

Monzeglio, Hope, NMENV

From: Monzeglio, Hope, NMENV
Sent: Monday, June 15, 2009 9:47 AM
To: 'Rajen, Gaurav'
Cc: Riege, Ed; Turri, Mark; Cobrain, Dave, NMENV
Subject: RE: monitoring well Installation

Raj

NMED has reviewed your June 9, 2009 email. NMED does not concur with all of your conclusions. NMED would like to note that MTBE is usually the first contaminant one will see in a plume and benzene moves relatively more slowly. Monitoring wells OW-14, OW-29, and OW-30 all contain contaminants (MTBE is not the only issue for the installation of additional monitoring wells) and there are no wells north and northwest of OW-29 to determine if contaminants are migrating north/northwest and potentially off-site.

As I have stated before, Gallup may not use the NM EIB of 0.1 mg/L for MTBE, this is an aesthetic value. Gallup must apply the Preliminary Remediation Goals, Human Health Medium-Specific Screening Levels, tap water of .012 mg/L for MTBE as Gallup is a RCRA site. In addition, all water in NM is considered a resource.

Gallup may either install two monitoring wells in accordance with NMED's May 28, 2009 letter or install one monitoring well following the requirements in NMED's May 28, 2009 letter and remobilize and install the other well at a later date. Remediation cannot be used as an alternative to installing the monitoring wells.

Please let me know if you have additional questions.

Hope

From: Rajen, Gaurav [mailto:Gaurav.Rajen@wnr.com]
Sent: Tuesday, June 09, 2009 4:53 PM
To: Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Cc: Riege, Ed; Turri, Mark
Subject: Some more of our reasoning regarding MTBE and BTEX monitoring wells needed in our NE section

Dear Hope:

It is a pleasure to write further and present more of our thinking on adding two new monitoring wells in the North-east section of our facility. What we would like to suggest for your consideration is that we add one new monitoring well (let's call it OW-31) north and slightly west of OW-30. If contamination is found here that warrants another well west of this new well, we will add one more. However, if OW-31 is clean enough, then we have existing wells OW-29 and OW-13 to the west from OW-14 and OW-30 that will serve to track the westward movement of a plume. Simultaneously, we would work with you to get an approved work plan and start remediating the MTBE to prevent any further spread. We feel the clean-up goal could be the one set by the NM EIB of 0.1 mg/L at MTBE sites, instead of a residential tap water level, as no drinking water source can be impacted.

Please take a look at the three graphs below and the explanatory figure. We understand that you believe that a plume has moved north from OW-14 and has gone past OW-30. However, levels in OW-14 and OW-30 are rising and falling in tandem. And, OW-29 is showing a steady increase. This to us seems to indicate that the plume is moving west – and, OW-29 and OW-13 are already in place to the west to serve as good observation wells. If the plume was moving north, the results for OW-14 and OW-30 would not be rising and falling together. Rather, we feel that these wells are representative of the area of initial contamination, which is being pushed to the west by up-gradient groundwater entering from the east.

Further, there is BTEX detected at OW-14 – but none elsewhere. Like MTBE, benzene also dissolves in water. So, why has benzene not shown up in OW-30 if the plume is moving north? This may be because the BTEX came from a spill to the south and more west than the MTBE spill. The MTBE spill may have lain along a path more in line with OW-30. This shows that movement from OW-14 is very slow, and not in the northward direction – at least BTEX is not traveling that way. The MTBE more dissolved in groundwater not sorbing with soil particles as much as BTEX and moving more rapidly than BTEX may be passing between OW-14 and OW-30, with the edges having touched OW-14 and now OW-30, and rising and falling in tandem. In this case, the plume will be heading straight for OW-29.

6/15/2009

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Sent: Tuesday, June 09, 2009 4:53 PM
To: Monzeglio, Hope, NMENV; Cobrain, Dave, NMENV
Cc: Riege, Ed; Turri, Mark
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This is an issue that needs clarification, which is why we initially suggested waiting two more quarters to see if the plume is moving north and west from OW-30, or mainly west. However, after more deliberation, we would like to suggest that one new well (OW-31) to the north could be established on your schedule. This should let us know if the plume has passed by OW-30 in a northward direction. If this new well is clean, we will not need new wells to the west, as OW-29 and OW-13 are in place. If OW-31 is dirty, we will establish a second well (OW-32) to the west of OW-31 as you suggest.

