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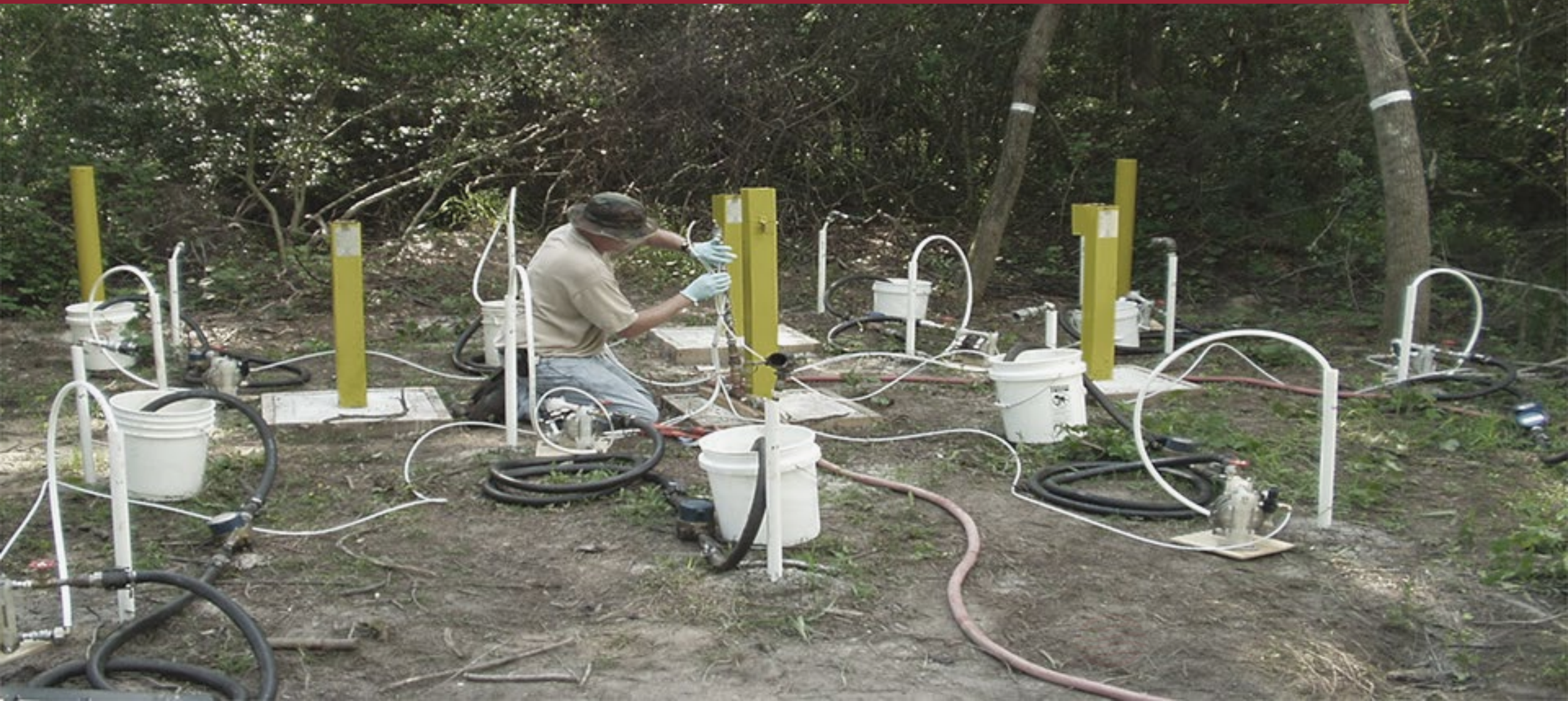
IMPORTANT WRITING SKILLS FOR CAREERS IN THE ENVIRONMENTAL INDUSTRY

