

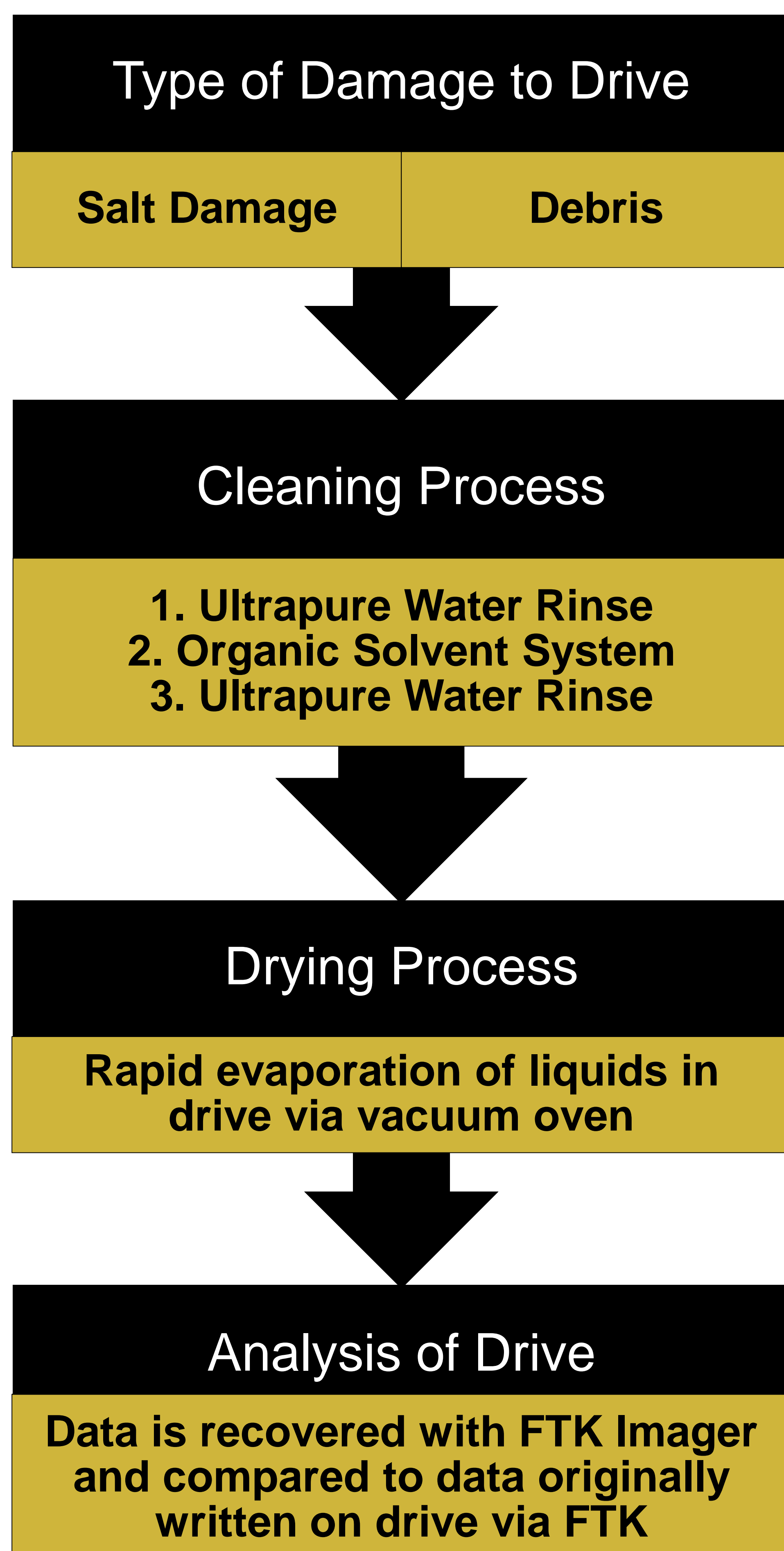
Chemical Restoration of Damaged Hard Drives

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Abstract

Currently there are very few viable methods of recovering data from a damaged hard drive, and even less that are economically feasible. Creating a standard, repeatable method for extracting data from a hard drive that has sustained salt and debris damage would be beneficial to various fields. Our methods aim to develop a chemical means of purifying a hard drive of superficial impurities in order to recover information contained within the damaged drive. The methods we have developed will create an economically viable system using principles of organic chemistry, reverse osmosis filtration, and vacuum evaporation as a substitute for clean room facilities.

Methodology



Before



After



Results

Our preliminary findings show that our process is able to clean the hard drive platters. However, upon running the hard drives it is evident that our solvents have damaged the mechanical components in addition to the intended cleaning. By altering the solvent concentrations, we believe we can minimize that damage, while still removing any debris, leaving the drives in a temporary working condition.

Future Work

- Further expansion upon the process, including solvent systems used, number of rinses and equipment
- Tested damage will expand to include hard drives damaged from smoke, as those found in fires
- Recovery of data from other solid state media such as flash drives, SD cards, and solid state drives