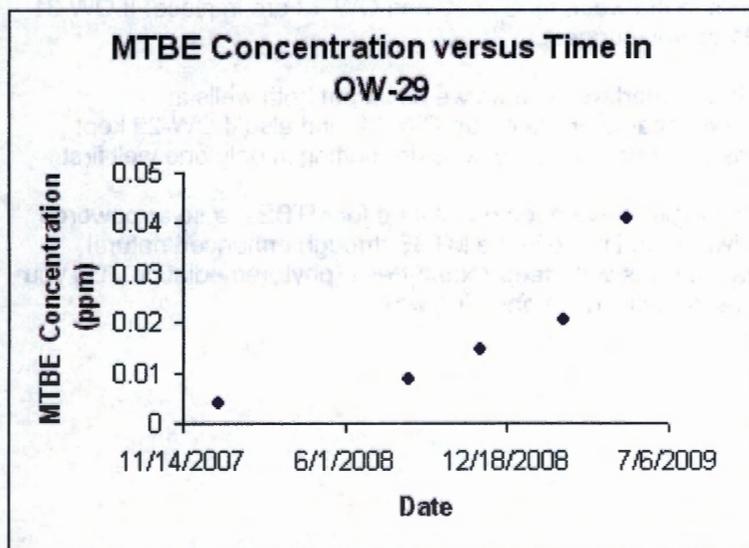
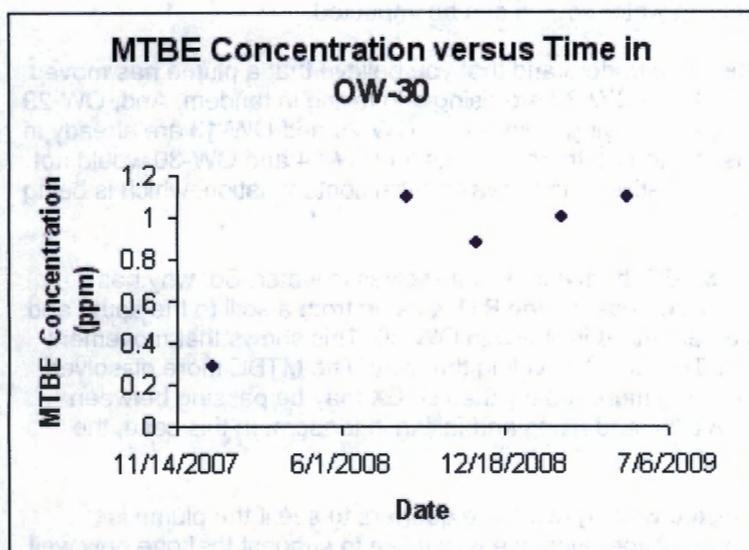
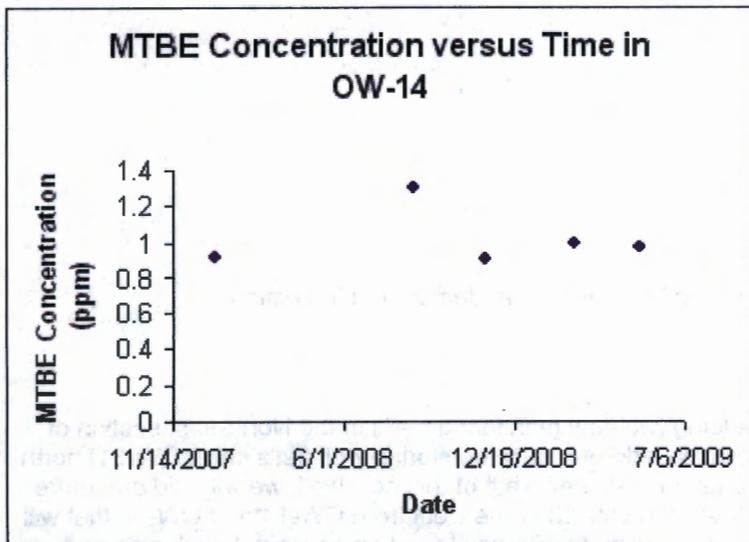
If you feel that our thinking is plausible, it might behoove us all to wait two quarters, as then we could put both wells in simultaneously – the key marker would be if OW-30 went up further and became greater than OW-14, and also if OW-29 kept steadily increasing. If the pattern demonstrated in our attached graphs continues, we may consider putting in only one well first.

