To:
Cc:
Leslie[Mcvi
From: Liyang Chu
Sent: Thur 8/18/2016 3:25:50 PM
Subject: RE: Keddy Mill Status Update...Aug. 17, 2016...update

Ex. 6 - Personal Privacy

Becky,

Jim Vernon, the project hydrogeologist informed me that the Public Water Systems in Maine are regulated by Maine DOH, Drinking Water Program (not DEP). But he is unsure sure who regulates well drillers or has records of private wells. Are there any State databases for private wells? Perhaps if we can be provided with a DOH contact, we'll pursue communications with them. Thanks.

Liyang Chu

Senior Project Manager

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From: Liyang Chu

Sent: Wednesday, August 17, 2016 5:20 PM

Ex. 6 - Personal Privacy

Subject: RE: Keddy Mill Status Update...Aug. 17, 2016

Leslie, Becky,

This is the first project update since I've been out of the office for 3 weeks during July and August for my health situation. So, several tasks I had planned to accomplish will be pushed back into August and Sept. There is a lot to catch up on. So, I'll apologize in advance for several items that have been delayed.

Progress to Date:

- The draft fish tissue data report was submitted to EPA in mid-July. EPA will review first. If edits are needed, we will make them and provide updated version to EPA and MEDEP.

- In early July, Leslie and I discussed whether sampling of groundwater for perfluorinated chemicals (PFOA, PFOS) may be required because a 1969 new clipping was found that showed an "oil blaze" at the Keddy Mill, which required suppression by fire fighters and equipment from eight communities. There was some questions whether foam suppressants were used, but could be a possibility due to the nature of the oil fire. However, Leslie was contacted by Dennis Marrotte, who was the son of Rod Marrotte, a former Keddy Mill worker and a former volunteer in the Westbrook Fire Dept. Rod does not think foam suppressants were used and only water pumped from the river was. However, he was not at fire as they had guests at his home for Thanskgiving. Rod is interested in meeting someone from EPA to relay his recollections. Dennis is contact with the Gorham Fire Chief as they were H.S. classmates.

- On Sat. July 17, the Nobis crew and drilling subcontractor (Cascade Drilling, L.P.) had to prematurely terminate the Phase II borings and wells installation. At this time, 7 overburden wells and one bedrock well had been installed. The surface casing for the remaining 5 bedrock wells have been installed and were allowed to set. The Nobis site geologist (Rich Rizza) saw

the subcontractor was using newly opened tub of pipe thread lubricant that had a label "TFE" on it [see attached photo of "King Stuff – hydrocarbon free thread compound made with TFE" - Notice the environmentally responsible "green" color of the grease!]. The old tub's label was badly scratched and dirty, and the label was obscured. Rich went online and determined "TFE" was polytetrafluoroethylene [PTFE], which is a fluoropolymer in the same chemical family as Teflon. As you may be aware, PTFE/Teflon is/was manufactured using PFOA (one of several perfluorinated compounds [PFCs] of interest], which has been found in a number of private water supplies in New England and throughout the US and poses health concerns. Use of the thread lubricant with PTFE during the drilling program may result in cross-contamination and potentially bias our sampling results for PFOA in groundwater. I contacted Leslie McVickar right away, and it was decided drilling would be halted until EPA R1 could consult with EPA HQ. In the meantime, we had to release Cascade from the site as they needed to move to another project and we were not going to pay for standby for several days. Completion of the bedrock wells has been rescheduled for August 29, allowing us time to research and identify PTFE- and PFC-free pipe thread lubricants.

- During the past few weeks we have been discussing with Cascade and other drillers possible options including the use of plant/vegetable-based greases or food-grade greases. Back in the day (many years ago), Crisco shortening was an acceptable alternative to avoid pipe thread lubricants that typically had petroleum hydrocarbons because they would foul up environmental investigations through cross contamination. Probably the reason thread lubricant (aka pipe dope) has PTFE is because modern greases used in the water well and environmental drilling industries have additives that provide proper viscosity, drop point, lubricity and water- and heat-resistant properties to withstand high temperature and shear forces. These are needed to ensure threaded drilling rods and pipes can be assembled and disconnected. Drilling technology has also changed with sonic rigs, large DPT rigs, etc. that may put more stresses on drilling equipment. Cascade also informed us that they greases they used was to prevent galling of the metal drilling equipment.

