LITHOLOGIC WELL LOG PRINTOUT

SOURCE - fgs

WELL NUMBER: W- 16387
TOTAL DEPTH: 662 FT.
65 SAMPLES FROM 0 TO 662 FT.

COMPLETION DATE - 01/07/89
OTHER TYPES OF LOGS AVAILABLE -

COUNTY - HENDRY
LOCATION: T.44S R.34E S.09 B
LAT = N 26D 40M 55
LON = W 80D 56M 13
ELEVATION - 14 FT

OWNER/DRILLER: DRILLED BY FGS-JOHN MORRILL DRILLER; U.S. SUGAR #1;

WORKED BY: WORKED BY TOM SCOTT AND RICHARD GREEN, JULY/AUGUST 1989.
NOTE: ABOVE 210' THE SANDS ARE SIMILAR TO THE WABASSO
BEDS IN INDIAN RIVER COUNTY-MARTIN COUNTY BUT LESS
CALCAREOUS. MUCH OF THE SANDS 142-210' LOOK LIKE
"NEAR BEACH" SANDS.
FORMATION TOPS ARE TENATIVE.
NOTE: THE CALOOSAHATCHEE PICK ALSO INCLUDES THE FORT THOMPSON
FORMATION (THE TWO ARE UNDIFFERENTIATED HERE)

0. -	9.	090UDSS	UNDIFFERENTIATED SAND, CLAY, AND SHELLS
9. -	35.	112CLSCR	CALOOSAHATCHEE FM.
35. -	142.	122TMIM	TAMIAMI FM.
142. -	TD.	122HTRN	HAWTHORN GROUP
142. -	403.	122PCRV	PEACE RIVER FM.
403. -	TD.	122ARCA	ARCADIA FM.

0 - 9 OVERBURDEN, SPOIL, ETC.

9 - 35 LIMESTONE; LIGHT GRAY TO TAN;
LS AND SHELL, ABUNDANT TURRITELLIDS 27-35'. SAND WITH ABUNDANT SHELL FRAGMENTS(FINE).

35 - 97 SAND; LIGHT BROWNISH GRAY TO LIGHT GRAY; INTERGRANULAR, POSSIBLY HIGH PERMEABILITY;
GRAIN SIZE: MEDIUM; RANGE: FINE TO VERY COARSE; POOR INDURATION;
ACCESSORY MINERALS: PHOSPHATIC SAND-01%, MICA- %, CALCILUTITE- %;
OTHER FEATURES: CALCAREOUS;
FOSSILS: FOSSIL FRAGMENTS, FOSSIL MOLDS, MOLLUSKS;
MAY BE PART OF FT. THOMPSON\CALOOSAHATCHEE. FINE TO MEDIUM WITH ZONES OF MED-COARSE-VERY COARSE, POOR INDURATION, SEEMS TO BECOME MORE COARSE WITH DEPTH, TRACE TO 1% PHOS.; CARB. MATRIX VARIES IN AMOUNT. MORE CALC. MATRIX BELOW APPROX 77', LIGHT GRAY TO WHITE, MOST COARSE BELOW 77', MORE INDURATED BELOW 83-88', MORE SHELL BELOW 77', MOLLUSK MOLDS BELOW 88' TO NEAR 97' SAND WITH CARBONATE MATRIX , MEDIUM GRAINED. COULD BE CALOOSAHATCHEE SAND TO 77', AND ORTUNA SAND 77-97'.

97 - 101 LIMESTONE; WHITE TO LIGHT GRAY;
POOR INDURATION;
ACCESSORY MINERALS: QUARTZ SAND- %, PHOSPHATIC SAND-02%;
FOSSILS: FOSSIL MOLDS, MOLLUSKS;
VARIABLY SANDY, MOLLUSK MOLDS, NOTICEABLE INCREASE IN PHOS. TO 1-2%. GRADES INTO:

101 - 112 SAND; ; INTERGRANULAR, POSSIBLY HIGH PERMEABILITY;
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM; POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: MICA- %;
OTHER FEATURES: CALCAREOUS;
SAND WITH VARIABLE CALCAREOUS MATRIX AND SAND PERCENTAGES. BARNACLES, MOLLUSK FRAGMENTS.

112 - 142 LIMESTONE; LIGHT GRAY TO WHITE; MOLDIC;
MODERATE INDURATION;
ACCESSORY MINERALS: QUARTZ SAND- %;
FOSSILS: FOSSIL MOLDS;
VERY MOLDIC. VERY SANDY. MOD-GOOD INDURATION. POORLY CONSOLIDATED BED 117-118'. ABUNDANT TU TURRITELLID MOLDS 123-124'.

