

PHILADELPHIA OIL COMPANY

## SAMPLE DESCRIPTIONS

WELL NO. P-17

0 -30	Soil; light colored mica; few fragments of grey Shale; tan quartzitic sand
30- 60	Tan quartzitic sand; few fragments of grey Shale; abundant mica
60- 90	Same
90-120	Grey fine grained Shale
120-160	Same
160-190	Light grey and white orthoquartzitic sand; abundant mica; grey fine grained Shale
190-220	Same
220-250	Same
250-280	Grey fine grained Shale; light grey orthoquartzitic sand; abundant mica
280-310	Grey fine grained Shale
310-340	Same
340-370	Grey fine grained Shale; few fragments of light grey orthoquartzitic sand
370-400	White and light grey orthoquartzitic sand; few fragments of grey fine grained Shale; abundant mica
400-430	Same
430-460	Grey fine grained Shale

460-490	Same
490-520	Grey fine grained Shale; few fragments of light orthoquartzitic sand
520-550	Grey fine grained Shale
550-580	Grey fine grained Shale; white coarse grained quartzitic sand; abundant mica
580-610	Same
610-640	Grey fine grained Shale
640-670	Same
670-700	Same
700-730	Light grey coarse grained quartzitic sand; few fragments of grey fine grained Shale
730-760	Light grey and white quartzitic sand
760-790	Grey fine grained Shale
790-820	Light grey coarse grained sand in fine grained quartz matrix; few fragments of grey fine grained Shale
820-850	Light grey coarse grained sand in fine grained quartz matrix
850-880	Light grey quartzitic sand; grey fine grained Shale
880-910	Grey fine grained Shale; few particles of light grey quartzitic sand
910-940	Same
940-970	Light coarse grained quartzitic sand in fine grained quartz matrix; few particles of grey fine grained Shale; abundant mica

970-1000	Same
1000-1030	Grey fine grained Shale; light grey coarse grained quartzitic sand; abundant mica
1030-1060	Same
1060-1090	Same
1090-1120	Light grey and buff coarse grained quartzitic sand; abundant mica; few particles of grey fine grained Shale
1120-1150	Same
1150-1180	Same
1180-1210	Grey fine grained Shale
1210-1240	Same
1240-1270	Same
1270-1300	Light grey coarse grained orthoquartzitic sand; grey fine grained Shale; abundant mica
1300-1330	Same
1330-1360	Same
1360-1390	Light grey and white finely ground quartzitic sand; few fragments of grey fine grained Shale
1390-1420	White coarse grained quartzitic sand
1420-1450	Grey fine grained Shale; abundant mica
1450-1480	Grey fine grained Shale; light grey coarse grained orthoquartzitic sand
1480-1510	Same
1510-1540	Grey fine grained Shale abundant in mica; few particles of light grey coarse grained orthoquartzitic sand

1570-1600	Same
1600-1630	Same
1630-1660	Same
1660-1690	Same
1690-1720	Light grey orthoquartzitic sand; few fragments of grey fine grained Shale
1720-1750	Grey fine grained Shale; light grey coarse grained orthoquartzitic sand
1750-1780	Same
1780-1810	Same
1810-1840	Light grey coarse grained orthoquartzitic sand; light grey fine grained quartz matrix
1840-1870	Grey fine grained Shale; light grey coarse grained quartzitic sand in fine grained quartz matrix; abundant in mica
1870-1900	Grey fine grained Shale; abundant mica
1900-1930	Grey fine grained Shale
1930-1960	Same
1960-1990	Same
1990-2020	Grey fine grained Shale; light grey coarse grained orthoquartzitic sand; abundant in mica; possible coal fragment
2020-2050	Same (No coal)
2050-2080	Same
2080-2110	Same
2110-2140	Same

2140-2170	Grey fine grained Shale; white and light grey coarse grained quartzitic sand
2170-2200	Grey fine grained Shale; few fragments of white coarse grained quartzitic sand
2200-2230	Light grey and white coarse grained orthoquartzitic sand; few fragments of grey fine grained Shale
2230-2260	Same and few particles of coal
2260-2290	White coarse grained orthoquartzitic sand in white fine grained quartz matrix; few fragments of grey fine grained Shale
2290-2320	Same
2320-2350	Same
2350-2380	Same
2380-2410	Light grey coarse grained quartzitic sand
2410-2440	Grey fine grained Shale; Red Rock
2440-2470	Grey fine grained Shale; few fragments of red rock; white coarse grained sand
2470-2500	Same
2500-2530	Grey fine grained Shale; few particles of Red Rock; white finely ground quartzitic sand
2530-2560	Same
2560-2590	White finely ground quartzitic sand; few particles of Red Rock
2590-2620	Same
2620-2650	Same
2650-2680	Same
2680-2710	Buff finely ground sand; few particles of grey fine grained Shale

