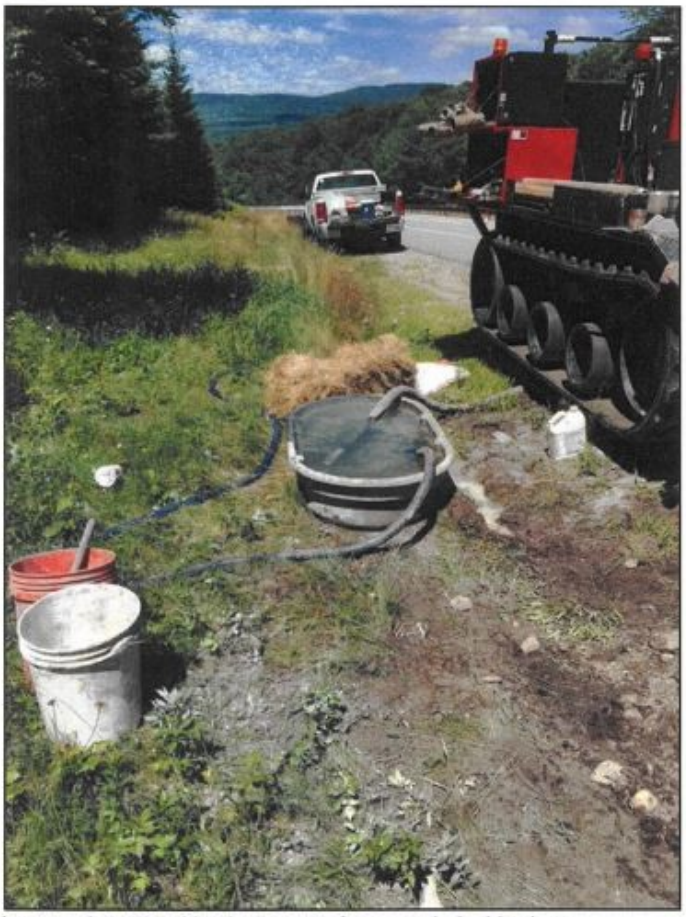
2016
October 27

On August 8th, 2016 Mr. Bisbee sent his **"Second Response to Geotechnical Test Boring Questions**" to Craig Rennie at the NH Department of Environmental Services. I have now tracked down his first response.

Intevenors attempt to navigate NPT document dump.

Describing the mess up in Kinsman Notch, Mr. Bisbee wrote: "with respect to draining water into the roadside at the location in question, S.W. Cole had set up appropriate Best Management Practices (BMPs) in the field to contain water discharged from the drilling operations to prevent inadvertent discharges from reaching aquatic resources. In this location, the water was directed to a haybale containment/filtering BMP. (see attached photograph.) According to the boring contractors the nature of the suspended solids in the discharge water was very fine and it consisted of stone dust and bentonite clay that are easily suspended in water."



Photograph 1: "Mud bucket" set up for geotechnical borings.

The slurry (usually in the tub, which appears filled with water for this photo) was not directed toward the hay bale. This is clearly shown in the photo, where the slurry mess is uphill of the tub, left and slightly downhill from the borehole. The slurry is comprised of water, drilled material, bentonite added for lubrication and to increase to viscosity of the fluid, and possibly polymer. "Suspended solids in discharge water" implies that the two things are easily separated and that the water is meant to be discharged, neither of which is true. One limp haybale is not BMPs. BMPs are frak tanks that circulate the drilling slurry, filter out the solids, re-use the slurry in the next hole, and dispose of the solids in the appropriate landfill. BMPs are silt fences and more (see list below.) There isn't supposed to be

slurry discharged from the drilling operations, “inadvertently” or intentionally.

Silt Fence - ODOT Approved

A silt fence is a temporary sediment control device used on construction sites to protect water quality in nearby streams, rivers, lakes and water features. A typical fence consists of a piece of synthetic filter fabric (also called a geotextile) stretched between a series of wooden or metal stakes.

