In 2017, the Environmental Protection Agency (EPA) enacted Tier 3 regulations on sulfur content in fuels which changed the maximum allowable sulfur content from 30 parts per million on an average annual basis to 10 parts per million. In addition to the Tier 3 regulations, the International Marine Organization (IMO) will implement on January 2020 a directive to reduce sulfur in marine/bunker fuels to less than 0.5 percent. With these two pieces of legislation, quantifying sulfur in petroleum products is now becoming ever more important. There are many methods of doing sulfur and elemental analysis in aqueous solutions and petroleum matrices including; ICP-MS, ICP-AES, and XRF. Each method has its own pro's and con's including detection limits, sample preparation, and analysis time. As of right now, for the EPA Tier 3 and IMO sulfur regulations X-ray fluorescence spectroscopy is the preferred method of elemental analysis due to its lack of sample preparation and overall simplicity compared to the other elemental analysis methods. In this poster, we demonstrate how the Shimadzu Energy Dispersive X-ray fluorescence spectrometer (EDX-7000) can be easily used for not only sulfur determination in petroleum products, but also for quantification of other elements in addition to sulfur. For example, Pb, which plays a role in the antiknock capabilities of the fuel, is measured. Overall, this poster is meant to demonstrate the application of Shimadzu's EDX-7000 towards elemental analysis of petroleum products.