Schnabel ENGINEERING

Lessons Learned Early

(Some may have kept me alive)

Bill Murphy, PE, MS, LMASCE

May 1, 2012

Agenda

- PILLAR MOUNTAIN, KODIAK ALASKA
- PILE DRIVING INSPECTOR
- IBM, FISHKILL, NEW YORK
- TEST PIT LOGGING – PRE OSHA
- HOW DEEP IS THAT POND MUCK???

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Pillar Mountain, Kodiak, Alaska

- 1,200-ft Mountain (taller than a 100-story building)
- Top Tension Crack 1,100 ft (as tall as 100-story building)
- Talus debris at base of mountain
- Contractors used talus for borrow material, including the new container dock, triggering rock fall, and waking up an old landslide

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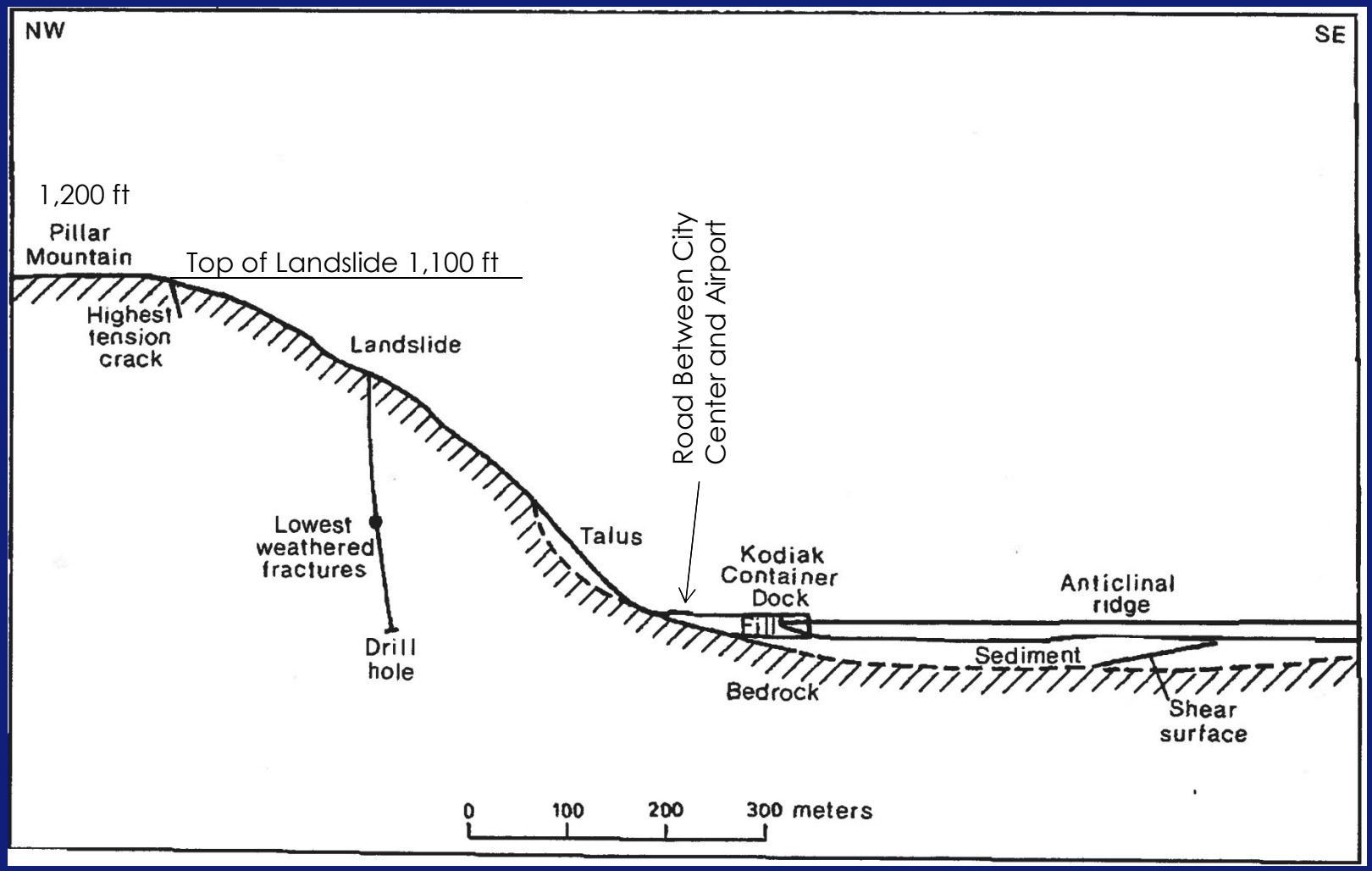
Pillar Mountain (continued)