142 - 198 SAND; LIGHT GRAY TO LIGHT GREENISH GRAY; INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: FINE TO VERY FINE; POOR INDURATION;
ACCESSORY MINERALS: PHOSPHATIC SAND-03%, MICA- %;
FOSSILS: FOSSIL FRAGMENTS;
SLIGHT CALC. MATRIX. LEACHED SHELL FRAGS., APPEARS AS A " SUGAR SAND"- BEACH?, SOME COARSE GRAINS BELOW 177', STILL FINE MODE SAND. MINOR MICA. SAND AND PHOS. BECOME MORE COARSE AROUND 184' TO MEDIUM. SOME PHOS GRAVEL 184-5', MATRIX IS DOLO. BACK TO FINE MODE AT 186'TO VF, VERY LITTLE MATRIX MATERIAL. FAINT LAMINAE OF MORE GREENISH SILTY? LAYERS VERY DISTURBED BY BIOTURBATION 192-198'.

198 - 208 SAND; LIGHT GRAYISH GREEN; INTERGRANULAR;
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE; POOR INDURATION;
ACCESSORY MINERALS: PHOSPHATIC SAND-15%, CLAY-01%, MICA-01%;
OTHER FEATURES: DOLOMITIC;
SAND BECOMES MORE SILTY AND LIGHT GRAY GREEN, PHOS TO 15% (VF), VERY MINOR CLAY (<1%), SOME DOLOMITE IN MATRIX. SEE NOTE IN "3 CARDS"

208 - 210 AS ABOVE
BUT UP TO 30% PHOS., ABUNDANT CLASTS OF DOLOMITIC CLAYEY SILT, THAT APPEARS SIMILAR TO THE LITHOLOGY AT 214-215'.

210 - 214 CLAY; LIGHT OLIVE GRAY TO OLIVE GRAY; LOW PERMEABILITY; POOR INDURATION;
ACCESSORY MINERALS: SILT- %, QUARTZ SAND-30%, PHOSPHATIC SAND-10%, MICA-02%;
OTHER FEATURES: DOLOMITIC;
FOSSILS: DIATOMS, BENTHIC FORAMINIFERA;
SILTY, SAND UP TO 30%, PHOS UP TO 10%, THIN BEDDED, DIATOMS AND LEACHED FORAMS?.

214 - 239 SILT; LIGHT GREENISH GRAY; POOR INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-02%;
FOSSILS: DIATOMS;
SAND TO 10%, PHOS TO 2%, THIN BEDDED WITH SANDIER LAYERS INTERBEDDED. DIATOMS ABUNDANT. CLAY CONTENT VARIABLE W\ THIN ZONES BEING SILTY CLAYS. DIATOMS NOTED THROUGHOUT. ZONES OF CLAY CLASTS AS AT 218-219', MANY ZONES ARE THINLY LAMINATED WITH NO SIGNS OF BIOTURBATION. SAND CONTENT INCREASES BETWEEN 235-9' TO MAX OF 25%.

239 - 241.5 SILT; LIGHT GRAYISH GREEN; INTERGRANULAR; POOR INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX;
ACCESSORY MINERALS: DOLOMITE-25%, QUARTZ SAND-20%, PHOSPHATIC SAND-05%, MICA- %;
FOSSILS: DIATOMS;
DOLOMITE 25%(?), DIATOMS NOT NEARLY AS ABUNDANT.

241.5- 252 SILT; LIGHT OLIVE GRAY TO OLIVE GRAY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-35%, PHOSPHATIC SAND-03%;
FOSSILS: DIATOMS, BENTHIC FORAMINIFERA;
SILT TO VF SAND., CLAY MATRIX WITH MINOR DOLOMITE. DIATOMS MORE ABUNDANT THAN ABOVE. THIN BEDDED, BUT DUE TO MORE SAND IT IS NOT AS EVIDENT. LITTLE TO NO BIOTURBATION, POORLY PRESERVED FORAMS.

252 - 258 SAND; ; INTERGRANULAR;
GRAIN SIZE: VERY FINE; RANGE: MICROCRYSTALLINE TO VERY FINE; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: CLAY-04%, PHOSPHATIC SAND-15%, PHOSPHATIC SAND-20%, MICA- %;
FOSSILS: BENTHIC FORAMINIFERA, SPICULES;
THIN CLAY LAMINAE, PHOS. UP TO 40% IN ZONES.

258 - 262 CLAY; OLIVE GRAY; POOR INDURATION;
ACCESSORY MINERALS: PHOSPHATIC SAND-05%, QUARTZ SAND- %;
OTHER FEATURES: FOSSILIFEROUS;
FOSSILS: SPICULES, BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS;
VERY SANDY CLAY TO VERY CLAYEY SAND.

