~~Sample Description~~

70 – SD & LS, UNCONSOLIDATED: 80% M-GRN SR WP SD. 20% WHITE MICROXTAL LS FRAGS, MOST SHOWING ROUNDING. TR SH FRAGS.

~~70~~-75 – DO @ INC IN LS TO 40%, CORRESP DEC IN SD. SD M-C GRN

75-80 – WHITE MICROXTAL LS, @ TR SH MATL. C-GRN SR-R WP SD PREDOM

80-84 – DO

84 – DO @ BLK & BRN-STAINED SAND V V PREDOM.

84-90 – SAND, UNCONSOL, C-GRN, SR-R, WP. (80%). 20% WHITE LS AS ABOVE.

90-100 LS, ~~WHITE TO~~ LT-TAN, MICROXTALL, WELL IND, GOOD INC. TR SAND.

100-110 DO @ MUCH SOLUTION EFFECT ON LS. MANY SMALL PITS & VUGS DEVELOPED

110-120 DO @ LG FORAMS V PREDOM

120-130 – LS, LT GRY, V HIGHLY VUGGY. MUCH LS AS ABOVE

130-140 DO

240-250 LS, WHITE, VF XTAL, WELL IND. TR BRN OIL-STAINING VUGS.

250-260 DO @ ABT ½ OF ROCK OIL-STAINED. BLK ASPHALTIC MATL COMMON

270-280 - AS ABOVE @ NO VUGS OR FRACS
MAG. GRAIN SIZE MICROCRYST, SL CALCITE

280-290 - 00

290-300 - 00 @ BASE OIL-STAIN, ASPHALTIC MATL
PROM.

300-10 AS 280-90

310-20 LS, VF XTLN, WKST MTX, VUGS WKST DOL.
TR FOSSILIFEROUS MATL LIMEY SHALES.

320-30 00 @ MUCH OF LS AS (V-FINE-GRAIN
SIZE MIXTURE OF RUBBLY LS PARTS

330-40 LS @ 310-20

340-50, 350-60 - 00

1215-20 - AS. OGSC ON GC

FLA-FRA-OT-2

70 | M, crmy, A-SR gtz sd

70-75 | wh, micro, ind ch, porous

75-80 | do

80-84 | wh, micro, ind chy ls, porous

84 | wh, soft ch, porous

84-90 | wh, M, A-SR gtz sd w/ a few forams

90-100 | Crmy, micro, soft ch, porous

100-10 | wh w/ yel cast, micro, soft, v chy ls, porous

110-20 | -do- but not v chy

120-30 | vltgry, micro, ind, pel-frag, cly ls, porous

130-40 | do

140-240 | N.S.

240-50 | wh, frag, micro, ind ls, porous

250-60 | wh, micro, ind, chy ls, porous

260-70 | -do-

270-80 | -do-

280-90 | -do- w/ some frags of wh, micro, chy ls

290-300 | do

300-10 | do

310-20 | do

320-30 | do

1160-1215 | N.S

1215-20 | crmy, micro ind, foss-frag, chy ls almost completely dolt'd by lt tan, f xtals dol

1220-30 | brn, vuggy, m xtals, gypsf, tight dol. Typ is lenses & pods

1230-40 | do w/ thin clear plates of selenite loose & in dol

1240-50 | do relict foss from ls can still be seen

1250-60 | wh, microcolline dolic, ~~dolst~~ w/ micro mtx.

1260-70 | do

1270-80 | do

1280-90 | do but wh-buff

1290-00 | do

1300-10 | do wh-crmy

1350-60 | do

1400-10 | tan, f xtals, tight, vuggy, chy dol Tr blk asp

1450-60 | -do-

1460-70 | do

1470-80 | do w/ abundant asp

1480-90 | do but dol is m xtals

1490-00 | do but not chy

1500-10 | do Tr asp

1510-20 | brn-bmgny, micro, ind asphaltic ls w/ tr vltgry cht

1520-30 | do

1530-40 | wh-tan, dolt'd, foss-frag, micro, ind ls w/ brn, asphaltic, micro, ind ls

dol is tan, M xtaln, porous, vuggy

1570-80 | Crmy, micro, foss, dolic, ind ls

1580-90 | do

1590-00 | do

1600-10 | tan, M xtaln, sacc, vuggy, porous dol

1610-20 | Crmy, micro, foss, ind ls

1620-30 | do

1630-40 | do

1640-50 | tan, M xtaln, sacc, vuggy, tight dol

1650-60 | Crmy, micro, foss, ind ls

1660-70 | brn, micro, porous, asphaltic ls

1670-80 | do

1680-90 | Crmy, micro, foss-pel, ind ls

1690-00 | tan, f xtaln, vuggy porous dol

1700-10 | buff, frag-foss, micro, ind ls w/ som doltz & abundant loose forams

1750-60 | do but crmy

1780-90 | do

1790-00 | do w/ abundant C xtaln doltz

1800-10 | do

1810-20 | do

1820-30 | do w/ less doltz

1830-40 | do

1840-50 | do w/ som pieces gypsf

1880-90 | do

1890-00 | Buff-crmy, microcoquina, lilac, porous, chy ls w/ micro matrix & brn cht chips

1900-10 | do w/ abundant lg loose forams

1950-60 | do

2000-10 | do

2050-60 | do

2080-90 | buff, ool, ang cht chips

2090-00 | ls as above

2100-10 | buff, ool, ang, cht chips

2110-20 | Crmy, microcoquina w/ qtz lams, micro matrix, ind, porous w/ abundant loose ls forams

2160-90 | Crmy, porous, ind, microcquina w/ micro matrix, abundant ls loose forams & dk brn highly fractured cht chps

2190-00 | do w/ fewer fractures in cht

2200-10 | do but foss smaller & some pel ls

2250-60 | do abundant pel ls

2290-00 | do but foss v small

2300-10 | wh-crmy, pel ls, porous, ind w/ micro matrix & abundant brn, gry, ang cht chips pels of sd size

2310-20 | do

2320-30 | do

2330-40 | do & cht

2340-50 | do

2370-80 | Crmy, microcoquina-lilac, foss, chy, porous, ind ls

| do

2450-60 | do

2460-70 | do

2470-80 | wh, v chy, micro, ind ls w/ gry CAST

2480-90 | do

2490-00 | Crmy, micro, foss-pel ls, fossil pel small, porous, chy w/ abundant dk-lt brn Ang cht chips

N.S.

2500-10 |

2510-20 | do

2520-30 | do but no pel or foss

2590-00 | do

2620-30 | do

2630-40 | do but cht is lt brn-ltgry

2640-50 | do but ls is pel

2650-60 | do

2700-10 | do

2740-50 | buff, micro, ind, chy, porous ls w/ Abundant dk brn-ltgry cht chips Tr deep gn glauc

2750-60 | buff, micro, ind, porous non chy ls w/ cht as above

2800-10 | do

2610-20 | Crmy-buff, micro-pel, porous, ind, chy ls w/ cht as above

2820-30 | —do— w/ Tr. cht & deep gn glauc

2830-40 | do

2840-50 | do

2850-60 | lt brn gry, v Ang cht chips

[illegible] porous ind ls w/ cht as (2650-60)

2890-00 | wh, micro-pel, ind, chy, porous ls w/ vltgy-ltbrngry, v Ang cht chps

2900-10 | do

2930-40 | do

2940-50 | wh, chy, ind, micro, porous ls w/ vltgy-wh, v Ang, cht chps

2950-60 | do but wh-buff ls

2960-70 | do

2970-80 | vltgy, micro, ind, porous ls w/ dk-ltbrn-ltgry, NAng, cht chps

2980-90 | do becoming fairly tight

2990-00 | do

3000-10 | do

3040-50 | do

3050-60 | dk tan M rally, sacc, vuggy, porous, chy dol as replacement of ls above

3060-70 | do

3070-80 | ltgngry, blocky, soft, calc sh

3080-90 | do

3090-00 | do. now w/ pods of wh calc material

3100-10 | do

3140-50 | do

3150-60 | wh, micro, ind chy ls

3190-00 | do w/ Tr Inoceramus prisms

3200-10 | ltgngry, blocky-fissile, soft, calc sh

3210-20 | do

| ls, cht chy ls

3300-10 | do

3350-60 | do Tr brn-wh, VAry cht chips

3400-10 | do

3500-10 | do but less chy than above

3550-60 | do & wh-ltgry

3600-10 | do

3610-20 | do

3630-30 | lt-dk gry, fissile, soft, calc sh

3630-40 | do

3640-50 | do

3650-60 | do

3660-70 | do

3670-80 | do

3680-90 | wh, micro, porous, ind chy ls

3690-00 | do

3700-10 | do

3710-20 | Gn-gry, soft, fissile, calc sh w wh pods of calc mareml

3720-30 | do

3730-40 | wh-ltgry, micro, ind, chy, porous ls Tr Anh pyr

3740-70 | do

3770-80 | sh as above w minor AMTS of dk gry, fissile, soft, calc sh

3780-90 | do

May have ltgn-gry, fissile calc, soft sh intbd

3850-60 | wh - v lt gry, micro, ind, porous, foss ls

3910-20 | do

3920-30 | Gry-brngry, fissle, hard sh w/ well developed lt calc talk laminations

3950-60 | do

3960-00 | do

4000-10 | do

4010-20 | buff, micro, tight, sdy ls sd is wh, f, ang

4020-30 | do

4030-40 | do

4040-50 | do

4050-60 | dk gry-gnry, fossily, soft sh

4100-10 | do

4150-60 | do

4200-10 | do

4250-60 | do

4260-70 | do

4270-80 | do

4280-90 | do

4290-00 | do

4340-50 | ltgry, f, glauc, pyritic, friable, calc ss

4350-60 | sh as above

4360-70 | ss as above

(4340 - 4690 Intb shoss as described at left)

ELA-PRA-01-2 (Detail of Red Bed Section)

4700-10| first appearance of red beds,
brick red, blocky, soft, highly mic. sh w/ wh, red, fgrn calc ss

4710-20| do plus Tr. Anh pyr

4720-30| brick red w/ slight gngry cast, soft, slightly fissile, highly mic sh w/ fgrn, pyritic, mic Arg, calc ss plus Tr. Anh pyr

4730-40| do plus glauc in ss

4740-50| do for sh ss is now v arg

4750-60| f-vfgrn, highly Arg, mic, glauc wh-pink, red, calc ss

4760-70| brick red, fissile, soft-hard, highly mic w/ gngry cast sh w/ ss as above & loose M musc

4770-80| N.R.S. (Lino red sh)

4780-90| brick red, blocky, soft, highly mic sh w/ gngry cast w/ wh, f-mgrn, slightly Arg, calc, friable ss plus M-f, musc flakes

4790-00| sh "do" but not as mic as above ss is wh-pink, glauc fgrn, Arg/calc, friable, glauc musc is c-f flaky

4800-10| N.R.S. (Lino red sh)

4810-20| brick red w/ gngry cast, highly mic, blocky-fissile, hard-soft sh w/ fgrn, wh-pink, Arg, glauc mic, calc ss, Tr. Anh pyr & M platy musc

4820-30| do for sh ss is wh-red, vf-fgrn, glauc, mic, Arg w/ blot musc

4830-40| brick red, fissile soft, highly mic sh

4840-50| do

4850-60| do but blocky & some pieces have ltgngry cast

4860-70| do w/ Tr. glauc & pyr in ss w/ M-f musc flakes

4900-10 brick red, fissile-blocky, soft, highly mic sh w/ some pieces of ltgngy cast

4910-20 do Tr. pyr (in some pieces mica not as large as in others)

4920-30 do but no pyr

4930-40 do Tr. pyr.

4940-50 do but no pyr

4950-60 do Tr. pyr. v few w/ gngy cast

4960-70 do

4970-80 do No pyr or pieces w/ gngy cast

4980-90 brick red, fissile-blocky, soft, highly mic sh possibly more finely mic than above
some lt-dk maroon, soft, finely mic pieces

4990-00 do but mica coarser than above

5000-10 do

5010-20 do w/ glauc pyr in ss

5020-30 do but no maroon pieces

5030-40 brick red, fissile-blocky, soft, highly mic sh w/some pieces mottled & tinted gngy w/ easily visible
mica flakes coarser than above. Abundant ss

5040-50 do but more finely mic than above w/ abund ss

5050-60 do w/ mxt. of coarser & finer mic types

5060-70 do w/ glauc in ss

5070-80 do

5080-90 brick red, blocky, soft, highly mic sh w/ mica being visible but not as coarse
as above Tr. pyr

in some pieces

5100-10| do w/ Tr. pyr & glauc in SS

5110-20| do w/ Tr. glauc in SS & brn red, fissile, soft sltst

5120-30| do w/ Tr. pyr & glauc in SS & sltst & C-f loose musc flakes

5130-40| brick red - slight maroon, fissile - blocky, soft, highly mic sh but not as coarsely mic as above. Some pieces of brick red, sltst & loose musc probably from abundant SS & red Tr. pyr & glauc within SS

5140-50| do but no pyr

5150-60| do

5160-70| do Fsp in SS?

5170-80| N.S.

5180-90| brick red - slight maroon, fissile - blocky, soft, highly mic sh, mxt. of coarsely - finely mic by euh-dal grains material. Tr. pyr & glauc in ASS. SS is v ang & loosely cemented & homo & there is possibility of fsp within the SS.

5190-00| N.S.

5200-10| do but no SS, pyr, fsp or glauc

5210-20| do w/ Tr. pyr & musc in ASS

5220-30| do but no pyr, musc, glauc, fsp but w/ M-C grn, wh, dolic SS as above (5180-90)

5230-40| do

5240-50| brick red, fissile - blocky, highly mic, soft sh w/ yel brn & gn gry mottling & mxt. of coarsely & finely mic pieces. SS is wh-gn gry, fgnd, mic.

