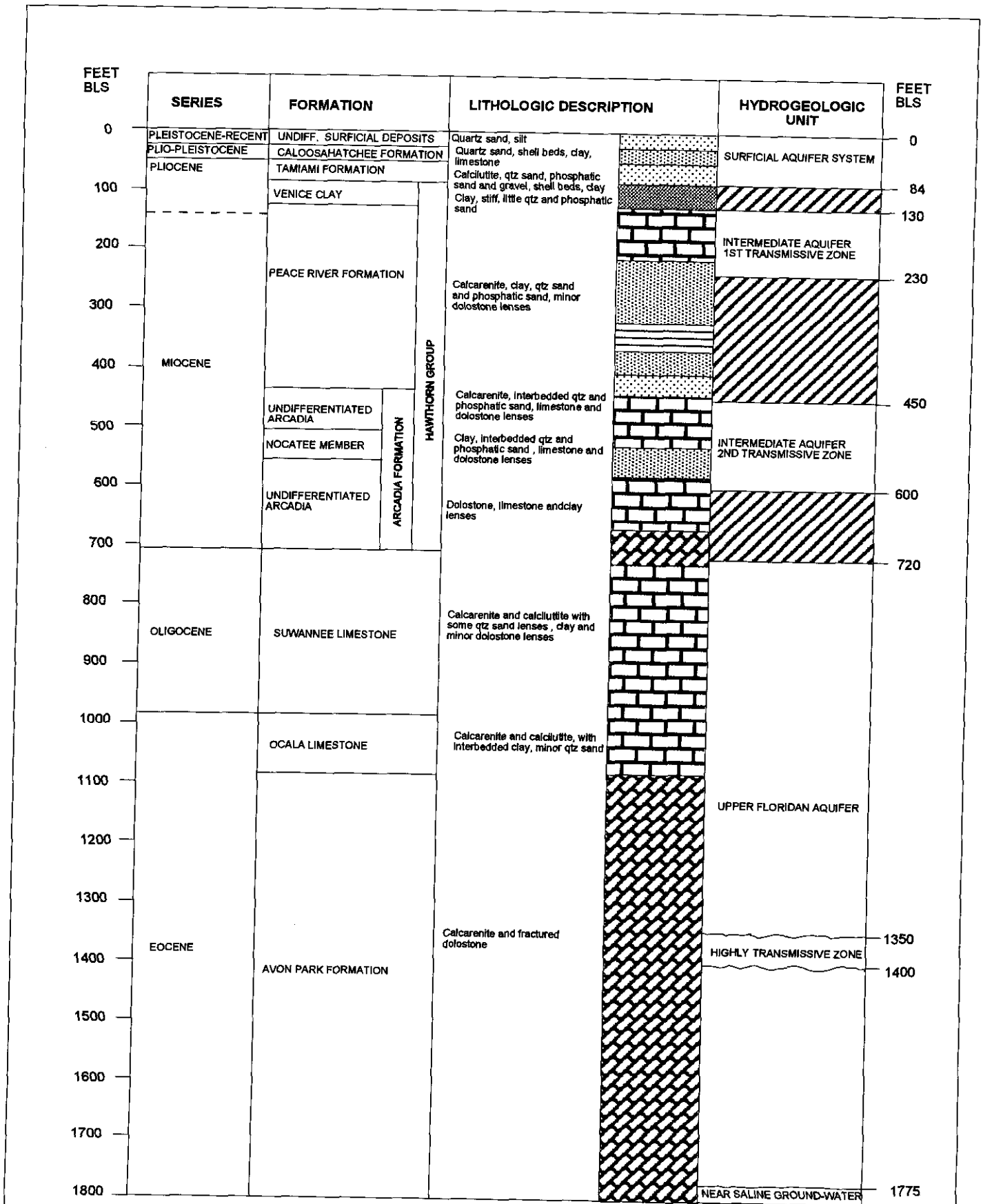


FIGURE 6. ROMP 5 CECIL WEBB
Hydrogeology

R5hydr3.wpg

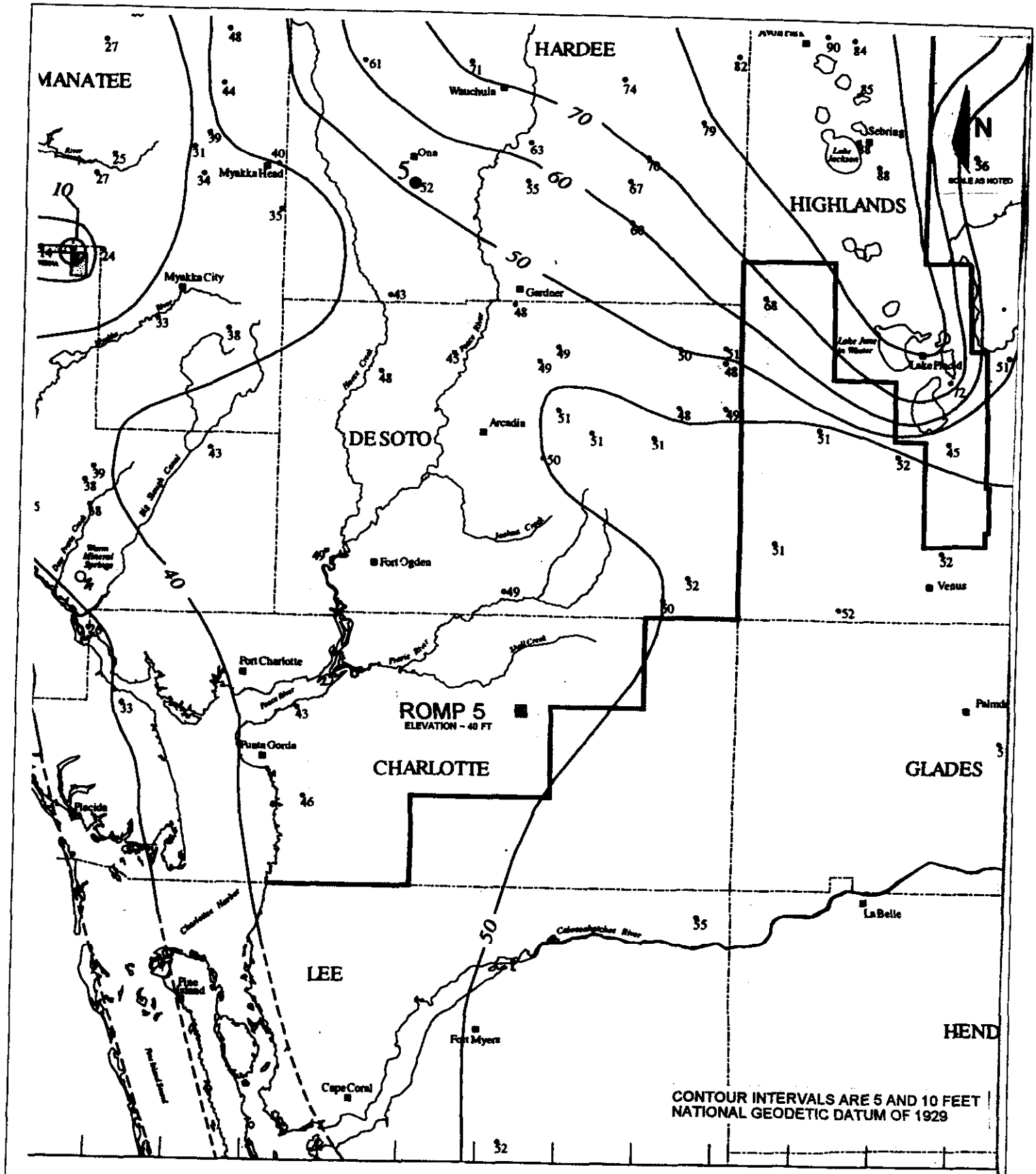
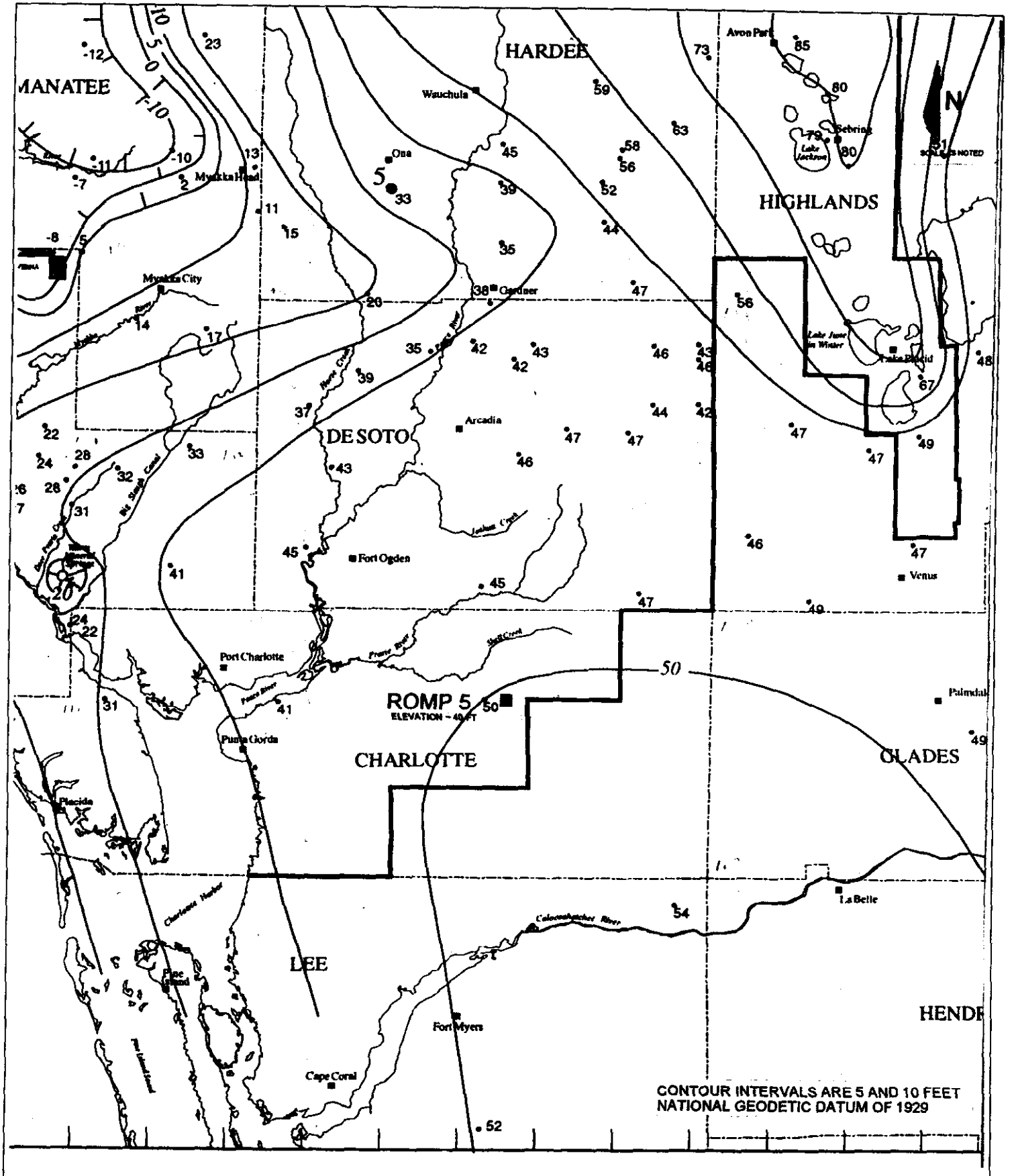


FIGURE 7. ROMP 5 CECIL WEBB

Potentiometric Surface of the Upper Floridan Aquifer September 1994

Potfm.wpg



Source: P.A. Metz and K.A. Stelman, USGS 1995

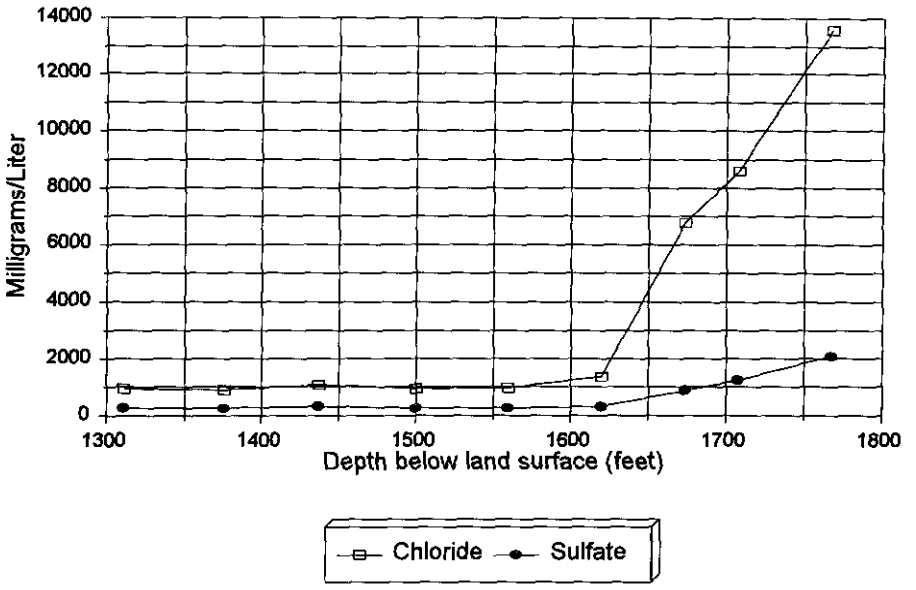
FIGURE 8. ROMP 5 CECIL WEBB

Potentiometric Surface of the *Upper Floridan* Aquifer, May 1995

Potfm2.wpg

EXPLORATORY DRILLING BAILER SAMPLES

Laboratory Analyses



EXPLORATORY DRILLING BAILER SAMPLES

Laboratory Analyses

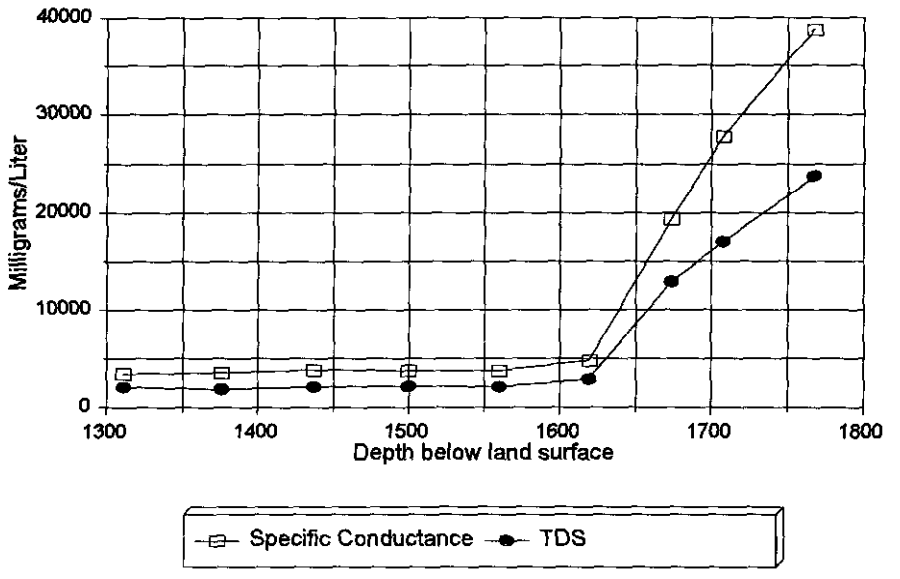
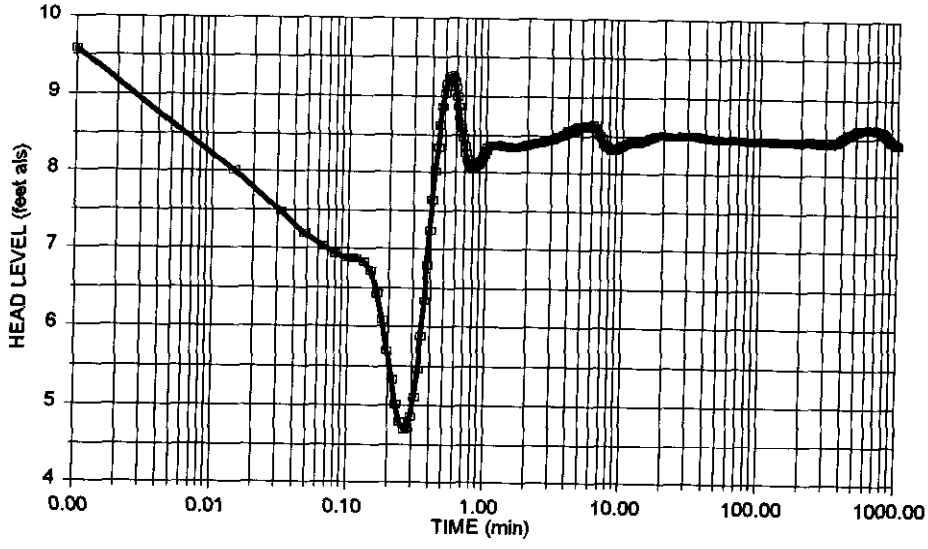


FIGURE 9. ROMP 5 CECIL WEBB
Ground-Water Sample Laboratory Results

r5.wb2

ROMP 5 FLOW TEST (Drawdown)

AVON PARK (1080-1650') 600 GPM STEP



ROMP 5 FLOW TEST (Drawdown)

AVON PARK (1080-1650') 1000 GPM STEP

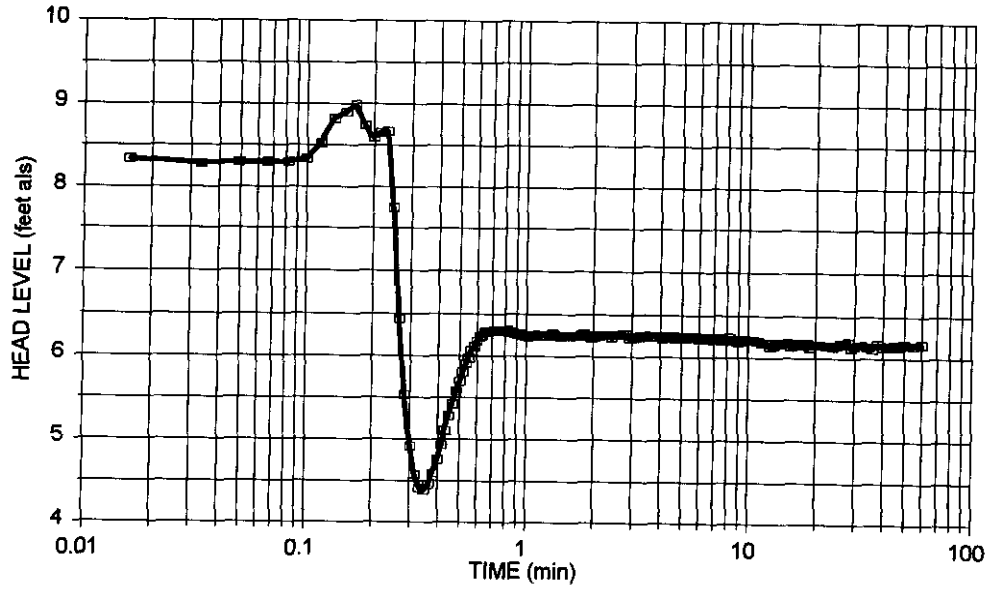


FIGURE 10. ROMP 5 CECIL WEBB
Avon Park Flow Test - Drawdown

r5flow2.wb2

ROMP 5 FLOW TEST (Recovery)

