

EXPLORATIONS IN ENVIRONMENTAL GEOLOGY

AEG Webinar

July 30, 2020



INTRODUCTIONS



Hello! Nice to meet you all





Virtual Event

2020 ANNUAL MEETING

16-18 SEPT | aegannualmeeting.org

AEG's First Ever Virtual Annual Meeting!

- Technical Sessions and Symposia
- Corporate Business Meeting
 - Student Events
 - Awards Ceremony
- Special Event Wine Tasting and more....

September 16-18, 2020



Virtual Event

2020 ANNUAL MEETING

16-18 SEPT | aegannualmeeting.org



Registration:

\$100 for AEG members

\$200 for non-members and

\$25 for students

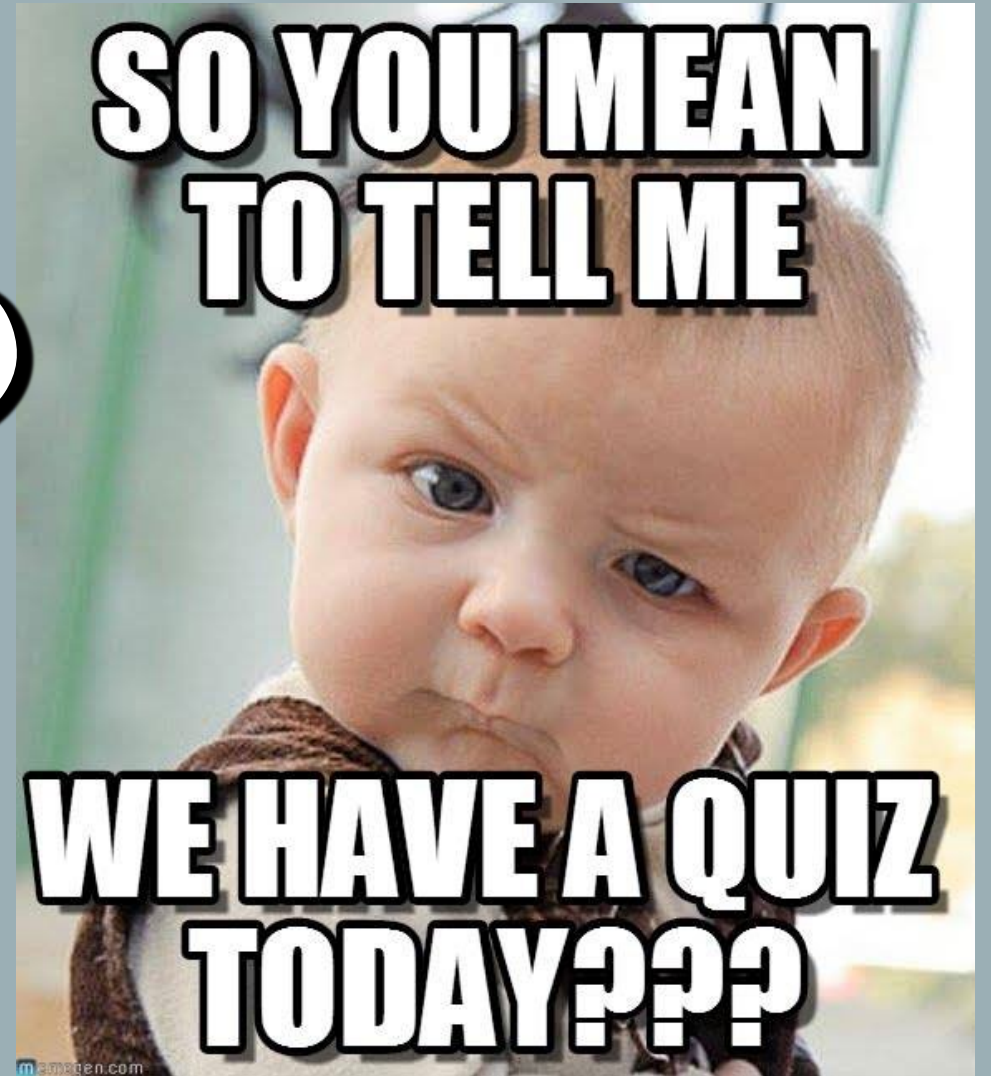
All sessions will be recorded, with registration you can view them at any time.