5250-60| do

5260-70| do w/ Tr glauc in wh, fgn, mic SS

5300-10 | do but ss is not mic, glauc or pyr

5310-20 | do w/ tr. glauc & pyr in ss

5320-30 | do

5330-40 | do but sh is brick red - small amt. maroon & mottled as above

5340-50 | do but no glauc

5350-60 | 1st bag of almost 100% sh: brick red, soft, blocky-fissile, highly mic, sh which is vfinely mic. & mostly blocky. Possibly break b/w mottled & non mottled sh

5360-70 | do w/ a few medium mic pieces & w/ wh fgrn ss

5370-80 | do but no ss

5380-90 | do w/ wh-yel, fgrn, glauc & mic ss

5390-00 | do

5400-10 | do plus a few blocky, maroon, m mic, highly, mu, soft sh pieces

5410-20 | brick red, soft, highly mic, fissile-blocky sh which is vfinely - Mgrn micaceous, tr. pyr & glauc in wh-yel, m-fgrn ss

5420-30 | do w/ a few pieces mottled grn & yel

5430-40 | do

5440-50 | do plus a few maroon pieces

5450-60 | do

5460-70 | do but no pyr or glauc

5470-80 | do

5480-90 | do

5490-00 | do

5530-40 do ± fsp

5540-50 do but no glauc or pyr

5550-60 do w/ pink fsp in ss

5560-70 do

5570-80 do

5580-90 do

5590-600 do

5600-10 do ± fsp

5610-20 do

5620-30 sh is SAME but w/ wh-yel, sR, Mqmy, gtr sd Tr. gtr gravel

5630-40 do

5640-50 sh is same but w/ wh-pale yel-pink fgmy, ind ss + gravel

5650-60 do

5660-70 do but mostly blocky & Mqmy micaceous

5670-80 do w/ ss & Mqmy, wh-yel-pink sd no gravel

5680-90 do ss has calc matrix

5690-700 do

5700-10 sh is SAME, Tr rose qtz w/ abund. ss & wh Mxlnh dol

5710-20 do

5720-30 do

5730-40 sh as above w/ abund Mgmy wh ind ss w/ abund pink fsp inclusions & Tr. glauc.

5740-50 do but sh is ind

5780-90 | Brick red, soft, highly mic, fissile-blocky, vf-m gnd micaceous sh w/ a few maroon pieces
Wh, m-f gnd, ind, qtz-fsp ss w/ irridescent slightly calc matrix.

5790-00 | do

5800-10 | do plus MICA-ss

5810-20 | do but ss wh-pink

5820-30 | do but no ss

5830-40 | do w/ ss as above but — mica

5840-60 | N.S

5860-70 | sh as above w/ f-m gnd, wh-pink, ind ss w/ som fsp plus Mgnd, SR, loose qtz sd

5870-80 | do

5880-90 | do but no sd Tr. rose qtz

5890-00 | do but no rose qtz

5900-10 | do

5910-20 | do

5920-30 | do but w/ sd

5930-40 | do Tr. rose qtz Pel ls here

5940-50 | do No rose qtz

5950-60 | sh as above w/ ss as above + Tr. pel ls

5960-70 | do but sh is ind-soft & some pieces mottled gn-yel No ls

5970-80 | do

5980-90 | do

5990-00 | do

6030-40 | do | but no ls

6040-50 | do

6050-60 | do

6060-70 | do | In. ls & rose qtz

6070-80 | do | no ls or rose qtz

6080-90 | do

6090-00 | do

6100-10 | do

6110-20 | do | In. rose qtz | calc ss

6120-30 | do | no rose qtz

6130-40 | wh-red, f-M qtz, calc ind, sparse qtz ss

6140-50 | do

6150-60 | do

6160-70 | do | In. rose qtz | w/ brick red, highly mic. ind. soft, blocky fissile sh, f-m micaceous

6170-80 | N.S.

6180-90 | Same (6160-70) | w/ a few pieces of maroon sh as above | SS not calc

6190-00 | do

6200-10 | do

6210-20 | do | but sh v slightly deeper red than above + some pieces wh-yel-gn | SS is wh-yel-red

6220-30 | do

6250-60 | do but ss fgnd only

6260-70 | do plus micg wh ls

6270-80 | do

6280-90 | do Tr glauc in ss

6290-00 | do Tr glauc & mica in ss

6300-10 | do

6310-20 | do

6320-30 | do

6330-40 | do

6340-50 | do

6350-60 | do but no ls

6360-70 | do but m-f micaceous & no ss

6370-80 | do

6380-90 | do

6390-00 | do

6400-10 | do w/ wh-pink, fgnd, calc, md ss w/ Tr glauc & mica

6410-20 | do

6420-30 | do but no ss Tr red, micg ls

6430-40 | sh as above w/ wh-pale grn, md, fgnd, calc, mic ss plus micg/lyg ls

6440-50 | do but ss wh-pink

6450-60 | do w/ abund. lt-dk gry, friable, soft, calc sh

6460-70 | do but no ss or ls

6500-10 do

6510-20 do

6520-30 do

6530-40 do

6540-50 do

6550-60 do

6560-70 do but mostly gry sh as above & no SS

6570-80 equal amts. of redgry sh as above plus SS as above

6580-90 red sh as above plus red, f gry red, calc ss w/ Tr. mica in it

6590-00 do plus gry sh as above

6600-10 do but no SS plus red-yel mottled, micro ls

6620-30 do plus ss as above

6630-40 do but no SS & ls is wh-red

6640-50 deep brick red, highly mic f-Mgry micaceous, fissile-blocky but mostly blocky, ind-soft sh
plus lt-Mgry-gnygry, fissile, soft, calc sh plus Multicol, micro, tight, hard ls

6650-60 do plus wh-pink-pale gn, vf-fgry, red, slightly calc, slightly glauc,
slightly mic, slightly pyritic ss

6660-70 do but red sh is mostly & mic

6670-80 do

6680-90 do

6690-00 do

6700-10 do but red sh is M-f micaceous

6740-50 | do

6750-60 | do plus ls as above

6760-70 | do but red sh is deep-M brick red-orange red Tr. pyr

6770-80 | do w/ rare of orange red sh

6780-90 | do

6790-00 | do No pyr.

6800-10 | do

6810-20 | red sh as above w/ gnarly, fissile, soft, calc sh w/ ss as above

6820-30 | deep brick red w/ some orange red, red soft, blocky-fissile but mostly blocky, highly micr M-finely micaceous, sh plus pinky fgry, rnd, calc, maybe slightly feldspathic q-ss plus gnarly, fissile, soft, calc sh

6830-40 | do plus a few pieces of multicol, micro, light is

6840-50 | do

6850-60 | do

6860-70 | do

6870-80 | do w/ Tr. wh glauc, vfgry, calc ss, micr

6880-90 | do

6890-00 | do w/ Tr. pyr

6900-10 | do but no pyr

6910-20 | do

6920-30 | do

6930-40 | do

6960-70 do

6970-80 red-pink ss as above; wh ss as above; deep brick red-maroon-dk orange red, blocky-fissile but mostly blocky, highly mic, v-finely micaceous, ind-soft sh; multicol ls as above; Tr. M-gn q-xl, fissile, soft, calc sh

6980-90 do but no wh ss

6990-00 do w/ wh ss as above

7000-10 red sh as above; red-pink-wh, fgrn, ind, slightly calc ss; wh, vfgrn, ind, mic, glauc, calc ss; gngry-Mgry-brngry, fissile soft calc sh

7010-20 do

7020-30 do Tr. rose qtz

7030-40 do no rose qtz

7040-50 red sh as above; gry sh as above; Tr. red-pink-wh, fgrn ss & wh vfgrn, slarc ss A few pieces of wh, micro ind ls & vltgry, blocky, soft, calc sh

7050-60 do plus vf & fgrn sandstones as above

7060-70 do but no ls

7070-80 do

7080-90 do but no red or pink ss Tr. pyr

7090-00 do STARTING AT 7080, there is wh, f-vf ss as above

7100-10 do but only traces, if any, of the pink & red ss.

7110-20 do

7120-30 do

7130-40 do

7160-70 do but no ltgy sh

7170-80 do Tr. pyr

7180-90 red sh as above; wh-ltgy f-vfgry, rnd, calc, mic, glauc, pyritic ss; dk-Mgry-gngry, fissile, soft calc sh

7190-00 do

7200-10 do plus Abund. wh-ltgry, Mgrn qtz tr

7210-20 do

7220-30 do

7230-40 wh-ltgry-pink, vf-fgry, rnd, mic, glauc, slightly calc ss w/ deep brick red, blocky, ind-soft, highly mic, M-finely mic sh, plus gngry-Mgry, fissile, soft, slightly calc sh, Arg-clean and some M-fgrn Mgry qtz tr

7240-50 do

7250-60 do

7260-70 do

7270-80 do but red sh is deep brick red-Maroon & no qtz-tr

7280-90 do

7290-00 do plus purple, blocky, soft, highly v-finely mic, sh, v finely sdy

7300-10 do

7310-20 do

7320-30 do

7330-40 deep brick red-maroon, blocky, ind-soft, highly mic, All finely mic, sh w/ M-gngry, fissile, soft, slightly calc sh, plus pink-wh-ltgngry vf-fgry, rnd, glauc, mic, Arg-clean, pyritic, ss

7370-80	do
7380-90	do but red sh is M-finely mic plus purple, blocky, soft, v finely sdy sh
7390-00	do
7400-10	do
7410-20	do but no purple sh
7420-30	do
7430-40	do
7440-50	do w/ some pink, fgrn qtztz
7450-60	do
7460-70	do but no qtztz but w/ wh, micro, ind, foss ls, porous
7470-80	do but w/ wh, Mgrn qtztz (red sh, gy sh, ss ls)
7480-90	deep brick red - maroon, highly mic, M-finely mic, ind-soft, blocky sh
7490-00	sh as above w/ pink, fgrn, ind, mic, Arg, slightly calc-dolic ss, slightly glauc
7500-10	do
7510-20	do
7520-30	do but ss is not glauc or mic, but sample has gn, blocky, highly waxy mic sh, soft
7530-40	do
7540-50	red sh as above; ss is pink- wh & not glauc or mic; gn, fissile, highly mic, ind-soft sh
7550-60	do w/ wh-pink marg light, hard dol probably as matrix in ss
7560-70	do but no gn sh
7570-80	do plus gn sh
7580-90	do

7620-30	do
7630-40	do no pyr
7640-50	do
7650-60	do plus dull orange red, fissile, ind, extremely f micaceous sh, breaks into pencil-like pieces
7660-70	do
7670-80	do has more of "pencil" dull orange red sh than above
7680-90	do
7690-00	do
7700-10	do has less "pencil" sh than above
7710-20	do
7720-30	do but no "pencil sh"
7730-40	do
7740-50	red sh, gn sh, wh-pink, fgny tght, ind, dolic ss w/ Tr. "pencil" red sh as above
7750-60	do plus Tr. ltgn, ufgny, mic, ind ss
7760-70	red sh, gn sh, wh-pink ss, gn ss
7770-80	do Tr. pyr
7780-90	do but no pyr on pink ss
7790-00	red sh, gn sh, wh-pink ss, plus Tr. purple, blocky, ind, ufinely sdy sh
7800-10	do
7810-20	do plus some dull orange red, fissile, ind, extremely finely mic, sh that breaks into pencil-like pieces
7820-30	red sh, gn sh, wh, fgny, ind, dolic ss, ltgn, ufgny, glauy, mic, ind ss, "pencil" sh as above but more of

7850-60 red sh/wh, fgry, ddy, ind ss; pencil sh; gn sh; Tr. ltgn, micaceous, vfgrn ss

7860-70 red sh; wh/pink ss; gn sh; Tr. pencil sh

7870-80 red sh slightly lighter red than above; gn sh; wh-pink ss

7880-90 red sh, wh-pink ss, Tr gn sh

7890-00 deep brick red - brn red - maroon, blocky ind soft, highly slty micaceous sh

wh-pink, fgry ind, ddy ss w/ some pieces glauconitic Tr. gry-gn gry, fissile, soft, calc sh

& lt-mgn, highly arg, vfgrn, pyritic, calc ss

7900-10 do w/ some pieces of red-brn mottled, micro, tight dol lmst, which is probably dolic ss matrix

7910-20 do

7920-30 do

7930-40 do but no gn ss

7940-50 do but w/ gn ss but no pyr

7950-60 do

7960-70 do but mostly red sh w/ Tr of the rest

7970-80 red sh, gn-gry sh, wh-pink ss

7980-90 Same (7900-10) but no pyr

7990-00 do

8000-10 do but vfgrn ss is now just slightly calc

8010-20 do

8020-30 do w/ some of the red sh being slightly, finely sdy

8030-40 do

8070-80 | Red sh, pinkss, gry sh, qn ss + A few pieces of orange rd, fissile, ind, extremely finely micaceous, pencil-like sh as above

8080-90 | do In pyr

8090-00 | do but no qn ss

8100-10 | red sh, pink-wh ss, gry-grn-gry sh, "pencil" sh

8110-20 | do

8120-30 | N.S.

8130-40 | do

8140-50 | do plus pale grn vfgrn, mic, Arg, ind ss

8150-60 | N.S.

8160-70 | do

8170-80 | N.S.

8180-90 | do

8190-00 | do

8200-10 | deep brick red - deep brn red - maroon, blocky highly mic, m-finely micaceous, ind-soft sh w/ wh-pink-red, Arg, fgrn dolic ss w/ some pieces bery mic & slightly glauc plus a few pieces of pale grn vfgrn Arg, mic, ind, slightely calc ss

8210-20 | do

8220-30 | do

8230-40 | do w/ qn ss bcom, slightely glauc & pyritic

8240-50 | do

8250-60 | do but wh-pink-wh ss is Mgrn

8290-00 | do

8300-10 | red sh, Mgrn ss   Tr. pale gn, vfgrn, mic, ind, arg ss

8310-20 | red sh, Mgrn ss

8320-30 | SAME (8300-10) plus abund loose clean red, Mgrn sd

8330-40 | do

8340-50 | red sh, Mgrn SS

8350-60 | do   Tr pale gn, vfgrn, mic, ind ss, arg.

8360-70 | do   but almost completely deep brn red sh

8370-80 | do

8380-90 | do

8390-00 | do   Tr gn gry, fissile, soft, calc sh probably falling down hole

8400-10 | do   red sh is deep brn red-maroon

8410-20 | do

8420-30 | do

8430-40 | red sh, gn sh, Mgrn SS   Tr. C, clear qtz

8440-50 | do

8450-60 | red sh which is deep brn red-orange red; Mgrn ss; gngry-gry sh; vpale gn, vfgrn, ind, arg, mic ss, glauc

8460-70 | do   but red sh is mostly finely mic

8470-80 | red sh, gngry-gry sh   Tr. Mgrn-vfgrn ss

8480-90 | Red sh; Tr. gry sh, Mgrn ss, vfgrn ss

8490-00 | deep brn red-orange red, blocky, ind-soft, highly mic, finely micaceous sh w/ some pieces vslightly & finely sdy; Tr. wh-red-pink, Mgrn, ind, dolic, sometimes mic ss; lt pale gn, vfgrn, mic w/ or glauc, ind

8520-30 do

8530-40 do

8540-50 do but red ss is M-fgrn gy ss is pyritic

8550-60 do no pyr.