2710-2740	Same
2740-2770	Grey fine grained Shale; light grey quartzitic sand; few fragments of Red Rock (possibly caving.)
2770-2800	Same
2800-2830	Same
2830-2860	Same
2860-2890	Grey fine grained Shale
2890-2920	Same
2920-2950	Grey fine grained Shale; few fragments of light white fine grained lime
2950-2980	grey fine grained Shale
2980-3010	Same
3010-3040	Same plus few fragments of Red Rock
3040-3070	Red Rock
3070-3100	Red Rock
3100-3130	Grey fine grained Shale; Red Rock
3130-3160	Same; Red Rock possibly caving down hole
3160-3190	Grey fine grained Shale
3190-3220	Grey fine grained Shale; Red Rock
3220-3250	Same
3250-3280	Grey fine grained Shale; light grey massive lime
3280-3310	Same
3310-3340	Grey fine grained Shale
3340-3430	Buff finely ground quartzitic sand; grey fine grained Shale; few fragments of Red Rock

3430-3460	Same (Less Shale)
3460-3490	Same plus few fragments exhibit reddish-brown iron stain
3490-3520	Buff finely ground quartzitic sand; few fragments of grey fine grained Shale
3520-3550	Same
3550-3580	Dark grey fine grained Shale
3580-3610	Dark grey fine grained Shale; grey massive lime
3610-3640	Same
3640-3670	Same
3670-3700	Same
3700-3730	Same
3730-3760	No Sample
3760-3790	No Sample
3790-3820	Grey fine grained Shale; few particles of dark grey dolomitic lime; few particles of grey massive lime
3820-3850	Same
3850-3880	Dark grey dolomitic lime; few particles of white fine grained calcitic lime (Little Lime)
3880-3910	Same
3910-3940	Same
3940-3970	Dark grey dolomitic lime; light grey massive lime (Top of Big Lime 3970)

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BIG LIME SAMPLES  
WELL NO. P-17

3970-3980	Dark grey dolomitic lime; white fine grained calcitic lime; few particles of light grey massive lime
3980-3990	No sample
3990-4000	No sample
4000-4010	Light grey massive lime; dark grey dolomitic lime; few fragments of white fine grained calcitic material
4010-4020	Light grey massive lime; white fine grained calcitic material; few fragments of buff crystalline lime
4020-4030	Light grey massive lime; white fine grained calcitic material; few particles of buff crystalline lime; few fragments of dark grey dolomitic lime
4030-4040	Grey massive lime; white crystalline lime; few fragments of dark grey dolomitic lime
4040-4050	Light grey massive lime; white fine grained calcitic lime; dark dolomitic lime; few fragments of buff crystalline lime
4050-4060	Dark grey dolomitic lime; few fragments exhibit reddish brown iron stain; few fragments of grey massive lime and white calcitic lime
4060-4070	Grey massive lime with stringers of white fine grained calcitic lime; dark grey dolomitic lime
4070-4080	Light grey massive lime with stringers of fine grained calcitic material; dark grey dolomitic lime; few fragments of white fine grained calcitic material



4080-4090	Light grey massive lime; dark grey dolomitic lime; white fine grained calcitic material; few fragments exhibit reddish brown iron stain
4090-4100	Same
4100-4110	Grey massive lime; white fine grained calcitic lime; few fragments of buff crystalline lime
4110-4120	Same
4120-4130	Same
4130-4140	Grey massive lime; buff crystalline lime; white fine grained calcitic lime
4140-4150	Light grey massive lime; white fine grained calcitic lime; buff crystalline lime
4150-4160	Same
4160-4170	Light grey massive lime; white fine grained calcitic lime; few particles of buff crystalline lime
4170-4180	Light grey massive lime; grey dolomitic lime; few fragments of buff crystalline lime; white fine grained calcitic lime
4180-4190	Same
4190-4200	Grey massive lime; white fine grained calcitic lime; few fragments of dark grey dolomitic lime; few fragments of buff crystalline lime.
4200-4210	Grey massive lime; white fine grained calcitic lime; few fragments of dark grey dolomitic lime; few fragments of buff crystalline lime
4210-4220	Same
4220-4230	Buff crystalline lime; light grey massive lime; white fine grained calcitic lime
4230-4240	Same
4240-4250	Same
4250-4260	Same

