ESM 223 Soil and Groundwater Quality Management

Case Study

Due: Report on Tue 3/14 (11:59 PM), Presentation on Wed. 3/15 in class

The objective of this assignment is to put together all of the concepts you have learned in this course. The information for the different cases varies considerably, with some providing a lot of detail and some being quite general or concise. In several of the cases, they have gone ahead with a particular remediation proposal, usually a conservative approach. You may use this information, but you should be critical of their approach.

Your tasks are to:

1) Evaluate the site characterization information and determine what are the main pollutants, how are they distributed geographically, what media they are in and what are the most likely exposure routes. In some cases, most of this information is clearly provided in the case study, but in other cases it has to be extracted from the narrative. Summarize it (small narrative, use tables and figures from the case study).

2) Prepare a risk assessment, similar to what you did in the previous assignments. Determine the most critical pollutants, media and exposure routes, and determine clean-up goals. Some cases will involve only human health risk, and in some other cases there is enough information to do an ecological risk assessment.

3) Determine the applicable technologies. You should consider all of the appropriate actions (control, containment, in-situ and ex-situ), and consider the associated technologies.

4) Based on the cost, performance and uncertainty information we have seen in class, make a recommendation. Explain your choice and provide as much support as possible. If the case study proposed a different solution, explain your reasoning to differ. You can also discuss some of the legal, social or political issues involved with your recommendation. Depending on the info available in the case study description, you should also suggest additional site characterization.

Your report should have the following sections:

Executive Summary
Introduction (site characterization info)
Risk Assessment and Clean-up Goals
Remediation Options
Recommendations
References (very important)

You will also make an oral presentation of the case study results, with about 10 min per case, at our scheduled time for the final exam. You can do a team presentation, but all have to participate actively. Feel free to drop by and ask questions about site characterization, remediation options, etc.