262 - 280 SAND; LIGHT OLIVE GRAY TO BROWNISH GRAY; INTERGRANULAR;
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MICROCRYSTALLINE; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX;
SEDIMENTARY STRUCTURES: MOTTLED,
ACCESSORY MINERALS: CLAY-10%, PHOSPHATIC SAND-10%;
APPEARS MOTTLED DUE TO BURROWING. SAND BECOMES FINE, (VF-M) BELOW 278'.

280 - 287 SANDSTONE; ; INTERGRANULAR;
GRAIN SIZE: MEDIUM; RANGE: VERY FINE TO COARSE; MODERATE INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: PHOSPHATIC SAND-05%;
FOSSILS: FOSSIL FRAGMENTS;
POOR RECOVERY, MODERATE-GOOD INDURATION. OYSTER SHELL.

287 - 292 SAND; OLIVE GRAY TO MODERATE GRAY; INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX;
ACCESSORY MINERALS: PHOSPHATIC SAND-05%, CLAY-05%, MICA- %, CALCILUTITE- %;
OTHER FEATURES: CALCAREOUS;
MODERATE GRAY IN ZONES. MINOR CALCILUTITE, CALC. INCREASES AROUND 290-1'. BIOTURBATED.

292 - 298 SAND; MODERATE GRAY; INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: PHOSPHATIC SAND-03%, MICA-01%;
POOR RECOVERY. POOR-MODERATE INDURATION.

298 - 316 SAND; OLIVE GRAY TO MODERATE GRAY; INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; POOR INDURATION;
SEDIMENTARY STRUCTURES: BIOTURBATED,
ACCESSORY MINERALS: SHELL- %, MICA- %;
FOSSILS: FOSSIL FRAGMENTS;
SAND AS 287-292'. BECOMES MORE CALCAREOUS AND LIGHTER COLORED 301.5-305'; <1% COARSE WELL ROUNDED QTZ GRAINS; TRACES OF VERY LEACHED SHELL FRAGMENTS.

316 - 318 CLAY; OLIVE GRAY TO LIGHT OLIVE GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-35%, PHOSPHATIC SAND-05%, SHELL- %, MICA- %;
FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA;
SAND TO 35%, SOME MORE CALC. ZONES, SAND INCREASES TO A CLAYEY SAND BY 318'.

318 - 323 SAND; LIGHT OLIVE GRAY TO OLIVE GRAY; INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: VERY FINE TO MEDIUM; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: CLAY-20%, PHOSPHATIC SAND-03%, MICA- %;
FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA;
CALC. MATRIX INCREASES AT 320'; SAND BECOMES MORE COARSE AROUND 323' TO MEDIUM, FEW ZONES OF MED. SAND AROUND 321.5-322'.

323 - 326 SAND; LIGHT GREENISH GRAY; INTERGRANULAR;
GRAIN SIZE: MEDIUM; RANGE: FINE TO MEDIUM;
ROUNDNESS: SUB-ROUNDED TO ROUNDED; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: PHOSPHATIC SAND-03%, CLAY-03%, MICA- %;
FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA;
VERY MINOR CLAY, THIN CALC. CEMENTED ZONES.

326 - 332 NO SAMPLES
NO RECOVERY, DRILLER SAYS SAND.

332 - 334 SAND; LIGHT OLIVE GRAY; INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX;
ACCESSORY MINERALS: PHOSPHATIC SAND-02%, MICA- %;
FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA;
VERY POOR INDURATION. VERY LITTLE CLAY. MORE CLAYEY AND CALC. 334' AND BELOW.

334 - 378 SAND; LIGHT OLIVE GRAY TO LIGHT GRAY; INTERGRANULAR;
GRAIN SIZE: FINE; RANGE: VERY FINE TO FINE; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: PHOSPHATIC SAND-03%, CLAY-10%, MICA- %, SILT- %;
FOSSILS: BENTHIC FORAMINIFERA, SPICULES;
CLAY TO 10%; MORE CLAYEY BELOW 342' BUT INTERBEDDED WITH LESS CLAYEY ZONES; BECOMES VF-F AND SILTIER BELOW 347+/-, INCLUDES ZONES THAT ARE CLAYEY SILT WITH SAND AND PHOS., PHOS. VARIABLE 3-10%, LESS CLAYEY, MORE CALC. IN MATRIX BELOW 354', VERY SILTY AS 370 TO 378' WITH THIN CLAY BEDS. 0.5-1 FOOT PHOSPHORITE BED AT 376.75-377.75'+/-; VF-F PHOS. GRAINS WITH QTZ SAND (10%) AND CLAY MATRIX. BURROWS OFTEN FILLED WITH HIGH CONCENTRATIONS OF PHOSPHATE.

