GWCC Meeting:

In attendance: Marje Gale, Liz Royer, Jordyn Geller (intern), Jon Kim, Connor Remmington (UVM intern), Rodney Pingree, Scott Stewart, Kasey Kathan, Michael Smith, Darlene Autery (call in), Kira Jacobs EPA (call in), Joe Ayotte USGS (call in)

1. Potential corrosivity of untreated groundwater in the United States – Joe Ayotte (call in) Joe presented the recent done as part of the National Water Quality Assessment (NAWQA 1991 and Ken Moulton's study) on lead (Pb) mobilization. There was congressional inquiry following Flint, Michigan. About ¹/₂ the nation gets groundwater from "private" wells. The study didn't look at aquifer type or rock geochemistry and its correlation to corrosivity (but should be done). Joe mentioned a Virginia study of more than 2100 private systems – nearly 20% first flush samples were > 15 ug/l (EPA action level). About 27,000 wells were used in the USGS study, looking at Langelier Saturation Index (LSI), Potential to Promote Galvanic Corrosion (PPGC), chloride to sulfate mass ratio and alkalinity. LSI for 22,000 locations - 32% corrosive, 63% indeterminate for scale formation. PPGC - 27,000 locations used - Vermont was moderate but based on few samples and principle aquifer type not local geology. East coast area higher than rest of nation. Joe also mentioned a study done in southern NH looking at domestic wells (about 9,000 people) for As, Fe, Mn, PB, Ur. 3% had Pb above 15 ug/l and 6.5% had Pb above 5 ug/l. High Fe seemed to correlate with high Pb. Most samples taken at pressure tank (which had higher concentrations), few at the tap, few if any at the source. High water level (static < 20 feet) also showed high Pb. Sediment filters and softeners reduced levels. Joe's presentation was well done and brought up several areas that would make great future projects and supports the need for private well testing.

Jon mentioned the Middlebury detailed studies for 300 wells and cooperative matching funds (40% USGS/60 % State). Roughly \$3000 per student to conduct these studies, VGS just needs funding. Joe (USGS) and Marcel (EPA) should talk about possible Vermont or New England studies using the VGS data and funding! Maybe look radiochems vs Pb.

Joe mentioned new projects a) domestic well arsenic study – nation-wide geology based and b) DOT iron fouling where blasting of rock occurs – surface water impacts. They are also looking at isotopes and gases to get at sources of nitrate in GW. DOT responsible for nitrates from blasting along with agriculture and septic systems. Perfluorinated compounds may be studied using isotopes (tritium, CFC, Fx6, tritium/helium, carbon 14, noble gases, dissolved oxygen) to fingerprint age of GW.

Kira brought up the last Private Well Conference which took place in 2011. At that time, Vermont was supposed host the next conference. We thought reviving this conference would be a great topic for next meeting.

2. Update on Aquifer Characterization in the Bennington Area – Jon Kim gave short but informative discussion of the continuing work in Bennington and brought a wall sized

map of the road cut showing the anticline/syncline complex which is around 300 meters long.

We discussed how this work has indicated a potential need to providing training for Well Drillers on logging wells with more detail on glacial geology (overburden) and bedrock geology with actual representative cuttings/samples. Another good topic for the potential Private well conference and Water Well Advisory Meeting and Winter/Spring Well Driller annual meeting.

- 3. PFC Sampling Update -- Michael provided an update on sampling domestic wells near IBM all were clean, IBM had PFOA at 2.6 ppt. Domestic wells within a 0.25 mile radius of the Shaftsbury Landfill all have been sampled with results showing no PFOS but PFOA within 8 of the 24 wells at concentrations < 20ppt but as high of 16 ppt. Pownal Tannery was sampled for PFOS and Champlain Cable is being sampled.
- Discussion Database Functionality: Scott recently held an initial meeting to get ideas for improving the Well Driller (well completion report) database and its utility. A number of tasks have been identified and subsequent meetings will be held to pursue scope and prioritize them, mainly;
 - a. Developing an on-line form for Well drillers to enter WCRs (office or from the field using tablets/existing technology);
 - b. Creating or improving process for staff and public to give us corrected WCR data or locations;
 - c. Data clean-up of existing database;
 - d. Combined with USGS grant application or separate project to use staff, interns to field locate known wells and GPS locations.
 - e. Links to other databases, such as Waste Management (sites), VDH Tracker, etc.
 - f. Others?

Kira mentioned that we should look at NH DES "OneStop" reporting website for ideas – Paul Susca

http://des.nh.gov/onestop/

5. Update from Liz Royer and Jordyn Geller

Jordyn has almost completed her review of town ordinance and plans for Source Protection efforts. It varies state-wide, some are great, some mention SPA but have no maps, Regional Planning Commissions provide some towns with maps, etc. Jordyn will be providing a final report with some of the best plans. This should help us focus outreach efforts.

Rodney, Liz, Kira are on a workgroup mentioned at the previous meeting. Liz provided an abstract for a talk to be presented in November in Quebec City regarding Vermont's Source Protection Program. Land. Water. Sources. Great job and great work getting international attention for this important issue. Here's the link to the abstract.

https://rv-eau.ca/en/

Ideas for the next GWCC Meeting - Look into having Jeff Comstock give us an update of Dept. of Ag's RAP rules.

Next GWCC Meeting

Thursday, September 22 1pm @ ANR Annex (directions at bottom)

Directions to ANR Annex:

Coming off I-89 at exit 8 for Montpelier First left onto Dog River Road (going past the Park and Ride) Go under the interstate and bear right onto Junction Road. The Annex Building is the 3rd building on the right, across from Capital Steel It is a green/grey steel building with an enclosed/fenced area to the right

Call in number: 802-828-5017