

Georgia Geological Survey well no. 491

Fulaski County, Georgia

Leighton Drilling Co., Dana no. 1

TD 6030 feet

Geophysical datum: Kelly bushing, 340 feet above sea level.

logged by Claude Robert Hilliard, 1976

GGs 491

Pulaski county, Georgia

Leighton Drilling Company

Farm/Well No. - Dana #1

Ground level - 328 feet

Total depth - 6035 feet

Brief summary of major lithology:

No samples to 200', sandy limestone from 200' to 350' grading to limy sand from 350' to 450', sand with intermittent layers of mica and clay from 450' to 2350', basement at 2350'.

Brief summary of accessory minerals :

Mica common from 600' to 950', 1040' to 1410', and 1500' to 1820'; phosphate and megafossils common from 200' to 490', glauconite common from 200' to 600', microfossils common from 200' to 350', pyrite common from 600' to 800' and from 960' to 1250', feldspar common from 640' to 2350'.

- 0-200 No samples
- 200-210 very light grey(N8) to light grey(N7), micaceous, glauconitic, slightly limonitic, phosphatic, very fossiliferous(megafossils), dull and vitreous lusters present, quartz grains range in size from fine(1/8-1/4mm.) to very coarse grained(1-2mm.), lime-cemented, sandy(40%), limestone, interbedded sand?, angular, foram.
- 210-220 Same as 200-210 but more sandy, sand(70%), limestone (30%), layer of interbedded sand?
- 220-230 light grey(N7), same as 200-210 otherwise except more limy, sand(30%), limestone(70%), poor sample, rose quartz observed.
- 230-240 Same as above
- 240-250 Same as above.
- 250-260 chips are more indurated, glauconite common, no megafossils observed, otherwise no change.
- 260-270 megafossils observed, glauconite still common, otherwise no change.
- 270-280 glauconite not as common, no change otherwise.
- 280-290 No change
- 290-300 No change
- 300-310 more sandy, no change otherwise.
- 310-320 No change
- 320-330 No change
- 330-340 No change

- 340-350 No change
- 350-360 much more sandy, no change otherwise.
- 360-370 nearly pure sand, medium light grey(N6), phosphate common, vitreous luster, grains are not cemented, grain size ranges from 1/2 to 2mm., limy(5%) sand, megafossils, no forams observed.
- 370-380 some quartz grains are iron-stained, phosphate is not common, no change otherwise.
- 380-390 No change
- 390-400 no phosphate observed, no change otherwise.
- 400-410 slightly larger grains, no change otherwise.
- 410-420 grain size ranges from 1/2 to 3mm.
- 420-430 micaceous, pyritic, medium dark grey(N4), dull, limy chips present, no change otherwise.
- 430-440 No change
- 440-450 No change
- 450-460 light grey(N7), very clean quartz sand, pyritic, vitreous, well sorted, medium grained(1/4-1/2mm.) sand(100%).
- 460-470 No change
- 470-480 micaceous, pyritic, medium dark grey(N4), dull, limy chips occur again.
- 480-490 medium sorted, medium light grey(N6), grains to 2mm., sand(100%).

- 490-500 No change
- 500-510 medium dark grey(N4), dirty quartz sand, medium sorted, 1/4-1/2mm. with a few grains as large as 1mm., sand(100%).
- 510-520 No change
- 520-530 cleaner, light grey(N7), pyritic vitreous, larger grains(to 3mm.).
- 530-540 grains as large as 1cm. occur, feldspathic, rose quartz, micaceous, medium grey(N5).
- 540-550 pinkish grey(5YR8/1), opaque quartz grains, rose quartz.
- 550-560 abundant rose quartz, light brownish grey(5YR6/1), very slightly limy, still feldspathic.
- 560-570 pinkish grey(5YR8/1), opaque quartz grains are less abundant than at 540-550, grains are more transparent.
- 570-580 No change
- 580-590 greyish orange(10YR7/4), slightly clayey, rose quartz still abundant; feldspathic, very slightly limy.
- 590-600 pinkish grey(5YR8/1), transparent quartz grains.
- 600-610 dark reddish brown(10R3/4), micaceous, pyritic, dull, poorly sorted, non-cemented, fine to very coarse grained (1/4mm.-1cm.), clayey(5%) sand.
- 610-620 dark reddish brown(10R3/4), micaceous, pyritic, dull, poorly sorted, non-cemented, fine to very coarse grained(1/4mm.-1cm.), clayey(5%) sand.
- 620-630 greyish red(10R4/2), no change otherwise.

