

PL-99

PHILADELPHIA OIL COMPANY

SAMPLE DESCRIPTIONS
WELL NO. P-18

0- 30	Light grey finely ground orthoquartzitic sand; abundant mica
30- 60	Grey fine grained Shale; abundant in mica; few particles of finely ground orthoquartzitic sand
60- 90	Light grey coarse grained orthoquartzitic sand, grey fine grained Shale; abundant in mica
90-120	Light grey coarse grained orthoquartzitic sand; abundant in mica
120-150	Grey fine grained Shale
150-180	Same
180-210	Grey fine grained Shale; few fragments of light grey finely ground orthoquartzitic sand
210-240	Grey fine grained Shale; abundant in mica
240-270	Light grey finely ground orthoquartzitic sand; abundant in mica
270-300	Same
300-330	Grey fine grained Shale
330-360	Light grey finely ground orthoquartzitic sand; few fragments of grey fine grained Shale
360-390	Grey fine grained Shale.

390-420	Grey fine grained Shale; few fragments of coal
420-450	Grey fine grained Shale
450-480	Same
480-510	White finely ground orthoquartzitic sand; abundant mica; few fragments of grey fine grained Shale
510-540	No sample
540-570	Grey fine grained Shale; few particles of white finely ground sand
570-600	Same
600-630	Same
630-660	White finely ground orthoquartzitic sand; few particles of grey fine grained Shale
660-690	Same
690-720	Grey fine grained Shale; few particles of white finely ground quartzitic sand
720-750	Same
750-780	Same plus few fragments of coal
780-810	White finely ground orthoquartzitic sand; abundant mica; few particles of grey fine grained Shale
810-840	Same
840- 870	Grey fine grained Shale
870-900	Light grey coarse grained orthoquartzitic sand; abundant in mica; grey fine grained Shale
900-930	Grey fine grained Shale
930-960	Same
960-990	Grey fine grained Shale; abundant in mica
990-1020	Same
1020-1050	Grey fine grained Shale; few fragments of light grey coarse grained orthoquartzitic sand

1050-1080	White coarse grained and finely grained ortho-quartzitic sand; few fragments of grey fine grained shale
1080-1110	White finely ground quartzitic sand; few fragments exhibit reddish-brown iron stain
1110-1140	No sample
1140-1170	No sample
1170-1200	Light grey finely ground quartzitic sand; few fragments of light grey fine grained Shale
1200-1230	Grey fine grained Shale; abundant in mica; grey coarse grained quartzitic sand
1230-1260	Same
1260-1390	Same
1290-1320	Same
1320-1350	Same possible coal
1350-1380	Same
1380-1410	Same
1410-1440	Same
1440-1470	Same
1470-1500	White finely ground quartzitic sand; few fragments of grey fine grained Shale
1500-1530	Same
1530-1560	Same
1560-1590	Grey fine grained Shale
1590-1620	Grey fine grained Shale; light grey coarse grained orthoquartzitic sand
1620-1650	Same

1650-1680	Same
1680-1710	Same
1710-1740	Same
1740-1770	Same
1770-1800	White finely ground quartzitic sand; few particles of grey fine grained Shale
1800-1830	Same
1830-1860	Same
1860-1890	White finely ground quartzitic sand
1890-1920	Same
1920-1950	Same
1950-1980	Same
1980-2010	Same
2010-2040	Same
2040-2070	White finely ground quartzitic sand; grey fine grained Shale
2070-2100	White finely ground quartzitic sand; few particles of grey Shale
2100-2130	Same
2130-2160	Same
2160-2190	Same
2190-2220	Light grey fine grained Shale; white finely ground quartzitic
2220-2221	Red Rock; grey fine grained Shale
2221-2250	Grey fine grained Shale

- 2250-2280 Grey fine grained Shale; light grey finely ground quartzitic sand; few fragments of Red Rock
- 2280-2310 Grey fine grained Shale; light grey fine grained quartzitic sand
- 2210-2340 Same
- 2340-2370 Light grey finely ground quartzitic sand; few fragments of grey fine grained Shale
- 2370-2400 Grey fine grained Shale; light grey coarse grained quartzitic sand
- 2400-2430 Same
- 2430-2460 Same
- 2460-2490 Grey fine grained Shale
- 2490-2520 Grey fine grained Shale; few fragments of calcitic material
- 2520-2550 Same
- 2550-2580 Same
- 2580-2610 Grey fine grained Shale; light grey quartzitic sand; few fragments of Red Rock, dark grey massive lime
- 2610-2640 Grey fine grained Shale; dark grey massive lime
- 2640-2670 Same
- 2670-2700 Light grey finely ground quartzitic sand; few fragments of grey fine grained Shale
- 2700-2730 Same plus grey fine grained Shale
- 2730-2760 Grey fine grained Shale; few particles of sand; grey massive lime
- 2760-2790 Red Rock; grey massive lime; grey fine grained Shale

