

## Environmental Medium-Specific Issues Checklist

This table is intended to guide health assessors through some basic features of reviewing sampling data. The table is meant to remind health assessors of issues to consider when they review data. While the table addresses several medium-specific concerns, it does not cover every nuance you could encounter in the field; and some of the questions might not apply to all data sets. As health assessors consider these issues, their responses might trigger further evaluation or a closer look at the underlying data. Note that your answers to these questions do not invalidate data; they just provide a more complete perspective when interpreting them. For more details specific to each medium, health assessors can refer to [ATSDR’s Data Needs for the PHA Process](#). Consultation with SMEs and the ADS group for individual media may be necessary when evaluating certain data sets.

Medium	Issues to Consider	Assessor’s Findings/Notes
<b>Soil</b>	<ul style="list-style-type: none"> <li>▪ Did sampling results characterize contamination in soils of areas with different land uses (for example, restricted access areas, roadsides, gardens, farms, residential yards, parks, and playgrounds)?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were the soil samples discrete (grab) or non-discrete (composite or incremental soil sampling method [ISM] samples)? Were samples a combination of approaches (discrete and non-discrete)?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ At what depths were soils sampled? (Note: Soil less than 3 inches deep is considered surface soil, and soil deeper than 3 inches is considered subsurface soil. Soil samples representing greater than a 3-inch depth should be noted.)</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Did surface soil samples contain materials from lower layers of soil?</li> </ul>	

Medium	Issues to Consider	Assessor's Findings/Notes
	<ul style="list-style-type: none"> <li>▪ Was the rationale provided for the selected sampling locations and sampling depths?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Was the presence of organic liquids indicated (e.g., odors; visible signs of oil, gasoline, or solvents)?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were bioavailability tests conducted for metals?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Was the type of soil described in the data? (Note: If not, you should assume soil includes any unconsolidated natural material or fill above bedrock and excludes human-generated materials such as slabs, pavements, asphalt, concrete, brick, rock, ash, or gravel.)</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Did any soil removal activities (for example, excavation) occur that may have changed contamination levels? For example, were the data based on sampling performed before a removal action so the soil is no longer found at the site?</li> </ul>	
<b>Soil gas/Sub-Slab</b>	<ul style="list-style-type: none"> <li>▪ Where were the soil gas sampling locations in comparison to buildings?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were sub-slab gas samples collected from under or within 3 feet of the foundation?</li> </ul>	

Medium	Issues to Consider	Assessor's Findings/Notes
	<ul style="list-style-type: none"> <li>▪ Were soil gas samples collected to characterize potential exposures or to characterize potential explosion hazards?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ What gases were sampled/monitored? Did these include those believed to be found in greatest quantities or the most toxic?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ At what depth was soil gas sampled/monitored?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Was the monitoring continuous or periodic?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples available over several seasons, representing a worst-case scenario?</li> </ul>	
<b>Outdoor air</b>	<ul style="list-style-type: none"> <li>▪ Was the duration of sample collection appropriate to characterize site exposures?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples obtained using appropriate methods for the appropriate contaminants with minimum detection limits below CVs?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples collected at locations upwind and downwind from the source? Did sampling occur at locations expected to have the highest air quality impacts?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Was the source of concern operating at full capacity when the samples were collected? Or were samples collected when the source of concern operated at diminished capacity or in an unusual manner?</li> </ul>	

Medium	Issues to Consider	Assessor's Findings/Notes
	<ul style="list-style-type: none"> <li>▪ Were the ambient air sampling devices placed near a source that may bias the results?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were stationary monitors located in areas representative of exposure pathways?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were the data generated by a one-time air-sampling event or by a long-term ambient air-monitoring program?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ What is the height of each sampling location?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Did sampling occur over a long enough period to capture seasonal variations in meteorology?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ How did the results compare to other regional or national air sampling programs (for instance, the EPA Air Quality System)?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Did gas releases from the site raise concern about potentially explosive atmospheres or oxygen-deficient atmospheres?</li> </ul>	
<b>Indoor air</b>	<ul style="list-style-type: none"> <li>▪ Was the duration of sample collection appropriate to describe the relevant exposures for the site?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were the basement and main living or office spaces sampled?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were indoor sources considered?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were sub-slab gas and indoor air samples collected at the same time, so they can be compared?</li> </ul>	

Medium	Issues to Consider	Assessor's Findings/Notes
	<ul style="list-style-type: none"> <li>▪ Was crawl space air, which can comingle with indoor air, sampled?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples collected during different seasons?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were follow-up samples collected after installing mitigation systems?</li> </ul>	
<b>Groundwater</b>	<ul style="list-style-type: none"> <li>▪ Were the groundwater samples collected in the aquifer of concern?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Was groundwater sampled in all wells that may be sources of drinking water?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Was the groundwater contamination plume clearly delineated, both in terms of lateral extent and depth?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Did the sampling occur both up-gradient and down-gradient of the site?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Was the timeframe for sample collection adequate (i.e., when the plume is expected to be impacting the exposure pathway)? Were seasonal groundwater samples taken?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples for metals filtered (dissolved) or unfiltered (total)? (Note: Unfiltered samples are preferred for public health assessment purposes.)</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ How was the groundwater sample collected (for example, during well construction, a flushed sample, a bailed sample, low-flow [micro-</li> </ul>	

Medium	Issues to Consider	Assessor's Findings/Notes
	<p>purge] or after purging well column, from a drinking water tap, or before treatment)?</p>	
	<ul style="list-style-type: none"> <li>▪ For vapor intrusion, were the wells screened across the surface of the shallowest aquifer?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Did the groundwater sampling data help you figure out the concentrations of vapor-forming chemicals in soil gas beneath buildings?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were concentrations near solubility limits, which could indicate the presence of a non-aqueous phase liquid (NAPL)?</li> </ul>	
<b>Surface water</b>	<ul style="list-style-type: none"> <li>▪ Did surface water data include results for samples both upstream and downstream of the primary source of contamination?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Was there information about the number of surface water samples taken at each sampling station, as well as the frequency, duration, and dates of sampling?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ How did the timing of surface water sampling compare to the timing of site releases?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples filtered?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples collected at locations where people have access (like beaches)?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples collocated with sediment samples?</li> </ul>	

Medium	Issues to Consider	Assessor's Findings/Notes
<b>Sediment</b>	<ul style="list-style-type: none"> <li>▪ Were the depths of the samples specified?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples collected at regular intervals, only in depositional areas, or following some other type of scheme?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were sediments sampled both upstream and downstream from the site?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Have any sediment removal activities (for example, dredging or excavation) or erosion occurred that may have changed contamination levels?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples located at locations where people have access (like beaches)?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were samples collocated with surface water samples?</li> </ul>	
<b>Biota (plants and animals)</b>	<ul style="list-style-type: none"> <li>▪ Did biota sampling consider the species that people in the area typically eat?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Did the sampling project consider the species that are most likely to accumulate contaminants?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ What age and size of the selected species were sampled? Do these correspond to the age and size of biota that people would likely capture and eat?</li> </ul>	
	<ul style="list-style-type: none"> <li>▪ Were data available on the consumption habits of the exposed population (e.g., whether fillets or whole fish are consumed)?</li> </ul>	

*Public Health Assessment Guidance Manual (PHAGM)*

Medium	Issues to Consider	Assessor's Findings/Notes
	<ul style="list-style-type: none"><li>▪ For the species sampled, were levels of contamination measured in the parts that people typically eat?</li></ul>	