EXECUTIVE SUMMARY
ROMP #55 "COCA-COLA FOODS"
POLK COUNTY **J.L. DECKER**
10-27-88 **Basin 20, S.18, T.31S, R.28E**

I. SITE LOCATION

The ROMP 55 wellsite is located about 7 miles south-southeast of Lake Wales and nearly 4 miles northwest of Frostproof, Polk County, Florida. The wellsite can be found by proceeding 2.7 miles north of Frostproof (CR 630) on alternate U.S. 27, then turning left (west) on Breezy Point Road. Travel 1.3 miles west on Breezy Point Road until it intersects with a north-south trending dirt road. The wellsite can be found by continuing southwest from this intersection through a fence (gate) to a large ditch that drains into Crooked Lake. The wellsite lies about .1 miles east of Crooked Lake on the south side of the drainage ditch. The ROMP 55 wellsite is located in the NW 1/4 of the NE 1/4 of the NW 1/4 of Section 18, Township 31 South, Range 28 East; at latitude 27° 47'30.3" North, longitude 81° 33'38.5" West (Figure 1).

A 10 foot wide easement from Breezy Point Road provides access to the site. Coca-Cola Food Division granted a 30' x 30' perpetual easement with a 100' x 100' temporary construction easement (Figure 2).

II. GEOLOGY

ROMP 55 lies in the Central Highlands physiographic province which includes an upland area known as the Lake Wales Ridge (Figure 3). This site is located in the Peace River Basin and near the eastern edge of the ground-water divide in Polk County. This longitudinal sand ridge or upland area of thick surficial sands is transected by numerous sinkholes, several of which have coalesced to form Crooked Lake. Crooked Lake is slightly north of an aerial

valley, the "Intraridge Valley", which appears to have resulted from the more complete reduction of a beach-ridge controlled zone by solution of the underlying soluble limestone. Faulting, fracturing and dissolution of rock material created the potential for lake formation as a result of sinkhole collapse of rocks within the Floridan Aquifer System. Bottom topography of Crooked Lake suggests it formed through the joining of several sinkhole depressions (Figure 4). Radar imaging techniques conducted in and around Crooked lake indicate the existence of solution caverns, sinks and shafts. These features appear to be partially or totally sediment-filled. Crooked Lake appears to be internally drained because of little surface water outflow.

The structural features, Peninsular Arch and the Ocala Uplift, have probably controlled the depositional environment in the Lake Wales ridge area. The Peninsular Arch is reported to be a buried anticlinal fold of late Paleozoic and early Mesozoic time. The Ocala Uplift is southwest of and parallel to the Peninsular Arch (Figure 5). Structurally, the Tertiary geologic formations in Polk County dip at low angles and thicken to the south, southeast and southwest from the north-central part of the county around the southern end of the Ocala Uplift.

ROMP 55 is underlain by a thick sequence of quartz sand, clay and sedimentary rocks whose lithology and structure control the occurrence and movement of ground-water. The stratigraphic units described at ROMP 55 include: Undifferentiated Surficial Deposits, Hawthorn Group, Suwannee Formation, Ocala Group and the partially penetrated Avon Park Formation (Figure 6).

The Undifferentiated Surficial Deposits compose the uppermost stratigraphic unit on the Lake Wales Ridge. Local relief is the result of solution by ground-water, stream erosion, and the building of sand domes by wind deposition. Most of the Lake Wales Ridge is capped with remnants of a fluvial blanket of bar plain deposits. The Undifferentiated Surficial deposits at ROMP 55 are mostly Pleistocene terrace deposits. The wellsite is located on the Sunderland Terrace at an elevation of about 121' above NGVD.

The Undifferentiated Surficial Deposits, consisting mostly of quartz sand, extend to a depth of 109' below LSD at ROMP 55. The upper 2' of grayish black and yellowish brown quartz sand is stained by organics. This material may be lake bottom organic detritus. Between 14' and 109' below LSD the quartz sand is interspersed with small amounts of clay. Some heavy minerals were also described in the samples retrieved between land surface and 78.5' below LSD.

Iron staining in the drill cuttings was observed near the bottom of the unit. The sandy clay, mica and quartz sands found near the bottom of the Undifferentiated Surficial Deposits are thought to be Pliocene in age (T. Scott, 1986).

The Hawthorn Formation extends from 109' to 205' below LSD. The Hawthorn Formation of former usage consists of an upper clastic unit and a basal carbonate unit. Under Tom Scott's (Florida Bureau of Geology) revised nomenclature, the Hawthorn Formation has been upgraded to group status. The upper Hawthorn Group, consisting of the Peace River Formation, extends from 109' to about 151' below LSD at ROMP 55. Some of this formation material consisting of clay, quartz sand, sandstone and siltstone (calcarenitic mudstone) is now called the unnamed member of the Peace River Formation.

The basal carbonate unit of the Hawthorn Formation is now referred to as the Arcadia Formation (Scott, 1986), the lower member of Hawthorn Group. The carbonate unit at the ROMP 55 wellsite extends from about 151' to 205.5' below LSD. The Tampa and Nocatee members of the Arcadia Formation were not indentified at this wellsite. The formation material consists of dolomite, dolosilt, limestone, calcilutite, siltstone (calcareous mudstone), clay, calcarenite and sandstone. Clastic beds containing variable proportions of clay, quartz sand and phosphate occur sporadically throughout the Arcadia Formation.

Some fractures were observed in both the Peace River and Arcadia Formations (Hawthorn Group). These fractures were noted in the siltstone, limestone, calcilutite, and dolomite between 136' and 199' below LSD. Brecciation, fractures, bioturbation were noted in the siltstone near the top of the Arcadia Formation. The proximity of the wellsite to the numerous sinkholes which formed Crooked Lake may be the reason for the occurrence of brecciation, fractures and bioturbation in the core material. These features may be due to subsurface stratigraphic disruption of subterranean dissolution and collapse processes (Hine, 1986).

The Arcadia Formation lies unconformably on Oligocene age Suwannee limestone. The Suwannee Formation contact was identified at 205.5' below LSD. This formation is only 44.2' thick at the ROMP 55 wellsite (205.5' - 249.7' below LSD). The Suwannee Formation's limited vertical extent in the Crooked Lake locality is probably due to both depositional and erosional thinning. The Suwannee Formation contact was partially identified on the basis of reduced activity on the gamma ray log. The absence of the accessory constituents (clay, phosphorite) described in the core samples contribute to the lower activity on the gamma ray

log in the upper Suwannee Formation. Most of the formation is composed of a calcarenitic limestone.

The Upper Eocene Ocala Group limestones lie beneath the Suwannee Formation. The Ocala Group consists of three units: the Crystal River, Williston and Inglis Formations. These formations will not be differentiated in this report. The upper Ocala Group contact was identified at 249.7' below LSD. The Ocala Group consists chiefly of calcarenitic limestone. Clay and calcilutite were the major constituents found in the calcarenite. Clay layers were occasionally identified in the three formations. The electric log profiles delineate fairly well the upper contact of the Ocala Group. At the base of the Ocala Group the gamma gamma log indicated an increase in density, whereas, the neutron log indicated a decrease in porosity. The base of the Ocala Group was identified at 600.8' below LSD.

The Lower Eocene Avon Park Formation lies unconformably beneath the Ocala Group. Layers of clay (603.6' - 604.1', 609' - 613.5' below LSD) were described in the core samples near the top of the Avon Park Formation.

Much of the upper Avon Park Formation from 601.8' to 690.3' below LSD is composed of calcarenite and occasional clay layers. Between 690.3' and 868' below LSD the formation consists of intermittent intervals of dolosilt, dolomite, and calcilutite. This zone has three intervals of dolomite (690.3' - 695.7', 718.5' - 720' and 737.5' - 764' below LSD).

The principal dolomitized zone extends from 868' to 1200' below LSD (TD) at the ROMP 55 wellsite. This zone lies from 266' to 598' below the top of the formation. The dolomitized zone includes some fractured intervals, some of which have been recemented. Permeability, and porosity range from low to high within this zone.

The stratigraphic sequence for the ROMP 55 wellsite as interpreted from core samples, drill cuttings and geophysical logs is as follows:

Depth (Ft. below LSD)	**STRATIGRAPHIC UNIT/AGE Lithologic Description**
LSD - 109'	**UNDIFFERENTIATED/SURFICIAL/DEPOSITS/PLEISTOCENE, PLIOCENE AGE**

Sand, quartz; yellowish brown to black, yellowish gray to very light orange; fine to medium grain size, subangular to angular, low to medium sphericity, poorly indurated, frosted; accessory

constituents-clay, heavy minerals, peat (0-2'below LSD), mica (46.6'-71.5' below LSD); moderate porosity, low to high permeability.

109' - 205.5' **HAWTHORN FORMATION/MIOCENE AGE (HAWTHORN GROUP)**

Sand, sandstone, quartz; very light gray, grayish green, light olive gray, very fine to coarse grain size, angular to subangular, low to medium sphericity, poor to good induration, speckled, calcareous; accessory constituents-clay, phosphatic sand and gravel; moderate to high porosity, low to high permeability.

Clay; light - dark greenish gray, yellowish gray, olive gray; moderate - good induration, mottled appearance, bioturbated; fossils-molds, mollusks; calcareous; accessory constituents - quartz sand, phosphatic sand and gravel; low permeability.

Silt; very light gray, light olive gray, yellowish gray; moderate to good induration, bioturbated, brecciated,nodular; fossils - worm traces, mollusks; calcareous, speckled; accessory constituents - clay, dolomite, phosphatic sand and gravel; low permeability.

Dolomite; light gray, light bluish gray, light olive gray; microcrystalline to cryptocrystalline grain size, anhedral, good induration, mottled appearance, bioturbated, interbedded; accessory constituents - quartz sand, phosphatic sand and gravel, clay, limestone, calcite; occasionally fractured; fossils - coral, mollusks, worm traces, molds, barnacles; usually low porosity and permeability.

Limestone; yellowish gray, light bluish gray, light gray, pinkish gray; grain type - biogenic, calcilutitic; medium to microcrystalline grain size; moderate induration, interbedded, bioturbated; accessory constituents - calcilutite, phosphatic sand and gravel, calcite, clay; fossils - mollusks, barnacles, mollusks, molds, coral; moderate porosity, low to high permeability.

Calcarenite, calcilutite; very light gray, light olive gray, yellowish gray, very light orange; grain type - biogenic, intraclastic; very fine-cryptocrystalline grain size, good induration,

brecciated, nodular, interbedded; accessory constituents - dolomite, calcite, clay; fossils- mollusks, molds, worm traces; low - moderate porosity, low - high permeability.

205.5'-249.7' **SUWANNEE FORMATION/OLIGOCENE AGE**

Calcarenite; very light gray, yellowish gray, very light orange; intergranular, moldic; grain type- biogenic, skeletal, calcilutite; very fine to coarse grain size, poor to good induration, interbedded, bedded, granular reefal; accessory constituents - calcite, phosphatic sand, clay; fossils - mollusks, molds, coral, coquina, worm traces, echinoids; low to high porosity, low to high permeability.

Limestone; yellowish gray; moldic, interbedded, intergranular; grain type - biogenic, calcilutite, skeletal; very fine to microcrystalline grain size; fossils - mollusks, molds, fossil fragments; low to high porosity, low to high permeability.

249.7' 600.8' **OCALA GROUP / EOCENE AGE**

Calcarenite; very light orange, moderate dark gray, yellowish gray, light olive gray; grain type - biogenic, intraclast, calcilutite; medium to microcrystalline grain size; poor to moderate induration, bedded, interbedded; accessory constituents - clay, dolomite; fossils- foraminifera (Operculinoides, Lepidocyclina), mollusks, coral, bryozoa, miliolids, echinoids (Peronella dalli), worm traces; low to moderate porosity, low to high permeability.

Calcilutite; very light orange, yellowish gray, light olive gray; grain type - calcilutite, biogenic, intraclastic; very fine to cryptocrystalline grain size; moderate to good induration, interbedded, laminated, graded bedding, bioturbated; accessory constituents- calcite, dolomite; fossils - foraminifera (Lepidocyclina sp., Operculinoides sp., Sorites sp.), mollusks, molds, fossil fragments; usually low porosity and permeability.

Clay; light gray to light bluish gray, very light orange, moderate dark gray; poor induration, laminated, plastic, brecciated, interbedded; accessory constituent - limestone; fossils-

benthic foraminifera, fossil fragments, mollusks; low permeability.

600.8'-1200 TD **AVON PARK FORMATION/EOCENE AGE**

Calcarenite; yellowish gray, very light orange, white, light olive gray, grayish yellow; grain type - biogenic, calcilutite, skeletal, skeletal cast; very fine to coarse grain size; intergranular, moldic, moderate to good induration, interbedded, laminated, bedded; accessory constituents - dolomite, clay, limestone, calcilutite; fossils - miliolids, mollusks, worm traces, echinoids (Peronella dalli), foraminifera (Dictyconous cookei), algae; moderate to high porosity, low to high permeability.

Calcilutite; light olive gray, very light orange, white, very light gray; grain type - calcilutite; very fine to cryptocrystalline grain size; intergranular, angular; moderate to good induration; graded bedding, bedded, interbedded, laminated; accessory constituents - clay, dolomite; fossils - algae, organics, fossil molds; low to moderate porosity, low permeability.

Limestone; moderate light gray, very light orange, olive gray; grain type - biogenic, calcilutite; very fine to microcrystalline grain size; vugular, moderate to good induration; interbedded, bedded, streaked; accessory constituents - clay, dolomite; fossils - miliolids, mollusks, fossil fragments, organics; low to moderate porosity, low permeability.

Clay; white, very light orange, yellowish gray, light gray; poor to good induration, interbedded, graded bedding, plastic; accessory constituents- calcilutite, limestone; fossils - miliolids, fossil fragments, organic laminations; low permeability.

Dolomite; dark yellowish brown, moderate yellowish brown, light olive gray, grayish brown, light olive gray, light to moderate gray, grayish orange; fine to cryptocrystalline grain size; subhederal to anhederal; moderate to good induration; bedded, interbedded, massive,

splintery, platy, occasionally fractured, vugular, sucrosic, granular; accessory constituents - plant remains, calcilutite, quartz, clay, calcite; low to high recrystallization; fossils - echinoids, mollusks, fossil molds, miliolids, foraminifera (Dictyconus Cookei); low to high recystallization; low to moderate porosity, low to high permeability.

Dolosilt; yellowish gray, grayish orange, moderate yellowish brown; intercrystalline, intergranular, unconsolidated to poor induration, graded bedding, massive, granular, sucrosic; moderate porosity, high permeability.

III. HYDROLOGY (Figure 6)

The Surficial Aquifer System, Intermediate Aquifer System (Upper Confining Unit) and Floridan Aquifer System were identified at the ROMP 55 wellsite.

A. SURFICIAL AQUIFER SYSTEM

The Surficial Aquifer System extends from land surface datum (LSD) to 109' below LSD (12' above NGVD) at this wellsite. The elevation at the ROMP 55 wellsite is about 121' above NGVD. The Surficial Aquifer System at this site is the uppermost hydrologic unit consisting of unconsolidated to poorly indurated clastic deposits. These clastic deposits consist principally of fine to medium grain sand and clayey sand which range from Pliocene and Pleistocene to Holocene in age. The thickness of these deposits (LSD-109' below LSD) include both unsaturated and saturated deposits. The Surficial Aquifer System or (water-table aquifer, is unconfined at ROMP 55. A "perched" water table was not identified between land surface and 109' below LSD.

The surficial sand (terrace) deposits demonstrate moderate porosity and low to high permeability. The porosity and permeability of these terrace deposits is determined by the fine to medium grain size, subangular to angular grains and its clay and organic content.

The water in the Surficial Aquifer System at ROMP 55 is replenished principally by precipitation. Fluctuations in the water table are variable, due to seasonal rates of precipitation and local agricultural pumpage. The water table (hydrostatic level) varies seasonably through a range of 5 to 10 feet. The lowest water table occurs at the end of the dry season, usually during the month of May or June.

High water table levels occur during September or early October. During March, 1987, water levels in the Surficial Monitor and observation wells at ROMP 55 ranged from 9.75' to 12.20' below LSD. A year later these same wells ranged from 7.10' to 7.67' below LSD. It might also be noted that substantial daily changes occur occasionally due to local pumping.

Due to their close proximities, the hydrostatic level in the Surficial Aquifer System at ROMP 55 is likely to be an expression of the water level at Crook Lake. A regional ground-water divide is located near the northeast edge of Crooked Lake. Surface and ground-water flow from this divide, through the Surficial Aquifer System, is toward Crooked Lake. Leakage through the Intermediate Aquifer System (Upper Confining Unit), local pumpage and evaporation more than offset any input into the system, creating conditions for a declining lake level.

Yields of wells in the Surficial Aquifer System in the Highlands Ridge area range from about 10 to 1200 gpm (gallons per minute. Hydraulic coefficients of the aquifer show that transmissivities in this area average 1400 gpd/ft. (Geraghty & Miller, Inc. 1980). An average transmissivity of 1900 feet squared per day ($ft.^2/day$) and a storage coefficient of 0.29 was determined by Hutchinson (1978). Specific capacity in the Surficial Monitor at ROMP 55 was estimated at 1.24 gpm/ft.

Generally, water quality in the Surficial Aquifer System is good. Locally, in some areas near ROMP 55, agricultural contaminants, iron, color and taste degradate water supplies.

B. INTERMEDIATE AQUIFER SYSTEM

Underlying the surficial terrace deposits of the Surficial Aquifer System at ROMP 55 are the clastic (Peace River Formation) and carbonate (Arcadia Formation) sequences of the Hawthorn Group, which comprise the Intermediate Aquifer System (Upper Confining Unit). The thickness of this system in the Lake Wales Ridge and Crooked Lake locality is variable as is its integrity as a confining unit. This integrity is often affected by karst features present along the Lake Wales Ridge.

At the ROMP 55 wellsite, the Intermediate Aquifer System includes all water bearing and confining units between 109' and 205' below LSD. This system contains water under semi-confined conditions. These water-bearing and confining units include interbedded sandstone, sand, silt,

clay, dolosilt, dolostone, limestone and calcilutite beds of the Hawthorn Group. The clastic sequence (Peace River Formation) includes interbedded sand, sandstone, clay, silt (calcarenitic mudstone) extending from 109' to 151' below LSD. The basal carbonate unit (Arcadia Formation) consists of interbedded dolomite, limestone and calcilutite extending from 151' to 205.5' below LSD. Clastic beds consisting of silt (calcarenetic mudstone) and sandstone were also identified within this unit. Core sample descriptions and geophysical log interpretations indicate confining properties within the upper Hawthorn Group, while the lower Hawthorn Group with its carbonate sequences are more permeable. Porosity and permeability of the entire Hawthorn Group is variable.

Much of the Lake Wales Ridge is underlain with beds exhibiting low permeability which retard vertical movement of water. With karst features such as Crooked Lake, this is probably not true. Recent radar imaging techniques (Hine, 1986) revealed the existence of solution caverns, sink and shafts. These features tend to enhance vertical movement of water. The Intermediate Aquifer System (Upper Confining Unit) in the ROMP 55 vicinity receives water not only through the formation horizontally from other localities, but also from the Surficial Aquifer System.