AVON PARK (1080-1650') 1000 GPM STEP

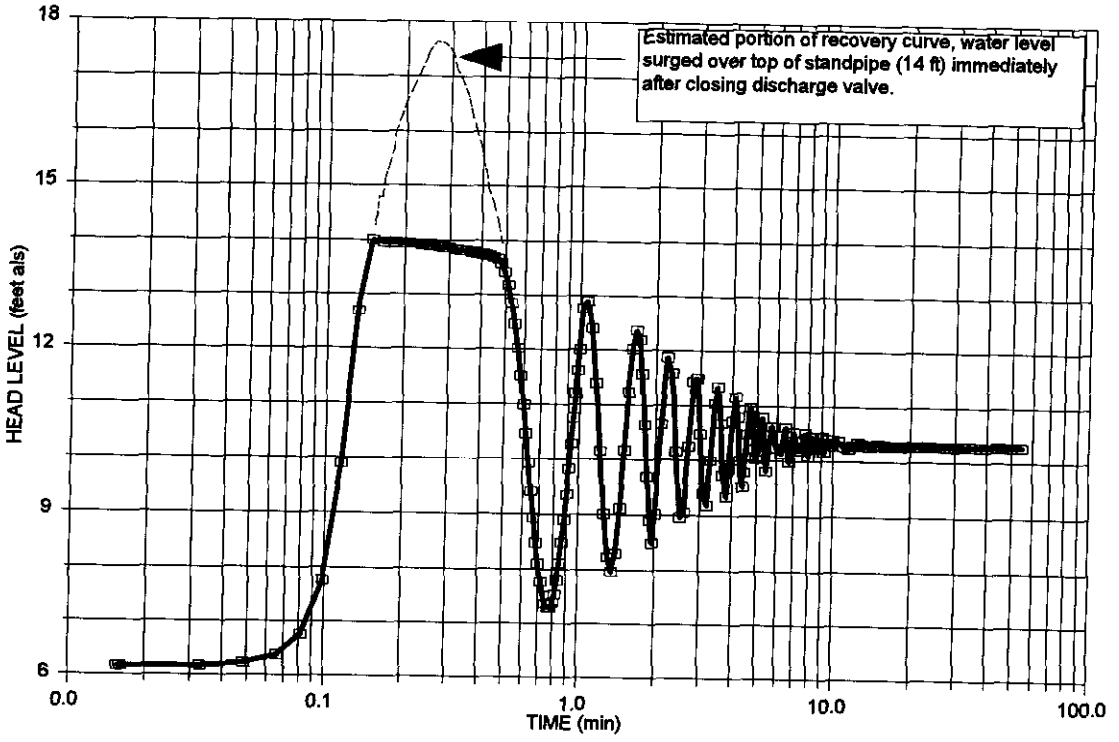
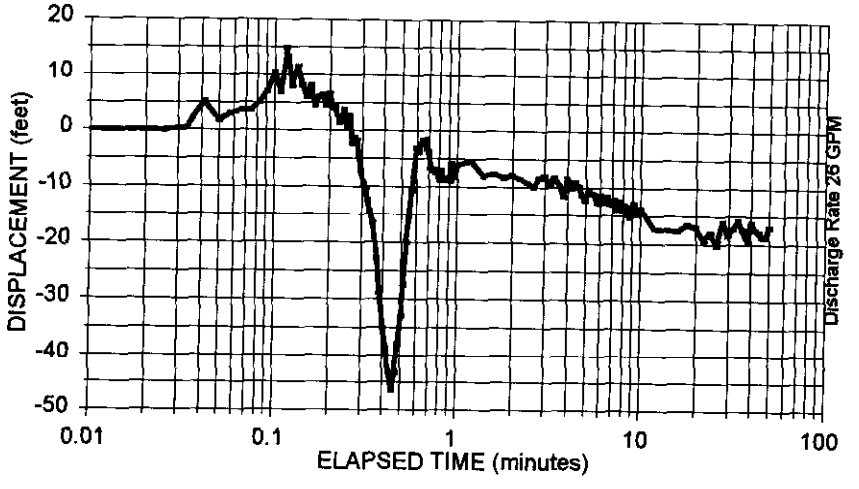


FIGURE 11. ROMP 5 CECIL WEBB
Avon Park Flow Test - Recovery

r5flow2.wb2

ROMP 5 PACKER TEST (Drawdown)
AVON PARK (1690-1738')



ROMP 5 PACKER TEST (Recovery)
AVON PARK (1690 -1738')

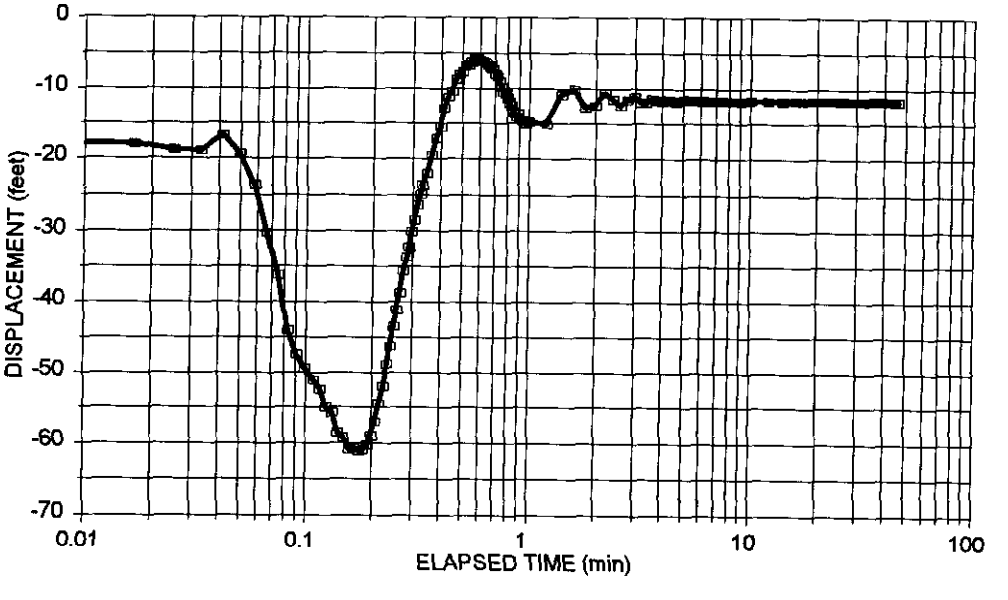
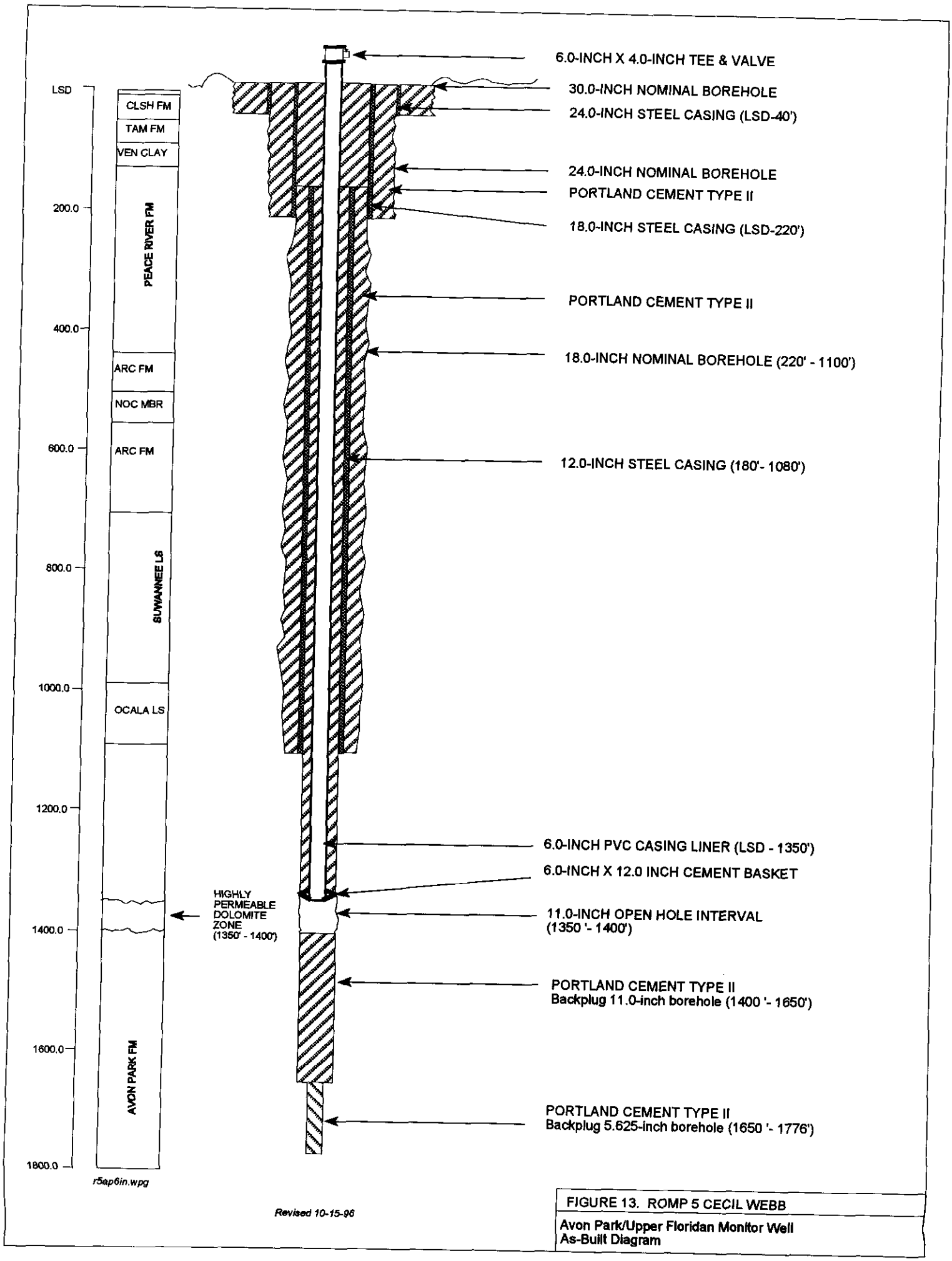


FIGURE 12. ROMP 5 CECIL WEBB
Avon Park Packer Test Drawdown and Recovery Curves

r5-1690d.wb2



r5ap6in.wpg

Revised 10-15-96

FIGURE 13. ROMP 5 CECIL WEBB

Avon Park/Upper Floridan Monitor Well
As-Built Diagram

APPENDIX A

ROMP 5 LITHOLOGIC LOG

LITHOLOGIC WELL LOG PRINTOUT

SOURCE - FGS

WELL NUMBER: W-16913
TOTAL DEPTH: 1650 FT.
SAMPLES - NONE

COUNTY - W-16913
LOCATION: T.41S R.25E S.03 AA
LAT = 26D 56M 44S
LON = 81D 14M 29S

COMPLETION DATE: 16/11/93
ELEVATION: 40 FT
OTHER TYPES OF LOGS AVAILABLE - GAMMA, CALIPER, ELECTRIC, FLUID CONDUCTIVITY,

OWNER/DRILLER:ROMP 5 CECIL WEBB (S-2) SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT, PAT MEADORS

WORKED BY:HYDROLOGIST-- TED GATES & JOHN DECKER FROM 6-15-93 TO 11-16-93. HOLLOW STEM (LSD-35.5') WIRELINE CORE (35.5'-1304') SAMPLE QUALITY-- AVERAGE TO EXCELLENT.
DRILL CUTTINGS COLLECTED 1300'-1650', 07-19-95
** 84'-128' IS VENICE CLAY **

0.0	-	9.0	090UDSC	UNDIFFERENTIATED SAND AND CLAY
9.0	-	49.0	112CLSCR	CALOOSAHATCHEE FM.
49.0	-	84.0	122TMIM	TAMIAMI FM.
84.0	-	128.0	122PCRV	PEACE RIVER FM.
128.0	-	432.0	122PCRV	PEACE RIVER FM.
432.0	-	508.0	122ARCA	ARCADIA FM.
508.0	-	561.5	122NOCA	NOCATEE MEMBER OF ARCADIA FM.
561.5	-	711.0	122ARCA	ARCADIA FM.
711.0	-	989.0	123SWNN	SUWANNEE LIMESTONE
989.0	-	1080.4	124OCAL	OCALA GROUP
1080.4	-	T.D	124AVPK	AVON PARK FM.

0 - 4.5 SAND; BROWNISH GRAY TO MODERATE YELLOWISH BROWN
25% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ROUNDED; UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%, SILT-10%, HEMATITE-02%
PLANT REMAINS-02%
FOSSILS: NO FOSSILS

4.5- 6 SAND; DARK GRAYISH YELLOW TO LIGHT GREENISH GRAY
20% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ROUNDED; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-07%, SILT-05%, PEAT-02%
PLANT REMAINS-02%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

6 - 9 SAND; DARK GRAYISH YELLOW TO GRAYISH ORANGE
25% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ROUNDED; UNCONSOLIDATED
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

9 - 11.5 SAND; VERY LIGHT ORANGE TO YELLOWISH GRAY
25% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ROUNDED; UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS
QUARTZ SAND, CLEAN AND INTERBEDDED WITH MOLLUSK FRAGMENTS.

11.5- 15 SHELL BED; WHITE TO DARK YELLOWISH ORANGE
50% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

15 - 18 SAND; WHITE TO YELLOWISH GRAY
25% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ROUNDED; UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
QUARTZ SAND, CLEAN, AND INTERBEDDED WITH MOLLUSK FRAGMENTS.

18 - 23.5 SAND; VERY LIGHT GRAY TO LIGHT OLIVE GRAY
20% POROSITY: INTERGRANULAR, MOLDIC
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ROUNDED; LOW SPHERICITY
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-05%, SILT-05%, CLAY-02%
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS, WORM TRACES, FOSSIL FRAGMENTS

23.5- 36 SAND; LIGHT OLIVE GRAY TO LIGHT GRAY
15% POROSITY: INTERGRANULAR, MOLDIC
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ROUNDED; LOW SPHERICITY
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-10%, CLAY-02%
OTHER FEATURES: CALCAREOUS
FOSSILS: CORAL, MOLLUSKS, FOSSIL FRAGMENTS
QUARTZ SAND INTERBEDDED WITH LIMESTONE RUBBLE AND NUMEROUS
SHELL FRAGMENTS.

36 - 44 CALCILUTITE; VERY LIGHT GRAY TO MODERATE LIGHT GRAY
20% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED, BIOTURBATED
ACCESSORY MINERALS: CLAY-02%, QUARTZ SAND-01%
OTHER FEATURES: PARTINGS
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, WORM TRACES
FOSSIL MOLDS

44 - 49 CALCILUTITE; YELLOWISH GRAY
20% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED, BIOTURBATED
ACCESSORY MINERALS: CLAY-02%, QUARTZ SAND-01%
OTHER FEATURES: PARTINGS
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, WORM TRACES
FOSSIL MOLDS
CALCILUTITE, FOSSILIFEROUS, MOLDIC, NUMEROUS PELECYPOD PECTIN MOLDS & CASTS, LITTLE QUARTZ SAND & CLAY, MODERATE INDURATION.

49 - 64 SAND; YELLOWISH GRAY
20% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; LOW SPHERICITY
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, CALCILUTITE-10%, SILT-03%
PHOSPHATIC GRAVEL-03%
OTHER FEATURES: CALCAREOUS, POOR SAMPLE, GRANULAR
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
QUARTZ SAND, INTERBEDDED LIMESTONE, SHELL FRAGMENTS, CLAY SILT, PHOSPHATIC SAND & GRAVEL. POOR SAMPLES.

64 - 69 PHOSPHATE; OLIVE GRAY TO BLACK
UNCONSOLIDATED
ACCESSORY MINERALS: CLAY-20%, LIMESTONE-10%, QUARTZ-03%
PHOSPHATIC SAND-10%
OTHER FEATURES: CALCAREOUS, POOR SAMPLE
FOSSILS: FOSSIL MOLDS

69 - 84 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-05%, QUARTZ SAND-03%
PHOSPHATIC GRAVEL-10%, PHOSPHATIC SAND-05%
OTHER FEATURES: POOR SAMPLE, MUDDY, VARVED
CLAY, SOFT, INTERBEDDED LIMESTONE, QUARTZ SAND, PHOSPHATE
SAND & GRAVEL.

84 - 95 CLAY; GRAYISH OLIVE TO MODERATE GRAYISH GREEN
POROSITY: NOT OBSERVED; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: DOLOMITE-01%, LIMESTONE-01%
QUARTZ SAND-01%
FOSSILS: NO FOSSILS
CLAY, DUSKY YELLOW-GREEN, IMPERMEABLE. FEW ACCESSORY
MINERALS.

95 - 120.5 CLAY; GRAYISH OLIVE TO MODERATE GRAYISH GREEN
POROSITY: NOT OBSERVED; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-20%, PHOSPHATIC SAND-05%
LIMESTONE-01%
FOSSILS: ECHINOID, MOLLUSKS, FOSSIL FRAGMENTS
CLAY, SAND INCREASES WITH DEPTH, PHOSPHATIC SAND AND GRAVEL
PRESENT, SOME INTERBEDDED LIMESTONE FRAGMENTS, ECHINOID AND
MOLLUSK FOSSILS. SERVES AS CONFINING UNIT FOR SURFICIAL
AQUIFER.

120.5- 128.3 CLAY; LIGHT OLIVE GRAY
03% POROSITY: INTRAGRANULAR, FRACTURE, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-35%, PHOSPHATIC GRAVEL-15%
CALCILUTITE-02%
OTHER FEATURES: CALCAREOUS
FOSSILS: FOSSIL FRAGMENTS
CLAY, QUARTZ SAND, PHOSPHATIC GRAVEL ABUNDANT, SOME
LIMESTONE FRAGMENTS.

128.3- 139 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE
25% POROSITY: MOLDIC, VUGULAR, FRACTURE
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO VERY COARSE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-03%
OTHER FEATURES: GRANULAR, PARTINGS
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
CALCARENITE, FOSSILIFEROUS, NUMEROUS MOLLUSK SHELLS, OYSTER SHELLS COMMON, INTERBEDDED QUARTZ SAND & PHOSPHATE SAND.

139 - 144 SAND; GRAYISH OLIVE
05% POROSITY: INTERGRANULAR, FRACTURE
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: PHOSPHATIC SAND-10%
PHOSPHATIC GRAVEL-03%, CLAY-02%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED
FOSSILS: FOSSIL FRAGMENTS

144 - 154 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
20% POROSITY: INTERGRANULAR, FRACTURE, VUGULAR
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: QUARTZ SAND-30%, PHOSPHATIC SAND-05%
LIMESTONE-02%, PHOSPHATIC GRAVEL-01%
OTHER FEATURES: POOR SAMPLE, CHALKY, PARTINGS
FOSSILS: MOLLUSKS, SHARKS TEETH, WORM TRACES
FOSSIL FRAGMENTS
CALCARENITE, POORLY CONSOLIDATED, PERMEABLE, FRACTURED INTERBEDDED.

154 - 159 SAND; LIGHT OLIVE GRAY TO GRAYISH BROWN
15% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY
UNCONSOLIDATED
ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC GRAVEL-05%
SILT-05%, LIMESTONE-05%
OTHER FEATURES: CALCAREOUS, SPECKLED, POOR SAMPLE
FOSSILS: FOSSIL FRAGMENTS, SHARKS TEETH
QUARTZ SAND, INTERBEDDED LIMESTONE, PHOSPHATIC GRAVEL & SAND, SHELL FRAGMENTS & CLAY, SHARKS TEETH COMMON.

159 - 164 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
20% POROSITY: FRACTURE
GRAIN TYPE: CALCILUTITE, SKELETAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED, NODULAR
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC GRAVEL-05%
PHOSPHATIC GRAVEL-02%
FOSSILS: FOSSIL FRAGMENTS
CALCARENITE RUBBLE, LARGE PHOSPHATE NODULES, QUARTZ SANDY.

164 - 179 CALCARENITE; DARK GRAYISH YELLOW TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, VUGULAR, MOLDIC
GRAIN TYPE: BIOGENIC, CRYSTALS, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY COARSE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC SAND-02%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS

179 - 184 LIMESTONE; YELLOWISH GRAY TO YELLOWISH GRAY
25% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO MEDIUM; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCITE-01%, QUARTZ SAND-01%
PHOSPHATIC SAND-01%
OTHER FEATURES: PLATY, PARTINGS
FOSSILS: CORAL, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL MOLDS
LIMESTONE, FOSSILIFEROUS, NUMEROUS TURRITELLA MOLDS
PERMEABLE

184 - 189.1 CLAY; VERY LIGHT GRAY TO LIGHT OLIVE GRAY
02% POROSITY: FRACTURE, LOW PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-02%
CALCILUTITE-02%
OTHER FEATURES: CALCAREOUS, CHALKY, PARTINGS
FOSSILS: MOLLUSKS
CLAY, LIMEY, SOME INTERBEDDED, MICRO-SIZE QUARTZ SAND
MOLLUSKS.

