Limited numbers of studies have been performed to date on the removal of heavy metals from the soil through phytoextraction. The number of plants species used in such studies is also restricted. One of the plants used for phytoremediation is the Brassica. Four different doses of lead (0, 500, 1000, and 2000 mg Pb/kg) were applied under four different levels of irrigation (IR40, IR60, IR80, and IR100) to the plant Brassica napus L, which is used in the remediation of soil polluted with certain heavy metals. Therefore, the ability of Brassica napus L to remove lead (Pb) from the soil at different irrigation levels and Pb concentrations was investigated. The result of current study indicated that the highest water requirement was generally observed at higher Pb doses, namely at 1000 and 2000 mg Pb/kg. Similarly, the minimum water requirement was generally observed when the Pb dose was lower. Under experimental conditions, it was determined that irrigation water requirement and water consumption for the Brassica was not significantly affected by doses of Pb. No significant differences were observed between the level of irrigation and the amount of Pb removed from the soil by the plant.