Mike Lawless, PG & Brandy Barnes
Draper Aden Associates

ENVIRONMENTAL GEOLOGY



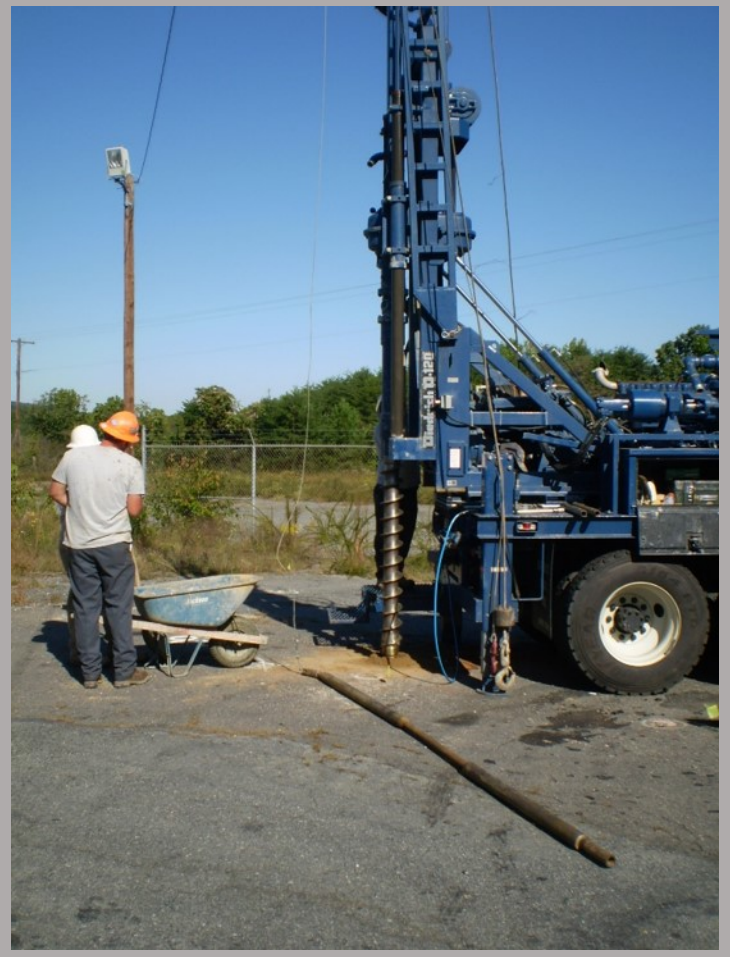
GRADUATE TO PROFESSIONAL

Skills that transfer from a BS degree:

- Basic skills

Skills that transfer from an MS degree:

- Thesis process
- Problem definition
- Data collection
- More rigorous writing process
- Peer review process



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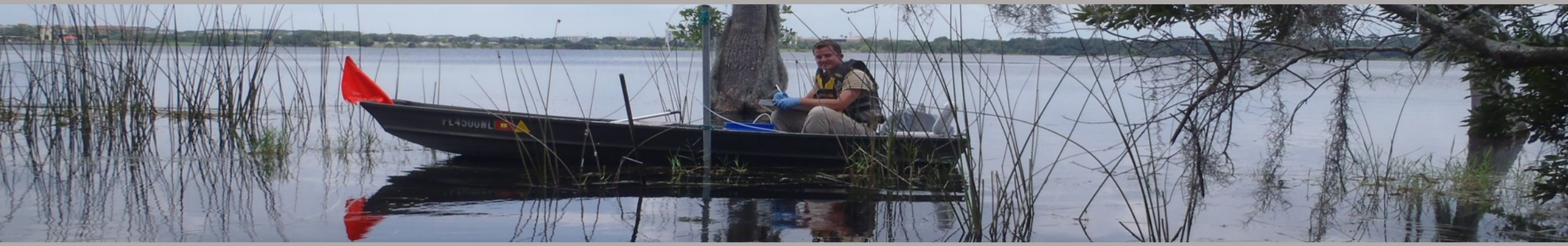
ENVIRONMENTAL INDUSTRY WRITTEN PRODUCTS



- Proposals
- Corrective Action Plans
- Environmental Phase I, Phase II, Brownfields
- Letters
- Memos
- Emails
- Technical Reports
- Remediation Reports
- Sampling and Work Plan Completion Reports
- Field Notes

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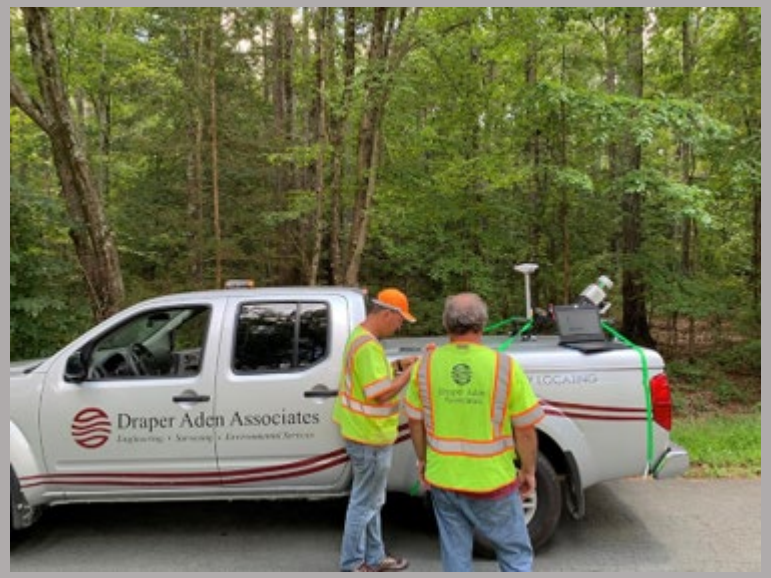
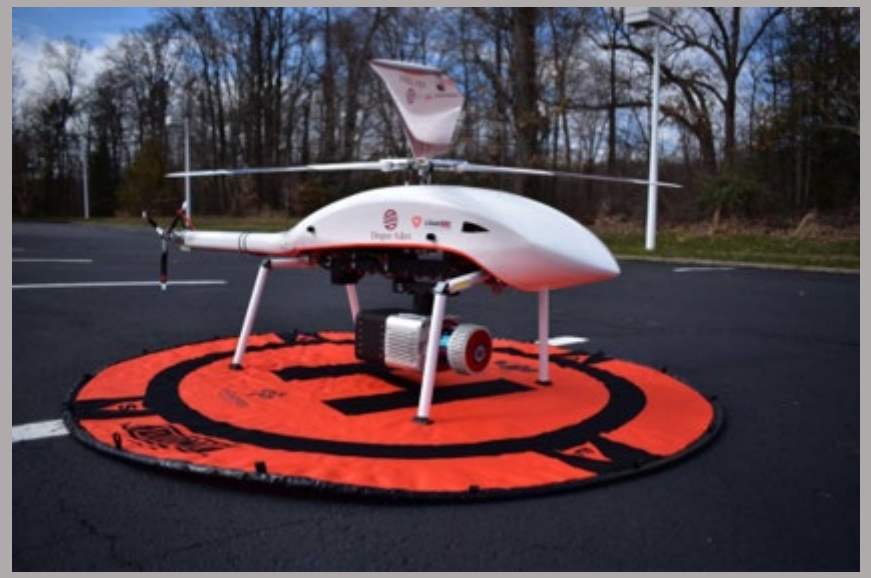
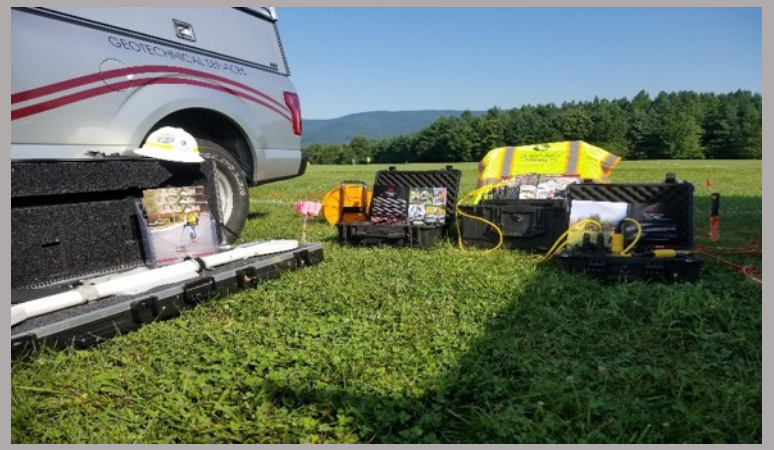
IMPROVING AND EXPANDING WRITING SKILLS