189.1- 199 CLAY; YELLOWISH GRAY TO YELLOWISH GRAY
03% POROSITY: FRACTURE, LOW PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-02%
CALCILUTITE-02%

199 - 205.2 LIMESTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY
20% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO COARSE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: CALCITE-01%, QUARTZ SAND-01%
PHOSPHATIC GRAVEL-05%
OTHER FEATURES: PLATY, PARTINGS, SPECKLED
FOSSILS: CORAL, BENTHIC FORAMINIFERA, MOLLUSKS
WORM TRACES, FOSSIL MOLDS
LIMESTONE, FOSSILIFEROUS, PERMEABLE, ABUNDANT GRANULE-SIZED
PHOSPHATE GRAVEL.

205.2- 219 CLAY; YELLOWISH GRAY TO LIGHT GREENISH GRAY
03% POROSITY: INTERGRANULAR, FRACTURE
POSSIBLY HIGH PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-02%, CALCILUTITE-05%
QUARTZ SAND-05%, PHOSPHATIC GRAVEL-10%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED
FOSSILS: FOSSIL FRAGMENTS
CLAY, QUARTZ AND PHOSPHATIC SANDY, ABUNDANT PHOSPHATE
GRAVEL, SOME VERY SMALL PHOSPHATIZED TEETH--(ALLIGATOR??)

219 - 229.2 CALCILUTITE; VERY LIGHT GRAY TO YELLOWISH GRAY
10% POROSITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, CALCITE-01%, QUARTZ SAND-02%
PHOSPHATIC GRAVEL-05%
OTHER FEATURES: POOR SAMPLE, CHALKY, PARTINGS, SPECKLED
FOSSILS: FOSSIL MOLDS

229.2- 233.3 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
03% POROSITY: INTERGRANULAR, FRACTURE; MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-01%, QUARTZ SAND-20%
PHOSPHATIC GRAVEL-10%, PHOSPHATIC SAND-05%
OTHER FEATURES: CALCAREOUS, GRANULAR, PARTINGS, SPECKLED
FOSSILS: FOSSIL MOLDS
CLAY, INTERBEDDED MICRO- TO COARSE- GRAINED QUARTZ SAND
PHOSPHATIC SAND & GRAVEL ABUNDANT; LOW PERMEABILITY.

233.3- 239 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-02%
OTHER FEATURES: LOW RECRYSTALLIZATION
FOSSILS: NO FOSSILS
CLAY, QUARTZ AND PHOSPHATE SAND PRESENT AS THIN LAMINAE
LESS INTERBEDDED.

239 - 254 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
10% POROSITY: INTERGRANULAR; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-02%, QUARTZ SAND-20%
PHOSPHATIC SAND-15%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
CLAY, VERY SANDY, QUARTZ & PHOSPHATE GRAINS ARE MEDIUM
-VERY COARSE, FEW LIMESTONE MOLLUSK FRAGMENTS.

254 - 259 SAND; WHITE TO BLACK
30% POROSITY: INTERGRANULAR
GRAIN SIZE: COARSE; RANGE: MEDIUM TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: PHOSPHATIC SAND-40%
FOSSILS: NO FOSSILS
SAND-- QUARTZ AND PHOSPHATIC-- COARSE-GRAINED
UNCONSOLIDATED; PERMEABLE.

259 - 264.5 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
05% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-02%, QUARTZ SAND-10%
PHOSPHATIC SAND-10%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

264.5- 267 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
05% POROSITY: INTERGRANULAR, FRACTURE
GRAIN TYPE: BIOGENIC, PELLET, CRYSTALS
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-10%
CLAY-03%
OTHER FEATURES: GRANULAR, SPECKLED

267 - 279 SAND; WHITE TO BLACK
10% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: LIMESTONE-02%, CALCILUTITE-02%
PHOSPHATIC SAND-40%
OTHER FEATURES: CALCAREOUS, SPECKLED
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
SAND-- QUARTZ AND PHOSPHATIC, PERMEABLE, SOME MOLLUSK
FRAGMENTS.

279 - 295.7 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
01% POROSITY: FRACTURE; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%
FOSSILS: FOSSIL MOLDS
CLAY, STIFF, IMPERMEABLE, MINOR THIN SAND LAMINAE.

295.7- 299 CALCARENITE; MODERATE LIGHT GRAY TO LIGHT OLIVE GRAY
05% POROSITY: MOLDIC, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CRYSTALS, PELLET
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: CLAY-02%, CALCITE-05%, QUARTZ SAND-03%
PHOSPHATIC SAND-03%
OTHER FEATURES: DOLOMITIC, SPECKLED
HIGH RECRYSTALLIZATION
FOSSILS: CORAL, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL MOLDS, ECHINOID
CALCARENITE, HARD, CALCITE REPLACED FOSSILS, INTERBEDDED
CLAY, QUARTZ AND PHOSPHATIC SAND, LOW PERMEABILITY EXCEPT
IN FRACTURE ZONES.

299 - 303.8 CLAY; LIGHT OLIVE GRAY
04% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCITE-03%, CALCILUTITE-02%
QUARTZ SAND-20%, PHOSPHATIC SAND-20%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED, MUDDY
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

303.8- 321.6 CLAY; MODERATE GRAYISH GREEN TO GREENISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCITE-03%, CALCILUTITE-02%
QUARTZ SAND-20%, PHOSPHATIC SAND-20%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS
CLAY, VERY SANDY-- QUARTZ AND PHOSPHATIC, INTERGRANULAR LOW POROSITY.

321.6- 323.8 DOLOSTONE; YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY; 50-90% ALTERED; ANHEDRAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: CALCITE-02%, QUARTZ SAND-05%
PHOSPHATIC SAND-03%, CLAY-03%
OTHER FEATURES: SPECKLED
FOSSILS: CORAL, BENTHIC FORAMINIFERA, MOLLUSKS
WORM TRACES
DOLOMITE, MOLDIC, FOSSILIFEROUS, MOLLUSK & WORM TUBES COMMON.

323.8- 324 SANDSTONE; LIGHT OLIVE GRAY TO GREENISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; HIGH SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-25%, PHOSPHATIC SAND-30%
LIMESTONE-05%
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

324 - 324.6 SAND; DARK GREENISH GRAY TO GREENISH BLACK
10% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; HIGH SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
ACCESSORY MINERALS: CLAY-20%, PHOSPHATIC SAND-30%
LIMESTONE-05%, CALCILUTITE-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

324.6- 329.2 SAND; VERY LIGHT GRAY TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ROUNDED; HIGH SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-30%, PHOSPHATIC SAND-20%
LIMESTONE-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL FRAGMENTS
SAND, QUARTZ & PHOSPHATIC, CALCILUTITIC CEMENT.

329.2- 348.6 CALCARENITE; YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CRYSTALS, PELLET, SKELTAL CAST
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-01%, SPAR-04%, QUARTZ SAND-03%
PHOSPHATIC SAND-25%
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL FRAGMENTS, CORAL

348.6- 362 CLAY; YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-10%, SPAR-03%
QUARTZ SAND-05%, PHOSPHATIC SAND-20%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS
CLAY, LIMEY, SANDY, PHOSPHATIC, LESSER VERY FINE-GRAINED
SAND.

362 - 363 SANDSTONE; YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%, CALCILUTITE-10%
QUARTZ SAND-04%, PHOSPHATIC SAND-20%
OTHER FEATURES: CALCAREOUS
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL FRAGMENTS
SANDSTONE, PHOSPHATIC SAND IN CALCILUTITIC CEMENT, LESSER
AMOUNTS SAND & LIMESTONE FRAGMENTS.

363 - 389 CLAY; YELLOWISH GRAY
04% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-10%, QUARTZ SAND-04%
SPAR-04%, PHOSPHATIC SAND-20%
OTHER FEATURES: CALCAREOUS
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL FRAGMENTS

389 - 406.6 CLAY; LIGHT OLIVE GRAY TO LIGHT OLIVE GRAY
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: CALCILUTITE-02%, QUARTZ SAND-15%
PHOSPHATIC SAND-15%, CALCITE-01%
OTHER FEATURES: CALCAREOUS
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS
CLAY, WELL INDURATED, LOW PERMEABILITY, INTERBEDDED
FINE-GRAINED QUARTZ AND PHOSPHAITC SAND.

406.6- 407.7 CALCILUTITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
03% POROSITY: MOLDIC, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, QUARTZ SAND-03%
PHOSPHATIC SAND-05%, SPAR-05%
OTHER FEATURES: PARTINGS
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS

407.7- 414 CLAY; YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-10%, QUARTZ SAND-02%
PHOSPHATIC SAND-03%, SPAR-05%
OTHER FEATURES: CALCAREOUS, MUDDY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS
CLAY, LIMEY, INTERBEDDED CALCILUTITE, PHOSPAHTIC SAND
QUARTZ SAND, NUMEROUS CALCILUTITE-REPLACED MOLLUSK MOLDS.

414 - 423.5 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
00% POROSITY: NOT OBSERVED; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%
FOSSILS: NO FOSSILS

423.5- 424.5 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, CRYSTALS, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%, QUARTZ SAND-02%
PHOSPHATIC SAND-03%
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL FRAGMENTS

424.5- 425.6 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
03% POROSITY: INTERGRANULAR, FRACTURE; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-20%, PHOSPHATIC SAND-05%
PHOSPHATIC GRAVEL-02%
FOSSILS: NO FOSSILS

425.6- 433 SANDSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
03% POROSITY: INTERGRANULAR, FRACTURE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE
ROUNDNESS: ANGULAR TO SUB-ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: CLAY-05%, PHOSPHATIC SAND-03%
CALCILUTITE-04%, CHERT-01%
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS
QUARTZ SANDSTONE CEMENTED WITH CLAY & CALCILUTITE CEMENT
SOME INTERBEDDED LIMESTONE, SOME CHERT PEBBLES.

433 - 445 CALCARENITE; LIGHT OLIVE GRAY
20% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, CRYSTALS, PELLET
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-01%, QUARTZ SAND-05%
PHOSPHATIC SAND-01%, PHOSPHATIC GRAVEL-01%
OTHER FEATURES: CRYSTALLINE, FROSTED
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS
CALCARENITE, MOLDIC, PERMEABLE, SOME INTERBEDDED LIMEY
CLAY.

445 - 469 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
15% POROSITY: INTERGRANULAR, FRACTURE, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE, PELLET
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-20%, QUARTZ SAND-02%
OTHER FEATURES: POOR SAMPLE
FOSSILS: MOLLUSKS, WORM TRACES
CALCARENITE, MOLDIC, FOSSILIFEROUS, INTERBEDDED LIMEY CLAY
AND NUMEROUS CLAY LENSES ALTERNATING WITH CALCARENITE
LENSES.

469 - 490.7 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-01%, QUARTZ SAND-02%
PHOSPHATIC SAND-02%
FOSSILS: MOLLUSKS

490.7- 499 DOLOSTONE; VERY LIGHT GRAY TO LIGHT OLIVE GRAY
10-50% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-01%, QUARTZ SAND-02%
PHOSPHATIC SAND-03%, CALCITE-03%
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

499 - 508 CALCARENITE; WHITE TO VERY LIGHT GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%, QUARTZ SAND-02%
PHOSPHATIC SAND-03%, CALCITE-02%
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

508 - 510.5 CLAY; WHITE TO VERY LIGHT GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-05%, QUARTZ SAND-02%
PHOSPHATIC SAND-03%
FOSSILS: MOLLUSKS

510.5- 513.7 CALCARENITE; WHITE TO VERY LIGHT GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, QUARTZ SAND-02%
PHOSPHATIC SAND-02%, CALCITE-01%
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

513.7- 519 CLAY; WHITE TO VERY LIGHT GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-05%, QUARTZ SAND-02%
PHOSPHATIC SAND-03%
FOSSILS: MOLLUSKS
CLAY, LIMEY, INTERBEDDED THIN LIMESTONE LENSES, INTERBEDDED
QUARTZ AND PHOSPHATE GRAINS.

519 - 553.6 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED, MOTTLED
ACCESSORY MINERALS: CLAY-10%, CALCITE-02%, QUARTZ SAND-02%
PHOSPHATIC SAND-03%
OTHER FEATURES: DOLOMITIC
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
CALCARENITE, FOSSILIFEROUS, MOLDIC, LOW PERMEABILITY
ALTERNATES WITH BEDS OF SANDY, LIMEY CLAY.

553.6- 555 DOLOSTONE; LIGHT GRAY TO MODERATE LIGHT GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MOTTLED, INTERBEDDED
ACCESSORY MINERALS: CLAY-03%, QUARTZ SAND-02%
PHOSPHATIC SAND-02%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

555 - 559 CLAY; VERY LIGHT GRAY TO LIGHT GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-01%, QUARTZ SAND-02%
PHOSPHATIC SAND-02%
OTHER FEATURES: CALCAREOUS, POOR SAMPLE
FOSSILS: NO FOSSILS

559 - 560.2 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
04% POROSITY: INTERGRANULAR
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%, QUARTZ SAND-01%
PHOSPHATIC SAND-02%
OTHER FEATURES: POOR SAMPLE, GRANULAR, SPECKLED
FOSSILS: MOLLUSKS

560.2- 560.9 CLAY; VERY LIGHT GRAY TO LIGHT GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-01%, QUARTZ SAND-02%
PHOSPHATIC SAND-02%
OTHER FEATURES: CALCAREOUS, POOR SAMPLE
FOSSILS: NO FOSSILS

560.9- 561.4 DOLOSTONE; MODERATE LIGHT GRAY TO MODERATE GRAY
01% POROSITY: INTERGRANULAR, LOW PERMEABILITY
50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED, MOTTLED, MASSIVE
ACCESSORY MINERALS: LIMESTONE-02%, QUARTZ SAND-10%
PHOSPHATIC SAND-10%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS
DOLOMITE, VERY FINE-GRAINED TO CRYSTALLINE, INTERBEDDED
QUARTZ AND PHOSPHATE SAND, GRADES INTO COARSER-GRAINED
MOLDIC DOLOMITE BELOW.

561.4- 573 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
20% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-05%, QUARTZ SAND-02%
PHOSPHATIC SAND-05%
OTHER FEATURES: GRANULAR, REEFAL
FOSSILS: CORAL, ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
VERTEBRATE
COARSE-GRAINED, MOLDIC, FOSSILIFEROUS DOLOMITE; QUARTZ &
PHOSPHATIC SAND; NUMEROUS TURITELLA AND FORAM MOLDS, AND
SOME VERTEBRATE BONE MOLDS.

573 - 579 DOLOSTONE; VERY LIGHT GRAY
03% POROSITY: FRACTURE; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%, QUARTZ SAND-01%
PHOSPHATIC SAND-01%
FOSSILS: NO FOSSILS
DOLOMITE, HARD, ONLY VISIBLE POROSITY IS IN FRACTURES.

579 - 583.5 SAND; YELLOWISH GRAY TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR
GRAIN SIZE: FINE; RANGE: FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC SAND-03%
IRON STAIN-01%, LIMESTONE-01%
OTHER FEATURES: CALCAREOUS
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

583.5- 589 LIMESTONE; VERY LIGHT GRAY
03% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: DOLOMITE-02%, CLAY-05%, CALCITE-01%
PHOSPHATIC SAND-03%
OTHER FEATURES: DOLOMITIC, PARTINGS
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS
LIMESTONE, MOLDIC, FRACTURED, SOME CLAY FILLED FRACTURES
LOW POROSITY.

589 - 598.5 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
20% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-03%, QUARTZ SAND-02%
PHOSPHATIC SAND-05%
OTHER FEATURES: CALCAREOUS, GRANULAR, CRYSTALLINE
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

598.5- 608 DOLOSTONE; LIGHT GRAY TO LIGHT OLIVE GRAY
15% POROSITY: FRACTURE; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: LIMESTONE-02%, QUARTZ SAND-08%
PHOSPHATIC SAND-08%, CALCITE-03%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED
FOSSILS: MOLLUSKS

608 - 613.5 DOLOSTONE; LIGHT OLIVE GRAY TO GREENISH GRAY
02% POROSITY: FRACTURE; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: FINE; RANGE: VERY FINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-10%
OTHER FEATURES: PARTINGS
FOSSILS: MOLLUSKS
HARD, CONSOLIDATED, NON-MOLDIC DOLOMITE; INCREASING SAND CONTENT.

613.5- 614 CLAY; LIGHT GRAY TO LIGHT OLIVE GRAY
02% POROSITY: INTERGRANULAR; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

614 - 618.5 CALCARENITE; WHITE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, MOLDIC
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: FINE; RANGE: FINE TO COARSE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED, INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, QUARTZ SAND-01%
PHOSPHATIC SAND-03%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA

618.5- 619.6 CLAY; WHITE TO LIGHT GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BANDED, INTERBEDDED
ACCESSORY MINERALS: PHOSPHATIC SAND-03%
OTHER FEATURES: CALCAREOUS

619.6- 621 CALCILUTITE; VERY LIGHT ORANGE TO MODERATE GRAY
02% POROSITY: FRACTURE, LOW PERMEABILITY
GRAIN TYPE: CRYSTALS, CALCILUTITE, BIOGENIC
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: DOLOMITE-15%, QUARTZ SAND-01%
PHOSPHATIC SAND-01%
OTHER FEATURES: DOLOMITIC
FOSSILS: BENTHIC FORAMINIFERA
CALCILUTITE, HARD, MOTTLED APPEARANCE DUE TO SOLUTION CAVITIES BEING FILLED BY DARK-COLORED DOLOMITE.

621 - 624 CLAY; YELLOWISH GRAY
02% POROSITY: FRACTURE; POOR INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC SAND-05%
LIMESTONE-03%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

624 - 629 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT ORANGE
20% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-03%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

629 - 630.2 CLAY; YELLOWISH GRAY TO LIGHT GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-03%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

630.2- 639.5 DOLOSTONE; LIGHT GRAY TO LIGHT OLIVE GRAY
03% POROSITY: FRACTURE, LOW PERMEABILITY; 10-50% ALTERED
SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): IRON CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC SAND-05%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA

639.5- 640.2 CLAY; LIGHT GRAY TO YELLOWISH GRAY
02% POROSITY: LOW PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX

640.2- 641.5 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-20%, QUARTZ SAND-01%
PHOSPHATIC SAND-03%
OTHER FEATURES: MUDDY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

641.5- 644 CLAY; VERY LIGHT GRAY TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-02%, QUARTZ SAND-01%
PHOSPHATIC SAND-02%
FOSSILS: NO FOSSILS

644 - 648.5 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
08% POROSITY: INTERGRANULAR, MOLDIC
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BANDED
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-03%
OTHER FEATURES: SPECKLED
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

648.5- 653 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-20%, QUARTZ SAND-01%
PHOSPHATIC SAND-04%
OTHER FEATURES: SPECKLED
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS
MOLDIC CALCARENITE; INCREASING PHOSPHATE GRAINS; CLAYEY.

653 - 654.6 SANDSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
05% POROSITY: INTERGRANULAR, FRACTURE
POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MASSIVE
ACCESSORY MINERALS: PHOSPHATIC SAND-40%, LIMESTONE-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

654.6- 656.1 CLAY; YELLOWISH GRAY TO LIGHT OLIVE GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-25%, PHOSPHATIC SAND-20%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

656.1- 657.8 DOLOSTONE; LIGHT GRAY TO MODERATE LIGHT GRAY
02% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-15%, PHOSPHATIC SAND-15%
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA
DOLOMITE, HARD SANDY, NON-MOLDIC, FEW FOSSILS.

657.8- 662 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, FRACTURE
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, PELLET
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; UNCONSOLIDATED
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-10%
CLAY-10%, LIMONITE-15%
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA
CALCARENITE, UNCONSILDATED, INTERBEDDED DOLOMITE, CLAY &
QUARTZ & PHOSPHATIC SAND GRAINS.

662 - 669 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: CLAY-05%, QUARTZ SAND-02%
PHOSPHATIC SAND-03%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

669 - 671 DOLOSTONE; LIGHT OLIVE GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: LIMESTONE-04%, QUARTZ SAND-20%
PHOSPHATIC SAND-25%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED, WEATHERED
FOSSILS: MOLLUSKS, ECHINOID

671 - 674.4 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
03% POROSITY: FRACTURE, MOLDIC; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-20%, PHOSPHATIC SAND-20%
CALCITE-03%
OTHER FEATURES: CALCAREOUS, SPECKLED
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS
DOLOMITE, VERY SANDY, SLIGHTLY MOLDIC, FEW CALCITE FOSSILS.