378 - 378.5 DOLO-SILT; LIGHT GREENISH GRAY; INTERGRANULAR; MODERATE INDURATION;
CEMENT TYPE(S): CLAY MATRIX, DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%;
SILT-SIZED DOLOMITE. BURROWS AS ABOVE. GRADES INTO CLAY.

378.5- 389 CLAY; OLIVE GRAY TO OLIVE GRAY; MODERATE INDURATION;
CEMENT TYPE(S): CLAY MATRIX, DOLOMITE CEMENT;
ACCESSORY MINERALS: DOLOMITE-01%, DOLOMITE-10%, SILT-%;
VARIABLY SILTY.

389 - 389.5 PHOSPHATE; OLIVE GRAY TO BLACK; INTERGRANULAR; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-02%, SILT- %, CLAY-25%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS;
VERY LEACHED MOLLUSK FRAGS PRESENT.

389.5- 403 CALCILUTITE; LIGHT GRAY TO LIGHT GREENISH GRAY;
GRAIN TYPE: CALCILUTITE;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-10%, SILT- %, PHOSPHATIC SAND-07%, GYPSUM- %;
FOSSILS: FOSSIL FRAGMENTS;
SAND IS VF, SILT TO VF RANGE, UP TO 10%, MINOR CLAY IN MATRIX, FOSSIL FRAGS ARE VERY LEACHED, MORE CLAYEY WITH DEPTH TO 397', VERY CLAYEY IN SOME ZONES. MINOR PHOS. TO 7%, MAY BE SLIGHTLY DOLOMITIC, GYPSUM ABUNDANT AT 396.5'.

403 - 422 LIMESTONE; LIGHT GREENISH GRAY TO LIGHT GRAY; INTERGRANULAR;
GRAIN TYPE: SKELETAL, BIOGENIC;
POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-50%, SILT- %, PHOSPHATIC SAND-02%, PHOSPHATIC SAND-15%;
OTHER FEATURES: CALCAREOUS;
FOSSILS: FOSSIL FRAGMENTS, BRYOZOA, MOLLUSKS;
LIMESTONE AND SAND, THE LIMESTONE IS DESCRIBED ABOVE. THE SAND IS V. LT. GRAY TO LT. OLIVE GRAY IN COLOR, SILT SIZED TO V.F., MEAN V.F., POOR-MOD. INDURATION, CALCITUTITE AND CLAY MATRIX, CARBONATE UP TO 50%, CONTAINS BRYOZOANS, AND BENTHIC AND PLANKTIC FORAMS. PHOSPHATIC ZONES ARE PREDOMINANTLY SAND. VARIABLE BETWEEN LS AND SAND. ZONES WITH FORAMS 411-412'. TRACES OF ORGANIC MATTER (PLANT REMAINS?). OSTREA RICH ZONE 417-419'. LEACHED SHELL FRAGMENTS (PECTEN?) 419-422'.

422 - 425 LIMESTONE; LIGHT GRAY TO WHITE;
GRAIN TYPE: SKELETAL, BIOGENIC, CALCILUTITE;
MODERATE INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-15%, PHOSPHATIC SAND-01%;
FOSSILS: MOLLUSKS, FOSSIL FRAGMENTS, FOSSIL MOLDS;
GRADES INTO SAND AND LS. AS 403'.

425 - 441 SAND; LIGHT GREENISH GRAY TO LIGHT GRAY; INTERGRANULAR;
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MICROCRYSTALLINE; POOR INDURATION;
ACCESSORY MINERALS: PHOSPHATIC SAND-20%;
SAND AS 403-422', W/ PHOS. TO 20%, MOSTLY FINE GRAINED, POOR RECOVERY.

441 - 446.5 SILT; LIGHT GRAY TO LIGHT GREENISH GRAY; INTERGRANULAR; POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND- %, PHOSPHATIC SAND-01%, CLAY- %;
FOSSILS: FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA;
VARIABLY CLAYEY. BURROWS. GRADES INTO SAND AT 442.75', BACK TO SILT AT 443.5, GRAY CLAY 443.75-444', BIOTURBATED CONTACT AT 446.5'.

