

PHILADELPHIA OIL COMPANY

SAMPLE DESCRIPTIONS

WELL NO. P-5

| | |
|---------|---|
| 0- 30 | Light grey orthoquartzitic sand; abundant mica |
| 30- 60 | Same |
| 60- 90 | Light grey coarse grained orthoquartzitic sand abundant in mica, possible fragments of coal |
| 90-120 | Same (No coal) |
| 120-150 | Light grey coarse grained orthoquartzitic sand; grey fine grained shale |
| 150-180 | Grey fine grained Shale |
| 180-210 | Grey fine grained Shale, many fragments abundant in light colored mica |
| 210-240 | Grey fine grained Shale |
| 240-270 | Same |
| 270-300 | Same |
| 300-330 | Grey fine grained Shale; few fragments of coal |
| 330-360 | Grey fine grained shale; few fragments of coal |
| 360-390 | Grey fine grained Shale; light grey finely ground quartzitic sand; abundant mica |
| 390-420 | Grey fine grained Shale; few fragments of coal |
| 420-450 | Grey fine grained Shale; few fragments of light grey coarse grained sand. |

| | |
|---------|--|
| 450-480 | Grey fine grained Shale; light grey orthoquartzitic sand |
| 480-510 | Light grey finely ground orthoquartzitic sand; few fragments of grey fine grained Shale |
| 510-540 | Same plus few fragments exhibit reddish brown iron stain |
| 540-570 | Light grey finely ground orthoquartzitic sand; grey fine grained Shale |
| 570-600 | Same |
| 600-630 | Grey fine grained Shale abundant in mica; few fragments of light grey orthoquartzitic sand |
| 630-660 | Light grey coarse grained orthoquartzitic sand; grey fine grained Shale |
| 660-690 | Grey fine grained Shale |
| 690-720 | Same |
| 720-750 | Grey fine grained Shale |
| 750-780 | Grey fine grained Shale; light grey orthoquartzitic sand; abundant mica |
| 780-810 | No sample |
| 810-840 | Grey fine grained Shale |
| 840-870 | Same |
| 870-900 | Light grey coarse grained orthoquartzitic sand |
| 900-930 | No sample |
| 930-960 | Grey fine grained Shale |
| 960-990 | No sample |

| | |
|-----------|---|
| 990-1020 | Samples were all soap |
| 1020-1050 | " " " |
| 1050-1080 | " " " |
| 1080-1110 | No sample |
| 1110-1140 | No sample |
| 1140-1170 | No sample |
| 1170-1200 | Light grey coarse grained orthoquartzitic sand; few fragments of grey fine grained Shale |
| 1200-2130 | Same |
| 1230-1260 | Grey fine grained Shale; light grey coarse grained orthoquartzitic sand |
| 1260-1290 | Same |
| 1290-1310 | Same |
| 1310-1350 | Same |
| 1350-1380 | No sample |
| 1380-1410 | Grey fine grained Shale; light grey orthoquartzitic sand |
| 1410-1440 | Same |
| 1440-1470 | No sample |
| 1470-1500 | Grey fine grained Shale |
| 1500-1530 | No sample |
| 1530-1560 | No sample |
| 1560-1590 | No sample |
| 1590-1620 | No sample |
| 1620-1650 | No sample |

| | |
|-----------|---|
| 1650-1680 | No sample |
| 1680-1710 | Light grey orthoquartzitic sand |
| 1710-1860 | No sample - samples were all soap |
| 1860-1890 | Light grey coarse grained orthoquartzitic sand; grey fine grained Shale |
| 1890-1920 | Same |
| 1920-1950 | Light grey coarse grained orthoquartzitic sand; few fragments of grey fine grained Shale |
| 1950-1980 | Grey fine grained Shale; few fragments of light grey orthoquartzitic sand; few particles of red rock. |
| 1980-2010 | Grey fine grained Shale; few particles of light grey orthoquartzitic sand |
| 2010-2040 | Grey fine grained Shale; few fragments are iron stained |
| 2040-2070 | Light grey coarse grained orthoquartzitic sand grey fine grained Shale, red rock |
| 2070-2100 | No sample |
| 2100-2130 | Grey fine grained Shale |
| 2130-2160 | Grey fine grained Shale; few fragments of light grey orthoquartzitic sand |
| 2160-2190 | Light grey coarse grained orthoquartzitic sand; grey fine grained Shale |
| 2190-2220 | Same |
| 2220-2250 | Light grey finely ground quartzitic sand; many fragments exhibit reddish-brown iron stain |

| | |
|-----------|--|
| 2250-2280 | Same |
| 2280-2310 | No sample |
| 2310-2430 | No sample - samples were all soap |
| 2430-2460 | Buff quartzitic sand; many particles exhibit iron stain; few particles of red rock; grey fine grained Shale. |
| 2460-2490 | Grey fine grained Shale; *white coarse grained quartzitic sand |
| 2490-2520 | Buff quartzitic sand; very rich in iron |
| 2520-2550 | Same plus grey fine grained Shale |
| 2550-2580 | No sample |
| 2580-2610 | No sample |
| 2610-2640 | Red Rock |
| 2640-2670 | Red Rock; grey fine grained Shale |
| 2670-2700 | Same |
| 2700-2730 | Grey fine grained Shale; Red Rock (possibly caving down hole) |
| 2730-2760 | Same |
| 2760-2790 | Same |
| 2790-2940 | No sample |
| 2940-2980 | Light grey finely ground quartzitic sand |
| 2980-3010 | Buff finely ground orthoquartzitic sand; few fragments of grey fine Shale |
| 3010-3040 | Same |
| 3040-3070 | Same |
| 3070-3100 | No sample |