Hydraulic heads differ within the Intermediate Aquifer System due to the properties of the confining beds. These beds transmit water from one zone to another, creating a leaky - aquifer system. Aquifer testing at ROMP 55 verified these conditions. Hydraulically, the Intermediate Aquifer System in the ROMP 55 locality, varies in relation to its lithology and solution development. Being a leaky confining system, downward leakage probably occurs largely from solution caverns, sinks and shafts which exist in and around Crooked Lake. The sinks and shafts appear to terminate within the Hawthorn carbonate units and may or may not be sediment-filled.

During coring operations (11-85) potentiometric surface within the Intermediate Aquifer System ranged from 33.65' 38.20' below LSD. After completion of the dual zone Hawthorn observation wells during the month of March, 1987, potentiometric surface ranged from 35' to 56' below LSD in the upper Hawthorn Group. In the lower Hawthorn Group, potentiometric surface ranged from about 35' to 64' below LSD. These fluctuations are probably due to local agricultural pumpage. Within the upper Hawthorn Group where confining properties appear to be greater than in the lower Hawthorn Group, one potentiometric surface measurement indicated a value of 31.6' below LSD in the interval (140'-145' below LSD). At the same time potentiometric surface

in the interval (177' -182' below LSD) was 35.9' below LSD. This measurement indicates that the lower Hawthorn Group is hydraulically connected to the upper Floridan Aquifer System.

Permeability and consolidation tests were performed on undisturbed samples retrieved by the Shelby tube method within the Hawthorn Group Formations at ROMP 55. Constant head permeability tests were completed on 3 different samples collected at 109'-113.1', 113.1'-113.6', and 116.2'-116.7'. These samples indicated permeabilities (K) that ranged from 1.8×10^{-3} to 11×10^{-3} ft/day, for hydraulic gradients of 4, 8, and 16 psi. Consolidation tests on these samples indicated specific storage (S's) ranging from 1.4×10^{-4} to 3.0×10^{-4} ft^{-1}. Hydralic conductivity (K') ranged from 2.9×10^{-4} to 5.2×10^{-4} ft/day.

In Polk County, transmissivities of the permeable deposits within the Intermediate Aquifer System range from less than 200 to 13,000 $ft.^2$/day. In the Lake wales locality, transmissivity in two wells were estimated to be 2,600 and 5,000 $ft.^2$/day respectively. Storage coefficient of the first well above was estimated to be .0001 $ft.^3/ft.^3$ or 1.0×10^{-4}. Hutchinson (1978) determined that storage coefficient ranged from 4.2×10^{-5} to 1.0×10^{-4} in seven aquifer pumping tests. These values indicate that the Intermediate Aquifer system is confined or under artisan conditions. Leakage values developed by Ryder (1985) ranged from 1×10^{-5} to 3×10^{-4} (ft./day)/ft. for the uppermost Intermediate Aquifer System, while a range of 7×10^{-6} to 1×10^{-4} (ft./day) / ft. were values derived for the lowermost Intermediate Aquifer System.

In 1988, an aquifer pumping test was conducted by District personnel to investigate the hydraulics of the Intermediate Aquifer System at ROMP 55. The "Ratio Method" Neuman and Witherspoon, 1972) was used in this aquifer test to evaluate the hydraulic conductivity of the upper Intermediate Aquifer System. Water level drawdowns were the greatest in the wells located in the lower Hawthorn Group during the aquifer test (300gpm) in which only the Suwannee Formation (210' - 250' below LSD) was pumped. These wells have screened intervals (156' - 161', 177' - 182' below LSD) located in the more permeable sections of the Hawthorn Group. To create sufficient stress across the Intermediate Aquifer System, pumping only the Suwannee Formation was necessary.

The two wells in the upper Hawthorn Group, having screened intervals (113' - 118', 140' - 145' below LSD, had water levels which rose above the original static water level. This created a situation where the "Ratio Method"

was not practical.

Leakance coefficient values during the test were high, indicating they might represent total leakage into the pumped zone.

The quality of water samples collected in the Intermediate Aquifer System (123.5' - 203.5' below LSD) was good. Specific conductivity values for the water samples ranged from 160 to 260 Umhos, with the exception of the water samples collected at 123.5' and 143.5' below LSD with specific conductivities of 1150 and 440 Umhos respectively. Chloride values ranged from 3 to 11 mg/l, while sulfate values ranged from 4 to 58 mg/l. Total dissolved solids (TDS) of the water samples ranged from 103 to 330 mg/l. Water temperatures within the Intermediate Aquifer System, ranged from 24° - 26° C.

C. FLORIDAN AQUIFER SYSTEM

The upper Floridan Aquifer System at the ROMP 55 wellsite consists of all the water bearing and semi-confining units which were encountered while coring and drilling the monitor and observation wells from 205' - 1200' below LSD. The stratigraphic units, described at the ROMP 55 wellsite and belonging to the upper Floridan Aquifer System, consist of calcarenite, calcilutite, dolomite and minor clay seams.

At a depth of 205.5' below LSD, the top of the upper Floridan Aquifer System coincides with the top of the Suwannee Formation. Wireline coring was completed to 827.5' below LSD. Drill cutting samples were then retrieved from this depth to 1200' below LSD.

The base of the Floridan Aquifer Systems, consisting of evaporites associated with the lower Avon Park Formation, was not defined at the ROMP 55 wellsite.

The Floridan Aquifer System is a productive water source for agricultural irrigation and industrial, municipal usage along the Lake Wales Ridge. The regional flow direction is south and west. This is controlled by a regional ground-water divide which transverses the area about (5) five miles east of ROMP 55. Both the Floridan Aquifer and Intermediate Aquifer Systems are hydraulically connected not only due to the absence of the Tampa Formation, but from the sinkhole lake development. This creates conditions for conduits which enhance vertical ground-water flow.

The substantial head difference in hydrostatic level between the Surficial and Floridan Aquifer Systems indicates

a potential for downward leakage. Leakage to the Floridan Aquifer System is due in part to sinks and shafts originating in the Hawthorn Formation. Solution caverns appear to extend vertically all the way from the surface to the Suwannee Formation. Sediments which eventually fill these sinks, shafts and solution caverns provide some confinement between the Surficial and Floridan Aquifer Systems, thereby creating conditions for a head differential. The Hawthorn Group (Upper confining Unit) in the Crooked Lake locality with its sinks and shafts and solution caverns exhibits characteristics of a leaky confiner. The Surficial Aquifer System and Crooked Lake recharge the Floridan Aquifer System at a rate greater than they are being recharged themselves. Domestic and agricultural use appears to be accelerating this problem. The easiest conduit for water to the Floridan Aquifer System is through the sediment-filled sinkholes which formed Crooked Lake. Stressing the Floridan Aquifer System in turn stresses Crooked Lake, thus creating a downward trend in its water level.

The potentiometric surface in the Floridan Aquifer System varies seasonally due to precipitation and local pumpage. The Floridan Aquifer System contains water under confined conditions. In comparison to water table measurements which ranged from 7' to 12' the below LSD, potentiometric surface in the Floridan Aquifer System ranged from 35.2' to 42.2 below LSD while coring from 223.5' to 827.5' below LSD (11-85 to 11-86). During construction of the Florida observation well (2-87), potentiometric surface ranged from 36.3' to 40.4' below LSD between the depths of 820' and 1200' below LSD. The potentiometric surface declined with depth as construction proceeded in both of the wells. Local agricultural wells were apparently being pumped heavily during this period of time due a cold period and low precipitation typical of the winter season.

Yield of wells in the Floridan Aquifer System range from about 100 to 6000 gpm. Specific capacity tests were completed while constructing the Floridan observation well between the depths of 210' and 820' below LSD. Discharge rates (Q) ranged from 73.3' to 113.8' gpm. Calculated specific capacity values during the drawdown and recovery phases ranged from 8.10' to 87.54 gpm/ft. The major increases in specific capacity occurred between 740' and 820' below LSD. Due to the increased formational productivity, specific capacity testing was discontinued after drilling to 820' below LSD due to minimum drawdowns recorded.

Due to karst features which formed sinkhole lakes like Crooked Lake, transmissivity is highly variable. During two

separate aquifer tests in the Lake Wales locality transmissivity values were estimated to be 51,471 and 385,000 gpd/ft. Other reported transmissivities in the Highlands Ridge Area range from less than 50,000 ft^2/day to greater than 9,000,000 ft^2/day. Storage coefficient values for the Lake Wales area wells were 4.7×10^{-2} and 4.7×10^{-3} ft^3/ft^3 respectively. Other storage coefficient values from tests in the Highland Ridge locality range from 3.0×10^{-4} to 4.8×10^{-3} ft^3/ft^3. In the Avon Park Area, an aquifer test performed by Geraghty & Miller, Inc. yielded an average transmissivity of 535,000 gpd/ft. and an average storage coefficient of 4.45×10^{-4} ft^3/ft^3.

During construction of the ROMP 55 Upper Floridan Monitor, an aquifer test was performed within the Suwannee Formation (210'-250' below LSD). Total drawdown after 36 hours was 46.3'. Water level drawdown in the Suwannee observation well was 9.5'. The Jacob and Walton methods were used to evaluate the aquifer test data. Transmissivity ranged from 2400 to 7500 ft^2/day. Storage coefficient was estimated to be 1.3×10^{-4}. Major pumpage occurred from the upper zone of the Suwannee Formation during this aquifer test.

During 1989, a second aquifer test will be conducted at the ROMP 55 wellsite. The interval to be pumped will be the upper Floridan Aquifer System, extending from 210-1200' below LSD.

During coring operations, water quality samples collected from the upper Floridan Aquifer System (223.5-827.5' below LSD) ranged from 210 to 500 Umhos for specific conductivity. Chlorides ranged from 8 to 30 mg/l, whereas, sulfates ranged from 2 to 9.3 mg/l. Total Dissolved Solids (TDS) ranged from 162 to 228 mg/l.

Water quality samples were collected between the depths of 820' and 1200' below LSD during the construction of the Floridan observation well. Specific conductivity values ranged from 230 to 350 Umhos. Chloride values ranged from 5 to 15 mg/l while sulfates increased from less than 1 mg/l at 820' below LSD to 44 mg/l at 1200' below LSD. One Total Dissolved Solid (TDS) sample retrieved at 1200' below LSD had a value of 246 mg/l (See ROMP file).

During geophysical logging operations specific conductivity in the Floridan Aquifer Monitor (210-1200' below LSD) ranged from 268 to 448 Umhos. Temperatures in the same depth interval ranged from 23.38° C to 25.4° C. Slight increases in specific conductivity and temperature occurred about 1020' below LSD.

IV. TYPE AND PURPOSE OF MONITORS

Two permanent wells, a Floridan Monitor and Surficial Monitor, were constructed on the perpetual easement at the ROMP 55 wellsite. In addition to these two permanent monitors, two temporary surficial observation wells, two dual zone Hawthorn observation wells, one upper Floridan observation well and one Floridan observation well were constructed on the temporary construction easement (Figure 7). Note: the corehole was modified and drilled to a depth of 1200' to serve as the Floridan observation well. These observations wells were constructed for the purpose of gathering aquifer test data during the two pump tests conducted at the wellsite. The observation wells will be permanently cement plugged to surface on completion of aquifer testing. Data collected during coring operations and following construction of the monitor and observation wells include: water quality, lithology, identification of geological formations, hydrostratigraphic boundaries and hydrologic characteristics of the Surficial, Intermediate and Floridan Aquifer Systems. The permanent monitors will provide a long term record of hydrostatic water levels. It is hoped that by comparing the long term potentiometric levels of each aquifer and interpreting aquifer test results, other judgments may be made regarding downward leakage and the large hydrostatic head differential which exists between the Surficial and Floridan Aquifer Systems in the Crooked Lake locality.

V. WELL DESIGN AND CONSTRUCTION

A. SURFICIAL MONITOR (Figure 8)

The Surficial Monitor was designed to monitor and record any fluctuations in the water table (hydrostatic level) in the Surficial Aquifer System.

The construction of the Surficial Monitor was initiated by drilling a 10" dia. nominal borehole, using mud-rotary drilling techniques, to a depth of 73' below LSD. Fifty feet (50') of 6" PVC (0.020" slot) wellscreen (23'-73' below LSD) was coupled onto 25' of 6" PVC casing (+2' to 23' below LSD) and set into the borehole. The well annulus from 73' to 5' below LSD was sandpacked with 6-20 type silica sand, and was then cement-grouted from 5' to land surface.

B. TEMPORARY SURFICIAL OBSERVATION MONITORS (Figure 9)

Two temporary surficial observation wells were constructed 20' east and 40' south of the permanent Surficial Monitor for the purpose of acquiring data within

the Surficial Aquifer System during aquifer testing.

The surficial observation well, 20' east of the Surficial Monitor, was drilled to a depth of 78' below LSD. The construction of this observation well was initiated by drilling a 6" dia. nominal borehole to 78' below LSD using mud-rotary drilling techniques. Fifty feet (50') of 2" dia. PVC (0.020") wellscreen 28'-78') was coupled onto 30' of 2" dia. PVC (+2' to 28') and inserted into the borehole. The well annulus from 78' to 5' below LSD was sandpacked with 6-20 type silica sand, and was then cement-grouted from 5' to land surface.

The surficial observation well, located 40' south of the Surficial Monitor, was drilled to a depth of 75' below LSD. The construction of this observation well was initiated by drilling a 6" dia. nominal borehole to 75' below LSD using mud-rotary drilling techniques. Fifty feet (50') of 2" dia. PVC (0.020" slot) wellscreen (25' - 75') was coupled onto 27' of 2" dia. PVC casing (+2' to 25' and inserted into the borehole. The well annulus from 75' to 5' below LSD was sandpacked with 6-20 type silica sand, and was then cement-grouted from 5' to land surface.

C. TEMPORARY DUAL ZONE HAWTHORN OBSERVATION MONITORS (Figures 10,11)

Two temporary dual zone Hawthorn observation wells were constructed for the purpose of acquiring pump test data within the Intermediate Aquifer System. These wells were also constructed for the purpose of determining hydraulic head differences within the Intermediate Aquifer System.

The first dual zone Hawthorn observation well (West) was drilled to a depth of 162' below LSD. The construction of this dual zone well was initiated by drilling a 16" dia. nominal borehole to a depth of 30' below LSD. Thirty feet (30') of 12" dia. steel casing (LSD-30') was inserted into the borehole and cement-grouted to land surface. A 10" dia. nominal borehole was then drilled out of the 12" dia. steel casing to a depth of 110' below LSD. One hundred eight feet (108') of 8" dia. PVC casing (+1 to 107') was inserted into the borehole and cement-grouted to land surface. An eight inch (8" dia.) nominal borehole was drilled out of the 8" dia. PVC casing to a depth of 162' below LSD. An one foot (1') sediment trap (161'-162'), five feet (5') of 2" dia. PVC (0.020" slot) wellscreen (156'-161' below LSD) was coupled onto 2" dia. PVC Casing (+2' to 156' below LSD) and inserted into the borehole. The well annulus was sandpacked from 162' to 153' below LSD with 6-20 type silica sand, and was then cement-grouted from 153' to 119' below LSD.

An one foot (1') sediment trap (118'-119' below LSD), five feet (5') of 2" dia. PVC (0.020"slot) well screen (113-118' below LSD) was coupled onto 2" dia. PVC casing (+2' to 113' below LSD) and inserted into the borehole. The well annulus was sandpacked from 119'to 110' below LSD with 6-20 type silica sand, and was then cement-grouted from 110' to land surface.

The second dual zone Hawthorn observation well (East) was drilled to a depth of 183' below LSD. The construction of this dual zone well was initiated by drilling a 10" dia. nominal borehole to a depth of 106' below LSD. One hundred seven feet (107') of 6" PVC casing (+1' to 106' below LSD) was inserted into the borehole and cement grouted to land surface. A six inch (6") dia. nominal borehole was then drilled out of the 6" dia. PVC casing to a depth of 183' below LSD. An one foot (1') sediment trap (182'-183'), five feet (5') of 2" dia. PVC (0.020" slot) well screen (177'-182' below LSD) was coupled onto 2" dia. PVC casing (+2' to 177' below LSD) and inserted into the borehole. The well annulus was sandpacked from 183' to 174' below LSD with 6-20 type silica sand, and was then cement-grouted from 174' to 146' below LSD.

An one foot (1') sediment trap (145'-146'), five feet (5') of 2" dia. PVC (0.020" slot) wellscreen (140'-145' below LSD) was coupled onto 2" dia. PVC casing (+2' to 140' below LSD) and inserted into the borehole. The well annulus was sandpacked from 146' to 136' below LSD with 6-20 type silica sand, and was then cement-grouted from 136'to land surface.

D. **FLORIDAN MONITOR** (Figure 12)

The Floridan Monitor was designed to monitor and record fluctuations in the potentiometric surface (hydrostatic level) in the calcarenitic, calcilutitic limestones and dolomite in the Ocala Group and Avon Park Formations. The Floridan Monitor was drilled to a depth of 1200' below LSD.

The construction of the Floridan Monitor was initiated by drilling a 22" dia. nominal borehole, using mud-rotary drilling techniques, to a depth of 100' below LSD. Sixteen inch (16") dia. steel casing was set (LSD-100' below LSD) and cement-grouted to land surface. A 14" dia. nominal borehole was then drilled out of the 16" dia. steel casing to a depth of 212' below LSD. Ten inch (10") dia. PVC casing was then set (+2.5' to 212' below LSD) and cement-grouted to land surface. This casing will effectively isolate the Surficial and Intermediate Aquifer Systems from the Floridan Aquifer System at ROMP 55. A 10 dia. nominal borehole was then drilled out of the 10" dia. PVC casing,

using mud-rotary and reverse air drilling techniques, to a total depth of 1200' below LSD.

E. **TEMPORARY FLORIDAN OBSERVATION WELL** (Figure 13)

The temporary Floridan observation well was modified from the core well (LSD - 827.5' below LSD) and drilled to a depth of 1200' below LSD. The construction of the temporary Floridan observation well was initiated by drilling a 12" dia. nominal borehole to a depth of 185' below LSD. Eight inch (8") dia. PVC casing was set (LSD to 210') and cement-grouted to land surface. An 8" dia. nominal borehole was then drilled out of the 8" dia. casing to a depth of 210' below LSD. Six inch (6") dia. PVC casing was set (+2.5' to 210' below LSD) and cement-grouted to land surface. The casing will effectively isolate the Surficial and Intermediate Aquifer Systems from the Floridan Aquifer System at ROMP 55. A 6" dia. nominal borehole was drilled out of the 6" dia. PVC casing, using mud-rotary and reverse air-drilling techniques, to a total depth of 1200' below LSD.

F. **TEMPORARY UPPER FLORIDAN OBSERVATION WELL** (Figure 14)

The temporary upper Floridan observation well was constructed for the purpose of acquiring pump test data in the upper Floridan Aquifer System. This temporary observation well was drilled to a depth of 250' below LSD.