Visit www.aegannualmeeting.org for all the details!

September 16-18, 2020



QUIZES



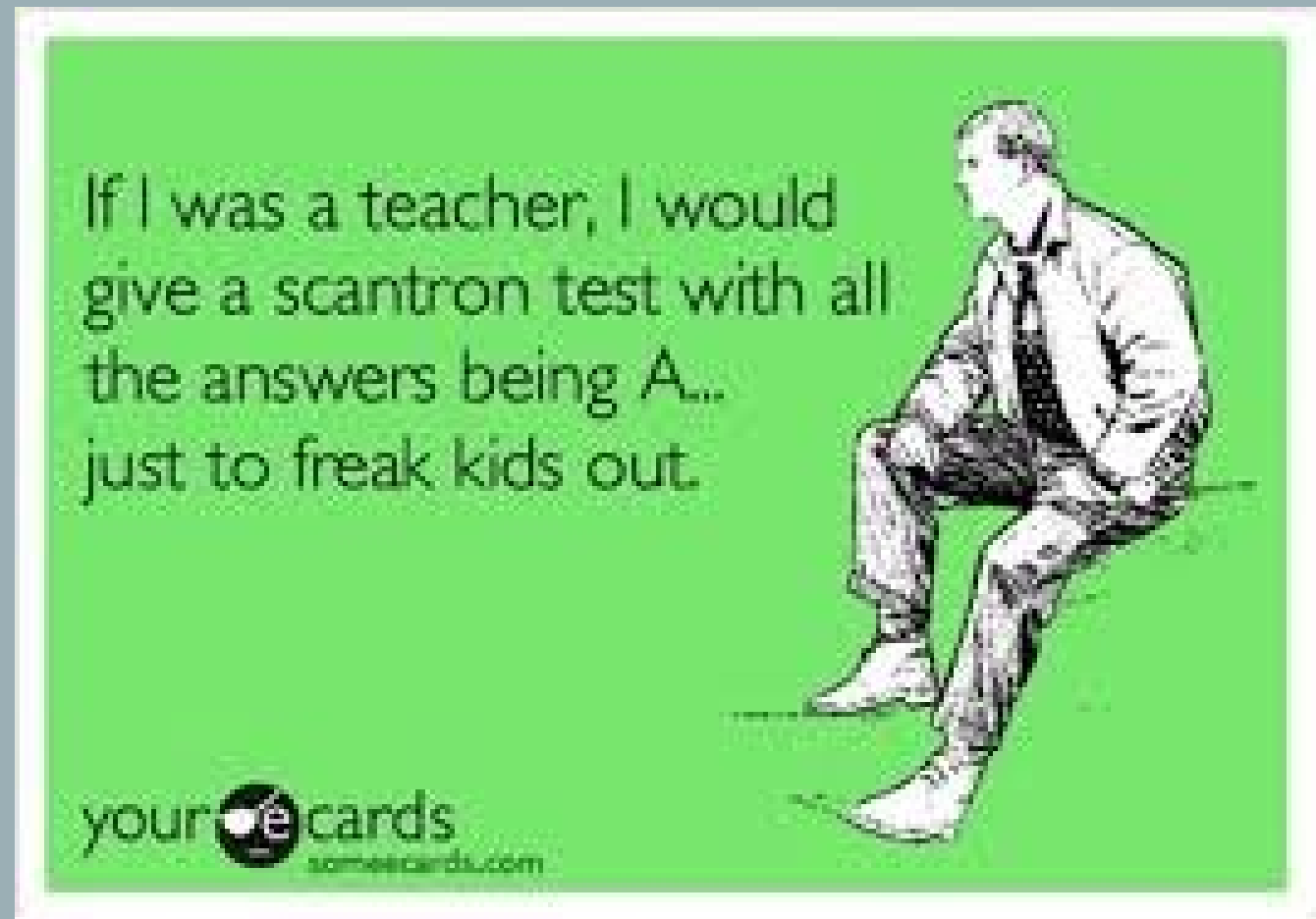
“Bueller...Bueller....Bueller....”