- Continuous improvement
- Learning on the job
- Input from attorneys
- Peer review
- Workshops and other outside training opportunities







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KNOW YOUR AUDIENCE

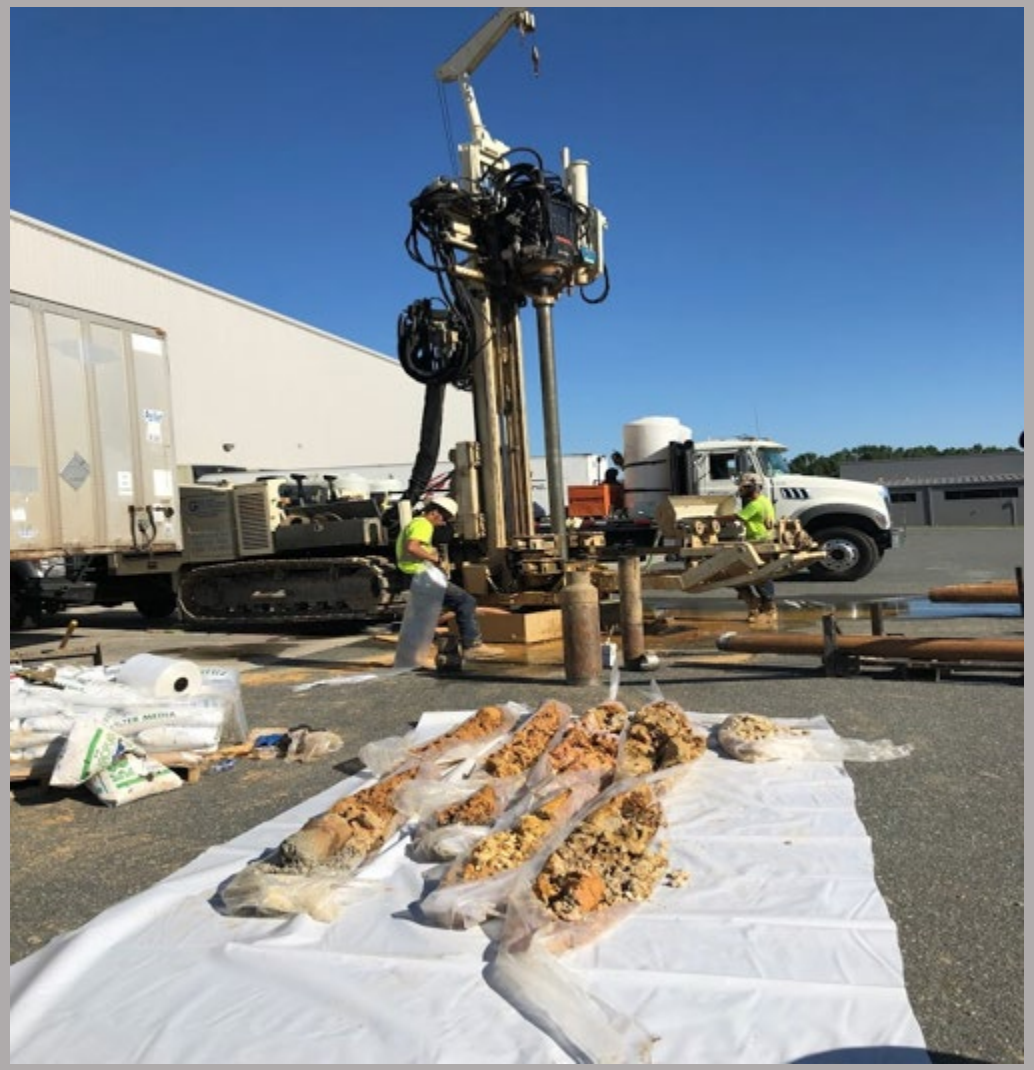
Understand the goals and objectives of project; do not speculate about issues tangentially related to those goals. Don't be afraid to stay narrow.