- Leslie relayed to me that EPA Region 1 did consult with EPA HQ. They decided that using pipe dope with PTFE was unavoidable if industry is using it. They speculated that the amounts used in the field was probably not much, and there would be minimal residuals.

- We just received confirmation today from Cascade that they will use a food-grade grease for the rest of the drilling program.

- To date, 7 overburden monitoring wells (MW-01, MW-02, MW-03D, MW-05, MW-08, MW-09, & MW-10) and one bedrock well (MW-04B).

- Week of Jul 11 - The wells were developed by Cascade.

- Week of Jul. 27 – A team performed hydraulic conductivity tests (falling head slug tests) in the 7 overburden wells and data were acquired using downhole transducers and recorded on data loggers. No slug test could be performed on the MW-04B bedrock well as we could not acquire a slug for a 4-inch diameter well. The data were downloaded and are being reduced.

- Week of Aug. 1 – The monitoring wells were sampled for VOC, SVOCs, metals, PCB congeners/homologs, metals, and select wells were sampled for dioxins/furans. A decision was made to proceed with sampling so we can get timely data that will be helpful to assess potential VOCs presence. While our CSM is predicated on the presence of non-mobile (via the groundwater migration pathway) PCBs, PAHs, and metals, there is some uncertainty regarding VOCs, per discussions with the MEDEP and EPA. At this time, not decision had been made by EPA about sampling groundwater for PFCs. While overburden well pairs had been planned for the MW-09 and MW-10 locations to monitor groundwater above and below the clay layer, only MW-09D (deep overburden, below clay) will be installed in late August. At MW-09, there was a 10 ft thick silty clay layer, depth to bedrock was 44 ft, and a 5-ft screen was installed at the 15 to 20 ft bgs. At MW-10, there was only a 5 inches layer of clay at 9 ft bgs, depth to bedrock was only 22.5 feet, and a 5-ft screen was installed at the 14 to 19 ft bgs. The field crew also used GPS to locate all Phase I and II boring locations.

- **Becky, Leslie - We are open to discussion on the possible merits of installing a shallow overburden well at MW-10 above the 5 in. of clay lens, and whether this very thin clay provides any impediment to groundwater above it from migrating vertically deeper. I suggest we resolve this before the start of drilling on Aug. 29.**

- Week of August 8 - Leslie informed us that we should proceed with sampling groundwater for PFCs to help establish a baseline. Therefore, once the remaining wells are installed, the wells will be sampled for the standard suite and PFCs. The remaining overburden well and 5 bedrock wells will be sampled in mid-Sep.

Ongoing Activities

- Due to my unplanned absence, several items requiring my review/approval, etc. became bottlenecked. I will do my best to get these taken care of.

- Nobis had initiated a private well supply inventory for properties located within a 0.5 mile radius of the Site. A Nobis staff engineer visited both the town offices of Windham and Gorham. Neither town maintains records on private wells (whether for potable supply or irrigation). The engineer also visited the Portland Water District office in Portland, ME to obtain information on what streets and properties are serviced by their public water supply. We are developing a list of possible properties with private wells. We will use the Town of Windham's online property database to determine whether there are habitable structures. We are looking into whether the Town of Gorham has a similar database. We will also use Google Street View to look for residential structures for properties in questions. A letter report will be provided. Nobis will assist EPA in developing letters of inquiry to find out if the properties in question do or do not have private wells. Or possibly, this could be integrated with a site visit when performing Community Interviews (see below)

- Complete the draft Community Involvement Plan for submittal to EPA and MEDEP for comments. I just need to do the review and will then forward to EPA for their review. Once they ok it, we'll revise and send out to EPA and MEDEP, and will then coordinate with EPA on when to conduct community interviews. This may be a good opportunity to meet with Rod Marrotte, the retired fireman and former Keddy Mill employee. I think it would be great to get first-hand knowledge about what processes were being conducted in the various buildings. And whether degreasing (with chlorinated solvents) were done in the mill buildings. Were there spent solvents? How were they stored/disposed?

- Before my absence, I had planned to send letters to all three parties to thank them for their assistance in providing access to the background locations and will reaffirm that the analytical results will be provided to them after the data have been validated and approved for release by EPA. I will send these out in the near future and cc: EPA and MEDEP.