The stakes are installed on the downhill side of the fence, and the bottom edge of the fabric is trenched into the soil and backfilled on the uphill side. The fence is installed on a site before soil disturbance (earth moving) begins, down-slope from the disturbance area.*

Silt Fencing is one of the contractors' foremost and common tools to control silt and soil infiltration on the construction site. Proper installation of a silt fence is key to its effectiveness.

“Disposal costs is a huge issue for contractors, as the costs to transport and get rid of the used mud continue to increase. The use of mud cleaners and recyclers has become commonplace by contractors for projects of all sizes, not just the larger work. Contractors are now using the systems with the compact and midsize units.

“Before it was easy to get rid of your mud. Contractors would just dump it in someone’s field,” Kuyers says. “Today, people don’t want you to do that. We are working in urban areas and there is no space to do it and you have to find a local facility to dump it and it’s costing them an arm and leg to do it.

“Every one of these contractors is using a vacuum system and they are sucking up the mud and it costs them money to dump it. This is not just occurring on large back reams. It’s an industry -wide problem,” he adds. http://trenchlessonline.com/fiber-telecom-work-hdd-industry/

Mr. Bisbee claims “The intent of the BMPs was to filter the drilling water such that the fine materials would be removed and the water would infiltrate into the ground to prevent flowage into the nearby stream (unnamed tributary to the Wild Ammonoosuc River). However, because this site was on a slope having an uneven rocky ground surface beneath the vegetative cover, the drilling discharge water appears to have flowed more quickly than it could be fully filtered. As a result some of the water containing the suspended solids reached the stream during the drilling in this location. Nonetheless, according to the drilling crews, the amount of release was very small (less than 10 gallons) and the milky discharge that traveled to the stream was minimal and quickly dissipated. PAR has assured Northern Pass that the appropriate BMPs will be implemented for the remaining test boring locations to avoid any similar discharge.”

It is hard to know where to start deconstructing this fabrication. “According to the drilling crews;” with this NPT distances themselves from responsibility. “PAR has assured Northern Pass...”; distancing again. First PAR is clearly able to deal with slopes with uneven and rocky ground surfaces beneath vegetative cover. I watched them remove discarded Eversouce poles from quite steep and rocky terrain *with vegetative cover* using ropes and helicopters. The notion that difficult terrain caused spillage of slurry is a fiction.

Northern Pass's contractor, PAR, has no understanding of boring with bentonite and other slurries. Their subcontractors were using techniques to filter silt and sand size particles instead of using equipment and practices to filter clay size particles, which bentonite falls into for classification. Clays present in a state of colloidal suspension are too small to be filtered by the methods the contractors employed. Multiply the test boring work a hundred-fold for HDD slurry and casing of foundation holes, and the wetlands, rivers, ponds, streams, and aquifers etc. will be subject to major releases of driller's mud products into these environments. Remember, "may opt" to use proper techniques is not enforced.

One would suspect was not the terrain, but methods based on cost, ignorance, and the expectation that no one would be watching, that led to the slurry dumping. The fact that slurry was noticed in two other streams, including one in Lost River Reservation, support this. An alternative explanation is a frak-out of boring fluid through the ground in water-bearing strata into the rivers. Given that Lost River is within ½ mile of this location, one might expect atypical subsurface geology and water movement and be prepared for that. The boring logs may prove helpful in this regard. Will they show losses of several hundred gallons of slurry into many of the holes, as is recorded in the logs from the shallower Clarsksville and Stewartstown borings? Will they be accurate? Are boring logs produced under oath? Will they be claimed “confidential?”

Mr. Bisbee claimed that BMPs were used, and that they would in future be implemented for the remaining test boring locations to prevent the sedimentation of rivers that they failed to prevent the in first and second (documented) instances. This makes no sense. In addition, the contractors moved on and discharged slurry in another stream several days later.

Describing the mess up in Kinsman Notch, Mr. Bisbee wrote: “ with respect to draining water into the roadside at the location in question...”

The incident that drainage referred to is a different slurry dump, shown in the photo to the left.