Understand legal perspective.

Respect peer review process.

Understand quality of writing reflects upon you and your company.

TIPS FOR ALL WRITTEN PRODUCTS



Write clearly and convincingly

Write for a non-technical audience

Protect liability of company and client

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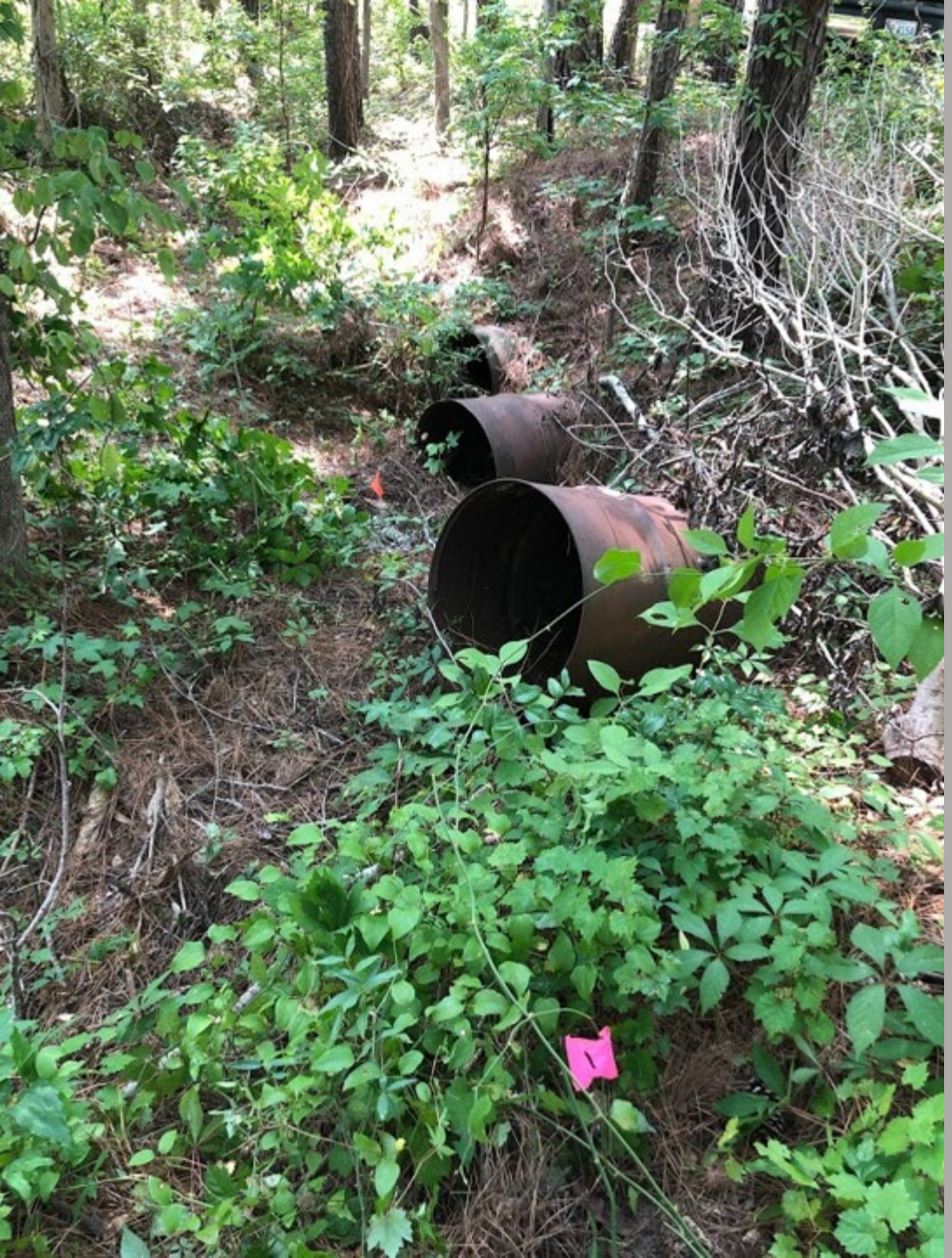

WHO IS YOUR AUDIENCE?

Client – often non-technical

Regulators – technical background widely variable

General public – most often non-technical

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LEGAL ASPECTS OF ENVIRONMENTAL WORK

Avoid qualifiers, be direct. Don't use "Significant impact." Use, "Increase in concentrations of ..."