446.5- 453.5 LIMESTONE; LIGHT GRAY TO LIGHT GREENISH GRAY; INTERGRANULAR;
GRAIN TYPE: SKELETAL, BIOGENIC;
POOR INDURATION;
ACCESSORY MINERALS: QUARTZ SAND-50%, PHOSPHATIC SAND-15%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS;
POOR-MODERATE INDURATION. SAND TO 50%, PHOS TO 15%, MOLLUSKS MOST COMMON IN FIRST ONE FOOT. BECOMES MORE SHELLY 451.5', PECTENS TO 453.5', SOME VERY SANDY ZONES.

453.5- 470 SAND; LIGHT GRAY TO LIGHT GREENISH GRAY; INTERGRANULAR;
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MICROCRYSTALLINE; MODERATE INDURATION;
ACCESSORY MINERALS: CALCILUTITE-50%, PHOSPHATIC SAND-15%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS, BRYOZOA;
VARIABLE TO LIMESTONE. CARBONATE TO 50%, PHOS. TO 15%. HIGHLY VARIABLE BETWEEN LS AND SAND, PRIMARY LITHOLOGY AS 446.5'.

470 - 488.5 LIMESTONE; YELLOWISH GRAY TO LIGHT GRAY; INTERGRANULAR;
GRAIN TYPE: CALCILUTITE;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-30%, PHOSPHATIC SAND-01%, PHOSPHATIC SAND-15%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS, BENTHIC FORAMINIFERA, BRYOZOA;
POOR-MODERATE INDURATION. MUCH LESS PHOSPHATE BELOW 476', MORE SHELLY 474.5-488.5'.

488.5- 492 LIMESTONE; LIGHT GREENISH GRAY TO MODERATE GRAY; INTERGRANULAR;
GRAIN TYPE: CALCILUTITE;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-45%, PHOSPHATIC SAND-20%;
FOSSILS: FOSSIL FRAGMENTS;
SAND TO 45%, PHOS. TO 20%, BURROWS, SCATTERED FOSSIL FRAGMENTS.

492 - 493.5 CLAY; DARK GREENISH GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
SEDIMENTARY STRUCTURES: BIOTURBATED,
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-02%;
FOSSILS: FOSSIL FRAGMENTS;
POOR-MOD. IND., VARIABLE SAND, PHOS., GRADES INTO CLAYEY, SANDY, CARBONATE BY 493.5'.

493.5- 498 LIMESTONE; LIGHT GREENISH GRAY; INTERGRANULAR;
GRAIN TYPE: BIOGENIC, CALCILUTITE, SKELETAL;
POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-20%, PHOSPHATIC SAND-02%, CLAY- %;
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS;
WACKESTONE-MUDSTONE. CLAY DECREASES WITH DEPTH. MOTTLED APPEARANCE DUE TO BURROWS FILLED WITH VERY PHOS. SANDS, MORE COMMON WITH DEPTH. LIMESTONE BECOMES VERY PHOSPHATIC.

498 - 499 SAND; ; INTERGRANULAR;
ACCESSORY MINERALS: PHOSPHATIC SAND- %, CLAY- %, LIMESTONE-%;
ZONE OF VERY PHOSPHATIC SAND W\CLAY W\ ABUNDANT CLASTS(?) OF LS. AS ABOVE. THIN BEDDING IN CLAYEY SANDS.

499 - 502.5 SAND; DARK GRAY TO GREENISH GRAY; INTERGRANULAR;
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO MICROCRYSTALLINE; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
SEDIMENTARY STRUCTURES: BIOTURBATED,
ACCESSORY MINERALS: PHOSPHATIC SAND-40%;
FOSSILS: FOSSIL FRAGMENTS;
PHOS. TO 40%; SOME CLAY PEBBLES AND LS PEBBLES . SHELL FRAGMENTS AT BASE.

502.5- 504 CLAY; LIGHT GREENISH GRAY TO GREENISH GRAY; MODERATE INDURATION;
CEMENT TYPE(S): CLAY MATRIX;
SEDIMENTARY STRUCTURES: BEDDED,
ACCESSORY MINERALS: QUARTZ SAND-30%, PHOSPHATIC SAND-05%;
FOSSILS: FOSSIL FRAGMENTS;

504 - 505 LIMESTONE; WHITE TO LIGHT GREENISH GRAY;
GRAIN TYPE: CRYSTALS, CALCILUTITE;
MODERATE INDURATION;
CEMENT TYPE(S): SPARRY CALCITE CEMENT, DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-07%;
OTHER FEATURES: DOLOMITIC;
FOSSILS: FOSSIL MOLDS, MOLLUSKS, FOSSIL FRAGMENTS;
WACKESTONE TO MUDSTONE.

505 - 506 DOLOMITE; LIGHT GRAY TO LIGHT GREENISH GRAY;
GOOD INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-01%, GYPSUM-02%;
SOME LARGE GYPSUM CRYSTALS PRESENT.