674.4- 675.2 CLAY; WHITE TO YELLOWISH GRAY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: LIMESTONE-15%, QUARTZ SAND-03%
PHOSPHATIC SAND-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

675.2- 679 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL, PELLET
GRAIN SIZE: COARSE; RANGE: MEDIUM TO COARSE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC SAND-05%
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA

679 - 681.2 CALCILUTITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-15%
CLAY-02%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

681.2- 684 CALCARENITE; WHITE TO YELLOWISH GRAY
08% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-15%
CLAY-02%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, ECHINOID

684 - 685.3 CALCILUTITE; WHITE TO LIGHT OLIVE GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, PELLET
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-15%
OTHER FEATURES: GRANULAR, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

685.3- 688 CLAY; LIGHT GRAY TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-02%
FOSSILS: NO FOSSILS

688 - 690 DOLOSTONE; LIGHT GRAY TO MODERATE LIGHT GRAY
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-02%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

690 - 693 CALCILUTITE; MODERATE LIGHT GRAY TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: FINE; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-03%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

693 - 702.8 CLAY; LIGHT OLIVE GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-02%
FOSSILS: NO FOSSILS

702.8- 711.6 DOLOSTONE; YELLOWISH GRAY TO MODERATE DARK GRAY
02% POROSITY: FRACTURE; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BANDED, MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC SAND-02%
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA
DOLOMITE, BRECCIATED, FOSSILIFEROUS, MOLDIC, FRACTURED
BELOW 706'.

711.6- 729 CALCARENITE; WHITE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, FRACTURE
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CRYSTALS
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-05%, QUARTZ SAND-05%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

729 - 731 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
08% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: SILT-02%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

731 - 731.7 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-25%
OTHER FEATURES: CALCAREOUS
FOSSILS: BENTHIC FORAMINIFERA

731.7- 734 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
08% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: SILT-02%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

734 - 734.6 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-25%
OTHER FEATURES: CALCAREOUS
FOSSILS: BENTHIC FORAMINIFERA

734.6- 738.9 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-03%, CLAY-01%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

738.9- 739 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY, POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-25%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

739 - 740 CALCARENITE; VERY LIGHT ORANGE
03% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

740 - 742.2 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-30%
OTHER FEATURES: CALCAREOUS

742.2- 744.8 CALCARENITE; VERY LIGHT ORANGE TO VERY LIGHT GRAY
03% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC SAND-01%
OTHER FEATURES: MEDIUM RECRYSTALLIZATION
FOSSILS: BENTHIC FORAMINIFERA

744.8- 745.5 CLAY; LIGHT OLIVE GRAY TO GREENISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-05%, QUARTZ SAND-20%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

745.5- 749 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: FINE; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-15%, CALCARENITE-01%
FOSSILS: BENTHIC FORAMINIFERA, ECHINOID

749 - 745 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-15%, PHOSPHATIC SAND-01%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

745 - 767 CALCARENITE; VERY LIGHT ORANGE TO VERY LIGHT GRAY
10% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: MEDIUM TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-20%, LIMESTONE-03%
PEAT-01%
FOSSILS: BENTHIC FORAMINIFERA, ECHINOID

767 - 769 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-15%, CALCILUTITE-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

769 - 779 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-15%, CALCILUTITE-05%
OTHER FEATURES: POOR SAMPLE
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS
CALCARENITE, QUARTZ SANDY, NUMEROUS LENSES OF QUARTZ SAND.

779 - 789 SAND; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: MEDIUM TO COARSE
ROUNDNESS: ANGULAR TO SUB-ANGULAR; MEDIUM SPHERICITY
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: BEDDED
FOSSILS: NO FOSSILS

789 - 794 SANDSTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: MEDIUM TO COARSE
ROUNDNESS: ANGULAR TO SUB-ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CALCILUTITE-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

794 - 795.3 SAND; LIGHT GREENISH GRAY
10% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: ANGULAR TO SUB-ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-30%, CALCILUTITE-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

795.3- 801.1 CLAY; LIGHT GREENISH GRAY
05% POROSITY: INTERGRANULAR; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-30%, CALCILUTITE-05%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

801.1- 804 CALCARENITE; WHITE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-05%, QUARTZ SAND-05%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

804 - 814 CALCILUTITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-15%, QUARTZ SAND-03%
OTHER FEATURES: MUDDY
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA

814 - 819.7 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-02%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

819.7- 824 CALCILUTITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-20%
FOSSILS: FOSSIL FRAGMENTS

824 - 829.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-01%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, ECHINOID

829.5- 833.4 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-10%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, ECHINOID
CALCARENITE, INCREASING QUARTZ CONTENT.

833.4- 843.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-10%
FOSSILS: FOSSIL FRAGMENTS

843.5- 850.2 CALCILUTITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-30%, QUARTZ SAND-01%
IRON STAIN-01%
FOSSILS: FOSSIL FRAGMENTS
CALCILUTITE, CLAYEY, LARGE IRON-STAINED CALCILUTITE NODULES
PRESENT AT 844.4'.

850.2- 857.2 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, CRYSTALS
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
ACCESSORY MINERALS: QUARTZ SAND-01%
FOSSILS: FOSSIL FRAGMENTS

857.2- 858.5 DOLOSTONE; GRAYISH BROWN TO YELLOWISH GRAY
02% POROSITY: LOW PERMEABILITY; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-05%, CALCILUTITE-10%
OTHER FEATURES: CALCAREOUS
FOSSILS: FOSSIL FRAGMENTS

858.5- 866 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, FRACTURE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-01%
FOSSILS: FOSSIL FRAGMENTS

866 - 870.8 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: QUARTZ SAND-01%, CLAY-05%
FOSSILS: PLANKTONIC FORAMINIFERA, FOSSIL FRAGMENTS
CALCARENITE, CLAYEY, SOME ORGANICS PRESENT.

870.8- 873.8 SANDSTONE; VERY LIGHT ORANGE TO GRAYISH ORANGE
15% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
ROUNDNESS: SUB-ANGULAR TO ROUNDED; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-01%
FOSSILS: NO FOSSILS

873.8- 889 SAND; GRAYISH ORANGE TO LIGHT OLIVE GRAY
15% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-03%
FOSSILS: NO FOSSILS

889 - 899 CALCILUTITE; VERY LIGHT GRAY TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED, INTERBEDDED
ACCESSORY MINERALS: CLAY-10%
FOSSILS: NO FOSSILS

899 - 900.1 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CALCILUTITE-02%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

900.1- 909 CALCILUTITE; VERY LIGHT GRAY TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%
FOSSILS: NO FOSSILS

909 - 912.3 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CRYSTALS, SKELETAL
GRAIN SIZE: FINE; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: QUARTZ SAND-01%
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

912.3- 922.5 CALCILUTITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-40%
FOSSILS: FOSSIL FRAGMENTS

922.5- 928.1 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CRYSTALS, SKELETAL
GRAIN SIZE: FINE; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: QUARTZ SAND-01%, CLAY-03%
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

928.1- 937 CALCILUTITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-40%
FOSSILS: FOSSIL FRAGMENTS

937 - 956 CALCILUTITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, FRACTURE
GRAIN TYPE: CALCILUTITE, CRYSTALS, BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: CLAY-20%, IRON STAIN-01%, CALCITE-05%
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS
CALCILUTITE, CLAYEY, SOME LENSES OF CALCARENITE, SOME IRON STAINS PRESENT IN FRACTURE ZONES, SOME MOTTLING.

956 - 971.6 CALCILUTITE; WHITE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCITE-05%, QUARTZ SAND-02%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS

971.6- 973.4 CALCILUTITE; YELLOWISH GRAY TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, FRACTURE
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-20%, PLANT REMAINS-01%
OTHER FEATURES: WEATHERED
FOSSILS: ALGAE
CALCILUTITE, SOFT, CLAYEY, WEATHERED, GREEN ALGAE CASTS.

973.4- 972.9 CALCILUTITE; DARK YELLOWISH BROWN TO DARK YELLOWISH BROWN
02% POROSITY: INTERGRANULAR, FRACTURE
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
FOSSILS: NO FOSSILS
CACILUTITE, DARK BROWN, WEATHERED.

972.9- 979.5 CALCILUTITE; VERY LIGHT GRAY TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-30%
OTHER FEATURES: WEATHERED
FOSSILS: NO FOSSILS

979.5- 980 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: QUARTZ SAND-01%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS

980 - 988 DOLOSTONE; LIGHT OLIVE GRAY TO YELLOWISH GRAY
05% POROSITY: FRACTURE; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: QUARTZ SAND-03%
FOSSILS: NO FOSSILS

988 - 994 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%, QUARTZ SAND-03%
CALCILUTITE-05%
OTHER FEATURES: WEATHERED
FOSSILS: BENTHIC FORAMINIFERA

994 - 1001 CALCILUTITE; WHITE TO YELLOWISH GRAY
04% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MOTTLED, INTERBEDDED
ACCESSORY MINERALS: CHERT-01%, CLAY-01%
OTHER FEATURES: FROSTED
SOFT CALCILUTITE; MANY FORAMINIFERA, E.G., NUMMULITES; SOME
INTERBEDDED CLAY & CHERT AND RIP-UP CLASTS AT 996.5'.

1001 - 1037.4 CALCARENITE; WHITE TO YELLOWISH GRAY
04% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: CALCILUTITE, BIOGENIC, SKELETAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-01%, CLAY-01%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

1037.4- 1046 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: VUGULAR, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-01%
OTHER FEATURES: GRANULAR, REEFAL
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
WORM TRACES
CALCARENITE, FOSSILIFEROUS, MANY MOLLUSKS AND FORAMS.

1046 - 1049.2 CALCARENITE; WHITE TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-05%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS

1049.2- 1050.7 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-02%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, ECHINOID
FOSSIL FRAGMENTS

1050.7- 1060 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CRYSTALS, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-01%
FOSSILS: NO FOSSILS

1060 - 1068.6 DOLOSTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
FOSSILS: NO FOSSILS
DOLOMITE, HARD, SOME FRACTURE ZONES, FINE GRAIN-SIZED
DOLOMITE CRYSTALS PRESENT IN THESE ZONES.

1068.6- 1070 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: QUARTZ SAND-01%
OTHER FEATURES: CHALKY
FOSSILS: NO FOSSILS

1070 - 1071.4 DOLOSTONE; MODERATE YELLOWISH BROWN TO VERY LIGHT GRAY
10% POROSITY: FRACTURE, MOLDIC; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
OTHER FEATURES: MEDIUM RECRYSTALLIZATION
HARD DOLOMITE; RECRYSTALLIZATION PRESENT IN FRACTURES &
VUGS.

1071.4- 1080.4 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: QUARTZ SAND-01%
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

1080.4- 1085.5 DOLOSTONE; LIGHT GRAY TO LIGHT OLIVE GRAY
15% POROSITY: FRACTURE, MOLDIC, VUGULAR; 50-90% ALTERED
SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: PLANT REMAINS-02%, CALCILUTITE-02%
FOSSILS: ECHINOID, FOSSIL MOLDS
VUGULAR, FRACTURED DOLOMITE; ORGANICS AT 1082.6'.

1085.5- 1086 CLAY; LIGHT OLIVE GRAY TO OLIVE GRAY
01% POROSITY: LOW PERMEABILITY; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX, DOLOMITE CEMENT
ACCESSORY MINERALS: DOLOMITE-02%
OTHER FEATURES: DOLOMITIC
FOSSILS: NO FOSSILS

1086 - 1095.1 DOLOSTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-02%
FOSSILS: NO FOSSILS
DOLOMITE, CRYSTALLINE, FRACTURED.

1095.1- 1096.2 DOLOSTONE; OLIVE GRAY TO DARK GREENISH GRAY
01% POROSITY: INTERGRANULAR, FRACTURE
POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE
SEDIMENTARY STRUCTURES: FISSILE, MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-01%
OTHER FEATURES: WEATHERED, GREASY
FOSSILS: NO FOSSILS
DOLOMITE, VERY SOFT, WEATHERED, MOTTLED.

1096.2- 1097.3 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
03% POROSITY: FRACTURE, LOW PERMEABILITY; 50-90% ALTERED
SUBHEDRAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-02%
OTHER FEATURES: FROSTED, GRANULAR
FOSSILS: NO FOSSILS

1097.3- 1099.5 DOLOSTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY
03% POROSITY: FRACTURE, LOW PERMEABILITY; 50-90% ALTERED
SUBHEDRAL
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED, MOTTLED, MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-02%, CLAY-02%, PYRITE-01%
OTHER FEATURES: CALCAREOUS, WEATHERED
FOSSILS: NO FOSSILS

1099.5- 1105.7 DOLOSTONE; LIGHT OLIVE GRAY TO OLIVE GRAY
02% POROSITY: FRACTURE, LOW PERMEABILITY; 90-100% ALTERED
ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: FISSILE, MASSIVE
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: WEATHERED
FOSSILS: NO FOSSILS
DOLOMITE, VERY SOFT, WAXY.

1105.7- 1109 DOLOSTONE; YELLOWISH GRAY
01% POROSITY: LOW PERMEABILITY; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA

1109 - 1109.7 DOLOSTONE; MODERATE YELLOWISH BROWN
05% POROSITY: FRACTURE, LOW PERMEABILITY; 50-90% ALTERED
ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: FISSILE, LAMINATED
OTHER FEATURES: PLATY, WEATHERED
FOSSILS: NO FOSSILS
DOLOMITE, SOFT, WAXY, VERY WEATHERED.

1109.7- 1110.9 DOLOSTONE; MODERATE YELLOWISH BROWN TO GRAYISH BROWN
01% POROSITY: INTERGRANULAR, LOW PERMEABILITY
50-90% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-01%
OTHER FEATURES: WEATHERED
FOSSILS: NO FOSSILS

1110.9- 1114 DOLOSTONE; MODERATE LIGHT GRAY TO BLACK
01% POROSITY: LOW PERMEABILITY; 50-90% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, ORGANIC MATRIX
SEDIMENTARY STRUCTURES: LAMINATED, FISSILE
ACCESSORY MINERALS: PLANT REMAINS-03%
OTHER FEATURES: CALCAREOUS, WEATHERED
FOSSILS: ORGANICS
SOFT, VERY WEATHERED DOLOMITE; THIN LAMINAE OF ORGANICS.

1114 - 1119.2 CALCARENITE; VERY LIGHT ORANGE
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-01%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA

1119.2- 1128 CALCARENITE; VERY LIGHT ORANGE
15% POROSITY: MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: MEDIUM; RANGE: MEDIUM TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-01%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

1128 - 1151 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, PELLET, SKELTAL CAST
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-01%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
ORGANICS

1151 - 1154 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, PELLET, SKELTAL CAST
GRAIN SIZE: MEDIUM; RANGE: FINE TO VERY COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-02%
OTHER FEATURES: GRANULAR, REEFAL
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

1154 - 1164 CALCARENITE; VERY LIGHT ORANGE
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CRYSTALS, PELLET
GRAIN SIZE: FINE; RANGE: FINE TO COARSE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: DOLOMITE-01%, QUARTZ SAND-01%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

1164 - 1165.2 CALCARENITE; VERY LIGHT ORANGE TO LIGHT GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, FRACTURE
GRAIN TYPE: BIOGENIC, PELLET
GRAIN SIZE: MEDIUM; RANGE: MEDIUM TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED
ACCESSORY MINERALS: DOLOMITE-05%, QUARTZ SAND-01%
OTHER FEATURES: DOLOMITIC, MEDIUM RECRYSTALLIZATION
GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
CALCARENITE, RECRYSTALLIZED DOLOMITE IN CAVITIES AND IN
FOSSIL MOLDS.

1165.2- 1169 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-20%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

1169 - 1179.9 CALCARENITE; VERY LIGHT ORANGE TO LIGHT GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO VERY COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, MOTTLED, MASSIVE
ACCESSORY MINERALS: DOLOMITE-05%, QUARTZ SAND-01%
QUARTZ-02%
OTHER FEATURES: DOLOMITIC
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

1179.9- 1183 CLAY; VERY LIGHT ORANGE TO GRAYISH BROWN
02% POROSITY: FRACTURE, LOW PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-20%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

1183 - 1189.4 CALCARENITE; GRAYISH BROWN TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: DOLOMITE-01%, QUARTZ SAND-01%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA

1189.4- 1193.7 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: LOW PERMEABILITY; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

1193.7- 1203 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, FRACTURE
GRAIN TYPE: BIOGENIC, CRYSTALS, PELLET
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-02%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

1203 - 1209 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: QUARTZ SAND-02%
FOSSILS: BENTHIC FORAMINIFERA

1209 - 1209.4 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-20%, QUARTZ SAND-01%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

1209.4- 1223.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-02%
OTHER FEATURES: CHALKY
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA
CALCARENITE, FINE-GRAINED, SOME WEATHERED FORAMS AND
ECHINOID CASTS.

1223.5- 1235 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, VUGULAR
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-02%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

1235 - 1258 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
08% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-01%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA

1258 - 1258 CALCARENITE; YELLOWISH GRAY TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CRYSTALS, SKELETAL
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: DOLOMITE-02%
OTHER FEATURES: DOLOMITIC, GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS
ORGANICS

1258 - 1273.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
08% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, PELLET, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, BENTHIC FORAMINIFERA, MOLLUSKS

1273.5- 1281.6 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CRYSTALS, PELLET
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED, MASSIVE
ACCESSORY MINERALS: PLANT REMAINS-10%, DOLOMITE- %
OTHER FEATURES: GRANULAR, LOW RECRYSTALLIZATION
FOSSILS: BENTHIC FORAMINIFERA, ORGANICS, FOSSIL FRAGMENTS
MOLLUSKS
CALCARENITE, GRANULAR, INTERBEDDED ORGANICS, CALCIFIED
FOSSILS, SOME VERTICAL FRACTURE TRACES, SLIGHTLY DOLOMITIC
SOME LAMINATION FEATURES-- DARK GREEN GLAUCONITE PELLETS?
OR ORGANICS.

1281.6- 1282 CALCARENITE; YELLOWISH GRAY
07% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MASSIVE
ACCESSORY MINERALS: PLANT REMAINS- %
OTHER FEATURES: LOW RECRYSTALLIZATION, CALCAREOUS
GRANULAR
FOSSILS: BENTHIC FORAMINIFERA, ORGANICS, FOSSIL FRAGMENTS

1282 - 1283.6 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT ORANGE
07% POROSITY: INTERGRANULAR, PIN POINT VUGS, FRACTURE
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: PLANT REMAINS- %
OTHER FEATURES: GRANULAR, LOW RECRYSTALLIZATION
FOSSILS: ORGANICS, FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA
INFILLED FRACTURE TRACES, GLAUCONITE? OR ORGANICS.

1283.6- 1284 CALCARENITE; YELLOWISH GRAY
07% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, MASSIVE
OTHER FEATURES: GRANULAR, LOW RECRYSTALLIZATION
FOSSILS: FOSSIL FRAGMENTS

1284 - 1299.1 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT ORANGE
07% POROSITY: INTERGRANULAR, LOW PERMEABILITY, FRACTURE
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED, MASSIVE
ACCESSORY MINERALS: DOLOMITE- %, CALCITE- %
QUARTZ SAND- %
OTHER FEATURES: GRANULAR, LOW RECRYSTALLIZATION
FOSSILS: FOSSIL FRAGMENTS, ORGANICS, BENTHIC FORAMINIFERA
MOLLUSKS
SOME MOLLUSK FRAGMENTS & MOLDS, CHLORITE? OR ORGANICS
FRACTURE TRACES- SOME INFILLED, SLIGHTLY MORE
RECRYSTALLIZED.

1299.1- 1299.2 CALCILUTITE; YELLOWISH GRAY
POROSITY: INTERGRANULAR
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS
CLAYEY CALCILUTITE.