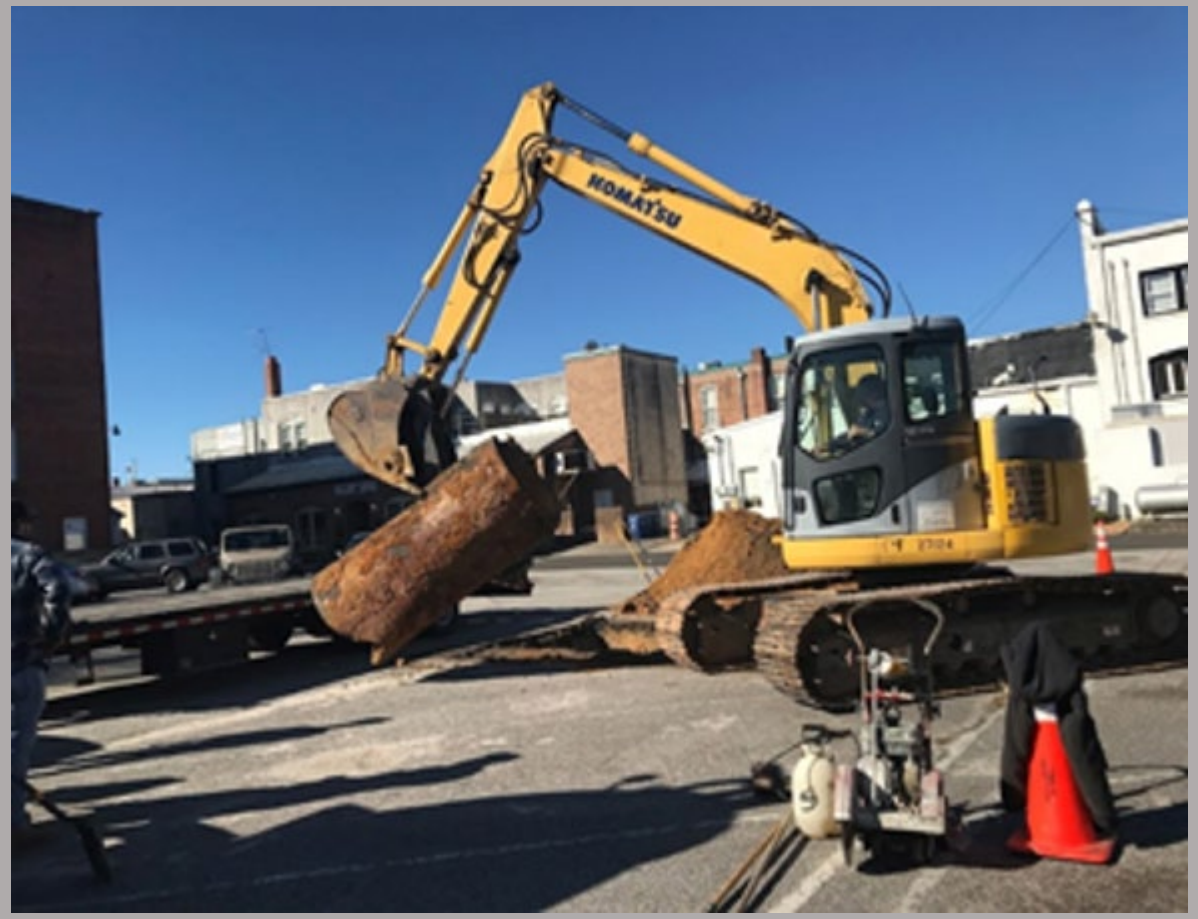
Avoid use of adjectives or adverbs that are unnecessary. Do not write "Soil very heavily impacted."

Write specifically "1,000 mg/kg TPH was detected in the soil."

