Irrigated Ag Working Group (IAWG)

Charge from Groundwater Management Area Advisory Committee

Working Group Members

Dr. Troy Peters (GWAC-WSU); Bob Stevens (interested party) Bud Rogers (GWAC-Citizen), Chelsea Durfey (GWAC), Dan McCarty (interested party), Dave Cowan (interested party), Dave Fraser (Interested Party - Simplot Agronomist), Donald Jameson (interested party), Doug Simpson (GWAC-Farmer), Frank Lyall (GWAC-Farm Bureau), Ginny Prest (GWAC-Dept. of Ag), Jean Mendoza (GWAC-Friends of Toppenish Creek), Jim Newhouse (GWAC), Kevin Lindsey (interested party), Kirk Cook (GWAC-WSDA), Laurie Crowe (GWAC-South Yakima Conservation District), Melanie Redding (Ecology), Mike Shuttleworth (interested party), Ralph Fisher (EPA), Ron Cowin (GWAC-SVID), Scott Stephen (interested party), Stuart Turner (GWAC-Turner & Co.), Tom Tebb (GWAC-Department of Ecology), Rosalio Brambila (interested party), Vern Redifer, Jim Davenport.

Meetings/Calls Dates

Meeting: Sunnyside Valley Irrigation District Office, 120 S. Eleventh Street, Sunnyside

When: July 19, 2016, from 1:30 pm to 3:30 pm.

Call: (509) 574-2353 – Pin # 2353

Participants

Troy Peters (Chair), Vern Redifer, Dan McCarty, Anthony Dorsett, Kathleen Rogers, Frank Lyall, Doug Simpson, Jim Davenport, Ron Cowin, Paul Stoker*, Chris Saunders (Yakima County Support Staff)

*via telephone

Key Discussion Points

Chair Troy Peters convened the meeting at 1:45pm. Paul Stoker, former executive director of the Columbia Basin GWMA (CBGWMA), joined the group by phone. After the customary introductions, Troy asked Paul to give a background sketch of his experience heading up the organization, which nitrate mitigation projects worked for them, and how they decided to do what they did.

Paul began by describing the local mood 20 years ago. The CBGWMA was formed in 1998, growing out of controversy surrounding a 1995 USGS report on nitrate contamination in the Central Columbian Plateau, containing Adams, Douglas, Franklin, Grant, Lincoln, Whitman, and parts of Spokane and Latah (Idaho) Counties. The report concluded that the main source of nitrates in the groundwater were agricultural fertilizers.

There was a great deal of suspicion and mistrust in the air when the CBGWMA, initially comprising Adams, Franklin, and Grant Counties, (and later including Lincoln County), was set up. Roughly 2,000 people participated in the process. One of the earliest ground rules was that only local residents could be voting members of the GWAC and its working groups. State and federal employees could attend meetings and offer their perspectives, but were not allowed to cast votes or make decisions. (They are listed as "technical advisors" on the CBGWMA's organizational chart.) Paul said this helped build political support for the CBGWMA's activities among the populace, and did not appear to harm relations with government entities.

The CBGWMA was structured similarly to the Yakima GWMA. Adams, Franklin, and Grant Counties were the lead agencies. A central GWAC set the overall policy direction and approved projects from five working groups: 1) Irrigated & Dryland Agriculture, 2) Sprayfields & Wastewater, 3) Dairy, Feedlots & Cattlemen, 4) Environment & Recreation, and 5) Urban & Rural Residential. The Irrigated & Dryland Agriculture group had 50 voting members at one point.

The process for choosing mitigation projects began at the working group level, where any and all suggestions would be recorded, some of which were more feasible than others. The full 700-page list of every suggestion was given to the Department of Ecology (DOE), and is presumably in a filing cabinet somewhere. The GWAC would then take the top three ideas from all five working groups, making 15 total, and seek funding for the individual projects as the opportunities arose. This list was also given to DOE and is possibly still in CBGWMA's possession as well, although it's not readily available on their website. The dollars were brought in through legislative mandate with no agency matching funds required. Paul spent a lot of time in Olympia and Washington, D.C. meeting with legislators and lining up funds. The key factor in getting money was having the support of the local population.