QUIZ

TIME



“1.21 gigawatts!?!”





PHASE I

SITE STUDIES,
ENVIRONMENTAL
ASSESSMENTS, ETC.

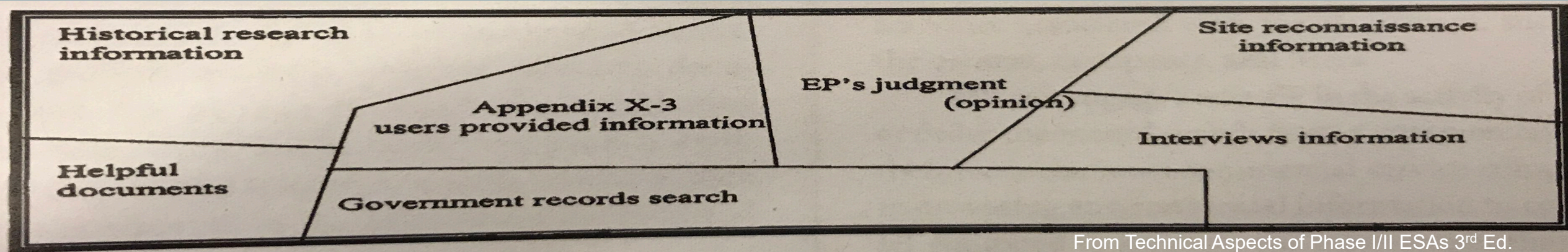


ASTM Phase I

- **Current: ASTM E1527 – 13**
 - Up for renewal 2021
- **Typically performed for real estate transactions**



The Proposal

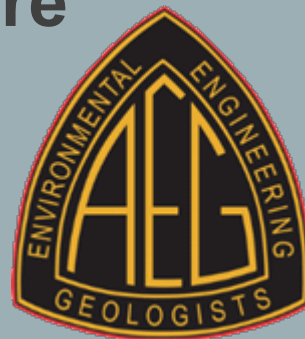


➤ Key to Everything that follows

➤ State what you will do

➤ If you are doing anything outside of 1527-13 state that here

➤ Do what you say and explain why.

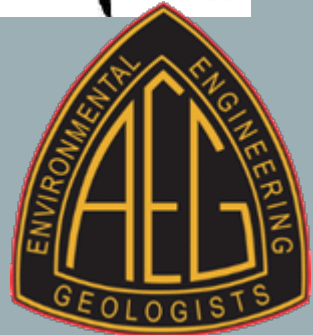


GET ORGANIZED!

➤ Schedule

- Client Timeline
- Existing Projects
- Personal Obligations
- Access Restrictions
- EDR, FOIA, File Search
 - Radius search, use the
 - boundary feature

➤ File Management



Site Reconnaissance – On-Site

➤ What to look for to maximize field efficiency

➤ **PICTURES!!!**

➤ Documentation is key.

➤ Battery Backup

➤ **H2O**



Report



- You won't know how good your report is until it is tested
- In 2, 5, 10 years – will this make sense?
- **TELL YOUR STORY!**
 - State what you did and why



EXAMPLE I



Real Estate/Property Transaction

Portfolio of Industrial Sites, in North Carolina, South Carolina and Georgia



GET ORGANIZED!

➤ People

➤ Build your teams

- Where are they located?

- What is their availability?

- What are their roles?