Look at the slurry all over the ground in the photo on page one, near the tub, and the five gallon buckets into which they hand-shoveled the solids as they sunk in the tub. It is beyond belief that a spill of ten gallons of slurry would make it from the hay bale to the pick-up truck in the photo without being visible on the ground. I photographed the stream below that was clouded with sediment and there was no slurry on the ground above it, where the drilling was taking place. This, and the presence of boring slurry uphill from the tub argue for other events.

Discharge means (a) The addition, introduction, leaking, spilling, or emitting of a pollutant to surface waters, either directly or indirectly through the groundwater, whether done intentionally, unintentionally, negligently or otherwise; or (b) The placing of a pollutant in a location where the pollutant is likely to enter surface waters. Env-Wq 1702.18.

Pollutant means "pollutant" as defined in 40 CFR 122.2. Env-Wq 1702.39. 40 CFR 122.2 defines pollutant as:

> *Pollutant* means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq.*)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:
> (a) Sewage from vessels; or
> (b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

DES rules above, yet no action has been taken against Northern Pass.

Below are some Best Management Practices from Washington State DOT that towns may want to adopt as mandatory, in absence of NH DOT and DES standards.

"The Washington State Department of Transportation (WSDOT) is dedicated to protecting the environment when conducting field exploration projects. This memo outlines the erosion/sediment control and spill prevention best management practices (BMPs) that will be followed for all drilling activities.

The two distinct scenarios for drilling include pavement and vegetated areas. The variety of erosion and sediment control BMPs may vary between the two scenarios, but the philosophy of minimizing site disturbance, reducing waste materials, trapping sediment, and stabilizing the site, remains the same.

Disturbance Minimizing BMPs:
• Select the smallest rig capable for the job
• Use elevated scaffolding for driller and assistant when necessary

Waste Reduction BMPs:
• Re-circulate drilling slurry
• Minimize volume of water for drilling

Sediment Trapping BMPs:
• Baffled mud tub (sealed with bentonite to prevent fluid loss)

• Polyacrylamide (PAM) for flocculation (must meet ANSI/NSF Standard 60)
• Silt fence (trenched, below drill, and on contour)
• Sand bag barrier (washed gravel, below drill, two rows high, and on contour)
• Straw bale barrier (trenched, staked, below drill, and on contour)
• Catch basin insert (pre-fabricated type, above or below grate)
• Storage of slurry in locked drums

Site Stabilization BMPs:
• Seed with pasture grass
• Straw mulch (2” maximum for seeded areas)
All BMPs will be installed and a thorough inspection for sensitive areas (wetlands, streams, aquifer recharge, etc.) and stormwater conveyances will be conducted, prior to starting drilling activities. At no time shall drilling slurry or cuttings be allowed to enter Water Bodies of the State of Washington.

When sensitive resources or conveyances to these areas exist, all slurry and cuttings will be stored in lockable drums and disposed of off-site. If not, the slurry will slowly be infiltrated into the ground using surrounding vegetated areas and the cuttings will be stored and disposed of off-site.

Removal of sediment control BMPs will be performed immediately after drilling is completed. Place trapped sediment with cuttings in drums. If significant soil disturbance occurs during drilling, the BMPs will be left in place until the site is stabilized with grass or mulch.

The drill crew will have a copy of the Hydraulic Project Approval (HPA), issued by the Washington State Department of Fish and Wildlife (WDFW) on-site for all work adjacent to or over water. The Supervisor will discuss the requirements of this permit with the crew prior to each project. All of the provisions in each HPA will be strictly followed until the completion of said project. The previously defined erosion/ sediment control philosophy and BMPs will be implemented in these conditions

The approach to protecting surface and ground water is focused on prevention.