- Another report needing my review. We'll complete the bedrock and lineaments analysis letter report shortly for submittal.

- The QAPP is being updated to include sampling for PFCs in groundwater.

- The project team has developed the RI report outline and we will start populating the draft report with the typical site description, site history, previous investigation, field investigations methods, geology/hydrogeology, etc. We are waiting for the analytical results to be sent by the

various labs, which will then need to be validated. After that, we can proceed with data evaluation and interpretations contaminant distribution and extent, etc.

Upcoming Activities:

- Sorry, another bottleneck by me. I needed to finalize my reviews of the for the archaeological studies procurement packages and then have these re-issued.

Longer Term Activities:

- TBD - Once sufficient information has been developed for the RI report and analytical data have been validated and entered into the project database, the SLERA and BERA can be prepared. Assuming the supplemental tissue sampling will be performed, and will need to be integrated at a later date.

- Sep. – hire licensed surveyor to survey all key elevations for the new monitoring wells.

- Mid-Sep – Complete the sampling of Phase II monitoring wells (1 overburden and 5 bedrock for full-suite analysis & PFCs).

- Mid-Sep - Surface water and sediment sampling.

- Sep - possible supplemental fish tissue sampling?

- TBD – Community interviews and interviews with former fire fighters re: 1969 Thanksgiving fire.

- TBD – Issue subcontracts and initiate archaeological studies, and follow-up test pit excavations, if allowed. [we will not be using TRC archaeological staff, who are on Maine Historic Preservation Commission's approved lists of archaeologists) to avoid potential conflict of interest with SAPPI]

- Nov. – 2nd round of groundwater sampling.

- Nov. – Liquid IDW characterization and disposal. The solid IDW (containerized drilling spoils, etc.) will be left at the Site under the canopy on the eastern side of the mill building. I anticipate this could be addressed as part of the NTCRA for no additional cost. If we need to characterize and send the drums for off-site disposal, it'll cost a lot. Just thinking about cost-

effective solutions.

- TBD, probably winter,– once we have sufficient analytical results (soil, groundwater), assess whether mobile contaminants (via groundwater) are present. If so, evaluate investigations of the bedrock with borehole geophysics and discrete zone sampling, evaluate groundwater discharges to surface water with pore water samplers and seepage meters.

Other:

- Becky, Leslie – (this is a repeat of an above item) We are open to discussion on the possible merits of installing a shallow overburden well at MW-10 above the 5 in. of clay lens, and whether this very thin clay provides any impediment to groundwater above it from migrating vertically deeper. I suggest we resolve this before the start of drilling on Aug. 29.

- Becky – For the residential well survey, we wanted to find out whether the State maintains a database of water wells. It is different in every state. In some NE states, the town or city's dept. of health issues permits, so there are records. But not in Gorham or Windham. If you can direct us to the appropriate MEDEP party, we can follow through.

- Becky – we plan to collect sediment samples and will use the START 2012 data to guide selection of sample locations. However, the issue was raised about access to the shoreline. In Maine regulations, what is considered the property line when it abuts a waterway? Are there allowances for scientific studies (which the RI would qualify)? If you can direct us to the appropriate MEDEP party, we can follow through. One concern is whether we will be allowed to collect sediment from SAPPI's shoreline, both at the Hydro property and then along the Transmission Line Property. And yes, the START contractor is Nobis and that team collected samples from the boats without setting foot on the shore. But, we need to collect samples no deeper than 2 inches, per Rick Sugat's direction. And this may entail the need to get out of the boat and stand in the sediment. Does the property line extend to the middle of the river?

- The staff in the field noted that during rain events, water appears to run off from the adjacent condominium property (and probably others), enters into the Site, flows downhill and into the buildings, and into the openings in the floor slabs and into the river. So, surface soil with PCBs and other contaminants are continually being washed into the river from the Site. We believe the adjacent property owners should be responsible for not allowing surface runoff to enter into the Site. Even if there were no contamination, flooding is a concern for any property owner. In our case, runoff from offsite is causing unwanted contamination into the river. We may need to do some interim grading to alleviate the situation. We plan to assess this situation further.

Any questions, please let me know.

Thanks.

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