

SK 46 SW 1/1

6" Derby 31 S.W.

1" 112.

HARDSTOFT BORING NO. 1.

Bags of samples examined at Pearson's Yard, Chesterfield,
Friday, December 6th, 1918.

Feet.

- 160-175 Grey sandy shale.
175-200 Grey shale fragments.
200-218 " " "
218-257 " " with fireclay and fgmnts coaly shale.
257-260 Dark grey shale.
290-300 " " "
300-305 Fireclay.
300-312 (sic) Sandy shale with pieces of fine grey sandstone.
312-319 Fine grey shaly sandstone.
319-325 Grey shale and sandy shale.
325-330 Grey sandy shale.
330-334 Grey shale.
334-338 " "
338-345 Fine grained sandstone.
345-359 " " "
359-366 Grey sandy shale.
366-370 " " "
370-385 Dark grey shale.
385-389 Black shale with coal fragments.
389-395 Black shale with fragments of cannel shale.
395-398 Dark grey shale and fireclay.
398-402 Grey shale and clay.
405-410 Fine grey sandstone and grey shale.
410-418 Grey clay and fragments of grey shale.
418-425 Grey sandy shale.
425-428 " " "

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2.

Feet.

| | |
|---------|---|
| 428-430 | Grey sandy shale. |
| 430-435 | " " " |
| 435-440 | " " " |
| 440-445 | Grey shale. |
| 445-449 | " " |
| 449-454 | <u>Bright Coal.</u> |
| 454-460 | Grey shale and pieces of fireclay. |
| 460-464 | Grey shale. |
| 464-469 | " " |
| 469-474 | " " and pieces of fireclay. |
| 474-477 | " " |
| 480 | " " |
| 484 | " " |
| 488 | " " |
| 493 | " " with pieces of sandstone and ironstone. |
| 496 | Very sandy shale. |
| 500 | Dark grey shale. |
| 505 | Black shale. |
| 510 | Fine grey sandstone. |
| 514 | Grey shale. |
| 519 | " " |
| 523 | " " (sample received at yard Nov. 16th). |
| - | |
| 532 | Fine sandstone and little shale. |
| 537 | " " " " " |
| 542 | " " |
| 547 | Grey shale and some sandstone. |
| 552 | " " " " " |
| 560 | Grey shale. |
| 571 | " " |
| 578 | " " " " " |

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3.

Feet.

- 584 Grey shale and some sandstone.
589 " "
596 Fine sandstone.
604 Fine sandstone and grey clay.
609 Grey clay.
613 Grey clay and shale.
619 Grey shale.
624 " "
630 " "
637 " "
646 " "
651 " "
657 " "
662 " "
667 " " and clay.
673 Grey and black shale.
677 Grey shale.
685 Grey shale and little sandstone.
695 Grey shale.
700 " "
707 " "
713 Hard grey shale (called 'Lime' in journal).
717 Grey shale and sandstone.
723 Grey shale.
725 " "
732 " "
736 " "
742 " "
748 Sandy shale.
754 Shale.
760 Sandy shale.

4.

Feet.

- 765 Grey shale.
779 Sandstone.
785 " and shale.
797 Fine sandstone.
803 " "
809 " "
814 " " and grey shale.
824 Grey shale.
830 " "

859 Sandstone and shale.
868 " " "
887 Shale and coal.
895 Sand and traces of coal.
902 Sand and little shale.
911 Sand.
920 "
926 Sand and little shale.
933 Sand and grey clay.

examined 17/1/18 M.B.

- 938 Fine pale buff sand.
943 Sand and shale, some of it carbonaceous.
950 "
955 "
959 "
964 Shale and clay.
969 " " "
974 " " "
978 " " "
983 " " "

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5.

Foot.

988 Shale and clay.

1005 " " "

1011 " " "

1016 " " "

1027 " " "

1035 Hard shale in small fgmts.

1045 " " and fine sand.

1065 " " " " "

1070 Hard sandstone and shale.

1075 Clayey shale.

1080 " "

1085 Fine sand and powdered shale.

1090 Hard shale.

1095 Hard sandy shale.

1110 " " "

1120 Hard shale.

1130 "

1145 "

1150 "

1165 "

1175 "

1185 "

1191 "

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6.

