



Application of CDQM to Dredging Projects

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Types of Projects

- Maintenance dredging
- Evaluate disposal sites (Phase I & IIs)
- HW disposal - field office support
- Work for others
 - environmental remediation (EPA & State)
 - maintenance dredging



Data Quality

- Require lab validation in testing contracts
- utilize the same level of lab review
- SOW includes details of sampling and lab requirements
- SOW references EM 200-1-1, EM 200-1-3, and SW 846 Methods



Lab Validation

- District funds the validation - Civil Works
- cost under \$10K annually
- have two AE contracts (8a) - want one validated lab for each contract



Data Quality Objectives

- Upland disposal of dredged material
 - State regulates upland sites
 - utilizes risk based clean-up standards
 - various categories of standard
 - unrestricted
 - industrial I, II etc.
- May vary depending on project
 - EPA work
 - clean sediments vs contaminated sediments
 - most difficult projects are often the moderately clean sediments - unrestricted classification



Sampling Plan

- Maintenance Dredging Project
 - shoaling - typically shallow 1-3 feet
 - place a sample point in as many shoals as possible
 - utilize existing data for problem areas
- Remediation Project
 - have not been dredged
 - sampling design more straightforward
 - usually also need deep samples to identify depth of problem area



Sample Collection

- Sediment sampling - navigation channels and environmental remediation
 - Gravity coring
 - vibracoring
 - geotechnical borings
 - grab samples
- Water quality sampling - CDF monitoring



Deliverables

- Hard copy
- EDD - Excel and Word
- PDF of entire report (including QA/QC)



Storage of Data

- Database file
 - translate data into correct format
 - add to database file
- Utilize database to view data on Arcview
 - to update database about \$1K per project



Disposal sites

- Exceed threshold - deed restriction
- poor quality data often requires additional work or time delays while lab is working out problems
- delays project - must work closely with PM
- deed restriction often kills project



Types of Problem Encountered

- Sensitivity - detection limits above the regulatory thresholds
- Lab procedures not followed
- Cleanup procedures not followed



Example Problem Projects

- Grand Haven - As, PAHs
- Manitowoc - EPA work
 - closed lab
- Hennepin Marsh (Detroit R.) - Hg detection limit in water



Conclusions

- Lab validation program is an essential tool to help us maintain good labs
- Project audits
 - spend \$10K to have the lab reviewed
 - especially on sensitive projects
- Deal directly with labs as much as possible
 - they often don't get the SOW of work for the project
 - they might not have read the main contract SOW