

To: PBAC
From: L J Spoonemore, CAG Chair
Subject: Recommendation #1

Subsequent to the formation of the Citizens Advisory Group (CAG) in the fall of 2005 we have met monthly to better understand our charge as well as the nature of the Palouse basin aquifer itself. We have made great progress and have grown to appreciate the individual contributions of our committee including those ex-officio participants who have added significantly to our understanding and appreciation of the task at hand.

The attached "Recommendation #1" is in keeping with the original PBAC charge and is subject to future modification. The original draft, prepared by Jay Eliason and Earl Bennett, has been subjected to critical review and edits by the entire committee. A brief history of PBAC is followed by specific comments on PBAC's Goals and concludes with a "Summary Technical Recommendations" section. Briefly, we are recommending a more streamlined administrative structure and that a major effort be placed on the preparation of a "geohydrologic characterization plan."

In the future you can expect to receive other recommendations from our group on such issues as funding, conservation, surface water and associated social/ecological concerns.

Attachment (1): Recommendation #1

A CRITICAL EVALUATION OF THE PALOUSE BASIN AQUIFER COMMITTEE'S MISSION AND GOALS WITH ATTENDANT RECOMMENDATION SET #1

BACKGROUND

The Moscow/Pullman area obtains its water from aquifers basically confined in two units of the Columbia River Basalt Group; the deeper Grande Ronde aquifer (650 to 1,300 feet below the surface and major source of water for Pullman, WSU, Moscow and UI) and the shallower Wanapum aquifer (250-500 feet deep, one third of Moscow's water and wells in the western part of Latah County). Some water is also pumped from the Vantage sands that separate the two basalt units in western Latah County and from the Bovill sediments above the Wanapum basalt.

Researchers at the University of Idaho (UI) and Washington State University (WSU) drew attention to declining groundwater levels in the Moscow-Pullman area in the 1960s. Prompted by a severe drought in 1977, the Pullman-Moscow Water Resources Commission (PMWRC) was formed to assess the deteriorating groundwater situation. This commission met until 1984. In 1987, a new legally designated PMWRC was established including former commission members and sanctioned by the Washington Department of Ecology and the Idaho Department of Water Resources (IDWR). In 1992, the PMWRC adopted a "Ground Water Management Plan" to stabilize the Grande Ronde aquifer by limiting annual increases in groundwater withdrawal by the entities. In 1998, the PMWRC became the Palouse Basin Aquifer Commission (PBAC). Two years later, PBAC revised its mission/goals statement with a major goal of stabilizing water levels in the Grande Ronde aquifer by 2020.

The PBAC committee includes 15 members, two (one elected official or administrator and one technical advisor) from each "entity" (Moscow, Pullman and Colfax, UI, WSU, Latah and Whitman counties) and the Executive Secretary/Technical Advisor. The committee meets once a month alternating between Moscow and Pullman.

The U.S. Geological Survey (USGS) collected selected groundwater information from 1983 to 1985 for the Columbia Plateau Regional Aquifer study. These data included water level data for the Wanapum and Grande Ronde aquifers in the Palouse Basin. Groundwater potential plots were interpreted from these data. Published groundwater level maps show regional potential gradients in the Wanapum and Grande Ronde aquifers from the fractured bedrock aquifer toward the regional drainage systems.

In 1989, the USGS modeled the Palouse Basin aquifers and confirmed that water levels were dropping, but noted that natural recharge should stabilize the system. The four PBAC entities that used most of the water from the Grande Ronde decided to hold pumping rates constant to see if lowering water levels could be stabilized by natural recharge. The demand for more water was met with successful conservation, waste water treatment and more utilization of the upper aquifer. In 2004, pumping was actually reduced and water levels in the Grande Ronde appear to be declining at significantly

slower rates in some wells. However, it appears that the Grande Ronde recharge is slower than assumed by the initial USGS model.

In 1999, with water levels still declining, PBAC adopted its current mission and goals. Each entity would provide \$8,000 per year for operating expenses and \$20,000 per year for research. In 2005, funding by the entities included a total \$80,000 for research and \$36,000 for operating expenses.

In addition to the hydrologic studies, Dr. John Bush, a geologist with the University of Idaho, began mapping the geology in 1995 of nine 7.5' quadrangles in Whitman and Latah counties. These maps cover the extent of the key Grande Ronde and Wanapum basalts and other important geologic units in the area and are the basis for much of the current thinking about the geology of the basin.