| | |
|-----------|--|
| 3100-3130 | Light grey coarse grained orthoquartzitic sand; many fragments exhibit reddish brown iron stain Grey fine grained Shale |
| 3130-3160 | Grey fine grained Shale |
| 3160-3280 | Same |
| 3280-3310 | Dark grey finely ground dolomitic lime; few particles of white fine grained calcitic material. |
| 3310-3340 | Same plus few fragments of grey fine grained Shale |
| 3340-3370 | Buff finely ground quartzitic sand; few particles exhibit reddish-brown iron stain; few fragments of grey fine grained Shale |
| 3370-3400 | No sample |
| 3400-3430 | Grey fine grained Shale; few particles of iron-stain |
| 3430-3520 | Same |
| 3520-3550 | Grey fine grained Shale |
| 3550-3580 | Same |
| 3580-3670 | Same plus grey dolomitic lime |
| 3670-3700 | Dark grey dolomitic lime; grey fine grained Shale |
| 3700-3730 | Same |

Top of Big Lime approximately 3750'

PHILADELPHIA OIL COMPANY

BIG LIME SAMPLES

WELL NO. P-5

| | |
|-----------|---|
| 3730-3760 | Dark grey dolomitic lime; white fine grained calcitic material |
| 3760-3790 | Dark grey dolomitic lime; buff massive lime; white fine grained calcitic lime, few fragments exhibit reddish brown iron stain |
| 3790-3820 | No sample |
| 3820-3850 | Light grey massive lime; white fine grained calcitic material; few fragments of buff crystalline lime |
| 3850-3880 | Light grey massive lime; white fine grained calcitic lime; few fragments of buff crystalline lime |
| 3880-3900 | No sample |
| 3900-3910 | Buff massive lime; white fine grained calcitic lime; few fragments of white crystalline lime |
| 3910-3940 | Same |
| 3940-3950 | Grey massive lime; white fine grained calcitic lime; few fragments of white crystalline lime |
| 3950-3960 | Same |
| 3960-3970 | Grey massive lime; white fine grained calcitic lime; buff crystalline lime |
| 3970-3980 | Grey massive lime; white fine grained calcitic lime; few fragments exhibit reddish-brown iron stain |
| 3980-3990 | Grey massive lime; white fine grained calcitic lime; few particles of red quartzitic sand |

| | |
|-----------|--|
| 3990-4000 | Grey massive lime; white fine grained calcitic lime; white crystalline lime |
| 4000-4010 | Grey massive lime; white fine grained calcitic lime; white crystalline lime. |
| 4010-4030 | Same |
| 4030-4040 | Grey massive lime; white fine grained calcitic lime; white crystalline lime |
| 4040-4050 | Grey massive lime; white fine grained calcitic lime; buff crystalline lime; few fragments exhibit reddish-brown iron stain |
| 4050-4060 | Grey massive lime; white fine grained calcitic lime; white crystalline lime |
| 4060-4070 | Same |
| 4070-4080 | Same |
| 4080-4090 | Grey massive lime; red fine grained quartzitic sand; dark grey dolomitic lime; white fine grained calcitic lime |
| 4090-4100 | Red Fine grained quartzitic sand, dark grey dolomitic lime; light grey massive lime |
| 4100-4110 | Red fine grained quartzitic sand |
| 4110-4180 | Same |
| 4180-4210 | Grey fine grained Shale; few particles of grey dolomitic lime; few particles of grey fine grained Sand |
| 4210-4240 | Same |
| 4240-4330 | Same |
| 4330-4740 | Grey fine grained Shale |

PHILADELPHIA OIL COMPANY

BEREA SAMPLES

WELL NO. P-5

| | |
|-----------|--|
| 4740-4750 | Grey fine grained Shale; light grey fine grained quartzitic sand; grey dolomitic lime; many fragments exhibit reddish-brown iron stain; white fine grained calcitic lime |
| 4750-4760 | Same |
| 4760-4770 | Same |
| 4770-4780 | Grey fine grained quartzitic sand; white calcitic lime; grey dolomitic lime; many fragments exhibit reddish-brown iron stain; few fragments of grey fine grained Shale |
| 4780-4790 | Light grey fine grained quartzitic sand; white fine-grained lime; few fragments of grey fine grained Shale |
| 4790-4800 | Grey fine grained quartzitic sand; white crystalline lime, many fragments exhibit reddish-brown iron stain |
| 4800-4810 | Grey dolomitic lime; white fine grained calcitic lime; grey fine grained quartzitic sand; few fragments exhibit reddish brown iron stain |
| 4810-4840 | No sample |
| 4840-4850 | Grey fine grained Shale; grey fine grained quartzitic sand |
| 4850-4860 | Grey fine grained Shale; few fragments of lime |
| 4860-4950 | Grey fine grained Shale |