8560-70 Abund Mgrn-fgrn ss & red sh Tr. gy sh, gy ss

8570-80 do

8580-90 red sh, M-fgrn ss, Abund, wh-red-yel, VC, qtz sd

8590-00 red sh, f-Mgrn ss, Tr. gy ss, qtz sd, gy-gry sh

8600-10 red sh, f-Mgrn ss Tr. gy ss, qtz sd, purple, ind, blocky sh Red sh is mostly orange-brick red

8610-20 do

8620-30 red sh, f-Mgrn ss

8630-40 red sh Tr. gy fissile sh, purple, fissile-blocky, ind sh, dull yel, ind cly

8640-50 red sh w/ M-fgrn ss as above & Tr. yel cly

8650-60 do

8660-70 red sh w/Tr. dull yel, ind cly

8670-80 red sh w/ Tr. dull yel, ind cly, purple, blocky, ind, finely sdy sh

8680-90 red sh Tr. lt-Mgry-gy gry, fissily, soft, calc sh

8690-00 do

8700-10 do plus Tr. yel cly as above

8710-20 do but no cly

8720-30 do

8730-40 red sh w/ Tr. gy-gry, fissile, soft, calc sh

8770-80 red sh (mostly brick red) w/ tr. gny-gn gyp, fissile, soft, calc sh

8780-90 do

8790-00 red sh (brick red-deep brn red)

8800-10 do

8810-20 red sh as above w/ tr. gn, fissile, soft, calc sh

8820-30 do

8830-40 red sh (deep brick red-deep brn red-maroon) w/ tr. gn sh

8840-50 red sh

8850-60 do

8860-70 do w/ tr. red fgnd, Arg, ivd ss

8870-80 do

8880-90 do plus tr. lm

8890-00 red sh w/ tr. pyr

8900-10 red sh but slightly more sdy than above

8910-20 do

8920-30 do

8930-40 do tr. pyr.

8940-50 do but tr. lm & no pyr

8950-60 do but no lm

8960-70 red sh AS above

8970-80 do

8980-90 do

9020-30 | red sh as above w/ Tr. yel, fissile, soft sh

9030-40 | red sh as above

9040-50 | do

9050-60 | red sh w/ Tr. v pale ltgy, blocky, soft calc sh; M-fgrn, rnd-wh ss

9060-70 | do

9070-80 | red sh w/ Tr. gn sh & dull yel, blocky, ind cly

9080-90 | red sh w/ Tr. ltgy, vfgrn, Arg, Mic, ind, slightly calc ss

9090-00 | do

9100-10 | do

9110-20 | red sh w/ Tr dull yel, blocky, ind cly

9120-30 | red sh

9130-40 | do

9140-50 | do

9150-60 | do

9160-70 | do

9170-80 | do

9180-90 | do

9190-00 | do

9200-10 | do

9210-20 | do

9220-30 | do

9230-40 | do w/ Tr. rnd-wh, f-Agrn, ind, dolic ss

9270-80 | do

9280-90 | do

9290-00 | do

9300-10 | do w/ Tr. blk lim

9310-20 | red sh as above

9320-30 | do

9330-40 | do

9340-50 | do

9350-60 | do

9360-70 | do

9370-80 | red sh as above w/ Tr. yel-pink, f-Mgrn, qtztz

9380-90 | red sh as above

9390-00 | do

9400-10 | do

9410-20 | do

9420-30 | do w/ Tr. Mgrn, wR, qtz sd

9430-40 | red sh as above w/ Tr. Milky-pink-clear, wR-A, Cgrn, highly fractured qtz sd

9440-50 | red sh w/ abund. qtz sd Also appears to be some qtztz present

9450-60 | do

9460-70 | do

9470-80 | do

9480-90 | do

9520-30 | do bar no yel

9530-40 | do

9540-50 | do

9550-60 | do

9560-70 | do

9570-80 | do

9580-90 | 50% sh 50% qtz-rq tztz

9590-00 | do

9600-10 | 50% deep brn red - deepbrick red, blocky, ind-soft, finely mic, highly mic, vfinely sdy sh
50% wh-clear-milky-red, C-UC gry, A-SR qtz-sd & wh-clear-milky-red, M grn qtztz

9610-20 | do

9620-30 | Sd & qtztz as above w/ some red sh as above

9630-40 | do

9640-50 | do

9650-60 | do

9660-70 | qtztz & sd w/ Tr, sh as above

9670-80 | do

9680-90 | do

9690-00 | do

9700-10 | do

9710-20 | Sd & qtztz w/ Abund sh as above

9720-30 | do

9760-70 | do

9770-80 | do

9780-90 | do plus tr. qngny, fissile, solid sh

9790-00 | do

9800-10 | do

9810-20 | qtz+qtzite w tr. red sh as above

9820-30 | do

9830-40 | do

9840-50 | do

9850-60 | do w/ tr. fsp(pink) + red sh

9860-70 | do

9870-80 | do

9880-90 | do slightly more fsp than above

9890-00 | abund. qtz+qtzite as above w/ abund micropegmatite(fsp+qtz intergrowths) w/ tr. red sh as above

9900-10 | do

9910-20 | wh-clear-pink, VC, A-SR qtz sd + wh-clear-pink, M-Cgr qtzite w/ some qtz intergrown with fsp. tr. sh

9920-30 | do

9930-40 | do

9940-50 | do

9950-60 | do

9990-00 | qtz sd, qtzite, fsp, qtz & fsp ingrowths, cly, red sh   All as Above
10,000-10 | do
10,010-20 | do
10,020-30 | Abund qtz sd & qtzite w/ Tr. red sh, wh cly & fsp
10,030-40 | do
10,040-50 | do
10,050-60 | do
10,060-70 | do
10,070-80 | N.S.
10,080-90 | do
10,090-00 | do   but red sh not as sdy as above & M-finely mic
10,100-10 | do
10,110-20 | Abund qtz sd, qtzite, fsp w/ Tr. wh cly & red sh as above
10,120-30 | 50% qtz sd, qtzite & fsp
50% deep brn red, blocky, ind, highly & finely mic, slightly & v finely sdy sh
Tr. wh, blocky, ind cly & pink fgrn ss
10,130-40 | do   but only 30% red sh
10,140-50 | 50% red sh   50% qtz sd, qtzite & fsp   Tr. deep brn red, extremely finely mic sh
10,150-60 | do
10,160-70 | do
10,170-80 | do   plus Tr. wh-pink-deep brn red, fgrn, ind ss
10,180-90 | do

10,220-30 | 50% qtz sd, qtzite, fsp | 50% red sh | Tr. wh. lithic, f-u fgr, ind ss

10,230-40 | do

10,240-50 | do but no ss

10,250-60 | 60% qtz sd, qtzite, fsp | 20% red sh

10,260-70 | do w/ fsp more abund. than above

10,270-80 | 80% qtz sd, qtzite, fsp | 20% red sh

10,280-90 | 50/50

10,290-00 | 35% qtz sd, qtzite, fsp | 35% red sh | 30% wh, fgr, ind ss

10,300-10 | 20% | 60% | 20%

10,310-20 | do

10,320-30 | 50% qtz sd, qtzite, fsp | 50% red sh | Tr. wh ss

10,330-40 | 20% " | 50% " | 30% "

10,340-50 | 10% " w/ little fsp | 50% " | 40% "

10,350-60 | 30% " | 60% " | 10% "

10,360-70 | do but just Tr. fsp & ss not as tight as above

10,370-80 | Mostly wh, M-fgr, porous ind ss w/ red sh as above | Tr. qtz sd, qtzite, fsp

10,380-90 | Red sh w/ some M-fgr wh ss & f-u fgr, pale grn, ind ss | Tr. qtz sd, qtzite, fsp

10,390-00 | do w/ both wh & grn ss being tighter than above

10,400-10 | Red sh w/ wh, f-M grn, porous, ind ss | Tr. fsp, qtz sd, qtzite

10,410-20 | do

10,420-30 | do

10,430-40 | wh, M-fgr, ind, porous ss w/ red sh as above | Tr. fsp, qtz sd, qtzite as above

10,470-80	Reddish as above w/ abund. m-vf, wh, tight, incl ss plus diabase frags
10,480-90	do
10,490-00	do
10,500-10	do w/ abund qtz+qtzite as above
10,510-20	do
10,520-30	do
10,530-40	do but no diabase, qtz sd ang-subrd
10,540-50	do
10,550-60	do

#2A

70 SPOT – SAND, M-GRN, SA-SR, WP. TR SH FRAGS, C-GRN MUSC.

70-75 SAND, WHITE, C-GRN, SA-SR. ± 35% WHITE CHALKY CLAY MATX.

75-80 CLAY, WHITE, HIGHLY CALC. ± 25% BROWN LS, CHALKY. TR SH FRAGS C-GRN SD.

80-84 – LS, WHITE, MICROXTALLINE, CHALKY, SOFT BUT INDURATED, PURE. TR MF

84 SPOT – CHALK, SOFT, WHITE, PURE.

84-90 – SAND, C-GRN, SR-R, WP TO FROSTED. WHITE LS PARTS AS 80-84 ABOVE.

90-100 – LS, WHITE @ TAN CAST, CHALKY, V. SOFT, PURE

100-10 – DO BUT WITH SLIGHT INDURATION

110-20 – DO

120-130 – DO

130-140 – DO LS LT-GRY @ BLUE CAST

240-250 – LS, WHITE, MICROXTALL, WELL IND.

250-260 LS, WHITE CHALKY, SOFT. TR ASPHALTIC MATL.

260-270 LS, WHITE, CHALKY, SOFT TO FIRM. SOME FORAMS & M-SD SIZE LS PARTS IN THE (PREDOMINANT) LIME MUD MATRIX.

270-280 DO [illegible]

300-10 Do

310-20 - ~~[illegible]~~ MED-SAND-SIZE PARTS OF LS IN A WHITE CHALKY LS MATRIX. TR ASPHALT

320-30 Do. FAIRLY WELL IND.

330-40 LS, WHITE TO LT-GRY, MICROSPARITE, WELL IND. A FEW VUGS. SOME PELLETAL MATL AS ABOVE

340-50 Do

350-60, LS, WHITE, MICROCOQUINA: MOSTLY FORAM TESTS & BRYOZOAN REMAINS & LS PELLETS OF FORAM SIZE IN A CHALKY LS MATRIX.

1215-1220 MOSTLY TAN SACCHAROIDAL (CC-XTAL) LS CONTAINING WHITE LS PELLETS, WHITE CHALKY IND LS FRAG. TR DK-GRY HI-GRY ASPHALTIC LS, WHITE LARGE ~~FORAMS~~ TR PYRITE [illegible]

1220-30 Do - PREDOMINANTLY TAN SACCH LS (VC XTAL) W/ MUCH A WHITE SHELL MATL & MINOR ASPHALT CONTAINED IN 1%. NO WHITE LS. TR DK-GRY ASPHALTIC LS. NO LG FORAMS

1230-40 Do

1240-50 Do W/ LG FORAMS, VC-GRN GYP (AS THIN BEDS ?) IN LS.

1250-60 Do W/ WHITE MICROCOQUINA (PARTS MOSTLY FORAM-SIZE) ABUND.

1260-70 MICROCOQUINA WHITE W/ TAN [illegible] PARTS

1280-90 Do. Picking up Some Tan Sacch. LS

1290-1300 Do

1300-10 Do @ A few Large Forams

1310-20 Do. Some Tan LS Recrystallization
(but no Sacch. texture) in Microcoquina

1320-30 Do @ Tan LS (in 2 cup of
Microcoquina) V. PROM.

1330-40 Do

1340-50 Do and Tr Pink Sh

1350-60 Do Tan Sacch LS picking up

1360-70 Do

1370-80 Do @ inc in Tan Sacch LS to ± 15%. Add
Tr Dk-gry Sh.

1380-90 Do @ Most of matrix Tan Sacch LS.
Also some Frag Tan Sacch LS.

1390-1400 Do @ Some Gyp & Dk-gry Asphaltic LS

1400-10 Practically all Tan Saccharoidal
(VC-xtln) LS. Some Gyp, White Microcoquina,
~~1410-20~~ Dk-gry Asphaltic LS

1410-20 Do

1420-30 Do @ Asphaltic LS Plus add Tr Dk-
gry & Blk Sh

1430-40 Do

1440-50 Do. Dec in Asph LS to Tr White Micro-

1450-60 Do

1460-70 Do

1470-80 MOSTLY (± 60%) TAN (C. XTALN) SUCROSIC LS. 40% M-CRY ALGAL LS. MINOR PINK MARL (SAME SHOWN ABOVE), HAS ROUND AIR BUBBLES.

1480-90 Do

1490-1500 MOSTLY ARE TAN (V.C. XTALN) SUCROSIC LS. FEW M-CRY ALGAL LS, PINK MARL.

2A

1500-10 MOSTLY TAN SACCH (VCXTALN) LS. LT TO DK GRY ABRAHAMIC LS COMMON. TR WHITE MICRO-COQUINA.

1510-20 DO @ ABRH LS PROM. PINK SH (?) @ LT-GRY CHERT (?) ASSOCIATED (W/ STAINING) IS PROM.

1520-30 DO. MUCH WHITE CHALKY MICROCOQUINA

1530-40 DO

1540-50 DO MOSTLY ABRAHAMIC LS (40) & MICROQUINA (40) 20 TAN SACCH LS. RED MARL CHIEFLY CHT (?) FROST CHT (?) COMMON.

1550-60, 60-70 - DO

1570-80 DO @ 15% INC IN TAN LS, CORRESP DEC IN MICROCOQUINA

1580-90 ALL TAN (VCXTALN) SACCH LS, @ ENCLOSING WHITE PATCHES OF CHALKY LS.

1590-1600 DO @ MANY LG FORAMS & LG PATCHES OF CHALKY MARL (MICRO COQ IN TAN MTX)

1600-10 DO. ADD FREE DISC-SHAPED LG FORAMS

1610-20 DO @ MUCH VC-XLN TRANSP (MOSTLY, & SHOWING STRIATIONS) TO WHITE OPAQUE GYPSUM

1620-30, 30-40, 40-50 DO @ NO LG FORAMS
@ 1630-40 DEC IN GYP TO TR

1650-60 ~~[illegible]~~ DO LG FORAMS BACK

1660-70 60% TAN SACCH (VF XTALN) LS. 40% MOSTLY ASPH. LS. MUCH PINK SH(?). TR CXTALN TRANSP. GYP.