In 2002, Naylor Farms, with lands just north of Moscow, applied to the Department of Water Resources for a water right to pump substantial groundwater to irrigate crops and support clay mining. In October, 2002, Moscow and Pullman protested the application. In November 2003, five environmental groups from Moscow petitioned the Director of IDWR to grant protection to the Grande Ronde aquifer as a Critical Ground Water Area and the Wanapum aquifer as a Ground Water Management Area. Although the request was denied in 2004, the director did approve a Citizens Advisory Group (CAG) to review PBAC's program. At the present time the 11 members of the CAG would include three representatives from the petitioners and/or other environmental groups, two members from county/rural interests, two members from non-PBAC municipal water providers within the Palouse Basin, 2 members from Developer/Business interests, a technical member and one other.

After hearings in Moscow in September, 2004, a preliminary water right was granted to Naylor by IDWR in December of 2004. Moscow and Pullman developed a protocol with Naylor in September, 2004 to protect the groundwater supply for the cities, but Latah County was not included. The Latah County Commission petitioned the Department of Water Resources to reconsider the preliminary approval amid a flurry of citizen concerns about the impact of the Naylor water use on neighboring wells. After a second hearing in Moscow in April, 2005, the IDWR withdrew the preliminary Naylor right. The county then approved the emergency Moscow Subbasin Groundwater Management Overlay Zone (now permanent) to regulate land (and in effect water) use in approximately a 6-mile radius surrounding Moscow. In July, 2005, Naylor Farms filed a \$30 million tort claim against Latah County claiming the state has jurisdiction over groundwater not the county.

With local concern rising, PBAC was immediately in the public spotlight to provide answers concerning the current status and future availability of groundwater resources in the Palouse Basin. As the Naylor Farms issue accelerated, questions were raised about PBAC's ability to provide the information needed for future groundwater management. An evaluation of the mission and goals of PBAC is the subject of this review and recommendation.

PBAC's Mission and Goals

As stated, PBAC's mission is to, "ensure a long-term quality water supply for the Palouse Basin Region." It has five stated goals and two implied goals,"
Comment

Goal 1: To stabilize the declining deep aquifer water levels by 2020.

Goal 1, Part A. To determine a plan for accomplishing this by 2010.

Comment

To accomplish Goal 1, Part A. will require a much better understanding of the geohydrology of the Palouse Basin aquifer than exists today. Given the uncertainties about the aquifer system, PBAC will really have to hustle to obtain the necessary information needed to arrive at a scientifically viable and defensible plan by 2010. It is doubtful that this level of understanding can be obtained with the way the aquifer is being studied presently.

Goal 1, Part B. To conduct the necessary research to understand the basin geohydrology and determine the most economical options for enhancing deep aquifer recharge.

Comment

An evaluation of Goal 1, Part B. requires a look at how PBAC has always done research. Started by university scientists, it is not surprising that the geohydrology of the aquifers has been studied as a basic research problem rather than what it is; an applied research problem. Although there is a "Ground Water Management Plan" for PBAC, there has never been a "geohydrologic characterization plan" and research has been conducted using university faculty and student studies via a proposal system with little long range planning. For example, all of the voluminous data that has been collected over the years is only now being entered into a modern computer system for analysis and this work is being done by a graduate student. The student is also tasked with deciding if the information is valid or is of questionable use. This should have been the first step PBAC undertook years ago and this database needs to be updated continually. There is nothing wrong with using student work as long as it is in line with a good science plan and is well supervised. Mike Bestor, from Golden, Colorado, warned at the Water Summit held in Moscow in October, that field data must hold up in a court-of-law as most of these water issues end up in court. It is essential that PBAC's studies withstand legal scrutiny in that as noted, the Naylor Farms issue maybe headed for the courts.

A study of this type would be handled quite differently using an "applied research" approach. The first step would be to use all available data to develop comprehensive geologic and hydrologic conceptual models of the study area. These models would then be assessed by comprehensive analyses based on available data. Hydrostratigraphic units would be defined by interpretation of geologic units and measured potential gradients.

All available historical data including recharge, discharge, pumpage records, potential measurements, estimated aquifer hydraulic characteristics, etc., would then be used to evaluate the geohydrologic system.

Goal 2: To conduct pilot projects to test promising options for increasing recharge to the basin aquifer system.

Comment

Currently, PBAC apparently favors replenishing the Grande Ronde aquifer by diverting water from the shallow aquifer system into a borehole drilled into the Grande Ronde aquifer. Whenever proposed, this plan is immediately challenged usually over concerns about maintaining the pristine water quality of the existing aquifer. With all of the uncertainty about the basic geohydrologic system, it is premature to promote this idea, even if it is legal. As indicated earlier, these artificial recharge options should be carefully assessed.