 - Allocate people by their strengths

- Don't backseat drive from the office



Site Reconnaissance - Planning

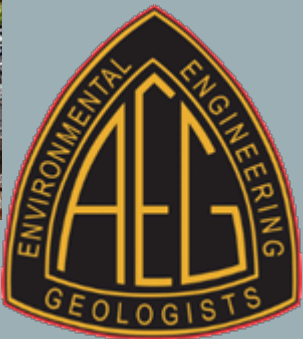
➤ Schedule

- Team Home Base
- Distance between Sites
- Dates/Timeline
- File Review Locations
- Once on site
 - Split up vs. one group?
 - Interview(s)
 - Roles











EXAMPLE 2

Regulatory Driver

Site - Rural North Carolina



SITE DETAILS



Closed Landfill,
Photo date 2/26/19

- Closed Landfill (1971-1993)
- Consistent historical monitoring occurs semi-annually at groundwater monitoring locations, surface water monitoring points and quarterly at landfill gas probes
- Change of Regulator



MONITORING WELLS

- Groundwater and Surface Water monitoring since 1993
- Identified consistent detections of both volatile organic and metals compounds – 3 Monitoring Well Locations
- Residential wells sampled annually (since 1985) by County Health Department, no detections



MW-2, Photo Date 7/26/18

SURFACE WATERS (CREEKS)



- Creek samples were collected downgradient to the three primary areas of concern and multiple locations
- Facility almost completely bounded by creeks and streams
- NO detections over Surface Water (2B) Standards in collected surface water samples

Surface Water near MW-6 and MP-9, photo date 2/26/2019



48IN REINFORCED CONCRETE PIPE



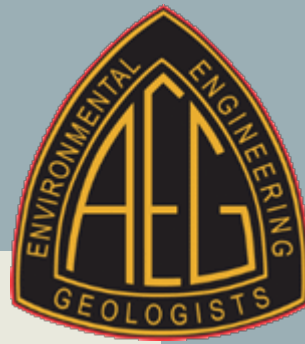
- Discovered during historical records search
- Likely installed 1970s prior to waste disposal
- Collected samples on related tributary to determine influence on site surface water
 - NO detections above surface water standards



QUIZ TIME

"Excuse me. I believe you have my stapler."





How to write good...

1. **Avoid alliteration. Always.**
2. **Prepositions are not words to end sentences with.**
3. **Avoid clichés like the plague. (They're old hat.)**
4. **Eschew ampersands & abbreviations, etc.**
5. **One should never generalize.**
6. **Comparisons are as bad as clichés.**
7. **Be more or less specific.**
8. **Sentence fragments? Eliminate.**
9. **Exaggeration is a billion times worse than understatement.**
10. **Parenthetical remarks (however relevant) are unnecessary.**
11. **Who needs rhetorical questions?**

Before Writing. THINK!

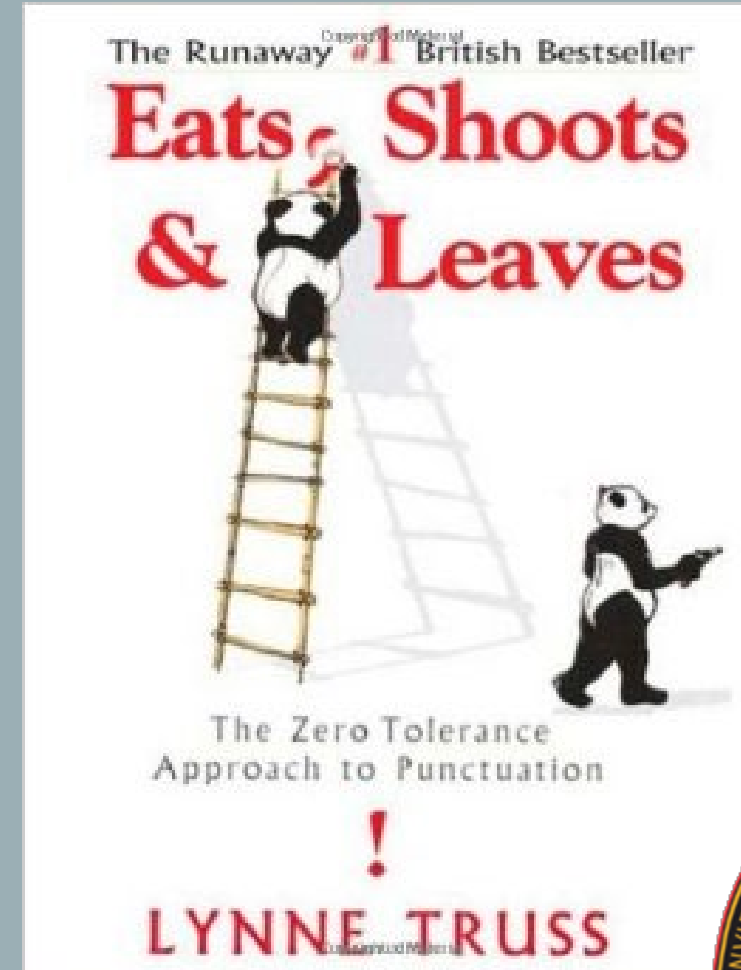
- What are you writing about?
- Who are you writing to?
- Who else might read it?
- 5 Years from now, what will people need to know?