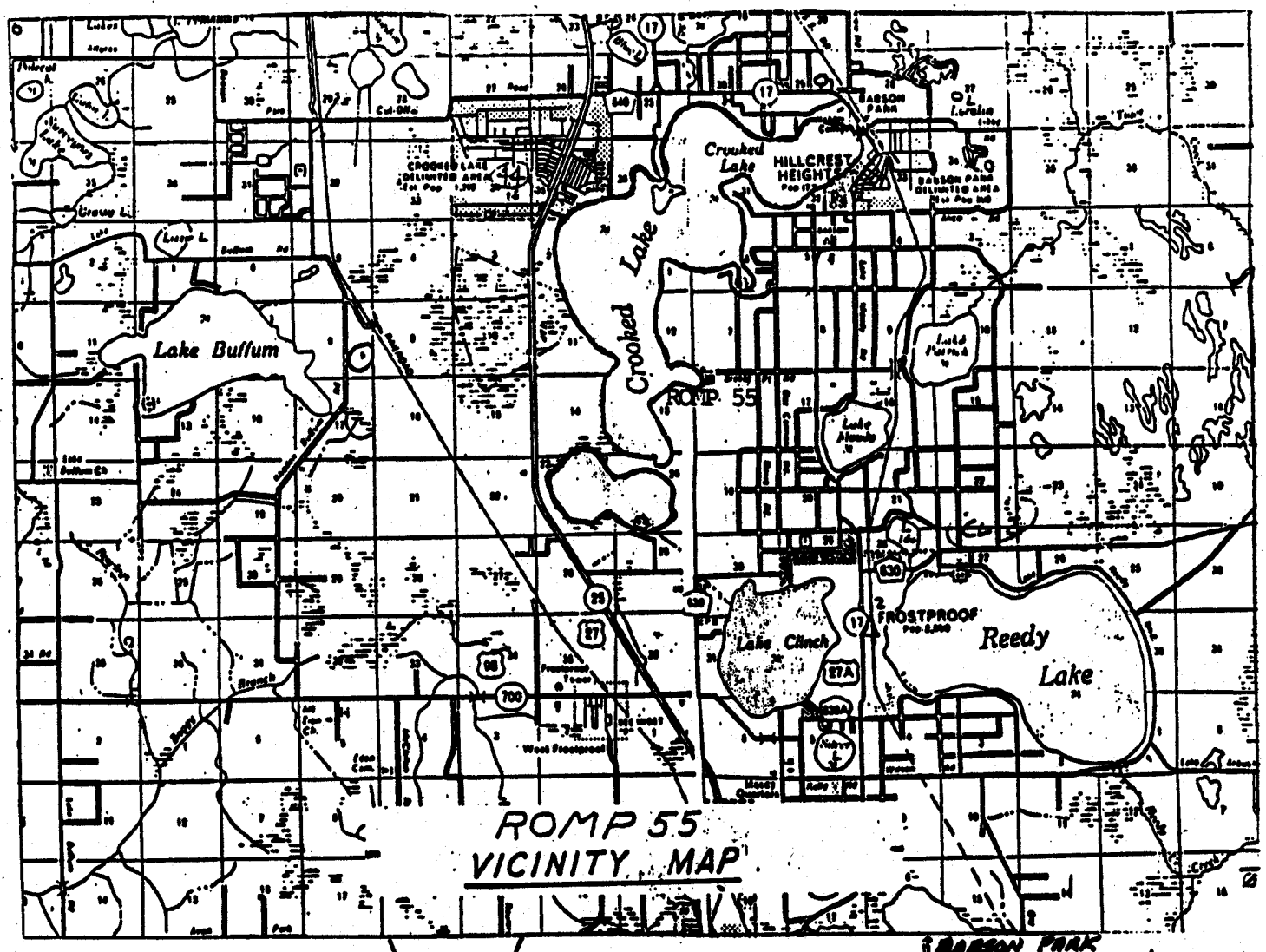
The construction of the temporary upper Florida observation well was initiated by drilling a 14" dia. nominal borehole to a depth of 30' below LSD. Ten inch (10") dia. PVC casing was set (LSD to 30') and cement-grouted to land surface. A 10" dia. nominal borehole was drilled out of the 10" dia. casing to a depth of 210' below LSD. Six inch (6") dia. PVC casing was set (+2.5' to 210' below LSD) and cement-grouted to land surface. A 6" dia. nominal borehole was drilled out of the 6" dia. PVC casing, using reverse air-drilling techniques, to a total depth of 250 below LSD.

ROMP 55 COCA COLA FOODS

Township 31 South, Range 28 East

LAT. 27° 47' 30.3"N, LONG. 81° 33' 38.5" W (Scaled)

BABSON PARK U.S. GEOLOGICAL QUADRANGLE



ROMP 55
VICINITY MAP

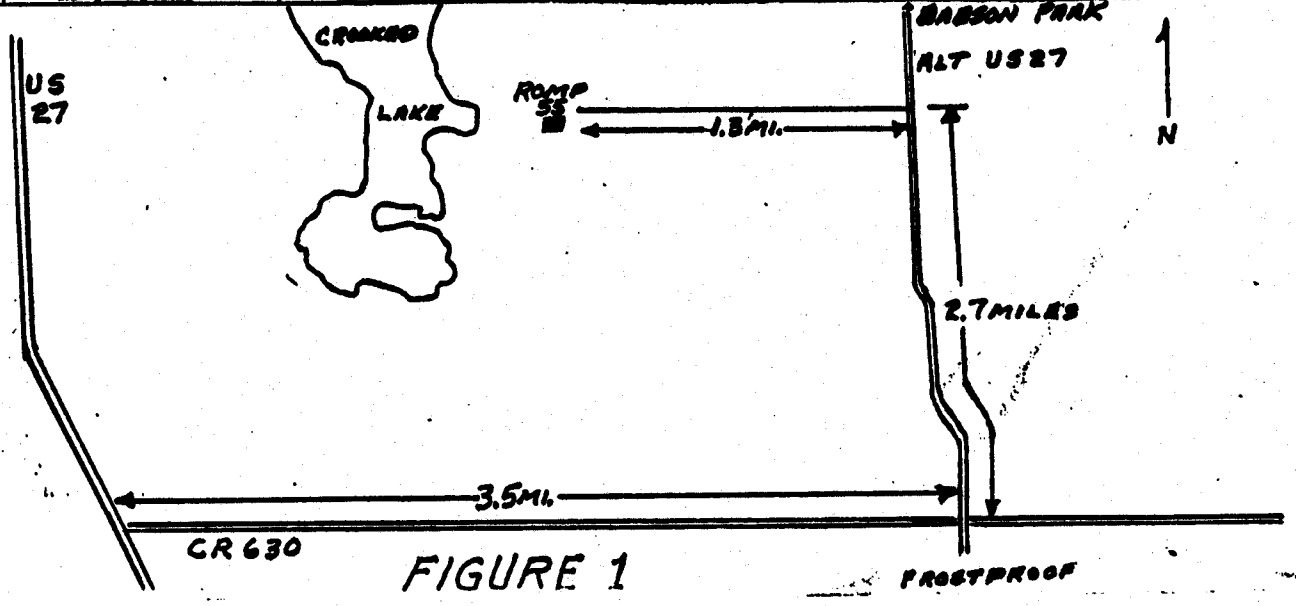


FIGURE 1

SITE SURVEY MAP
ROMP 55 COCA COLA

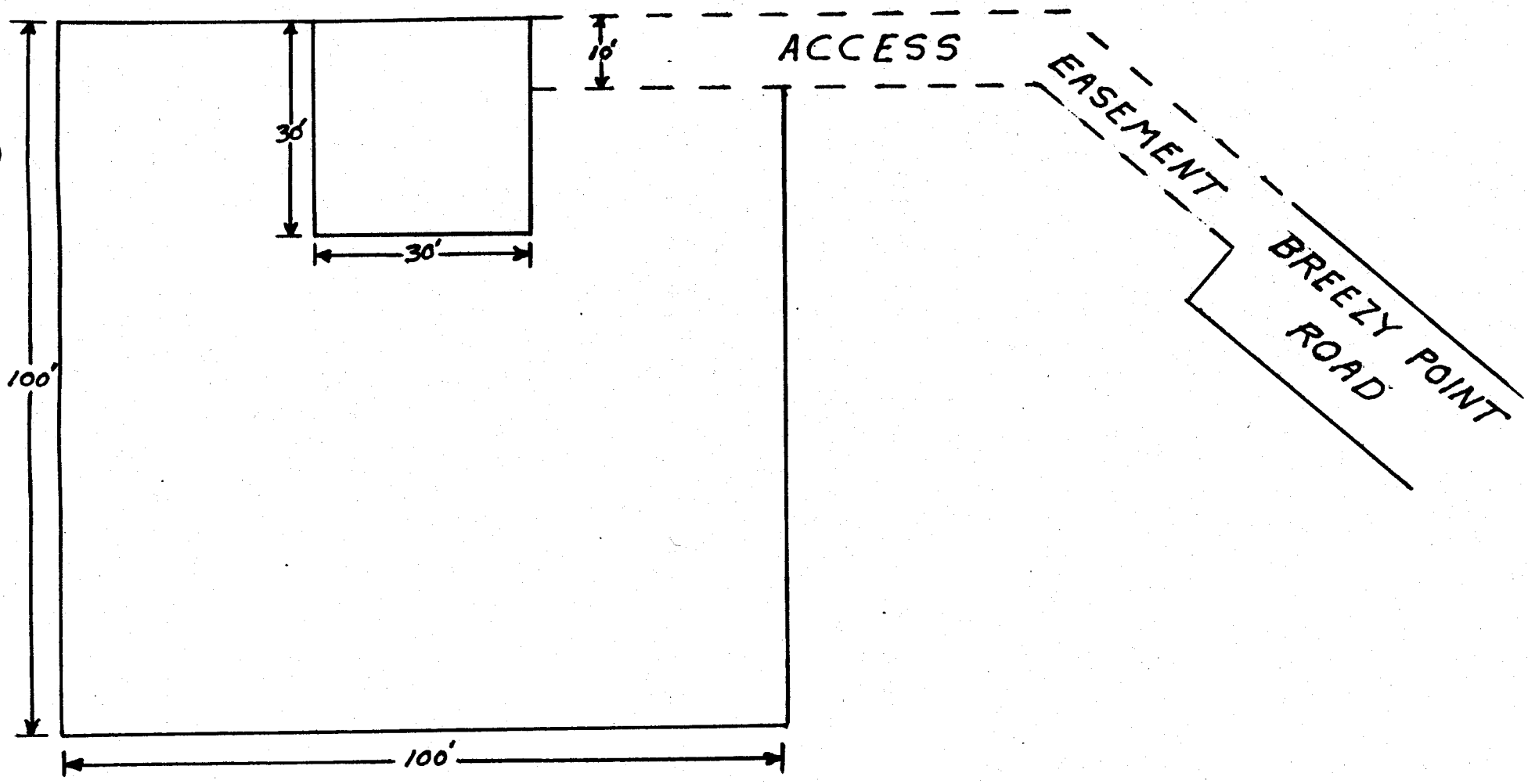


FIGURE 2

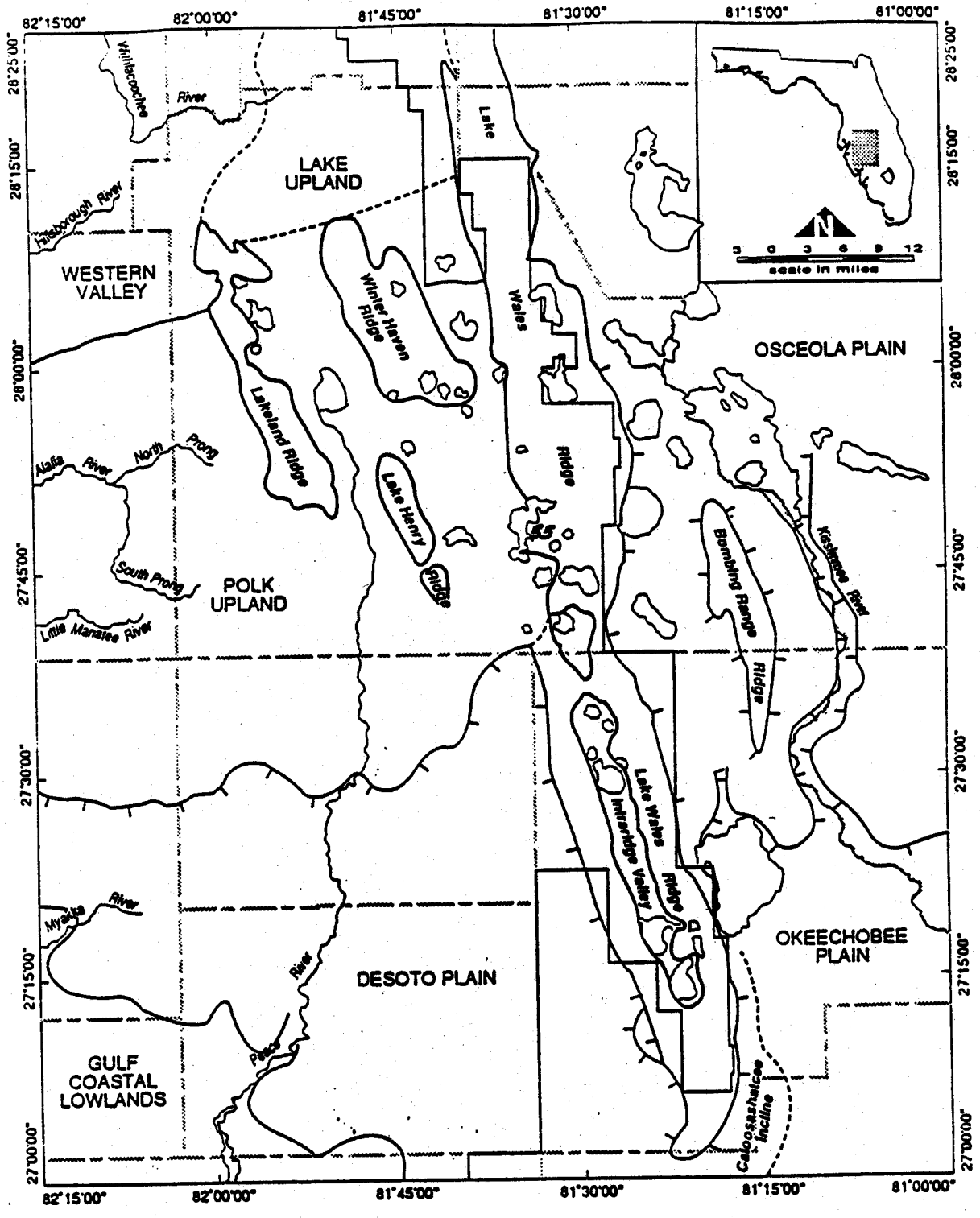


Figure 3. Physiographic sub-divisions (from White, 1976).

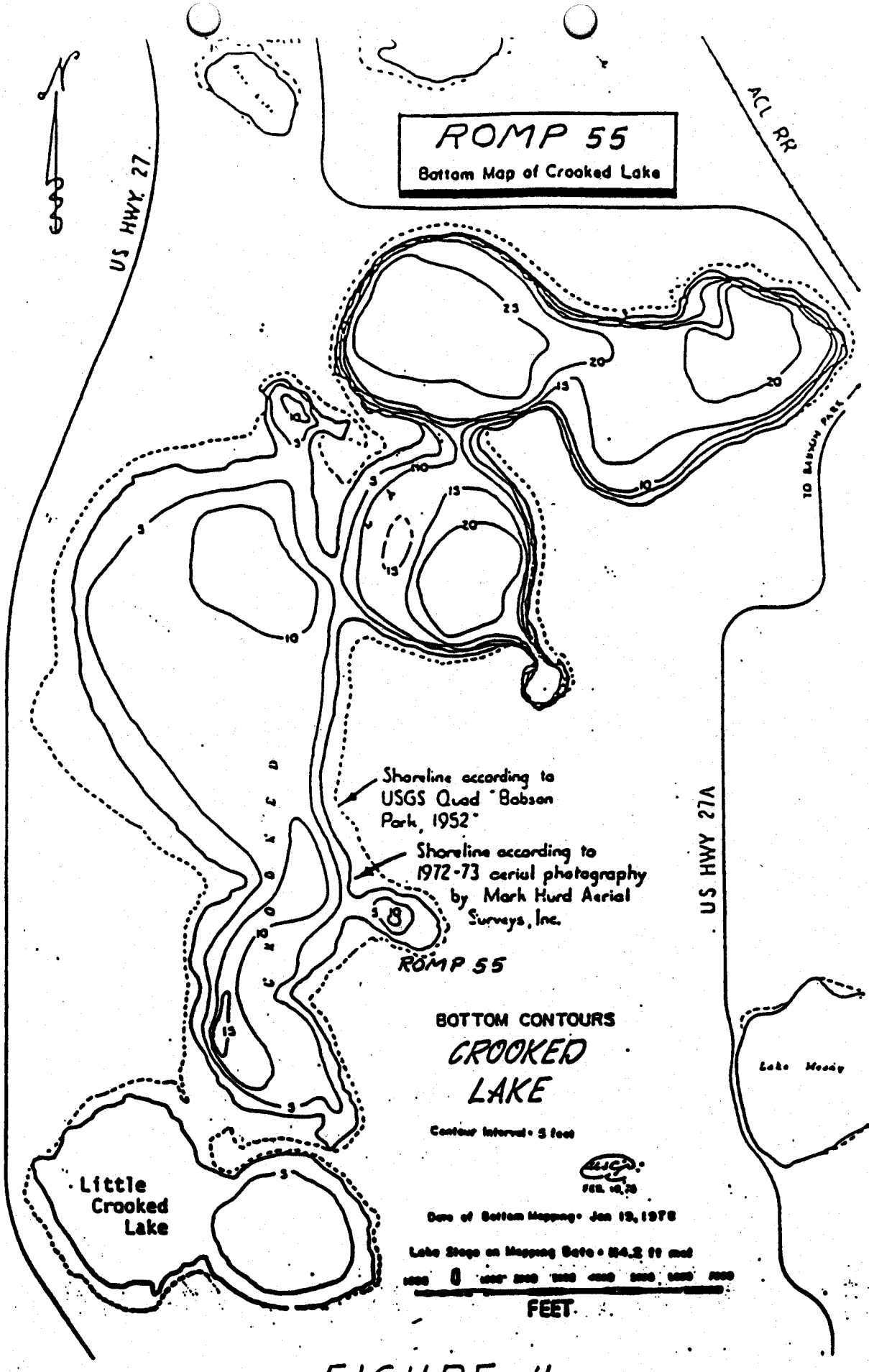

ROMP 55
Bottom Map of Crooked Lake
US HWY. 27
ACL RR
TO BABSON PARK
US HWY 27A
Shoreline according to USGS Quad "Babson Park, 1952"
Shoreline according to 1972-73 aerial photography by Mark Hurd Aerial Surveys, Inc.
ROMP 55
BOTTOM CONTOURS
CROOKED LAKE
Contour Interval = 5 feet
Date of Bottom Mapping: Jan 12, 1978
Lake Stage on Mapping Date = 154.2 ft msl
FEET
Little Crooked Lake
Lake Hoody