1299.2- 1304 CALCARENITE; YELLOWISH GRAY
POROSITY: INTERGRANULAR
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED, MASSIVE
OTHER FEATURES: GRANULAR, LOW RECRYSTALLIZATION
FOSSILS: FOSSIL FRAGMENTS, ORGANICS
WHITE CHALKY FOSSILS & FOSSIL FRAGMENTS; ALTERED
RECRYSTALLIZED MOLLUSK SHELL FRAGMENTS; FRACTURE TRACE AT
BASE OF SECTION.

1304 - 1341 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR
GRAIN TYPE: BIOGENIC
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX

1341 - 1360 DOLOSTONE; MODERATE LIGHT GRAY TO LIGHT OLIVE GRAY
05% POROSITY: FRACTURE; 10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
OTHER FEATURES: CALCAREOUS, WEATHERED
HARD DOLOSTONE, POSSIBLY FRACTURED, SOME SULFATE STAINING.

1360 - 1395 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, PELLET
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-20%, MICA-01%

1395 - 1407 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
10% POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCARENITE-03%
OTHER FEATURES: CRYSTALLINE
HARD DOLOSTONE, FRACTURED, SOME INTERBEDDED CALCARENITE
HIGHLY PERMEABLE.

1407 - 1437 CALCARENITE; WHITE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, PIN POINT VUGS
GRAIN TYPE: BIOGENIC, SKELETAL, SKELTAL CAST
GRAIN SIZE: VERY FINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: DOLOMITE-02%
OTHER FEATURES: MUDDY, WEATHERED, FOSSILIFEROUS
FOSSILS: PLANKTONIC FORAMINIFERA

1437 - 1467 CALCARENITE; WHITE TO YELLOWISH GRAY
15% POROSITY: INTRAGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: PELLET, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: DOLOMITE-02%
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: PLANKTONIC FORAMINIFERA
LIMESTONE, FOSSILIFEROUS, COMPOSED OF NUMMULITES - PROBABLY
FALL IN FROM OCALA LM ABOVE.

1467 - 1507 CALCARENITE; YELLOWISH GRAY TO OLIVE GRAY
10% POROSITY: INTRAGRANULAR, POSSIBLY HIGH PERMEABILITY
FRACTURE
GRAIN TYPE: PELLET, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-02%
OTHER FEATURES: CHALKY, FOSSILIFEROUS
FOSSILS: PLANKTONIC FORAMINIFERA

1507 - 1527 CALCARENITE; YELLOWISH GRAY TO OLIVE GRAY
10% POROSITY: INTRAGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: PELLET, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-03%, CALCITE-01%
OTHER FEATURES: CHALKY, FOSSILIFEROUS, VARIEGATED
FOSSILS: PLANKTONIC FORAMINIFERA
LIMESTONE, FOSSILIFEROUS, DOLOMITE CONTENT INCREASING.

1527 - 1537 DOLOSTONE; DARK GRAYISH YELLOW TO OLIVE GRAY
10% POROSITY: INTERGRANULAR, PIN POINT VUGS
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: CALCAREOUS

1537 - 1547 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH BROWN
10% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: PELLET, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-01%, CALCITE-01%, CLAY-01%
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: PLANKTONIC FORAMINIFERA

1547 - 1557 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH BROWN
10% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: PELLET, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, DOLOMITE-01%
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: PLANKTONIC FORAMINIFERA

1557 - 1580 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH BROWN
10% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: PELLET, SKELETAL, SKELTAL CAST
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-30%, CLAY-02%
FOSSILS: PLANKTONIC FORAMINIFERA
LIMESTONE, NMEROUS FOAMS, NUMMULITES - FALL IN FROM ABOVE.

1580 - 1600 DOLOSTONE; WHITE TO LIGHT OLIVE GRAY
10% POROSITY: INTRAGRANULAR, INTERCRYSTALLINE
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-20%
OTHER FEATURES: CRYSTALLINE
FOSSILS: PLANKTONIC FORAMINIFERA

1600 - 1620 DOLOSTONE; WHITE TO LIGHT OLIVE GRAY
10% POROSITY: INTRAGRANULAR, INTERCRYSTALLINE
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-05%
OTHER FEATURES: CRYSTALLINE
FOSSILS: PLANKTONIC FORAMINIFERA

1620 - 1630 DOLOSTONE; WHITE TO LIGHT OLIVE GRAY
10% POROSITY: INTRAGRANULAR, INTERCRYSTALLINE
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
ACCESSORY MINERALS: CALCILUTITE-20%
OTHER FEATURES: CRYSTALLINE
FOSSILS: PLANKTONIC FORAMINIFERA
DOLOMITE, INCLUDES LIMESTONE FRAGMENTS & NUMMULITES CASTS FALL IN FROM ABOVE.

1630 - 1640 DOLOSTONE; LIGHT OLIVE GRAY TO LIGHT OLIVE GRAY
05% POROSITY: INTERGRANULAR, INTERCRYSTALLINE, FRACTURE
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
ACCESSORY MINERALS: CALCILUTITE-03%
FOSSILS: VERTEBRATE
DOLOSTONE, DECREASING CALCILUTITE.

1640 - 1650 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
15% POROSITY: INTERGRANULAR, INTERCRYSTALLINE, FRACTURE
10-50% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: FOSSILIFEROUS
FOSSILS: ECHINOID
DOLOSTONE, HARD, FRACTURED, CRYSTALLINE, ECHINOID MOLDS PRESENT.

1650 TOTAL DEPTH

APPENDIX B

ROMP 5 AVON PARK FLOW TEST DATA

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
DRAWDOWN PHASE 1ST STEP (600 GPM)				
12-19-95	17:40:00	0.000	9.59	10.69
12-19-95	17:59:59	0.001	9.59	10.69
12-19-95	18:00:00	0.014	7.22	10.68
12-19-95	18:00:01	0.032	6.96	10.68
12-19-95	18:00:02	0.048	6.77	10.68
12-19-95	18:00:03	0.065	6.71	10.68
12-19-95	18:00:04	0.081	6.68	10.68
12-19-95	18:00:05	0.098	6.73	10.68
12-19-95	18:00:06	0.114	6.85	10.68
12-19-95	18:00:07	0.131	6.68	10.68
12-19-95	18:00:08	0.148	6.2	10.68
12-19-95	18:00:09	0.164	5.44	10.68
12-19-95	18:00:10	0.181	4.71	10.68
12-19-95	18:00:11	0.197	4.26	10.68
12-19-95	18:00:12	0.215	4.09	10.68
12-19-95	18:00:13	0.230	4.1	10.68
12-19-95	18:00:14	0.248	4.34	10.68
12-19-95	18:00:15	0.265	4.8	10.68
12-19-95	18:00:16	0.281	5.29	10.68
12-19-95	18:00:17	0.298	5.77	10.68
12-19-95	18:00:18	0.314	6.25	10.68
12-19-95	18:00:19	0.331	6.86	10.68
12-19-95	18:00:20	0.348	7.38	10.68
12-19-95	18:00:21	0.364	7.79	10.68
12-19-95	18:00:22	0.382	8.19	10.68
12-19-95	18:00:23	0.397	8.53	10.68
12-19-95	18:00:24	0.415	8.77	10.68
12-19-95	18:00:25	0.431	8.99	10.68
12-19-95	18:00:26	0.448	9.15	10.68
12-19-95	18:00:27	0.465	9.38	10.68
12-19-95	18:00:28	0.481	9.44	10.68
12-19-95	18:00:29	0.498	9.39	10.68
12-19-95	18:00:30	0.514	9.39	10.68
12-19-95	18:00:31	0.531	9.31	10.68
12-19-95	18:00:32	0.547	9.21	10.68
12-19-95	18:00:33	0.564	9.07	10.68
12-19-95	18:00:34	0.582	8.89	10.68
12-19-95	18:00:35	0.598	8.75	10.68
12-19-95	18:00:36	0.615	8.6	10.68
12-19-95	18:00:37	0.631	8.43	10.68
12-19-95	18:00:38	0.648	8.27	10.68
12-19-95	18:00:39	0.664	8.18	10.68
12-19-95	18:00:40	0.681	8.11	10.68
12-19-95	18:00:41	0.698	8.05	10.68
12-19-95	18:00:42	0.714	8.04	10.68

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-19-95	18:00:43	0.732	8.04	10.68
12-19-95	18:00:44	0.747	8	10.68
12-19-95	18:00:45	0.765	8.06	10.68
12-19-95	18:00:46	0.780	8.07	10.68
12-19-95	18:00:47	0.798	8.14	10.68
12-19-95	18:00:48	0.815	8.11	10.68
12-19-95	18:00:49	0.831	8.11	10.68
12-19-95	18:00:50	0.848	8.12	10.68
12-19-95	18:00:51	0.864	8.14	10.68
12-19-95	18:00:52	0.881	8.13	10.68
12-19-95	18:00:53	0.897	8.22	10.68
12-19-95	18:00:54	0.914	8.2	10.68
12-19-95	18:00:55	0.932	8.23	10.68
12-19-95	18:00:56	0.948	8.3	10.68
12-19-95	18:00:57	0.965	8.39	10.68
12-19-95	18:00:58	0.981	8.4	10.68
12-19-95	18:00:59	0.998	8.39	10.68
12-19-95	18:01:00	1.014	8.46	10.68
12-19-95	18:01:03	1.064	8.4	10.68
12-19-95	18:01:06	1.115	8.36	10.68
12-19-95	18:01:09	1.165	8.3	10.68
12-19-95	18:01:12	1.214	8.36	10.68
12-19-95	18:01:15	1.264	8.43	10.68
12-19-95	18:01:18	1.315	8.31	10.68
12-19-95	18:01:21	1.365	8.36	10.68
12-19-95	18:01:24	1.414	8.41	10.68
12-19-95	18:01:27	1.464	8.32	10.68
12-19-95	18:01:30	1.515	8.3	10.68
12-19-95	18:01:33	1.564	8.39	10.68
12-19-95	18:01:36	1.614	8.35	10.67
12-19-95	18:01:39	1.665	8.32	10.68
12-19-95	18:01:42	1.715	8.34	10.68
12-19-95	18:01:45	1.764	8.35	10.68
12-19-95	18:01:48	1.814	8.43	10.68
12-19-95	18:01:51	1.865	8.41	10.68
12-19-95	18:01:54	1.914	8.38	10.68
12-19-95	18:01:57	1.964	8.36	10.68
12-19-95	18:02:00	2.015	8.39	10.68
12-19-95	18:02:06	2.114	8.42	10.68
12-19-95	18:02:12	2.215	8.43	10.68
12-19-95	18:02:18	2.314	8.43	10.68
12-19-95	18:02:24	2.415	8.42	10.68
12-19-95	18:02:30	2.514	8.41	10.68
12-19-95	18:02:36	2.615	8.48	10.68
12-19-95	18:02:42	2.714	8.49	10.68
12-19-95	18:02:48	2.814	8.43	10.68
12-19-95	18:02:54	2.915	8.45	10.68

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-19-95	18:03:00	3.014	8.47	10.67
12-19-95	18:03:06	3.115	8.54	10.68
12-19-95	18:03:12	3.214	8.53	10.68
12-19-95	18:03:18	3.315	8.52	10.68
12-19-95	18:03:24	3.414	8.5	10.67
12-19-95	18:03:30	3.515	8.51	10.68
12-19-95	18:03:36	3.614	8.54	10.67
12-19-95	18:03:42	3.714	8.54	10.68
12-19-95	18:03:48	3.815	8.56	10.68
12-19-95	18:03:54	3.914	8.63	10.68
12-19-95	18:04:00	4.015	8.68	10.68
12-19-95	18:04:06	4.114	8.55	10.68
12-19-95	18:04:12	4.215	8.52	10.67
12-19-95	18:04:18	4.314	8.56	10.67
12-19-95	18:04:24	4.415	8.62	10.67
12-19-95	18:04:30	4.514	8.64	10.67
12-19-95	18:04:36	4.614	8.65	10.67
12-19-95	18:04:42	4.715	8.68	10.67
12-19-95	18:04:48	4.814	8.62	10.67
12-19-95	18:04:54	4.915	8.55	10.67
12-19-95	18:05:00	5.014	8.68	10.67
12-19-95	18:05:15	5.265	8.54	10.67
12-19-95	18:05:30	5.514	8.8	10.67
12-19-95	18:05:45	5.764	8.6	10.67
12-19-95	18:06:00	6.015	8.68	10.67
12-19-95	18:06:15	6.264	8.37	10.67
12-19-95	18:06:30	6.515	8.67	10.67
12-19-95	18:06:45	6.764	8.12	10.67
12-19-95	18:07:00	7.014	8.36	10.67
12-19-95	18:07:15	7.265	8.11	10.67
12-19-95	18:07:30	7.514	8.37	10.67
12-19-95	18:07:45	7.764	8.39	10.67
12-19-95	18:08:00	8.015	8.32	10.67
12-19-95	18:08:15	8.264	8.3	10.67
12-19-95	18:08:30	8.515	8.37	10.67
12-19-95	18:08:45	8.764	8.36	10.67
12-19-95	18:09:00	9.014	8.39	10.67
12-19-95	18:09:15	9.265	8.4	10.67
12-19-95	18:09:30	9.514	8.39	10.67
12-19-95	18:09:45	9.765	8.41	10.67
12-19-95	18:10:00	10.014	8.43	10.67
12-19-95	18:10:30	10.515	8.44	10.67
12-19-95	18:11:00	11.015	8.47	10.67
12-19-95	18:11:30	11.514	8.47	10.67
12-19-95	18:12:00	12.014	8.45	10.67
12-19-95	18:12:30	12.515	8.34	10.67
12-19-95	18:13:00	13.015	8.43	10.67

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-19-95	18:13:30	13.514	8.49	10.67
12-19-95	18:14:00	14.014	8.47	10.67
12-19-95	18:14:30	14.514	8.52	10.67
12-19-95	18:15:00	15.015	8.5	10.67
12-19-95	18:15:30	15.515	8.52	10.66
12-19-95	18:16:00	16.014	8.54	10.66
12-19-95	18:16:30	16.514	8.53	10.66
12-19-95	18:17:00	17.015	8.53	10.66
12-19-95	18:17:30	17.515	8.53	10.66
12-19-95	18:18:00	18.014	8.49	10.66
12-19-95	18:18:30	18.514	8.53	10.66
12-19-95	18:19:00	19.014	8.49	10.66
12-19-95	18:19:30	19.515	8.52	10.66
12-19-95	18:20:00	20.015	8.51	10.66
12-19-95	18:21:00	21.014	8.5	10.66
12-19-95	18:22:00	22.015	8.49	10.65
12-19-95	18:23:00	23.014	8.5	10.66
12-19-95	18:24:00	24.015	8.52	10.65
12-19-95	18:25:00	25.014	8.52	10.65
12-19-95	18:26:00	26.015	8.53	10.65
12-19-95	18:27:00	27.014	8.55	10.65
12-19-95	18:28:00	28.014	8.49	10.65
12-19-95	18:29:00	29.015	8.5	10.65
12-19-95	18:30:00	30.014	8.51	10.65
12-19-95	18:32:00	32.014	8.53	10.65
12-19-95	18:34:00	34.014	8.56	10.64
12-19-95	18:36:00	36.014	8.41	10.66
12-19-95	18:38:00	38.015	8.46	10.65
12-19-95	18:40:00	40.015	8.47	10.65
12-19-95	18:42:00	42.015	8.48	10.65
12-19-95	18:44:00	44.015	8.48	10.65
12-19-95	18:46:00	46.014	8.48	10.65
12-19-95	18:48:00	48.014	8.48	10.65
12-19-95	18:50:00	50.014	8.46	10.65
12-19-95	18:55:00	55.014	8.45	10.64
12-19-95	19:00:00	60.015	8.49	10.64
12-19-95	19:05:00	65.015	8.43	10.64
12-19-95	19:10:00	70.014	8.46	10.64
12-19-95	19:15:00	75.014	8.44	10.64
12-19-95	19:20:00	80.015	8.43	10.63
12-19-95	19:25:00	85.015	8.43	10.64
12-19-95	19:30:00	90.014	8.47	10.64
12-19-95	19:35:00	95.014	8.48	10.64
12-19-95	19:40:00	100.014	8.46	10.64
12-19-95	19:50:00	110.015	8.44	10.64
12-19-95	20:00:00	120.014	8.43	10.64
12-19-95	20:10:00	130.015	8.44	10.64

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-19-95	20:20:00	140.014	8.45	10.63
12-19-95	20:30:00	150.015	8.43	10.64
12-19-95	20:40:00	160.014	8.45	10.63
12-19-95	20:50:00	170.015	8.45	10.63
12-19-95	21:10:00	190.014	8.43	10.76
12-19-95	21:25:00	205.014	8.43	10.77
12-19-95	21:40:00	220.015	8.44	10.79
12-19-95	21:55:00	235.014	8.43	10.8
12-19-95	22:10:00	250.014	8.42	10.8
12-19-95	22:25:00	265.015	8.41	10.81
12-19-95	22:40:00	280.014	8.42	10.82
12-19-95	22:55:00	295.014	8.43	10.82
12-19-95	23:10:00	310.015	8.44	10.83
12-19-95	23:25:00	325.014	8.43	10.83
12-19-95	23:40:00	340.014	8.48	10.84
12-19-95	23:55:00	355.015	8.46	10.84
12-20-95	00:10:00	370.015	8.56	10.85
12-20-95	00:25:00	385.016	8.57	10.86
12-20-95	00:40:00	400.016	8.57	10.87
12-20-95	00:55:00	415.015	8.57	10.88
12-20-95	01:10:00	430.016	8.59	10.88
12-20-95	01:25:00	445.016	8.59	10.9
12-20-95	01:40:00	460.015	8.6	10.9
12-20-95	01:55:00	475.016	8.6	10.9
12-20-95	02:10:00	490.016	8.62	10.91
12-20-95	02:25:00	505.015	8.64	10.92
12-20-95	02:40:00	520.016	8.64	10.93
12-20-95	02:55:00	535.016	8.63	10.93
12-20-95	03:10:00	550.015	8.63	10.93
12-20-95	03:25:00	565.016	8.63	10.94
12-20-95	03:40:00	580.016	8.6	10.94
12-20-95	03:55:00	595.015	8.63	10.95
12-20-95	04:10:00	610.016	8.64	10.96
12-20-95	04:25:00	625.016	8.62	10.97
12-20-95	04:40:00	640.015	8.62	10.98
12-20-95	04:55:00	655.016	8.61	10.99
12-20-95	05:10:00	670.016	8.62	10.99
12-20-95	05:25:00	685.015	8.6	11
12-20-95	05:40:00	700.016	8.61	10.95
12-20-95	05:55:00	715.016	8.58	10.93
12-20-95	06:10:00	730.015	8.57	10.93
12-20-95	06:25:00	745.016	8.58	10.93
12-20-95	06:40:00	760.016	8.57	10.93
12-20-95	06:55:00	775.015	8.55	10.92
12-20-95	07:10:00	790.016	8.51	10.91
12-20-95	07:25:00	805.016	8.48	10.9
12-20-95	07:40:00	820.015	8.47	10.89

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-20-95	07:55:00	835.016	8.45	10.73
12-20-95	08:10:00	850.016	8.45	10.77
12-20-95	08:25:00	865.015	8.47	10.64
12-20-95	08:40:00	880.016	8.43	10.61
12-20-95	08:55:00	895.016	8.43	10.59
12-20-95	09:10:00	910.015	8.45	10.55
12-20-95	09:25:00	925.016	8.43	10.55
12-20-95	09:40:00	940.016	8.43	10.68
12-20-95	09:55:00	955.015	8.4	10.72
12-20-95	10:10:00	970.016	8.39	10.55
12-20-95	10:25:00	985.016	8.4	10.51
12-20-95	10:40:00	1000.015	8.39	10.48
12-20-95	10:55:00	1015.016	8.39	10.51
12-20-95	10:55:00	1015.016	8.35	10.51
DRAWDOWN PHASE 2ND STEP (1000 GPM)				
12-20-95	11:15:00	0.016	8.34	10.57
12-20-95	11:15:01	0.033	8.28	10.56
12-20-95	11:15:02	0.049	8.3	10.56
12-20-95	11:15:03	0.066	8.3	10.56
12-20-95	11:15:04	0.082	8.3	10.56
12-20-95	11:15:05	0.099	8.34	10.55
12-20-95	11:15:06	0.115	8.53	10.55
12-20-95	11:15:07	0.132	8.83	10.55
12-20-95	11:15:08	0.150	8.9	10.55
12-20-95	11:15:09	0.166	8.99	10.54
12-20-95	11:15:10	0.183	8.75	10.54
12-20-95	11:15:11	0.199	8.6	10.54
12-20-95	11:15:12	0.216	8.66	10.54
12-20-95	11:15:13	0.232	8.68	10.54
12-20-95	11:15:14	0.249	7.76	10.54
12-20-95	11:15:15	0.266	6.44	10.54
12-20-95	11:15:16	0.282	5.53	10.54
12-20-95	11:15:17	0.300	4.92	10.54
12-20-95	11:15:18	0.315	4.58	10.54
12-20-95	11:15:19	0.333	4.42	10.54
12-20-95	11:15:20	0.348	4.4	10.54
12-20-95	11:15:21	0.366	4.47	10.54
12-20-95	11:15:22	0.383	4.6	10.54
12-20-95	11:15:23	0.399	4.76	10.54
12-20-95	11:15:24	0.416	4.93	10.54
12-20-95	11:15:25	0.432	5.1	10.54
12-20-95	11:15:26	0.449	5.28	10.53
12-20-95	11:15:27	0.467	5.42	10.53
12-20-95	11:15:28	0.482	5.57	10.53