1670-80 DO AND TR LT-GRY CHT(?)

1680-90 MOSTLY TAN SACCH LS. WHITE CHALKY MICRO GYP. COMM PROM. SOME ASPH. LS, GYP, & CHT

1690-1700 DO @ GYP PROM.

1700-10 WHITE CHALKY MICROXTALN PARTLY WELL IND LS @ TAN CHST, BIOCLASTIC (LG FORAMS) IN PART. TAN SACCH LS AS ABOVE PROM.

1710-20 DO

1720-30 DO GOOD FORAM SAMPLE

1730-40, 40-50 DO

1750-60 DO, MICROCOQUINOID (RUBBLY & ROUGH) IN PART

1760-70 DO. PRAC ALL LS MICROCOQUINOID (FORAMS & C-SD SIZE LS PARTS IN CHALKY MTRX)

1770-80 DO

1780-90 DO. TAN SACCH. LS PROM.

1790-1800 DO @ TAN LS ± 40% OF SAMP.

1800-10 DO

1810-20 DO

1830-40, 40-50, 50-60 DO

1860-70 DO @ DOC IN TAN SACCH LS TO "PROM" (MTRX OF MICROCOQUINA IS NON WHITE LS.)

1870-80 DO - LT-TAN (UNDER SCOPE - GRY IN FLOOD LIGHT) CHT PROM.

1880-90 DO @ NO CHT. TAN SACCH LS V. PROM.

1890-1900 AS 1860-70 @ NO TAN LS

1900-10 DO @ TR LT-TAN CHT, LG FORAMS COMMON

1910-20, 20-30, 30-40, 40-50, 50-60 DO

1960-70 DO - NO CHT. LG FORAMS ABUND

1970-80, 80-90 DO

1990-2000 DO A LITTLE SOFTER & MORE CHALKY. ADD TR GLAUC.

2000-10 DO

2010-20 DO. ADD TR WHITE CHT

2020-30 DO @ WHITE & TAN (@ WHITE SPOTS) CHT PROM

2030-40 DO @ COQUINOID FRAGS ABT M-SAND SIZE

2040-50 DO - THIS IS MICROCOQUINA. WH @ TAN CAST, @ WHITE & TAN CHT PROM. COQ FRAGS MOST SMALL, BUT LG FORAMS (CONTAINED IN LS & FREE) V. PROM.

2050-60, 60-70 DO

2090-2100 DO @ LG FORAMS SOME

2100-10 DO @ LG FORAMS V. PROM. TR. [illegible] SKELM. LS

2110-20 MICROCOQUINA, WHITE, F-M-GRN SD-SIZE, LS-GRN GRAINS (PROM). TR LG FORAMS. NO [illegible]

2120-30 DO @ LG FORAMS, @ COARSE SKELETAL MATL (BRYZ) PROM (COARSER-GRN COQUINA)

2130-40 MICRO COQUINA, WH TO LT-GY, MOSTLY LG FORAM REMAINS IN MINIMUM OF MATRIX.

2140-50 DO @ MORE MATRIX. SKEL. MATL (PGASTR, ETC) PROM. M-SD SIZE LS PELLETS COMMON. STILL MOSTLY LG FORAMS. TR DGC.

2150-60 DO

2160-70 DO. MTRX TIGHT. PEBBLE-SIZE LS PARTS PROM. TR CLR TRANSP GYP.

2170-80 MOSTLY F-GRN SL GC. MICROCOQ @ LG FORAMS ± 20% OF ROCK.

2180-90 DO DGC IN LG FORAMS TO TR DK-BRN UNIT PROM.

2190-2200 DO. MOST OF ROCK IS SMALL FORAM TESTS

2200-10 DO GRAINS COMMON. GYP V PROM

2210-20 DO

2220-30 DO @ "PINPOINT" LG FORAMS ~~[illegible]~~ V V PROM

CONTINUE LS

2240-50 ~~[illegible]~~ MIX @ TAN SOIL, SAT 7, F-CON (PARTS F-50-SIZE). LS PARTS SUB-ROUND IN PART. LT-GRY CHT ± 15% OF ROCK. TR LG FERRUS, GC.

2250-60 Do ± 40% CHT, 60% LS, LG FERRUS CHT

2260-70 Do.

2270-80 Do @ ASH IN LT-GRY CHT TR "PEARL" MAT TR BONE WHITE CHT.

2280-90 Do

2290-2300, 2300-10, 10-20, 20-30, 30-40, 40-50 Do @ MIX ± 30% OF ROCK GRAINS VF-F-50 SIZE. CHT MOSTLY GRY

2350-60 Do @ LG FERRUS BASE AS TR.

2360-70 Do @ GRAIN SIZE F-50-SIZE. BONE WHITE CHT BASE.

2370-80 - CLASTIC LS, CHALKY: C-SAND SIZE PARTS OF CHALKY LS IN [illegible] MATRIX LS MTRX. LG FORAMS ABUNDANT. (MICRO-FOSSIL LS)

2380-90 - DO - LG FORAMS ± 25% OF SAMP.

2390-2400, 2400-10, 2410-20 (ADD BRYOZOA) - DO

2420-30 DO AND TR GRY & BRN CHT.

2430-40 CHANGE: CLASTIC LS, OFF WHITE (TAN CAST) = C-VC GRAIN PARTS OF LS IN CHALKY MTRX. FEW LG FORAMS. MUCH BRN CHT. SOFTER & MORE FRIABLE THAN ABOVE, & FINER-GRN DUE TO ABS LG FORAMS

2440-50 DO

2450-60 - DO @ LG FORAMS [illegible].

2460-70 - DO

2470-80 - CHALK, WHITE @ BLUISH CAST. CLEAN, PURE. TR MICROSCOPIC BLUE SPECKS. GOOD LG FORAM FAUNA

2480-90 - DO

2490-2800 - LS & CHERT: MIXTURE OF CHALKY LS DO @ TAN CLASTIC LS AS UP-HOLE. LT TO DK-BRN CHERT ± 35% OF SAMP.

2500-10 DO LS MOSTLY TAN, SANDSTONE. CHT MOSTLY DK-BRN

2510-20, 20-30 - DO

2560-70 – Do @ OCC IN CHT TO ± 10%, CHERT INC IN LS. LS IS V. FINELY SACCHAROIDAL
LG FORAMS & PELLETS.

2570-80 Do @ CHT UP TO ± 20%.

2580-90 Do – CHT & LS INTERGROWN

2590-2600 – , 10-20, 20-30 – Do

2630-40 – LS, WHITE, CHALKY SOFT SOME C-SAND SIZE LS FRAGS IN MATRIX. MUCH LT-GREY CHT.

2640-50 Do. CHT ± 30%

2650-60 LS Do. CHT WHITE, ± 10%

2660-70 TO 2700-10 – Do

2710-20 – BIT CHANGE? – MAINLY MIXED – MOSTLY AS 2700-10 BUT WITH SOME TAN SUCR. LS & SOME WHITE CHALK LS. (CAVINGS?)

2720-30 Do

2730-40 – AS 2660-70 & ETC. AND TR ASPHALTIC LS, OFF-WHITE, F XLN. ASPH IS C-SD SIZE

2740-50, 50-60 – Do

2760-70 – CHANGE: LS, MICRITIC, WELL IND, V LT-GRY. SOME CLASTIC, F-SD SIZE. TR CHT VARIOUS COLORS BRN & GRY.

2770-80 Do @ SUB-MICROSCOPIC BLK DOTS IN LS

2780-90 Do

2790-2800 Do @ TR V LT-GREY SHALE

— DENSE — [illegible]

2800-10 MIXTURE 2 TYPES LS.

1 – LT-GRY MICROXTALL

2 – OFF-WHITE CONSISTING OF SAND-SIZE LS PARTS & FORAM & BRYOZOAN HASH IN WHITE CHALKY MATRIX.

DK BRN CHERT COMMON. TAN GRY CHT.

2810-20 – DO MOSTLY #2 LS

2820-30 – DO BUT V. CHALKY, V FINE-GRAINED. NOT AS CLASTIC AS ABOVE

2830-40 – DO @ MUCH GREY CHT

2840-50 – DO

2850-60 50% CHALKY LS DO. 50% LT-GRY CHERT.

2860-70 60 LS DO 40 CHT DO.

2870-80 – DO

2880-90 – MOSTLY WHITE CHALKY LS. MUCH WHITE CHERT

2890-2900 – DO

2900-10 – DO @ INC IN WHITE CHT TO ±35%

2910-20 – DO

2920-30 DO @ LT-GRY CHERT PROM. (±5% OF ROCK)

2930-40 DO @ SLIGHT INC IN LT-GRY CHT

2940-50 DO

2950-60 PRAC. ALL WHITE CHALKY LS

2960-70 – HIGHLY MIXED. STILL MOSTLY CHALKY LS DO.

2 NEW ROCK TYPES: 1: TAN (V. LT-TAN) CLASTIC

(SAND-SIZE) [illegible]

2980-90 - PREDOM. LITHOLOGY IS A LT GRY WELL IND.
LS W/ NUMEROUS MICROSCOPIC BLACK SPECKS.

2990-3000 - DO, HIGHLY MIXT. MUCH WHITE TO TAN CHT.

3000-10 - DO W/ WHITE & LT GRY CHT & 25% OF SAMP.

3000-10 LS, WHITE, CHALKY, IMD TO SOFT. LT-GRY (TO DK-GRY IN PLACES)
CLT PREM. TR LT-TAN CALCAREOUS, LG FORAMS, PALE-GRN SHALE.

3010-20 DO @ LT-BRN CLT, TAN SUCR. LS COMMON

3020-30 DO

3030-40 DO PRETTY WELL MIXED. ALL GRAVE LS PREV UPHOLE, OFF-WHITE BLOCKY CLT(?) & ASSOC RED SH(?).

3040-50 DO. ADD TR TAN MICROCOQUINA

3050-60 DO WHITE CHALKY LS STILL PREDOM. UPHOLE[?]

3060-70 DO. VY MUCH MIXED

3070-80 CHANGE - MIXTURE OF ½ & ½ WHITE CHALKY IMD TO SOFT LS & LT GRY CALC SH @ SOME MINUTE WHITE SPOTS.

3080-90 DO. BUT MOSTLY SH (±70%)

3090-3100 DO. PRACTICALLY ALL SHALE

3100-10 DO. ALL SHALE

3110-20, 20-30, DO

3130-40 DO @ WHITE & TAN MICROCOQUINA PARTICLES (FORAMINIFERAL) PREM.

3140-50 PRACTICALLY ALL LT-GRY SH DO. WHITE PURE CHALK PARTICLES PREM.

3150-60 ½ ½ (GRY) SH & CHALK WHITE PURE SOFT.

3170-80 Do @ TAN [illegible] SHALE, LS, [illegible] CREAM

3180-90 PRED. AND WHITE CHALKY, CLAY, [illegible]

3190-3200 Do @ GRY CAST TO CHALK. ADD TR LG FIBROUS SHELL MATL (ARAG INOCERAMUS) (FROM INTERBEDDED)

3200-10, 10-20 Do

3220-30 Do @ LT-GRY CALC SH ± 35% OF SAMPLE

3230-40, 40-50, 50-60, 60-70 Do

3270-80 Do @ INC IN SH TO 50%. ADD TR LT-GRY CHT

3280-90, 3290-3300, 3300-10, 10-20, 20-30 Do

3330-40, 40-50 Do @ INC IN CHALK TO ± 75%, COMP DEC IN SH. TR WHITE CHT. NO LT-GRY CHT.

3350-60, 60-70, 70-80 Do

3380-90, ~~[illegible]~~ 3390-3400 Do @ INC IN SH TO ± 50%, COMP DEC IN CHALK

3400-10 Do @ INC IN SH TO 50%, COMP DEC IN CHALK. ADD TR DK-BRN CHERT.

3410-20 Do @ INC IN SH TO ± 75%.

3420-30, 30-40, 40-50 Do. PRISMATIC SHELL MATL, LT-GRY CHT IN ALL SAMPLES STILL (AS TRACES)

3450-60 – ½ ½ WHITE CHALK, SOFT & LT-GRY FISSILE SH @ MANY WHITE SPOTS (FORAMS) TR LT-GRY CHT.

3460-70 DO

3470-80 DO @ INC IN CHALK TO ± 75%, CORRESP DEC IN SH.

3480-90 DO

3490-3500 DO. PRACTICALLY ALL CHALK, WHITE, SOFT TO SEMI-HARD, TR LT-GRY CHT, W/ FORAMS.

3500-10 DO @ INC IN SH TO ± 35%, CORRESP DEC IN CHALK.

3510-20 DO

3520-30 MOSTLY WHITE CHALKY FAIRLY WELL MD. LS, @ MUCH VF-GRN A SD. MUCH LT-GRY FISSILE SH @ PLANKTONIC FORAMS & WHITE SPOTS IN. NO CHT.

3530-40 JUST ABOUT ALL CHALK DO. — BEGAN BREAK IN SH

3540-50 DO @ SHALE ± 25% OF SAMP.

3550-60 DO – GLOBIGERINAS & OTHER SMALL FORAMS MANY IN SHALE. WORK BACK UP HOLE IN W.S. FOR BASE T

3560-70 DO @ INC IN SH TO ± 40%

FLA-FRA-OT-2
#2 Fla. State Lease 224-A
Sidewall Core Descriptions

6203	Sand, F-grn, A-SA, Dk-Grey. 5% lignite. Miscovite very common.
7214	Sand, VF-grn, A, WS, M-grey. Red and green specks (green is sausserite) prominent. Tr
8219	Shale, brick-red. F-grn sand prominent. Tr white kaolinitic clay.
8233	Sand, Pink, vf-grn, A, WS, coated with pink clay, unindurated. Muscovite, biotite very prominent.

FLA-FRA-OT-2
Florida State Lease 224 A-2
Sidewall Core Descriptions

Depth	Lithology
10478	Siltstone, very pale greenish-grey with maroon mottling. Trace of suboolitic hematite.
10482	Sandstone, White, well indurated, fine-medium grained, subangular-subrounded. 5% calcium carbonate cement.
10517	Silt, calcareous, very light-grey, highly friable, crumbly. Trace of Maroon stain.
10524	Sandy clay, off-white, soft, friable. 40% very fine-fine grained angular sand. 60% white calcareous clay matrix.
10538	As above.
10545	Clay, pale green-maroon banded, soft, friable, very slightly calcareous.
10547	Sand, very fine-fine grained, angular - Subangular, with trace of maroon and pale green clay binder.
10552	Sand, white, very fine grained, angular - subangular, well-sorted. 15% white kaolinitic clay binder. Friable.