Be succinct, use as few words as possible

Avoid clichés, colloquialisms, vernacular, conjunctions, emojis…

USE THE PEER REVIEW PROCESS



Proofread your own work first

Don’t take review personally

We all have room for improvement throughout our careers

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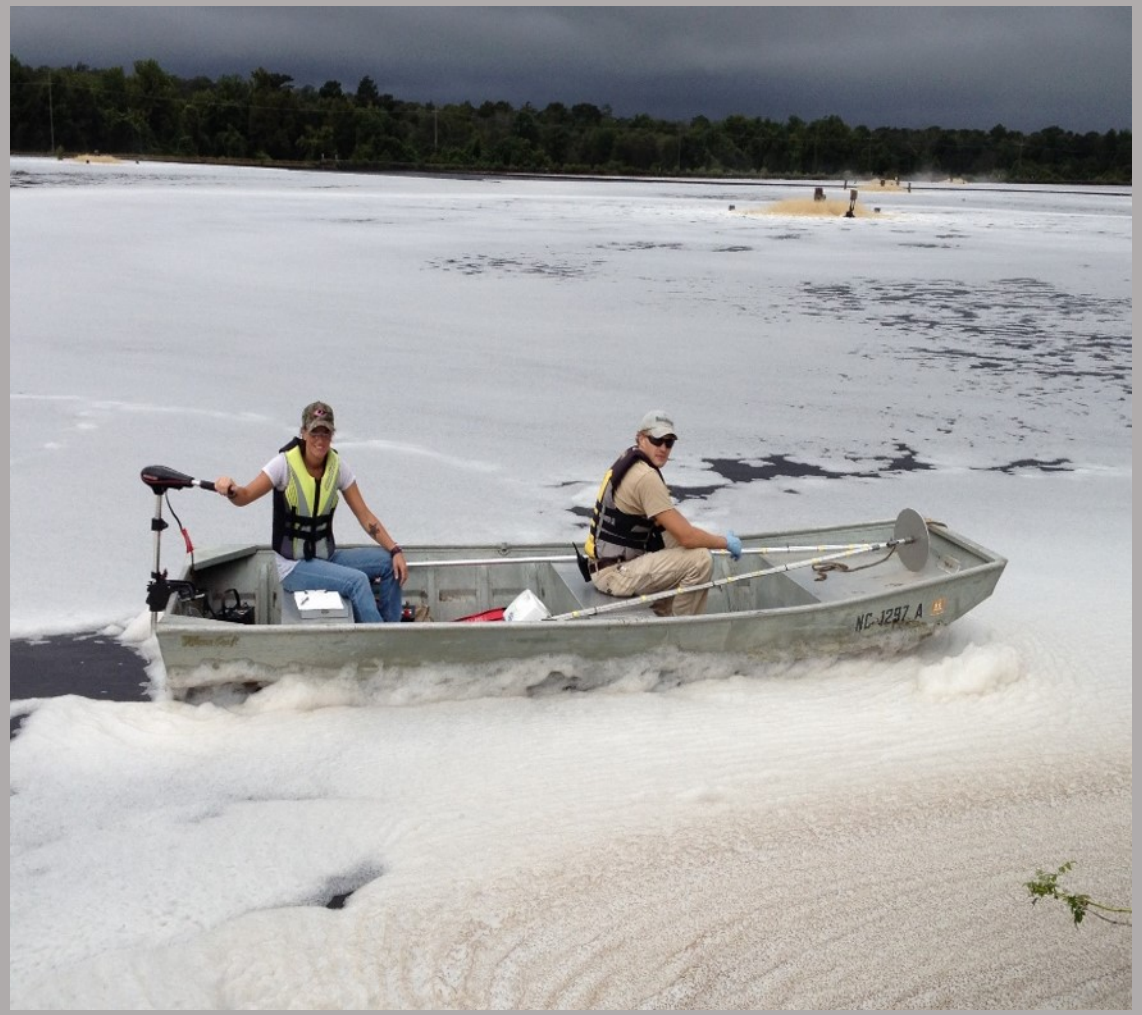
WRITING TIPS



Use active voice

Use bullets if it helps clarify your message

Remember the sentence subject

Do not use a negative subject

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PREPARATION AT THE UNIVERSITY LEVEL

RESEARCH PUBLICATIONS

COURSE RESEARCH PAPERS

COURSE TECHNICAL PAPERS

INTERNSHIP OPPORTUNITIES

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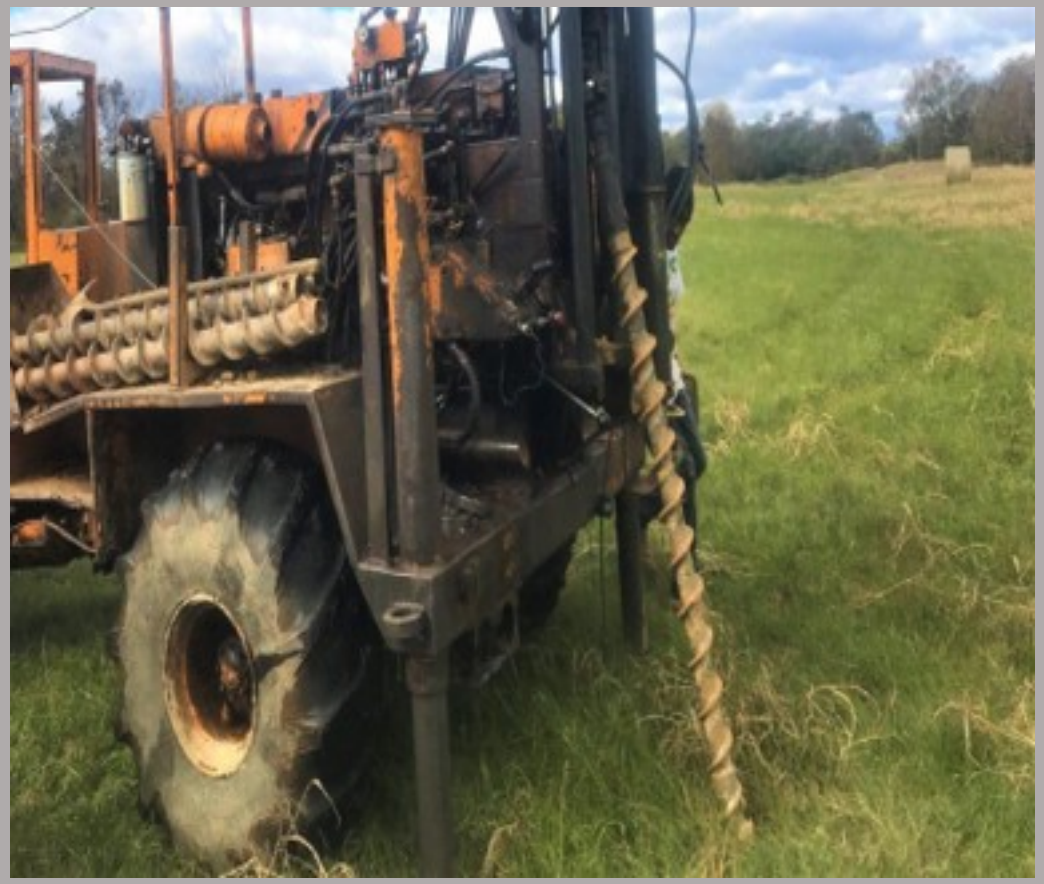
TECHNICAL COURSE AND GEOLOGIC LITERATURE

Geotechnical adjunct professor had us create reports based on real world industry issues.

