Executive Summary
ROMP Site TR 21-2
Core and Chloride Monitor

Location - ROMP Site TR 21-2 is located along County Road C-494 approximately one (1) mile west of US 19 in Citrus County. The site is located in Section 4, Township 19 South, Range 17 East and at latitude 28°51'12", longitude 82°36'01".

Site Easement - The site was obtained from George B. and Mary V. Schoenrock on March 28, 1978 for the sum of one dollar. The Perpetual Easement is 20 feet by 20 feet and is contained in the Temporary Construction Easement of 100 feet by 100 feet. The Temporary Easement was also obtained on March 28, 1978 for a period of 24 months and it will expire on March 27, 1980.

Reason for Coring - Core and water samples were obtained at this site in order to define the location of the freshwater-saltwater interface and to finalize the design for a chloride monitor at this site.

Geology - The site is located on the Pamlico Terrace at an elevation of approximately 5 feet above mean sea level (MSL). The geology at the site was described from analysis of core samples that were obtained to a depth of 200 feet below land surface datum (LSD). The generalized geology of this site is as follows:

0-10' Sand

10'-110' Ocala Group

110' - 200' Avon Park Limestone

Hydrogeology - The water levels at this site ranged from .83 to 2.67 feet below LSD. These changes could be attributed to tidal fluctuation since the site is only about 2 miles east of the tidal salt marshes. The

TLR

transmissivity of this site has been estimated to range between 4 and 5 million gallons per day per foot (MGD/Ft). This figure is based upon the angle of the interface at this site (approximately 0.95^{o}) and data from Missimer and Associates report on the Pithlachascotee Basin. The field geologist that was on site during the coring operations indicated that the permeabilities were generally high and that numerous cavities were encountered from 35 to 95 feet below LSD. Since circulation was lost in these cavities it can be assumed that high transmissivities occur in these areas as postulated by the low angle of the interface and Missimer's report.

Core Drilling - Core and water samples were obtained to a depth of 200 feet below LSD at this site. This work was completed under contract R12171 by Davis Drilling, the subcontractor for coring work with Layne-Atlantic the prime contractor, at a cost of $5,731.00 or $28.65 per foot.

Core samples of 1 7/8" diameter were obtained at 5 foot intervals from 10 to 200 feet below LSD. These samples were described by the field geologist and boxed up to be sent to the Bureau of Geology for in-depth analysis. In addition 18 water samples were obtained and analyzed for chlorides and conductance. Upon completion of coring operations the core hole was grouted with a neat cement slurry.

Well Construction - This well was constructed with a cable tool rig under Contract R12171 by Layne-Atlantic at a cost of $6,912.02 or $34.56 per foot. The well is 111 feet deep and is cased with 105 feet of 6 inch PVC casing which has been stage grouted in place with a cement slurry. The PVC casing is set inside 39 feet of 12 inch steel surface casing. Upon completion of the well a 4 foot section of 18 inch diameter concrete culvert pipe was then placed around the 6 inch PVC casing and

cemented in place in order to protect the thermoplastic casing from degradation from ultraviolet rays and sharp blows.