Foot.

- 1196 Slightly softer grey shale.
1205 "
1215 "
1225 "
1235 "
1245 "
1255 Shale and traces of clay.
1265 " "
1275 " "
-
-
-
1310 Hard sandy shale.
1315 Hard shale.
1320 Hard shale.
1330 Hard sandy shale. Trace of coal.
1335 " " " little pyrites (could not find ironstone noted by Brown).
1340 " " "
1345 Sandstone and shale with minute trace of coal.
-
1355 Black slightly carbonaceous shale and sand (said to have been trace of oil detected here)
1360 Soft black shale.
1365 " " " and sand.
-
-
1380 Fine sandstone and shale.
1385 " " " "
-
1395 " " " " and little coal.

SK 46 SW 11

7.

Feet.

- 1400 Dark grey micaceous sandstone.
-
-
1420 Grey micaceous sandstone.
1425 " " "
1430 " " "
1435 " " "
1445 " " "
1450 " " " rather coarser, with ferruginous
spec's.
1455 Coarse grained sand with rusty specs (? M.G.).
Examined with Capt. Brown 18/3/19.
Boring said to have passed through
2 flts.
1455-60 Coarse sand fine grit.
-1465 Fine sandy micaceous shale.
-1470 Hard shale, trace of iron.
-1475 Hard shale.
-
-1485 Softer shale.
-1490 " " (plant traces).
-1495 " "
-1500 Fine white micaceous sand.
-
-
1525-35 (?) Micaceous shale and sandstone, some slightly
micaceous.
-
-1545 Coal and soft fine mic. sandstone.
-1550 Fine grey micaceous sand, trace of coal.
-1555 Grey clay.
-1560 "
-1565 "

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8.

East.

- 1570 V.fine grey micaceous sand. Little black shale.
-1575 "
-1578 "
-1583 Grey clay.
-1593 Sandy shale.
-1600 Sandy shale and little black shale.
-1607 "
-1615 "
-1625 "
-1635 "
-1642 "
-1650 "
-1661 " little pyrites.
-1672 "
-1678 "
-1685 "
-1693 Sandy shale with gannister and little iron.
-1700 " " "
-1712 Micaceous sandy shale.
-1717 Sandy shale and gannister.
-1722 "
1730 "
-1735 "
-1747 "
-1755 Sandy shale.
-1767 "
-1777 "
-1787 "
-1797 Black shale slightly sandy.
-1809 "
-1815 Grey and black shale.

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9.

Feet.

| | |
|-------|----------------------------|
| -1825 | Sandy grey shale. |
| -1835 | " and gannister. |
| 444 | " |
| -1850 | " |
| " | " |
| 1865 | Soft black shale. |
| 1875 | " and coarse sand. |
| 1885 | Coarse sand. |
| 1890 | " " ferruginous. |
| 1900 | Micaceous sandy shale. |
| 1910 | " |
| 1915 | " |
| 1925 | " and black shale. |
| 1930 | Black shale and gannister. |
| 1945 | Sandy shale and sandstone. |
| 1953 | Grey clay. |
| 1960 | " (Gas given off here). |
| 1965 | " |
| 1975 | Sandy shale and gannister. |
| -1985 | Sandy shale. |
| -1990 | " |
| -1995 | " |
| -2005 | " |
| -2010 | " |
| -2020 | Dark micaceous shale. |
| -2025 | Sandy " " |
| -2030 | " " " |
| -2035 | " " " |
| -2040 | " " " |
| -2045 | " " " |

Shale
1945-1970

SK 46 SW 1

10.