(Fairshore) Franklin County, Fla. 47' 03" N, Long. 84° 22' 51" W. Twp. 8 S - South Shoal Area. 2704' State No. 2

Samples through the courtesy of Wendell Roberts, Coastal Petroleum Co., Tallahassee, Fla.

0-70'
Age Miocene
Probably Lower Tampa (?)

(First sample) washed concentrate, quartz sand, medium grained (0.25-0.50 mm), subangular, about 25% fragments of a chalky, porous, white limestone - same general size as sand grains. Limestone fragments show traces of fossil structure.

70 - 75' Sand similar to above, but moderately coarse grained. Soft, light cream colored, chalky limestone fragments with some shell fragments 50% of sample.

75 - 80' Soft, white, chalky limestone, a few coarse sand grains, a few fragments of Sorites sp.

80 - 84' Like the preceding. Specimens of Archais and fragments of Sorites fairly common, a few chalky molds of Miliolids. See #1 and 2 on slide 1.

84 - 90' Sample about 50% coarse, subangular, etched quartz sand, and 50% fragments of chalky limestone similar to the preceding in character and fauna. A few fragments of small fossil bivalves also present.

90 - 100' Soft, light cream colored, chalky limestone. Vague traces of fossil structure noted on some of the limestone fragments. Some fragments of Sorites sp.

100 - 110' Cut of chalky, cream colored limestone as above. Fragments of Sorites sp., and specimens of Archais very common.

110-- 20' Limestone similar to preceding but more firmly consolidated. Fauna same with addition of some fragments of macro-fossils.

120 - 30' Fragments of cream colored, chalky and fossiliferous limestone like that above, and about 50% fragments of a light gray limestone similar in general character and in faunal content to the cream colored limestone but more dense. Both lime-stones have the appearance of being composed largely of the badly worn limestone molds of Foraminifera and some Ostracods.

130 - 40' Like the preceding.

140 - 240' No samples.

240 - 50' Nodular (variable in size and shape) fragments of a light cream colored, chalky textured limestone somewhat chalk-coated.

250 - 60'

type - coarse, nodular fragments of a hard and dense, light cream colored limestone, and some fragments of a finely nodular, finely porous, grayish white limestone. Both types appear to be badly water worn.

270 - 80' Like the preceding. A few calcitic molds of Ostracods noted.

280 - 90' Like the preceding.

290 - 300' Cream colored, moderately hard, chalky textured limestone like that above, and many fragments of what seems to be nodules of porous limestone with the porous areas filled with gilsonite. The material is silty and somewhat oil stained. Material may be a type of mud conditioner.

300 - 10' Limestone and some nodules with gilsonite as above, (these much less numerous). A few fragments of thin shelled bivalves.

310 - 20' Like the preceding.

320 - 30' No change.

330 - 40' Hard, dense, nodular fragments of white to light cream colored limestone. Nodules irregular in size and shape. These may have been embedded in a relatively soft chalk. One fragment shows a good specimen of Sorites, see #3 on slide 1.

340 - 50' Cutting of a moderately hard, dense, cream to white colored, coarsely nodular, chalky textured limestone. A few faint traces of an original faunal content noted.

350 - 60' Age Oligocene Suwannee. Finely nodular, coquinoid limestone composed mainly of loosely packed chalky molds of foraminifera, Rotalia byramensis, Rotalia cf choctawensis, Valvulammina sp. ? (Cushman), Miliolids (several species) including, Quinqueloculina fulgida, Dictyoconus floridanus (small and rare) Karreriela advena, Discorbis cf. tentortia and Asterigerina cf. subacuta. The fauna is Oligocene, apparently Suwannee. For fauna, see #4-8 on slide 1.

360 - 1215' (No samples.)
Top partially in missing depths.

1215 - 20' U. Eocene Cuttings of a highly microfossiliferous limestone which seems to vary from a finely crystalline, rich brown, porous dolomite to a dolomitic chalk. Many chalky specimens of two varieties of Lepidocyclina ocalana (?), some specimens of Operculina ocalana (?) and some chalky algal nodules make up most of faunal content. The dolomite also contains many inclusions of gypsum. For fauna, see #10-16 on slide 1.

mite much less common. Gypsiferous dolomite strongly predominates in sample.

1230 - 40' Like the preceding. A few fragments of a large, heavily ribbed bivalve, in addition to a few specimens of the large forams, listed above.

1240 - 50' Possibly ~~a~~ facies of Avon Park (?). Has a mixture of Middle Eocene and Lower Ocala species

Cutting of dolomite similar to that above, but with few gypsum inclusions. Some forams also like above, but many fragments of coquinoid porous limestone made up largely of small limestone molds of small forams and molds of fragmental fossil material of similar size (resembles an oolite). Fossil material usually too poorly preserved and too fragmental to be identified. For fragments of this limestone and a badly worn rolled specimen of Dictyoconus americanus (?), see #17 to 19 on slide 1.

1250 - 60' Many fragments of the porous, brown, slightly gypsiferous dolomite like that above with chalky inclusions of large forams, some fragments of the finely nodular limestone as in preceding. A specimen of Amphistegina pinarensis noted. This fossil - on the peninsula, usually indicates the presence of (Applin's Lower Ocala), or (Puri and Vernon's Williston formation of the Ocala group). The significance of its rare appearance here is not indicated since this fossil seems to move up into higher portions of the section in west Florida. Fragments of the finely nodular, chalky, porous limestone, first described from (1240-50') common in this sample. For unusual fossils found, see #20 and 21 on slide 1.

1260 - 70' Sample composed mainly of the finely nodular, porous, chalky and calcitic limestone first noted at (1240-50'). Some fragments of the chalky, fossiliferous dolomite. A few badly worn specimens of Dictyoconus americanus. More specimens of Amphistegina pinarensis, some specimens of Dictyoconus floridana, Fabularia matleyi and several large Miliolids, and a few specimens of Lepidocyclina pustulosa also present. This seems to be a mixed fauna coming from the finely nodular fossiliferous limestone, both early ~~late~~ Eocene, and late Middle Eocene faunal elements are represented. For typical fragments of this fossiliferous limestone, see #21-24 on slide 2.

1270 - 80' Definite Lake City Middle Eocene

Sample composed entirely of fragments of the finely nodular, porous, microfossiliferous limestone like that dominant in the preceding sample. A trace of glauconite. Fauna same as above, with specimens of Lepidocyclina (Cedarkeysensis) and Lepidocyclina pustulosa more common.

1280 - 90' Like the preceding.

of the fauna listed much more common. All specimens of D. americamus (?) badly worn.

1300 - 10' Like the preceding.

1310 - 20' No change.

1320 - 30' Fragments of a dolomitic chalk, in which the chalk represents the remains of chalk molds of small forams and fossil fragments similar to the preceding in general character and fauna, but molds of the soft chalk instead of limestone.

1330 - 40' Fragments of a dolomitic chalk. Material probably originally a fine chalky coquina of small forams and fine fossil fragments. Material is now infiltrated with fine, light brown dolomite, and only vague traces of fossil structure can be occasionally noted in the chalky areas of the limestone.

1340 - 50' Like the preceding. For typical fragments of fauna of the limestone, see #25-28 on slide 1. Contains specimens of Lituonella grandicamerata.

1350 - 60' Like the preceding.

1360 - 1400' No change.

1400 - 10' Material about 50% dolomitic chalk like that above, and 50% slightly chalky, light brown, porous dolomite. Apparently the dolomite is a highly chemically altered, fine, coquinoidal limestone.

1410 - 20' Mainly porous tan dolomite with a few small chalky areas on some chips.

1420 - 30' Like the preceding.

1430 - 40' Dolomitic chalk and slightly chalky dolomite like that above.

1440 - 50' Like the preceding with the addition of some small to medium gypsum inclusions.

1450 - 60' Like the preceding.

1460 - 90' No change.

1490 - 1500' Almost entirely light brown, porous dolomite, with some gypsum inclusions. A little chalk remains on a few fragments.

1500 - 10' Like the preceding. Some cavings.

1510 - 20' No change.

cilina sp. These fossils probably caving. No species new to the section noted.

1530 - 40' Like the preceding. Many cavings.

1540 - 80' No change.

1580 - 90' Light brown, finely crystalline, porous dolomite, with abundant, small, chalky areas, which apparently represent remnants of small fossils and fossil fragments. A small Lepidocyclina ariana, an Asterocyclina and Discocyclina, and some small Camerina floridensis and Camerina striatoreticulata, new to the section are fairly common at this depth. The fossils are slightly glauconitic. For typical fossil fragments, see #29-34 on slide 1.

1590 - 1600' (No sample.)

1600 - 10' Material and fauna as in preceding sample but more cavings.

1610 - 20' Similar to the above, but mainly porous, light brown dolomite, with comparatively few chalky areas, and small faunal content.

1620 - 30' Similar to the preceding. Specimens of poor chalky molds of a Lepidocyclina? sp. fairly common. A trace of glauconite and some anhydrite in pockets in the dolomite.

1630 - 40' Like the preceding. For examples of the thick Lep. see #35 and 36 on slide 1.

1640 - 50' Light brown, porous, finely crystalline dolomite, with chalky remnants of microfossils in protected pockets in the porous dolomite. Some Leps. and fragments of other forams as above. A little gypsum and a trace of glauconite.

1650 - 60' Like the preceding.

1660 - 70' No change.

1670 - 80' Like the above, but with much caving and fragments of mud conditioner.

1680 - 90' Like the preceding.

1690 - 1700' Brown dolomite - more dense, much less distinctly crystalline and less chalky than preceding. Some cavings (?) of fossils and fragments of fossils from slightly higher levels.

Miliolidae, Foraminifera and fragments of other fossil debris. Specimens of a species of Amphistegina (?) and rolled specimens of Dictyoconus americanus dominant. Some specimens of Archaias (?) sp., Fabularia matleyi sp., and molds of Gunteria (?) sp. For characteristic fauna, see #37 to 43 on slide 1. Crystals of dolomite, calcium, and some quartz helps to bind the fossil materials together. Some fragments of porous brown dolomite as above. These possibly caving.

1710 - 20' Like the preceding.

1720 - 60' No change.

1760 - 70' A highly fossiliferous, chalky limestone. Fauna same as above. Limestone much less nodular in appearance and less calcitic.

1770 - 80' Definite Middle Eocene — Like the preceding. Dictyoconus americanus very common. A trace of glauconite in some fossil fragments.

1780 - 90' Like the preceding.

1790 - 1810' No change.

1810 - 20' Nodular, coquinoidal, highly fossiliferous, calcitic and dolomitic limestone like that above. Dictyoconus americanus and Amphistegina cf. lopeztrigoi still the dominant recognizable foram species present. The Amphistegina seems to be more finely and abundantly beaded than specimens at higher levels. This ornamentation resembles that found on the related species describes as A. nassauensis. Limestone still shows a trace of glauconite and of gypsum.

1820 - 30' Like the preceding, but Amphistegina nassauensis strongly dominant, few specimens of Dictyoconus. For examples this limestone, see #44-46 on slide 1. A trace of glauconite in the limestone.

1830 - 40' Like the preceding.

1840 - 80' No change.

1880 - 90' Cut of a finely nodular, chalky limestone, composed of a tightly packed mass of chalky molds and fragments of fine fossil debris. Many specimens of an Asterocyclina monticellensis new to the section, and many fragments of light tan, gray chert. For examples of the material, fauna and chert, see #47-51 on slide 1. A trace of glauconite in this limestone.

1890 - 1900' Like the preceding.

Specimens of Asterocyclina fairly common, also Lepidocyclina (Polylepidina) antillea. Some shell fragments also noted. See #59 and 60 on slide 1 and 1-4 on slide 2.

2130 - 40' Like the preceding.

2140 - 50' No change.

2150 - 60' Composed chiefly of worn, rounded molds of Camerina wilcoxi and specimens of Dictyoconus americanus. Some specimens of Asterocyclina and some algal nodules. Some fragments of glauconitic limestone composed of glauconitic, porous, cemented masses of worn and partly fragmentary microfossil molds. Some of the fossil material may be caving. For typical faunal elements from this depth, see #9 to 11 on slide 2.

2180 - 90' Fragments of nodular, (rolled molds of microfossils and fragmentary fossil debris), glauconitic, porous, light cream colored limestone, many worn specimens of Camerina, Asterocyclina, Dictyoconus, and a few Leps., and many fragments of brownish gray chert.

2190 - 2200' Like the preceding with some specimens of Lepidocyclina (Polylepidina) antillea added to the fauna.

2200 - 10' Cuttings of cream colored, granular textured, glauconitic limestone, with many embedded chert areas, and many specimens of Lepidocyclina (Polylepidina) antillea. See #12-17 on slide 2.

2210 - 20' Same as preceding.

2220 - 60' No change.

2260 - 70' Cream colored, chalky, slightly porous, very finely dolomitic limestone, which is a tightly packed mass of very fine particles of fossil debris, and abundant fragments of light gray and brownish gray chert. A few specimens of Lepidocyclina, (Polylepidina) antillea as above.

2270 - 80' Like the preceding.

2280 - 2300' No change.

2300 - 10' Cuttings of moderately hard and dense, rough-textured, cream colored, chalky limestone apparently composed largely of finely broken and eroded fragmentary fossil material. A trace of glauconite, and about 25% light gray chert. A few specimens of Lepidocyclina and Camerina sp. Same as noted above, and possibly caving. A few very small forams in the fine screenings.

2340 - 40' No change.

2340 - 50' Material like that above, but glauconitic and with many specimens of Lep. sp. Polylepidina antillea, and a few of Dictyoconus and Camerina. This fossil material may be caving, but more probably the fauna is another and earlier occurrence of the fauna first reported from (2200-10'). For characteristic fauna, see #18-21 on slide 2.

2350 - 60' Like the preceding. Dictyoconus and Polylepidina each about equally abundant.

2360 - 2460' No change.

2460 - 70' Light cream colored, porous, moderately glauconitic, coquinoid limestone composed of worn limestone molds of small forams and fossil fragments fine in size, loosely cemented with a small amount of chalky matrix. Many worn and rolled specimens of Dictyoconus and Polylep. antillea. Also at this depth, numerous specimens of Amphistegina lopeztrigoi. The latter may be caving but more probably represents an earlier occurrence of the species. Some specimens of Fabionia cubensis also present. For faunal elements, see 22-24 on slide 2.