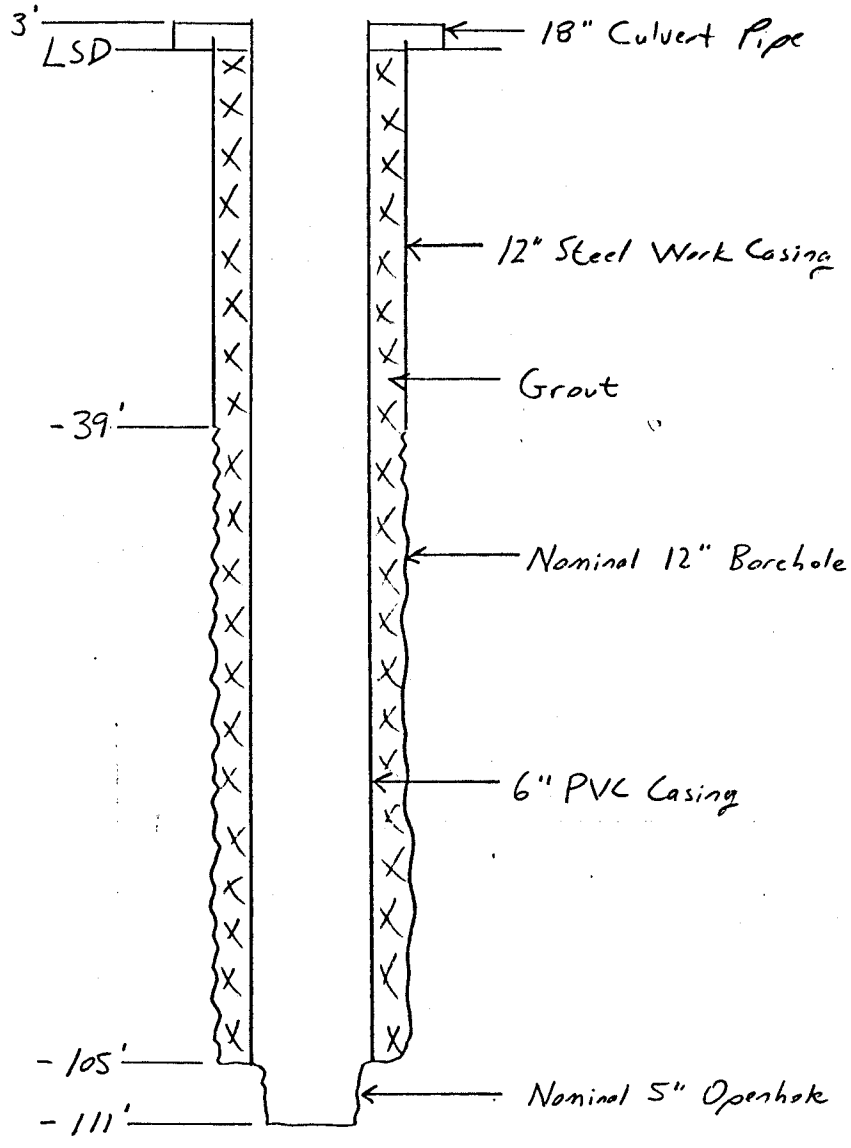
Geophysical Logs - Electric, temperature, and gamma logs were made on the core hole to a depth of about 195 feet below LSD. A caliper log was made to a depth of 105 feet below LSD on the monitor well prior to the setting of casing.

Type of Monitor - This well is designed to monitor the freshwater-saltwater interface at the 250 mg/l isochlor.

Water Quality - The potable water zone (less than 250 mg/l chlorides) extends down to approximately 120 feet below LSD at TR 21-2. From 120 to 200 feet below LSD the chlorides rise from 220 to 14,800 mg/l. Those results were determined from the 18 water samples that were obtained and analyzed on site.

USGS Notification - SWFWMD Planning Section was notified on that this well was completed.

