

Debris Weight with Nutrients & Metals Removed

Once a product was designed and developed to fit inside catch basins and attach to the wall adjacent the outlet pipe, we installed a prototype on campus at North Carolina State University to see if they would work. After three months it was cleaned and 150 lbs. of debris removed. Dr. Bill Hunt, Asst. Professor & Extension Specialist at NCSU, found cities within North Carolina that would be receptive to installing prototype designs to show how they worked and allow us to collect data.

We removed trash and debris from numerous stormdrain locations from the mountains to the coast with varying rainfall amounts and varying circumstances, such as: heavy and little vegetation, industrial sites, family subdivisions, commercial areas, neighborhoods noted for trash and college campuses. A spreadsheet is attached showing data collected from the various locations. As you see from early prototypes, we were averaging more than 800 lbs. of trash and debris per catch basin annually. Today we know that a Trash Guard can capture 900 lbs. to 1,200 lbs. per catch basin annually depending on the circumstances described above and size of the catch basins.

While removing and weighing trash and debris, Dr. Bob Rubin, Professor Emeritus at NCSU, started analyzing the debris to determine what must be done to convert the debris to compost. His analysis showed us that the debris was loaded with nutrients (Nitrogen & Phosphorus), regulated metals (Cadmium, Copper, Lead, Nickel, Zinc) and lots of all organic carbons. A spreadsheet showing the amounts of nutrients and regulated metals found in tested locations is attached. We have separated them to show the differences in heavy vegetation and leafy areas and impervious areas with primarily sediment. As you see, Nitrogen & Phosphorus levels rise with vegetation and manicured lawns and regulated metals levels rise with impervious areas.

We have since done testing showing influent to and effluent from sampling to determine percentages of total suspended solids, total organic carbons, Nitrogen & Phosphorus removed from trash and debris. Testing so far shows we are removing 75% - 85% of total suspended solids (TSS), 50% - 65% of total Nitrogen (TN), 55% - 65% of total Phosphorus (TP), and 60% - 75% of total organic carbons (TOC). We will continue to improve testing and keep updates posted to our web site.