Why?

➤ Used for:

- Reports
- Memos
- Press Releases
- Letters/Letter Reports
- Email
- Field Notes
- Proposals
- Any written communication



Get Organized

1. Plan

- Understand the Narrative before you begin
- Who, What, Where, When, Why? Must be answered in the first paragraph, or the Background Section
- Keep it Simple
- **AIM: By the conclusions section the reader should be able to write your conclusions themselves.**

2. Chunk

- Be Brief
- Most Important Information First
- Like topics together
- Compound Sentences

3. Active Voice

- **Avoid Bureaucratic Writing!!**
 - Identified by wordiness, specialized vocabulary, noun stacking, too much “to be” and passive voice.



Findings, Conclusions and Recommendations

➤ Findings

- Specific Facts and Supporting Details

➤ Conclusions

- Answer “What do the Facts mean?”
- Generally follow Findings
- Never brand new information, only contain information supported by findings

➤ Recommendations

- Answer “What do we do now?”
- Generally follow Conclusions
- Should never appear “out of the blue”.
- Must follow conclusions which are based on findings



REMEMBER



- Understand your audience
- Keep Related Ideas Together
- ACTIVE VOICE!!!
- Figures, Tables and Appendices are ALWAYS in Order from beginning to end of document.

No jumping around.

(e.g. the first paragraph of a document should not reference Table 3.)

- ALWAYS: Define the Acronym the 1st time used



MORE TIPS

➤ **REMEMBER:**

- **NO ONE** wants to read what you have written.
- Most will skim or more likely only read Findings and Conclusion sections.
- Your Main Point should be subtle as a sledgehammer.



QUIZ

TIME

“My God, Are We Gonna Be Like Our Parents?”

STAND BACK



**I'M GOING TO T
SCIENCE**



SPILLS AND REMEDIATION

SITE CLEAN-UP



Site & Area of Investigation

- Actions that follow the site investigation
- Drilling
- Sample Collection
- Results



The Site:



