192

Greenhagen, Andrew

From: McDonald, Jeffrey
Sent: Thursday, February 27, 2014 5:33 PM
To: mark.d.williams@pnnl.gov
Cc: Gilmore, Tyler J; Greenhagen, Andrew; Bayer, MaryRose
Subject: AoR delineation

Importance: High

Mark,

Thanks for talking today about the FutureGen Alliance (FGA) project. As we discussed, the issue of how the AoR is defined for this project has been a subject of discussion internally and with PNNL. Some of the issues that have caused us concern are:

- the regulatory requirement to track the pressure front
- the relatively small AoR that the plume footprint would define compared to one defined by increased formation pressures
- the inconsistent approach if ADM uses the Nicot method and the FGA uses the Birkholzer method

Although using the Nicot method is likely to result in a large AoR, we think that this needs to be considered. I think the FGA/PNNL has looked at this large area already, so we hope this is not too great a burden. We need to talk about how pressure might be monitored in the Mt. Simon, in the near plume and distant areas. We have had some discussions with you and your colleagues on this issue this week and previously. A few of the items that we'd like FGA to provide (by Monday, 3/3/14 ideally) are:

- a complete list of wells that penetrate the confining zone within a Nicot method described AoR. We think this is the maximum extent of the 5 psi contour. That is, where the Mt. Simon might be expected to have 5 psi above the current formation pressure based upon the proposed injection when the contour is furthest from the project location.
- an expanded list of all the monitoring wells with their predicted pressure profiles (injection and post injection phases)
- details on their DINSAR monitoring
    - how much area are you proposing to monitor?
    - how sensitive this is to changes in pressure. Specifically, can you overlay changes in pressure with changes in surface deformation?
- Details on how far outside the plume the passive seismic monitoring can "see" and what resolution you expect with increasing distance.

Please correct me if I missed an issue that we discussed. As always, if you and Tyler have questions or comments, please let us know.

Thanks,

Jeff

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