2470 - 80' Same as above, with a large amount of mud conditioner.

2480 - 90' Like the preceding.

2490 - 2500' Approx. top Lower Eocene. Sample composed mainly of hard, nodular fragments of the cream colored, rough-textured limestone apparently composed of minute fragments of very finely broken limestone molds of fossil debris. Limestone seems to contain a large amount of brown chert. Many rolled specimens of Dictyoconus and Polylepidina, and some specimens of other forams mentioned above. Materials may represent cavings for the most part.

2500 - 10' Limestone similar to the preceding but limestone fragments more dense and less obviously largely organic in origin, for examples see #25-28 on slide 2. Limestone appears to be chert streaked and spotted.

2510 - 20' = Like the preceding. Chert about 50%. Very few fossils. Those present, same species as above and probably caving.

2520 - 2640' = Like the preceding.

2640 - 50' = Limestone, and a few forams similar in general character to those in preceding samples, but the chert now white or light gray and not interbedded with the limestone as the brown chert was.

2650 - 60' = Like the preceding. Chert about 50% of sample.

2660 - 2760' = No change.

2760 - 70' = Light grayish tan, hard, dense limestone with some scattered, minute, dark spots. A little white chert. See #30 and 31 on slide 2.

2770 - 80' = Like the preceding. Some chert, brown and light gray.

2780 - 2850' = No change.

2850 - 60' = Moderately hard, white, chalky limestone with a trace of mica. About 50% of sample, light gray chert.

2860 - 70' = Like the preceding. See #32 and 33 on slide 2.

2870 - 2950' = Same as above. Light gray, and much white chert.

2950 - 60'. = Moderately hard, white, chalky limestone, and about 50% white chert.

2960 - 70' = Same as preceding, also a few fragments of soft gray shale, and a few specimens of Globigerina triloculinoides. Pos. top Velasco facies of Paleocene. Tamesi facies - for this facies & its midway relationships see - Contrib Cushman. Foundation, VIII, part 2, p. 51-52, 1964.

2970 - 80' = Like the preceding.

2980 - 3000' = No change.

3000 - 10' = White chalky limestone, chert, and a few forams caving from higher levels, also a few fragments of a light greenish gray bentonitic shale. A few specimens of Globigerina pseudo-bulloides. See #35 and 36 on slide 2 for shale and faunas from same.

3010 - 20' = Like the preceding, but no forams noted. Little material in the fine screenings.

3050 - 60' = White limestone and chert probably caving, a few fragments of the soft gray shale.

3060 - 70' = No change.

3070 - 80' = Some limestone and chert as above, but many fragments of the gray clay shale and some of the light greenish gray bentonitic material first noted at 3000-10'. A few specimens of Globorotalia velascoensis and a few of Globigerina triloculinoides.

3080 - 90' = Like the preceding, with the addition of some fragments of a very light gray chalky limestone showing some traces of embedded forams. Forams more abundant. Species same as above.

3090 - 3100' = Sample composed mainly of a light gray chalky marl, which shows some embedded small forams. Some fragments of the shales as in the immediately overlying samples, a few cavings from higher levels. Fauna same as above.

3100 - 10' = Like the preceding.

3110 - 30' = No change.

3130 - 40' = Like the preceding, but cavings abundant.

3140 - 50' = Gray marl, and many specimens of several species of Globigerina and some specimens of Globorotalia velascoensis. Fauna is typical of Velasco facies of Paleocene.

3150 - 60' Top of Upper Cretaceous. = Gray marl as above, also many fragments of a white, moderately hard, chalky limestone showing traces of microfossils and fragments. Fauna also as above with the addition of many specimens of Globotruncana arca and Anomalinoides pinquis. Age, Navarro. See #39 and 40 on slide 2.

3160 - 70' = Like the preceding.

3170 - 80' = Same as above with the addition of a few fragments of Inoceramus.

3180 - 3200' = (No samples.)

3200 - 10' = Like the preceding.

3210 - 3300' = No change.

3300 - 10' Top of Taylor(?) = Cuttings of moderately hard, white chalk, and cavings of soft, gray marl. Fauna a mixture of Cretaceous and Velasco species, with the addition of some specimens of Planulina cedarkeyensis (a species believed to be limited to the Taylor in its time

3310 - 20' = Like the preceding. Some fragments of Vag. taylorana.

3320 - 30' = Same as above, with addition of a number of specimens of Planulina ~~taylorensis~~. humblei,

3330 - 40' = Like the preceding.

3340 - 3440' = No change.

3440 - 50' = (No sample.)

3450 - 60' = Cuttings of white chalk, many fragments of the light gray marly shale from the Velasco (Paleocene) section, and some fragments of a few materials and fossils from higher levels. Fauna, like that above, usually badly coated with chalk dust.

3460 - 70' = Like the preceding.

3470 - 3560' = No change. A specimen of Stensioina americana was noted in the (3550-60') sample. The species may have appeared higher and caved to the depth given since the fossils in most of the samples in the Cretaceous section were badly coated with chalk dust and mixed with many species from the abundant fragments of the Paleocene section.

3560 - 70' = Cuttings of white chalk, and abundant fragments of the flaky gray shale apparently caving from the overlying Paleocene series. Numerous forams with several species of Globotruncana dominant, and many Paleocene species washing from the shale caving from that part of the section. A few fragments of a black, slightly white "speckled" shale. This material resembles some usually found in the Austin section in northern Florida but is not typical of that Austin facies.

3570 - 90' = Like the preceding.

3580 - 3670' = No change.

3670 - 80' = Same as preceding, with addition of some fragments of a darker gray marly shale with many Inoceramus prisms. This shale darker than the Velasco gray shale. See #42 and 43 on slide 2. Some fragments of the black, finely white streaked and speckled shale first mentioned at (3560-70').

Aprox. top of Austin section

3680 - 90' = Like the preceding.

3690 - 3730' = No change.

3730 - 40' = Lithology and fauna like that above. Inoceramus fragments very abundant and a few pyritic nodules present.

3800 - 10' = Same as above, but fragments of the black, (petroliferous?) white "speckled" shale more common, and a few, partly black coated Inoceramus fragments originally apparently embedded in a similar shale also present. Age - Lower Taylor ~~or~~ Austin(~~?~~). For examples of "speckled" black shale, see #44 on slide 2.

3810 - 20' = Similar to the preceding. Fragments of the darker gray shale with many Inoceramus prisms, and fragments of the brownish black, white streaked shale more common.

3820 - 30' = (No sample.)

3830 - 40' = Like the preceding. Fragments of the dark gray, light streaked shale fairly common. Some forams, mainly several species of Globotruncana. No species restricted to the Austin noted.

3840 - 50' = No change.

3850 - 60' = Materials same as above. Some Inoceramus fragments embedded in the black, light streaked shale, pyrite nodules fairly common. Badly stained specimens of Globotruncana also present and washing from the streaked and "speckled" shale. For shale, see #45 and 46 on slide 2.

3860 - 70' = Like the preceding. The white streaked, (petroliferous?) brownish black shale fragments about 1/4th of the washed sample at this depth. The shale contains some fragments of Inoceramus, and a few fragments of other bivalves. Pyrite nodules present as above.

3870 - 80' = Like the preceding.

3880 - 3930' = No change.

3930 - 40' = Similar to the preceding, but dark brownish gray "speckled" shale fragments about 50% of sample. Stained specimens of Globotruncana also common

3940 - 50' = Like the preceding.

3950 - 70' = No change.

3970 - 80' = Major portion of sample now dark gray shale and gray "speckled" shale with abundant fragments of the dark brownish gray "speckled" shale. Some Inoceramus fragments and many specimens of Globotruncana, some pyrite nodules as above.

3980 - 4000' = Like the preceding.

4000 - 10' = Like the above, but with many fragments of a light cream colored "Oligostegina" chalk which also contains an abundance of very fine fragments of calcitic microfossil molds. Material of this type is common near to and at the base of the Austin.

4010 - 20' = Like the preceding.

4020 - 30' Top of Upper Atkinson Eagle Ford. = Cuttings composed largely of fragments of very fine grained, calcareous, micaceous, light greenish gray sandstone, and some fragments of a hard, light cream colored, flaky limestone that contains abundant finely broken fragments of fossil debris. This limestone probably basal Austin. For examples of these materials, see 48 to 53 on slide 2.

4030 - 40' = Like the preceding.

4040 - 50' = Cuttings of sandstone, and some fossiliferous limestone as above, and some fragments of a flaky dark gray shale. Also cavings of the "speckled" shale and other materials noted at higher levels.

4050 - 60' = Like the preceding, with the addition of many fragments of a moderately hard, splintery gray shale.

4060 - 70' = Similar to the above, but gray or greenish gray shale about 75% of the washed concentrate.

4070 - 80' = Like the preceding.

4080 - 90' = Sample composed mainly of thinly flaky fragments of slightly greenish gray shale that contains specimens of Planulina eaglefordensis and Globigerina sp. Some fragments of the "speckled" dark gray shale, and a few fragments of the very fine grained sandstone caving. The shale is weakly micaceous. See #54 and 55 on slide 2 for examples of fauna and shale.

4090 - 4100' = Like the preceding.

4100 - 40' = No change.

4140 - 50' = Sample composed largely of thinly flaky fragments of the greenish gray shale which has a few light "speckles" and contains some specimens of Planulina eaglefordensis and Globigerina sp. Some fragments of a very fine grained, micaceous and argillaceous, light gray sandstone apparently interbedded with the shale. Some cavings of "speckled" shale.

4150 - 60' = Like the preceding. For some fragments of the "speckled", flaky, greenish gray shale, see #56 on slide 2.

4180 - 90' = Like the preceding, also some fragments of a dark brownish gray "speckled" shale which is possibly indigenous, although closely similar to the "speckled" shale of the Lower Austin section in character.

4190 - 4200' = Like the preceding.

4200 - 10' = Sample mainly composed of thinly flaky fragments of the slightly greenish gray shale. A few of these fragments have partings of very fine grained sandstone. Some fragments of brownish gray "speckled" shale as mentioned above. For sample of sand-streaked shale, see #57 on slide 2.

4210 - 20' = Like the preceding.

4220 - 30' = Similar to the above, but many cavings.

4230 - 50' = (No samples.)

4250 - 60' = Mainly flaky, grayish green shale, and some dark brownish gray "speckled" shale as above. Some materials caving from much higher levels.

4260 - 70' = Like the preceding, with addition of some fragments of a dark brownish gray, thinly flaky shale.

4290 - 4300' Approx. top of Lower Atkinson. = Greenish gray, thinly laminated shale as above, and many fragments of a dark brownish gray "speckled" shale, and fragments of a light gray, fine grained, micaceous sandstone which contains fragments of fossil bivalves and of lignite.

4300 - 10' = Sample composed of fragments of the flaky grayish green shale and of the brownish gray "speckled" shale. A few fragments of sandstone.

4310 - 20' = Cuttings of dark gray fissle shale, occasionally showing thin streaks of very fine grained, finely glauconitic, micaceous sandstone and of dark brownish gray, flaky "speckled" shale. Some nodular fragments of light gray, finely glauconitic, micaceous, calcareous sandstone. Some stained specimens of Globigerina apparently washing from the petroliferous(?), dark brownish gray, "speckled" shale. For materials characteristic of this depth, see #1-6 on slide 3.

4320 - 30' = Like the preceding.

4330 - 50' = No change.

4350 - 60' = Micaceous, gray fissle shale, and flaky fragments of petroliferous, brownish gray "speckled" shale. Some specimens of

4360 - 70' = Similar to the above, but some fragments of the shale with very thin, very fine grained sandstone partings.

4370 - 80' = Gray fissle shale, and a little fine, light gray, micaceous sandstone. Little "speckled" shale.

4380 - 90' = Similar to the above, but "speckled" shale fragments again fairly common. For characteristic shale fragments, see #6-9 on slide 3.

4390 - 4400' = Like the preceding.

4410 - 20' = A few fragments of white, micaceous sandstone, with a white argillaceous matrix, and a few fragments of a green unctuous shale added to the sample at this depth. A few fragments of brownish red shale also present. For this material, see #10-12 on slide 3.

Top of Comanche(?)

4420 - 30' = Gray shale as above, and many fragments of the white, fine grained, micaceous sandstone.

4430 - 40' = Shale as above, and about 50% micaceous sandstone.

4440 - 50' = Like the preceding.

4450 - 70' = No change.

(?) Top L. Cret: Clarence Babcock - Ok. Information Circular #40

4470 - 80' = Mainly shale, including a few fragments of the blue-green shale.

4480 - 90' = Same as preceding, and some fragments of carbonaceous material

4490 - 4500' = Same as above, and a few cavings.

4500 - 10' = Gray fissle, micaceous shale, some "speckled" shale, a few fragments of fine-grained, white, micaceous and calcareous sandstone. Some specimens of Globigerina sp.

4510 - 20' = Gray, thinly flaky, smooth, weakly micaceous shale, a little "speckled" shale, and fine loose sand in fine screenings.

4520 - 30' = Like the preceding.

4530 - 40' = Mainly fissle, smooth textured, gray shale. A very minor amount of "speckled" shale, and sandstone.

4540 - 50' = Like the preceding.

4550 - 60' = Gray shale, and some fragments of micaceous, white, fine grained sandstone. A few fragments of green shale.

4570 - 80' = Like the preceding.

4580 - 4610' = No change.

4610 - 20' = Shale as above, and about 25% white, micaceous, fine grained sandstone.

4620 - 30' = Same as above, and some cavings.

4630 - 40' = Same as above, with a few fragments of the green shale.

4640 - 50' = No change.

4650 - 60' = Mainly gray shale as above, but cavings common.

4660 - 80' = No change.

4680 - 90' = Gray shale, some micaceous sandstone, and cavings of other materials from higher levels, also numerous fragments of reddish brown shale and mudstone.

4690 - 4700' = Similar to the above, but with abundant cavings.

4700 - 10' = Sample composed mainly of brownish red shale, some red, gray and yellow mottled mudstone, and many fragments of fine grained, micaceous, white sandstone. Some gray shale, and some materials caving from much higher levels. For red shale and sandstone, see #13 to 17 on slide 3.

SS 0511 dc

4710 - 20' = Like the preceding, but many cavings(?) of gray shale.

4720 - 30' = Like the preceding.

4730 - 50' = No change.

4750 - 60' = Sample mainly medium, sub-angular, quartz sand, some mica and a minor amount of red and gray shale.

4760 - 70' = Mainly red shale.

4770 - 4810' = No change.