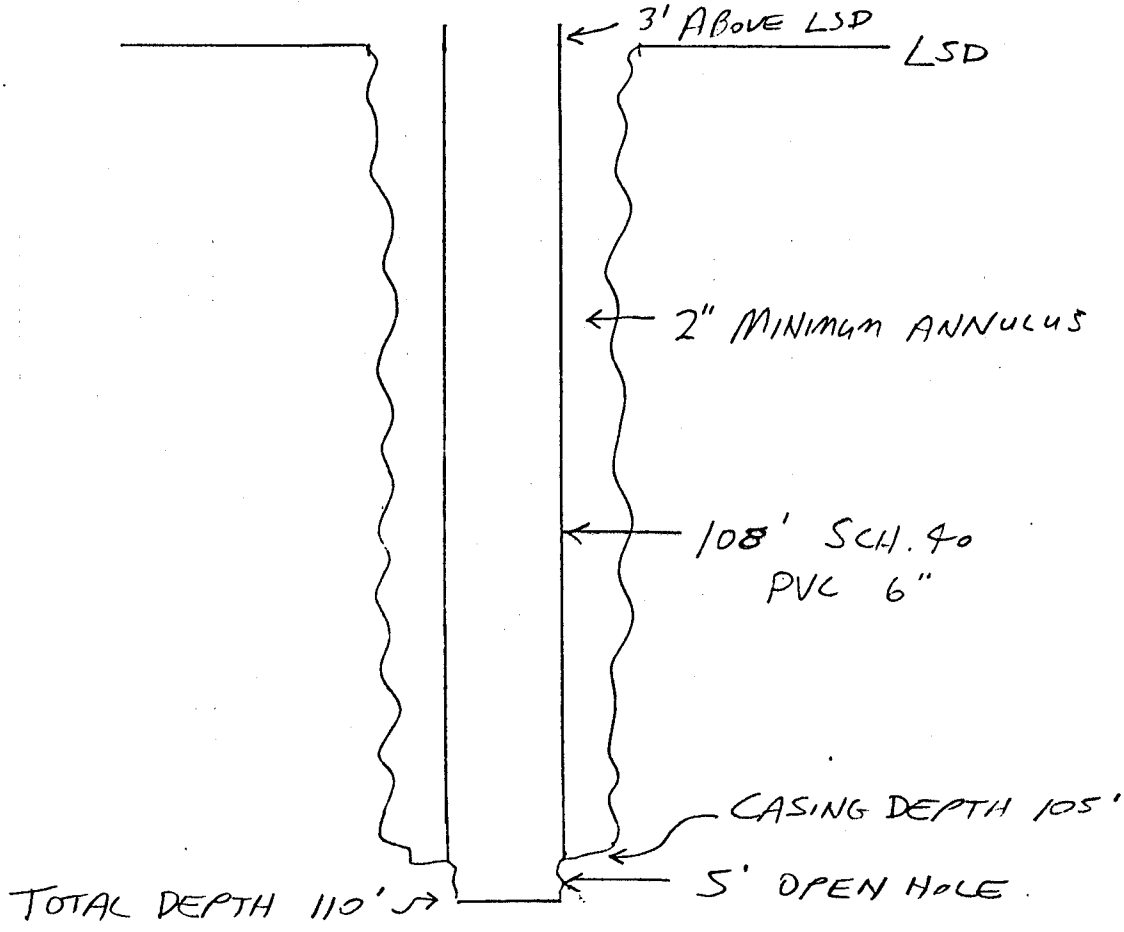
As Built
Well Diagram
TR21-2



TB

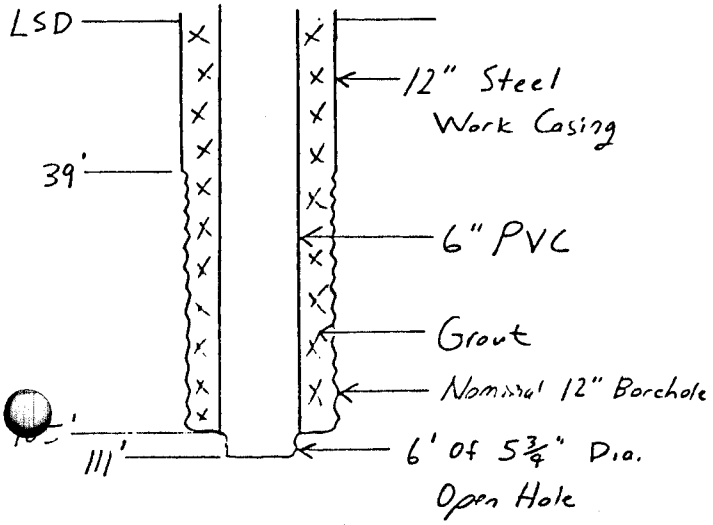
12/6/73
MGS

DESIGN
TR21-2

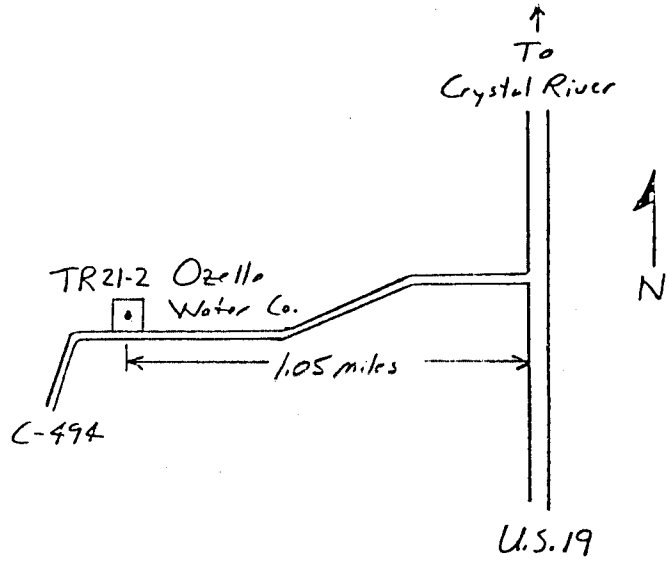


IB

As Built Well Diagram



Site Location



S4, T19S, R17E
Citrus Co.

IIB

LITHOLOGIC WELL LOG PRINTOUT

SOURCE - FGS

WELL NUMBER: W- 14671
TOTAL DEPTH: 00200 FT.
46 SAMPLES FROM 10 TO 200 FT.

COUNTY - CITRUS
LOCATION: T.19S R.17E S.04
LAT = N 28D 51M 12
LON = W 82D 36M 01

COMPLETION DATE - 12/06/78
ELEVATION - 005 FT

OTHER TYPES OF LOGS AVAILABLE - GAMMA, TEMPERATURE, TEMPERATURE

OWNER/DRILLER: SWFWMD;DAVIS DRILLING UNDER LAYNE ATLANTIC;CORE----ROMP TR21-2.

WORKED BY: CODED AND ENTERED BY RICHARD GREEN 7/90.
DESCRIBED BY G. STRASSER.
PARCEL NO. 12-020-011

0. - 10. NO SAMPLES
10. - 110. ~~UNDIFFERENTIATED SAND, CLAY, AND SHELLS~~ SEE DESCRIP BELOW
110. - 200. AVON PARK FM.

0 - 10 NO SAMPLES

10 - 15 LIMESTONE; WHITE; INTERGRANULAR, POSSIBLY HIGH PERMEABILITY, INTERCRYSTALLINE;
