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(54) Title: PROCESS, METHOD, AND SYSTEM FOR REMOVING HEAVY METALS FROM FLUIDS

(57) Abstract: Trace element levels of heavy metals such as mercury in crude oil are reduced by contacting the crude oil with an iodine source, generating a water soluble heavy metal complex for subsequent removal from the crude oil. In one embodiment, the iodine source is generated in-situ in an oxidation-reduction reaction, by adding the crude oil to an iodine species having a charge and a reductant or an oxidant depending on the charge of the iodine species. In one embodiment with an iodine species having a positive charge and a reducing reagent, a complexing agent is also added to the crude oil to extract the heavy metal complex into the water phase to form water soluble heavy metal complexes which can be separated from the crude oil, for a treated crude oil having reduced levels of heavy metals.

