

Data Collection, Characterization, Monitoring

Charge from Groundwater Management Area Advisory Committee

A discussion of timelines and details regarding the Nitrate Loading Assessment

Working Group Members

Melanie Redding (Chair); Andres Cervantes; Bob Stevens; Charles (Pony) Ellingson; David Bowen; Chelsea Durfey; Dave Cowan; Donald Brown; Doug Simpson; Elizabeth Sanchez; Eric Winiecki; Frank Lyall; Ginny Stern; Jaclyn Hancock; Jan Whitefoot; Jean Mendoza, Jennifer MacDonald; Jim Trull; John Van Wingerden, Kevin Lindsey; Laurie Crowe; Lino Guerra; Kirk Cook; Mike Shuttleworth; Ralph Fisher; René Fuentes; Robert Farrell; Ron Cowin, Scott Stephen; Sheila Fleming; Steve Swope; Stuart Turner; Dr. Troy Peters

Meetings/Calls Dates

Meeting: Wednesday, April 13, 2016, 10:00 AM

Call Number: 509-574-2353 pin: 2353#

Participants

Present: Melanie Redding (Chair)*, Gary Bahr*, Jim Davenport, Steve George, Jean Mendoza, Ginny Stern*, David Bowen, Stu Turner, and Bobbie Brady (Yakima County Support Staff). Pony Ellingson, Glenn Mutti-Driscoll and Wayne Rennick from PGG were present by phone as well.
*via phone

Key Discussion Points

Chair, Melanie Redding, opened the meeting at 1:04 PM. Everyone introduced themselves and Jim Davenport specifically introduced David Bowen the new Water Quality Section Manager from the Department of Ecology. David spoke briefly about his four week tenure at the Department noting that this was his first GWMA working group meeting. He also shared a bit about his background as a Kittitas County Commissioner (which included working through water issues), Auditor, and his 25 year participation in the family farm with his grandmother. He included that his goal was to be helpful to the group and help solve issues.

Melanie Redding drew the group's attention to the Technical Memorandum received from Pacific Groundwater Group (PGG) and introduced Pony to the conversation. Pony advised that two others from PGG were on the conference line as well – Glenn Mutti-Driscoll and Wayne Rennick. Pony explained that they had been asked to provide the group with a groundwater monitoring plan that left the group with a variety of options. As he understood it, the group's goal was to determine if the groundwater nitrate concentrations were declining. Further, it was his understanding that the GWAC had decided to focus on an ambient groundwater monitoring system in order to figure this out. Pony then began an overview of the Technical Memorandum

provided by Pacific Groundwater Group (PGG) that had been emailed to the working group on Tuesday, April 12. This was the first report due to the group. Pony stated that the goal of this meeting was to get feedback and that the next deliverable would include more detail on each spot. Pony provided an explanation as to how each spot was identified on Figure 1 Initial Random Proposed Sample Locations (Number 1-30) – that process is outlined in the Technical Memorandum which presents details of the draft methodology for selecting sampling locations for review by the Data Committee. The first monitoring point selected is the farthest from the GWMA boundary and approximates the centroid of the GWMA. The second monitoring point is the random point that is farthest from the combination of the boundary and first monitoring location. This is the middle of the largest un-sampled area. Each subsequent monitoring point selected is the one in the center of the largest un-sampled area. This evenly distributed monitoring locations throughout the GWMA and ranks them by size of the un-sampled areas.

Figure 1 presents the location of the first 30 well locations as selected and prioritized by the method presented above. Once the ranked set of prioritized locations are chosen, preliminary drill sites can be selected based on nearby public land locations, local land use, and availability of monitoring sites.

Pony went on to discuss the factors that would be considered in selecting preliminary drilling sites based on the prioritized points outlined in Figure 1. He stated that public lands, selected land uses, and known existing water table sampling stations will be mapped to help select actual drilling locations. The use of each coverage type will be as follows:

- Proposed drilling sites will be moved to the nearest public land, subject to the additional criteria below. Final selection of drilling sites will be performed after field inspection.
- Irrigation canals often leak and may influence groundwater quality in their vicinity. Monitoring sites will not be located within one-quarter mile downgradient from irrigation canals.
- Monitoring sites will not be located within one-quarter mile downgradient from facilities that may result in anomalous groundwater concentrations.
- Groundwater flow directions, canals, and drains will be mapped to assist in identifying groundwater gradients.
- Existing publicly-owned water table monitoring wells will be included to assess use of pre-existing wells. The accuracy of the monitoring well map coverage is likely imperfect. Use of existing wells is subject to field verification and agreement with the (public) well owner.
- Existing agricultural drains will be mapped as potential alternative sampling stations but the map coverage is likely incomplete. PGG's tentative recommendation is that drains be considered as a separate sampling station network. Therefore proposed drilling locations will not be altered by the presence or absence of agricultural drains.

