

Soil Remedy Description

10.5 Short-Term Effectiveness

This criterion addresses the period of time needed to implement the remedy and any adverse impacts that may be posed to workers, the community, and the environment during construction and operation of the remedy until cleanup levels are achieved.

10.5.1 Soil Alternatives

Remedial action goals for VOCs may be achieved within two years of startup if either Alternative 2 or 3 is implemented. However, periods of system shutdown and contamination rebound, followed by additional extraction, may lengthen the duration of remedial action. Care must be taken during construction of the extraction and vapor monitoring wells and conveyance piping to minimize/prevent soil gas emissions. The vapor-phase GAC must be designed so as to create no air emissions. Furthermore, well construction must be completed so as not to create a “conduit” through which contamination can migrate vertically.

Both Alternatives 2 and 3 include use of institutional controls to a different extent as a means of preventing exposure to the non-VOC contamination in soil. These controls are expected to remain in place until subsurface contamination is removed or otherwise no longer deemed hazardous.

If Alternative 3 is implemented, excavation and disposal of non-VOC contaminated soil above action levels is expected to be completed in a matter of months. Care must be taken to control fugitive dust and/or soil gas emissions during soil excavation and transport activities. Workers would be required to wear appropriate levels of protection to avoid exposure during excavation and transport activities.

10.5.2 Groundwater Alternatives

Appreciable short-term results (e.g., in less than a year) are generally not associated with the extraction/GAC treatment component of Alternatives 2 and 4. However, some reduction in mass and mobility of contamination is expected as groundwater is removed and treated. With regards to negative short-term effects, well construction must be completed so as not to create a “conduit” through which contamination can migrate vertically. Since liquid-phase GAC would be used, no air emissions are associated with use of this alternative.

Because of the higher extraction rates, there is a higher potential for commingling of plumes on site and off site if Alternative 2 is implemented.

Implementation of Alternative 4 may entail use of an oxidizing reagent for in situ oxidation of groundwater COCs. Oxidation of most COCs is expected to be rapid and effective. During application, skin contact with the oxidizing solution, and inhalation of any dust or vapors should be avoided. Workers should use protective gear and clothing. In some cases, oxidation may temporarily inhibit growth of anaerobic bacteria in the groundwater, which in turn may adversely affect biodegradation of the contaminants. Also, in the short-term, because of increased mobility, the concentrations of some metals may increase. The concentrations would eventually return to background concentrations. Well construction must be completed so as not to create a “conduit” through which contamination can migrate vertically. The pump-and-treat component of Alternative 4 must be designed so as to provide adequate hydrologic control of the injected oxidizing solution.

Reference: Record of Decision, Sept. 2002