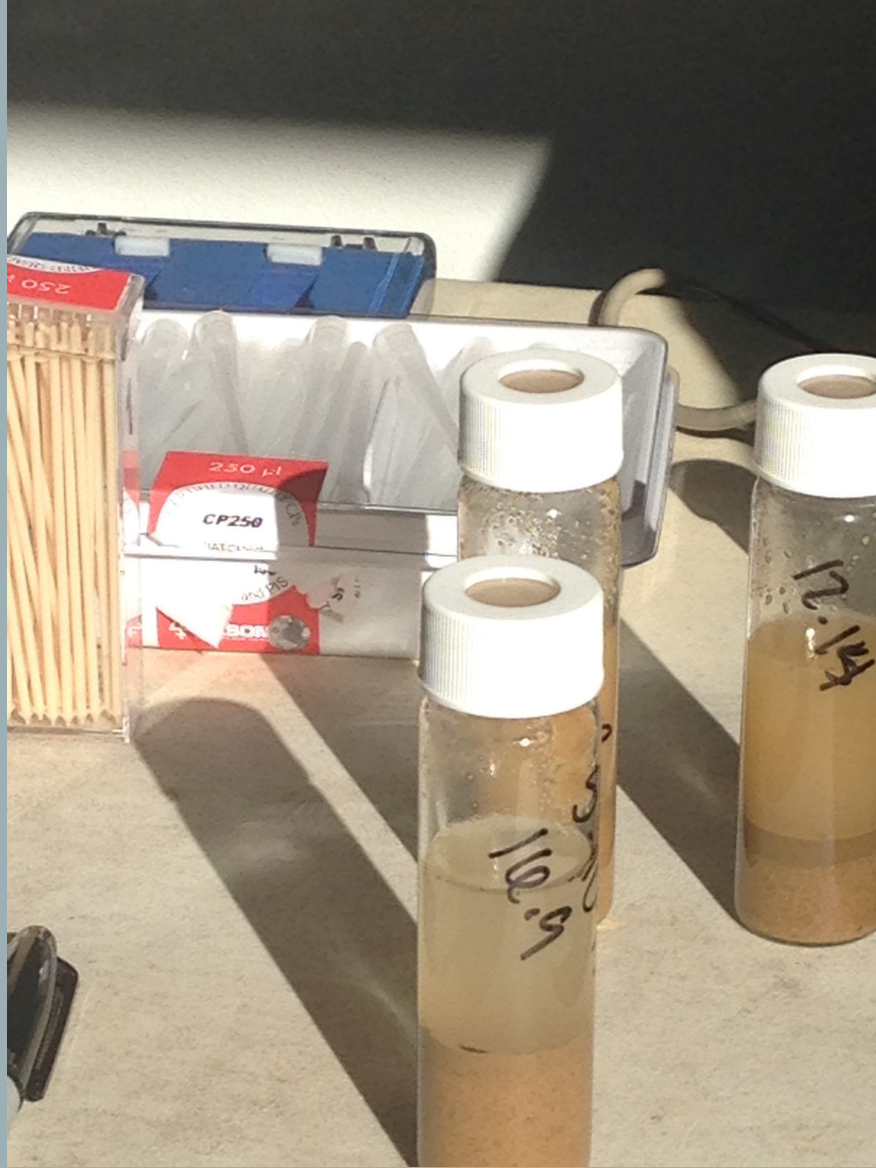
Take 2:



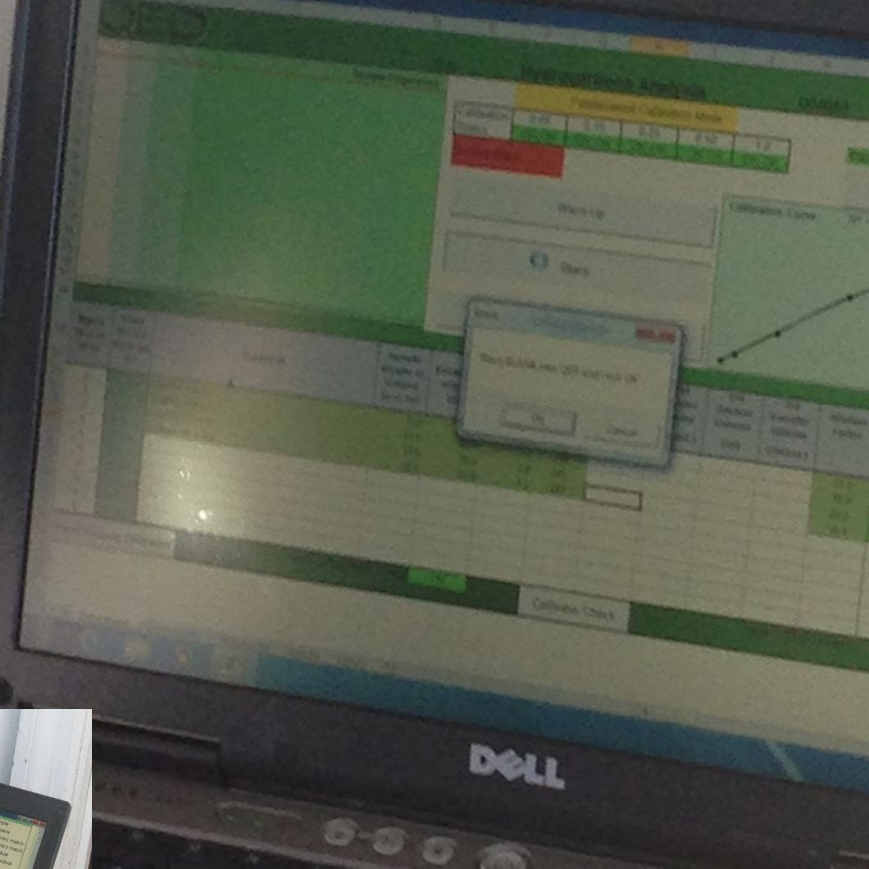
