

Nebraska Ground Water Monitoring Advisory Committee (NGWMAC)
Wednesday, April 27, 2011, 10:00 AM-12:00 Noon
NDEQ Van Dorn Street Facility, Lincoln, Nebraska

MEETING NOTES

1. *Introductions*

The following individuals were present:

Marty Link, NDEQ	Ron Zelt, USGS	Karen O'Connor, OA
Dana Divine, ENWRA	Jane Griffith, GWF	Mary Spalding, UNL
Colleen Steele, UNL	Teyona Powell, NDNR	Ginny McGuire, USGS
Dan Inman, NDEQ	Chris Hobza, USGS	Steve Herdzina, LPSNRD
Chris Witthuhn, LPSNRD	Ryan Rezac, LPSNRD	Ryan Chapman, NDEQ
Jim Newman, LLCHD	John Chess, LLCHD	John Gates, UNL
Pat O'Brien, NARD	Dick Ehrman, LPSNRD	

2. *NDEQ Annual Ground Water Monitoring Report to the Legislature/ Statewide GW Monitoring Network—Marty Link, NDEQ*

Link gave an overview of the 2010 report. Overall, the conclusions for the 2010 report are similar to those of past years, emphasizing the value of ground water to Nebraska, pointing out the importance of the Clearinghouse database, noting that the NRDs and other entities are collecting a large amount of data, and noting that trend analysis is difficult on a statewide basis, although 1994-2009 data does show a slight upward trend. She noted that NDEQ depends upon the Clearinghouse data to generate the report as it is, and that this data also helps the agency in determining the need for additional study. Such is the case with NDEQ beginning a Ground Water Management Area (GWMA) study in Cuming County with the Lower Elkhorn NRD. She also described a nitrate project that NDEQ is undertaking in three locations across Nebraska, which will involve installation of multiple dedicated monitoring wells to evaluate the effect of irrigation and land use on nitrate levels in these areas.

Dick Ehrman asked if NDEQ had received any questions or requests from the Legislature as a result of the report; Link responded that, as usual, there had been none. John Chess observed that term limits mean that no or very few legislators who understood the original legislation were still in the Legislature, so he thought that the report is a good tool to at least keep some of these issues in front of them.

Finally, Link described another report issued by NDEQ which involves this monitoring data. NDEQ has put out their 2010 Water Programs Monitoring Report, which summarizes in non-technical language all of the agency's monitoring efforts to cover both ground and surface water. Both the ground water report and the water programs report can be obtained by contacting NDEQ, or visiting their website at www.deq.ne.gov.

3. *Ag Chemical Clearinghouse Update—Mary Spalding/Colleen Steele, UNL*

Steele updated the group on the status of the Clearinghouse. The fall 2010 update contained data through 2009, and 2010 data has been received from 18 of the 23 NRDs since then. Of particular note is the receipt of a total of about 19,500 results from USGS, which are being prepared for the database and will be entered in the near future. As a result, the current version of the Clearinghouse contains over 404,000 individual results; about 91,000 of these are for nitrate, and there are about 22,500 wells for which at least nitrate has been reported.

Spalding then provided some information about the ELISA/immunoassay screening being performed by the NRDs. This effort was started several years ago through funding from NDA and NDEQ, which provided ELISA equipment to several NRDs across the state, and supported them with training and ongoing supplies of consumable materials. This data has initially been screened by Craig Romary of NDA to evaluate its use for their pesticide programs. Since this is not a standard method, this data will not be entered in the Clearinghouse, but NDA and UNL have been working to set up a parallel database whereby at least some of this data can be accessed. Spalding is also screening the data, and if NRD submittals are accompanied by reference samples analyzed by a standard method, the ELISA data will be placed in a database which will then show up as a link in the regular Clearinghouse. She noted that data from 2006-2009 includes approximately 1000 atrazine results, and a smaller number of metolachlor analyses. She also noted that the NRDs who are doing this analysis need to be reminded to collect basic data prior to submittal—standard items like date, some sort of identification other than an internal NRD number, etc. Also, she observed that some of the NRDs need an improved protocol; for example, use of reference samples as noted above, and even basic procedures like including a blank in each sample run would be helpful. Ehrman stated that many NRDs had had staff turnover since the project was initiated, and that development of a standard protocol (as well as additional training) should be helpful, especially if NDA and/or NDEQ continue to provide funding to the project. Pat O'Brien noted that the NDA lab will be preparing reference samples to distribute to the participating NRDs, and this should help with some of the cost issues.