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-20-95	11:15:29	0.500	5.69	10.53
12-20-95	11:15:30	0.516	5.8	10.53
12-20-95	11:15:31	0.533	5.9	10.53
12-20-95	11:15:32	0.549	5.98	10.53
12-20-95	11:15:33	0.566	6.06	10.53
12-20-95	11:15:34	0.583	6.12	10.53
12-20-95	11:15:35	0.599	6.18	10.53
12-20-95	11:15:36	0.616	6.23	10.53
12-20-95	11:15:37	0.632	6.25	10.53
12-20-95	11:15:38	0.649	6.29	10.53
12-20-95	11:15:39	0.665	6.29	10.53
12-20-95	11:15:40	0.683	6.3	10.53
12-20-95	11:15:41	0.700	6.3	10.53
12-20-95	11:15:42	0.716	6.31	10.52
12-20-95	11:15:43	0.733	6.31	10.53
12-20-95	11:15:44	0.749	6.3	10.52
12-20-95	11:15:45	0.766	6.31	10.52
12-20-95	11:15:46	0.782	6.3	10.52
12-20-95	11:15:47	0.799	6.31	10.52
12-20-95	11:15:48	0.816	6.31	10.52
12-20-95	11:15:49	0.832	6.29	10.52
12-20-95	11:15:50	0.850	6.29	10.52
12-20-95	11:15:51	0.865	6.29	10.52
12-20-95	11:15:52	0.883	6.27	10.52
12-20-95	11:15:53	0.899	6.26	10.52
12-20-95	11:15:54	0.916	6.27	10.52
12-20-95	11:15:55	0.933	6.27	10.52
12-20-95	11:15:56	0.949	6.25	10.52
12-20-95	11:15:57	0.966	6.25	10.52
12-20-95	11:15:58	0.982	6.24	10.52
12-20-95	11:15:59	0.999	6.24	10.52
12-20-95	11:16:00	1.015	6.23	10.52
12-20-95	11:16:03	1.066	6.25	10.52
12-20-95	11:16:06	1.116	6.26	10.52
12-20-95	11:16:09	1.166	6.25	10.52
12-20-95	11:16:12	1.215	6.25	10.51
12-20-95	11:16:15	1.266	6.26	10.52
12-20-95	11:16:18	1.316	6.27	10.51
12-20-95	11:16:21	1.365	6.25	10.51
12-20-95	11:16:24	1.416	6.24	10.51
12-20-95	11:16:27	1.466	6.25	10.52
12-20-95	11:16:30	1.516	6.25	10.51
12-20-95	11:16:33	1.565	6.25	10.51
12-20-95	11:16:36	1.616	6.25	10.51
12-20-95	11:16:39	1.666	6.25	10.51
12-20-95	11:16:42	1.716	6.25	10.51
12-20-95	11:16:45	1.765	6.26	10.51

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-20-95	11:16:48	1.816	6.27	10.51
12-20-95	11:16:51	1.866	6.25	10.51
12-20-95	11:16:54	1.915	6.24	10.51
12-20-95	11:16:57	1.966	6.22	10.51
12-20-95	11:17:00	2.016	6.24	10.51
12-20-95	11:17:06	2.115	6.25	10.51
12-20-95	11:17:12	2.216	6.26	10.51
12-20-95	11:17:18	2.316	6.26	10.51
12-20-95	11:17:24	2.416	6.23	10.51
12-20-95	11:17:30	2.516	6.26	10.51
12-20-95	11:17:36	2.616	6.26	10.51
12-20-95	11:17:42	2.716	6.27	10.51
12-20-95	11:17:48	2.815	6.27	10.51
12-20-95	11:17:54	2.916	6.22	10.51
12-20-95	11:18:00	3.015	6.24	10.51
12-20-95	11:18:06	3.116	6.23	10.51
12-20-95	11:18:12	3.216	6.25	10.51
12-20-95	11:18:18	3.316	6.26	10.51
12-20-95	11:18:24	3.416	6.26	10.51
12-20-95	11:18:30	3.516	6.24	10.51
12-20-95	11:18:36	3.616	6.25	10.51
12-20-95	11:18:42	3.715	6.25	10.51
12-20-95	11:18:48	3.816	6.25	10.51
12-20-95	11:18:54	3.915	6.25	10.51
12-20-95	11:19:00	4.016	6.24	10.51
12-20-95	11:19:06	4.116	6.22	10.51
12-20-95	11:19:12	4.216	6.25	10.51
12-20-95	11:19:18	4.316	6.25	10.51
12-20-95	11:19:24	4.416	6.24	10.5
12-20-95	11:19:30	4.516	6.25	10.51
12-20-95	11:19:36	4.615	6.25	10.51
12-20-95	11:19:42	4.716	6.22	10.51
12-20-95	11:19:48	4.815	6.25	10.51
12-20-95	11:19:54	4.916	6.25	10.51
12-20-95	11:20:00	5.016	6.24	10.51
12-20-95	11:20:15	5.266	6.23	10.51
12-20-95	11:20:30	5.515	6.25	10.51
12-20-95	11:20:45	5.766	6.25	10.51
12-20-95	11:21:00	6.016	6.22	10.51
12-20-95	11:21:15	6.265	6.24	10.51
12-20-95	11:21:30	6.516	6.24	10.51
12-20-95	11:21:45	6.765	6.22	10.51
12-20-95	11:22:00	7.016	6.21	10.51
12-20-95	11:22:15	7.266	6.23	10.51
12-20-95	11:22:30	7.515	6.23	10.51
12-20-95	11:22:45	7.766	6.21	10.5
12-20-95	11:23:00	8.016	6.2	10.51

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-20-95	11:23:15	8.266	6.24	10.51
12-20-95	11:23:30	8.516	6.2	10.51
12-20-95	11:23:45	8.765	6.21	10.51
12-20-95	11:24:00	9.016	6.19	10.51
12-20-95	11:24:15	9.266	6.21	10.51
12-20-95	11:24:30	9.516	6.2	10.51
12-20-95	11:24:45	9.766	6.21	10.51
12-20-95	11:25:00	10.015	6.21	10.51
12-20-95	11:25:30	10.516	6.21	10.5
12-20-95	11:26:00	11.016	6.2	10.51
12-20-95	11:26:30	11.516	6.18	10.51
12-20-95	11:27:00	12.015	6.18	10.51
12-20-95	11:27:30	12.516	6.14	10.51
12-20-95	11:28:00	13.016	6.15	10.51
12-20-95	11:28:30	13.516	6.18	10.52
12-20-95	11:29:00	14.016	6.17	10.52
12-20-95	11:29:30	14.515	6.18	10.52
12-20-95	11:30:00	15.016	6.18	10.51
12-20-95	11:30:30	15.516	6.14	10.51
12-20-95	11:31:00	16.016	6.16	10.51
12-20-95	11:31:30	16.515	6.17	10.51
12-20-95	11:32:00	17.016	6.15	10.51
12-20-95	11:32:30	17.516	6.17	10.51
12-20-95	11:33:00	18.016	6.15	10.51
12-20-95	11:33:30	18.516	6.17	10.51
12-20-95	11:34:00	19.015	6.13	10.51
12-20-95	11:34:30	19.516	6.16	10.52
12-20-95	11:35:00	20.016	6.16	10.52
12-20-95	11:36:00	21.015	6.16	10.51
12-20-95	11:37:00	22.016	6.15	10.52
12-20-95	11:38:00	23.016	6.15	10.52
12-20-95	11:39:00	24.016	6.14	10.51
12-20-95	11:40:00	25.016	6.15	10.5
12-20-95	11:41:00	26.016	6.17	10.5
12-20-95	11:42:00	27.016	6.18	10.49
12-20-95	11:43:00	28.015	6.2	10.5
12-20-95	11:44:00	29.016	6.13	10.5
12-20-95	11:45:00	30.015	6.15	10.5
12-20-95	11:47:00	32.016	6.16	10.5
12-20-95	11:49:00	34.016	6.14	10.5
12-20-95	11:51:00	36.016	6.12	10.49
12-20-95	11:53:00	38.016	6.17	10.5
12-20-95	11:55:00	40.016	6.14	10.49
12-20-95	11:57:00	42.016	6.15	10.49
12-20-95	11:59:00	44.016	6.14	10.48
12-20-95	12:01:00	46.015	6.16	10.49
12-20-95	12:03:00	48.015	6.14	10.49

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-20-95	12:05:00	50.016	6.17	10.49
12-20-95	12:10:00	55.015	6.15	10.48
12-20-95	12:15:00	60.016	6.17	10.48
RECOVERY PHASE				
12-20-95	12:20:00	0.000	6.15	10.47
12-20-95	12:25:00	0.016	6.18	10.47
12-20-95	12:25:01	0.033	6.17	10.47
12-20-95	12:25:02	0.049	6.18	10.47
12-20-95	12:25:03	0.066	6.23	10.47
12-20-95	12:25:04	0.082	6.38	10.47
12-20-95	12:25:05	0.099	6.77	10.47
12-20-95	12:25:06	0.116	7.77	10.47
12-20-95	12:25:07	0.132	9.89	10.47
12-20-95	12:25:08	0.150	12.69	10.47
12-20-95	12:25:09	0.165	14	10.47
12-20-95	12:25:10	0.183	13.96	10.47
12-20-95	12:25:11	0.199	13.94	10.47
12-20-95	12:25:12	0.216	13.94	10.47
12-20-95	12:25:13	0.233	13.93	10.47
12-20-95	12:25:14	0.249	13.91	10.47
12-20-95	12:25:15	0.266	13.9	10.47
12-20-95	12:25:16	0.282	13.88	10.47
12-20-95	12:25:17	0.299	13.87	10.47
12-20-95	12:25:18	0.315	13.86	10.47
12-20-95	12:25:19	0.332	13.84	10.47
12-20-95	12:25:20	0.350	13.82	10.47
12-20-95	12:25:21	0.366	13.81	10.47
12-20-95	12:25:22	0.383	13.79	10.47
12-20-95	12:25:23	0.399	13.77	10.47
12-20-95	12:25:24	0.416	13.75	10.47
12-20-95	12:25:25	0.432	13.74	10.47
12-20-95	12:25:26	0.449	13.72	10.47
12-20-95	12:25:27	0.466	13.69	10.47
12-20-95	12:25:28	0.482	13.66	10.47
12-20-95	12:25:29	0.500	13.58	10.47
12-20-95	12:25:30	0.515	13.42	10.46
12-20-95	12:25:31	0.533	13.18	10.46
12-20-95	12:25:32	0.548	12.85	10.46
12-20-95	12:25:33	0.566	12.46	10.47
12-20-95	12:25:34	0.583	12.02	10.46
12-20-95	12:25:35	0.599	11.52	10.47
12-20-95	12:25:36	0.616	11	10.47
12-20-95	12:25:37	0.632	10.47	10.47
12-20-95	12:25:38	0.649	9.93	10.47

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-20-95	12:25:39	0.665	9.41	10.46
12-20-95	12:25:40	0.682	8.93	10.46
12-20-95	12:25:41	0.700	8.48	10.46
12-20-95	12:25:42	0.716	8.1	10.46
12-20-95	12:25:43	0.733	7.78	10.47
12-20-95	12:25:44	0.749	7.53	10.46
12-20-95	12:25:45	0.766	7.38	10.47
12-20-95	12:25:46	0.782	7.29	10.46
12-20-95	12:25:47	0.799	7.3	10.47
12-20-95	12:25:48	0.816	7.4	10.46
12-20-95	12:25:49	0.832	7.56	10.46
12-20-95	12:25:50	0.849	7.81	10.46
12-20-95	12:25:51	0.865	8.12	10.46
12-20-95	12:25:52	0.883	8.49	10.46
12-20-95	12:25:53	0.900	8.9	10.46
12-20-95	12:25:54	0.916	9.35	10.46
12-20-95	12:25:55	0.933	9.82	10.46
12-20-95	12:25:56	0.949	10.29	10.47
12-20-95	12:25:57	0.966	10.76	10.47
12-20-95	12:25:58	0.982	11.21	10.46
12-20-95	12:25:59	0.999	11.63	10.47
12-20-95	12:26:00	1.016	12	10.46
12-20-95	12:26:03	1.065	12.76	10.46
12-20-95	12:26:06	1.116	12.9	10.47
12-20-95	12:26:09	1.166	12.4	10.46
12-20-95	12:26:12	1.215	11.4	10.46
12-20-95	12:26:15	1.266	10.16	10.46
12-20-95	12:26:18	1.316	9.01	10.46
12-20-95	12:26:21	1.366	8.23	10.46
12-20-95	12:26:24	1.415	7.97	10.46
12-20-95	12:26:27	1.466	8.3	10.46
12-20-95	12:26:30	1.516	9.11	10.46
12-20-95	12:26:33	1.567	10.18	10.47
12-20-95	12:26:36	1.616	11.24	10.46
12-20-95	12:26:39	1.666	12.03	10.46
12-20-95	12:26:42	1.716	12.37	10.47
12-20-95	12:26:45	1.765	12.2	10.47
12-20-95	12:26:48	1.816	11.57	10.46
12-20-95	12:26:51	1.866	10.65	10.46
12-20-95	12:26:54	1.916	9.69	10.47
12-20-95	12:26:57	1.965	8.9	10.47
12-20-95	12:27:00	2.016	8.49	10.47
12-20-95	12:27:06	2.115	9.01	10.47
12-20-95	12:27:12	2.216	10.67	10.47
12-20-95	12:27:18	2.315	11.88	10.47
12-20-95	12:27:24	2.416	11.59	10.47
12-20-95	12:27:30	2.516	10.16	10.47

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-20-95	12:27:36	2.616	8.96	10.47
12-20-95	12:27:42	2.716	9.05	10.46
12-20-95	12:27:48	2.816	10.26	10.47
12-20-95	12:27:54	2.916	11.44	10.48
12-20-95	12:28:00	3.015	11.5	10.47
12-20-95	12:28:06	3.116	10.49	10.47
12-20-95	12:28:12	3.215	9.39	10.47
12-20-95	12:28:18	3.316	9.18	10.47
12-20-95	12:28:24	3.416	10	10.47
12-20-95	12:28:30	3.516	11.05	10.47
12-20-95	12:28:36	3.616	11.35	10.47
12-20-95	12:28:42	3.716	10.69	10.46
12-20-95	12:28:48	3.816	9.73	10.47
12-20-95	12:28:54	3.915	9.34	10.47
12-20-95	12:29:00	4.016	9.85	10.47
12-20-95	12:29:06	4.115	10.73	10.47
12-20-95	12:29:12	4.216	11.17	10.47
12-20-95	12:29:18	4.316	10.8	10.47
12-20-95	12:29:24	4.416	10.01	10.47
12-20-95	12:29:30	4.516	9.53	10.46
12-20-95	12:29:36	4.616	9.79	10.47
12-20-95	12:29:42	4.716	10.49	10.47
12-20-95	12:29:48	4.815	10.98	10.47
12-20-95	12:29:54	4.916	10.82	10.47
12-20-95	12:30:00	5.015	10.22	10.46
12-20-95	12:30:15	5.266	10.03	10.46
12-20-95	12:30:30	5.516	10.8	10.46
12-20-95	12:30:45	5.766	9.81	10.46
12-20-95	12:31:00	6.016	10.64	10.46
12-20-95	12:31:15	6.265	10.24	10.46
12-20-95	12:31:30	6.516	10.14	10.46
12-20-95	12:31:45	6.766	10.63	10.46
12-20-95	12:32:00	7.016	9.98	10.46
12-20-95	12:32:15	7.266	10.53	10.46
12-20-95	12:32:30	7.515	10.26	10.46
12-20-95	12:32:45	7.766	10.2	10.46
12-20-95	12:33:00	8.016	10.52	10.46
12-20-95	12:33:15	8.265	10.09	10.46
12-20-95	12:33:30	8.516	10.46	10.46
12-20-95	12:33:45	8.767	10.28	10.46
12-20-95	12:34:00	9.016	10.24	10.45
12-20-95	12:34:15	9.266	10.45	10.46
12-20-95	12:34:30	9.515	10.17	10.46
12-20-95	12:34:45	9.766	10.41	10.46
12-20-95	12:35:00	10.016	10.29	10.46
12-20-95	12:35:30	10.516	10.4	10.46
12-20-95	12:36:00	11.016	10.38	10.46

APPENDIX B
ROMP 5 AVON PARK FLOW TEST DATA
AVON PARK OPEN HOLE INTERVAL (1080-1650' BLS)
WELL FLOWING THROUGH 6" VALVE

Date (M-D-Y)	24 Hour Time	Elapsed Time (minutes)	Avon Park Test Well (head level in feet above land surface)	Suwannee Observation well (feet of water above transducer)
12-20-95	12:36:30	11.516	10.28	10.46
12-20-95	12:37:00	12.015	10.25	10.46
12-20-95	12:37:30	12.516	10.3	10.46
12-20-95	12:38:00	13.016	10.35	10.46
12-20-95	12:38:30	13.516	10.34	10.46
12-20-95	12:39:00	14.015	10.3	10.46
12-20-95	12:39:30	14.516	10.28	10.46
12-20-95	12:40:00	15.016	10.31	10.46
12-20-95	12:40:30	15.516	10.33	10.46
12-20-95	12:41:00	16.016	10.32	10.46
12-20-95	12:41:30	16.515	10.3	10.46
12-20-95	12:42:00	17.016	10.31	10.46
12-20-95	12:42:30	17.516	10.3	10.46
12-20-95	12:43:00	18.016	10.31	10.46
12-20-95	12:43:30	18.515	10.3	10.46
12-20-95	12:44:00	19.016	10.3	10.47
12-20-95	12:44:30	19.516	10.31	10.47
12-20-95	12:45:00	20.016	10.3	10.47
12-20-95	12:46:00	21.015	10.3	10.47
12-20-95	12:47:00	22.016	10.3	10.47
12-20-95	12:48:00	23.015	10.29	10.47
12-20-95	12:49:00	24.016	10.31	10.47
12-20-95	12:50:00	25.016	10.29	10.47
12-20-95	12:51:00	26.016	10.3	10.47
12-20-95	12:52:00	27.016	10.3	10.48
12-20-95	12:53:00	28.016	10.29	10.47
12-20-95	12:54:00	29.016	10.3	10.47
12-20-95	12:55:00	30.015	10.3	10.47
12-20-95	12:57:00	32.015	10.28	10.47
12-20-95	12:59:00	34.016	10.3	10.47
12-20-95	13:01:00	36.016	10.3	10.47
12-20-95	13:03:00	38.016	10.3	10.47
12-20-95	13:05:00	40.016	10.3	10.47
12-20-95	13:07:00	42.016	10.29	10.47
12-20-95	13:09:00	44.016	10.29	10.47
12-20-95	13:11:00	46.016	10.3	10.47
12-20-95	13:13:00	48.015	10.3	10.47
12-20-95	13:15:00	50.015	10.29	10.47
12-20-95	13:20:00	55.016	10.29	10.47
12-20-95	13:25:00	60.016	10.29	10.47

