2025-04-17_Gasco: DNAPL Data Gaps Meeting

Meeting Title:	Gasco: DNAPL Data Gaps Meeting
Date/Time:	April 17, 2025 / 12:00 - 2:00 pm
Attendees:	AQ: Halah Voges, Matt Davis, Ryan Barth (remote) EE: Rob Ede DEQ: Wes Thomas, Heidi Nelson, Amber Lutey, Sarah Van Glubt GEI: Dave Terry (remote), Andy Adinolfi (remote), Matt O'Neil (remote), Paul Jansen (remote)
Location:	DEQ NW Region Office

Meeting Notes:

- Model Overview:
  - EVS Model with several layers that can be turned on and off. Layers include: hydrogeologic units, arial photography, topography, DNAPL observations in previous borings and wells, proposed sampling locations, initial ISS prisms, the proposed work platform surface for ISS construction, different vertical zones for DNAPL presented in FS.
  - Hydrogeologic zones are contoured using TIN methodology.
  - DNAPL observations include information from DNAPL mobility tests, DNAPL well entry, visual observations recorded in boring logs, and TarGOST results. DNAPL observations include TarGOST responses greater than background with a negative tau trend; so some of these observations may represent false positive results.
  - The ISS prisms shown are those included in NW Natural's ISS Design Basis memo (which DEQ has not approved).
  - Model does not allow a vertical 'fly through' yet that would allow a user to see changes in the ISS footprint at different depths, but that feature could be added.
  - Model does not parse out DNAPL observations by date. GEI notes that some of the data are more than 20 years old.

- GEI asks if AQ is planning to evaluate changes to DNAPL mobility after IRAM completion compared to current conditions. GEI notes previous experience where construction of a wall created significant changes (increases) in DNAPL mobility. GEI also comments that changes in hydraulics can have an effect on DNAPL mobility. These include higher groundwater velocities very close the barrier.
  - AQ will include those considerations in the IRAM design. AQ has also been looking at the vertical gradients needed to maintain DNAPL stability over the long term.

- DNAPL Data Gaps Planning
  - AQ provides an overview of the data gaps investigation.
  - DEQ/GEI observe that several locations appear to be within the ISS prisms and ask about step-outs if/when those TarGOST borings confirm DNAPL presence.
    - AQ confirms that the plan will include step-outs if DNAPL is observed in these locations.
  - DEQ asks why some of the TarGOST borings are only planned to shallower depths.
    - AQ states that these depths correspond with nearby DNAPL depths. The planned TarGOST borings can extend to a reasonable depth below those depths if needed.
  - DEQ points out two 'gaps' in DNAPL data that are bounded by densely spaced DNAPL observations. The denser data were intended to assess DNAPL migration because of HC&C system operation, and intentionally targeted areas outside of the known DNAPL footprint. The gaps between these locations represent uncertainty that DEQ wants to investigate to close data gaps.
    - AQ will review those data and consider the purpose of historical data when refining the data gap boring locations.
  - DEQ asks about DNAPL delineation upgradient of the current 'area of interest' on the Siltronic property. Understanding DNAPL upgradient of the area of interest in this area is critical for IRAM planning, since this area has deeper and more mobile DNAPL.
    - AQ agrees that the area upgradient of the 'area of interest' on the Siltronic GSA is

a data gap and is currently planning two TarGOST borings.
        - DEQ notes that depending on the results, there may be significant advantages to expanding the bulk ISS work to more holistically treat deep DNAPL in this are under one mobilization.
        - AQ/EE indicate that NW Natural is not planning to expand the ISS work, and doing so would present a schedule concern. NW Natural is planning to address areas outside of the area of concern in the FS.
        - DEQ disagrees that doing so presents a schedule concern. DEQ understands NW Natural's desire to address areas outside of the area of interest in the FS, although DNAPL in this area is likely to be considered a high-priority hot spot, and limiting the number of mobilizations for the class of ISS equipment capable of treating DNAPL at these depths presents a cost advantage that should not be ignored. DEQ is willing to table the conversation about expanding the ISS work in this area for now, pending results of the data gaps investigation. DEQ's direction to expand the ISS work based on the data gaps work should not be unexpected.
    - GEI asks if AQ has correlated TarGOST responses with negative tau trends with physical observations from adjacent or nearby borings to confirm the absence of DNAPL. GEI is currently working on another project where they observed a negative tau trend at depth, but a confirmation sample revealed the presence of DNAPL (MGP waste). GEI sent a sample of the material to Dakota for additional analysis.
        - AQ has not made a comparison, and there may not be enough co-located borings to do so. AQ will review existing data at shallower intervals.
        - Confirmation of negative tau trends should be part of the data gaps investigation.
    - Data replacement
        - DEQ observed that some TarGOST locations are intended to confirm older TarGOST responses. TG-1S is an example. DEQ asks if AQ is planning to propose data replacement
            - The data gaps work will include proposed data replacement.
            - DEQ states that the work plan should clearly identify data replacement as a data use objective, and which historical borings are being assessed/considered for data replacement. DEQ does not want to negotiate data replacement after completing the investigation.
            - AQ will clearly identify locations subject to data replacement in the work plan.

- Follow up on LOE Discussions.
    - AQ is planning to develop a cost analysis to support the LOE evaluation. But would like to better define risk by comparing the unit costs for DNAPL treatment with a corresponding risk reduction. AQ proposes a qualitative approach that assigns a relative risk classification based on several factors.
        - DEQ conceptually agrees that several factors would be important to consider. DEQ will continue to consider potentially relevant factors.
        - DEQ believes that it would be more helpful to walk through actual examples than try to develop abstract or conceptual rules.