Spalding then updated the group on some recent research involving studies of actual nitrate declines over the past 16 years in the Central Platte NRD. UNL's research indicates that, in this area, actual nitrate levels have declined on average about 0.26 mg/l per year over that period. Approximately 20% of this decline can be attributed to increased yields associated with new corn genetics, while about 50% of the decline is associated with the conversion of irrigated crop ground from flood to center pivot irrigation and the resulting improvement in irrigation efficiency. The research also documented that over this period, there was no increase in overall fertilization, but there was an increase in corn yields. For a copy of the article documenting these results, you can contact Mary Spalding at UNL, or visit the following website: http://www.thescientificworld.com/tsw/toc/TSWJ_ArticleLanding.asp?ArticleId=3360&jid=

4. *NSWMC Update—Dick Ehrman, LPSNRD*

Ehrman informed the group that the Nebraska Surface Water Monitoring Council met on April 20. The meeting included updates from participating agencies: NDEQ, NDHHS, NDA, US Army Corps of Engineers, USGS, NRDs, and others. The group then enjoyed a presentation from Karie Decker, UNL's Invasive Species Coordinator, about zebra mussels and other aquatic invasives. For more information or for a copy of the NSWMC meeting notes, contact Will Myers at NDEQ.

5. *Other Items/Roundtable Discussion*

Ehrman told the group that the Lower Platte South NRD completes an annual review of its ground water monitoring activities, and made copies of the 2010 review available; it can also be downloaded at the NRD's website: www.lpsnrd.org.

O'Brien described current efforts to evaluate and update the Statewide Ground Water Monitoring Network. He also announced that NARD is coordinating the annual ground water monitoring training day; this year's event will be held on May 24 at the Central Platte NRD in Grand Island, and will include training on chemigation, employment of Hydrasleeves for ground water quality monitoring, and use of soil moisture equipment and data. For more information and to register, visit www.nrdnet.org. He also informed the group that Jennifer Stanton and Steve Pederson from USGS will be presenting information on the High Plains Aquifer study at 11:00 AM on June 17, also at the Central Platte NRD.

Jim Newman discussed some work that LLCHD is doing on induced recharge from stormwater and other sources. He also inquired about submitting LLCHD data to the Clearinghouse. John Chess noted that the City of Lincoln has an ordinance requiring payment of a \$60 annual fee for private wells within the city, and that LLCHD samples these wells on a rotating basis.

Ryan Chapman told the group that NDEQ now has 89 approved wellhead protection plans across Nebraska. He also showed the group the proposed new WHPA signs, and stated that grant money would likely be available to help communities post them.

Ginny McGuire provided an update on USGS activities. First, she overviewed a water budget project for the High Plains aquifer. USGS is also in discussion regarding future use of airborne electromagnetic (HEM) technology, which has been used with some success in western Nebraska and the ENWRA area in the east. She also noted that the Papio-Missouri River NRD, which uses USGS to perform their ground water monitoring, is going to a four-year rotating schedule by aquifer, with the exception of their well nests at MUD, Springfield, and Tekamah. There was some discussion as to how this rotation might affect the statewide network submittals. Finally, she noted that USGS is undertaking an unsaturated zone study in the Central Platte NRD, with emphasis on

characterizing recharge.

Jane Griffin presented information about the Ground Water Foundation's national conference, which will be held October 4-6 at the Marriott Regency in Omaha. The conference will include concurrent sessions as well as field tours, and everyone is encouraged to submit information for posters or presentations!

Ron Zelt stated that he is working with USGS colleagues in Minnesota regarding the occurrence of arsenic in water resources; they are proposing to expand their efforts to address ongoing concerns. He noted that this information might be useful to NDEQ or ENWRA as most of Minnesota's data involves glacial environments somewhat similar to eastern Nebraska.

Marty Link also noted that the 2012 annual meeting of the Association of State Boards of Geology (ASBOG) will be held in Omaha in late October and early November of next year. ASBOG is the national organization which works with licensure of professional geologists.

6. *Approaches to Water Quality/Quantity Issues Facing Nebraska—Karen O'Connor, Olsson Associates*

Benefits of Low-Cost Tracers for Ground Water Monitoring—John Gates, UNL Dept. of Earth and Atmospheric Sciences

The group then enjoyed two interesting presentations. Karen O'Connor summarized some work that Olsson Associates is doing with the Village of Edgar involving alternatives for treatment of high nitrates in ground water, as well as with the Lower Platte North and Lewis & Clark NRDs to identify different aquifer/ground water areas for ground water management. John Gates then presented information on the use of robust, low-cost tracers to characterize ground water recharge and movement. If you would like a copy of either or both presentations, please contact the author(s) at koconnor@oaconsulting.com or jgates2@unl.edu.

7. *Next Meeting*—Tentatively, the joint NGWMAC/NSWMC meeting has been scheduled for 10:00 AM, Wednesday, October 12, 2011, location TBA. Ehrman and Myers will be in contact about location and program; be sure to let either of them know if you have ideas for discussion items and especially presentations/presenters. Mark your calendars!

The meeting was adjourned at approximately 12:05 PM.

Respectfully submitted,

Dick Ehrman, NGWMAC Chair