FIGURE 4

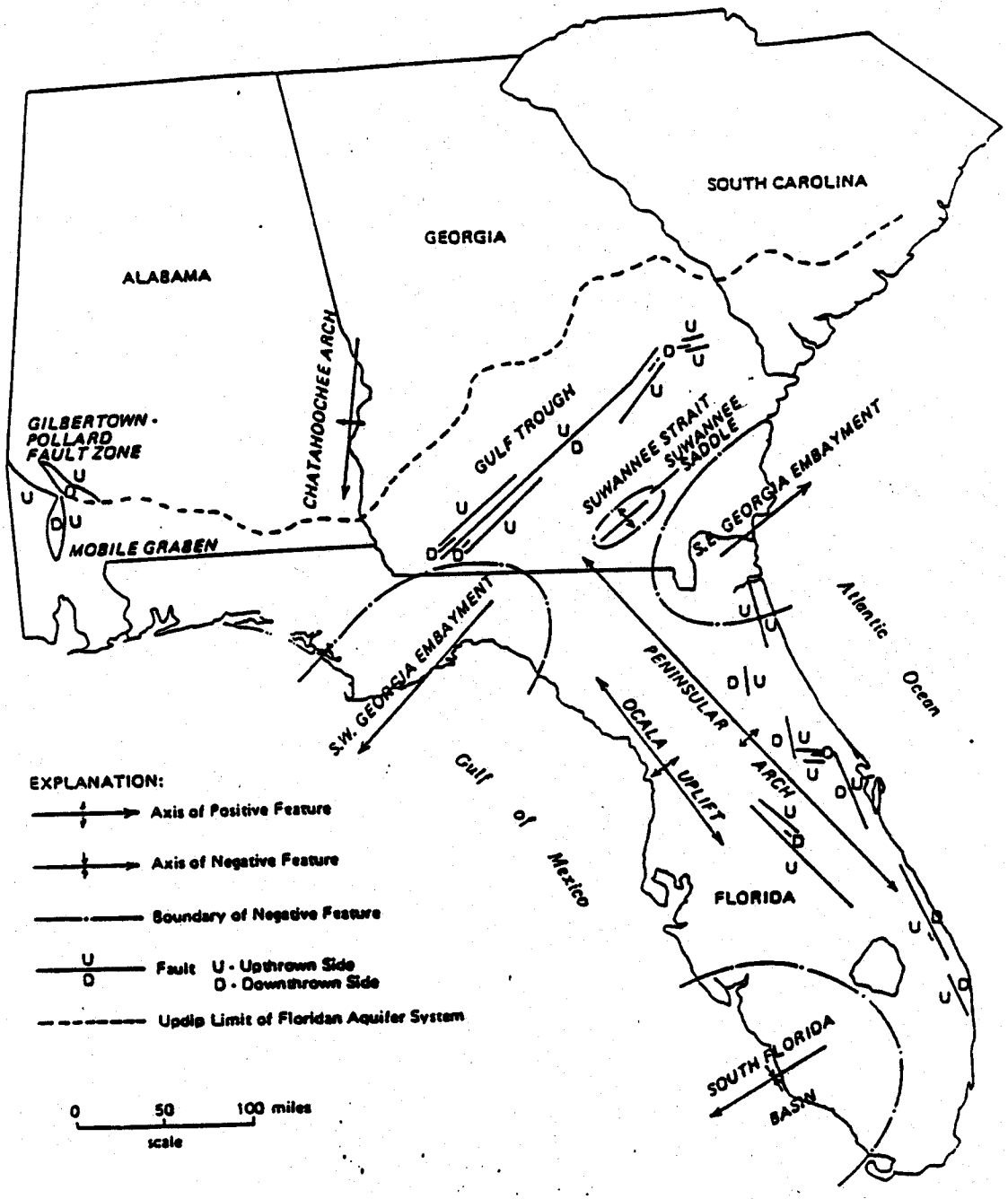


Figure 5 Major structural features in Florida (from Miller, 1986).

12-22-88 ROMP 55 "COCA COLA FOODS" J.L ecker

HYDROGEOLOGY

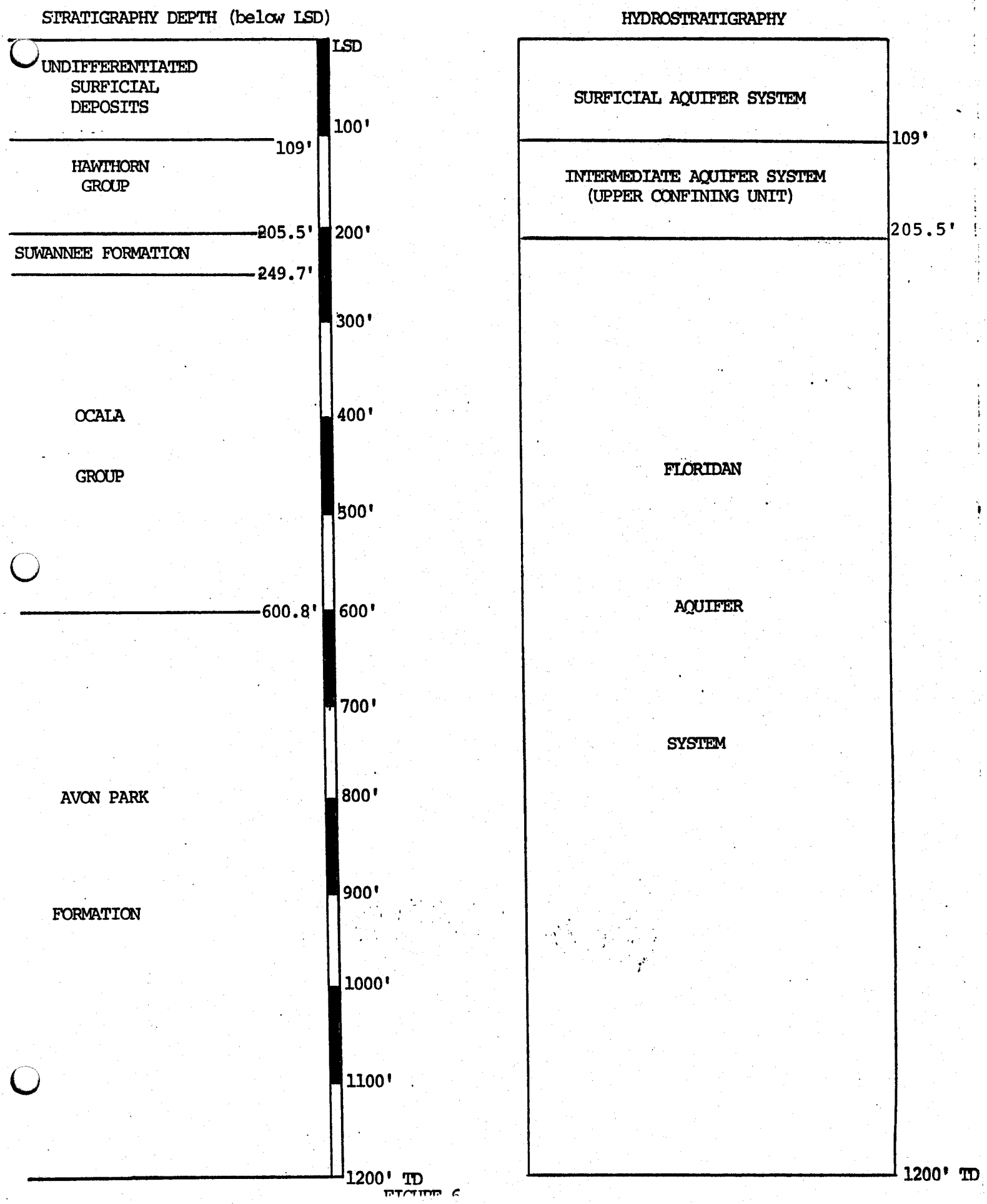
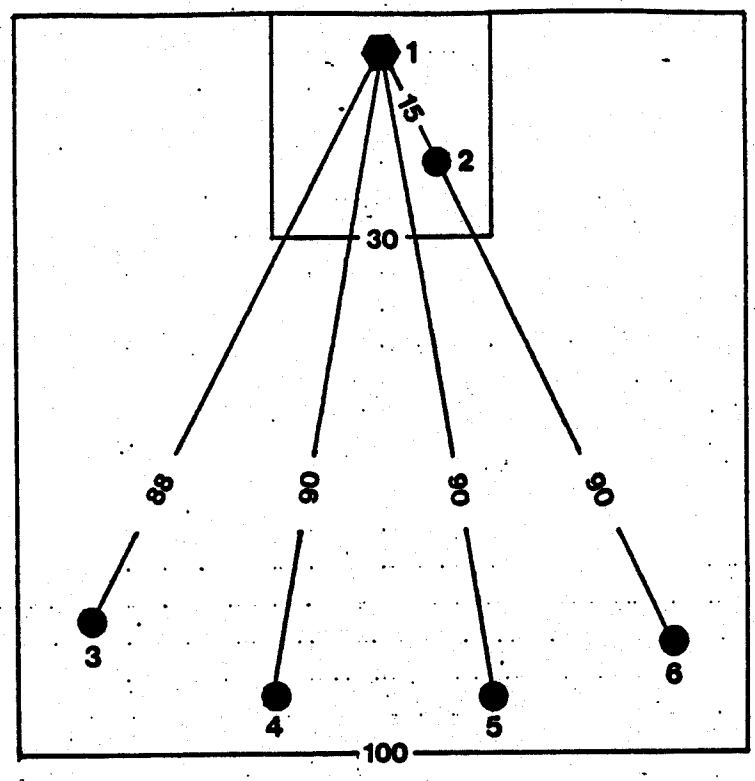


FIGURE 6

ROMP-55 SITE



Well ID	Open/Screened Interval (feet below LSD)	Formation
1. Pumped	210-250	Suwannee
2. Surficial	25-75	Undifferentiated Deposits
3. Avon Park	210-1200	Suwannee/Ocala /Avon Park
4. Suwannee	210-250	Suwannee
5. Intermediate		
UH1	113-118	Hawthorn
LH1	156-161	Hawthorn
6. Intermediate		
UH2	140-145	Hawthorn
LH2	177-182	Hawthorn

FIGURE 7

ROMP 55 COCA COLA FOODS SURFICIAL MONITOR

10-12-93

J.L. DECKER

AS BUILT

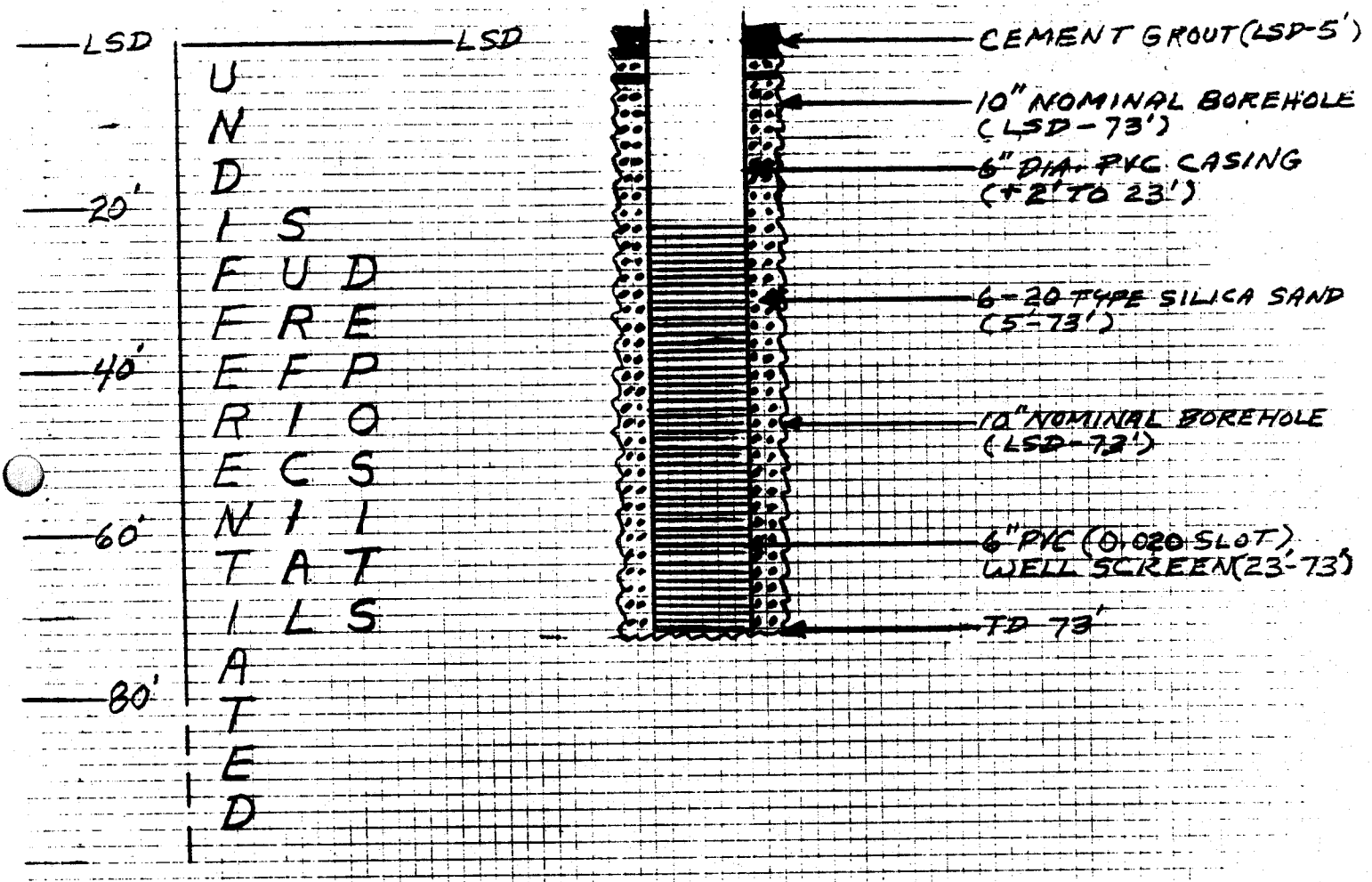
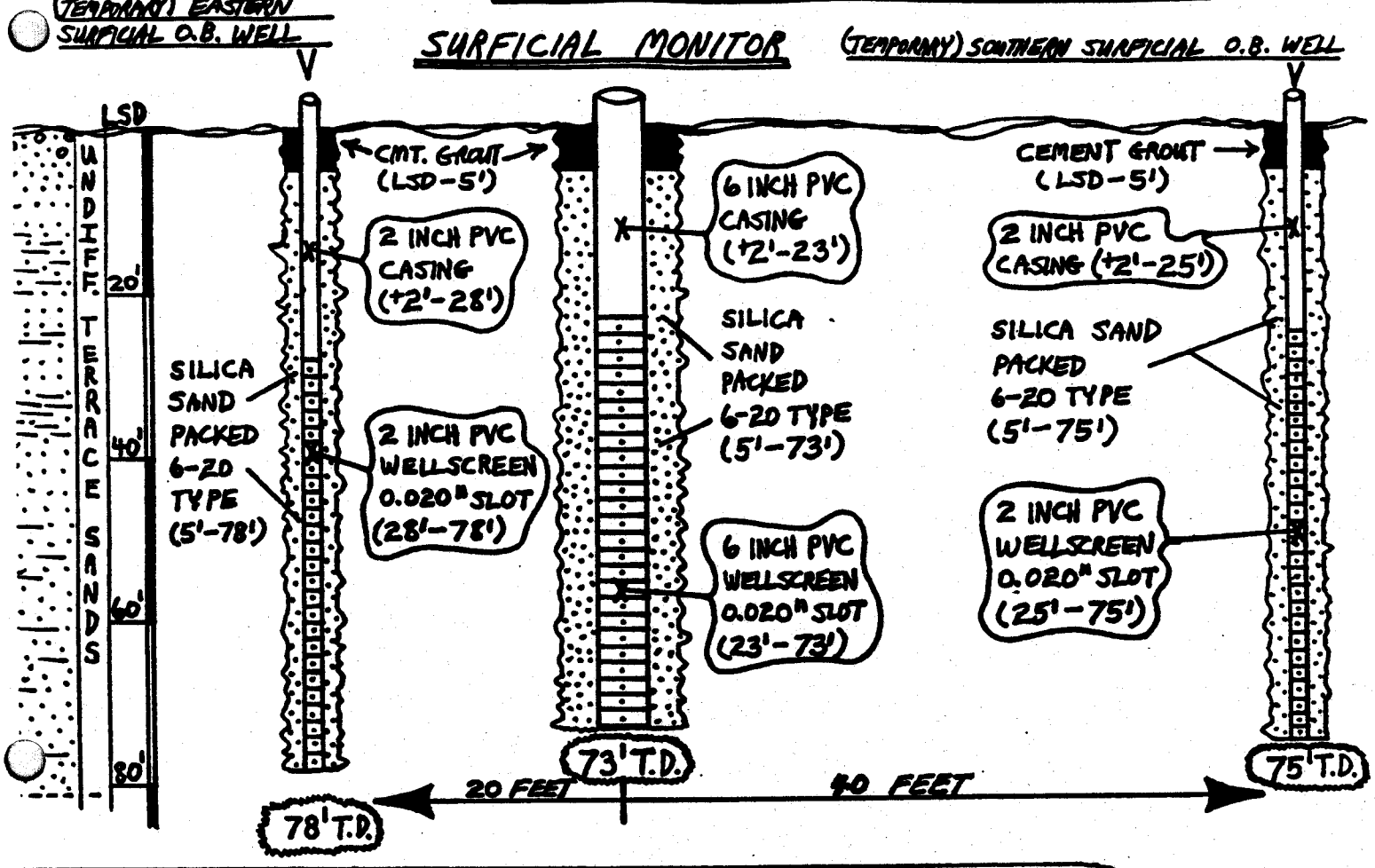
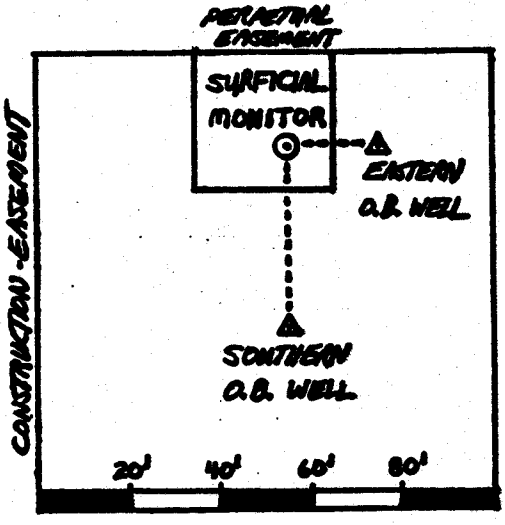


FIGURE 8

ROMP #55 (Cocacola Foods) | AS BUILT WELL DESIGN DIAGRAM





NOTE
UPON COMPLETION OF PUMP TESTING, ALL O.B. WELLS WILL BE CEMENTED TO LSD.