GRAIN TYPE: CRYSTALS, BIOGENIC, SKELETAL;
POOR INDURATION;
ACCESSORY MINERALS: ORGANICS- %;
OTHER FEATURES: CHALKY, FOSSILIFEROUS;
PACKED INTRA-BIOMICRITE. VERY CRUMBLY(COQUINA TYPE LIMESTONE), MINOR LENSES OF ORGANICS, SOME GRAINY SPARRY CALCITE, MEDIUM POROSITY AND PERM. WEAKLY LITHIFIED.

15 - 20 AS ABOVE
MINOR ORANGE STAINING, VERY POORLY PACKED (Oo BIOMICRITE). SEVERAL VOIDS AND CAVITIES.

20 - 25 AS ABOVE
SOMEWHAT LITHIFIED, BECOMING LESS CRUMBLY, WHITE TO CREAM. SEVERAL VOIDS AND CAVITIES.

25 - 30 LIMESTONE; CREAM TO LIGHT TAN; VUGULAR, INTERGRANULAR;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
GOOD INDURATION;
ACCESSORY MINERALS: SPAR- %, CALCILUTITE-%;
DRUSY CALCITE IN VUGS, SOME ZONES VERY CRUMBLY, VERY FINE GRAINY SPARRY CALCITE, LOW PERMEABILITY- HIGH IN VUGS, MEDIUM POROSITY. VERY HARD CALCITE CEMENT IN ZONES, LENSES OF VERY SOFT LIME MUD. SEVERAL VOIDS AND CAVITIES.

