Figure 4.1. General decision logic framework.

- Current CSM
- Identify potential AOCs, list of PCOCs, and potentially contaminated media
- Identify AOC/AOC clusters
- Contamination resulted from Chicopee AOCs?
  - Yes
    - Further refine CSM
  - No
    - Estimate/map initial boundaries of potential impacted media
    - Site boundary?
      - Off-site
        - Develop decision statement for off-site sampling
      - On-site
        - Specify sub-boundaries of the contamination volume with known sources
        - Describe potential sources of heterogeneity in contaminant patterns, migration pathways, stratigraphy, and other site materials.
        - Identify migration mechanisms (physical/chemical)
        - Prioritize each AOC/AOC cluster for sampling and then divide the site into investigation zones
        - Identify analytical methods and Categories
        - Confirm the PCOC list for each medium
        - Identify locations periodically with the highest and lowest contamination and confirm/refine the PCOC list with higher-level of analytical Category
Initial CSM with PCOC list for each AOC and medium identified for investigation

Select appropriate data Categories & analytical methods

Start the 1st biased sampling at the worst-case sample location.

Analytical results by lower Category

Input data into the data management system

Data QC, OK?

Yes

Plot data on a site or AOC map

Exceed the action levels?

No

 Confirmation sampling by higher analytical Category

Yes

Need higher level of analytical Category?

No

Conduct the 2nd sampling for the delineation sampling

Yes

Reanalyze stored samples by higher Category

Figure 4.2. Initial biased sampling from worst-case sample locations logic flow diagram.
Results of the 1st biased sampling at the worst-case AOC location

- Analyze by Category 2 or 3 methods
- Input data into the data management system

  - Data QC, OK?
    - Yes
    - Plot data on a site or AOC map
      - Exceed the action levels?
        - Yes
        - Need higher level of analytical Category?
          - Yes
          - Reanalyze stored samples by higher Category
          - No
          - Refine the CSM
        - No
        - Establish stable boundary?
          - Yes
          - Verified by higher analytical Category?
            - Yes
            - Identify the location on the site map
              - Site boundary?
                - Off-site
                  - Sufficient sample density as the representative of matrix at a selected AOC?
                    - Yes
                    - No further delineation
                  - On-site
                  - No
                  - Subsequent sampling by stepping-in/out from the previous sample location for further delineation at the selected AOC: (stepping-in below action levels or stepping-out above action levels) or increase sampling density
                  - No
              - No
            - No
          - No
        - No
      - No
    - No
  - No

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

Yes

No

No

No

No

No

No

No

No

No

No

No
Results of the 1st biased sampling at the worst-case location

Input data into the data management system

Data QC, OK? Yes  No  Reanalyze stored samples by higher Category

Plot data on a site or AOC map

Exceed the action levels? Yes  No  Verified by higher analytical Category?

Yes

Conduct delineation sampling

Established a stable boundary? (slightly or highly contaminated) Yes  No

Perform additional confirmation sampling or increase sampling density at the selected AOC

Sufficient sample density as the representative of matrix at a selected AOC?

Yes  No

Analyze by Category 1

No further delineation

Figure 4.7. AOC elimination decision logic flow diagram.