AS-BUILT 7-15-86 GH

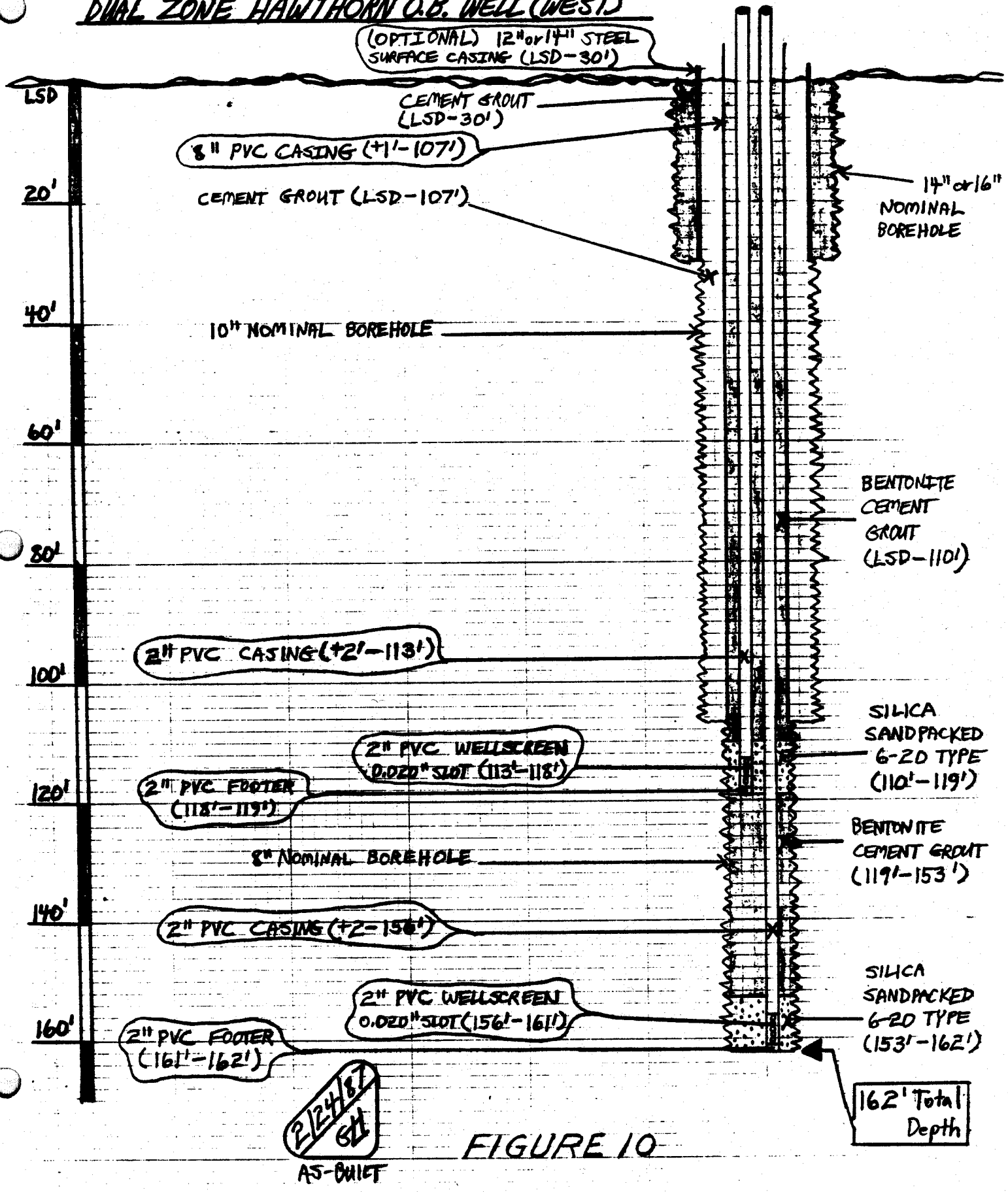
Well Placement Diagram For Surficial Aquifer Pump Tests At ROMP #55

FIGURE 9

AS-BUILT

RMP #55 (WCF)

DUAL ZONE HAWTHORN O.B. WELL (WEST)



2/24/87 GH

AS-BUILT

FIGURE 10

DUAL ZONE HAWTHORN O.B. WELL (EAST)

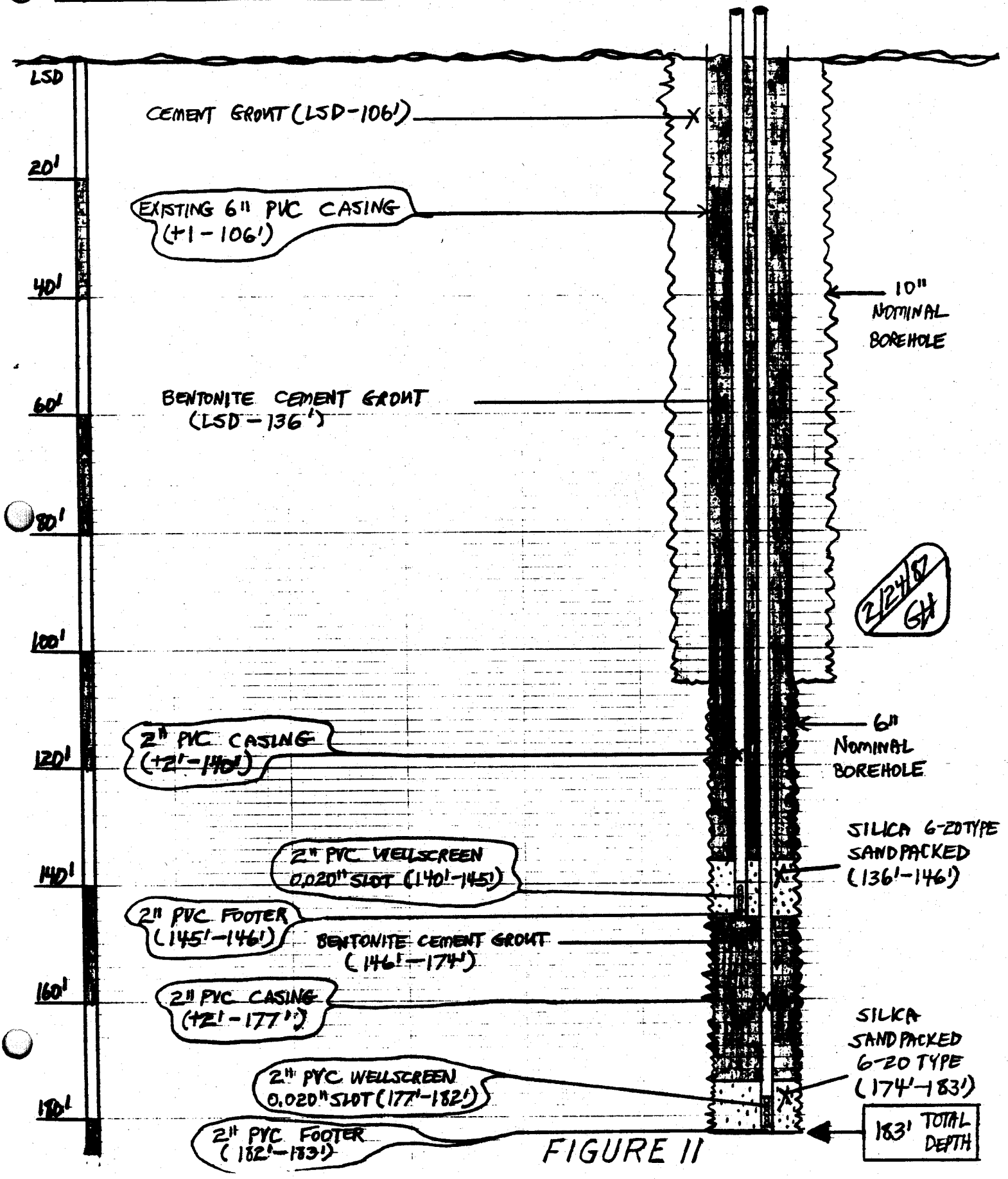


FIGURE II

ROMP 55 "COCA COLA FOODS"
FLORIDAN MONITOR
AS BUILT

10-12-88

J. L. DECKER

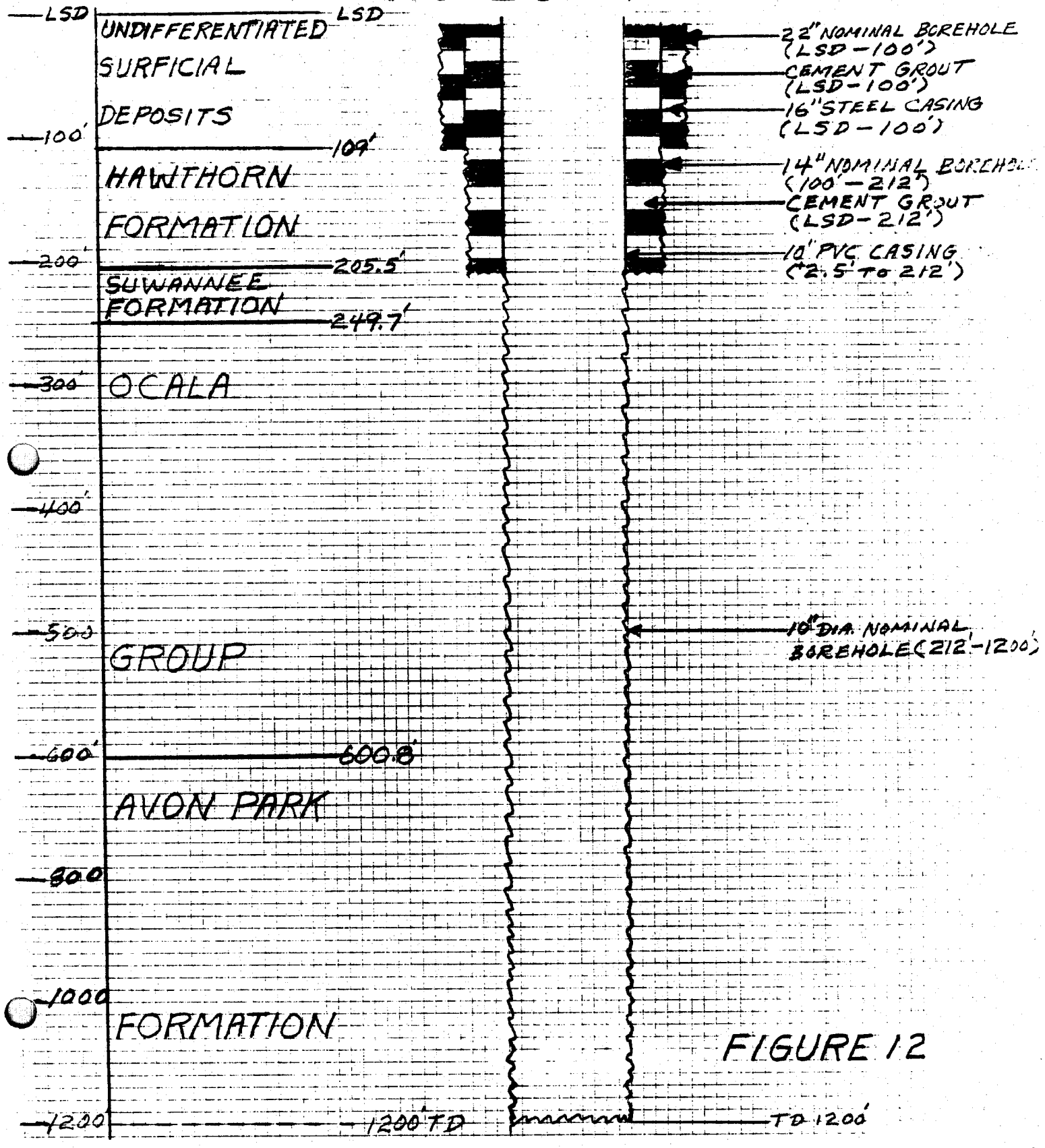


FIGURE 12

ROMP 55 COCA COLA FOODS

TEMPORARY FLORIDAN OBSERVATION WELL

12-22-88

J. L. DECKER

AS BUILT

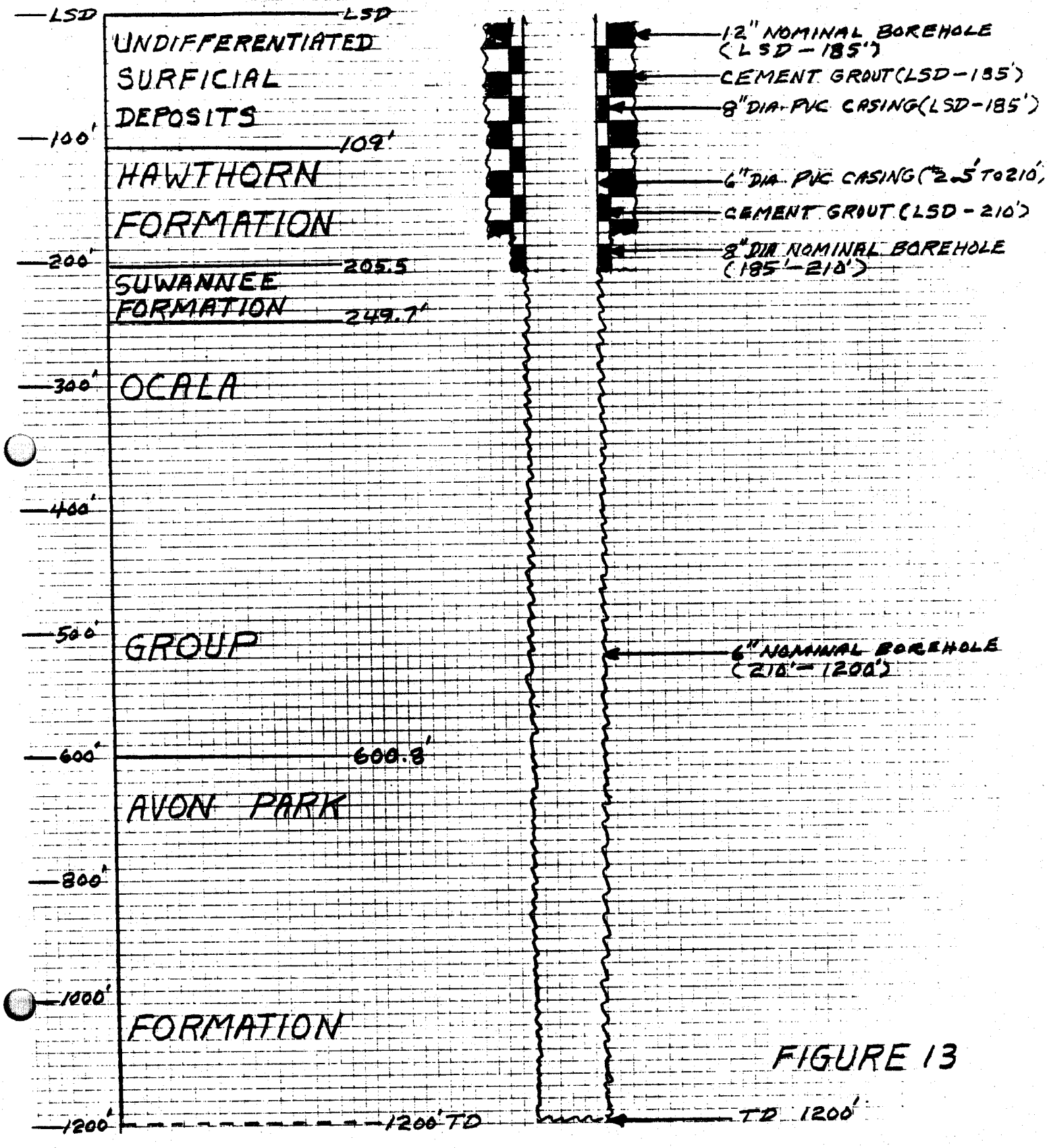


FIGURE 13

ROMP 55 COCA COLA FOODS

TEMPORARY UPPER FLORIDAN OBSERVATION WELL

1-09-89

AS BUILT

J.L. DECKER

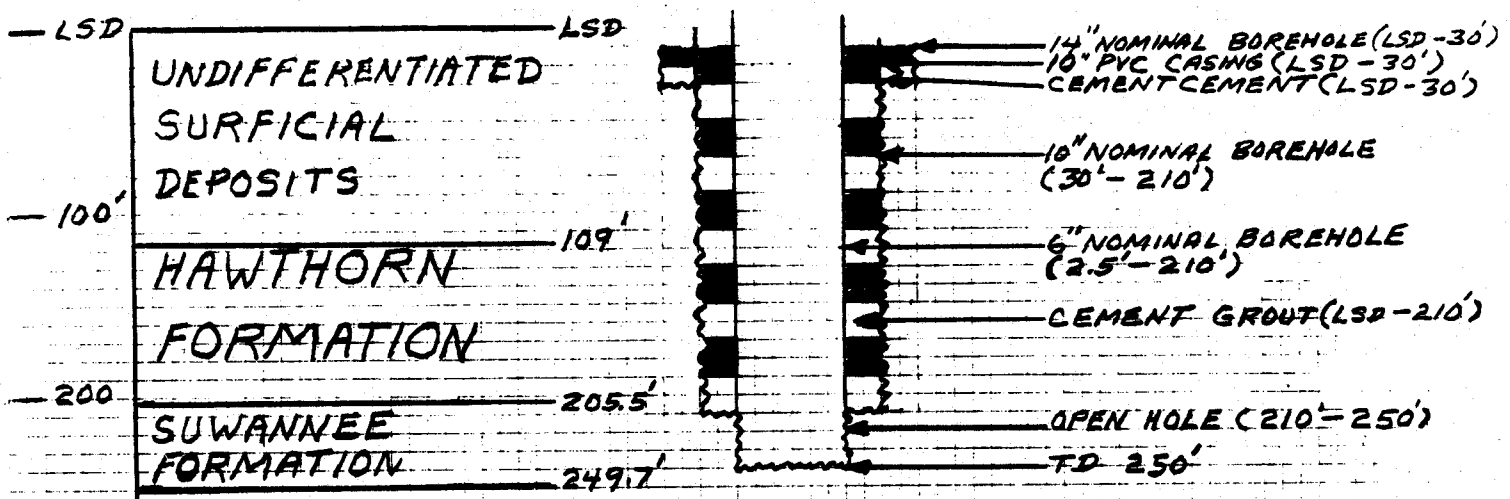


FIGURE 14

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LITHOLOGIC WELL LOG PRINTOUT SOURCE - SWFW

WELL NUMBER: W-16305 COUNTY - POLK
TOTAL DEPTH: 1200 FT. LOCATION: T.31S R.28E S.18 ba
SAMPLES - NONE LAT = 27D 47M 30S
LON = 81D 33M 38S
COMPLETION DATE: 11/02/87 ELEVATION: 121 FT
OTHER TYPES OF LOGS AVAILABLE - CALIPER, TEMPERATURE, GEOLOGIST, FLUID COND.,

OWNER/DRILLER:S.W.F.W.M.D. [ROMP #55] (COCA COLA FOODS)

WORKED BY:GREG HENDERSON
TEST COREHOLE--FAIR-GOOD CUTTINGS SAMPLES (LSD-81.5)
NO SAMPLES COLLECTED (81.5-113.5)
POOR-FAIR CORE SAMPLES (113.5-827.5)
HAWTHORN O.B.: GOOD SHELBY TUBE SAMPLES (109-113.6)
FLORIDAN O.B.: FAIR-GOOD CUTTINGS SAMPLES (800-1200)

0.	-	109.	112TRSD	TERRACE SANDS
81.5	-	113.5	000NOSM	NO SAMPLES
109.	-	206.	122HTRN	HAWTHORN GROUP
206.	-	250.	123SWNN	SUWANNEE LIMESTONE
250.	-	601.	124OCAL	OCALA GROUP
601.	-	1200.	124AVPK	AVON PARK FM.