The drill shaft will be filled with bentonite clay to prevent mixing of aquifers and eliminating the route for surface contaminants.
In addition, the following Spill Prevention Control & Countermeasures (SPCC) BMPs will be used when applicable:

Minimize Risk:
• Visually inspect equipment for leaks or worn hoses on a daily basis
• Fix equipment leaks as soon as possible to minimize cleanup
• Use proper equipment to transfer materials
• Reduce the overall volume of fuel and chemicals on site
• Remove as many sources of spills as possible from the site when not working (evenings/weekends)
• Use environmentally-friendly chemicals whenever possible
• Store all chemicals with lids closed and keep containers under cover
• Have secondary containment devices underneath potential spill sources when

applicable (e.g. 5 gallon bucket)

Maximize Response:
• Each drilling operation will have at least one emergency spill response kit on site at all times
• Know who to call in case of emergency spill

If an incidental spill (less than 1 gallon/small equipment leak) occurs, immediately collect contaminated soil and store it in label storage drum. Do not mix soils with different contaminants together. Report spill to your supervisor, as they are aware of reporting requirements.

If a major spill (more than 1 gallon) to water occurs, control the source of the leak if possible and contact the Washington State Emergency Management Division (800-258-5990) and the National Response Center (800-424-8802). If a major spill to soil occurs and there is immediate risk to human health and/or the environment, control the source of the leak if possible and contact the Washington State Department of Ecology (800-407-7170). Then contact your supervisor, as they are aware of reporting requirements."

http://www.wsdot.wa.gov/publications/manuals/fulltext/M46-03/Chapter3.pdf

Kris Pastoriza
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August 8, 2016

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Re: Northern Pass Transmission Project – Geotechnical Test Borings

Dear Mr. Rennie:

This is in response to your email request of August 1, 2016 that Northern Pass address the questions raised by Kris Pastoriza in her email of July 31, 2016 to the Department of Environmental Services regarding geotechnical borings that were being drilled along the shoulder of Route 112 in Woodstock, New Hampshire.

As you know, Northern Pass is undertaking further subsurface geotechnical investigations along the underground portion of the route and in select locations at station sites. The geotechnical work along the public roadways is being done to support a request by the New Hampshire Department of Transportation (NHDOT) to provide additional engineering details in order for NHDOT to complete its review of the project in a timely fashion under the schedule established by the Site Evaluation Committee ("SEC"). We offer the following in response to Ms. Pastoriza's July 31 e-mail.

1. Northern Pass has obtained the necessary permits for the geotechnical work along state highways from the NHDOT and a Special Use Permit from the United States Forest Service (USFS). NPT also obtained the appropriate permits under the Shoreland Water Quality Protection Act ("Shoreland") for various locations along the underground route. The location in question is not located in a protected shoreland, however.)

2. The general contractor for the Project (PAR Electrical Contractors, Inc.) indicated that the geotechnical crews (a subcontractor, S.W. Cole Explorations, Inc.) were

provided with copies of the permits and they were instructed that they should show copies to anyone who asks to see them. Ms. Pastoriza reported that the crews directed her to the Woodstock town offices to view copies of the permits. The Town did have copies, which is compliant with permitting requirements. To eliminate any further confusion, the crews will be reminded that they should show them to anyone who requests them.

3. With respect to draining water into the roadside at the location in question, S.W. Cole had set up appropriate Best Management Practices (BMPs) in the field to contain water discharged from the drilling operations to prevent inadvertent discharges from reaching aquatic resources. In this location, the water was directed to a haybale containment/filtering BMP. (See attached photograph.) According to the boring contractors, the nature of the suspended solids in the discharge water was very fine and it consisted of stone dust and bentonite clay that are easily suspended in water. The intent of the BMPs was to filter the drilling water such that the fine materials would be removed and the water would infiltrate into the ground to prevent flowage into the nearby stream (unnamed tributary stream to the Wild Ammonoosuc River). However, because this site was on a slope having an uneven rocky ground surface beneath the vegetative cover, the drilling discharge water appears to have flowed more quickly than it could be fully filtered. As a result, some of the water containing the suspended solids reached the stream during the drilling operation in this location. Nonetheless, according to the drilling crews, the amount of release was very small (less than 10 gallons) and the milky discharge that traveled to the stream was minimal and quickly dissipated. PAR has assured Northern Pass that the appropriate BMPs will be implemented for the remaining test boring locations to avoid any similar discharge.