Goal 3. To procure matching funds to facilitate the necessary research and pilot projects to clarify the best options available to regional entities for achieving the PBAC goals.

Comment

The recent loss of a \$100,000 Environmental Protection Agency (EPA) grant by not applying for the money in a timely fashion is a good example of how not to accomplish this goal. Public faith in PBAC was shaken and editorials/letters in the local papers called for replacement of the Exec. Sec./Tech. Manager. Aside from the PR issue is the more serious concern that Idaho's congressional delegation will probably think twice before earmarking more money for PBAC projects in spite of explanatory apologies from the commission. It is our opinion, that the loss of these funds is a direct result of having a single halftime Executive Secretary/Technical Advisor for PBAC, who is supervised by the other 14 members of the committee.

This year, the state legislature granted the IDWR \$450,000 for studying the Palouse Basin aquifer. However, very little of this money is actually under the control of PBAC. Some \$151,000 was awarded by the Latah County commissioners for a recharge study of the Wanapum aquifer near Moscow. The other \$300,000 of the IDWR money will be spent on monitoring wells with PBAC having input to the Idaho Department of Water Resources for drilling and equipment contracting. This \$450,000 might have been used differently if a comprehensive geohydrologic characterization plan had been in place.

Goal 4. To accomplish the PBAC mission and goals in the most economic fashion using best management practices.

Comment

As noted, a major problem with PBAC is that they really have two part-time employees (responsible for all of PBAC's day-to-day activities) and 14 supervisors. The current plan of having a halftime Exec Sec/Technical Advisor paid by PBAC and another

halftime Executive Manager (shared with the Idaho Water Resources Research Institute) is poor management, especially since neither person will be in charge of the overall program. PBAC should hire, at the very least, a single fulltime Executive Secretary/Technical Advisor to first write and then oversee a sound geohydrologic characterization plan and also generate matching or other research funds. It would also help if PBAC reduced the actual number of committee members directly responsible for administering the program by at least 50% although it is recognized that having technical expertise and government officials from the entities on the committee is very useful.

Goal 5: To educate entities and the public on the state of the basin water supply and options for carrying out PBAC's mission and goals

Comment

Again, what can be done with just a single halftime position or even two part-time people? Recently, a CAG representative noted that the PBAC website was out of date and this was unacceptable as the website is a major point of public access and information about the commission. But, who will update the website; certainly not the single halftime employee. At a recent PBAC meeting one member noted that PBAC is not doing a good job in public relations. In fairness, Larry Kirkland, the halftime employee, does a good job of explaining PBAC's programs at public functions, which has occupied a lot of his time over the past two years.

Goal 6. To encourage and facilitate entities in meeting their specific pumping, conservation, efficient use, water recycling and other goals.

Comment

This is a real strength for PBAC as the commission has both technical experts and elected officials from the entities active in the decision making process. Once they decide to act either on conservation or cooperative research, the entities can get the job done and relatively quickly. Their ability to encourage public water conservation and limit the use of the major consumers on both sides of the Washington/Idaho state line is well known and a real success story for the commission. *PBAC should continue to actively and aggressively pursue and expand the conservation projects as outlined in the "PBAC goals" of June 15, 2000.*

Implied Goals

Implied Goal 1: Work with state agencies to avoid delays and hassles associated with meeting the details of applicable regulations.

Comment

This implied goal is another very positive aspect of PBAC because the key state agencies from both Idaho and Washington are represented on the committee. Such cooperation is absolutely essential as laws and regulations are different in the two states.

Implied Goal 2: Continue to work harmoniously and effectively across the state-line to fairly meet the needs of all entities

Comment

It can be very difficult to work across geopolitical lines and the ability of PBAC to do exactly this may be their greatest strength. With the entities representing all levels of government in both Washington and Idaho, they are in good communication with each other and this goes a long way to dispelling suspicions about what is going on in the state/community next door. All the entities realize their responsibility to their constituents and they have acted accordingly.

Summary Technical Recommendations

1. Hire a fulltime hydrogeologist (or equivalent professional) as manager for the program. Responsibilities will include; writing a sound applied geohydrologic characterization plan to understand the Palouse Basin aquifer system, supervising the implementation and research segments of the plan and applying for grants/contracts to supplement existing research funding.
2. Develop a sound applied geohydrologic characterization plan with input from the many scientists interested in the Palouse Basin aquifer system as well as input from a social and environmental perspective.
3. Consider reducing the number of active participants on the PBAC committee from 15 to a more reasonable number recognizing that having elected officials and technical experts on the committee is very useful.
4. Commend PBAC entities for good work in coordinating water conservation programs and fostering excellent cooperation among a complex mix of state, city and county governments.