0 - 2 SAND; DARK YELLOWISH BROWN TO BLACK
10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
UNCONSOLIDATED
CEMENT TYPE(S): ORGANIC MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: PEAT-08%, HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR, GREASY
FOSSILS: ORGANICS

2 - 9 SAND; YELLOWISH GRAY
12% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
UNCONSOLIDATED
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR
FOSSILS: NO FOSSILS

9 - 14 SAND; YELLOWISH GRAY TO YELLOWISH GRAY
14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-08%, HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR, MUDDY
FOSSILS: NO FOSSILS

14 - 16 SAND; YELLOWISH GRAY
12% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: HEAVY MINERALS-02%
OTHER FEATURES: FROSTED, GRANULAR
FOSSILS: NO FOSSILS

16 - 16.5 SAND; YELLOWISH GRAY TO YELLOWISH GRAY
14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-08%, HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR, MUDDY
FOSSILS: NO FOSSILS

16.5- 24.5 SAND; YELLOWISH GRAY TO VERY LIGHT ORANGE
12% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-04%, HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR, MUDDY
FOSSILS: NO FOSSILS

24.5- 26.5 SAND; LIGHT OLIVE GRAY TO VERY LIGHT ORANGE
14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; LOW SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-08%, HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR, MUDDY
FOSSILS: NO FOSSILS

26.5- 37 SAND; YELLOWISH GRAY TO VERY LIGHT ORANGE
14% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-06%, HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR, MUDDY
FOSSILS: NO FOSSILS

37 - 46.5 SAND; YELLOWISH GRAY TO VERY LIGHT ORANGE
10% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM

ROUNDNESS: SUB-ANGULAR TO ANGULAR; LOW SPHERICITY
POOR INDURATION
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR
FOSSILS: NO FOSSILS

46.5- 66.5 SAND; YELLOWISH GRAY TO VERY LIGHT ORANGE
12% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-03%, MICA-02%, HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR, MUDDY
FOSSILS: NO FOSSILS

66.5- 71.5 SAND; YELLOWISH GRAY
12% POROSITY: INTERGRANULAR
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-04%, MICA-01%, HEAVY MINERALS-01%
OTHER FEATURES: FROSTED, GRANULAR, MUDDY
FOSSILS: NO FOSSILS

71.5- 81.5 SAND; LIGHT OLIVE GRAY TO YELLOWISH GRAY
12% POROSITY: INTERGRANULAR
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO MEDIUM
ROUNDNESS: SUB-ANGULAR TO ANGULAR; MEDIUM SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CLAY-03%, IRON STAIN-01%
OTHER FEATURES: FROSTED, GRANULAR, MUDDY
FOSSILS: NO FOSSILS

81.5- 109 NO SAMPLES

109 - 110.1 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
02% POROSITY: MOLDIC, LOW PERMEABILITY; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: GRADED BEDDING, BIOTURBATED
ACCESSORY MINERALS: QUARTZ-02%, PHOSPHATIC GRAVEL-01%
QUARTZ SAND-10%
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

110.1- 113.1 NO SAMPLES

113.1- 117.5 CLAY; DARK GREENISH GRAY TO DARK GREENISH GRAY
02% POROSITY: MOLDIC, LOW PERMEABILITY; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: GRADED BEDDING, BIOTURBATED

ACCESSORY MINERALS: QUARTZ-02%, PHOSPHATIC GRAVEL-01%
QUARTZ SAND-10%
OTHER FEATURES: CALCAREOUS
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

117.5- 123.5 SAND; VERY LIGHT GRAY
30% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: COARSE; RANGE: FINE TO COARSE
MEDIUM SPHERICITY; UNCONSOLIDATED
CEMENT TYPE(S): CLAY MATRIX
ACCESSORY MINERALS: CLAY-02%, PHOSPHATIC SAND-02%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED

123.5- 128.5 SAND; MODERATE GRAYISH GREEN TO VERY LIGHT GRAY
22% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MEDIUM SPHERICITY; UNCONSOLIDATED
CEMENT TYPE(S): CLAY MATRIX
ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC SAND-01%
OTHER FEATURES: CALCAREOUS, GRANULAR, SPECKLED

128.5- 129.5 SANDSTONE; MODERATE GRAYISH GREEN TO GRAYISH OLIVE GREEN
10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: FINE; RANGE: VERY FINE TO COARSE
MEDIUM SPHERICITY; MODERATE INDURATION
CEMENT TYPE(S): SILICIC CEMENT, CLAY MATRIX
ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC SAND-02%
OTHER FEATURES: GRANULAR, SPECKLED

129.5- 130.2 SANDSTONE; LIGHT OLIVE GRAY TO VERY LIGHT GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
MEDIUM SPHERICITY; GOOD INDURATION
CEMENT TYPE(S): SILICIC CEMENT, CLAY MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED, INTERBEDDED, MOTTLED NODULAR
ACCESSORY MINERALS: CLAY-08%, PHOSPHATIC GRAVEL-10%
OTHER FEATURES: GRANULAR, CALCAREOUS, SPECKLED

130.2- 131.6 SILT; VERY LIGHT GRAY
15% POROSITY: MOLDIC, VUGULAR, LOW PERMEABILITY
GOOD INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BIOTURBATED
ACCESSORY MINERALS: CLAY-08%, PHOSPHATIC SAND-02%
QUARTZ SAND-01%
OTHER FEATURES: CALCAREOUS, SPECKLED
FOSSILS: WORM TRACES, MOLLUSKS
MUDSTONE

131.6- 136.4 SANDSTONE; LIGHT OLIVE GRAY TO VERY LIGHT GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
LOW SPHERICITY; GOOD INDURATION
CEMENT TYPE(S): CLAY MATRIX, PHOSPHATE CEMENT
ACCESSORY MINERALS: CLAY-13%, PHOSPHATIC SAND-18%

OTHER FEATURES: CALCAREOUS, SPECKLED

136.4- 143.5 SILT; VERY LIGHT GRAY TO LIGHT OLIVE GRAY
05% POROSITY: MOLDIC, FRACTURE, LOW PERMEABILITY
GOOD INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED, INTERBEDDED
BIOTURBATED
ACCESSORY MINERALS: CLAY-05%, PHOSPHATIC SAND-02%
PHOSPHATIC GRAVEL-01%
OTHER FEATURES: SPECKLED
FOSSILS: MOLLUSKS
MUDSTONE

143.5- 144.5 CLAY; YELLOWISH GRAY TO OLIVE GRAY
POROSITY: NOT OBSERVED; GOOD INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MOTTLED, BIOTURBATED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC GRAVEL-02%
PHOSPHATIC SAND-10%
OTHER FEATURES: SPECKLED, VARIEGATED, WEATHERED
FOSSILS: NO FOSSILS

144.5- 146.2 CLAY; VERY LIGHT GRAY TO LIGHT GRAYISH GREEN
POROSITY: NOT OBSERVED; GOOD INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: MOTTLED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC GRAVEL-04%
PHOSPHATIC SAND-10%
OTHER FEATURES: SPECKLED, VARIEGATED, WEATHERED
FOSSILS: MOLLUSKS

146.2- 147.2 SILT; VERY LIGHT ORANGE TO LIGHT BROWNISH GRAY
18% POROSITY: MOLDIC, FRACTURE, POSSIBLY HIGH PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BIOTURBATED
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC GRAVEL-01%
PHOSPHATIC SAND-10%, CLAY-10%
OTHER FEATURES: SPECKLED, VARIEGATED, WEATHERED
FOSSILS: MOLLUSKS, FOSSIL MOLDS

147.2- 150.8 SILT; VERY LIGHT GRAY TO LIGHT GRAY
10% POROSITY: FRACTURE, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BIOTURBATED, NODULAR
ACCESSORY MINERALS: PHOSPHATIC SAND-12%
PHOSPHATIC GRAVEL-03%, CLAY-12%
OTHER FEATURES: SPECKLED
FOSSILS: MOLLUSKS, WORM TRACES, FOSSIL MOLDS

150.8- 151.3 DOLOSTONE; LIGHT GRAY TO LIGHT BLUISH GRAY
05% POROSITY: FRACTURE, LOW PERMEABILITY; 10-50% ALTERED
ANHEDRAL
GRAIN SIZE: CRYPTOCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE

GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC SAND-10%
FOSSILS: NO FOSSILS

151.3- 152.8 SILT; VERY LIGHT GRAY TO LIGHT OLIVE
15% POROSITY: MOLDIC, FRACTURE, POSSIBLY HIGH PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BIOTURBATED, BRECCIATED
INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-01%, PHOSPHATIC SAND-15%
OTHER FEATURES: SPECKLED, CALCAREOUS, DOLOMITIC
FOSSILS: MOLLUSKS, WORM TRACES, FOSSIL MOLDS
MUDSTONE

152.8- 153.5 DOLOSTONE; LIGHT GRAY TO LIGHT BLUISH GRAY
03% POROSITY: FRACTURE, LOW PERMEABILITY; 10-50% ALTERED
ANHEDRAL
GRAIN SIZE: CRYPTOCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, PHOSPHATIC SAND-02%
FOSSILS: NO FOSSILS

153.5- 154.2 SILT; LIGHT GRAY TO YELLOWISH GRAY
06% POROSITY: FRACTURE, MOLDIC, LOW PERMEABILITY
GOOD INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC SAND-05%
PHOSPHATIC GRAVEL-02%, CALCITE-01%
OTHER FEATURES: SPECKLED
FOSSILS: MOLLUSKS
MUDSTONE

154.2- 158.5 DOLOSTONE; LIGHT GRAY
03% POROSITY: VUGULAR, FRACTURE, LOW PERMEABILITY
10-50% ALTERED; ANHEDRAL
GRAIN SIZE: CRYPTOCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, PHOSPHATIC SAND-03%
FOSSILS: MOLLUSKS

158.5- 159 SILT-SIZE DOLOMITE; VERY LIGHT ORANGE TO LIGHT OLIVE GRAY
05% POROSITY: MOLDIC, INTERGRANULAR, LOW PERMEABILITY
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%, PHOSPHATIC SAND-02%
CALCITE-01%

OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS

159 - 160 LIMESTONE; VERY LIGHT ORANGE TO VERY LIGHT GRAY
18% POROSITY: MOLDIC, FRACTURE, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CRYSTALS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: SPAR-02%, PHOSPHATIC SAND-10%
CALCILUTITE-30%
FOSSILS: MOLLUSKS

160 - 163.5 LIMESTONE; VERY LIGHT GRAY TO VERY LIGHT ORANGE
15% POROSITY: MOLDIC, INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: CALCILUTITE-30%, PHOSPHATIC SAND-10%
PHOSPHATIC GRAVEL-01%
OTHER FEATURES: CHALKY, SPECKLED
FOSSILS: MOLLUSKS

163.5- 168.2 DOLOSTONE; VERY LIGHT GRAY TO LIGHT GRAY
10% POROSITY: MOLDIC, VUGULAR, LOW PERMEABILITY
10-50% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED, MOTTLED, BIOTURBATED
ACCESSORY MINERALS: LIMESTONE-10%, PHOSPHATIC SAND-02%
CALCITE-01%
OTHER FEATURES: REEFAL
FOSSILS: CORAL, BARNACLES, MOLLUSKS, WORM TRACES
FOSSIL MOLDS

168.2- 173.5 DOLOSTONE; VERY LIGHT GRAY TO LIGHT GRAY
15% POROSITY: MOLDIC, VUGULAR, POSSIBLY HIGH PERMEABILITY
10-50% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: LIMESTONE-15%, PHOSPHATIC SAND-01%
SPAR-01%
OTHER FEATURES: REEFAL
FOSSILS: CORAL, BARNACLES, MOLLUSKS, WORM TRACES
FOSSIL MOLDS

173.5- 174.1 LIMESTONE; VERY LIGHT ORANGE TO VERY LIGHT GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION

CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY
FOSSILS: MOLLUSKS

174.1- 175.1 SILT; LIGHT GRAY TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX, PHOSPHATE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-15%, PHOSPHATIC SAND-30%
OTHER FEATURES: SPECKLED, CALCAREOUS
FOSSILS: WORM TRACES, MOLLUSKS

175.1- 175.4 DOLOSTONE; LIGHT OLIVE GRAY
POROSITY: NOT OBSERVED; 10-50% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%
FOSSILS: NO FOSSILS

175.4- 176.2 CLAY; MODERATE GRAY TO DARK YELLOWISH BROWN
05% POROSITY: INTERGRANULAR, VUGULAR, LOW PERMEABILITY
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-30%, PHOSPHATIC SAND-15%
QUARTZ SAND-05%, PHOSPHATIC GRAVEL-03%
OTHER FEATURES: CALCAREOUS, DOLOMITIC
FOSSILS: MOLLUSKS

176.2- 178.5 LIMESTONE; LIGHT BLUISH GRAY TO YELLOWISH GRAY
20% POROSITY: MOLDIC, FRACTURE, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED, BIOTURBATED
ACCESSORY MINERALS: SPAR-02%
FOSSILS: MOLLUSKS, BARNACLES, FOSSIL MOLDS

178.5- 181 LIMESTONE; PINKISH GRAY TO LIGHT GRAY
20% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: FINE; RANGE: MICROCRYSTALLINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: CLAY-02%, PHOSPHATIC SAND-10%
PHOSPHATIC GRAVEL-02%, QUARTZ SAND-01%
OTHER FEATURES: GRANULAR, SPECKLED
FOSSILS: MOLLUSKS, WORM TRACES, FOSSIL MOLDS

181 - 183.5 LIMESTONE; LIGHT GRAY TO PINKISH GRAY
05% POROSITY: FRACTURE, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: CALCITE-01%, CLAY-02%
PHOSPHATIC SAND-02%, QUARTZ SAND-01%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, WORM TRACES, CORAL, FOSSIL MOLDS

183.5- 185 CALCILUTITE; VERY LIGHT GRAY TO LIGHT OLIVE GRAY
10% POROSITY: MOLDIC, VUGULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: SPAR-02%, DOLOMITE-01%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL MOLDS

185 - 185.7 CALCILUTITE; VERY LIGHT GRAY TO LIGHT OLIVE GRAY
25% POROSITY: MOLDIC, FRACTURE, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: SPAR-01%, DOLOMITE-01%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS

185.7- 188.5 CALCILUTITE; LIGHT BLUISH GRAY TO LIGHT GRAY
05% POROSITY: MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, INTRACLASTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BRECCIATED, INTERBEDDED, NODULAR
ACCESSORY MINERALS: DOLOMITE-10%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL MOLDS, WORM TRACES
FOSSIL FRAGMENTS

188.5- 190 LIMESTONE; VERY LIGHT GRAY TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: INTRACLASTS, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, PHOSPHATE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: PHOSPHATIC SAND-15%, QUARTZ SAND-30%
PHOSPHATIC GRAVEL-02%, CLAY-05%

OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL MOLDS

190 - 193.5 SANDSTONE; LIGHT GRAY TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
ROUNDNESS: ANGULAR TO SUB-ANGULAR; LOW SPHERICITY
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SILICIC CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-08%, CALCILUTITE-15%
PHOSPHATIC SAND-10%
OTHER FEATURES: CALCAREOUS, DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL MOLDS

193.5- 195.5 SANDSTONE; GRAYISH GREEN TO DARK GREENISH GRAY
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
ROUNDNESS: ANGULAR TO SUB-ANGULAR; LOW SPHERICITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: GRADED BEDDING, INTERBEDDED
ACCESSORY MINERALS: CLAY-30%, PHOSPHATIC SAND-03%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

195.5- 198.3 DOLOSTONE; LIGHT OLIVE GRAY
05% POROSITY: VUGULAR, MOLDIC, LOW PERMEABILITY
50-90% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-01%
PHOSPHATIC GRAVEL-01%
FOSSILS: MOLLUSKS, FOSSIL MOLDS

198.3- 199 DOLOSTONE; LIGHT OLIVE GRAY
05% POROSITY: FRACTURE, VUGULAR, LOW PERMEABILITY
10-50% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, QUARTZ SAND-02%
PHOSPHATIC SAND-01%
FOSSILS: NO FOSSILS
CLAY-FILLED VUGS NEAR THE BOTTOM OF THE SECTION.

199 - 203.5 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT ORANGE
15% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION

CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, GRADED BEDDING
ACCESSORY MINERALS: CLAY-10%
FOSSILS: MOLLUSKS, FOSSIL MOLDS

203.5- 205.5 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT ORANGE
20% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
PIN POINT VUGS
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-03%
OTHER FEATURES: GRANULAR
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

205.5- 210.6 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT ORANGE
20% POROSITY: INTERGRANULAR, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-03%
OTHER FEATURES: GRANULAR
FOSSILS: MOLLUSKS

210.6- 210.8 LIMESTONE; YELLOWISH GRAY
05% POROSITY: MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
FOSSILS: MOLLUSKS, FOSSIL MOLDS

210.8- 211.2 CALCARENITE; VERY LIGHT ORANGE
30% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR, COQUINA
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS

211.2- 214 CALCARENITE; VERY LIGHT GRAY TO YELLOWISH GRAY
05% POROSITY: MOLDIC, INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: PHOSPHATIC SAND-05%

FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS

214 - 216.5 CALCARENITE; VERY LIGHT ORANGE TO LIGHT OLIVE GRAY
25% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: PHOSPHATIC SAND-01%
OTHER FEATURES: COQUINA, GRANULAR
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS

216.5- 216.7 CALCARENITE; LIGHT GRAY TO VERY LIGHT ORANGE
10% POROSITY: MOLDIC, INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: SPAR-05%
FOSSILS: MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS

216.7- 220 LIMESTONE; VERY LIGHT ORANGE TO LIGHT GRAY
23% POROSITY: MOLDIC, INTRAGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, GRADED BEDDING
OTHER FEATURES: COQUINA
FOSSILS: MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS

220 - 228.5 CALCARENITE; VERY LIGHT ORANGE
28% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, GRADED BEDDING
OTHER FEATURES: GRANULAR
FOSSILS: MOLLUSKS, FOSSIL MOLDS, FOSSIL FRAGMENTS

228.5- 229.6 CALCARENITE; VERY LIGHT ORANGE TO LIGHT GRAY
15% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
FOSSILS: MOLLUSKS, FOSSIL MOLDS

229.6- 234.3 LIMESTONE; LIGHT OLIVE GRAY

05% POROSITY: MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
FOSSILS: MOLLUSKS, FOSSIL MOLDS

234.3- 238.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: MOLDIC, INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: REEFAL
FOSSILS: MOLLUSKS, CORAL, ECHINOID, FOSSIL MOLDS

238.5- 243.5 CALCARENITE; VERY LIGHT ORANGE
20% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: GRANULAR, REEFAL
FOSSILS: MOLLUSKS, CORAL, FOSSIL MOLDS

243.5- 246.1 CALCILUTITE; YELLOWISH GRAY
08% POROSITY: MOLDIC, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
FOSSILS: MOLLUSKS, WORM TRACES, FOSSIL MOLDS, CORAL

246.1- 248.5 CALCARENITE; YELLOWISH GRAY
15% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: MEDIUM RECRYSTALLIZATION
FOSSILS: MOLLUSKS, WORM TRACES, FOSSIL MOLDS, CORAL

248.5- 262.9 CALCARENITE; VERY LIGHT ORANGE
12% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
FOSSILS: MOLLUSKS

262.9- 278.5 CALCARENITE; VERY LIGHT ORANGE
15% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: GRANULAR
FOSSILS: MOLLUSKS, FOSSIL MOLDS, ECHINOID
BENTHIC FORAMINIFERA
LEPIDOCYCLINA, OPERCULINOIDES; FRIABLE, SOFT.

