

From: Dr. Jerry A. Moore, PHD, JD
Sent: Monday, May 06, 2013 2:50 PM
To: Hanlon, Edward
Subject: LATE COMMENTS FOR THE HYDRAULIC FRACTURING ADVISORY
PANEL MEETING

ED THANKS FOR ALLOWING ME TO SUBMIT LATE DR. MOORE

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Sent by E-Mail to Edward Hanlon today 5/6/2013 as a late submission

Edward Hanlon
United States Environmental Protection Agency
Hydraulic Fracturing Research Advisory Panel
Washington, D.C.

Dear Mr. Hanlon;

Ed it has been a long time since I served on the Water Research Committee serving the Office of Health and Environmental Assessment, headed by Dr. Elizabeth Anderson. Those days were calm when compared to what the Agency is involved in now with involvement in Hydraulic Fracturing Water (frac water) potential impact in the environment per your Advisory Panel Meeting.

I have been involved in oil and gas for over 30 years and have been active in drilling and fracking shallow wells and have been an active observer in the deep well fracking. My limited funds prevented me from doing my own Marcellus well. However, I have extensive experience in the process of establishing a well whether it be a deep or shallow well and upon the effect of contaminated water on the environment. My MS thesis dealt with the effect of acid mine water on vascular aquatic plants in the Monongahela River in West Virginia.

The critical decisions on the protection of water resources is not to let invasion of bad water to happen initially. In the well process it is critical to do a good cement job and then the possibility of having frac water come back up hole is one in a million in my opinion. I have never observed this event happening in my turf which is West Virginia/Pennsylvania. Wells cost a lot of money. Bad cementing is checked on each well by the oil and gas inspector along with company personnel. If any bad cement is discovered then the remainder of the process is aborted. I have never observed an aborted process or a leaking cement job. This type of information is repeated in the literature and among geologists all over America, and the rest of the world, especially in the Middle East.

In light of my 30 years of experience in this field and my 25 years in the U.S. Government with 23 of it in the EPA as a Charter Employee I want to present a few questions and statements to the Panel.; Has the Agency or any State conducted a before and after study using radio labeled isotopes which are non lethal or toxic to determine if any issues remain after fracturing . In the old days at Mannington West Virginia where fracturing was done on oil and gas resources no recordable issues were recorded. Dr. White, then head of the West Virginia Geological Survey first discovered the Flaggy Meadow field which had wells placed in it sometimes 200 feet or less apart for drilling and fracturing. The oil and gas resource was sometimes less than 1,500 feet in depth. The town as peppered with wells and some were even drilled in graveyards. No water wells were ever contaminated and the whole town used well water at that time for drinking water. Pressure on these old wells was immense.

Gas from Deep wells has other materials in the gas and frac water which would make them identifiable from gas coming from non well sources. Have you conducted any studies of a scientific nature on these types of situations? With a 40 percent increase of gas from deep wells there appears not to be any more or less contaminants in the air or water sampled and analyzed by the EPA or the STATES. So leaking is not occurring or if it does it is at a very small rate. This demonstrates the complete attention by the industry to areas of well production and gas and oil transport. What future studies will be conducted by the EPA or required by the industry to continue this monitoring?

If frac water comes up through the strata, where the production pipe is located, outside the cement what possible strata have you studied to determine the porosity of those strata and their ability to absorb the pressurized leakage before it might come up to a water table? Before frac water leakage would occur at a point below ground water levels would there not be evidence of its occurrence because the entire cement job would not go bad all at once. There could be placed in the cement marker indicators which would be water soluble dyes which would come up hole in case of leakage. Each location where leakage might occur would have a separate colored dye which would be indicative of the elevation down hole where the leakage might be. All dyes placed below the water table would be 100 feet or lower below those strata and would be the marker for potential ground water contamination At the EPA dyes were often used in Superfund to indicate the flow of contaminate liquids, including water. They are cheap and would be a valuable service in each well.

There are many opinions given by many researchers and oil and gas companies as well as major universities. How many of these people have ever gotten their hands greasy or watched a well come in with a lot of good pressure? If not they are to be encouraged to go to the field and see how things really happen? Well tenders are the first watch of issues after a well is on line. These people should be listened to with great enthusiasm as well as oil and gas state associations.

Thanks,

Dr. Jerry A. Moore, PHD, JD