As the review of the Technical Memorandum progressed, members of the group asked questions for further clarification as follows:

One member asked how PGG felt about the confidence factor in choosing only 30 sites for an area this size. The response was they would need 1,000 samples to gain confidence. The member also expressed a concern about depth – it was his belief that the group should be targeting the exact depth that is in proximity to domestic wells. His concern was that “first water” would be different later in the irrigation season (August) then it would be early on (February). He felt it was a mistake to go to first water instead of drilling to where productive water could be tested year round. Pony explained that the sampling network was intended to fill a gap in other data already available since no data was available currently at the water table level. He went on to explain that PGG will accommodate first water levels when considering what time of year they drill the wells. He expressed belief that this target would uniquely provide the opportunity for the GWMA to evaluate BMP effectiveness as things change and the process moves forward.

A member noted that the Department of Ecology could provide information already available as they have a whole program oriented around low nitrate water. Jim Davenport asked if this analysis could be done when the sites are determined. Pony expressed concern that there is some uncertainty depending on the quality of the State records. He explained that this would require a fairly substantial analysis which was not budgeted in the contract as they were contracted for first water testing.

Jim Davenport explained that he and Vern had talked at great length about the testing water level before entering into the contract with PGG. He went on to explain that the long-term goal was to determine if the nitrate levels were improving so the desire was to get a set of well sites identified that would allow them to detect problems and pursue those issues in greater magnitude as they arose. To do both at the same time would be very difficult. The goal initially is to get started. More could be added over time and hopefully the GWAC would propose this as we continue to move forward.

A member suggested that the group test a mixture of the sites proposed and additionally existing private wells. Ginny Stern expressed that she was not concerned about attaining the GWMA’s final testing network strength at this time. She went on to explain that PGG’s proposal would provide the beginning elements of a dedicated group of testing sites that meet certain criteria. She felt that what PGG had proposed provided a straightforward foundational piece to the group’s work. She did not believe it would be a problem to not have water at the site year round.

Jim Davenport reported that Vern was concerned that private ownership of private wells would not necessarily provide 100 percent right-of-way access and existing privately owned wells added the variable that we didn’t know how they were drilled.

A member spoke up and said that there were building logs for all privately owned wells constructed in the last 25 years which would allow the group to determine up front whether or not these wells met the criteria. In addition, he could see from the map that he was familiar with 80 to 90 percent of the owners and believed he could find two to three wells that could work.

Jim Davenport expressed that the group had already found it was difficult to get private venturers to allow access to procure data because of concerns of what would happen depending on the data that was found. The group needed to know for sure that data could be obtained from each system. Another member felt that the County could obtain right-of-way easements from private property owners and ensure long-term access so that was not an issue. It would require an agreement, easement and deed and the purpose would be required on the title.

Melanie noted that in the documents that were previously prepared existing wells were acceptable between the County and PGG.

A member voiced concern about some of the site locations as some of these could be road side areas and he saw these as highly contaminated with pollution, i.e., salt, metals, oil, grease and roadside storm water from runoff. It was also mentioned that the site could be dangerous for the person testing the well. Another member added that he had spoken with consultant, Kevin Lindsey, who had concerns that these sites were circumspect from his perspective and also from peer review journal articles that he had read. Jim Davenport suggested that the group should wait until PGG had completed its analysis of the sites as not all County rights-of-way were road side - some were parks, baseball fields, etc., and would easily work. Pony added that he would like to see the peer review journal articles referred to and speak with consultant Kevin Lindsey personally.

Ginny Stern expressed that as long as road side sites aren't the only sites chosen then we can include them in the evaluation. She cautioned the group from excluding sites for any reason besides those listed. They should not be categorically excluded as this could lead to bias as well. However, it would not be her recommendation to choose road side sites exclusively, but to choose others as well.

Another member noted that the draft Technical Memorandum didn't read that way and the group was asked for their input and therefore he felt they were just reacting to the draft.

Pony added that sampling well time and personnel were the biggest costs in the contract. Roadside ditch wells are easy – two of these could be done in the time it takes to do another at a more remote location.

Jim Davenport spoke up and noted that the next work done by PGG would be more specific to sites at each location. He pointed out that the diameter of the circles are big and hopefully would allow us not to deviate from randomness.

A member expressed concern that the locations at the northwest side had no up or down gradient. Pony reminded the group that the sites were purely a function of the program and that the GWMA is skinny. Another member thought it might be necessary to contact the SVID for an electronic version of their canals as some sites might need to be moved, i.e., Sample 28 appears to be straddling the canal. Pony informed the group that the map provided in Figure 1 was clean, but they had more detailed maps that would show this kind of information.

Pony and Jim reminded the group that part of the contract was to examine drains for additional information. They will also recommend a set of surface water stations (that reflect shallow groundwater conditions e.g., wasteways and drains during the non-irrigation season) that could be monitored in concert with the groundwater well locations. Agricultural drains can be sampled. You could map a list of places sampled historically. They would propose to the group independent samples be taken in addition to wells but the results be recorded independent of wells so it didn't skew the informational data from the wells. This is inexpensive data which the project should include. A member spoke up and said that drain samples are easy to do and provide a log of data which would allow someone to connect the chain of cause on the land from ¼ mile away. Jim Davenport said that he would talk with Vern but preliminarily it sounded like a good idea. The member continued and said drains are tattle-tails.