30 - 35 LIMESTONE; CREAM TO TAN; VUGULAR, LOW PERMEABILITY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
INTRASPARITE. VERY HARD LENSES, VUGS FILLED WITH TAN LIME MUD, VUGGY PERMEABILITY AND LOW POROSITY. SEVERAL VOIDS AND CAVITIES.

35 - 40 NO SAMPLES
LOST CIRCULATION IN CAVITIES.

40 - 45 AS ABOVE

45 - 50 DOLOMITE; BROWN; MOLDIC, VUGULAR, POSSIBLY HIGH PERMEABILITY;
GOOD INDURATION;
ALTERNATING LENSES OF SOFT DOLOMITE, FOSSILIFEROUS, HIGH POROSITY, MEDIUM PERMEABILITY, SAND SUCROSIC DOLOMITE LENSES, ORGANICS, MOTTLED TEXTURE, VUGGY IN ZONES.

50 - 55 NO SAMPLES
LOST CIRCULATION IN CAVITIES.

55 - 57 LIMESTONE; BROWN; MOLDIC, POSSIBLY HIGH PERMEABILITY;
GRAIN TYPE: CRYSTALS, SKELETAL, BIOGENIC;
GOOD INDURATION;
INTRA BIOSPARITE. FOSSILIFEROUS, HIGH MOLDIC POROSITY AND PERMEABILITY, LENSES OF ORANGISH MARLY SAND, SOMEWHAT CRUMBLY WITH DEPTH, SANDY SPARRY CALCITE GRAINS, FRACTURED.

57 - 60 LIMESTONE; ; MOLDIC, POSSIBLY HIGH PERMEABILITY;
GRAIN TYPE: CRYSTALS, SKELETAL, BIOGENIC;
GOOD INDURATION;
OTHER FEATURES: FOSSILIFEROUS;
INTRA BIOSPARITE. PINKISH. LENSES OF SAND, SOME ZONES OF SOFT CRUMBLY LIMESTONE, SOME HARD WELL LITHIFIED CALCITE CEMENT.

60 - 65 LIMESTONE; CREAM; FRACTURE, LOW PERMEABILITY;
GRAIN TYPE: CALCILUTITE, SKELETAL, BIOGENIC;
POOR INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
ACCESSORY MINERALS: QUARTZ SAND- %, CALCILUTITE- %, SPAR- %;
OTHER FEATURES: FOSSILIFEROUS, FOSSILIFEROUS;
SPARSE BIOMICRITE. GRAINY, SPARRY CALCITE CEMENT, MINOR LENSES OF CREAM LIME MUD, SOME SAND LENSES, HIGH POROSITY AND LOW PERM.

65 - 70 LIMESTONE; CREAM; FRACTURE, LOW PERMEABILITY;
GRAIN TYPE: SKELETAL, CRYSTALS, CALCILUTITE;
GOOD INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
ACCESSORY MINERALS: QUARTZ SAND- %, SPAR- %, CALCILUTITE- %;
OTHER FEATURES: CHALKY, FOSSILIFEROUS;
POORLY WASHED BIOSPARITE, MINOR LENSES OF LIME MUD, SAND SPARRY CALCITE CEMENT, MINOR ORANGISH MARLY SAND, HIGH POROSITY, LOW PERM., SOME FRACTURING.

70 - 75 LIMESTONE; LIGHT TAN TO TAN; LOW PERMEABILITY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
POOR INDURATION;
OTHER FEATURES: FOSSILIFEROUS;
INTRA BIOSPARITE. FOSSIL HASH, MINOR ORANGISH STAINING, LARGE GRAINS OF SPARRY CALCITE, MODERATELY WELL CEMENTED, HIGH POROSITY, LOW-MED. PERM.

75 - 80 LIMESTONE; TAN TO BROWN; MOLDIC, FRACTURE, POSSIBLY HIGH PERMEABILITY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
GOOD INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
OTHER FEATURES: FOSSILIFEROUS;
INTRA BIOSPARITE. ORANGE STAINING, SOLUTION CAVITIES, FOSSILS BECOMING GREATER WITH DEPTH,LOW POROSITY, HIGH PERMEABILITY, WELL CEMENTED.