APPENDIX C

ROMP 5 PACKER TEST DATA

APPENDIX C
ROMP 5 AVON PARK PACKER TEST DATA
TEST INTERVAL (1690-1738')
JUNE 6, 1996

Drawdown Phase (26 GPM)
Start Time 12:21:37

Elapsed Time (minutes)	Water Level Displacement Inside Drill Rods (feet)
0	0.031
0.0083	0
0.0166	0.015
0.025	0.517
0.0333	5.176
0.0416	1.85
0.05	3.089
0.0583	3.638
0.0666	3.638
0.075	5.129
0.0833	7.011
0.0916	10.509
0.1	6.823
0.1083	14.995
0.1166	8.062
0.125	11.622
0.1333	8.203
0.1416	5.928
0.15	8.14
0.1583	4.47
0.1666	6.023
0.175	6.415
0.1833	4.376
0.1916	6.587
0.2	4.031
0.2083	4.485
0.2166	1.537
0.225	1.568
0.2333	3.764
0.2416	0.58
0.25	2.666
0.2583	-2.274
0.2666	-1.239
0.275	-1.662
0.2833	-4.611
0.2916	-7.261
0.3	-9.614
0.3083	-10.414
0.3166	-12.39
0.325	-14.351
0.3333	-16.515
0.35	-22.835
0.3666	-28.764

Recovery Phase
Start Time 14:13:03

Elapsed Time (minutes)	Water Level Displacement Inside Drill Rods (feet)
0	-17.879
0.0083	-17.895
0.0166	-18.742
0.025	-18.82
0.0333	-16.703
0.0416	-19.291
0.05	-23.604
0.0583	-30.191
0.0666	-36.213
0.075	-43.975
0.0833	-47.347
0.0916	-49.37
0.1	-51
0.1083	-52.271
0.1166	-54.921
0.125	-55.767
0.1333	-58.543
0.1416	-59.17
0.15	-60.832
0.1583	-60.675
0.1666	-61.005
0.175	-60.895
0.1833	-60.221
0.1916	-58.935
0.2	-57.053
0.2083	-54.34
0.2166	-51.879
0.225	-48.789
0.2333	-46.233
0.2416	-43.411
0.25	-41.105
0.2583	-38.706
0.2666	-35.601
0.275	-33.609
0.2833	-32.12
0.2916	-29.971
0.3	-28.356
0.3083	-26.348
0.3166	-24.859
0.325	-23.604
0.3333	-21.957
0.35	-19.464
0.3666	-17.08

APPENDIX C
ROMP 5 AVON PARK PACKER TEST DATA
TEST INTERVAL (1690-1738')
JUNE 6, 1996

Drawdown Phase (26 GPM)
Start Time 12:21:37

Elapsed Time (minutes)	Water Level Displacement Inside Drill Rods (feet)
0.3833	-34.974
0.4	-38.769
0.4166	-43.27
0.4333	-46.359
0.45	-43.285
0.4666	-38
0.4833	-32.935
0.5	-27.462
0.5166	-19.981
0.5333	-15.323
0.55	-10.681
0.5666	-7.842
0.5833	-3.011
0.6	-3.811
0.6166	-2.305
0.6333	-1.584
0.65	-1.709
0.6666	-3.231
0.6833	-3.874
0.7	-6.634
0.7166	-7.12
0.7333	-6.838
0.75	-7.403
0.7666	-7.309
0.7833	-8.814
0.8	-7.105
0.8166	-8.187
0.8333	-8.689
0.85	-8.548
0.8666	-8.861
0.8833	-8.359
0.9	-8.955
0.9166	-5.819
0.9333	-8.297
0.95	-7.763
0.9666	-6.76
0.9833	-6.132
1	-5.426
1.2	-8.03
1.4	-7.685
1.6	-8.359
1.8	-7.92
2	-8.516

Recovery Phase
Start Time 14:13:03

Elapsed Time (minutes)	Water Level Displacement Inside Drill Rods (feet)
0.3833	-15.449
0.4	-12.845
0.4166	-11.214
0.4333	-10.477
0.45	-8.736
0.4666	-8.03
0.4833	-7.685
0.5	-6.76
0.5166	-6.697
0.5333	-6.211
0.55	-5.74
0.5666	-5.756
0.5833	-6.022
0.6	-6.148
0.6166	-6.289
0.6333	-6.681
0.65	-7.026
0.6666	-7.183
0.6833	-7.905
0.7	-8.234
0.7166	-8.893
0.7333	-9.708
0.75	-10.445
0.7666	-10.728
0.7833	-11.308
0.8	-11.935
0.8166	-12.453
0.8333	-13.331
0.85	-13.645
0.8666	-14.006
0.8833	-13.535
0.9	-14.46
0.9166	-14.664
0.9333	-14.445
0.95	-15.088
0.9666	-14.633
0.9833	-14.805
1	-15.088
1.2	-10.885
1.4	-10.21
1.6	-12.751
1.8	-12.374
2	-10.618

APPENDIX C
ROMP 5 AVON PARK PACKER TEST DATA
TEST INTERVAL (1690-1738')
JUNE 6, 1996

Drawdown Phase (26 GPM)
Start Time 12:21:37

Elapsed Time (minutes)	Water Level Displacement Inside Drill Rods (feet)
2.2	-9.222
2.4	-9.975
2.6	-8.344
2.8	-8.046
3	-9.598
3.2	-8.218
3.4	-9.63
3.6	-11.512
3.8	-8.391
4	-10.006
4.2	-8.971
4.4	-9.865
4.6	-11.308
4.8	-12.312
5	-10.241
5.2	-10.885
5.4	-11.135
5.6	-12.578
5.8	-11.339
6	-12.578
6.2	-12.218
6.4	-11.496
6.6	-12.861
6.8	-12.955
7	-12.077
7.2	-13.817
7.4	-12.406
7.6	-12.72
7.8	-13.88
8	-13.08
8.2	-14.79
8.4	-14.413
8.6	-15.307
8.8	-13.316
9	-12.782
9.2	-13.614
9.4	-14.774
9.6	-13.974
9.8	-13.692
10	-17.362
12	-17.456
14	-17.644
16	-16.625

Recovery Phase
Start Time 14:13:03

Elapsed Time (minutes)	Water Level Displacement Inside Drill Rods (feet)
2.2	-11.543
2.4	-12.406
2.6	-11.481
2.8	-11.183
3	-11.92
3.2	-11.888
3.4	-11.418
3.6	-11.622
3.8	-11.826
4	-11.559
4.2	-11.59
4.4	-11.779
4.6	-11.653
4.8	-11.543
5	-11.7
5.2	-11.669
5.4	-11.622
5.6	-11.716
5.8	-11.7
6	-11.622
6.2	-11.669
6.4	-11.7
6.6	-11.669
6.8	-11.684
7	-11.7
7.2	-11.669
7.4	-11.684
7.6	-11.7
7.8	-11.669
8	-11.684
8.2	-11.684
8.4	-11.669
8.6	-11.684
8.8	-11.7
9	-11.684
9.2	-11.684
9.4	-11.653
9.6	-11.7
9.8	-11.684
10	-11.684
12	-11.716
14	-11.684
16	-11.669

APPENDIX C
ROMP 5 AVON PARK PACKER TEST DATA
TEST INTERVAL (1690-1738')
JUNE 6, 1996

Drawdown Phase (26 GPM)
Start Time 12:21:37

Elapsed Time (minutes)	Water Level Displacement Inside Drill Rods (feet)
18	-16.986
20	-19.228
22	-17.942
24	-20.138
26	-16.013
28	-18.287
30	-17.221
32	-15.747
34	-17.378
36	-19.416
38	-16.107
40	-17.456
42	-17.848
44	-18.664
46	-18.695
48	-16.923
50	-17.754

Recovery Phase
Start Time 14:13:03

Elapsed Time (minutes)	Water Level Displacement Inside Drill Rods (feet)
18	-11.653
20	-11.653
22	-11.653
24	-11.716
26	-11.653
28	-11.669
30	-11.684
32	-11.7
34	-11.7
36	-11.7
38	-11.7
40	-11.716
42	-11.684
44	-11.716
46	-11.7

APPENDIX D

GEOLOGIST'S DAILY LOG

Ramp 5 Cecil Webb SS-40
MONDAY 6-19-95 TED GATES

1100 T. Gates & Mark Pilz arrive on-site.
B. Tomlinson & H. already on-site. Packer has been locked over the weekend - well is flowing. Getting ready to pull packer from 180' bls.

1115 Conductivity 3460 umhos from discharge water out of casing. Pulling rods out of hole.

1730 Have packer (surface) out of hole - will remove remaining rods & collars from hole tomorrow.

pb
6-19-95

Romps 55-40 T. Gates
Cecil Webb Tuesday 6-20-95

0700 Arrive on-site. Raining Temp. ~ 75°. Well still flowing. 5gal/min = 100gal/min flow fm casing.
0745 Casing out of hole w/ small collars.
0830 Call in to G. McQueen @ Brooksville office talk about removing 18" T.
0915 All collars and bit are out of hole - one of the rollers is stuck.
0930 Removing the 18" tee fitting. Preparing to weld a new nipple + 12" extension onto the 18x12" flanged fitting.
1100 Breaking for lunch. Murphy bring out a new 11" bit and 3/4" blowline.
1130 Hugh welding 12" extension and a nipple onto the 18x12" flange fitting.
1230 Murphy on-site delivering bit and supplies.
1430 New nipple and extension are on 18x12".
1530 New flange is bolted onto 18" casing - bolts need to be 2" longer - barely fit without washers.
1600 Installed new bit going into hole - rig is off-center from casing - will be very tight fit with bushings installed.
1630 Rod will not go in w/ the bushings in the table.
1645 Call in to Greg - he will unbolt the 12" flange and let it hang loosely on the 18" while we go in w/ rods - but then stay on the bottom of hole.
1715 Tried to seat the packer to tight strain of ripping the packer - will let it flow overnight.
1730 Mark P. calls into Greg - securing site for the night.
1745 Leaving site for the night.

M. T. Estes

PUMP 5 SS-40 TED GATES
Cecil Webb 6-21-95

0700 Arrive on-site, spinKling temp. ~ 75°F. Ben & Hugh bring water truck from the Bay Scout Camp.
0730 Unbolt the 11"x12" flange - Lift the table - Begin grinding the nipple protruding through 12" flange so packer won't tear on it.
0830 Begin tripping back in the hole.
0845 L. Johnson on-site to pick up 15" bit - Loading up bit for Lloyd.
0915 Resume tripping in 6,000 lb collars.
0945 Tripping in small collars.
1035 Begin tripping in rods.
1100 Stopping for lunch
1230 Resume tripping in rods (B. Tomlinson had nose bleed).
1315 Bit is resting on bottom preparing to lay down mast
1330 Mast is down preparing to try and slide rig over center of hole
1430 Managed to center rig over hole by putting jacks on several ½" thick steel plates and pulling back end of rig w/ water truck - pulled rig to far to the right. Were able to get rig back over hole by putting jack down on a steel rod at angle and rolling it to one side. Repositioning wood blocks under the jacks to level out the jacks.
1500 Putting mast back up - Raining hard.
1600 Reposition the screw jacks @ back of rig.
1630 Finishing packer and regulator leaks - still fix
1745 Finally got packer leaks fixed.
1800 Leaving site for day.

M. T. Gates

Ramp 5 Cecil Webb — T. GATES
SS-40 Exploratory Drilling — Thurs. 6-22-95

0730 T. Gates and M. Pike on-site, Hugh and Ben getting water truck. The packer is still sealed the regulator is holding @ 200 psi.

0735 • Call in to Brooksville - Greg not in yet - speak to D. DeWitt - relay site activities - talk about how to measure specific capacities. Will call Greg

0800 Measure conductivity in Swinnerton well = 1850 umhos ~~Setting~~ Removing packer - will drill to 1360 then collect Std. complete sample and measure specific capacity w/ packer.

0815 Raining on-site.

0900 Going back in hole after removing packer. I'm going to parts store to get more fittings for the N_2 line for packer - fitting broke when removing packer.

1000 T. Gates back on-site w/ new fittings. Current airlifting 30' off-bottom - still have mud drilling mud in the hole - mud in discharge.

1030

SS-40 Rods & Collars Specs	Kelly = 36.5'
(5) 8" COLLARS I.D. 0.034 FT^3/FT	TOTAL 152.5
(7) 6" COLLARS I.D. 0.021 FT^3/FT	TOTAL 215.1
3" I.D. RODS I.D. 0.049 FT^3/FT	

1050 Currently the bottom of the hole on Rod #31 is 1350.1' (includes 6' for bit & subs) from top of rod #31. For a H_2O sample the volume of water to evacuate from rods & collars is 430 gals @ 1338'.

1100 Call in to Greg in Brooksville update him on site activities. Begin drilling on bottom @ 1340

1150 ~~Kelly should be 17' above table @ 1360'~~ Will drill until Kelly is down @ 1370' @ table and collect sample.

1205 Water flowing out of pit offsite is 3360 umhos approx 2100 TDS.

ROMP-5 Cecil Webb — T. GATES
SF-40 Exploratory Drilling — Thurs 6-22-95

Encounter hard brown dolomite @ 1360'
Reach 1370 ~~kelly down~~ mill - bit is choking off - not getting any discharge out of discharge hose. Casings is not flowing during drilling.
1245 Pumping water from Suwannee down the rods to try and clear blockage at bit.
1330 Bit still choked off - trying to clear - T. Gates heading back to Brooksville.

n. T. Gates
6-22-95

15 45

Romp 5 Cecil Webb — T. Gates
55-40 Exploratory Drilling — Wed. 7-5-94

1145 T. Gates arrives on-sib & Cecil Webb - currently air-lifting @ 1376'. Cond: of discharge 3500 umhos
weather: Sunny, hot ~95°F
M. Pike, H. Asher, and B. Marsh on-sib.

1230 Removing blockie - preparing for sample collection

1245 Collect STD. Comp Sample from 1376' with SS thief
Temp: 32° C Cond: 3490 umhos pH: 7.76
Cl: 1360 mg/L SO4: 450 mg/L Density: —

1310 Resume ~~drilling in dolomite~~ air lifting to remove cuttings - bit trying to choke off

1330 Resume Drilling in hard dolomite - soft calcarenite falls in around bit and makes bit choke off - periodically stopping to air-lift.

1345 Bit falls ~2' cavity - large increase in flow - water flowing over 12" casing & depth & at discharge line. 1385

1500 Still seeing some cement in the cuttings, also calcarenite cuttings from soft area - cavity?

1605 Drilling in dolomite w/ calcarenite lenses - high flow at of casing ~~and~~ while discharging - highly permeable zone 1392' will have to cut packer off rod and mount it higher in order to do a specific capacity test. - right now the packer would be below the 12" adapter when the kelly is attached for air lifting.

1625 Flow out the top of the casing appears to be increasing

1645 Discharge off site 3330 umhos?

1715 Stop Drilling @ ~1400' bls. - setting packer.

1745 Measure waterlevel inside rod. 18.1' below top of rod. Top of rod is 17.5' above Rotary table. Rotary table is 5' above land. Waterlevel is 4.4' dbl.

1800 T. Gates headed for hotel.

M. T. Pike

1376 + 12 = 1388

1376 + 30 = 1406

Ramp 5 Cecil Webb — T. Gates
SS-40 Exploratory Drilling — Thurs. 7-6-95

0710 T. Gates arrives on-site - packer still seats'

0715 Measure water - 15.65' below top of rod. Rod is 17.5 above the rotary table. Table is 5' above land. Water level in rods is 6.85' a.l.s.

0820 Pulled slips reinstalled packer w/ pvc 3/4" pipe in the packer surface port. Water level is 9.8' below pipe. pipe is 16.1' above rotary table. Water level is 11.3' above land surface. Hole ID is 1400' b.l.s.

0850 Removing packer adding new rod. Hugh will cut packer off rod with torch and weld back on near top of rod.

0900 T. Gates leaving site to purchase in-line valve for packer and pvc fittings.

1000 Back-on-site rig is down due to air compressor leak. Crew will try to tighten bolts around the gasket.

1015 Discharge from the casing at least 200 gpm. Discharge @ 1400' conductivity: 3540 umohs. Reinstalling the packer to stop flow - crew can't fix the leak.

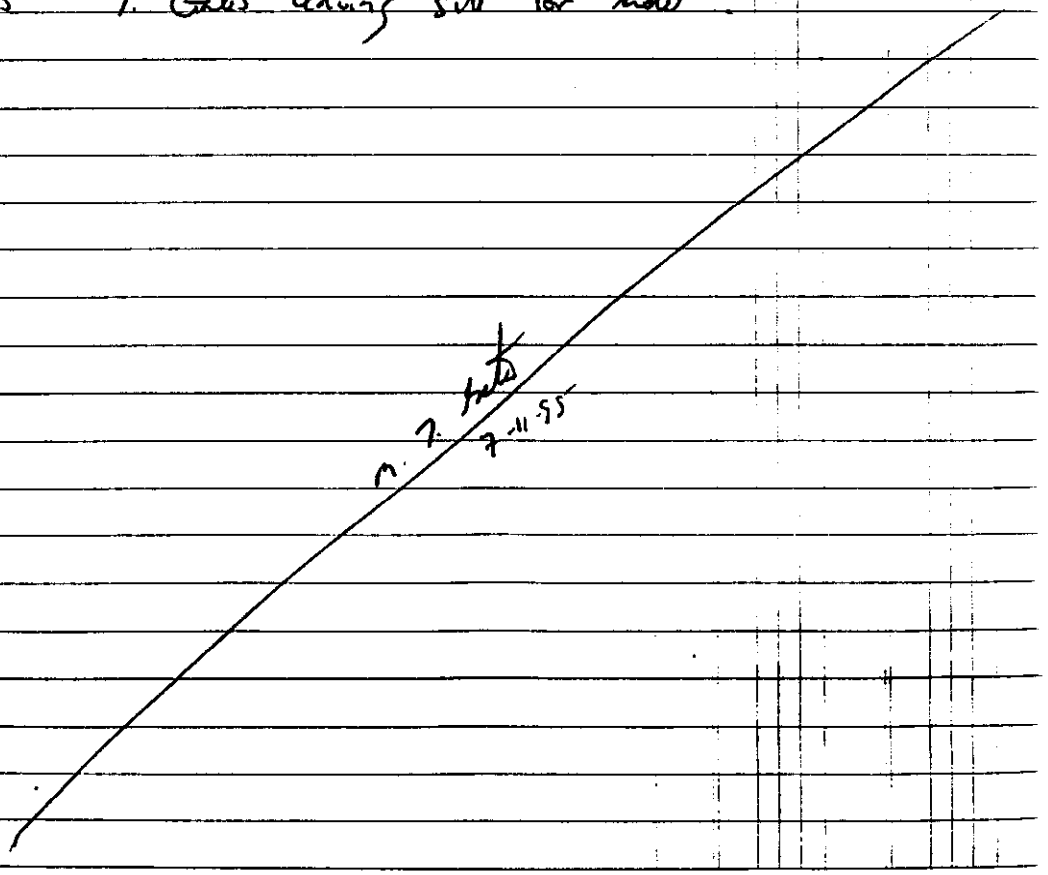
1045 Packer is installed in casing. Crew removing rod so I can take it back to Dave Fancher in Brooksville to replace gaskets.

1200 T. Gates leaving site.

M. T. Potts
7-6-95

Romp 5 Cecil Webb — T. Gates
SS-40 Exploratory Drilling — Tues. 7-11-95

1130 T Gates on-site. Temp ~ 92°F sunny, hot. Packer welds broke on rod and packer element slid down rods - will begin pulling rods to local packer. Mark Pike put today. Ending Cond
1200 Begin tripping out of hole (Lee, Ben T., Hugh A.)
1630 Have all rods & collars out of hole 1400' - the packer is on top of bit. Remove packer from bit. Drive to store & call Greg in Bixby.
1650 Call Greg inform him that packer is in decent shape may just need new "O" rings - he will order & bid out from Tem I what is necessary. Will trip back in tomorrow & resume drilling.
1700 T. Gates headed back to site. Inspect packer.
1730 T. Gates leaving site for motel.



