Project: MLGW Allen Wellfield  
Team: UoM CAESER, EnSafe, USGS  
Status report: September 2018

Project Status

1. Phase I: Historical and Regulatory Research
   o 96% complete
     ▪ We are holding at this percentage so we can update file information as new sites or investigations become available during the project period.
     ▪ Maintenance work conducted on the Phase I web portal.

2. Phase II: Groundwater Sampling
   ▪ Lumped parameter and geochemical modeling
     • Environmental tracer results indicate five production wells with tritium contents above background with 3 samples yielding >10% modern water that is 34 to 38 years old (piston flow ages). Six production wells had SF₆ contents above background levels with modern water piston-flow ages ranging from 24 to 39 years old.
     • Lumped parameter modeling of environmental tracer results yielded high model error or unrealistic ages when all data were used. The best results were achieved with either ³H and ³He or ³H and SF₆, which yielded mixing percentages of 1 to 23% modern water.
     • Analysis of geochemical data indicate mixing between shallow aquifer water from wells 1T8 or 1T7 with Memphis aquifer water from production well 103 best predicts the composition of production waters sampled in 2017. Mixing percentages range from 0 to 20% shallow aquifer water, with highest mixing percentages in production well waters with significant ³H, SF₆, or both.
   ▪ Compilation of groundwater quality results and trend analysis
     • Historical MLGW water quality data compiled and historical USGS data is in progress.
     • Water quality and water level data for the 2017 and 2018 quarterly sampling events compiled and QAQC’d.

3. Phase III: 3D Groundwater Model
   o Continue building Contaminant Transport Model
     ▪ Examining developed contaminant transport models and fixing issues.

Next Steps

1. Begin outline for final report for Phase I, II and III. Phase I deliverable is the interactive web portal already completed by EnSafe.
2. Complete historical trend analysis.
Recommendations

1. Still need all available water quality data from shallow wells and production wells for the Allen Well Field post-2000.

Comments

1. None