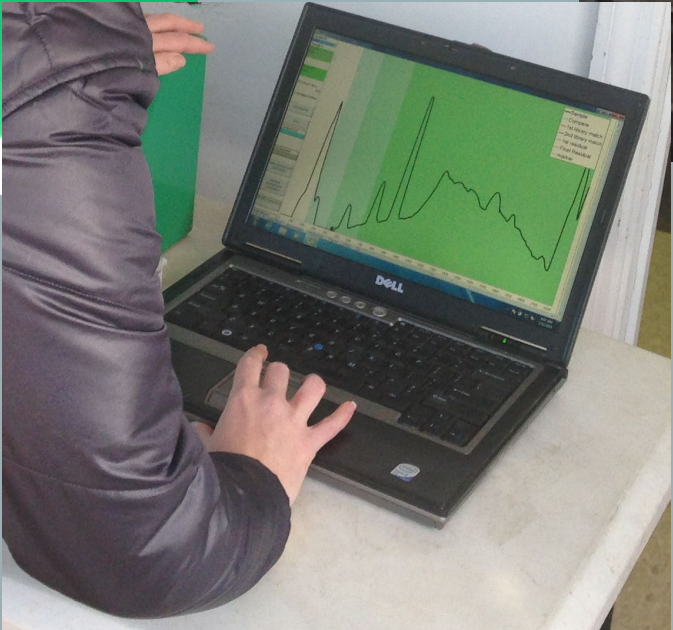
Sample Collection