Provided templates that we revised with our recommendations to a "client."

Credit for putting together a paper with an adjunct professor – someone in industry.

A geologic literature course that dissected writing research papers.



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WISH I HAD…

TAKE WRITTEN ASSIGNMENTS MORE SERIOUSLY

PRACTICED INCORPORATING MORE DATA,

e.g., TABLES AND GRAPHS INTO ASSIGNMENTS

SUBMITTED WRITTEN WORK TO PUBLICATIONS

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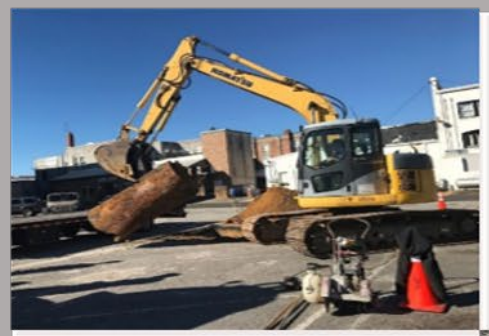
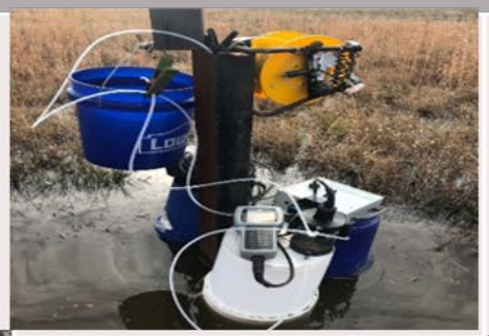
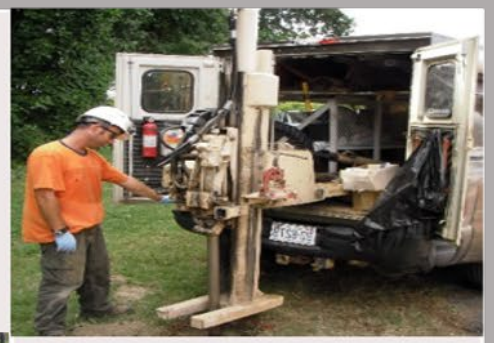
MORE EXPOSURE TO WRITING…



Groundwater Monitoring

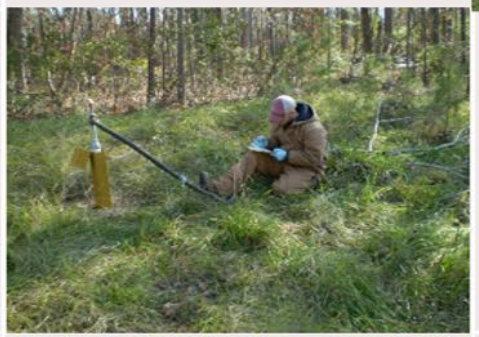


Landfills



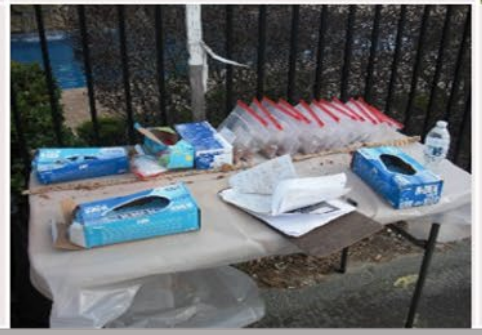
Bioremediation

Environmental Site Assessment



Vapor Intrusion

Brownfields



Waste Water Management

… CAN MAKE A DIFFERENCE.