2790-2820	Same
2820-2840	Same plus white fine grained calcitic material
2840-2870	Same
2870-2900	Same
2900-2930	Same
2930-2960	Same
2960-2990	Same
2990-3020	Same
3020-3050	Grey fine grained Shale
3050-3080	Light grey finely ground quartzitic sand; grey fine grained Shale
3080-3110	White finely ground quartzitic sand; few fragments of grey fine grained Shale
3110-3140	White finely ground quartzitic sand; few particles exhibit dolomitic stain
3140-3170	Grey fine grained Shale; light grey massive lime; white finely ground quartzitic sand
3170-3200	White finely ground quartzitic sand
3200-3230	Same
3230-3260	No sample
3260-3290	Grey fine grained Shale; grey massive lime
3290-3320	Grey fine grained Shale; light grey finely ground quartzitic sand; grey massive
3320-3350	Same
3350-3380	Same
3380-3410	No sample
3410-3440	Grey fine grained Shale; light grey finely ground coarse grained Sand

3440-3470	Same
3470-3500	Grey fine grained Shale; few particles of white finely ground sand
3500-3530	Grey fine grained Shale; Red Rock; grey massive lime; light grey finely ground quartzitic sand
3530-3560	Grey massive lime; grey fine grained Shale
3560-3590	Same
3590-3620	Same
3620-3650	Grey fine grained Shale, grey massive lime
3650-3690	Grey fine grained Shale; few particles of grey massive lime.

Top of Big Lime - 3690

PHILADELPHIA OIL COMPANY

BIG LIME SAMPLES
WELL NO. P-18

3690-3700	Grey massive lime; white fine grained calcitic lime; buff crystalline lime.
3700-3710	Grey massive lime; white fine grained calcitic lime; buff crystalline lime
3710-3720	Same
3720-3730	Same
3730-3740	Same
3740-3750	Grey massive lime; white fine grained calcitic lime; white crystalline lime, grey fine Shale
3750-3760	Same
3760-3770	Grey massive lime; few fragments of white fine grained lime; few fragments of dark grey dolomitic lime.
3770-3780	Grey massive lime; white fine grained calcitic lime; white crystalline lime
3780-3790	Same
3790-3800	Grey massive lime; few fragments of white fine grained lime
3800-3810	Grey massive lime; white fine grained calcitic lime; white crystalline lime
3810-3820	Same
3820-3830	Same
3830-3840	Same
3840-3850	Same

3850-3860	Grey massive lime; few fragments of white fine grained calcitic lime
3860-3870	Grey massive lime; white fine grained calcitic lime; few particles of white crystalline lime
3870-3880	Same
3880-3890	Same
3890-3900	Same
3900-3910	White crystalline lime; white fine grained calcitic material; few fragments of grey massive lime
3910-3920	Same
3920-3930	Same
3930-3940	No sample
3940-3950	Buff crystalline lime; white fine grained calcitic lime; few fragments of grey massive lime
3950-3960	No sample
3960-3970	White fine grained calcitic lime; buff massive lime; buff crystalline lime
3970-3980	Same
3980-3990	Same
3990-4000	Same
4000-4010	Buff massive lime; white fine grained calcitic lime; buff crystalline lime.
4010-4020	Same
4020-4030	Same
4030-4040	Same
4040-4050	Buff massive lime; white fine grained calcitic lime; buff crystalline lime
4050-4060	Same
4060-4070	Same
4070-4080	Same

4080-4090	Same
4090-4100	Same
4100-4110	Grey massive lime; white fine grained calcitic lime; buff crystalline lime; few fragments of grey dolomitic lime
4110-4120	Grey massive lime; buff crystalline lime; white fine grained calcitic lime
4120-4130	Buff crystalline lime; white fine grained calcitic lime
4130-4140	No sample
4140-4150	No sample
4150-4160	Grey massive lime; white fine grained calcitic lime ; few fragments of grey dolomitic lime
4160-4170	Same
4170-4180	Grey massive lime; few fragments of grey dolomitic lime; few particles of red fine grained Sand Bottom of Big Lime
4180-4190	Grey massive lime red fine grained Sand; grey fine grained Shale
4190-4220	Grey fine grained Shale; grey massive lime; grey dolomitic lime
4220-4250	Same
4250-4280	Grey fine grained Shale, light grey quartzitic sand; few particles of grey massive lime
4280-4290	Same
4310-4340	Same
4340-4370	Grey fine grained Shale
4370-4400	Same

4400-4630	Same
4630-4660	Dark grey fine grained Shale
4660-4690	Same
4690-4720	Same
4720-4740	Dark grey fine grained Shale; grey fine grained quartzitic sand; white fine grained calcitic lime

Top of Berea 4740'

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BEREA SAMPLES
WELL NO. P-18

4740-4750 Light grey and grey fine grained quartzitic sand; dark grey fine grained Shale; few fragments of white fine grained calcitic lime.

4750-4760 Light grey and grey fine grained quartzitic sand; dark grey fine grained Shale; few iron stained fragments

4760-4770 Dark grey fine grained sand; light grey coarse grained sand; few fragments exhibit reddish-brown iron stain; few particles of white fine grained calcitic lime; few fragments of grey fine grained Shale

4770-4780 Same

4780-4790 Grey fine grained quartzitic sand; light grey quartzitic sand; white fine grained calcitic lime; few fragments exhibit reddish-brown iron stain, few fragments of grey fine grained Shale

4790-4800 Same

4800-4810 Same

4810-4820 Grey fine grained quartzitic sand; few fragments exhibit reddish brown iron stain; few fragments of white fine grained calcitic lime

4820-4830 Grey fine grained quartzitic sand; few fragments show reddish-brown iron stain; few fragments of white fine grained calcitic lime

4830-4840 Same

Bottom of Berea 4840

4840-4931 Grey fine grained Shale