4810 - 20' = Red shale, and fine to medium grained, micaceous sand and sandstone. Some nodular fragments of red stained, calcareous siltstone.

4820 - 30' = Mainly brownish red, micaceous shale, and some flaky, gray shale. The latter, probably caving.

4840? - Salt Wash. - Fred. C. Babcock - see Ila. Information Circ. #45, 1964.

4830 - 4900' = No change.

4900 - 10' = Cuttings of dark brownish red shale, about 20% gray shale (possibly caving). A few fragments of red and gray mottled shale. A few pyrite nodules.

4910 - 20' = Like the preceding.

4920 - 80' = No change.

4980 - 90' = Dark dull red, in part finely micaceous shale, and a minor amount of gray shale which may be caving. A few fragments of light gray, red mottled shale.

4990 - 5000' = Like the preceding.

5000 - 10' = No change.

5010 - 20' = Shale as above, also many fragments of a fine to very fine grained, micaceous, calcareous, slightly red stained sandstone.

5020 - 30' = Like the preceding.

5030 - 40' = Similar to the above, red shale, a very minor amount of gray shale, and about 25% fragments of fine to very fine grained, micaceous, red stained sandstone. See #17 and 18 on slide 3 for sandstone.

SS ok

5040 - 50' = Like the preceding.

5050 - 60' = No change.

5060 - 70' = Red shale, and some sandstone as above, a few fragments of hard, red, sandy limestone probably from nodules.

5070 - 80' = Red shale, and some red stained, micaceous sandstone like that above, a little gray shale (probably caving).

5080 - 90' = Like the preceding.

5090 - 5130' = No change.

5130 - 40' = Red shale, and about 50% fine grained, micaceous, red stained sandstone.

5140 - 50' = Like the preceding.

5150 - 60' = No change.

5160 - 70' = Dull dark red shale, and many fragments of gray, red streaked and mottled mudstone. A few fragments of sandstone as above.

5190 - 5200' = Dark red shale, and many fragments of gray and gray and red mottled shale and mudstone. Some highly coarsely sandy fragments of nodular(?) red limestone.

5200 - 10' = Like the above, also some nodules and loose sand washing from a loosely consolidated, medium grained sandstone.

5210 - 20' = Like the preceding. Sandstone contains a few nodular fragments of white limestone.

5220 - 30' = Red, and red and gray mottled shale and mudstone, a little sandstone as above.

5230 - 40' = Mainly shale with a few fragments of a white (probably nodular) limestone.

5240 - 50' = Mainly red shale. Some flaky, gray shale (possibly caving).

5250 - 60' = Dark red, finely micaceous shale. A few fragments of red, sandy limestone (probably nodular). A few fragments of gray shale. For typical fragments of red shale, see #19 and 20 on slide 3.

5260 - 70' = Dull dark red, micaceous shale, and about 20% flaky, gray, and gray and red streaked and mottled shale. A few fragments of light gray limestone. Some of the gray shale may be caving. For the mottled shale and limestone, see #21-24 on slide 3. Lime is probably nodular.

5270 - 80' = Like the preceding.

5280 - 90' = As above, some medium grained sand, some cavings.

5290 - 5300' = Mainly red, micaceous shale. Some flaky, gray shale, and some gray, red mottled shale. A few fragments of medium grained, calcareous, micaceous sandstone, and a few fragments of light gray limestone as above.

5300 - 10' = Like the preceding.

5310 - 50' = No change.

5350 - 60' = Mainly red, finely micaceous, in part, silty shale. About 20% medium grained sand, a few fragments of sandstone, gray shale, gray and red mottled shale, and sandstone.

5360 - 70' = Like the preceding.

5370 - 5480' = No change.

5480 - 90' = Sample almost entirely finely micaceous, dark red shale. Some fragments of medium to coarse grained, micaceous, calcareous sandstone and loose sand from same. A few of the sandstone chips contain fragments of lignite.

5490 - 5500' = Similar to the above, but more sandstone, and some cavings of several materials noted at higher levels.

5500 - 10' = Like the preceding.

5510 - 30' = No change.

5530 - 40' = Mainly red shale. Some fragments of gray, and gray and red streaked and mottled shale. A few fragments of sandstone as above.

5540 - 50' = Like the preceding.

5560 - 80' = No change.

5580 - 90' = Mainly red shale, with a minor amount of medium to fine grained sand and sandstone.

5590 - 5600' = Like the preceding

5600 - 10' = Soft, dark red, micaceous shale about 50%, medium, sub-angular quartz sand about 50%, some mica.

5610 - 20' = Mainly red, finely micaceous shale, about 10% sand and sandstone.

5620 - 30' = Like the preceding. Some fragments of white limestone nodules?

5630 - 60' = No change.

5660 - 70' = Red shale as above, about 20% medium grained sand and sandstone. A few fragments of nodular limestone. Trace of gray shale. Sand averaging coarser grained.

5670 - 80' = Like the preceding.

5680 - 5700' = No change.

5700 - 10' = Red shale as above about 50%, and 50% fragments of calcareous, micaceous sandstone, with sand grains poorly sorted (very fine to medium), also many fragments of a light gray, calcitic limestone, which probably represents areas of concentration of calcium carbonate in the sandstone. For small chips of this limestone, see #25-27 on slide 3.

LS OKL Gry @ Red Mottles

5720 - 50' = No change

5750 - 60' = Similar to the above. Some sand grains coarser than in samples above. For examples of sandstone showing relation of limestone, see #27 to 34 on slide 3.

5760 - 70' = Like the preceding.

5770 - 80' = No change.

5780 - 90' = Red shale and a minor amount of sandstone and limestone like that above.

5790 - 5800' = Red shale, and a small amount of sandstone, and limestone as above. A trace of dark gray shale.

5800 - 10' = Almost entirely red, micaceous shale. A little red, red and gray shale, and sandstone as above.

5810 - 60' = No change.

5860 - 70' = Red shale, and about 50% fragments of sandstone.

5870 - 80' = Like the preceding.

5880 - 5920' = No change.

5920 - 30' = About 50% red, micaceous shale, and 50% fine to coarse, subangular grained sandstone, and many fragments of chalky, fossiliferous limestone that are obviously caving from a much higher level. For examples of the sandstone, see #34-36 on slide 3.

5930 - 40' = Like the preceding.

5940 - 60' = Red shale as above. A marked reduction in the amount of sandstone, and a few cavings.

5960 - 70' = Mainly red shale, some sandstone as above, and a few fragments of red shale with blue-gray mottling. See #37 and 38 on slide 3.

5970 - 80' = Like the preceding.

5980 - 90' = Similar to the above. Some increase in sandstone.

5990 - 6000' = Like the preceding.

6000 - 10' = No change.

6010 - 20' = Sample about 50% red shale, and red and gray mottled shale; and 50% red stained, calcareous sandstone, and red and gray, nodular, irregularly sandy limestone. For examples of limestone, see #40-43 on slide 3. A fragment of anhydrite.

6020 - 30' = Red shale, and red stained, medium grained sandstone as above. Some nodular limestone.

6030 - 40' = Like the preceding.

6040 - 50' = Sample about 50% red shale, and 50% micaceous sandstone - grains usually medium in size, subangular. A few fragments of nodular limestone. Shale is finely micaceous, rarely gray mottled.

6050 - 60' = Like the preceding.

6060 - 80' = No change.

6080 - 90' = Red shale as above, and about 25% sandstone like that above. A few fragments of limestone.

6090 - 6100' = Like the preceding.

6100 - 20' = No change.

6120 - 30' = Red shale as above, and red stained sandstone. Fragments of sandstone frequently show included blebs of red shale, and some of red limestone. See #44-48 on slide 3.

6130 - 40' = Like the preceding.

6140 - 50' = Like the above. The sandstone seems to be irregularly streaked with and contains many inclusions of hard red shale.

6150 - 6220 = No change.

6220 - 30' = Red shale and red stained sandstone, little nodular limestone or nodules and streaks in sandstone.

6230 - 40' = Like the preceding.

6240 - 60' = No change.

6260 - 70' = Like the above, and many cavings from a number of much higher levels.

6270 - 80' = Red shale, and about 50% fragments of light gray, highly calcareous sandstone with many limestone areas and inclusions.

sample.

6290 - 6320' = No change.

6320 - 30' = Mainly red shale, some chips of a very fine grained, micaceous and calcareous, reddish sandstone. A few varicolored limestone nodules, probably from the sandstone.

6330 - 40' = Mainly red, fine, micaceous shale. A little sandstone and nodular limestone. Some cavings.

6435? Moorings. E.B. no lith. or faunal evidence E.R.A.

6340 - 50' = Like the preceding. Shale is much less micaceous than in preceding samples.

6350 - 6440' = No change.

6440 - 50' = Red shale as above, a trace of sandstone and of nodular limestone, and many cavings.

6450 - 70' = No change.

6470 - 80' = Sample almost entirely red shale and red and gray mottled shale. A few fragments of sandstone, some fragments of gray shale (probably caving).

6480 - 6500' = No change.

6500 - 10' = Dull dark red, weakly finely micaceous shale, and some fragments of red and greenish gray mottled shale, a minor amount of greenish gray shale which may be caving.

6510 - 20' = Like the preceding.

6520 - 50' = No change.

6550 - 60' = Mainly red shale as above, some gray shale, and about 25% cavings of various materials.

6560 - 70' = Like the preceding.

6570 - 80' = No change.

6580 - 90' = Mainly red shale as above, some cavings, and about 10% fragments of red stained, micaceous and calcareous sandstone. A few fragments of sandy, red limestone nodules.

6590 - 6600' = Similar to the above, but less sandstone.

6600 - 10' = Dull dark red, finely micaceous shale. A few fragments of sandstone and of nodular red limestone. Many fragments of gray, flaky shale (these may be caving).

6620 - 6730' = No change.

6730 - 40' (6725?) Radeau E.B = Dull dark red shale. A few fragments of calcareous, red stained sandstone, and cavings of light gray shale and other material from much higher levels.

6740 - 50' = Like the preceding.

6750 - 70' = No change.

6770 - 80' = Red shale and some cavings as above. Also, about 50% fragments of red stained, micaceous, fine to medium grained, subangular, calcareous, quartzitic sandstone.

6780 - 90' = Like the preceding.

6790 - 6880' = No change.

6880 - 90' = Dull dark red, micaceous shale. A few concretionary, red, limestone nodules, and a few fragments of red tinted limestone nodules, a few fragments of fine grained, micaceous and calcareous sandstone, and cavings of a number of materials from higher levels.

6890 - 6900' = Like the preceding.

6900 - 10' = Red shale as above, and about 10% fragments of fine grained, calcareous, micaceous, red stained sandstone. Some cavings.

6910 - 20' = Like the preceding.

6920 - 40' = No change.

Zone A 6940 - 50' = Like the above, with the addition of a few fragments of light gray, sandy, nodular(?) limestone that contains irregular-shaped, darker gray inclusions. A few fragments of lignite.

Gry Silica Cemented SS, Pyritic & Lignitic 6950 - 60' = Like the preceding. For fragments of the gray spotted material and lignite, see #49-52 on slide 3.

6960 - 70' = Cutting of red shale, and about 5% fragments of micaceous, calcareous sandstone as above. Some cavings.

6970 - 80' = Like the preceding.

6980 - 90' = Almost entirely dull, red, micaceous shale.

6990 - 7000' = Like the preceding.

Red shale as above, a few fragments of red stained, micaceous, fine to medium grained sandstone, and a few cavings of other materials.

7010 - 20' = Same as preceding.

7020 - 60' = No change.

7060 - 70' = Cutting of red shale, some gray shale (probably caving.)

7070 - 80' = Like the preceding.

7080 - 7110' = Red shale, a few fragments of sandstone. A little gray shale. Some obvious cavings.

7110 - 20' = Like the preceding.

7120 - 60' = No change.

7150'? Pine Sh. C.B.

COAL in Gray Flaky Mic Sh

7160 - 70' = Materials as above, with the addition of some fragments of lignite which may be coming from this depth. See #52-54 on slide 3.

7170 - 80' = Like the preceding.

THIS IS A COAL 8M Gray Splotted R. & Gy Sh

7180 - 90' T.S. = Sample about 50% red shale, and 50% flaky gray shale. Some fragments of lignite as above. Lignite apparently from the gray shale to which some fragments of the lignite are attached. A few fragments of a gray limestone with dark gray inclusions (microfossil molds?). See #55 on slide 3.

This could be some-which in the sandy E.H.A.

7190 - 7200' = Like the preceding, but no gray nodular limestone noted.

QUARTZITIC Gray Mottled SS

7200 - 10' = About 50% red shale, and 50% flaky gray shale, and fragments of a hard, calcitic, dense, very fine grained, gray micaceous sandstone and sandy limestone. For fragments of this material, see #59-60 on slide 3.

7210 - 20' = Similar to preceding. More gray shale and less gray sandstone and sandy limestone. Many cavings.

7220 - 30' = Sample about 50% red shale, with a few fragments of red limestone nodules and a few of red tinted sandstone, and 50% gray flaky shale, and some fragments of very fine grained, micaceous, gray, calcareous sandstone.

7230 - 40' = Similar to the preceding. More fragments of red tinted sandstone. Some of red shale fragments silty.

7235-? Sligo C.B.

7240 - 50' = No change.

= Red shale again strongly dominant in samples -(about 4/5ths). A little gray shale, and cavings.

7260 - 70' = Like the preceding.

7270 - 80' = Almost entirely red shale. A little gray shale and cavings.

7280 - 90' = Red shale, about 1/4 gray shale, and many cavings. Some fragments of red nodular limestone.

7290 - 7300' = Like the preceding.

7300 - 10' = Same as preceding. A little carbonaceous material on some of the gray shale fragments.

7310 - 20' = Like the above, but no carbonaceous material. Since cavings of various other materials are present it is not possible to know whether or not any of the gray shale is indigenous.

7320 - 30' = Like the preceding.

7330 - 7400' = No change.

7390'- Houston C.B

7400 - 10' = Dull red shale, and a few fragments of red, fine grained, micaceous sandstone, and a few fragments of nodular, red limestone, about 5% fragments of gray shale, and some obvious cavings.

7410 - 20' = Like the preceding.

7420 - 40' = No change.

7440 - 50' = Mainly red shale, a very minor amount of gray shale, and some fragments of fine grained, micaceous, calcareous, red stained sandstone.

7450 - 60' = Like the preceding.

7460 - 70' = Mainly red, micaceous shale, and some red and gray mottled shale. Some gray shale, and cavings from the Tertiary portion of the hole.