Feet.

| | |
|------|---------------------------------|
| 2050 | Sandy micaceous shale. |
| 2060 | " " " and fine sandstone. |
| 2065 | Fine sandstone. |
| 2070 | " " |
| 2075 | " " and sandy shale. |
| 2080 | " " " " " |
| 2085 | " " " " " |
| 2090 | " " " " " |
| 2100 | " " " " " |
| 2110 | Sandy micaceous shale. |
| 2120 | " " " |
| 2125 | " " " |
| 2130 | " " " and fine sandstone. |
| 2135 | Slightly sandy micaceous shale. |
| 2140 | " " " " |
| 2145 | " " " " |
| 2150 | " " " " |
| 2155 | " " " " |
| 2160 | " " " " |
| 2165 | " " " " |
| 2170 | " " " " |
| 2175 | " " " " |
| 2180 | " " " " |
| 2185 | " " " " |
| 2190 | " " " " |
| 2200 | " " " " |
| 2210 | " " " " |
| 2220 | " " " " |
| 2230 | " " " " |
| 2235 | Dark shale. |

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11.

Feet.

| | |
|------|-----------------------------|
| 2245 | Grey sandy shale, pyrites. |
| 2255 | " " " |
| 2265 | " " " |
| 2275 | " " " |
| 2280 | " " " { |
| 2290 | " " " } |
| 2300 | " " " |
| 2310 | " " " |
| 2320 | " " " |
| 2330 | " " " |
| 2340 | " " " |
| 2345 | " " " |
| 2350 | " " " |
| 2355 | " " " |
| 2360 | " " " |
| 2365 | " " " |
| 2370 | " " " |
| 2375 | " " " |
| 2385 | " " " |
| 2395 | " " " |
| 2400 | " " " |
| 2405 | " " " |
| 2410 | " " " |
| 2415 | " " " |
| 2420 | " " " |
| 2425 | " " " |
| 2430 | " " " |
| 2435 | " " " |
| 2440 | Grey micaceous sandy shale. |
| 2445 | " " " " |
| 2450 | " " " " |

? Silky stone

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12.

Foot.

| | |
|------|------------------------------------|
| 2455 | Grey micaceous <u>sandy</u> shale. |
| 2460 | " " " " |
| - | |
| 2470 | " " " " |
| 2480 | " " " " |
| 2490 | " " " " |
| 2495 | " " " " |
| 2500 | " " " " |
| 2505 | " " " " |
| 2510 | " " " " |
| 2515 | " " " " |
| 2520 | " " " " |
| 2525 | " " " " |
| 2530 | " " " " |
| 2535 | " " " " |
| 2540 | " " " " |
| 2545 | " " " " |
| 2550 | " " " " |
| 2555 | Grey sandy shale and dark shale. |
| 2560 | " " " " " " |
| 2565 | " " " " " " |
| - | |
| 2575 | Grey shale. |
| 2580 | Grey micaceous shale. |
| 2585 | " " " |
| 2590 | " " " |
| 2595 | " " " |
| 2600 | " " " |
| 2605 | " " " |
| 2610 | " " " |
| 2615 | " " " |

J. G. Johnson

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13.

Feet.

| | | |
|------|--|----------------------|
| 2620 | Grey micaceous shale. | |
| 2625 | " " " | |
| 2630 | " " " | some sandy. |
| 2635 | " " " | |
| 2640 | " " " | |
| 2645 | " " " | |
| 2650 | " " " | |
| 2660 | " " " | |
| 2665 | Soft dark grey micaceous shale and little sdy.shale. May 7th, 1919. | |
| 2670 | " | no lime. |
| 2675 | " | |
| 2680 | " | |
| 2685 | " | |
| 2690 | " | |
| 2695 | " | |
| 2700 | " | |
| 2705 | " | |
| 2710 | Rather darker | " |
| 2720 | " | |
| 2730 | " | some slightly limey. |
| 2740 | " | |
| 2745 | " | |
| 2750 | " | trace lime. |
| 2755 | " | " |
| 2760 | " | " |
| 2765 | " | " |
| 2770 | " | " |

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14.