4. With respect to the water withdrawal hoses placed into streams to obtain water for the drilling operations, the geotechnical crews were following standard practices as conveyed to the contractors by local towns, the USFS, and guidance provided by NHDES. The contractors obtained NHDES Fact sheet WD-DWGB-1-17 which outlines the procedures and requirements for "Water Withdrawals from Surface Waters for Bulk Transport and Delivery" and are complying with the requirements as detailed in the NHDES guidance document. S.W. Cole received permission from the US Forest Service to withdraw water from the streams within the White Mountain National Forest for the purpose of performing geotechnical borings. No permitting is necessary for these water withdrawal activities.

We have received a second e-mail today from Ms. Pastoriza about another test boring location. We are looking into that now and will provide you information on that shortly. Should you wish to discuss this issue further, we are happy to talk or meet with you at your convenience

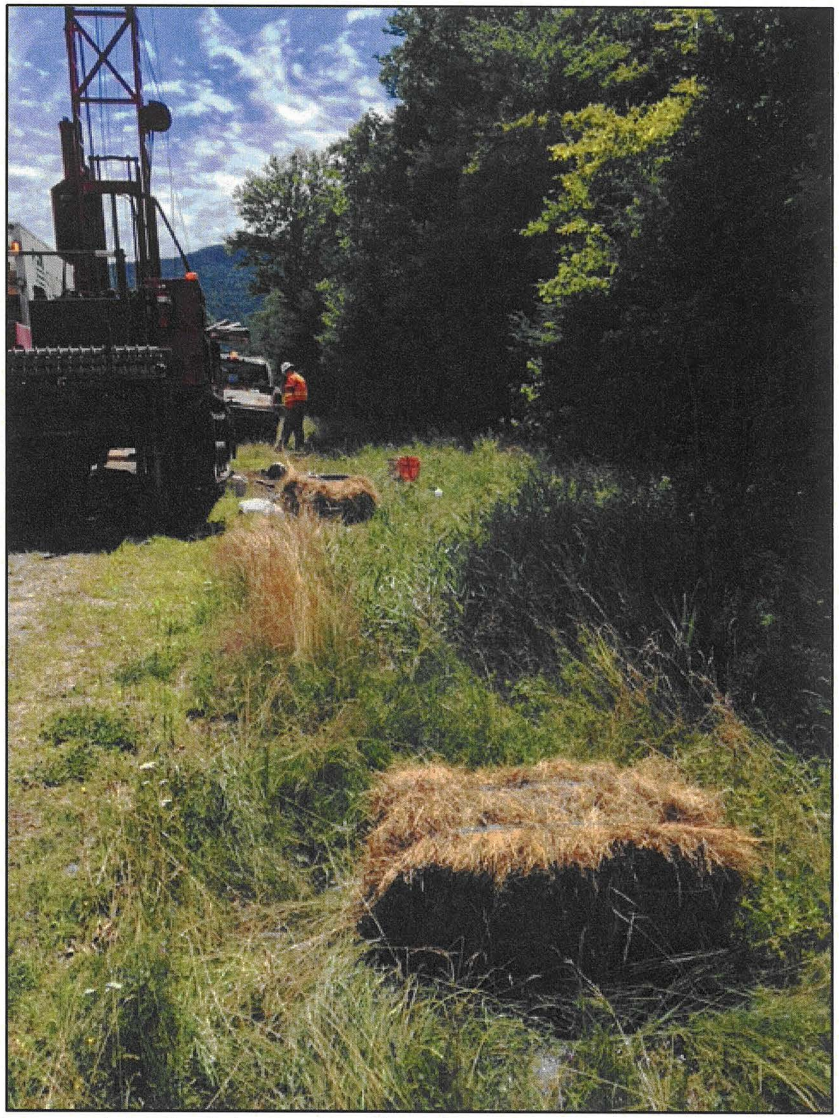
Very truly yours,

George Dana Bisbee

Attachment

cc: Jeff Blecharczyk, DES

Photograph 1: "Mud bucket" set up for geotechnical borings.



Photograph 2: Haybales used to filter discharge from mud bucket.

[Eversource] [Northern Pass Transmission]	BURNS McDONNELL	Photographs [July 30, 2016] [Boring Hole BH-31B Woodstock, NH]