278.5- 293.5 CALCARENITE; VERY LIGHT ORANGE
18% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL MOLDS
FOSSIL FRAGMENTS
LEPIDOCYCLINA, OPERCULINOIDES; SOFT CALCARENITE.

293.5- 302.2 CALCARENITE; VERY LIGHT ORANGE
20% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-01%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL MOLDS
FOSSIL FRAGMENTS

302.2- 302.3 CALCARENITE; VERY LIGHT ORANGE TO LIGHT BLUISH GRAY
15% POROSITY: MOLDIC, INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL MOLDS
FOSSIL FRAGMENTS

302.3- 313.5 CALCARENITE; VERY LIGHT ORANGE
17% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR, CHALKY

FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL MOLDS
FOSSIL FRAGMENTS

313.5- 328.5 CALCARENITE; VERY LIGHT ORANGE
05% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
ACCESSORY MINERALS: CLAY-06%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS

328.5- 333.5 CALCARENITE; VERY LIGHT ORANGE
10% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY, MEDIUM RECRYSTALLIZATION, VARVED
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS

333.5- 343.5 CLAY; VERY LIGHT ORANGE
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED
ACCESSORY MINERALS: LIMESTONE-20%
OTHER FEATURES: CHALKY, PLASTIC, CALCAREOUS, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS
CLAY MATRIX WITH LIMESTONE AND FOSSIL FRAGMENTS

343.5- 349 CALCARENITE; VERY LIGHT ORANGE
04% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

349 - 353.5 CLAY; VERY LIGHT ORANGE
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED
ACCESSORY MINERALS: LIMESTONE-25%
OTHER FEATURES: CHALKY, PLASTIC, CALCAREOUS, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL FRAGMENTS
LEPIDOCYCLINA, OPERCULINOIDES.

353.5- 354 CALCARENITE; VERY LIGHT ORANGE
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE

POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-15%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

354 - 358.5 CLAY; VERY LIGHT ORANGE
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BRECCIATED
ACCESSORY MINERALS: LIMESTONE-25%
OTHER FEATURES: CALCAREOUS, CHALKY, PLASTIC, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

358.5- 359.7 CALCARENITE; VERY LIGHT ORANGE
03% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-15%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

359.7- 363.5 CLAY; VERY LIGHT ORANGE TO MODERATE DARK GRAY
02% POROSITY: INTERGRANULAR, LOW PERMEABILITY
POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: LAMINATED
ACCESSORY MINERALS: LIMESTONE-28%
OTHER FEATURES: CALCAREOUS, CHALKY, PLASTIC, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
OPERCULINOIDES AND LEPIDOCYCLINA.

363.5- 370.2 CALCARENITE; VERY LIGHT ORANGE
15% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
ACCESSORY MINERALS: CLAY-14%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

370.2- 373.5 CLAY; LIGHT GRAY TO LIGHT BLUISH GRAY
POROSITY: NOT OBSERVED; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
OTHER FEATURES: PLASTIC, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

373.5- 398.5 CALCARENITE; VERY LIGHT ORANGE
15% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX

ACCESSORY MINERALS: CLAY-13%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: ECHINOID, FOSSIL FRAGMENTS
OPERCULINOIDES AND LEPIDOCYCLINA

398.5- 399.5 CALCARENITE; VERY LIGHT ORANGE
18% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-12%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

399.5- 408.5 LIMESTONE; VERY LIGHT ORANGE
05% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: VERY FINE TO MICROCRYSTALLINE; UNCONSOLIDATED
ACCESSORY MINERALS: CLAY-30%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

408.5- 409.2 CALCARENITE; VERY LIGHT ORANGE
10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS, BRYOZOA

409.2- 413.5 LIMESTONE; VERY LIGHT ORANGE
05% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, INTRACLASTS
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; UNCONSOLIDATED
ACCESSORY MINERALS: CLAY-30%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS, BRYOZOA
ABUNDANT LEPIDOCYCLINA AND OPERCULINOIDES.

413.5- 423.5 CALCARENITE; VERY LIGHT ORANGE
11% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS, BRYOZOA

423.5- 423.6 CALCARENITE; VERY LIGHT ORANGE
05% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, INTRACLASTS
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-20%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

423.6- 423.7 LIMESTONE; VERY LIGHT ORANGE
08% POROSITY: MOLDIC, INTERCRYSTALLINE
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO MICROCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-02%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL MOLDS

423.7- 434.2 CALCARENITE; VERY LIGHT ORANGE
10% POROSITY: INTERGRANULAR, VUGULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-15%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

434.2- 443.5 CALCILUTITE; VERY LIGHT ORANGE
10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO VERY FINE; MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: GRADED BEDDING
ACCESSORY MINERALS: CLAY-15%
OTHER FEATURES: CHALKY, WEATHERED
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
LEPODOCYCLINA AND OPERCULINOIDES.

443.5- 445.3 CALCARENITE; VERY LIGHT ORANGE TO MODERATE DARK GRAY
12% POROSITY: INTERGRANULAR, VUGULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED, GRADED BEDDING
ACCESSORY MINERALS: CLAY-15%, DOLOMITE-02%
OTHER FEATURES: WEATHERED, DOLOMITIC
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS

WORM TRACES

445.3- 446.7 CALCILUTITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: MOLDIC, INTERCRYSTALLINE, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
ACCESSORY MINERALS: DOLOMITE-02%, CLAY-05%
OTHER FEATURES: DOLOMITIC
FOSSILS: BENTHIC FORAMINIFERA, MOLLUSKS, FOSSIL MOLDS
SORITES(FORAMINIFERA).

446.7- 448.8 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
07% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%
FOSSILS: MOLLUSKS, FOSSIL MOLDS

448.8- 459.2 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-05%, CALCITE-01%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

459.2- 459.7 CALCILUTITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
05% POROSITY: INTERCRYSTALLINE, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCITE-02%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

459.7- 468.5 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: CALCITE-01%, CLAY-05%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS

468.5- 468.9 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
12% POROSITY: INTERGRANULAR, VUGULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED
ACCESSORY MINERALS: CLAY-05%
OTHER FEATURES: DOLOMITIC
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
WORM TRACES

468.9- 478.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
19% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: DOLOMITE-10%
OTHER FEATURES: DOLOMITIC, GRANULAR
FOSSILS: MOLLUSKS, ECHINOID, MILIOLIDS, FOSSIL FRAGMENTS
ECHINOIDS; PERONELLA DALLI.

478.5- 483.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
20% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: DOLOMITE-06%
OTHER FEATURES: DOLOMITIC, GRANULAR
FOSSILS: MOLLUSKS, ECHINOID, MILIOLIDS, FOSSIL FRAGMENTS

483.5- 503 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
18% POROSITY: MOLDIC, INTERGRANULAR
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: GRANULAR
FOSSILS: MOLLUSKS, ECHINOID, MILIOLIDS, FOSSIL FRAGMENTS

503 - 508.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, INTRACLASTS
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: GRANULAR

FOSSILS: ECHINOID, MILIOLIDS, FOSSIL FRAGMENTS
ECHINOIDS; PERONELLA DALLI; FINER GRAINED NEAR BOTTOM OF SECTION.

508.5- 513.5 LIMESTONE; VERY LIGHT ORANGE
10% POROSITY: MOLDIC, 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: CLAY-05%
OTHER FEATURES: CHALKY
FOSSILS: ECHINOID, FOSSIL FRAGMENTS, FOSSIL MOLDS

513.5- 516 CALCARENITE; VERY LIGHT ORANGE
15% POROSITY: INTERGRANULAR, VUGULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-01%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, FOSSIL FRAGMENTS, FOSSIL MOLDS
ALTERNATING THIN LAYERS OF CLAY AND CALCARENITE.

516 - 523.5 CALCILUTITE; LIGHT GRAY
05% POROSITY: PIN POINT VUGS, LOW PERMEABILITY, MOLDIC
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: CRYPTOCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED
ACCESSORY MINERALS: CLAY-01%
OTHER FEATURES: CHALKY
FOSSILS: ECHINOID, FOSSIL FRAGMENTS, FOSSIL MOLDS

523.5- 528.5 CALCARENITE; VERY LIGHT ORANGE TO LIGHT GRAY
10% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE, BIOGENIC
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: GRADED BEDDING
ACCESSORY MINERALS: CLAY-04%
OTHER FEATURES: CHALKY
FOSSILS: ECHINOID, FOSSIL FRAGMENTS, FOSSIL MOLDS

528.5- 538.5 CALCARENITE; VERY LIGHT ORANGE
14% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: GRANULAR

FOSSILS: ECHINOID, MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS
WORM TRACES

538.5- 548.5 CALCARENITE; VERY LIGHT ORANGE
11% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%, SILT-02%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: ECHINOID, MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS

548.5- 550.8 CALCARENITE; VERY LIGHT ORANGE
15% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: GRANULAR
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, ECHINOID, FOSSIL MOLDS

550.8- 553.5 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH BROWN
15% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS
ABUNDANT PERONELLA DALLI.

553.5- 558.5 CALCARENITE; VERY LIGHT ORANGE TO LIGHT OLIVE GRAY
12% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, FOSSIL FRAGMENTS
PERONELLA DALLI.

558.5- 561.6 CALCARENITE; LIGHT GRAY TO LIGHT OLIVE GRAY
14% POROSITY: INTERGRANULAR, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: GRANULAR

FOSSILS: ECHINOID, FOSSIL FRAGMENTS, FOSSIL MOLDS

561.6- 564.1 CALCILUTITE; VERY LIGHT ORANGE
04% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: SILT-03%
OTHER FEATURES: CHALKY
FOSSILS: NO FOSSILS

564.1- 565.3 CALCARENITE; LIGHT OLIVE GRAY TO VERY LIGHT ORANGE
15% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, FOSSIL FRAGMENTS, FOSSIL MOLDS

565.3- 566.6 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: CHALKY
FOSSILS: NO FOSSILS

566.6- 567.1 CALCARENITE; VERY LIGHT ORANGE
12% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: GRANULAR
FOSSILS: CONES, FOSSIL FRAGMENTS
CONES

567.1- 569.5 CALCILUTITE; VERY LIGHT ORANGE
02% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED, LAMINATED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: CHALKY
FOSSILS: CONES, FOSSIL FRAGMENTS

569.5- 573.5 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH BROWN
15% POROSITY: INTERGRANULAR, VUGULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE

GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED, BIOTURBATED
ACCESSORY MINERALS: CLAY-05%
OTHER FEATURES: CHALKY, GRANULAR
FOSSILS: MOLLUSKS, MILIOLIDS, FOSSIL FRAGMENTS, ORGANICS
ORGANICS, LAMINATIONS.

573.5- 578.5 CALCARENITE; VERY LIGHT ORANGE TO LIGHT OLIVE GRAY
10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED, BIOTURBATED, LAMINATED
ACCESSORY MINERALS: CLAY-08%
OTHER FEATURES: CHALKY, GRANULAR
FOSSILS: MOLLUSKS, MILIOLIDS, FOSSIL FRAGMENTS, ORGANICS

578.5- 583.5 CALCARENITE; YELLOWISH GRAY
08% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; GOOD INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED
ACCESSORY MINERALS: CLAY-05%
OTHER FEATURES: WEATHERED
FOSSILS: MOLLUSKS, ECHINOID, FOSSIL FRAGMENTS, FOSSIL MOLDS

583.5- 585.1 CALCARENITE; VERY LIGHT ORANGE
17% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR
FOSSILS: MILIOLIDS, WORM TRACES

585.1- 594.2 CALCARENITE; VERY LIGHT ORANGE
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%
FOSSILS: ECHINOID, FOSSIL FRAGMENTS

594.2- 595.2 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH BROWN
05% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE

MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-15%
OTHER FEATURES: CHALKY
FOSSILS: BENTHIC FORAMINIFERA

595.2- 598.5 CLAY; LIGHT OLIVE GRAY TO VERY LIGHT ORANGE
POROSITY: NOT OBSERVED; MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED
ACCESSORY MINERALS: LIMESTONE-10%
OTHER FEATURES: CALCAREOUS
FOSSILS: NO FOSSILS

598.5- 599.5 CALCARENITE; YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS

599.5- 603.6 CALCARENITE; VERY LIGHT ORANGE
09% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED
ACCESSORY MINERALS: CLAY-08%
OTHER FEATURES: GRANULAR
FOSSILS: MILIOLIDS

603.6- 604.1 CLAY; VERY LIGHT ORANGE
POROSITY: NOT OBSERVED; POOR INDURATION
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-15%
FOSSILS: NO FOSSILS

604.1- 608.5 LIMESTONE; VERY LIGHT ORANGE
03% POROSITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-03%
FOSSILS: NO FOSSILS

608.5- 609 CALCARENITE; YELLOWISH GRAY
10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE

GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR
FOSSILS: MILIOLIDS

609 - 613.5 CLAY; VERY LIGHT ORANGE TO YELLOWISH GRAY
POROSITY: NOT OBSERVED; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, IRON CEMENT
ACCESSORY MINERALS: LIMESTONE-05%
OTHER FEATURES: PLASTIC
FOSSILS: NO FOSSILS

613.5- 614.6 CALCARENITE; YELLOWISH GRAY
07% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-03%
OTHER FEATURES: GRANULAR
FOSSILS: ECHINOID, FOSSIL FRAGMENTS, MILIOLIDS
ECHINOIDS(PERONELLA DALLI).

614.6- 621 CALCARENITE; YELLOWISH GRAY TO VERY LIGHT ORANGE
10% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED
ACCESSORY MINERALS: CLAY-10%, CALCILUTITE-10%
OTHER FEATURES: GRANULAR
FOSSILS: BENTHIC FORAMINIFERA, ORGANICS

621 - 623.5 LIMESTONE; VERY LIGHT ORANGE TO OLIVE GRAY
05% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED
OTHER FEATURES: VARIEGATED, WEATHERED
FOSSILS: NO FOSSILS

623.5- 628.5 CALCARENITE; VERY LIGHT ORANGE
15% POROSITY: INTERGRANULAR, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED

ACCESSORY MINERALS: CLAY-05%
OTHER FEATURES: GRANULAR, CHALKY, WEATHERED
FOSSILS: ECHINOID, MILIOLIDS, MOLLUSKS

628.5- 630 CALCARENITE; VERY LIGHT ORANGE TO VERY LIGHT GRAY
10% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED, LAMINATED
ACCESSORY MINERALS: CLAY-07%
OTHER FEATURES: GRANULAR, CHALKY, WEATHERED
FOSSILS: MILIOLIDS, MOLLUSKS

630 - 633.5 CLAY; LIGHT GRAY
02% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
GOOD INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: LIMESTONE-30%
OTHER FEATURES: WEATHERED
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS
ORGANIC LAMINATIONS, GRAY CLAY INTERBEDDED WITH
CALCARENITE.

633.5- 634 CALCARENITE; LIGHT OLIVE GRAY
22% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: GRANULAR
FOSSILS: CONES, MILIOLIDS, ECHINOID, WORM TRACES
FOSSIL FRAGMENTS
FORAMINIFERA (DICTYCONOUS COOKEI).

634 - 638.5 CALCARENITE; VERY LIGHT ORANGE
16% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-03%
OTHER FEATURES: GRANULAR
FOSSILS: CONES, MILIOLIDS, ECHINOID, FOSSIL FRAGMENTS
DICTYOCONUS COOKEI, PERONELLA DALLI AND PELECYPODA.

638.5- 643.5 CALCARENITE; VERY LIGHT ORANGE
12% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM

MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-03%
OTHER FEATURES: GRANULAR
FOSSILS: CONES, MILIOLIDS, FOSSIL FRAGMENTS

643.5- 651 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
19% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: GRANULAR
FOSSILS: CONES, MILIOLIDS, MOLLUSKS, FOSSIL FRAGMENTS
DICTYCONUS COOKEI

651 - 651.1 LIMESTONE; MODERATE LIGHT GRAY
05% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, MILIOLIDS

651.1- 658.5 CALCARENITE; VERY LIGHT ORANGE
20% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: MEDIUM; RANGE: FINE TO COARSE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: GRANULAR
FOSSILS: CONES, MOLLUSKS, MILIOLIDS, FOSSIL FRAGMENTS

658.5- 668.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
20% POROSITY: INTERGRANULAR, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-08%
OTHER FEATURES: GRANULAR
FOSSILS: CONES, MOLLUSKS, MILIOLIDS, FOSSIL FRAGMENTS
WORM TRACES

668.5- 673.5 CALCARENITE; YELLOWISH GRAY TO LIGHT GRAY
15% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM

MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED, LAMINATED
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: GRANULAR
FOSSILS: CONES, MOLLUSKS, MILIOLIDS, FOSSIL FRAGMENTS
CLAY STRINGERS; ORGANIC LAMINATIONS.

