



Statistical appraisal of selected qualitative parameters of leachates from an industrial waste heap

Kazimierz Szymański^{a,*}, Bartosz Walendzik^a, Elżbieta J. Bielińska^b, Beata Janowska^a,
Roksana Królak^a

^a*Koszalin University of Technology, Faculty of Civil Engineering, Environmental and Geodetic Sciences,
Waste Management Department, ul. Śniadeckich 2, 75-453 Koszalin, Poland, Tel. +48 94 3478570; Fax: +48 94 3427652;
email: kazimierz.szymanski@tu.koszalin.pl (K. Szymański)*

^b*University of Life Sciences in Lublin, Institute of Soil Science, Environment Engineering and Management, ul. Akademicka 13,
20-950 Lublin, Poland*

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ABSTRACT

This paper is about the degree of contamination of land with mineral and organic compounds at a concrete manufacturing company site. Leachates from the site show alkaline reaction (pH > 12.0). Only effluents from the vehicle washing facility, which were collected in the sewer sump, had different pH. Leachates contain significant amounts of calcium (max. 407.53 mg/L). This pertains particularly to liquid effluents from the washing of truck concrete mixers providing alkaline pH in the sump. Effluents from the vehicle washing facility featured high organic carbon concentration, which had an impact on the increased level of (BOD - biological oxygen demand) BOD₅ and (COD - chemical oxygen demand) COD_{Cr}. The acceptable level of heavy metals concentration was not exceeded in leachates with the exception of lead and chromium compounds. Hexavalent chromium occurred mainly in samples 1 and 2 whereas trivalent chromium-in samples 3 and 4. This metal (in a trivalent form) occurred in the form of sparingly soluble compounds in sewage sludge and waste. Therefore, its ability to migrate in the environment was significantly reduced. The source of the metal was, possibly, some grades of cement. Cement could consist of ashes, blast-furnace slag and special additives containing chromium.

Keywords: Industrial waste; Leachates; Concrete elements; Heavy metals; Chromium

* Corresponding author.