



EUCLID CHEMICAL

Reducing the Impact of Concrete Process Water on the Environment

Due to increasing environmental regulations and concerns, concrete manufacturers are finding it necessary to implement systems for treating and/or recycling their concrete process water. Process water is mostly related to washout and clean-up operations, but may also include storm water, which collects a measurable amount of cementitious material from areas surrounding the production facility. Concrete process water is caustic and typically has a high pH value ranging between 11 and 12.

The high pH of this water can have numerous negative impacts on fish and other aquatic organisms. High pH may also increase the toxicity of other substances. For example, the toxicity of ammonia is ten times more severe at a pH of 8 than it is at pH 7. Therefore, it is desirable to lower the water to a safe pH range of 6.5 – 9.0 for freshwater aquatic life.

A large volume of water is needed to dilute the wastewater to a safe level, because pH is measured on a logarithmic scale. In order to dilute 1 gallon of “neat” runoff to a safer pH of 7, approximately 2,600 gallons (or more) of water would be needed (which is highly impractical). If the correct dilution rates were not achieved in the attempt to dilute the contaminant, you will simply be increasing the size of the problem (on a massive scale) rather than fixing it.

According to the EPA¹: *40 CFR 122.34(b) Section(4)* Construction site storm water runoff control: A program must be developed for construction site operators to control waste such as discarded building materials, **concrete truck washout**, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

The most effective systems of reducing the environmental impact of concrete process water involve a combination of methods that include using a wash-out stabilizing admixture, lowering the pH, and utilizing recycled water.

One option to help reduce the amount of waste water produced by the concrete industry is to use a cement stabilizing admixture such as **Eucon W.O.** to stabilize the wash-out water in the drum or batch mixer. **Eucon W.O.** helps reduce or eliminate the need to discharge waste wash-out water into settling pits, thus reducing the overall amount of water that would need to be otherwise released into the environment. **Eucon W.O.** delays the normal hydration of the Portland cement for up to 96 hours depending upon the dosage rate used. **Eucon W.O.** is designed to reduce the amount of water needed to wash out the drum of a ready mix truck. The material stabilizes or retards the remaining cement to allow for future use of the wash-out water.

General Concrete Washout Guidelines²

- DO NOT wash out concrete trucks into storm drains, open ditches, streets or streams.
- Slurry residue SHOULD NOT be allowed to enter storm drains or watercourses, should be vacuumed and should be disposed according to local guidelines.
- Concrete washout from concrete trucks can be washed into concrete pump trucks and discharged into a designated washout area or properly disposed of offsite.
- Temporary concrete washout facilities shall be constructed with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations.
- Plastic lining material should be a minimum of 10 mil polyethylene sheeting and should be free of holes, tears or other defects that compromise the impermeability of the material.
- Washout facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% FULL.
- For appropriate use and dosage information of Eucon W.O. please refer to the Technical Data sheet available at www.euclidchemical.com.

¹ US EPA. “Stormwater Phase II Regulatory Requirements”

² US EPA. “National Menu of Stormwater Best Management Practices for Concrete Washout”.