80 - 85 AS ABOVE

85 - 90 LIMESTONE; ; FRACTURE, VUGULAR, POSSIBLY HIGH PERMEABILITY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
GOOD INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
OTHER FEATURES: CHALKY;
INTRA BIOSPARITE. ORANGISH BROWN, LENSES OF CRUMBLY CHALKY MICRITE, FOSSILIFEROUS, VUGGY POROSITY AND PERMEABILITY, WELL CEMENTED SPARRY CALCITE IN ZONES.

90 - 95 NO SAMPLES
LOST CIRCULATION IN CAVITIES.

95 - 100 DOLOMITE; TAN TO BROWN; FRACTURE, LOW PERMEABILITY;
MODERATE INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
VARIABLE INDURATION, CRUMBLY, FRACTURED, WEAKLY CEMENTED DOLOMITE, HIGH POROSITY AND LOW PERM., LENSES OF CREAMY PASTY DOLOMITE, FORMATION BECOMES MORE COMPETENT WITH DEPTH.

100 - 105 DOLOMITE; BROWN; VUGULAR;
MODERATE INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
ACCESSORY MINERALS: ORGANICS- %;
OTHER FEATURES: FOSSILIFEROUS, SUCROSIC;
PASTY, CRUMBLY, LENSES OF ORGANICS, SOME LENSES OF MODERATELY WELL LITHIFIED DOLOMITE, VERY LOW POROSITY AND PERMEABILITY, ZONES OF VUGGY POROSITY AND PERM., SUCROSIC DOLOMITE IN LENSES.

105 - 108.5 DOLOMITE; BROWN; VUGULAR, LOW PERMEABILITY, FRACTURE;
POOR INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
CRUMBLY, FOSSILIFEROUS, LENSES OF ORGANICS, SOME VERY SOFT LENSES OF PASTY BROWN DOLOMITE, SUCROSIC LENSES.

108.5- 110 LIMESTONE; CREAM TO TAN; LOW PERMEABILITY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
POOR INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
ACCESSORY MINERALS: QUARTZ SAND- %, SPAR-%;
FOSSILIFEROUS MICRITE, CRUMBLY, SOMEWHAT PASTY LIME MUD, SANDY GRAINY SPARRY CALCITE, MEDIUM POROSITY.

110 - 115 LIMESTONE; TAN TO LIGHT TAN; MOLDIC, LOW PERMEABILITY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
POOR INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
ACCESSORY MINERALS: CALCILUTITE- %, SPAR- %;
OTHER FEATURES: FOSSILIFEROUS;
POORLY WASHED BIOSPARITE, CRUMBLY, GRAINS OF SPARRY CALCITE CEMENT, LENSES OF PASTY CREAMY LIME MUD.

115 - 116 AS ABOVE

116 - 117 DOLOMITE; LIGHT BROWN; MOLDIC, LOW PERMEABILITY, FRACTURE;
POOR INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
OTHER FEATURES: FOSSILIFEROUS;
CRUMBLY, SOME ORGANICS, LENSES OF SOFT PASTY DOLOMITE MUD.

117 - 118 LIMESTONE; CREAM TO TAN; MOLDIC, LOW PERMEABILITY, FRACTURE;
GRAIN TYPE: CALCILUTITE, SKELETAL, BIOGENIC;
POOR INDURATION;
OTHER FEATURES: FOSSILIFEROUS;
FOSSILIFEROUS MICRITE, CRUMBLY, FRACTURED, LENSES OF LIME MUD.

118 - 120 DOLOMITE; BROWN; MOLDIC, LOW PERMEABILITY;
GOOD INDURATION;
SEDIMENTARY STRUCTURES: MOTTLED,
ACCESSORY MINERALS: ORGANICS- %;
OTHER FEATURES: CALCAREOUS;
BECOMES MORE COMPETENT WITH DEPTH, SOME LENSES OF PASTY LIME DOLOMITE MUD.