506 - 522 CLAY; YELLOWISH GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-05%, SILT- %;
OTHER FEATURES: VARIEGATED;
FOSSILS: DIATOMS, FOSSIL FRAGMENTS, BRYOZOA, MOLLUSKS, BENTHIC FORAMINIFERA;
PERCENT DOLO., CLAY AND SAND VARIES WIDELY. SOME DIATOM MOLDS. LIME MUD INCREASES WITH DEPTH, GRADES INTO SILTY LIMESTONE AND CALCAREOUS, SILTY SAND AROUND 513' THEN BACK TO CLAY BY 517', MANY BURROWS FILLED WITH VERY PHOS. SANDS. CLAYS HAVE THIN PARTINGS. MORE CALCAREOUS BELOW 521'.

522 - 534.5 SAND; LIGHT GREENISH GRAY; INTERGRANULAR;
GRAIN SIZE: VERY FINE; RANGE: VERY FINE TO FINE; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: PHOSPHATIC SAND-25%, CLAY- %;
FOSSILS: BENTHIC FORAMINIFERA, FOSSIL FRAGMENTS;
SOME ZONES ARE 35-45% PHOS.; MORE CALC. 526-527.5', THEN MORE CLAYEY. PHOS. RANGES FROM V.F.-COARSE. BECOMES MORE SANDY AND CALC. 533-34', GRADES INTO LIMESTONE 534.5'.

534.5- 548 LIMESTONE; LIGHT GREENISH GRAY TO WHITE;
GRAIN TYPE: CALCILUTITE;
POOR INDURATION;
ACCESSORY MINERALS: QUARTZ SAND-20%, PHOSPHATIC SAND-25%;
FOSSILS: ECHINOID, MOLLUSKS, FOSSIL FRAGMENTS;
WACKESTONE-MUDSTONE. VERY RUBBLY APPEARANCE 536-38'. SOME MOLDS, MAY BE SLIGHTLY DOLOMITIC; PHOS. IS F-V.C. AND FINE GRAVEL. PHOS. CONTENT DECREASES AROUND 541 TO LESS THAN 1% FROM 542-546'; PHOS. CONTENT INCREASES SLIGHTLY BELOW 546'.

548 - 549.5 DOLOMITE; YELLOWISH GRAY TO GREENISH GRAY;
POOR INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-05%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS;
POOR-MOD. INDURATION; UNDOLOMITIZED FOSSIL FRAGMENTS IN DOLOMITE GROUND MASS. SAND AND PHOS. CONTENT HIGHLY VARIABLE, PHOS. IS FINE TO GRAVEL.

549.5- 562 LIMESTONE; LIGHT GRAY TO WHITE;
GRAIN TYPE: CALCILUTITE, SKELETAL;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-25%, PHOSPHATIC SAND-10%;
FOSSILS: FOSSIL MOLDS, FOSSIL FRAGMENTS, MOLLUSKS;
MUDSTONE TO WACKESTONE. SOME IRREGULARLY SHAPED DOLOMITIZED ZONES. SAND AND PHOS. CONTENT HIGHLY VARIABLE. PHOS. V.F.-COARSE, 5-35%, IN GENERAL INCREASING WITH DEPTH TO 562', WHERE IT DISAPPEARS. SAND CONTENT FOLLOWS SAME PATTERN. ZONES OF SAND 558-560' MOLLUSK MOLDS MORE COMMON NEAR BASE AS ARE OSTREA FRAGS.

562 - 569 DOLOMITE; LIGHT YELLOWISH GREEN TO LIGHT GREEN; 10-50% ALTERED;
MODERATE INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT;
ACCESSORY MINERALS: SILT-20%, QUARTZ SAND-03%, PHOSPHATIC SAND-02%;
FOSSILS: FOSSIL FRAGMENTS, FOSSIL MOLDS;
MANY UNREPLACED FRAGMENTS. AMOUNT OF CALC. MATERIAL VARIES WITH DEPTH. BECOMES A DOLOMITIC LS. IN ZONES. GRADES INTO LS. BY 569'.

569 - 571 LIMESTONE; LIGHT GREENISH GRAY; MOLDIC;
GRAIN TYPE: CALCILUTITE;
MODERATE INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-01%;
OTHER FEATURES: DOLOMITIC;
FOSSILS: FOSSIL MOLDS, MOLLUSKS, FOSSIL FRAGMENTS;
WACKESTONE.

