

BUREAU OF ENVIRONMENTAL REMEDIATION  
Assessment and Restoration Section

SEDIMENT POLICY

BER POLICY # BER-ARS-045

DATE: January 9, 2004

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REVISIONS

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Section Chief: \_\_\_\_\_ Date: \_\_\_\_\_

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## BUREAU OF ENVIRONMENTAL REMEDIATION POLICY

### Sediment Policy

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The Kansas Department of Health and Environment (KDHE) Bureau of Environmental Remediation (BER) is responsible for evaluating the impacts to sediments emanating from contaminated sites and how contaminated sediments may impact human health and the environment. The Sediment Policy will be used to provide a consistent definition and assessment approach for contaminated sediment sites.

Sediments are defined for this policy as: any eroded material which lies below surface water the majority of the time where the surface water is capable or should be capable of providing for an aquatic biota habitat. For fluvial systems, sediments are further defined as the eroded materials which are below surface water in perennial streams when the water height in the stream reaches the top of the lower current stream bank. Perennial streams are defined as those streams listed in the Kansas Stream Registry. For lakes, ponds, impoundments, or other surface water retention structures, sediments are defined as the eroded material below the high water line for the water retention structure. The BER project manager has some discretion to modify the above definitions based on special site-specific conditions, but any modification must be approved by the appropriate Section Chief or Bureau Manager.

The assessment of sediments should be performed under the general guidance Standard Operating Procedure BER-04 and the U.S. EPA guidance document "*Methods for Collection, Storage and Manipulation of Sediments for Chemical and Toxicological Analysis: Technical Manual,*" dated October 2001. The manual provides the project manager various guidance to consider before and during the collection of sediment samples. The main topics in the manual are: a discussion of background; sediment monitoring and assessment work plans; sediment collection techniques; sediment field sampling processes, transport, and storage; sediment manipulations; sediment sampling equipment; and quality assurance and quality control procedures. Specific sediment sampling procedures should be documented in a site-specific field sampling plan when appropriate.

The analytical results from sediment sampling need to be compared to a protective aquatic standard. The BER has decided, at the time of this policy, to use background concentration values or the sediment concentration numbers provided in the document "*Development and Evaluation of Consensus-Based Sediment Quality Guidelines for Freshwater Ecosystems,*" authored by MacDonald, D.D., C.G. Ingersoll, and T. A. Berger, dated January 13, 2000. This article provides consensus-based chemical-specific concentration values which are considered protective of aquatic biota. The BER will use background concentrations or the Threshold Effect Concentration (TEC) listed in the above article for the screening and remedial goals for contaminated sediments sites.

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Generally, background concentrations will be the concentration of a specific contaminant detected in sediment samples collected up-stream in the same surface water system from the contaminated site. The number of background samples to be collected should be adequate for statistical acceptance. The project manager is given some latitude for setting background concentration if there are several sources of a specific contaminant, including natural sources, or the contaminant is spread over a large area. The project manager should justify the determination of background concentrations with the appropriate Section Chief.

Not all chemicals of concern are listed in the MacDonald document. For chemicals not listed in the document, a site-specific number will need to be generated under the guidance of the BER project manager. The project manager must obtain approval of the site-specific sediment concentration number from the Section Chief and Bureau Manager prior to any discussions with responsible parties concerning a remedial action.

For chemicals listed in the MacDonald document, the Bureau Manager may alter the TEC or background concentration for the remedial goal or action. The Section Chief and Bureau Manager must approve the appropriate remedial goal if background or the TEC value is not used.

The Sediment Policy is to be used only for sediments defined above in paragraph 2. The Sediment Policy is used for freshwater streams or water retention structures which provide a habitat for aquatic biota. Eroded material in ditches, intermittent streams, or other surface water structures or features that do not remain below water the majority of the time should not be considered for this Sediment Policy. The project manager should consider remedial goals for the eroded material in these features the same as for soil. However, the project manager should consider the effects of the contaminated eroded material in non-aquatic drainage features if these materials could reach an aquatic stream or water retention structure where the TECs would be applied. Questions concerning the applicability of this policy should be discussed with the appropriate Section Chief.