4260-4270	Grey massive lime with stringers of white fine grained calcitic material; buff crystalline lime; white fine grained calcitic lime
4270-4280	Buff massive lime; white fine grained calcitic lime; buff crystalline lime
4280-4290	Light grey massive lime; few fragments of white crystalline lime; white fine grained calcitic lime
4290-4300	Same
4300-4310	Same
4310-4320	Same
4320-4330	Same
4330-4340	Light grey massive lime; white fine grained calcitic lime; buff crystalline lime
4340-4350	Same
4350-4360	Grey massive lime; white fine grained calcitic lime; buff crystalline lime
4360-4370	Same
4370-4380	Same
4380-4390	Same
4390-4400	Grey massive lime with white fine grained lime stringers; few fragments of buff crystalline lime
4400-4410	Same
4410-4420	Same
4420-4430	Buff crystalline lime; white fine grained calcitic lime; few particles of grey massive lime
4430-4440	Same
4440-4450	Same

4450-4460	Grey massive lime; buff crystalline lime; white fine grained calcitic lime
4460-4470	No sample
4470-4480	Light grey massive lime; grey lime with stringers of white fine grained lime; white fine grained calcitic lime
4480-4490	Same
4490-4500	Same
4500-4510	Grey massive lime; white fine grained calcitic lime; few particles of buff crystalline lime
4510-4520	No sample
4520-4530	Grey massive lime; white fine grained calcitic lime; dark grey dolomitic lime; few particles of buff crystalline lime
4530-4540	Grey massive lime; dark grey dolomitic lime; buff crystalline lime; few particles of white fine grained calcitic lime.
4540-4550	Grey massive lime; dark grey dolomitic lime; few fragments of white fine grained calcitic lime; few fragments of red fine grained
4550-4560	Light grey massive lime with white fine grained lime inclusions; red fine grained sand; dark grey dolomitic lime/ Bottom of Big Lime
4560-4570	Same
4570-4580	Grey dolomitic lime; light grey quartzitic sand; grey massive lime.

4580-4620	Grey dolomitic lime; white coarse grained quartzitic sand
4620-4650	Same
4650-4680	Grey dolomitic lime; white coarse grained sand; grey fine grained Shale
4680-4710	Grey fine grained Shale; few particles of grey dolomitic lime
4710-4740	Same
4740-4770	Grey fine grained Shale
4770-4800	Light grey fine grained Shale
4800-4830	Light grey fine grained Shale
4830-4980	Same
4980-5010	Light grey and dark grey fine grained Shale
5010-5100	Same - Top of Berea 5100'

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BEREA SAMPLES  
WELL NO. P-17

5100-5110	White coarse grained quartzitic sand; grey fine grained Shale; few particles exhibit reddish-brown iron stain; few particles of white fine grained calcitic lime
5110-5120	White coarse grained quartzitic sand; grey fine grained Shale; few particles exhibit reddish brown iron stain; few particles of white fine grained calcitic lime
5120-5130	White coarse grained quartzitic sand; grey fine grained sand; dark grey fine grained Shale; few particles of calcitic lime
5130-5150	Same
5150-5160	White coarse grained quartzitic sand; grey fine grained quartzitic sand; grey fine grained Shale few particles of white fine grained calcitic lime
5160-5170	Same
5170-5180	Grey fine grained quartzitic sand; few fragments of grey fine grained Shale; few particles of white fine grained calcitic lime
5180-5190	Same
5190-5200	White coarse grained quartzitic sand; grey fine grained quartzitic sand; grey fine grained Shale; few particles of white fine grained calcitic lime

5200-5210 White coarse grained quartzitic sand; grey fine  
grained quartzitic sand; dark grey fine grained  
Shale; few particles of white calcitic lime

Bottom of Berea

5210-5304 Dark grey fine grained Shale