In addition to the five items listed on page 4 of the June 28th meeting summary, some of the projects that received funding were a one-year "blue baby" study in partnership with the Centers for Disease Control in Atlanta, Georgia. Nurses would travel to people's homes in shallow-well areas with large migrant populations and test the water and the babies. They discovered that almost all the households were already avoiding the tap water and drinking bottled water instead, with virtually no babies with blue baby syndrome.

GIS mapping the area's hydrology became a huge project that took years to complete. This project had its roots in feedback the GWAC had received from DOE. Many people with technical backgrounds on the working groups had good ideas, but were advised that because they didn't know where the recharge water was being recharged from, they wouldn't know if their solutions were having any effect. Very little data on nitrates traveling through high-recharge areas existed at the time, so the CBGWMA undertook a long mapping process to learn more about hydrology and why there were more nitrates in some areas than others.

The CBGWMA also set up a well-monitoring program. Out of 15,000 wells in the four-county area, they monitored approximately 500 wells of which they had detailed histories, and where GIS could pinpoint their locations. In 2005, USGS published a report concluding that between 1998 and 2002, there had been a statistically-significant decline in nitrate concentrations in the most highly-contaminated wells in Adams and Franklin Counties. Paul stated that the Columbia Basin was the only area in the country that had seen a statistically significant decline in nitrate levels.

Proximity to a body of surface water was the most common correlation between high and low levels of nitrates. If a well was located near a large irrigation ditch, for example, there would be lower nitrate levels. If a well was far away from surface water, there would be high nitrates. Jim Davenport asked whether proximity to surface water wouldn't just move the nitrates elsewhere. Paul responded that groundwater is always moving somewhere, the questions are where and why. The Columbia Basin has porous soil, and heavier nitrate areas also drain into it.

The Deep Soil Sampling effort described in the June IAWG meeting was carried out by the local Conservation Districts (CDs), which had preexisting relationships and a level of trust with farmers in the area. The CDs would offer free soil sampling 10 feet deep, and reveal to the farmer their level of nitrate contamination. Some of the more outspoken farm leaders volunteered to have their fields tested first. When the results came back low, they would tell their neighbors about it, and then their neighbors would volunteer. As word of mouth spread, they eventually tested hundreds of farmers' fields over four years. The highest result they found was 1,900 pounds of nitrates in the top 10 feet of soil. The lowest results were found in the orchards.

The deep soil sampling was a precursor to the Irrigation Water Management Cost-Share Program, also previously discussed during the June IAWG meeting. The program ran for five years, with 2006 being their last year of funding. There was a 10-point checklist that farmers had to meet to get the subsidy at the end of the year. They would prove farmers had followed the checklist by installing probes at one foot, two feet, three feet of soil, etc., and carry on season-long moisture-counting. The key was the third foot. If there was no significant increase in nitrates for the entire year, you could be pretty confident there were no leachates. If there was a significant increase, you could be confident that human activities on the surface were having an impact. It became a very consultant-driven process, with the consultant writing up the end-of-year documents, the farmer delivering them, the CBGWMA reimbursing the farmer, and the farmer paying the consultant. Ultimately, it became clear that over-watering your fields was not a good business practice. The money for ongoing operations came from state and federal sources, although these sources got cut off once it became clear there was no local match. Of all the programs the CBGWMA pursued, the Irrigation Cost-Share program was the most expensive.

The Water on Wheels (WOW) program is still functioning in Franklin County, and has been very well-received in schools. Oftentimes the truck would be staffed by teachers seeking work. Lessons would often be fun, with WOW teachers sometimes using squirt guns to explain the process of water permeating soil layers to children.

Paul attributed several positive legacy effects to the efforts of the CBGWMA. Potato farmers changed water management practices. Local agencies and the fertilizer industry became more sensitive to nitrates. People paid more attention to their drinking water systems. But the bottom line is that after all of the programs pursued by the CBGWMA, there is still a nitrate contamination problem in the four-county area. In its later years, the CBGWMA lost momentum as the nitrate problem disappeared from the headlines.

