ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
WATER DIVISION - WATER QUALITY PROGRAM
ADMINISTRATIVE CODE

CHAPTER 335-6-15
TECHNICAL STANDARDS, CORRECTIVE ACTION REQUIREMENTS AND FINANCIAL RESPONSIBILITY FOR OWNERS AND OPERATORS OF UNDERGROUND STORAGE TANKS

335-6-15-.30 Corrective Action Requirements.

The following requirements shall apply when establishing risk based corrective action limits applicable to the cleanup of soil and groundwater contamination resulting from releases from underground storage tanks regulated under this Chapter.

(a) A risk based corrective action process will be used to establish site specific corrective action limits protective of human health and the environment. Corrective action limits, institutional controls, or a combination thereof, shall be adequate to support onsite and surrounding property use consistent with existing and reasonable future use and achieve and maintain compliance with all applicable environmental standards for air, soil and waters of the state of Alabama. The only exception to the use of a risk based corrective action process shall be that as described in rule 335-6-15-.30(f).

(b) Free product shall be removed to the maximum extent practicable.

(c) A risk based corrective action process requires the specification of a target risk level for carcinogenic effects. The estimated incremental excess lifetime cancer risk Individual Excess Lifetime Cancer Risk (IELCR) will be:

1. For constituents resulting from releases of petroleum or petroleum-based regulated substances, as regulated under this chapter, the estimated IELCR level used to establish site specific corrective action limits shall be 10^{-5}, for all constituents of concern, for each exposure pathway. If corrective action to a 10^{-5} risk level is determined by the Department to be infeasible, and, in the determination of the Department, appropriate institutional controls are implemented, the Department may approve a site-specific corrective action limit that represents a risk level equal to but not greater than 10^{-4}; and

2. For constituents resulting from releases of non-petroleum regulated substances, as regulated under this chapter, the estimated IELCR used to establish site specific corrective action limits shall be no less than 10^{-6} and no greater than 10^{-5}. If corrective action to a 10^{-6} to 10^{-5} risk level is determined by the Department to be infeasible, and, in the determination of the department, appropriate institutional controls are implemented, the Department may approve a site specific corrective action limit that represents a risk level equal to but not greater than 10^{-4}.

(d) For non-carcinogenic substances, a hazard quotient of one will be used.

(e) For the groundwater ingestion pathway, the corrective action limit shall be set equal to the Maximum Contaminant Level (MCL) or Health Advisory Level (HAL) established by EPA. For carcinogenic constituents for which a MCL has not been established, the estimated IELCR used to develop a corrective action limit shall be 10^{-6}. For a non-carcinogenic constituent for which a MCL or HAL has not been established, a hazard quotient of one shall be used to develop a corrective action limit.

(f) For hydrogeologic settings, where the models used in the risk based evaluations are considered in the determination of the Department, not to be representative of, and thus not protective of, a given hydrogeologic setting, the Department may require implementation of a corrective action plan to continue until the concentration of dissolved contaminants has leveled off. Leveling off shall mean that the graph of the contaminant concentration versus time fits a curve generally defined by the equation $C=C_f+C_o e^{-kt}$, and the slope of the final portion of the curve approaches zero. Alternatively, the Department may approve the use of a statistical method for use in demonstrating that contaminant concentrations are no longer decreasing with continued corrective action. An indicator parameter satisfactory to the Department shall be selected for application to the curve. In the equation above, the symbols are defined as follows:

1. C - contaminant concentration at time t;

2. C_f - the final concentration which the curve approaches asymptotically;

3. C_o - the concentration difference between the final concentration and the concentration at time zero;

4. e - 2.718, the base of natural logarithms;

5. k - an exponential factor which indicates how fast the concentration approaches Cf; and

6. t - time in days from some fixed starting point.

(g) Corrective action limits, institutional controls, or a combination thereof, shall be developed and submitted for approval by the Department, using a format, procedures, and within a schedule acceptable to the Department.

(h) Corrective action, institutional controls, or a combination thereof, shall be implemented, where necessary, to meet the objectives of this rule, within a schedule acceptable to the Department.

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