571 - 574 DOLOMITE; GREENISH GRAY; 10-50% ALTERED;
MODERATE INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT, CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-01%, SILT- %;
OTHER FEATURES: MEDIUM RECRYSTALLIZATION;
FOSSILS: BRYOZOA, MOLLUSKS, FOSSIL FRAGMENTS;
MORE UNREPLACED FOSSIL FRAGMENTS WITH DEPTH.

574 - 579 LIMESTONE; WHITE TO LIGHT GRAY;
GRAIN TYPE: BIOGENIC, SKELETAL, CALCILUTITE;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-01%;
FOSSILS: FOSSIL FRAGMENTS, BRYOZOA, MOLLUSKS, BENTHIC FORAMINIFERA;
PACKSTONE-WACKESTONE. FOSSIL FRAGMENTS OFTEN LEACHED. GRADES RAPIDLY INTO UNDERLYING UNIT.

579 - 583.5 CLAY; GREENISH GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-25%, PHOSPHATIC SAND-02%, SILT-25%;
FOSSILS: FOSSIL FRAGMENTS, SPICULES, BENTHIC FORAMINIFERA;
POOR-MOD. INDURATION; BURROWS OFTEN FILLED WITH VERY FOSSILIFEROUS SEDIMENT; HIGHLY VARIABLE CLAY CONTENT. VARIES TO A CLAYEY SILT.

583.5- 583.8 CLAY; GREENISH GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC SAND-35%, SILT- %;
FOSSILS: FOSSIL FRAGMENTS;

583.8- 587 PACKSTONE; LIGHT GREENISH GRAY TO MODERATE GRAY;
GOOD INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND- %, PHOSPHATIC SAND- %, CLAY- %;
OTHER FEATURES: MEDIUM RECRYSTALLIZATION, HIGH RECRYSTALLIZATION, DOLOMITIC;
FOSSILS: FOSSIL FRAGMENTS, FOSSIL MOLDS;
VERY RUBBLY APPEARANCE W\ 20% PHOS. 586-587'.

587 - 593 LIMESTONE; LIGHT GREENISH GRAY TO LIGHT GRAY; INTERGRANULAR;
GRAIN TYPE: SKELETAL, BIOGENIC, CALCILUTITE;
RANGE: VERY FINE TO FINE; POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
SEDIMENTARY STRUCTURES: MOTTLED,
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%;
FOSSILS: FOSSIL FRAGMENTS;
PACKESTONE-WACKESTONE. MOTTLED BY BURROWS. DRILLER NOTES FLOW AT 592'. VARIABLE SAND CONTENT.

593 - 595 LIMESTONE; LIGHT GREENISH GRAY TO GREENISH GRAY; INTERGRANULAR;
GRAIN TYPE: SKELETAL, BIOGENIC, CALCILUTITE;
GRAIN SIZE: FINE; MODERATE INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%, SILT- %;
FOSSILS: FOSSIL FRAGMENTS;
PACKESTONE TO WACKESTONE. MORE CLAY AND VARIABLE CLAY THAN 587-593', THIN ZONES OF CLAY.

595 - 601 CLAY; GREENISH GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-03%, PHOSPHATIC SAND-01%, SILT- %, CALCILUTITE- %;
FOSSILS: FOSSIL FRAGMENTS;
VERY CALCAREOUS. VARIABLE TO VERY CLAYEY, SILTY LS.

601 - 605 CLAY; GREENISH GRAY TO LIGHT OLIVE GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%, SILT- %;
FOSSILS: FOSSIL FRAGMENTS, BRYOZOA, MOLLUSKS, BENTHIC FORAMINIFERA;
FEW FOSSIL FRAGS ABOVE 603'. VERY ABUNDANT FRAGS (BRYOZOANS, MOLL., FORAM?) BELOW 603 TO 605'. CARBONATE CONTENT IN MATRIX INCREASES BETWEEN 603-5'.

605 - 607.5 SILT; YELLOWISH GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-01%;
FOSSILS: FOSSIL FRAGMENTS;
CLAY CONTENT INCREASES WITH DEPTH TO 607.5'.

607.5- 609.5 CLAY; OLIVE GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-02%;
LITTLE CALC., VERY FEW FOSSILS, MANY BURROWS- OFTEN FILLED WITH CARBONATE.

609.5- 611 CLAY; LIGHT GREENISH GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-03%, CALCILUTITE-03%;
FOSSILS: FOSSIL FRAGMENTS;
ABUNDANT FOSSIL FRAGS.; MORE CARBONATE WITH DEPTH, GRADING INTO LS.

611 - 621 WACKESTONE; GREENISH GRAY; LOW PERMEABILITY;
GRAIN TYPE: CALCILUTITE, SKELETAL;
POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-30%, PHOSPHATIC SAND-04%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS;
HIGHLY VARIABLE CLAY CONTENT. CLAY AS 609.5 AT 616-17', 618.5-619.5; LS W\ ABUNDANT OSTREA 619.25-621'.