Pillar Mountain Landslide

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Pillar Mountain (continued)

- Around 1970, we were engaged to drill a boring and install a slope inclinometer at the 850-ft level
- Dangerous……I asked top management for advice
- "Send a single guy" was the only advice I received
- The boring we drilled shows on USGS Open File Report 82-960
- We monitored a sub audible noise indicator to give us time to run

LESSON LEARNED

- Not all advice is Good Advice

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Pillar Mountain (*the rest of the story*)

- Falling rock striking roadway caused concern for public safety
- After taking a few deep breaths, I wrote a letter to the client – Highway Department – recommending a road closure
- Highway engineer shared my concern (whew) but explained that folks *would use* fishing boats as ferries, 24/7/365 in all kinds of weather…. DANGEROUS
- Highway engineer suggested flagmen at each end of the falling rock area to stop traffic during active rock fall (to my great relief).

LESSON LEARNED

- Work together with your client to solve problems

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Pile Driving Inspection – More Bad Advice

- Creosote-treated timber piles
- Steam powered pile driving rig and hammer
- I was given some really bad advice to tell the contractor that I “had done this before”
- Counted blows per foot, then blows per inch (Up Close and Personal)

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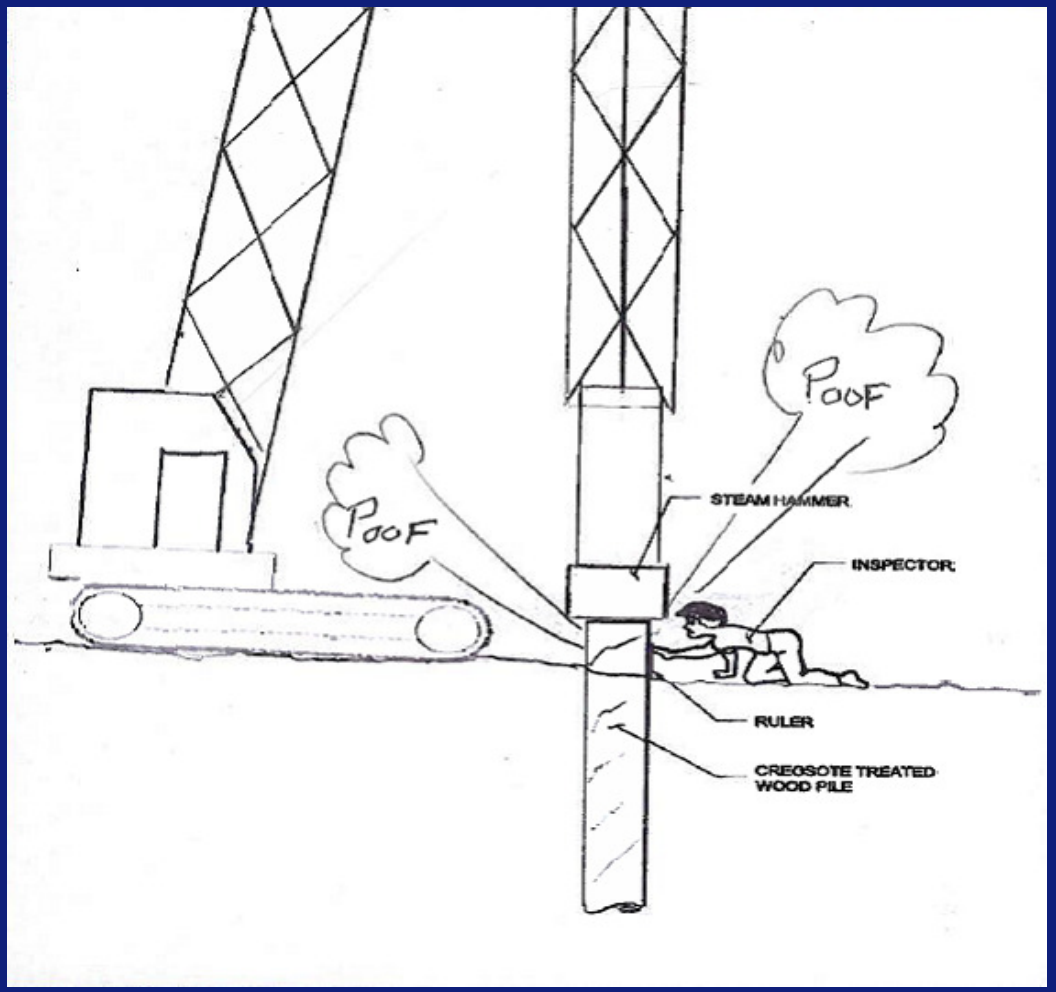
Pile Driving Inspection (continued)