1407
30
1437

Camp 5 Cecil Webb — T. Gates
35-40 Exploratory — Wed. 7-12-95

0700 On-site. Will begin tripping back in hole this morn.
0720 Measure CONDUCTIVITY OF WATER DISCHARGING FROM ANNULUS = 3650 umhos. Flow estimated @ 300 gpm.
0725 OFFSIDE COND: 3660 umhos.
0730 Begin going in w/ 8" collars.
0900 All (5) 8" collars are in the hole.
0915 Mark Pike on-site. The distance for mixing packer is 39" from top of rod.
1145 Stop tripping in due to thunder & lower.
1230 The rain has stopped - begin tripping back in w/ rods.
1345 All rods in the hole - currently drilling in soft calcarenite @ ~ 1413' bls. Drilling smoothly.
1415 High Bangs water truck on-site to cut old packer off rod and rewield it higher up.
1430 Discharge from Rods: 3750 umhos Annulus = 3660 OFFSITE = 3670 umhos.
1435 This rod #39 kelly down will be 1437'. Need to purge 467 gallons from rods & collars prior to samplings.
1445 Measure discharge rate (from rods only) 60 gpm. Should take ~ 8 minutes. Called in to Brookside.
1605 Reach 1437' Kelly down - circulating to remove cuttings.
1715 Called STD. comp. Sample @ 1437' w/ SS thief sample
Temp. 31.9°C COND: 3800 pH: 8.04
Cl. 1500 SO4: — Density: 1.0002
745 T. Gates headed to motel.

n. 7. feb
7/25/95

RCRA 5 Cecil Webb — Ted Gates
SS-40 Exploratory — Thurs. 7-13-95

0730 Arrive on site. Temp ~85° Sunny. Currently @ 1437'. Greg bringing out new "O" rings for packer this morn
0800 Well still flowing ~ 300 gpm. OFFsite discharge is 3700 umhos conductivity
0910 G. McQueen on-site with new "O" rings.
1030 Installed new "O" rings and lowered 8" nipple back onto packer. Hugh tack welding packer back on to 8" nipple. Greg McQueen offsite headed to Brooksville
1045 Waiting for weld to cool off. Breaking for lu
1145 Putting coupling on on 8" nipple below packer. Testing to see if packer works.
1230 Test packer - seems to be working. Measured 12"x18" adapter = 47" long. Can insert packer to the bottom of the upper coupling.
1240 Adding another rod currently @ 1468. Hole depth will be 1499. Air compressor exhaust gasket is leaking stopping to repair.
1245 Hugh cutting plugs off packer. Will reinstall packer and resume drilling monday.
1400 T. Gates heading for Brooksville.

T. Gates
7-13-95

Romp's Cecil Wells — T. Gates
STP 90 Exploratory — Tues 7-18-95

1315 T. Gates on-site - rainy. Mark said they are @ 1530'. Have collected one water sample @ 1500'. Sample is in the 1 gallon open container was collected about 1200 yesterday. Will pour it into Filter and bottles for STD comp.
Temp. 23.3°C Cond. 3640 pH. 7.01
1320 Mark trying to repair air compressor gasket leak - do not have the correct size gasket - he is going to NAPA to purchase new gasket.
1330 M. Pick back on-site w/ new gasket - still raining on-site.
1700 Repaired manifold w/ new gasket - rain has stopped.
1720 T. Gates leaving site for hotel.

M. Pick 7-18-95

Ramp 5 Cecil Webb
SS-40 Exploratory

Ted Gates
Wednesday 7-19-95

0700 T. Gates & Mark P. K on-site - raining again
0815 Pulling packer to resume drilling - still raining.
1010 Collect STD. COMP. sample w/ SS thief sampler @ 1550' bls. Temp: 31.8°C COND: 3710 pH: 7.71 Cl: 17500 mg/l
1030 Currently drilling in calcarenite & interbedded dolomite, some calcareous clay - many millioleids. Drilling very fast
1055 Bit choked off trying to return discharge by pumping water down the bit.
1150 Got bit unclogged - but gasket on air compressor blew out again - can't produce enough psi to bring cuttings up.
1215 Mark calls in to Greg - instructs him to get another gasket on N compressor - currently not raining.
1300 Geo McQuown on-site from Brooksville - still working on gasket - currently @ 1585'.
1430 Gasket repaired - made connection - drilling @ 1590
1535 Collect STD. COMP. @ 1620' bls.
Temp: 32.1°C COND: 5300' pH: 7.67
Cl: 2250 mg/l
1625 Drilling @ 1640 dolomite is harder - bit is bouncing cuttings appear fractured. Conduct of discharge 7650 umhos.
1645 Reach 1650' discharge conductivity is 7640 umhos.
1650 Call into office speak to J. Clayton. Called Greg on his mobile - decide to stay here and sample.
Collect STD. COMP. from 1650 bls.
Temp. 32.1 pH: 7.75 COND.: 4020 umhos
Cl: 2,000. Sample doesn't appear to be accurate - due to low conductivity measurement.
1745 T. Gates leaving site for the day.

M. L. Bates 7-19-95

Rowe 5 Cecil Wells — Tess Gates
Wed 5-29-96

1250 Arrive on-site. Diversified putting up mast after moving to location for personnel O.B. surface csg. L. Johnson on-site.

1315 Realize that rig is setting up in wrong location to install 4" o.b. surface csg (my mistake).

1330 Inform Lloyd - rig begin moving again to new location.

1400 T. Gates leaving site for Rowe 25 Lily.

1630 Call in to G. McQueen - inform him of mistake.

1730 Leave Rowe 25 for motel.

Pond 5 Cecil Well — Ted Gates

Thurs 5-30-91

0730 On-site @ Pond 5. Directional is set up on the the surficial o.b. location ~ 45' east of the 12" surficial pumped well.

0730 Begin drilling hole on mud using 4" screen

1130 Hole is T.D. @ ~ 88' bls. Encountered clay @ ~ 84'

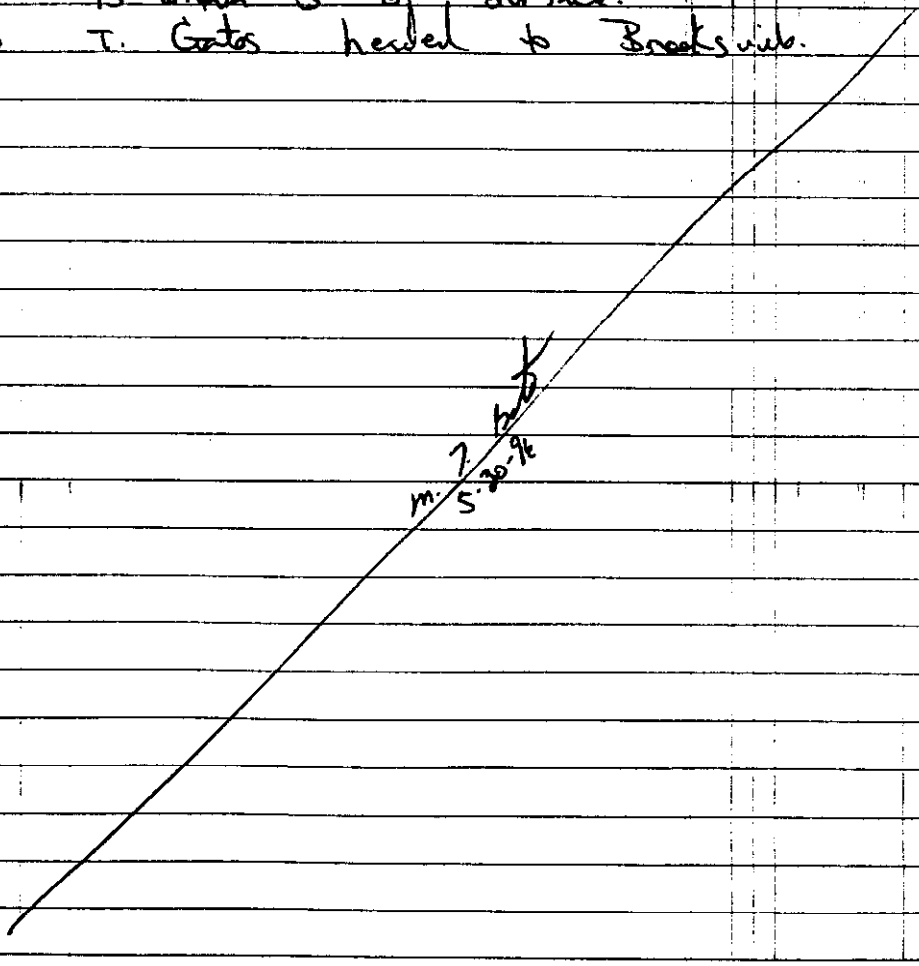
1145 Begin tripping rods out of hole.

1200 Installing 4" PVC screen into well - using hexagon to thru mud - gripped through casing.

1200-1300 Installing sand into well - pumping hose flow and water into screen while adding sand.

1400 Installed 114 bags of sand into annulus - sand is within 5' of surface.

1500 T. Gates headed to Brooks wtb.



100' of 1"

RAMP 5 Cecil Well — TED GATES

WED

11:30 Arrive on-site @ RAMP 5 (T. Gates, D. Thompson & McCrank)

HOLE	DEPTH	COMMENTS
18" STL	1650	CEMENT SQUEEZE
18"×12" STL	1865.0	CEMENT AROUND BACK-OFF
		2-TREMMIE PIPES @
12" STL W/ALL WALL		CEMENT PLUGS
		TREMMIE @ 412
12" STL @ 1600'		
11.0" NOMINAL OPEN HOLE		CAMERA CENTRALIZED
		FLOW DRAG OFF
T.D @ 1634.0'		
SWITCHED CAMERA AT 1619		

(All-415 casing cut)

~400 JOINT

NOT

42 — 5 5/8"

409-415 casing tear

casing is rolled

1215 The 18 1/2" surface packer would not go below 380' bls. Put delivering the camera trailer to Ramp 5

1230 Camera trailer on-site - begin logging well. Camera shows that the 12" steel casing was torn from 409-415 - the edge of the steel is [redacted] rolled from turning to the right. Went to the bottom of the hole - camera shows 1634' to be the bottom of the hole. Made tape of the zone from 409-415'. Could see grout & tremie pipe @ 180' where the 18" and 12" join together

1430 Call Greg inform him of well obstruction.

1500 Decide not to do the packer tests @ 1550' & 1550'

Ramps Coal Well

Wed. 6-5-96 Tim G.

1505 Discussed option w/ Greg - decide not to do the packer tests due to casing problems. Will drill trip in the hole w/ the 5 7/8" bit and begin the exploratory drilling @ bottom of the hole.

1530 Lloyd called Greg back to inform him of drilling options.

1540 Diversified begins tripping in the hole w/ 5 5/8" ∈

2nd Intermediate cond: 2,930 umhos

Steel Flange 19" = 3.20' a/s. 23.50 - 19.08 = 8.98

Road 5 Coal Well

Thurs 6-6-94 12" Casing = 21' 13.98 Tbg Cond.

0630 Arrive on-site. Gates, Thompson, McCormick, Messer w.l. inside 12" standpipe
Steel Flange = 2.5' a/s 12" PVC = 6.00 + 2.50
above land surface = 23.50' above land surface
Depth to water from top of 12" = 13.98'
Water level = 9.80' land surface (inaccurate w.l. - water is leaking out of 12" side outlet flange on "T" below the rotary table.

0700 Diversified crew - L. Johnson on-site. D. Thompson & E. McCormick setting up camera trailer on Suwannee well & digging trench to divert flow.

0800 Begin turning to the right - on batter @

0820 offsite discharge = 4000 conductivity - not adding H_2O from lower Intermediate well.

0825 offsite discharge = 3800 umhos cond with Intermediate added for dilution.

0830 Discharg cond. @ 1453' = 15,420 umhos

0850 UHS in the camera trailer not working.

0930 Clay was in the cuttings between 1660 - 1670' b/s - must have been a thin clay bed.

0935 Discharg cond. @ 1668' = 14,440' umhos

1000 Discharg cond @ 1671' = 17,700' umhos

1010 Reach batter of Kelly - 1674' b/s.
Complete camera logging of Suwannee well - VCR not working could not make a tape. Hole looks good - sand washout zones visible.

1030 Going in with SS baler to 1674'. (First coming out of casing) & add in additional rods

1110 Collect SS baler sample @ 1674' b/s.
Temp: 32.6°C cond: 18,530 umhos
pH:
Cond. of Discharg 19,280 @ 1494' b/s.

60 STEEL FLANGE TOP = 3.2' a.s.
↳ Measured land surface used level.

PUMP 5 Cecil Webb TED GATES
thurs. 6-6-94

1200 Annular flow cond: 3770 offsite = 3,460
(using town wat. to dilute.
1210 Conductivity > 20,000 umhos @ 1690' bls.
1240 Reach 1708' bls stopping - airlifting to clean cuttings from hole.
1300 L. Johnson back on-site + use his conductivity meter. Discharge H2O @ 1708' = 28,000
1320 L. Johnson off site - ~~drilling~~ adding a rod to collect a SS bailer sample @ 1708' bls
1345 Collect SS bailer sample @ 1708'.
Temp: 32.5°C Cond: 30,000 umhos
Cl: 8500 SO4: 1,000
1355 Resume drilling @ 1708' - this rod clean will be 1740' bls
1420 Discharge cond: 32,000 umhos @ 1720'.
1445 T. Gates, Thompson, McCormick leaving site for Brookside. Diversified crew will drill to 17 then trip out of hole.

T. Gates 6-6-94

W.L. in Ann Park this morning 9.8' above flange (Diversified).

POMP 5 Test Well 7.30 + 3.50 = 10.80 ads. TED GATES

MON. 6-10-94

1300 T. Gates on-site. V. Clayton & L. Johnson on-site setting up Geophysical Logger. All rods are out of hole. Bottom of hole is 1738'. Going in with caliper tool.

1430 Caliper tool appears to be on bottom but display shows no tool transmission.

1530 Coming out of the with the tool can't get tool to work. Lloyd offsite to Venice office to get the other caliper tool.

1540 Caliper tool working intermittently. Keep getting NO tool transmission on - screen.

1635 Measure water level w/ 12" steel pipe inside of both the 6" & 12" valve closed.
W.L. = 9.5' ads. depth of Well = 1738'.

1634 L. Johnson on-site w/ new caliper tool. - Removing 12" steel pipe.

1700 1720 Going in with new Caliper tool.

1810 Stopped going in hole @ 1722' GLS - tool wouldn't go any deeper

1820 Get caliper log - will set packer @ 1698' GLS.

1880 Check the packer inflation in a 6" PVC pipe. - O.K. - Logger is out of hole.

1900 Begin tripping packer in the hole.

1920 T. Gates off site to Scotty's to buy 1" PVC for Packer test tomorrow.

A. 7 pots
6-11-94

Roms Coal Well — Ted Gates

Tues 6-11-96

0725 Arrive on-site - raining - was raining hard @ motel
L. Johnson, J. Clayton, Diversified drill crew on-site
Drill crew tripping rods w/ packer into hole
taping steel tubing to rods going in
Water level this morning = 9.55' a.g.l. @ 174
0930 Capacity of hole below packer = 1.33 gal/FT, 50 FT, 65 gallons
Rods: 1690 FT x 0.25 gal/FT = 423 gallons.

Volume to be discharged = 488 gallons.
1000 Packer is @ 1690' s/s. Inflating packer to 831 psi.
1015 Gluing up XD. 1" pvc x 1/2" pvc airline.
Installing 170' of 1" ~~pvc~~ XD. line and 1500' 1/2" air
1030 Call into office spoke to P. Thompson - inform him of site activities - call Beech & Basso's extensions - both are busy will call later
1130 Installed airline & XD. pvc - installed s/n 4890CC 50 psi XD to 80' below top of rod in hole.
1150 Set up datalogger. Reads 76.56' of water above XD.
1200 Started air compressor ~~back~~ setting XD. letting water level recover.
1215 XD #1 Reads 75.853' ~~above~~ of H_2O.
1220 Begin air-lifting for PT 1690 - 1738' s/s.
1240 Discharge Rate = 28 gpm XD #1 = -18.05'
1241 Discharge conductivity = 29,000 umhos.
1255 Discharge Rate = 24 gpm XD #1 = -17.24
1300 Discharge conductivity = 32,000 umhos
1325 Collect sample from discharge line 1690 - 1738 P.T.
Temp.: 35.2°C Cond: 31,000 umhos pH:
Cl: 9,000

Roger S Cecil Webb — TED GATES

Tues 6-11-96

1410 Stop airlifting begin recovery phase of test.
- Data logger stopped collecting data after 50 min?

1400 Call from D. Boppert — inform him of site activities.

1515 Stop data logger - well is recovering - begin recovering XD. from well - * Transferred data from data logger to IBM thinkpad - files are RS-1690B.WK1 RS-1690D.WK1.

1625 Call M. Beach @ District discuss well construction plans - he recommends a smaller open hole interval - so that the chloride level will not increase to much should the interface move up the well.
Open hole 1350 - 1400'.

1720 Discharge conductivity = 4100 umohs.
Discharge from 18" casing = 4600 umohs.
Drill crew tripping packer out of hole.

1730 T. Gates headed for motel.

M. Beach 6-11-96

Rope 5 Cecil Webb 9.8 TED GATES

Wed. 6-12-94

0645 Helping P. Meadors @ motel w/ battery in #400. Will take PU to Vista to get a replacement battery.

0900 On-site @ Rope 5. Drill crew already on-bottom w/ 5 5/8" bit. Reaming hole to 1738'. Water level this morning = 9.88 a.l.s.

0905 Call in to the office spoke to D. Rappuhn - Corey on vacay this week.

0930 Discharge conductivity = 36,000 umhs. @ 1738' b/s.

1130 Went up and down w/ bit in borehole couple hrs to make sure hole is open - rigging up to collect SS bailer sample @ 1738' b/s.

1205 Collect SS bailer sample @ 1738' b/s.
Temp. 32.5 COND 42,000 umhos, pH: 6.5
Cl: 13,500 mg/L SO4: 1200 mg/L

1215 Begin tripping out of hole with bit.

1214 Call in to office spoke w/ D Rappuhn - inform him of activities - K. Staver is on his way down to perform logging

1430 All rods & bit out of hole - position logger on-site.

1800 Vince Pelham on-site w/ QWIP caliper tool.

1830 I can't get the computer to come on - waiting on Kevin. Call into office.

1900 K. Staver on-site - trying to get computer to come on.

1100 Going in w/ caliper tool.

1705 Can't get caliper tool past 1717'.
Call in to Doug - discuss options.

1805 Drillers tripping in one more time.

1830 T. Gates, K. Staver L. Johnson leaving site for the night.

6-12-94

Ramp 5 Cecil Webb — Ted Gates

Thurs 6-13-96

0745 Arrive on-site. Drillers tripping into the hole. Water level = 9.55' ds this morning

0800 K. Stein, L. Ibsen on-site w/ Geophysical Logger trailer

0900 Begin drilling on obstruction @ ~1708' bls.

1100 Reach 1775' bls (sampled 2 collars for 2 rods) drill an additional 7'. Collect discharge sample of 45,000 micro conductivity H_2O.

1120 Collect discharge sample @ ~~KGA~~ 1775'.
Temp: 34°C Cond: 45,000 micros pH.
Cl: 15,000 SO_4:
Tripping out of hole w/ rods. Called office spoke to office.

1330 Out of hole Kevin going in with Dummy probe. Dummy only goes down to 1708' bls.
Coming out of hole w/ Dummy probe.

1440 Multi-probe stops @ 1714' + (tool length).

1640 Complete induction log - flow tool looks like it is broken.

1700 Begin video Logging of well

1900 T. Gates heading for Brooksville.

2200 Arrive in Brooksville.

M. J. Gates 6-13-96

BOMP 5 Creek Wells — TED GATES

Thurs. 6-20-94

0830 Arrive on-site (Lloyd off today) Drillers installing 4" casing in hole - 0 40 feet of 4" were previously made up.

0945 Going to Prairie creek to get buckets of pellets.

1200 Back on-site still going in with 4" casing using elevators to hold casing in rotary table while adding new 40' joints. Glueing & using 4 screws in each connection.

1800 All 4" casing is in the hole - 2" steel pipe is installed on the well - flow is stopped. Begin adding the bentonite pellets into the annulus of the well. Installed 5 - 5 gallon buckets of bentonite into the well.

1900 T. Gates leaving site for Brooksville.

2200 Arrive @ Brooksville.

7 pm 6-20-94