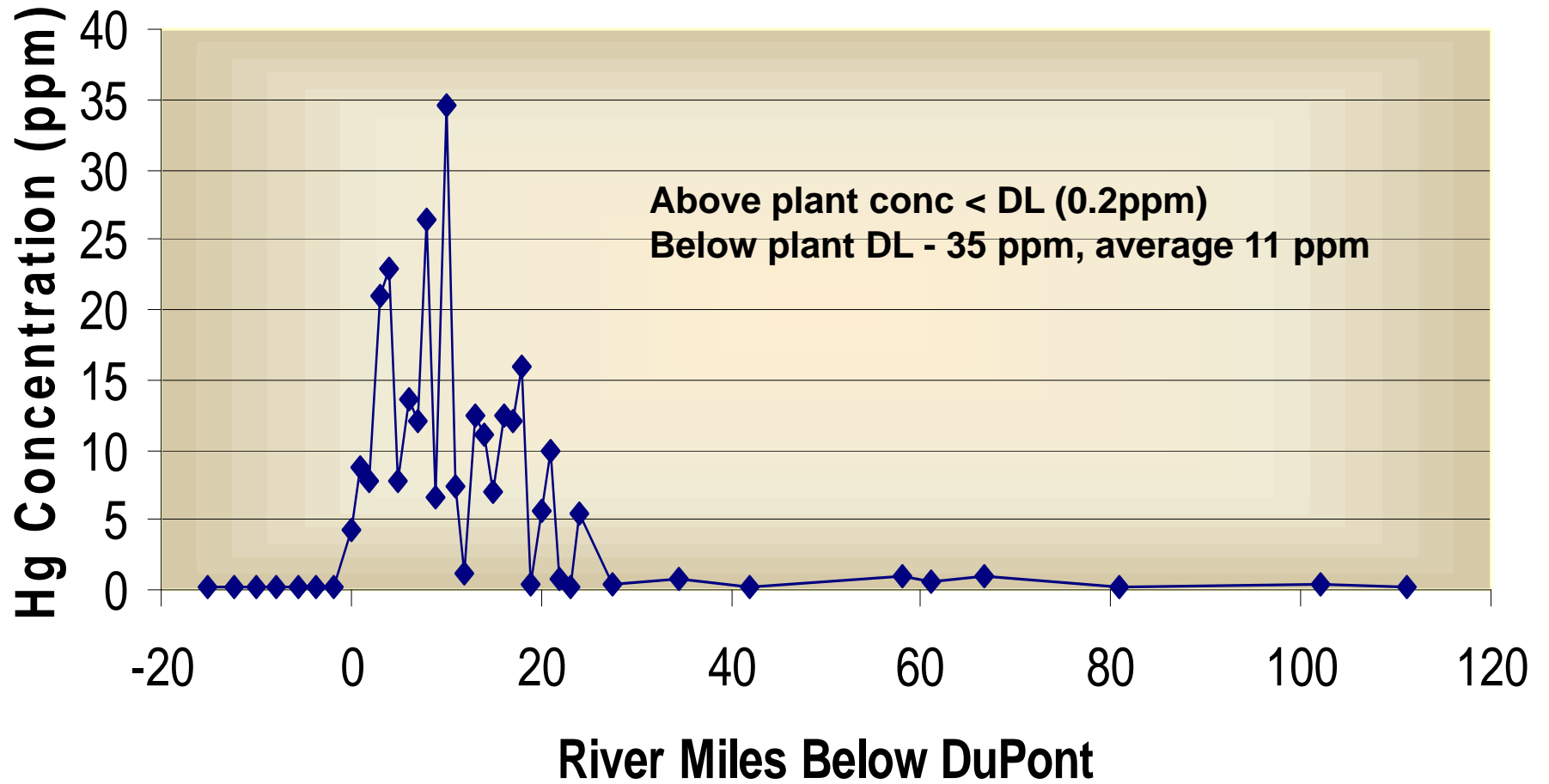




Floodplain Assessment

October 21, 2003

Hg Concentration in Floodplain Soils Summer 1980



Phased Approach

Phase 1: Spring 2003

- Objectives

- Gather data to test whether mercury in the floodplain soils is available at levels that could present a health risk from vegetable ingestion
- Gather data to determine role of floodplain soils as a potential “source”

- Strategy

- Leverage both but focus on “crop study” this spring
- Sampling for “source” objective will be optimized based on the results of other sampling currently planned, e.g., sediment, storm/tributary study.

- Status

- Soils at the Augusta Forestry Station sampled
- Results provided as part of the Crop Study

Phased Approach (cont.)

Phase 2 in planning stage

- Reviewed available data
 - Made recommendation on number of samples to meet statistical rigor
- River reconnaissance conducted
- Preliminary Scope has been drafted

Preliminary Scope

The objectives of the sampling will be

1. to determine general "representative" levels of mercury in floodplain soils relative to data currently available and
2. to leverage this activity with data gathering for helping to refine the conceptual site model including potentially defining continuing sources.

Future Samples

- Based on available data, samples should be focused on river miles 0-35 on SR and SFSH
- Multiple samples at each sampled river mile are recommended.
 - Tradeoff between number of reps and accuracy

How Many Sites?

- To obtain information comparable to previous studies, 15 “sites” or locations (e.g., approximately at river mile 0, 1, 2, 3, 4, 5, 6, 7, 8, 10, 15, 20, 25, 30, 35)
- Additional sites can be added to obtain more detailed profile or to extend down river.
- Thus, a site could be defined by (a) river mile, (b) distance from bank, (c) vegetation, (d) other features

How many “reps”?

- The reps at a “site” are meant to characterize the site.
- Assume all reps at the same depth.
- 5 reps per sampling site will provide enough accuracy for general indication of trends.
- More reps will improve accuracy.

Preliminary Scope

- Approximately 15 locations along the South River from Waynesboro to the confluence in Port Republic.
 - Possible locations are provided in the attached Excel Spreadsheet and illustrated on the attached map
- Maximum of 6 "sites" at each location will be sampled.
 - Typically three "sites" on either bank (as appropriate, i.e., based on available distance from the bank and accessibility) will be attempted.
 - Maximum anticipated distance from the bank will be about 150 feet.



Microsoft Excel
Worksheet



GIF Image

Preliminary Scope

- Typically, at each site a series of replicates will be composited to a single sample
- Hand auger equipment will be used.
- The majority of the samples will be taken as surface samples (0-24")
- Analysis for total mercury

Preliminary Scope

In one or 2 locations, a more comprehensive sample design (similar to the sample plan at the Forestry Station) will be employed.

- Individual rather than composite samples will be taken.
- Samples will also be taken at depth to evaluate potential concentration changes with depth.

Next Steps

- Feedback from the panel on strategy, e.g.,
 - Number and location of samples
- Finalize scope
- Begin process of getting permission from property owners