Pile Driving

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Pile Driving Inspection (continued)

- Later that evening……

  Contractor drove me to the ER with blistered hands and burned face
- Next day and thereafter……

  I lined up with the contractor's crew to get my castor oil to smear over my face and hands

LESSONS LEARNED

- Use good judgment and reject bad advice
- Don't try to hide inexperience – You're not fooling anyone and you can learn a lot

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IBM – Fishkill, New York

- Comprehensive site investigation for expansion of an IBM manufacturing plant
- We were instructed to drill two borings in the middle of the adjacent field for future expansion

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Google earth

IBM – Fishkill, New York (continued)

- We drove to what seemed like a good spot and raised the drill rig mast and drill rod right into a 15,000 volt power line
- The power line broke and started a grass fire. In no time, more suits appeared than you can find at Jos. A. Bank.....
- Driller disconnected water line from the drill rod and used the drill rig as a pumper

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IBM – Fishkill, New York (continued)

- I "helped" by spraying water on the burning grass while stepping back & forth across the broken cable
- Driller said ***"BE CAREFUL, IT'S HOT!!"***
- I'm thinking, "Of course it's hot. It's lying in burning grass."
- Then, I realized he meant that it was hot because it was carrying 15,000 volts!!!
- My blood turned cold as I tip-toed backwards away from the cable

LESSONS LEARNED

- If you don't know what you are doing, stay out of the way and watch
- Look up, down, and all around

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Test Pit Logging – Pre OSHA

- Large, unspoiled site for a planned nuclear power plant
- Drilled many borings and excavated many test pits
- During the day, we observed drilling and sampling
- After the work day, we drove separately to test pit locations and logged using “pre-OSHA” methods

