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## **Waste Wash Water Recycling in Ready Mix Concrete Plants**

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**W**orldwide waste wash-water (WWW) can be considered one of the major environmental problems that associated with ready-mix concrete production if it disposed in inappropriate manner. This study aims to evaluate the potential of WWW recycling in ready mix concrete plants in Jordan. A representative waste wash water sample (400 L) was collected from a basin in a ready-mix concrete company. A pilot plant on the lab scale was fabricated and installed. The treatment system consisted of concrete washout reclaimer, wedged slurry settling pond, slow sand filtration unit, and finally neutralization unit. Water samples were collected from all stages of the pilot plant and analyzed. The collected waste wash water samples were utilized for replacement of well

water (mixing water) at various ratios. Fourteen concrete mixtures were produced and cast as well as tested at various curing ages (7, 28, and 90 days). The results show that the raw WWW could not be accepted as mixing water even after dilution as it led to significant reductions in concrete compressive strength and low workability, the WWW from the settling pond, the filtered WWW and the filtered-neutralized WWW at dilution ratios up to 75% are a potential alternative for fresh water in the concrete industry. Therefore, the current guidelines for mixing water quality should be revised by governmental authorities to encourage the reuse of the WWW.

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