Another member spoke up and said they had a list of questions noting first that they were uncomfortable since they were not clear on the written goal and wondered what the GWAC was going to answer by doing this.

Pony responded and said that the GWAC's goal was to provide an ambient groundwater monitoring system that doesn't target parcels. It would calculate averages and the desire was to have it in the ground early to track long-term changes.

Melanie noted that this goal had been brought up in April, 2015, at a GWAC meeting and there was discussion on how this would work at the meeting. Additionally, the primary focus feeds back to the GWAC's goal to reduce nitrate levels. The ambient monitoring system gives the GWAC the ability to look at a set of wells over a long period of time. Then if a hot spot were to be identified the GWAC could move to figure out why. It will indicate the quality of the aquifer over time.

The member's next question was what about hot spots, they felt these was settled on because of finances. Melanie responded and said that it wasn't time to talk about BMP's at this time – that was a separate monitoring network.

The member followed up with the following question: Given the limited resources concern was expressed about some of the monitoring stations. It was their opinion that some sites were more important than others because the Lower Valley has a higher nitrate level then say Konnawac Pass. Others expressed concerns about other locations – some they felt should have higher priority and others lower. Melanie reminded the group that the goal was to make sure we don't have an inappropriate bias when determining where we sample. She went on to say that the group can't say we have issues here and none there because then bias exists. The question instead is how to we get the most representative data. A study can be done to look at trends in the future and wells can be put where the problem is. The GWAC did not approve trend wells. The ambient monitoring system network is about meeting the GWAC's goals. If we try to make it do too much we will fail. While Melanie didn't necessarily disagree with the member's points, she explained they weren't applicable to the goal at this time.

Conversation went on that was pertinent to specific spots – it was noted that some of the sites were publicly installed wells on private property. Pony stated that as the group moved forward PGG would look at owner's information and pointed out that they had used the Ecology data base, but that wasn't iron clad. Another was in close proximity to the Port of Sunnyside Wastewater Treatment field and it would need to be moved.

A member wanted to know what anomalies they were talking about - the response was canals, application areas, large onsite septic systems, MATCA site, dairy application areas and ponds – they would want to keep the ambient monitoring system wells ¼ mile away from these.

They did not go through an upgradient evaluation – these sites were purely random.

Another member expressed concern about priorities. Will they drill starting at spot 1 so that if there wasn't money for spots 20 through 30 these wouldn't get done? Jim Davenport responded and said that it was the goal to spend what money was possible while in the GWMA phase so that as the need for more is identified it can be recommended by the GWAC when completed so someone can fund it.

Questions were asked about pricing before determining locations and if PGG will give the group a figure. Pony said that from the time the Data group says proceed it might take six weeks to get the next product, but the group was to agree on well locations before costing was done. One member wanted PGG to price all 30 sites plus 30 private approved sites and also 60 private approved sites. Jim Davenport noted that this must be discussed with Vern first since sampling of existing wells was not part of the current scope of the contract. This is not off the table, but Jim would need to talk with Vern first.

Another member voiced concern to Jim and Melanie that the group was going to end up with a whole bunch of data and no plan to analyze it. The member felt that this had already happened with the deep soil sampling. Jim responded and said that they had not talked about the analytic period and who would do this as that would happen post-GWMA. It was his guess that the GWMA would ask the Department of Ecology to analyze the information.

It was pointed out that Melanie was an expert in the field of ambient monitoring systems as she is a monitoring person. If she says this has what we're looking for, she is the expert.

A member asked what would happen post-GWMA. They thought that the concept of a public/private partnership in evaluating water would be good. They wanted to see it continue as a peer-to-peer professional review board not a public agency. They felt that two sets of eyes should be monitoring the situation. It was their desire to bring this up to the GWAC with the question – “how do we stay engaged in this”?

Melanie thanked PGG for their work and noted it was in line with the GWAC approved directive on the ambient monitoring system.

NITROGEN LOADING ASSESSMENT

All three chapters must go through the peer review process; must have consistent methodology for all three pieces and the percentage of loading must line up in all sources so we can compare apples to apples. The peer review is done on the livestock piece and it has been returned to Gary Bahr at the Department of Ag. The peer review team has the piece from Irrigated Ag and is reviewing it now. The County is doing the atmospheric deposition portion of the RCIM piece which was newly assigned to them. Melanie was not sure when this draft would be available, but it should be soon.

Stu Turner wanted Melanie to call him as he has information on livestock sites one end of pen livestock and on the other nothing. Melanie responded and asked Stu to contact Kelly McClain directly by phone or email as she wants to keep separate the information the author receives from the information received by the peer reviewer.

A member voiced that they were disappointed by the nitrogen loading assessment going slow.

Chair, Melanie Redding adjourned the meeting at 2:20 PM

Resources Requested

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Recommendations for GWAC

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Deliverables/Products Status

-

Proposed Next Steps