673.5- 683.5 CALCARENITE; VERY LIGHT ORANGE
10% POROSITY: INTERGRANULAR, LOW PERMEABILITY
PIN POINT VUGS
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY
FOSSILS: CONES, MOLLUSKS, MILIOLIDS, FOSSIL FRAGMENTS

683.5- 688.5 CALCILUTITE; LIGHT OLIVE GRAY TO VERY LIGHT ORANGE
06% POROSITY: VUGULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: GRADED BEDDING
ACCESSORY MINERALS: CLAY-12%, DOLOMITE-02%
OTHER FEATURES: DOLOMITIC, CHALKY, VARIEGATED, WEATHERED
FOSSILS: ALGAE, ORGANICS

688.5- 689.2 CALCARENITE; VERY LIGHT ORANGE
10% POROSITY: INTERGRANULAR, PIN POINT VUGS
LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-01%
OTHER FEATURES: DOLOMITIC, GRANULAR
FOSSILS: CONES, MOLLUSKS

689.2- 689.9 CLAY; VERY LIGHT ORANGE
POROSITY: NOT OBSERVED; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-10%
OTHER FEATURES: CALCAREOUS, PLASTIC, WEATHERED
FOSSILS: NO FOSSILS

689.9- 690.3 LIMESTONE; VERY LIGHT ORANGE
07% POROSITY: VUGULAR, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; MODERATE INDURATION

CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-02%, CLAY-02%
FOSSILS: MOLLUSKS

690.3- 690.7 SILT-SIZE DOLOMITE; YELLOWISH GRAY TO GRAYISH ORANGE
12% POROSITY: INTERCRYSTALLINE, POSSIBLY HIGH PERMEABILITY
UNCONSOLIDATED
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: GRADED BEDDING
OTHER FEATURES: GRANULAR, SUCROSIC
FOSSILS: NO FOSSILS

690.7- 693.5 DOLOSTONE; DARK YELLOWISH BROWN
05% POROSITY: INTERCRYSTALLINE, LOW PERMEABILITY
50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: SUCROSIC
FOSSILS: ECHINOID

693.5- 695.7 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
12% POROSITY: INTERCRYSTALLINE, MOLDIC
POSSIBLY HIGH PERMEABILITY; 50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: SUCROSIC
FOSSILS: ECHINOID, MOLLUSKS, FOSSIL MOLDS

695.7- 698.5 CALCILUTITE; WHITE TO VERY LIGHT GRAY
05% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-01%
OTHER FEATURES: CHALKY
FOSSILS: ECHINOID, FOSSIL MOLDS

698.5- 703.5 CLAY; WHITE
POROSITY: NOT OBSERVED; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: GRADED BEDDING
ACCESSORY MINERALS: CALCILUTITE-12%
OTHER FEATURES: CHALKY, WEATHERED, CALCAREOUS
FOSSILS: NO FOSSILS

703.5- 706.5 CALCILUTITE; WHITE TO VERY LIGHT ORANGE
02% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
GRAIN TYPE: CALCILUTITE
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION

CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: LAMINATED, BEDDED
ACCESSORY MINERALS: CLAY-10%
OTHER FEATURES: CHALKY, WEATHERED, VARIEGATED
FOSSILS: NO FOSSILS

706.5- 708.5 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
18% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: GRANULAR
FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA

708.5- 718.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
15% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR
FOSSILS: MOLLUSKS, ECHINOID

718.5- 720 DOLOSTONE; LIGHT OLIVE GRAY TO GRAYISH BROWN
12% POROSITY: MOLDIC, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY; 50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: SUCROSIC
FOSSILS: FOSSIL MOLDS

720 - 723.5 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
20% POROSITY: MOLDIC, VUGULAR, POSSIBLY HIGH PERMEABILITY
50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: SUCROSIC
FOSSILS: FOSSIL MOLDS

723.5- 737.5 CALCARENITE; VERY LIGHT ORANGE
08% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; POOR INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR

FOSSILS: MOLLUSKS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
FOSSIL MOLDS

737.5- 738.5 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
18% POROSITY: VUGULAR, 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: BEDDED
OTHER FEATURES: SUCROSIC
FOSSILS: MOLLUSKS

738.5- 748.1 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
08% POROSITY: PIN POINT VUGS, FRACTURE, LOW PERMEABILITY
50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED
OTHER FEATURES: SUCROSIC

748.1- 749 DOLOSTONE; LIGHT GRAY TO MODERATE LIGHT GRAY
07% POROSITY: FRACTURE, LOW PERMEABILITY; 50-90% ALTERED
ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-10%
FOSSILS: NO FOSSILS

749 - 751.5 DOLOSTONE; LIGHT OLIVE GRAY
05% POROSITY: FRACTURE, PIN POINT VUGS, LOW PERMEABILITY
50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED, MASSIVE
OTHER FEATURES: SUCROSIC
FOSSILS: ECHINOID

751.5- 752.5 DOLOSTONE; LIGHT OLIVE GRAY TO GRAYISH ORANGE
17% POROSITY: INTERGRANULAR, VUGULAR
POSSIBLY HIGH PERMEABILITY; 50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: GRANULAR, SUCROSIC
FOSSILS: NO FOSSILS

752.5- 754 DOLOSTONE; LIGHT OLIVE GRAY TO VERY LIGHT GRAY
10% POROSITY: PIN POINT VUGS, INTERGRANULAR
LOW PERMEABILITY; 50-90% ALTERED; ANHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE

GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
OTHER FEATURES: SUCROSIC
FOSSILS: NO FOSSILS

754 - 757.8 DOLOSTONE; LIGHT OLIVE GRAY TO VERY LIGHT GRAY
15% POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
50-90% ALTERED; SUBHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: SUCROSIC, GRANULAR
FOSSILS: NO FOSSILS

757.8- 759 DOLOSTONE; GRAYISH BROWN TO DARK YELLOWISH BROWN
12% POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
50-90% ALTERED; ANHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED, MASSIVE
OTHER FEATURES: SUCROSIC
FOSSILS: NO FOSSILS

759 - 764 DOLOSTONE; VERY LIGHT GRAY TO MODERATE YELLOWISH BROWN
15% POROSITY: FRACTURE, VUGULAR, POSSIBLY HIGH PERMEABILITY
50-90% ALTERED; ANHEDRAL
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: BEDDED, MASSIVE
ACCESSORY MINERALS: CLAY-02%
OTHER FEATURES: SUCROSIC
FOSSILS: NO FOSSILS

764 - 770.2 LIMESTONE; VERY LIGHT ORANGE TO VERY LIGHT GRAY
11% POROSITY: FRACTURE, INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): CLAY MATRIX
SEDIMENTARY STRUCTURES: BEDDED, STREAKED
ACCESSORY MINERALS: CLAY-07%
OTHER FEATURES: LOW RECRYSTALLIZATION, CHALKY, WEATHERED
FOSSILS: NO FOSSILS, ORGANICS

770.2- 775.1 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
18% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: BEDDED
ACCESSORY MINERALS: CLAY-02%

OTHER FEATURES: CHALKY, GRANULAR
FOSSILS: NO FOSSILS

775.1- 781 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
06% POROSITY: MOLDIC, LOW PERMEABILITY; 50-90% ALTERED
SUBHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: FINE TO MICROCRYSTALLINE; MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, INTERBEDDED, BRECCIATED
LAMINATED
ACCESSORY MINERALS: CALCITE-10%, CLAY-01%
OTHER FEATURES: GRANULAR, SUCROSIC, SPLINTERY
MEDIUM RECRYSTALLIZATION
FOSSILS: MOLLUSKS, FOSSIL MOLDS
MILIOLIDS COMMON, DICTYOCONUS COOKEI.

781 - 789 CALCARENITE; YELLOWISH GRAY TO YELLOWISH GRAY
14% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, BRECCIATED, MOTTLED
ACCESSORY MINERALS: DOLOMITE-02%, CALCILUTITE-04%, CLAY-02%
FELDSPAR-01%
OTHER FEATURES: GRANULAR, CHALKY, DOLOMITIC
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, BENTHIC FORAMINIFERA, MOLLUSKS
FOSSIL FRAGMENTS
BRECCIATED; MILIOLIDS; SPARRY CALCITE.

789 - 790 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
16% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, LAMINATED, MOTTLED
ACCESSORY MINERALS: DOLOMITE-02%, CLAY-03%
OTHER FEATURES: GRANULAR, CHALKY, LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
ORGANICS

790 - 804 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
05% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: DOLOMITE-02%, CLAY-03%
OTHER FEATURES: CHALKY, GREASY, LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS
MILIOLIDS; BROWN PEATY LAMINATIONS.

804 - 806 CALCARENITE; YELLOWISH GRAY TO YELLOWISH GRAY
06% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST

MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, BRECCIATED, LAMINATED
ACCESSORY MINERALS: CLAY-05%, DOLOMITE-02%
OTHER FEATURES: GRANULAR, CHALKY, LOW RECRYSTALLIZATION
GREASY
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS

806 - 809 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
08% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, BRECCIATED, LAMINATED
ACCESSORY MINERALS: DOLOMITE-02%, CLAY-02%
OTHER FEATURES: GRANULAR, CHALKY, MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS, FOSSIL MOLDS
MILIOLIDS; WEATHERING RIMS AROUND DOLOMITE BRECCIA.

809 - 813.6 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
16% POROSITY: INTERGRANULAR, MOLDIC
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, BRECCIATED, LAMINATED
ACCESSORY MINERALS: CLAY-08%, DOLOMITE-02%, SHALE-03%
OTHER FEATURES: GRANULAR, CHALKY, GREASY
LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, ORGANICS, FOSSIL FRAGMENTS

813.6- 814.4 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
09% POROSITY: INTERGRANULAR, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-06%, CLAY-02%
OTHER FEATURES: CHALKY, LOW RECRYSTALLIZATION
FOSSILS: NO FOSSILS
SOME BRECCIATION, LAMINATIONS, DOLOMITE LENSES.

814.4- 815.5 CALCARENITE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
16% POROSITY: INTERGRANULAR, MOLDIC, LOW PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, BRECCIATED, LAMINATED
ACCESSORY MINERALS: CLAY-08%, DOLOMITE-02%, SHALE-03%
OTHER FEATURES: GRANULAR, CHALKY, GREASY
LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, ORGANICS, FOSSIL FRAGMENTS

815.5- 824 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
12% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST

MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT
CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: SPAR-05%, CLAY-01%
OTHER FEATURES: GRANULAR, COQUINA, CHALKY
LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS, FOSSIL MOLDS

824 - 827.5 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
12% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT
CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE, INTERBEDDED
ACCESSORY MINERALS: SPAR-02%, CLAY-03%
OTHER FEATURES: GRANULAR, REEFAL, CHALKY
LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, ECHINOID, FOSSIL FRAGMENTS
FOSSIL MOLDS
SOME MILIOLIDS, ECHINOID TEST (PERONELLA DALLI).

827.5- 835 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
16% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: SPAR-02%, DOLOMITE-02%
OTHER FEATURES: GRANULAR, CHALKY, MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS, FOSSIL MOLDS

835 - 840 CALCARENITE; VERY LIGHT ORANGE TO YELLOWISH GRAY
12% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-09%, DOLOMITE-01%
OTHER FEATURES: GRANULAR, CHALKY, LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS, FOSSIL MOLDS

840 - 850 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH YELLOW
14% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELTAL CAST
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, SPARRY CALCITE CEMENT
CLAY MATRIX
SEDIMENTARY STRUCTURES: INTERBEDDED
ACCESSORY MINERALS: CALCILUTITE-10%, SPAR-03%
OTHER FEATURES: GRANULAR, CHALKY, SUCROSIC
LOW RECRYSTALLIZATION

FOSSILS: MILIOLIDS, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS
FOSSIL MOLDS

850 - 860 CALCARENITE; YELLOWISH GRAY TO GRAYISH YELLOW
17% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-10%, DOLOMITE-01%
OTHER FEATURES: GRANULAR, CHALKY, LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL FRAGMENTS, FOSSIL MOLDS

860 - 868 CALCARENITE; VERY LIGHT ORANGE TO GRAYISH YELLOW
18% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
CLAY MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-10%, DOLOMITE-02%
OTHER FEATURES: GRANULAR, CHALKY, LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL FRAGMENTS
FOSSIL MOLDS

868 - 877 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
03% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SILICIC CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%, QUARTZ-02%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION, GREASY
FOSSILS: FOSSIL MOLDS

877 - 883 DOLOSTONE; VERY LIGHT ORANGE TO MODERATE YELLOWISH BROWN
08% POROSITY: FRACTURE, POSSIBLY HIGH PERMEABILITY
50-90% ALTERED; EUHEDRAL
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MICROCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%, DOLOMITE-01%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY, SPECKLED
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

883 - 887 DOLOSTONE; VERY LIGHT ORANGE TO GRAYISH BROWN
05% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL

GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SILICIC CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-03%, QUARTZ-02%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: FOSSIL MOLDS

887 - 894 DOLOSTONE; DARK YELLOWISH BROWN TO LIGHT OLIVE BROWN
02% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SILICIC CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%, QUARTZ-01%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: FOSSIL MOLDS

894 - 898 DOLOSTONE; VERY LIGHT ORANGE TO LIGHT OLIVE BROWN
12% POROSITY: INTERGRANULAR, VUGULAR
POSSIBLY HIGH PERMEABILITY; 50-90% ALTERED; EUHEDRAL
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MICROCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-04%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY, SPECKLED
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, ECHINOID, FOSSIL FRAGMENTS
FOSSIL MOLDS

898 - 908 DOLOSTONE; MODERATE YELLOWISH BROWN TO DARK GRAYISH YELLOW
10% POROSITY: PIN POINT VUGS, VUGULAR, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%, DOLOMITE-01%
OTHER FEATURES: DOLOMITIC, SPLINTERY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, ECHINOID, FOSSIL FRAGMENTS
FOSSIL MOLDS

908 - 910 DOLOSTONE; YELLOWISH GRAY TO VERY LIGHT ORANGE
03% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE

GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

910 - 912 DOLOSTONE; MODERATE YELLOWISH BROWN TO DARK GRAYISH YELLOW
10% POROSITY: PIN POINT VUGS, VUGULAR, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

912 - 914 DOLOSTONE; DARK YELLOWISH BROWN TO DARK YELLOWISH BROWN
01% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SILICIC CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: PYRITE-01%, CHERT-01%
OTHER FEATURES: DOLOMITIC, SPLINTERY
HIGH RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

914 - 920 DOLOSTONE; YELLOWISH GRAY TO MODERATE YELLOWISH BROWN
03% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, PLATY, MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

920 - 940 DOLOSTONE; YELLOWISH GRAY TO GRAYISH BROWN
02% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
GOOD INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY

MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

940 - 942 DOLOSTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY
16% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY; 0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

942 - 950 SILT-SIZE DOLOMITE; VERY LIGHT ORANGE TO MODERATE YELLOWISH B
14% POROSITY: INTERGRANULAR, POSSIBLY HIGH PERMEABILITY
POOR INDURATION
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: IRON STAIN-05%
OTHER FEATURES: GRANULAR, CHALKY
FOSSILS: NO FOSSILS

950 - 952 DOLOSTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY
16% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY; 0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

952 - 960 DOLOSTONE; YELLOWISH GRAY TO GRAYISH BROWN
03% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

960 - 971 DOLOSTONE; DARK YELLOWISH BROWN TO GRAYISH ORANGE
03% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%

OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

971 - 974 DOLOSTONE; YELLOWISH GRAY TO GRAYISH ORANGE
10% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY; 0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

974 - 982 DOLOSTONE; DARK YELLOWISH BROWN TO YELLOWISH GRAY
03% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

982 - 990 DOLOSTONE; YELLOWISH GRAY TO GRAYISH ORANGE
10% POROSITY: INTERGRANULAR, MOLDIC
POSSIBLY HIGH PERMEABILITY; 0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-03%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
LOW RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

990 - 1000 DOLOSTONE; GRAYISH ORANGE TO DARK YELLOWISH BROWN
03% POROSITY: MOLDIC, PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, GRANULAR, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, ECHINOID, FOSSIL MOLDS
ECHINOID TESTS(PERONELLA DALLI).

1000 - 1009 DOLOSTONE; GRAYISH ORANGE TO DARK YELLOWISH BROWN
03% POROSITY: MOLDIC, PIN POINT VUGS, LOW PERMEABILITY

90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, PLATY, MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

1009 - 1012 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
07% POROSITY: FRACTURE, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY; 90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, PLATY, SPLINTERY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS
SOME SOLUTION ALONG FRACTURES.

1012 - 1021 DOLOSTONE; DARK YELLOWISH BROWN TO MODERATE YELLOWISH BROWN
07% POROSITY: FRACTURE, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY; 90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, PLATY, MEDIUM RECRYSTALLIZATION
SPLINTERY
FOSSILS: MILIOLIDS, FOSSIL MOLDS

1021 - 1069 DOLOSTONE; YELLOWISH GRAY TO MODERATE YELLOWISH BROWN
18% POROSITY: MOLDIC, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY; 0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-03%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

1069 - 1070 DOLOSTONE; DARK YELLOWISH BROWN TO DARK YELLOWISH BROWN
02% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE

ACCESSORY MINERALS: CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, PLATY, SPLINTERY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

1070 - 1080 DOLOSTONE; YELLOWISH GRAY TO GRAYISH ORANGE
22% POROSITY: MOLDIC, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY; 0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-03%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, ECHINOID, FOSSIL MOLDS

1080 - 1135 DOLOSTONE; VERY LIGHT ORANGE TO YELLOWISH GRAY
21% POROSITY: MOLDIC, PIN POINT VUGS
POSSIBLY HIGH PERMEABILITY; 0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-04%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, ECHINOID, FOSSIL MOLDS

1135 - 1136 DOLOSTONE; DARK YELLOWISH BROWN TO YELLOWISH GRAY
07% POROSITY: PIN POINT VUGS, POSSIBLY HIGH PERMEABILITY
0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-05%, PLANT REMAINS-01%
OTHER FEATURES: DOLOMITIC, GRANULAR, SPECKLED, SPLINTERY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS
CLAY BLEBS, CHERTY BLACK DOLOMITE, SOME ORGANICS.

1136 - 1147 DOLOSTONE; YELLOWISH GRAY TO LIGHT OLIVE GRAY
03% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS

1147 - 1149 DOLOSTONE; YELLOWISH GRAY TO DARK YELLOWISH BROWN
05% POROSITY: MOLDIC, PIN POINT VUGS, LOW PERMEABILITY

90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: PLANT REMAINS-03%, CALCILUTITE-02%
OTHER FEATURES: DOLOMITIC, GRANULAR, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS, ORGANICS

1149 - 1175 DOLOSTONE; VERY LIGHT ORANGE TO DARK YELLOWISH BROWN
03% POROSITY: PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: DOLOMITIC, SPLINTERY, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, FOSSIL MOLDS

1175 - 1176 DOLOSTONE; DARK YELLOWISH BROWN TO DARK YELLOWISH BROWN
07% POROSITY: MOLDIC, PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: PLANT REMAINS-01%, CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, GRANULAR, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS, ORGANICS

1176 - 1187 DOLOSTONE; YELLOWISH GRAY TO DARK YELLOWISH BROWN
14% POROSITY: MOLDIC, PIN POINT VUGS, LOW PERMEABILITY
0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS

1187 - 1190 DOLOSTONE; DARK YELLOWISH BROWN TO DARK YELLOWISH BROWN
06% POROSITY: MOLDIC, PIN POINT VUGS, LOW PERMEABILITY
90-100% ALTERED; ANHEDRAL
GRAIN SIZE: MICROCRYSTALLINE
RANGE: MICROCRYSTALLINE TO CRYPTOCRYSTALLINE
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX
SEDIMENTARY STRUCTURES: MASSIVE

ACCESSORY MINERALS: PLANT REMAINS-02%, CALCILUTITE-01%
OTHER FEATURES: DOLOMITIC, GRANULAR, PLATY
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS, ORGANICS

1190 - 1200 DOLOSTONE; YELLOWISH GRAY TO DARK YELLOWISH BROWN
12% POROSITY: MOLDIC, PIN POINT VUGS, LOW PERMEABILITY
0-10% ALTERED; FIBROUS
GRAIN SIZE: FINE; RANGE: FINE TO MEDIUM
MODERATE INDURATION
CEMENT TYPE(S): DOLOMITE CEMENT
SEDIMENTARY STRUCTURES: MASSIVE
ACCESSORY MINERALS: CALCILUTITE-02%, CLAY-01%
OTHER FEATURES: DOLOMITIC, GRANULAR, SUCROSIC
MEDIUM RECRYSTALLIZATION
FOSSILS: MILIOLIDS, MOLLUSKS, FOSSIL MOLDS

1200 TOTAL DEPTH