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IMPROVING MY WRITING SKILLS

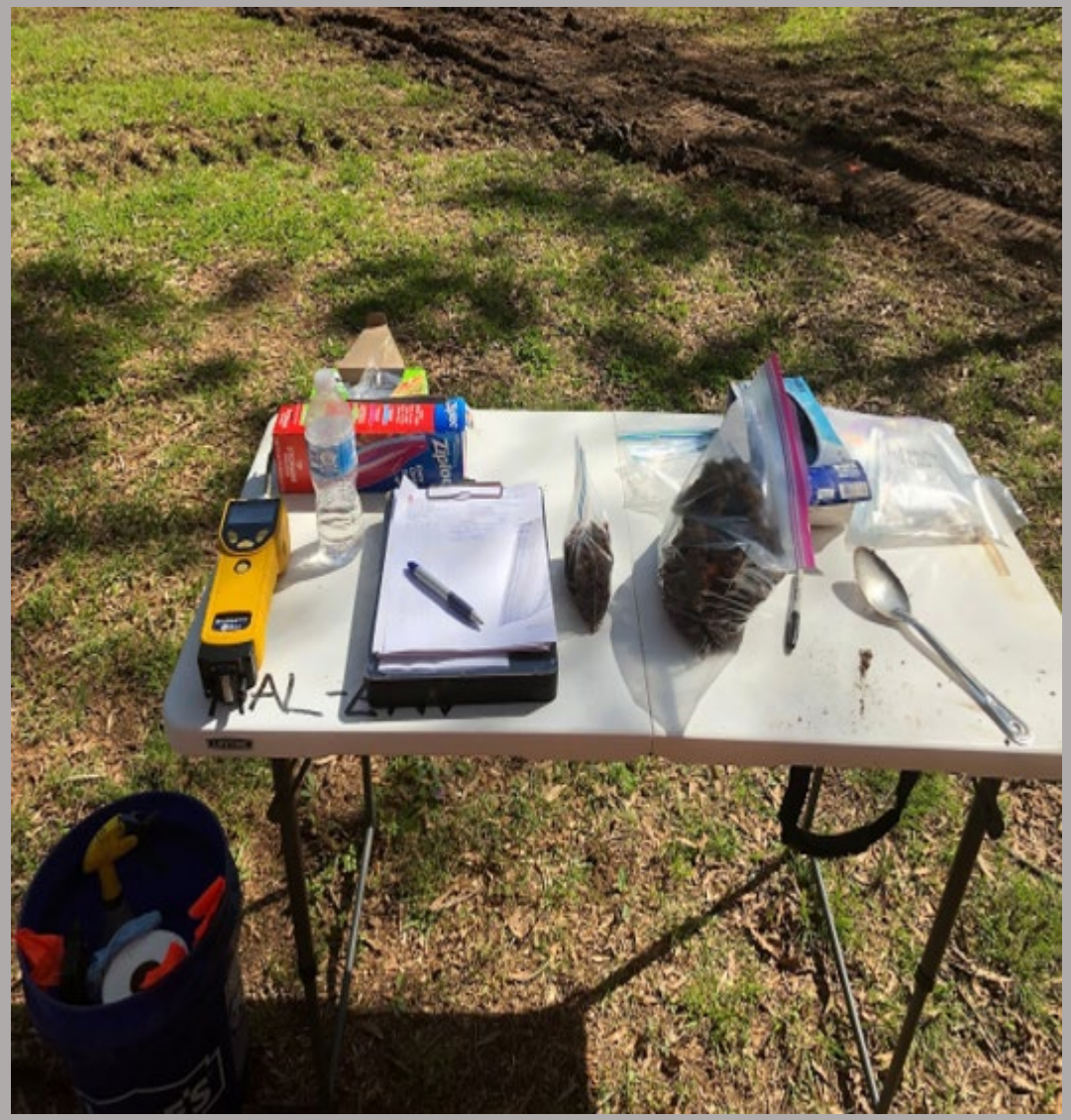
The more lengthy or in-depth reports get, the more I must make sure I don't miss any information.

Styles of writing can vary based on the client, scope of work, and project manager.

At first, I felt less inclined to “paint a picture” of the scope of work and stay restricted to a template. I still keep a similar flow, but try my best to practice the “readability” of a report.

Some information in technical writing will require the checking of sentence structure and grammatical rules.

WHAT TO EXPECT



Expect mistakes in the beginning.

Take criticism professionally.

If someone edits your work, make the changes and/or review edits.

Ask for more feedback if reasons for edits are unclear.

Practice great time management skills and get your reports done as early as possible.

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TRIALS OF JOINING THE WORKFORCE

Environmental Phase Is are massive reports which incorporate a lot of research on a property. Don't get hung up in the details. Get to know the ASTM Standard; that will help!

"Don't reinvent the wheel."

Learn important terminology and which words should not be used in reports, unless necessary.

Our generation uses technology sometimes in different ways than others, don't be afraid to find more efficient ways to complete your reports.

Pay attention, listen, learn, and practice. Writing will become easier with continuous improvement.

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EXAMPLES

"Therefore, the project developer requested a survey for the imperiled freshwater mussels to better understand any potential impact."

Technical writing can be repetitive. Don't be afraid to be repetitive. A thesaurus is not your friend. Use regulatory terms like "threatened and endangered" repeatedly. Don't look for a synonym. "Imperiled" is a lot worse than being repetitive and is undefined in the context of T&E species.

EXAMPLES

Original: **"The proposed Facility planned for rural Virginia will impact jurisdictional waters within the River drainage basin."**

Second try: **"The proposed Facility planned for rural Virginia may contain proposals to impact jurisdictional waters within the River drainage basin."**

The way it should be:

While the first draft indicated that the facility "will impact", I am not sure that the new language is any better. I am not sure why the report can't just start with a statement like,

"The proposed Facility is located in Virginia as indicated in Figure 1. Company was contracted to review the mussel population in the vicinity of the proposed project area. Nearby perennial streams include……."

I am unclear on why they seem to need to reference "impacts" at all. They were hired only to review the mussel population.

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Examples

Don't increase the Standard of Care.

"Draper Aden will ~~inspect~~ survey the building for the presence of asbestos-containing materials (ACM)."

"We will ~~make every attempt~~ endeavor to locate ACM in the survey area."

CONCLUSION

Prepare and practice writing before your professional career

Write for your audience

Stick to scope of project

Be aware of potential liabilities, protect, don't introduce more

Your writing is a direct reflection of you and your company; it will be read by others

QUESTIONS?

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