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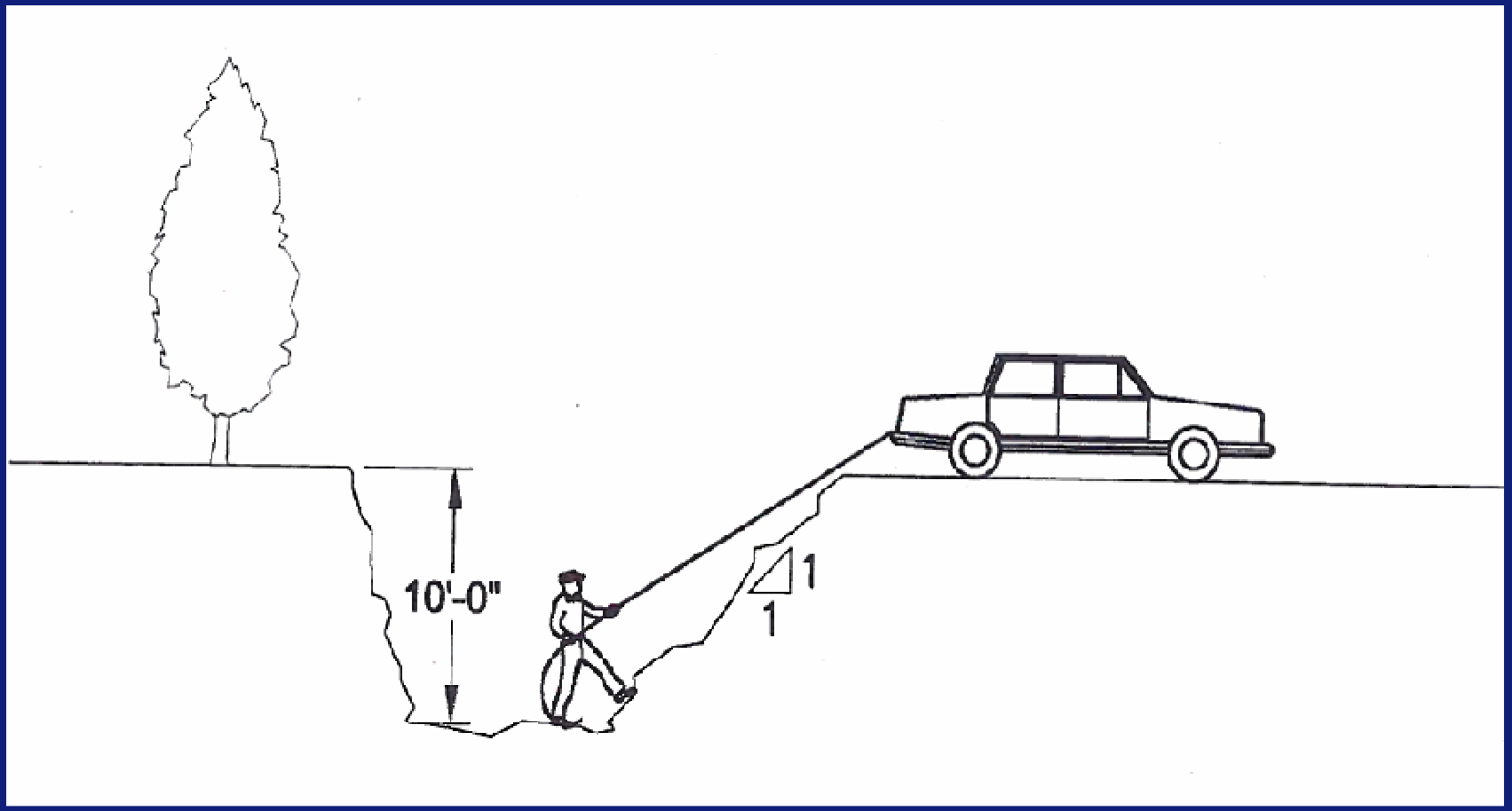
Test Pit Logging



One-Man Test Pit Inspection (Before OSHA)

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Test Pit Logging – Pre OSHA

- Fortunately soil was dense, glacial till. For non-geotechs, that is pretty stable soil

LESSON LEARNED

- Logging test pits is one of the things you should not do without the buddy system. Even in an OSHA-legal test pit, you have to bend down to sample the bottom

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How Deep Is that Pond Muck?

- Objective was to measure thickness of muck across a pond for a roadway design
- Cold winter day
- No activity on the site except guard cabin