- 630-640 No sample
- 640-650 pale yellowish brown(10YR6/2), micaceous, pyritic, feldspathic, vitreous, poorly sorted, non-cemented, 1/4-1mm., fine to very coarse grained sand(100%), (very clean).
- 650-660 light grey(N7), still cleaner than 640-650, no change otherwise.
- 660-670 No change
- 670-680 No change
- 680-690 pale yellowish brown(10YR6/2), not as clean as above samples, no change otherwise.
- 690-700 clean sand again, no change otherwise.
- 700-710 medium grey(N5), micaceous, pyritic, feldspathic, vitreous, poorly sorted, partially cemented, fine to very coarse grained(1/4-1mm.), clayey(10%) sand.
- 710-720 No change
- 720-730 more sandy than above, no change otherwise.
- 730-740 No change
- 740-750 No sample
- 750-760 medium grey(N5), micaceous, feldspathic, vitreous, poorly sorted, pyritic, partially cemented, fine to very coarse grained(1/4-1mm.), clayey(10%) sand, claystone chips.
- 760-770 medium dark grey(N4), micaceous, feldspathic, vitreous, poorly sorted, fine to coarse grained(1/4-1mm.), clayey (5%) sand.

- 770-780 dark grey(N3), more clayey and more micaceous.
- 780-790 No change
- 790-800 No change
- 800-810 dark grey (N3), micaceous, feldspathic, dull, fine to medium grained (1/4-1/2mm.), medium sorted, clayey (25%) sand.
- 810-820 No change
- 820-830 No change
- 830-840 No change
- 840-850 No change
- 850-860 No change
- 860-870 No change
- 870-880 No change
- 880-890 No change
- 890-900 No change
- 900-910 No change
- 910-920 not as clayey, no change otherwise.
- 920-930 No change
- 930-940 medium light grey(N6), cleaner than above samples, otherwise no change.

- 940-950 No change
- 950-960 No change
- 960-970 very light grey(N8), pyritic, feldspathic, vitreous, medium sorted, non-cemented, fine to coarse grained (1/4-imm.), very clean sand(100%).
- 970-980 No change
- 980-990 No change
- 990-1000 No change
1000
- 1000-1010 No change
- 1010-1020 No change
- 1020-1030 No change
- 1030-1040 No change
- 1040-1050 clayey chips and mica occur again, megafossils.
- 1050-1060 medium dark grey(N4), no change otherwise.
- 1060-1070 No change
- 1070-1080 No change
- 1080-1090 No change
- 1090-1100 No change
- 1100-1110 finer grained(1/4-1/2), no change otherwise.
- 1110-1120 No change

- 1120-1130 fine to coarse grained(1/4-1mm.), no change otherwise.
- 1130-1140 fine to very coarse grained(1/4mm.-1cm.), no change otherwise.
- 1140-1150 No change
- 1150-1160 No change
- 1160-1170 coarser grained, no change otherwise.
- 1170-1180 clayey chips occur again, otherwise no change.
- 1180-1190 No change
- 1190-1200 clayey chips are not as abundant as in above samples.
- 1200-1210 micaceous clayey chips occur in abundance again, medium sorted, no change otherwise.
- 1210-1220 No change
- 1220-1230 No change
- 1230-1240 No samples
- 1240-1250 cleaner sand than in above samples, poorly sorted, no change otherwise.
- 1250-1260 dark grey(N3), micaceous, feldspathic, vitreous, poorly sorted, non-cemented, fine to coarse grained (1/4-1mm.), clayey(5%) sand.
- 1260-1270 more clayey
- * 1270-1280 more clayey
- 1280-1290 more clayey

* Note: 1275 feet - Circulated sample-15 minutes

- 1290-1300 still more clayey, no change otherwise.
- 1300-1310 clayey chips not abundant(nearly disappear), clean, poorly sorted, sand(100%).
- 1310-1320 more clayey, increased grain size(1/4-1mm.), no change otherwise.
- 1320-1330 more clayey, even larger grained(1/4-2mm.), no change otherwise.
- 1330-1340 No change
- 1340-1350 not as clayey as above samples but grain size continues to increase(1/4-3mm.).
- 1350-1360 more clayey than previous sample, maximum grain size occurs in this sample(4mm.), otherwise, same as above.
- 1360-1370 grain size decreases(1/4-2mm.), less clayey, no change otherwise.
- 1370-1380 medium sorted, much less clay than in previous samples, grain size still decreasing(1/4-1mm.).
- 1380-1390 grain size still decreasing, clayey chips are more abundant, no change otherwise.
- 1390-1400 No change
- 1400-1410 No change
- 1410-1420 light grey(N7), feldspathic, vitreous, medium sorted, non-cemented, fine to coarse grained(1/4-1mm.), very clean sand(100%).
- 1420-1430 more clayey
- 1430-1440 No change