Beyond WOW, Troy asked about the effectiveness of education and public outreach (EPO) efforts in the Columbia Basin, the approach favored by many members of the Yakima Irrigated Ag Work Group. The CBGWMA would do presentations at trade shows, and communicate with ag consultants about best management practices. These had positive effects in getting farmers to

change practices. Of all the different sectors of the Columbia Basin ag economy, the dairies were the hardest to convince to change. Troy observed that dairies are a much bigger component of the ag economy in the Lower Yakima Valley than in the Columbia Basin, and asked for any ideas on how to deal with that. Paul observed that in the dairy industry, as in all walks of life, there are good actors and bad actors. In his view, EPO is effective with the good actors, and ineffective with the bad actors, and the only way to get a bad actor to do good is for someone to hold a hammer over them. Paul stated that if he was working for DOE or the EPA, he would look for a regulatory mechanism. Jim Davenport asked if he had observed any correlation between good actors and bad actors and the size of the dairy operation. Paul said not really. While it was hard to speculate on all the factors that come into play for every farmer, the most likely difference between dairies and other forms of agriculture is that nitrate contamination has a greater negative impact on non-dairy operations, giving them greater incentive to be concerned about it.

Troy thanked Paul for his presentation. Paul signed off at this point in the meeting.

Troy asked the group for comments on what they had heard. Jim was glad to have heard more details about how the Irrigation Water Management program had worked. Troy was interested in the role of communication between consultants in changing management practices. Other members began thinking of additional questions, such as the total budget for the CBGWMA over its course of operations. Vern had heard $20 million as a possible figure. Members discussed the cost/benefit ratio, with some being wary of spending a large amount of money for a relatively small amount of mitigation, and others stating that groundwater mitigation is a very slow process (23 years before noticeable effects in the Umatilla Basin), and that the important thing was to start getting things moving in the right direction.

Discussion ensued on the effects of weather and market conditions in affecting nitrate levels. A member stated that the Landau presentation at the June IAWG meeting didn't show nitrates below the root zone, indicating that crops were in-taking nitrogen, and that this hadn't changed over the dry winter of 2014/15. In the member's view, there was no indication that a shortage of water had changed anything, and that low commodity prices combined with a floor on the fixed cost of fertilizer would lead to less nitrates being applied. Asked for clarification, the member stated that as the price of oil goes down, the cost of commercial nitrogen also goes down, leading to diminished profitability in manufacturing nitrogen-rich products, leading to a decline in commercial nitrogen production. Hence, less application of nitrogen-rich products on fields.

Jim asked the group if everyone wanted to see the 700-page list and/or the top-priority list of 15 items. Several members said yes.

Vern observed that the CBGWMA had been defunded after staying in business for at least 15 years, while the Yakima GWMA expires in December 2017. The Yakima GWMA has at least one advantage, in Vern's view, in that USGS has done a lot of work charting groundwater flow in the Lower Valley, and we generally know which way the water is moving.

Vern referred to the Residential, Commercial, Industrial, and Municipal working group meeting, held the day before. There are approximately 6,400 residential dwellings in the GWMA on septic systems, so presumably there would be a similar number on private wells. On the wells tested by the GWMA so far, about 12% sampled high (>10mg/L). The EPA had found 18% testing high in

their efforts, although they had gone about it purposely looking for high results. Information is incomplete regarding all the wells in the GWMA regarding depth and exact locations, which were drawn up before GIS systems, and are plotted on quarter-by-quarter plat maps. If there was more than one well in any given section, it would be difficult to match up the existing data. The estimated cost of drilling everyone new 1,500-feet wells would be about $12 million. Members cautioned that at that price tag, you would certainly want to share the costs with other entities, and with many parts of Eastern Washington depopulating, and farms consolidating, it wouldn't necessarily be cost-effective to offer new well-drilling on all farm properties.

With the meeting winding down, Jim Davenport stated that while the group had identified its most desirable approaches, it still had no idea of the curriculum or cost. Vern stated that the group is still in the process of moving from the general to the specific, and when things get specific, there will be a better idea of the costs. A member observed that the political and economic situation today is much different than in the late '90s and 2000s, in such a way that funding for these types of projects at the state and local level would be harder to come by.

Troy asked the group whether they would like to invite Paul Stoker to make a presentation before the GWAC. Members felt that it would be premature to invite him before they had fleshed out more details on what nitrate mitigation measures they wanted to recommend. Troy ended the meeting by noting the CBGWMA's method of letting everyone submit ideas to the project list, and suggested this should be a model and attitude to emulate.

The meeting adjourned at 3:40pm.

Recommendations for GWAC

Resources Requested

Jim Davenport will attempt to procure the approximately 700-page list of every proposal made at the CBGWMA working group meetings, currently believed to be in the Department of Ecology's possession, as well as the top 15 items on the GWAC's priority list.

Deliverables/Products Status

Proposed Next Steps