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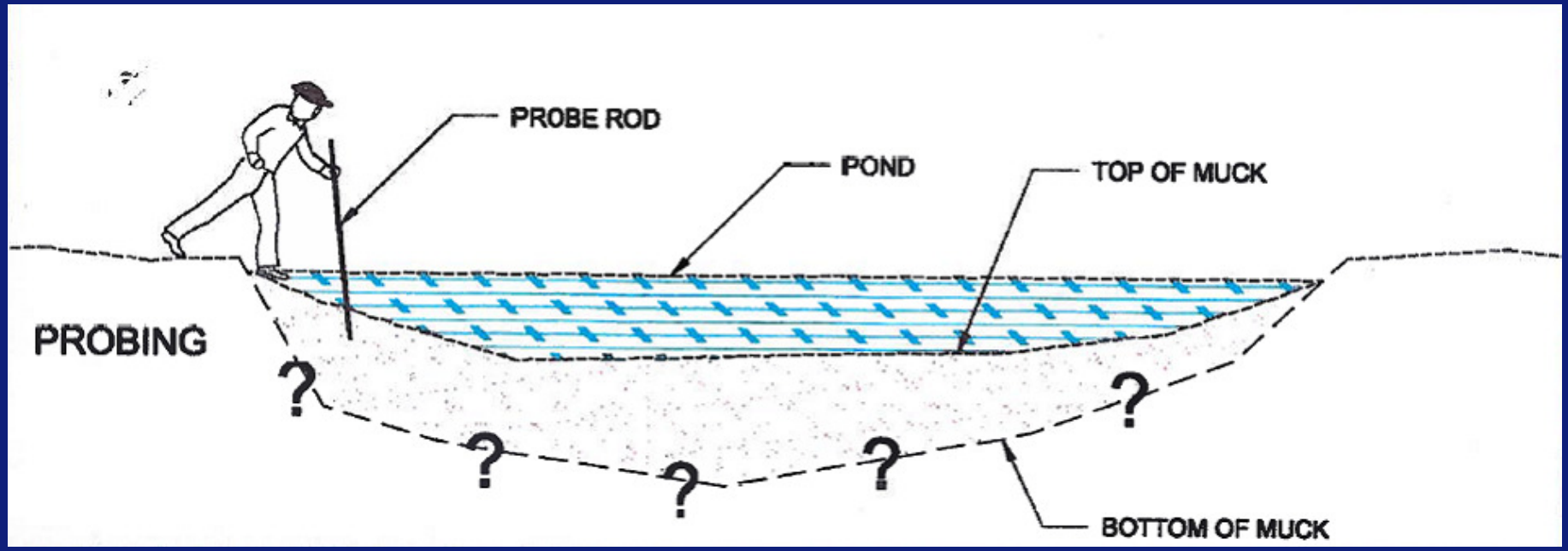
How Deep is that Pond Muck?



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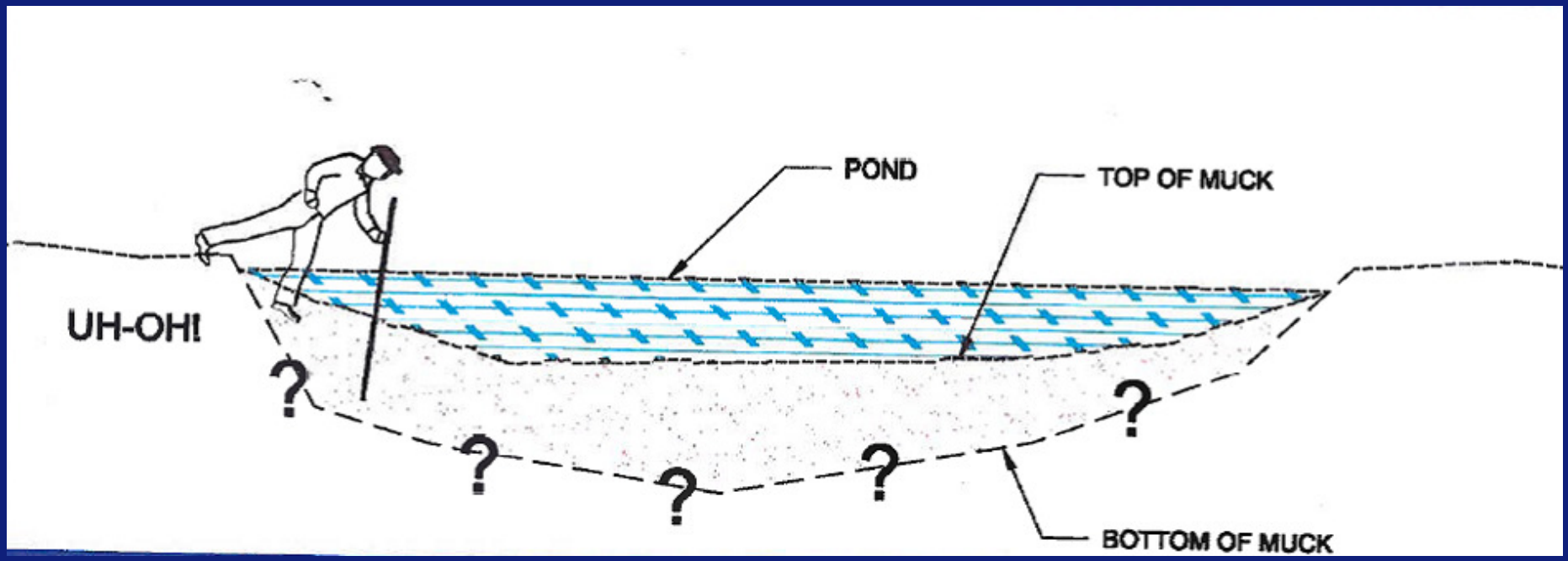