Feet.

| | | |
|-----------|--|--|
| 2775 | Hard dark shale slightly limey. | pyrites. |
| 2780 | " | |
| 2785 | " | |
| 2790 | " | |
| 2795 | " | |
| 2800 | " | |
| 2805 | " | vein-calcite. |
| 2810 | " | |
| 2815 | Dark grey laminated calc.shale. | |
| 2820-2910 | " | |
| 2915 | " | with sandy shale band. |
| 2920 | " | " dolomite vein. |
| 2925 | " | |
| 2935 | " | |
| 2947 | " | |
| 2952-90 | Hard dark grey calc.shale | with pyrites and spar. |
| 2997 | " black | " " |
| 3004 & 7 | " dark grey | " " |
| 3012-50 | " black | " " |
| 3060 | " " | " " smell and show of oil with CS ₂ |
| 3065 | " " | " " " |
| 3070 | | strong " |
| 3077 | Hard black shale, dark bituminous limestone and little grey limestone. | <u>Oil</u> . |
| 3077-3100 | Numbered 1 - 17. | |

Average { Limestone 45%
 { Dolomite 5%
 { Quartz grains 25%
 { Hard dark grey mic.shale 25%

Nos.1-5 Fine grained, as above.

6 More shale in larger fragments.

SK46SW1

15.

Nos. 7, 8, 9. Large pieces pale grey limestone (up to $\frac{1}{2}$ inch).

10-17 Medium grained with large pieces limestone and shale.

3100-3127 Numbered 18-34.

18, 19, 20 Medium grained, mostly grey limestone with some shale etc.

21, 22, 23 Fine powder of same.

24, 25, 26 " rather darker, with more shale.

27 - 30 " lighter, more limestone.

31 - 34 "

N Reg. Survey No. 113/94 - copy already filed here SK46SW1/

D'ARCY EXPLORATION CO. LTD. TEST AREA HARDSTOFT (1918-1938-9) WELL NO. 1

LICENCE NO.

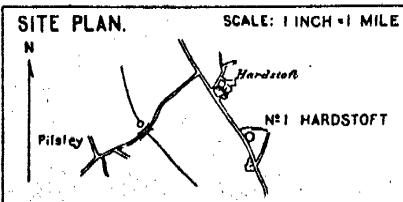
POSITION OF WELL:
LAT. 53° 9' 23" N.
LONG. 1° 20' 12" S.W.
COUNTY: DERBYSHIRE

ELEVATION:

DERRICK FLOOR:
ROTARY TABLE:

RIG: CABLE TOOL

DERRICK: 94'
POWER: STEAM



HISTORY:

MESSRS. PEARSONS LTD.

Drilling commenced 15-10-18

Drilling completed at 3127' (corrected depth) 27-6-19

D'ARCY EXPLORATION CO. LTD.

Original derrick dismantled & new derrick erected.

The 6" liner was pulled 26-6-38 & the hole cleaned & deepened to 3130'.

The bottom of the hole to 3059' was plugged & a 3" wooden plug placed with top at 3067' above it 3' of gravel & clay.

& 3' of cement. 6" casing was cemented at 3059'. After drilling out cement plug to 3061' a pressure of 500 lbs./sq.in. was held for 10 mins.

The hole was then bailed dry.

NOTE. Details of formation taken from driller's log.

LEGEND



SAND.



CONGLOMERATE.



SHALE OR CLAY.



LIMESTONE OR CHALK.



GYPSUM OR ANHYDRITE.



COAL SEAMS



CHERT

| GEOLOGICAL FORMATION | DEPTH IN FEET | CORING & RECORDED | DETAILS OF FORMATION | OIL, GAS, WATER, COAL SEAMS | SEPARATE | CABING | DATE | REMARKS |
|----------------------|---------------|-------------------|---|-----------------------------|----------|--------|----------|---|
| | 50 | | Blue shale | | | | 15-10-18 | Commenced drilling 18" diam. hole |
| | 100 | | Lime, shales & slates | | | | 19-7-38 | Backed off 60° of 8" casing |
| | 150 | | Blue shale | | | | | |
| | 200 | | (trace of coal (brown)) Limey shale | Water | | | | |
| | 250 | | Shale | | | | | |
| | 300 | | Shale | | | | | |
| | 350 | | Black shale | | | | | |
| | 400 | | Blue shale Lime Blue shale Lime Black shale Black shale Black shale Lime Sandy blue shale | | | | | 102' Single water show, less than 200 g.p.d. (3 barrels/our) |
| | 450 | | Black shale | | | | | |
| | 500 | | Lime shale Shale Lime Hard | 5' Coal | | | | |

