DRAFT GUIDELINES
GROUND WATER GUIDANCE

MINNESOTA POLLUTION CONTROL AGENCY
SITE REMEDIATION SECTION
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EXECUTIVE SUMMARY

The Site Remediation Section of the Minnesota Pollution Control Agency (MPCA) has developed this Ground Water Guidance document as part of a program wide guidance development effort. The intent of this document is to develop a consistent framework through which ground water contamination problems are evaluated and remedial actions decisions are managed in the state. The guidance is based on managing risk associated with ground water contamination within the framework of state and federal regulations. The document also provides guidance relative to information which should be considered when formulating risk-based remedial actions.

State and federal regulations provide the statutory basis for conducting remedial investigations of environmental contamination. Minnesota Rules ch. 7060 outlines policy and and rule making which should be applied when managing contamination of state ground water. Minnesota Statutes Section 103H.201 identifies health risk limits/standards (HRLs) which identifies concentrations of ground water contaminants that can be safely consumed daily for a lifetime. These HRLs must be used in consideration with federal standards (Maximum Contaminant Levels (MCLs), 40 C.F.R. pts 141-143) and state standards developed to protect environmental receptors (Minn. Rules 7050.0220) when identifying cleanup levels to manage ground water contamination.

The policy of the Site Remediation Section is to apply promulgated standards as cleanup levels, stabilize plumes which migrate through aquifers at concentrations which exceed cleanup levels, and implement remedial actions which manage the risk a ground water plume poses to human health or the environment. A remedial investigation is the process which facilitates the compilation and evaluation of information to identify remediation requirements necessary to manage the risk ground water contamination poses to human and environmental receptors. The goal of ground water remedial actions is to manage ground water contamination in a manner which prevents further degradation of aquifers and preserves the current and future use of ground water for its highest priority use as a potable supply and/or for food processing and culinary purposes. One of the first steps in a ground water remedial investigation is to identify human and environmental receptors within an area surrounding a ground water contamination site. It is important to evaluate ground water use in an area extending beyond the property boundaries of the site generating contamination, due to the tendency of ground water contamination to migrate various distances over time and be influenced by various forms and magnitude of ground water use.

Once current and future human and environmental receptors have been identified, the appropriate promulgated standards can be identified and used as site specific cleanup levels to manage risk associated with a ground water contamination plume. A compliance monitoring well network can then be installed to evaluate the nature, extent, and stability of the plume in order to evaluate impacts the plume may have on current and future receptors. An effective compliance monitoring well network should establish monitoring locations placed within all ground water exposure pathways identified within the horizontal and vertical extent of the plume. Compliance point locations should be established upgradient of a potential receptor at a distance which provides a minimum advance warning of at least two years with respect to arrival of the plume at the receptor point in order to provide an adequate period of time for a contingency remedial action to be developed and implemented.

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Ground water remedial actions shall be based on requirements which provide: interim response actions to control and eliminate exposure to contamination which poses an immediate risk to human and environmental receptors and actions which control and eliminate long-term risk to current and future receptors. If ground water monitoring data indicates that a contaminant plume is stable and not impacting receptors, remediation requirements should focus on a long term plan to monitor plume stability and demonstrates the effectiveness of natural attenuation to restore aquifer quality. If data indicates that an unstable plume is migrating through an aquifer at concentrations which exceed site cleanup levels, remediation requirements should focus on managing risk within the extent of the plume and provide remedial measures which, at a minimum, will establish plume stability in order to control and eliminate impacts to current and future human and environmental receptors.