Problem 1: Oil drilling, extraction, and refining virtual tour

In preparation for the BP Whiting trip, watch the YouTube videos below and comment on at least one interesting thing for each (or write a question for something you didn’t understand).

A. The history of oil part 1. The video of drilling is reconstruction, though (no movies in 1859). Note that once Rockefeller got rich with Standard Oil – his personal fortune was estimated by Forbes in its first “Rich List” of 1918 as equivalent to ¼ of all U.S. currency in circulation - he spent his wealth ... building the University of Chicago. Your education is built on oil. http://www.youtube.com/watch?v=D4sykoUWZ8g&feature=related

For extra credit you can watch the rest of this series (there are 5 parts, all on You Tube), or, better yet – the documentary is not that compelling – rent the excellent Daniel Day-Lewis movie “There Will Be Blood”, a fictional version of this story based on the 1927 novel “Oil!” by the muckracking journalist Upton Sinclair. Extra credit can be deferred til when we do the fossil fuel lecture as well, need not be by Thursday.

B. Pumpjack engines and gearboxes. Compare this to the early beam engines that pumped water: http://www.youtube.com/watch?v=FU0dYV3LvAk&feature=related

C. Sucker rod pumps (compare to earlier animation of linear water pump): http://www.youtube.com/watch?v=SFJFiyXTOa0

D. Basic oil drilling. Watch for the addition of the casing that lines the well hole and the filling of the hole with drilling mud (that helps ease the drilling process). Obviously the mud has to be pumped out again before oil can flow. http://www.youtube.com/watch?v=U2ms95HX0l4

E. Addition of drilling pipe (what that tower is for). This video is for offshore oil drilling rigs, but onshore drilling works similarly: http://www.youtube.com/watch?v=WPOi1WYTf2c&feature=related

F. **Most important for Whiting**: oil refining. This is ten minutes long, though, and you can skim the cracking and reform steps if you are not going on the Whiting tour. http://www.youtube.com/watch?v=jk0WrtA8_T8

G. **(Optional, extra credit)**: Oil refining history. Skim lightly the 30-min documentary called “The Story of Oil” produced in 1927. No sound yet for movies. The gasoline market was comparatively much smaller but the whole refining process had been worked out – you’ll see in this video the same things you’ll see at Whiting, only on smaller scale. I recommend sliding around to find interesting footage rather than attempting to watch it straight through; it is very slow. http://www.youtube.com/watch?v=R7crQe4tYqY&feature=related