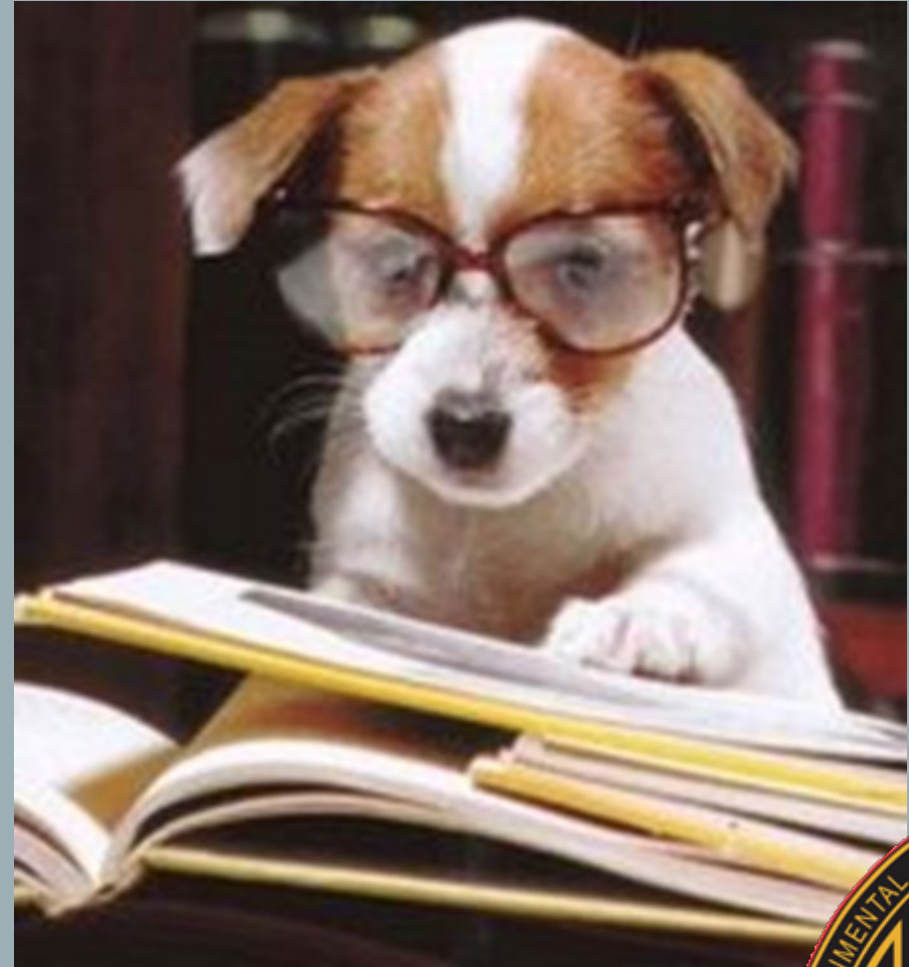
Sample Preparation



Sample Analysis



QUIZ TIME



"It's just a flesh wound."



Connecting with Non-Scientists



Why is this Important?

To Do List

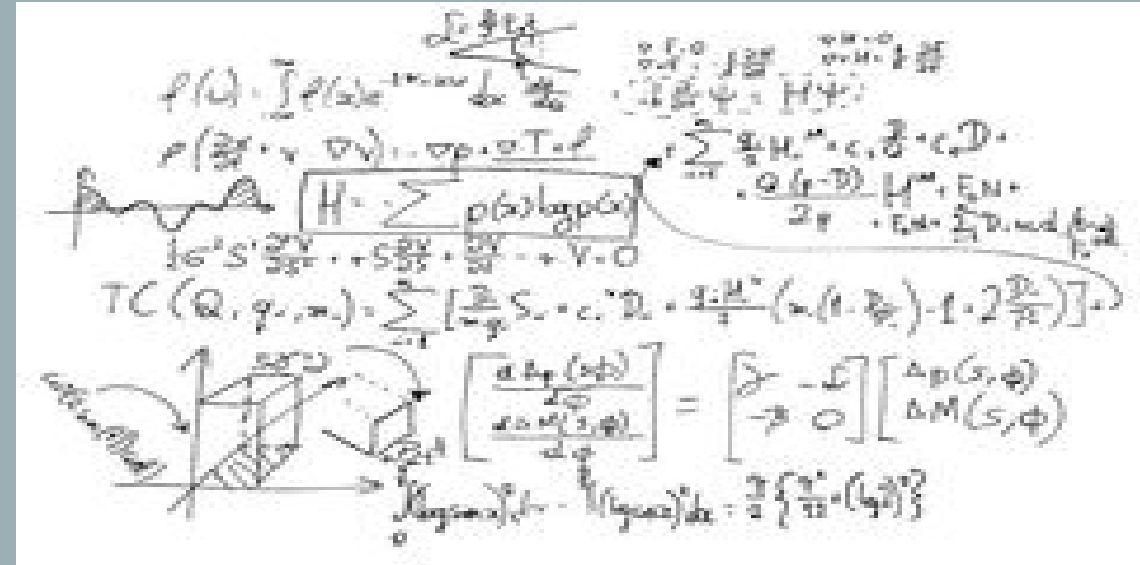
1. VERY VERY IMPORTANT STUFF
2. VERY IMPORTANT STUFF
3. OTHER IMPORTANT THINGS
4. DON'T FORGET TO eat
5. SLEEP WOULD BE GOOD

- The general public needs to understand complex scientific ideas to make informed decisions
- Speaking above their head creates distrust



Why is this a Challenge?

- Scientists and engineers are generally smart people
- No training to convey complex scientific topics to a general audience
- Increased specialization over time



Determine Your Message

- **Taylor to the Audience**
 - Children, Students, General Public
- **Make it Memorable**
 - Mnemonic Devices
 - Physical Examples
 - Local Examples



Talking to the Public

- **Practice Public Speaking Skills**
 - **Be Direct**
 - **Avoid Jargon**
 - **Use Relatable Examples**
- **Toastmasters**
- **Present at Annual Meeting**
- **Schools**
- **Citizen Groups**





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*Advancing the science, scholarship and education in
environmental and engineering geology for the benefit of all.*

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QUESTIONS



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