5.2.1 Air Monitoring

When considering releases to the air from a Subpart X unit, several factors must be examined in determining the fate and transport of contaminants. Contaminants released to the air behave very differently in different atmospheric conditions. Because atmospheric dispersion processes are complex, it can be difficult to perform air pathway analyses. Unlike releases to some other pathways, air releases can have an immediate effect, and the location of such effects can change quickly with changing atmospheric conditions. The most obvious concern resulting from a release to the air is the concentration of contaminants in the air downwind of a source. However, deposition from the air to soil surfaces or surface water is another important concern. Other potentially important interactions among media include resuspension of contaminated soil in the air and volatilization of contaminants from soil and water to the air.

Some Subpart X units will emit toxic particles and gases that can settle out of the air onto soil or water surfaces, be drawn out by aerodynamic processes, or be scavenged by precipitation. Those processes, usually termed dry and wet deposition, reduce the concentration of a contaminant in a plume, but also increase the concentration in another medium. Characterization of deposition values may be an important part of an overall risk assessment (EPA 1994a) that the permit applicant should address, depending on the characteristics of the source and the atmospheric and topographic characteristics of the area in which the unit is located.