- 1440-1450 No change
- 1450-1460 more clayey, no change otherwise.
- 1460-1470 No change
- 1470-1480 increased grain size(1/4-2mm.), no change otherwise.
- 1480-1490 increased grain size(1/4-4mm.), no change otherwise.
- 1490-1500 No change
- 1500-1510 light grey(N7), micaceous, feldspathic, rose quartz, vitreous, medium sorted, fine to very coarse grained (1/4-3mm.), clayey(5%), sand.
- 1510-1520 No change
- 1520-1530 No change
- 1530-1540 No change
- 1540-1550 No change
- 1550-1560 No change
- 1560-1570 No change
- 1570-1580 No change
- 1580-1590 No change
- 1590-1600 No change
- 1600-1610 No change
- 1610-1620 claystone appears, light brown(5YR5/6), pearly luster, soft, comprises approximately 5% of sample.

- 1620-1630 more claystone, otherwise no change in major lithology or accessory minerals.
- 1630-1640 claystone comprises approximately 10% of sample.
- 1640-1650 less claystone (approximately 5% of sample).
- 1650-1660 no claystone at all in this sample.
- 1660-1670 claystone - approximately 5% of sample.
- 1670-1680 claystone - approximately 5% of sample.
- 1680-1690 no claystone.
- 1690-1700 no claystone.
- 1700-1710 No change
- 1710-1720 No change
- 1720-1730 medium dark grey (N4), no change otherwise.
- 1730-1740 light grey (N7), no change otherwise.
- 1740-1750 No change
- 1750-1760 No change
- 1760-1770 No change
- 1770-1780 No change
- 1780-1790 No change
- 1790-1800 No change

- * 1800 feet Circulated sample - 15 minutes.
- * 1800 feet Circulated sample - 30 minutes.
- 1800-1810 lignite fairly common, no change otherwise.
- 1810-1820 lignite and mica are not as common as in above samples, no change otherwise.
- 1820-1830 No change
- 1830-1840 No change
- 1840-1850 No change
- 1850-1860 iron-stained quartz grains appear. 85% quartz sand; 15% gray shale
- 1860-1870 ^{as above} iron-stained quartz grains are more abundant than in 1850-1860; limonite
- 1870-1880 iron-stained quartz grains are still more abundant, no change otherwise. some sand clay cemented 15% clay and shale
- 1880-1890 No change 90% sand, 10% shale
- 1890-1900 No change ✓
- 1900-1910 No change
- 1910-1920 No change
- 1920-1930 No change
- 1930-1940 No change
- 1940-1950 No change

1950-1960	No change
1960-1970	No change
1970-1980	No change
1980-1990	No change
1990-2000	No change
2000-2010	greyish orange(10YR7/4), due to abundance of iron-stained quartz grains.
2010-2020	No change
2020-2030	No change
2030-2040	No change
2040-2050	No change
2050-2060	No change
2060-2070	No change
2070-2080	No change
2080-2090	No change
2090-2100	No change
2100-2110	No change
2110-2120	No change
2120-2130	No change

- 2130-2140 No change
- 2140-2150 No change
- * 2141 feet Circulated sample - 30 minutes
- 2150-2160 moderate yellowish brown(10YR5/4), dirty samples?.
- 2160-2170 finer grained than above samples(1/4-1mm.), no change otherwise.
- 2170-2180 same as 2140-2150.
- 2180-2190 grain size increasing.
- 2190-2200 very coarse grained, mostly 2-5mm.
- 2200-2210 finer grained(1/4-2mm.).
- 2210-2220 very coarse grained(2-5mm.).
- 2220-2230 finer grained(1/4-3mm.).
- 2230-2240 much finer grained, mostly 1/4-1mm.
- 2240-2250 No change
- 2250-2260 slightly coarser grained(1/4-2mm.)
- 2260-2270 No change
- 2270-2280 No change
- 2280-2290 very coarse grained(1-5mm.).
- 2290-2300 very coarse grained(2-5mm.).

2300-2310 iron-stained quartz grains are not as common as
in above samples, no change otherwise.

2310-2320 No change

2320-2330 No change

2330-2340 No change, lignite

2340-2350 very light grey(N8), sand as above, no change in
accessory minerals or major lithology. *cont.*

2350-2360 Basement material. *Basalt*