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Bayer, MaryRose

From: Bayer, MaryRose
Sent: Tuesday, March 04, 2014 12:15 PM
To: Gilmore, Tyler J
Cc: Akhavan, Maryam; Greenhagen, Andrew; McDonald, Jeffrey; Smith, Robert H; Roy, Stephen; Bergman, Ronald
Subject: FG-EPA Call Notes: March
Attachments: FG call notes 030314.docx

Tyler,
As discussed, attached, please find notes from yesterday's call. If you have any questions, edits or comments, please feel free to let us know.

Regards,
Molly

Mary Rose Bayer
Geologist, UIC GS Team Leader
U.S. Environmental Protection Agency
Office of Ground Water & Drinking Water: Prevention Branch
Phone: (202) 564-1981

Conference Call with FutureGen (FG) 2.0: March 3, 2014

Summary:

FutureGen and EPA held a conference call (1:30-3:00, CST) to discuss:

- Delineation of an AoR for the FutureGen 2.0 project that accounts for the increased pressure associated with the injection operation in addition to the CO₂ plume;
- Testing and Monitoring in the AoR that accounts for both direct and indirect plume and pressure front monitoring.

EPA communicated that:

- The FutureGen 2.0 project must have an AoR that accounts for both the CO₂ plume and the associated pressure front.

FutureGen indicated that¹:

- The Nicot² (2009) and Birkholzer (2011) approaches did not “buy us [FG] anything” and were “overly conservative”.
- They are concerned that the Nicot and Birkholzer methods are not applicable at the FG site.

FutureGen provided information about:

- Their evaluation of wells, artificial penetrations, faults and fractures in several ‘concentric’ areas:
 - 5x5 miles
 - 20-30 mile radius
 - State and interstate
- Microseismic resolution (horizontal and vertical)
- DINSAR spatial coverage
- Pros and cons of siting a direct monitoring well outside the plume area at this time vs. at a point in the future after operational information has been collected
 - Agreed to include a strategy in the Testing and Monitoring Plan to site a direct pressure monitoring well (in the injection zone) in the pressure front portion of the FG AoR within a timeframe specified by FG

EPA communicated that time is an important factor in decision-making this week. We must wrap-up any deliberations on all topics discussed on this call by Friday, March 7, 2014.

Expectations/Deliverables/Timeline:

- ASAP:
 - FutureGen to send to EPA: Plans that are “in good shape” (e.g., Well Plugging Plan; ERRP; QASP)

¹ FutureGen will send Nicot and Birkholzer calculations to facilitate EPA evaluations.

² EPA indicated that the application of “thief zones” is not a prerequisite for use of an AoR delineation approach. Assuming no thief zones is a more conservative approach with which EPA is comfortable.

- FutureGen to provide the five proposed AoR reevaluation triggers
- EPA will evaluate and consider whether there are any additional considerations required of the permit applicant with the characterization/delineation of a larger AoR.
- By Wednesday:
 - EPA to propose: An AoR delineation approach/an AoR accounting for pressure
 - FutureGen to send to EPA: Testing and Monitoring Plan; Other Plans?
 - FutureGen to provide a strategy (e.g., schedule and procedures) which will go in the Testing and Monitoring Plan to site a direct pressure monitoring well in the injection zone for monitoring the pressure front portion of the FG AoR within a timeframe specified by FG
- By Friday:
 - EPA and FutureGen will have resolved all AoR delineation and testing and monitoring issues

Participants:

- EPA: Rob Smith, Andrew Greenhagen, Stephen Roy, Steve Jann, Mary Rose Bayer, Maryam Akhavan
- FutureGen: Tyler, Delphine, Alain, Frank, Vince, Jake, Dave, Mark
- The Cadmus Group: Inci Demirkhanli