621 - 622.8 PACKSTONE; LIGHT GRAY TO LIGHT GREENISH GRAY;
GRAIN TYPE: CALCILUTITE;
POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS;
POOR-MOD. IND.; CLAY MATRIX IN SOME ZONES; ABUNDANT FOSSIL FRAGMENTS, THICK OSTREA AT 622.75'.

622.8- 624.5 WACKESTONE; LIGHT GREENISH GRAY;
POOR INDURATION;
CEMENT TYPE(S): CLAY MATRIX, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS;
LS TO CLAY. CLAY CONTENT DECREASE TO 624.5', GRADES INTO UNDERLYING BED.

624.5- 633 LIMESTONE; LIGHT GREENISH GRAY;
MODERATE INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-01%, PHOSPHATIC SAND-01%;
FOSSILS: FOSSIL FRAGMENTS, MOLLUSKS, BRYOZOA;
LESS CLAYEY THAN ABOVE. VARIABLY DOLOMITIC.

633 - 635 LOST RETURNS.

635 - 636 DOLOMITE; LIGHT BROWNISH GRAY;
RANGE: MICROCRYSTALLINE TO VERY FINE; GOOD INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-07%, PHOSPHATIC SAND-02%;
OTHER FEATURES: MEDIUM RECRYSTALLIZATION;
FOSSILS: FOSSIL MOLDS, FOSSIL FRAGMENTS, BRYOZOA;
DOLOMITE MIXED WITH LS AS 624.5'. MOD. DOLOMITIZATION.

636 - 638 PACKSTONE; ;

638 - 638 PACKSTONE; WHITE TO LIGHT GRAY;
MODERATE INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-01%;
SOME PHOS. GRAVEL <1%. MIXED W\ DOLO. CLASTS.

638 - 641 CLAY; LIGHT GREENISH GRAY TO GREENISH GRAY; LOW PERMEABILITY; POOR INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-02%, PHOSPHATIC SAND-05%, CALCILUTITE-30%;
FOSSILS: FOSSIL FRAGMENTS;

641 - 646.5 DOLOMITE; GREENISH GRAY;
GRAIN SIZE: MICROCRYSTALLINE; GOOD INDURATION;
CEMENT TYPE(S): DOLOMITE CEMENT;
ACCESSORY MINERALS: QUARTZ SAND-10%, PHOSPHATIC SAND-04%, SILT- %, CLAY- %;
FOSSILS: FOSSIL MOLDS;
MANY BURROWS FILLED WITH CLAY, SILTY, SOME ZONES ARE DOLOMITIC.

646.5- 658 LIMESTONE; LIGHT GREENISH GRAY TO YELLOWISH GRAY; MOLDIC;
GRAIN TYPE: SKELETAL, BIOGENIC, CALCILUTITE;
MODERATE INDURATION;
CEMENT TYPE(S): CALCILUTITE MATRIX, CLAY MATRIX;
ACCESSORY MINERALS: CLAY- %, QUARTZ SAND-01%, PHOSPHATIC SAND-01%, PYRITE- %;
OTHER FEATURES: DOLOMITIC;
FOSSILS: BRYOZOA, FOSSIL FRAGMENTS, BENTHIC FORAMINIFERA;
PACKSTONE-WACKESTONE. SLIGHTLY TO MOD. DOLOMITIC. ABUNDANT BRYOZOANS IN SOME ZONES. LEACHED FORAMS AND FOSSIL FRAGS. PYRITE FILLED MOLDS. THIN ZONES OF DOLOMITIC SANDS, CLAY.

658 - 662 PACKSTONE; LIGHT GRAY TO MODERATE GRAY;
GOOD INDURATION;
CEMENT TYPE(S): SPARRY CALCITE CEMENT, CALCILUTITE MATRIX;
ACCESSORY MINERALS: QUARTZ SAND-05%, PHOSPHATIC SAND-07%;
OTHER FEATURES: HIGH RECRYSTALLIZATION;
FOSSILS: FOSSIL MOLDS, MOLLUSKS;
TAMPA-LIKE, BUT TOO PHOSPHATIC. SOME SOFTER ZONES ARE VERY PHOSPHATIC. SOME ZONES MAY BE DOLOMITC. BASAL ZONE OF MOLDIC LS. LOOKS LIKE ZONES SEEN IN MANY OTHER CORES IN LEE AND COLLIER COUNTIES AND IN PORT BOUGAINVILLA CORE.

662 TOTAL DEPTH