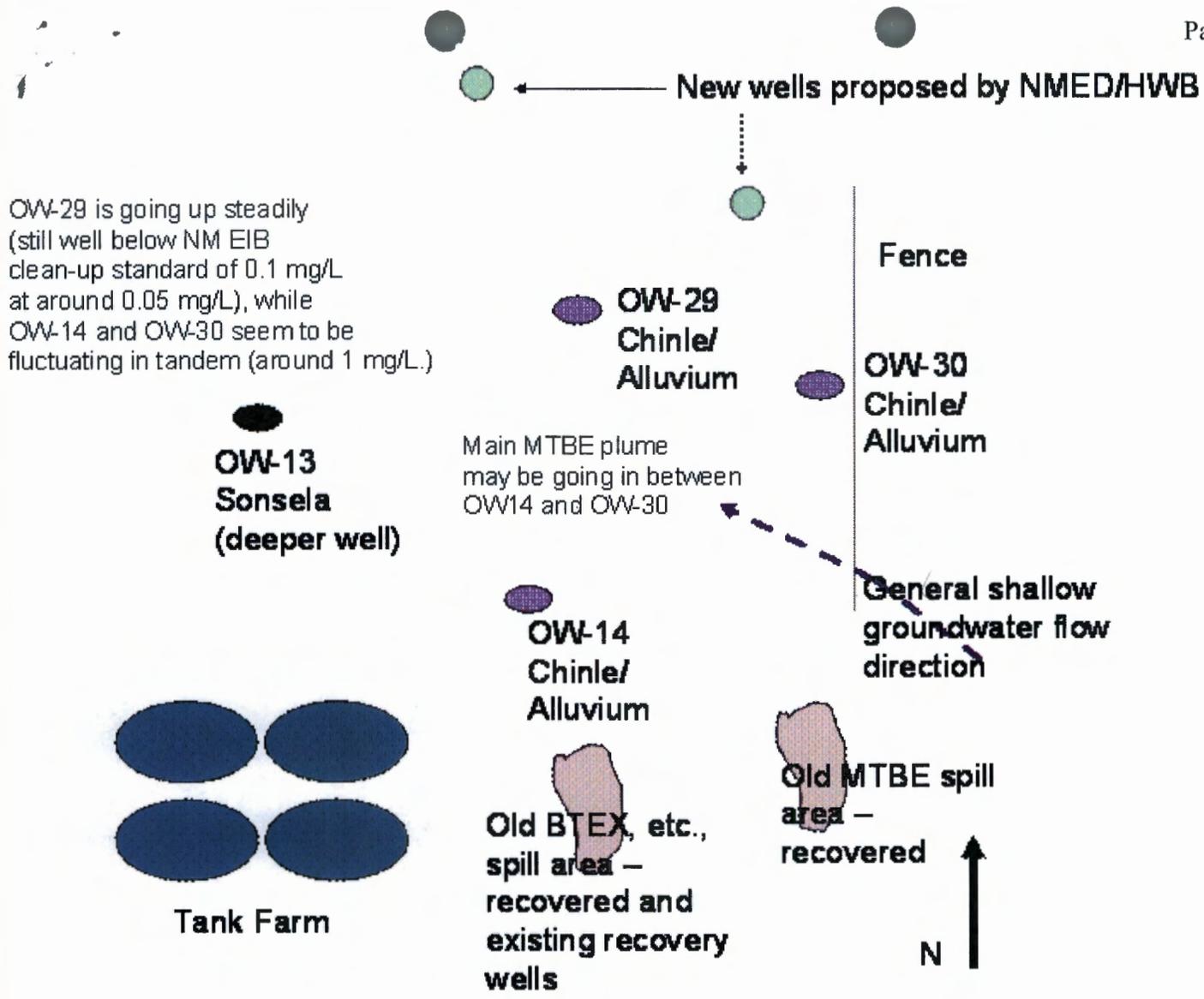
Also, please consider that some extremely effective remediation technologies have been developed for MTBE – a solar-powered pump for instance could be dropped into OW-30 to aerate the groundwater and remove the MTBE through enhanced natural attenuation. We have also been following projects that have had great success with deep-rooted trees (phytoremediation). Do you concur that remediation may be an option to consider as an alternative to additional monitoring wells?

We look forward to your response with great interest.

Best regards,

Raj





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