7470 - 80' = Mainly red, and a little gray shale as above. A few cavings.

7480 - 90' = Like the preceding, with the addition of some fragments of micaceous and calcareous, red stained sandstone.

7490 - 7500' = Like the preceding. Red stained sandstone fragments about 5%.

7500 - 10' = Red shale, and red stained, fine, micaceous, calcareous sandstone about 20%. A trace of gray shale.

7510 - 20' = Like the preceding. Some gray shale and cavings.

7520 - 50' = No change.

7550 - 60' = Red shale and some cavings. A little sandstone.

7560 - 70' = Mainly red shale, about 10% fine to medium grained, red stained, micaceous, calcareous sandstone, and some fragments of red (nodular?) limestone, a very minor amount of gray shale.

7570 - 80' = Like the preceding, but many fragments of red and white, sandy, concretionary, calcitic limestone.

7580 - 90' = Like the preceding.

7590 - 7640' = No change.

7650 - 60' = Mainly dull dark red shale as above. A very minor amount of sandstone, lime nodules, and gray shale.

7660 - 70' = Like the preceding. A trace of lignite from the gray shale. See #1-3 on slide 4.

7670 - 7700' = No change.

7700 - 10' = Mainly red, micaceous shale like that above, about 10% gray shale. A few fragments of red stained, fine to medium grained sandstone.

7710 - 20' = Like the preceding.

7720 - 40' = No change.

7740 - 50' = Red shale like that above, about 10% gray shale, and 10% fine to medium grained, calcareous, micaceous, red stained sandstone.

7750 - 60' = Like the preceding.

7760 - 7860' = No change.

7860 - 70' = Dull dark red, micaceous shale strongly dominant, about 15% gray shale, and a trace of sandstone. Some cavings of several materials from much higher depths.

7870 - 80' = Like the preceding.

7880 - 90' = No change.

7890 - 7900' = Red shale strongly dominant as above, a little gray shale, and about 5% fragments of a medium grained, hard, calcareous, micaceous sandstone, and some concretionary lime nodules, also some sandy and calcitic, red and white limestone fragments that probably represent calcium carbonate concentrations in the sandstone. Sand grains in sandstone mainly clear quartz, with a few small nodules of a soft, bright green substance, and a few yellow tinted sand grains.

7900 - 10' = Like the preceding.

7910 - 70' = No change.

7970 - 80' = Red shale still dominant, but many (about 10%) fragments of red stained, micaceous, fine grained, calcareous sandstone. A few fragments of irregularly red stained nodular limestone. A little gray shale, probably caving for the most part. An occasional fragment of blue-green shale.

7980 - 90' = Like the preceding.

7990 - 8050' = No change.

8050 - 60' = Mainly red shale as above; about 10% micaceous sandstone, a little gray shale and nodular limestone like that above, and an occasional fragment of blue-green shale. For typical examples of materials from this depth, see #4-11 on slide 4. Some fragments of the red shale smooth textured, non-micaceous.

8060 - 70' = Similar to the above, but a marked reduction in fragments of sandstone.

8070 - 80' = Like the preceding.

8080 - 90' = No change.

8090 - 8100' = Similar to preceding. Sandstone fragments about 20% of washed concentrate.

8100 - 90' = Like the preceding. Some of the sandstone fragments coarse grained and very lightly stained.

8190 - 8200' = Red shale strongly dominant. About 5% gray shale, and a very minor amount of sandstone and nodular sandy limestone.

8200 - 10' = Almost entirely red shale as in preceding.

8210 - 50' = No change.

8250 - 60' = Red shale dominant as above, but about 20% medium grained,

8200 - 10' = Samples at least 50% sandstone as above.

8270 - 80' = Mainly sandstone.

8280 - 90' = Like the preceding.

8290 - 8320' = No change.

8320 - 30' = Sandstone like that above, and about 10% dull dark red shale.

8330 - 40' = Like the preceding. A few fragments of the red shale have thin, interbedded lenses of light greenish gray, micaceous, highly silty clay. For materials this depth, see #18-21 on slide 4. Blebs of red limestone very common in the sandstone chips.

8340 - 80' = No change.

8380 - 90' = Sample about 75% red shale, 25% sandstone like that above.

8390 - 8400' = Same as preceding.

8400 - 10' = Mainly red shale with some loose sand, a trace of sandstone, and some cavings of various materials from various higher levels.

8410 - 50' = No change.

8450 - 60' = Red shale. A trace of sandstone, a few cavings.

8460 - 70' = Red shale strongly dominant, a little gray shale and sandstone like that above. The red shale is a brighter shade of red than in preceding red shale sections. See #22-24 on slide 4.

8470 - 8520' = No change.

8520 - 30' = Red shale like the preceding, and about 10% chips of light red, medium grained, micaceous, calcareous sandstone.

8530 - 40' = Red shale as above, and 25% light red, medium grained, micaceous, calcareous sandstone.

8540 - 80' = Red shale and about 10% sandstone. Some light gray shale.

8580 - 90' = Like the preceding, but sandstone, in part, coarser grained, with some grains of small pebble size. See #25-27 on slide 4.

8590 - 8600' = Almost entirely red shale. A few cavings of various materials from higher depths.

8600 - 10' = Like the preceding.

8620 - 60' = No change.

8660 - 70' = Mainly red shale as above, and some fragments of gray, red and ochre mottled mudstone. See #28-32 on slide 4. Some light gray-green shale.

8670 - 80' = Like the preceding.

8680 - 90' = Red shale, a little multicolored mudstone as above, a little sandstone, and some fragments of the light grayish green shale.

8690 - 8700' = Like the preceding.

8700 - 90' = No change.

8790 - 8800' = Red shale, many fragments of which are veined or finely and irregularly streaked and mottled with gray areas. Some fragments of nodular red mottled calcitic limestone, and a few fragments of grayish green shale.

8800 - 50' = No change.

8850 - 60' = Red shale, and many fragments of red and gray mottled shale and mudstone.

8860 - 8930' = No change.

8930 - 40' = Red shale, and some fragments of red and gray mottled shale and mudstone. A few fragments of blue-green unctuous shale. See #33 on slide 4.

8940 - 50' = Like the preceding.

8950 - 9020' = No change.

9020 - 30' = Mainly red shale, with a very minor amount of red and gray mottled shale and mudstone.

9030 - 40' = Like the preceding. Red shale not so bright red as just above the red and gray mottled shale. See #34 and 36 on slide 4.

9040 - 70' = No change.

9070 - 80' = Red shale like that above, and many fragments of red and gray shale. Some ochre mottling also noted, and a few blue-gray fragments.

9080 - 90' = Sample again composed almost entirely of chips of dull dark red, irregularly micaceous shale. A few fragments of the gray

9290 - 9300' = Dark red, sparsely micaceous shale.

9300 - 10' = Same as preceding. A few fragments of sandstone and a few of the gray and mottled shale. A few calcitic and sandy, red and white, lime nodules, and an occasional fragment of greenish blue waxy shale. textured.

9310 - 9440' = No change.

9440 - 50' = Like the preceding, and in addition a small number of well rounded, small, red stained, quartz pebbles.

SS, comm. PS, Hommage Content

9450 - 60' = Similar to the preceding, but more pebbles and a few fragments of sandstone which is apparently the source of the pebbles. See #37 and 43 on slide 4.

9460 - 70' = Like the preceding.

9470 - 80' = Samples again mainly red shale, with a few fragments of the conglomeritic sandstone described above. Sand grains in the sandstone very variable in size and materials and well rounded.

9480 - 90' = Red shale strongly dominant. A few fragments of red and gray mottled shale. A few fragments of red and white limestone nodules, and a few grains of the sand from the conglomeritic sandstone above.

9490 - 9500' = Like the preceding.

9500 - 10' = Sample almost entirely red shale as above, with some fragments of sandstone and small pebbles as above, and a few fragments of blue-green, waxy shale. A few fragments of red limestone (nodules?).

9510 - 20' = Like the preceding. Same as above. A few fragments of white quartzite (possibly from the sandstone). For examples of quartzite, see #43 and 44 on slide 4.

Qtzte white, ang. Grains

9520 - 80' = No change.

9580 - 90' = Red shale as above, and about 25% fragments of a sandstone similar to that first reported from 9450', but with some larger pebbles common, and some fragments of sandstone resembling a coarse quartzite. See #45-48 on slide 4.

Aprox top of conglomeritic s.s. section - Jur. or Cret ? see also in Sealy well, Walton Co. E.R.A.

VC-Gm PS and SS, red to white

9590 - 9600' = Similar to preceding. Less sandstone.

9600 - 10' = Sandstone again about 25%.

9610 - 20' = red shale, and sandstone and pebbles about 50% to 75%.

9620 - 9770' = Same as above. Some of the red shale also silty to sandy.

9770 - 80' = Sample composed mainly of fragments of sandstone and grains from the conglomeritic sandstone like that above. Some red shale. A large part of grains are quartz, well rounded, and of small pebble size, but there are some grains of feldspar and of limestone and other undetermined materials. Shape of grains rounded but irregular and grains of fine size are present. Cementing medium is usually white and clayey but apparently red clay acts as cementary medium in some fragments. Small fragments of a black mineral (magnetite?) are common, and some mica. There are some pebbles of quartzite and other igneous and metamorphic materials. One fragment shows a contact of the sandstone with the red shale through which the sandstone may be irregularly distributed.

9780 - 9900' = Same as above, with steady increase in percentage of very coarse grains in conglomerate.

9900 - 10' = Coarse conglomerate like that above with grains of very coarse (pebble size) abundant. No change in general character of conglomerate. A very small amount of red shale which occasionally contains a light bluish gray streak.

9910 - 9990' = Like the preceding.

9990 -10000' = Like the preceding. Some fragments of a dark red shale at this depth very highly micaceous. See #60 on slide 4. Nos. 49 to 60 on same slide show various characterics of the conglomeritic sandstone. Material mainly fragments and pebbles from sandstone.

49-60 HAS NOT G OVERPRINT TYPES - MOST CAVE SL

10,000 - 60' = No change.

10,060 - 70' = Same as above with the addition of a few fragments of dark gray shale. This shale may be caving although the individual chips show some variation in color which is not a characteristic of gray shales occurring higher in the section.

10,070 - 80' = Like the preceding.

10,080 -120' = No change.

10,120 - 30' = Sandstone as above, and about 20% fragments of red micaceous shale. A few of these with light bluish, gray, irregular vein-like streaks. A few chips of dark gray shale as noted above.

10,130 -260' = No change.

10,200 - 10' = cuttings of conglomeritic sandstone as described above, and about 20% fragments of dark red, irregularly micaceous and irregularly silty to sandy shale like that above. A few fragments of gray shale that may be caving.

10,270 - 90' = Like the preceding.

Korea

10,290 - 300' = Materials as above, also many fragments of a white, fine and even grained quartzite-like sandstone. See #1-5 on slide 5.

Top of white qtz. s.s. - even grnd. Jurassic or older?

10,300 - 10' = Similar to preceding, but comparatively few fragments of the white (quartzite?).

Core
10,319 - 335' Rec. 9.4'.

Part 10,319.5' = White, fine to medium grained, subangular quartzitic sandstone.

Part 10,320.5' = Same as preceding.

Part 10,321.5' = No change.

Part 10,322.5' = Same as above, probably less well consolidated, since is more red stained.

Part 10,323.5' = Sandstone as above, grains moderately even in size but average size of grain increasing with depth. Grains at top of section, very fine. Grains at this level, medium to moderately coarse in size.

Part 10,324.5' = No change.

Part 10,324.8' = Sandstone like that above, but with some irregular-shaped inclusions of black, soft, fibrous, carbonaceous material, and a few areas in which there are concentrations of the soft, white matrix, usually sparsely distributed among the sand grains.

Jurassic spores by Magnolia in coal. ←

Part 10,325.5' = Sandstone like that above, but no carbonaceous material noted.

Part 10,326.5' = Like the preceding.

10,320 - 30' = Red shale about 50%, conglomeritic sandstone as above the core about 50%. A few fragments of gray shale.

10,330 - 40' = Same as preceding, with the addition of many fragments of the white sandstone like that cut in preceding core.

eritic sandstone and of the white, even-grained sandstone as above. For typical examples of materials at this depth, see #5-24 on slide 5.

10,350 - 60' = Same as above, also a few fragments of the lighter and darker ~~gray~~ streaked shale first noted at slightly higher levels.

10,360 - 70' = Same as preceding, with some chips of the white sandstone with sand grains averaging medium in size.

10,370 - 80' = Like the preceding.

10,390 - 400' = Like the preceding, also a few fragments of a bluish green sandstone like the white sandstone in character, and a few fragments of greenish blue shale. The greenish blue sandstone is very dense, almost a quartzite. See #25-29 on slide 5 for bluish green sandstone and shale.

10,400 - 410' = Red shale, a little gray shale as above about 50%. Fragments of the conglomeritic sandstone, and of the white, even-grained sandstone about 50%.

10,410 - 20' = Like the preceding.

10,420 - 30' = No change.

10,430 - 40' = Sample about 25% red shale, and some red, light greenish gray mottled shale, and 75% fragments of the white, subangular grained sandstone, with a few fragments of the conglomeritic sandstone and a very few of the gray shale and bluish green sandstone.

10,440 - 50' = Like the preceding. Grains in the white sandstone usually medium in size with some coarse grains also present. See #31-33 on slide 5.

10,450 - 60' = Like the preceding.

10,460 - 70' = Like the preceding, but with the addition of many fragments of diabase. See rpt. by R.L. Griggs USGS. 5/26/61. PLA Book 2 - Basic cuttings.

10,470 - 80' = Red shale and sandstone like that above, only a few fragments of diabase.

10,480 - 90' = Red and red and greenish gray mottled shale, and about 75% white, medium to coarse grained, quartzitic sandstone. A few fragments of diabase.

10,490 - 500' = Like the preceding.

10,500 - 10' = Red shale and fine to medium grained quartzitic sandstone.

10,510 - 20' = Same as above, a few fragments of gray shale and a few of diabase.

10,520 - 30' = Like the preceding.

10,530 - 40' = Red and red and gray mottled shale 50%; quartzitic sandstone 50%.

10,540 - 50' = Red shale and some mottled shale about 25%. White, quartzitic sandstone about 75%. A few fragments of blue-green shale.

10,550 - 60' = Like the preceding.

10470-80 - Diabase from cuttings

6940-50 - Hole cleaned in poorly white [illegible] consol. SD & lt. gray ash SH.