120 - 125 LIMESTONE; CREAM; MOLDIC, FRACTURE, LOW PERMEABILITY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
POOR INDURATION;
OTHER FEATURES: CHALKY;
POORLY WAHSED BIOSPARITE. CRUMBLY, SOME LENSES OF PASTY LIME MUD, SANDY SPARRY CALCITE CEMENT.

125 - 130 AS ABOVE

130 - 135 AS ABOVE

135 - 140 AS ABOVE

140 - 145 AS ABOVE

145 - 150 LIMESTONE; CREAM; LOW PERMEABILITY;
GRAIN TYPE: CALCILUTITE, SKELETAL, BIOGENIC;
POOR INDURATION;
ACCESSORY MINERALS: CALCILUTITE- %, SHELL- %;
OTHER FEATURES: CHALKY, FOSSILIFEROUS;
FOSSILIFEROUS BIOMICRITE, VERY WEAKLY LITHIFIED, WITH SOME COMPETENT LENSES, VERY FEW FOSSILS, CRUMBLY, HIGH POROSITY, VERY LOW PERMEABILITY, POROSITY DECREASING AND PERM. INCREASING WITH DEPTH, LENSES OF LIME MUD.

150 - 155 AS ABOVE

155 - 160 AS ABOVE
BECOMING MORE FOSSILIFEROUS (PACKED BIOMICRITE) MOLDIC POROSITY, HIGH PERM., WELL CEMENTED SPARRY CALCITE LENSES, GRAINY SPARRY CALCITE THROUGHOUT.

160 - 165 LIMESTONE; CREAM; FRACTURE, MOLDIC, POSSIBLY HIGH PERMEABILITY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
POOR INDURATION;
ACCESSORY MINERALS: CALCILUTITE- %;
OTHER FEATURES: FOSSILIFEROUS, CHALKY;
POORLY WASHED BIOSPARITE, LENSES OF PASTY LIME MUD, SANDY SPARRY GRAINS OF CALCITE CEMENT, HIGH MOLDIC POROSITY.

165 - 170 AS ABOVE
BECOMING MORE COMPETENT WITH DEPTH.

170 - 171 AS ABOVE

171 - 175 LIMESTONE; CREAM TO TAN; POSSIBLY HIGH PERMEABILITY, MOLDIC, FRACTURE;
GRAIN TYPE: BIOGENIC, SKELETAL, CRYSTALS;
GOOD INDURATION;
CEMENT TYPE(S): SPARRY CALCITE CEMENT;
UNSORTED BIOSPARITE, VERY HARD LENSES, VERY WELL LITHIFIED WITH SPARRY CALCITE CEMENT, HIGH MOLDIC POROSITY, FOSSILIFEROUS, MINOR LENSES OF CREAMY LIME MUD, PASTY, SOMEWHAT CRUMBLY IN ZONES.

175 - 179 AS ABOVE
BECOMING MORE COMPETENT WITH DEPTH.

179 - 180 DOLOMITE; BROWN TO LIGHT REDDISH BROWN; POSSIBLY HIGH PERMEABILITY;
MODERATE INDURATION;
ACCESSORY MINERALS: ORGANICS-%;
CRUMBLY, SUCROSIC DOLOMITE TEXTURE, HIGH POROSITY, MINOR LENSES OF ORGANICS, LENSES OF VERY HARD DOLOMITE, LENSES OF WEAKLY LITHIFIED PASTY LIMEY DOLOMITE.

180 - 181 AS ABOVE

181 - 185 DOLOMITE; BROWN TO LIGHT BROWN; MOLDIC, POSSIBLY HIGH PERMEABILITY;
GOOD INDURATION;
ACCESSORY MINERALS: ORGANICS- %;
OTHER FEATURES: SUCROSIC;
SOME LENSES OF PASTY BROWN DOLOMITE, ALTERNATING HARD AND SOFT LENSES.

185 - 190 AS ABOVE

190 - 195 AS ABOVE

195 - 200 AS ABOVE

200 TOTAL DEPTH