

DimockJul12-144

**KarenD  
Johnson/R3/USEPA/US**

11/25/2011 08:26 AM

To Michael DAndrea, Jon Capacasa, Victoria Binetti, Jennie  
Saxe

cc

bcc

Subject Fw: Follow up on our previous call

FYI- This is what I sent to Scott this morning, but got a message he is out of the office...

Karen D. Johnson, Chief

Ground Water & Enforcement Branch

----- Forwarded by KarenD Johnson/R3/USEPA/US on 11/25/2011 09:25 AM -----

From: KarenD Johnson/R3/USEPA/US  
To: "Perry, Scott (DEP)" <scperry@pa.gov>  
Date: 11/25/2011 09:12 AM  
Subject: Follow up on our previous call

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Scott- I think , as you suggested it would be a good idea to get together to talk about some of the technical issues associated with Dimock and probably other areas experiencing some significant effects from the drilling activities. It is clear from the volumes of data that DEP has collected, and Cabot in the Dimock area, that there are ground water effects on the private wells, and that in some cases the treatment systems installed at least by Cabot in Dimock , are not capable of removing all the contaminants. I'm particularly concerned that several of the homes with treatment have the highest levels of Propane , Ethane and Ethene, after treatment. It may be that the samples were during a "shake down period" on the treatment, but in talking to the residents that are using the treatment systems, they really don't have any confidence that they can drink their water. There are also a number of contaminants like ethylene glycol , VOC's (like toluene, and xylene) and radionuclides that have also been detected in the data you sent us, but the systems aren't really designed to remove them.

I'm also concerned that several of the homes (about 4 or 5), along Carter Road don't have any knowledge of whether their wells were tested or whether they have problems. With the number of homes that have had problems, and the fact that most of these homes had children living in them, I can see if we can sample and fill in any data gaps, if Cabot or your office have never tested these residences...Some of them were rental properties, but none were getting bottled water, and maybe the current tenants just don't know samples were taken, but they should know if they are living there. I'll have to get you the names next week and we can talk about options to verify there have/have not been samples at these locations.

Also, as we discussed, we're looking at some options to see what tools can be run through multiple strings of pipe to confirm whether the squeeze cement jobs were successful in stopping the gas migration. Many could still have noise, temperature or other logs we routinely run for mechanical integrity to verify the cement bond. From the looks of some of the methane values, I think there is still migration going on and the only means of remedying it might be to have Cabot put in some shallow gas recovery wells to take the pressure off the upper formations. Dave Recetenwald is looking into some of the options to run when you have to log through both the 4. 5 and 7 inch casing strings.

Another area I'd like to discuss with you and your technical staff is diesel fracing ....as I told you there were allegations that at least with Costello 1 V and Costello2 V, Cabot used diesel for fracing, and I guess we have to assume, if they did, then they did others with diesel. I've asked for some guidance from HQ on pursuing an information request to Cabot on the matter. Our Office of Enforcement sent information requests to other companies but I don't believe Cabot was included. It may be an avenue to have mechanical integrity confirmed on the wells and address other issues that may not have been addressed to date. They certainly had a large number of wells with problems.

Jennie Saxe also indicated she'd talked to John Heinz about wanting to get together to talk about issues..let me know what works. I still have not gotten any of the information from the residents that came in from other counties, but the Dimock data has been enough to try and understand..... I think we're expecting a summary document with data from that meeting.

I'll talk with you next week when I get the list of homes without samples /water on Carter Rd. Have a good weekend!

Karen D. Johnson, Chief  
Ground Water & Enforcement Branch

DimockJul12-152

**Jon Capacasa /R3/USEPA/US**

11/30/2011 10:32 AM

To "Perry, Scott (DEP)"

cc Kheffner, daunkst, Victoria Binetti, KarenD Johnson

bcc

Subject Drinking Water in Dimock, PA

Scott - this is a follow-up to recent contacts from Karen Johnson of my staff and my call with you earlier this morning on the Dimock matter. We agreed that a meeting of our agencies would be good to do as soon as possible and I provide below some of the open questions for that discussion.

We have been reviewing the data from citizens, PADEP and Cabot on drinking water wells in Dimock, both on Carter Road and in the near vicinity. It appears that Cabot's drilling program in 2008 and beyond likely caused or contributed to methane migration and other impacts on the shallow aquifers used by private wells. It is also evident, from the extraordinary volumes of data collected by PADEP and the multiple Orders issued to Cabot, that this has been a difficult issue to resolve, with multiple drinking water wells being impacted from drilling activities. The planned meeting of our agencies would focus on working down the list of remaining questions and technical issues involved here.

We want to thank you for sharing the data you've collected, and data from Cabot and other parties, so we could attempt to address the citizens' concerns raised in recent weeks about the November 30 termination of provided water to the residents that have not signed on to the provision of treatment systems. We ask that you consider whatever mechanisms you might have to continue or extend the supply of alternate water to these and other residents in the vicinity for the following reasons:

- We have not finished reviewing the data and we realize that technically the provisions of the Cabot Order have been satisfied since the residents have been offered access to treatment. But after talking to the residents and performing a preliminary review of the data, concerns continue about the reliability of the systems provided by Cabot, if they were intended to have returned the drinking water to pre-drilling quality (background levels). In a number of the six homes that have accepted treatment there are still periodic levels of metals (aluminum, iron, manganese, etc.) well above pre-drilling levels; there are also periodic high levels of methane, ethane and ethene post-treatment. Some samples also show the presence of organic chemicals (like toluene, ethylene glycol) and radionuclides that the treatment systems were not designed to remove. These are common constituents of hydrofracking fluids, flowback and produced waters.
- The citizens are concerned that the long-term effectiveness of the treatment systems and O&M are not sufficient and should be further evaluated (by the state or a third party). Have you have considered requiring NSF-certified treatment systems be used and that maintenance be done by a third-party certified operator?
- The remediation of the natural gas wells by Cabot is apparently still underway to address methane migration pathways. While the remediation of many of the gas production wells required squeezing cement to attempt to stop the flow of methane into the shallow aquifers, it is difficult after the remediation to verify success, except when the methane levels drop. In some wells they have not, and there may need to

be further testing/logging or other remediation performed, like placing shallow gas production wells to draw off the pressure in the Upper Devonian formations.

- At the request of the citizens, ATSDR continues to review the volumes of data provided to determine if there are cumulative health risks beyond those addressed by individual Safe Drinking Water Act standards. We have also asked about data from four remaining homes in the vicinity that may not have been sampled (in addition to one which you've indicated was sampled and for which results showed no impact).

EPA has heard additional allegations that Cabot used diesel fuel to hydrofrack at least two and maybe more of the early vertical wells. This could make them subject to the Safe Drinking Water Act's Underground Injection Control Program, for which EPA Region 3 is the permitting authority. We continue to evaluate this and may pursue an information request or other course of action for proper follow-up.

We ask that you consider whatever mechanisms you have to continue to have Cabot provide alternate water to the residents until these issues can be addressed. We look forward to meeting to discuss this further at your earliest convenience - Karen Johnson and Linda Boornazian are our contacts here to help arrange logistics. Feel free to call me at 215-814-5422 in the interim. Thanks.

Jon M. Capacasa, Director

Water Protection Division, EPA Region III