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Effluent discharges to the Southern California Bight from industrial facilities in 2005

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ABSTRACT

Industrial facilities represent a diverse class of point source dischargers to the Southern California Bight (SCB). Industrial effluent characteristics have been analyzed periodically since 1971 to estimate total contaminant loading, to evaluate discharge trends, and to facilitate comparisons between pollutant sources within the SCB. This study continues the assessment of industrial effluent by analyzing discharges from 2005. Five industrial facilities, including a petroleum refinery, a chemical plant, a salt processing plant, and two research and public aquaria, discharged directly to the SCB in 2005. Total effluent volume, contaminant mass emissions, and annual average concentrations were calculated and compared to the previous assessments of discharges. Industrial emissions were also compared to the largest point source of contaminants to the SCB, large publicly owned treatment works (POTWs). Total effluent volume from industrial facilities was 13.3 L x 10^9 in 2005 compared to 1,453 L x 10^9 from large POTWs. The number of discharging industrial facilities and their combined effluent volume has decreased by more than 90% since 1971. Mass emissions of most constituents have also decreased, with all general constituent loads down at least 98% since 1971 and most metals loads below 1995 levels. Although the long-term trend in mass emissions has decreased, discharge volume and loads of many constituents were higher in 2005 than in 2000. The increased contaminant loading observed in 2005 was influenced by three factors: 1) increased monitoring and reporting requirements, 2) increased flow volume, and 3) higher constituent concentrations at individual facilities. Although mass emissions from industrial facilities increased in 2005, they remain a relatively minor source of contaminants to the SCB compared to large POTWs; effluent volume and contaminant mass from all industrial facilities constitutes generally less than 1% of the combined loading from all major point source discharges.

Full Text

ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/2009AnnualReport/AR09_015_029.pdf