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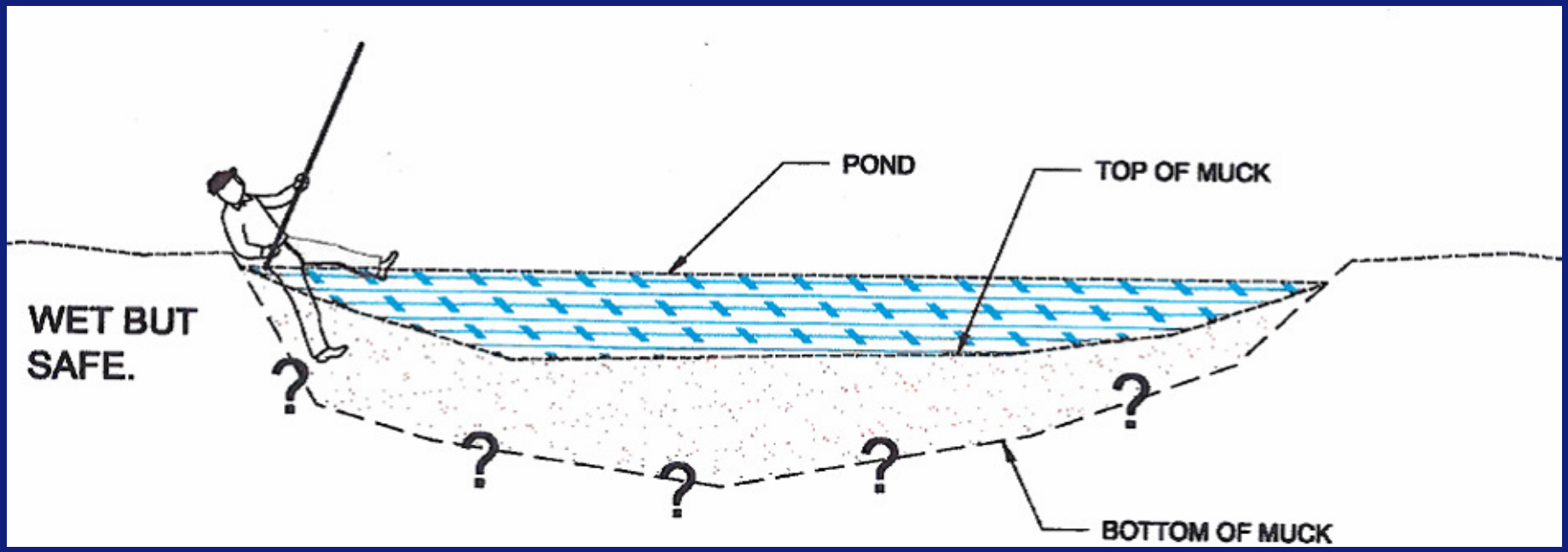

How Deep is that Muck?

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How Deep Is that Pond Muck?

LESSONS LEARNED

- Buddy system
- Safety harness

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QUESTIONS…. Like How Am I Still Here?

Save Lives. Be an organ donor.
www.beadonor.org