

## Data Collection, Characterization, Monitoring Working Group

### Charge from Groundwater Management Area Advisory Committee

#### Working Group Members

Kirk Cook - Chair (Dept of Ag), Andres Cervantes (Dept of Health), Dr. Kefy Desta (WSU), Jan Whitefoot (CCYR), Jim Trull (SVID), Kevin Lindsey (GSI - Consultant), Laurie Crowe (South Yakima Conservation District), Lonna Frans (USGS), Matt Bachmann (USGS), Lorraine Edmond (Citizen), Mark Nielson (Benton County Conservation District), Steve Swope (PGG - Consultant), Stuart Turner (Turner & Co.), Thomas Tebb (Dept of Ecology)

#### Meetings/Calls Dates

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Conference Call: 1:00 PM – 3:00 PM, Thursday, November 7, 2013

Call Number: 509.574.2353 PIN# 2353

#### Participants

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Kirk Cook, Matt Bachmann, Ginny Stern, Steve Swope, Pony Ellingson, Melanie Redding, Kevin Lindsey, Frank Lyle, Jean Mendoza, Don Gatchalian (Yakima County staff support), and Troy Ross-Havens (Yakima County staff support)

#### Key Discussion Points

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Agenda:

- Steve and Pony's Introduction of the Draft Potential Groundwater Monitoring Stations document prepared by PgG

Steve and Pony from Pacific Groundwater Group (PgG) gave a big picture overview of the LYV GWMA process and how it concerns data collection and the Potential Groundwater Monitoring Stations draft document completed by PgG for HDR and the LYV GWMA. The report is based on all available nitrate analyses from the late 70's to more recent findings. Pony mentioned that the data came from two different sources; one source was a compilation of USDA, USGS, EPA, and DOH data; while the other was data regarding monitoring well locations and owners on file with Yakima County. An important aspect of the project is to monitor Nitrate concentrations in particular wells over time, this document is to outline how to select the most beneficial and reliable groundwater monitoring wells. The Potential Well Locations draft document is requested to be reviewed and commented on no later than two weeks from today's conference call.

Nutrient Loading Study

1. Presentation of three basic approaches followed by group discussion
2. Review of feedback from GWAC on the merit of such a study
3. Timelines to begin such a study
4. Interface with Deep Soil Study

Kirk stated that following his most recent presentation of this study to the GWAC, he has received comment back ranging from support for a table top model (lowest effort) to an extensive groundwater similar to the approach presented by Matt Bachmann during the September GWAC meeting (highest effort).

Kirk reviewed each study type to the group explaining that the lowest effort would involve looking up and using published documents and numbers associated with the current nutrient pathways evident in the LYV GWMA to develop the Nutrient Loading Study. This approach would not be relatively GWMA specific as it would not collect site-specific data within the GWMA, and would be more of a generalization. A medium effort approach would involve talking to local residents to determine what the constituents are actually applying to the ground in regards to nutrients and how over application, under application, or “ideal” application is contributing to groundwater quality. This approach goes a step further in eliminating the assumption that residents are following the recommended application rates, and gearing data collection towards GWMA. A high effort approach would be a model/study that is more comprehensive in the manner that it might include Vadose zone modeling as well as the involvement of a groundwater particle tracking basis, and a further attempt to understand what is happening in the root zone, beyond the root zone, in the Vadose zone and, ultimately, groundwater impacts associated with these practices.

General concern with the lack of integrity in the lowest effort approach was shared amongst the participants. Participants felt that this approach was not showing what is actually occurring in the LYV GWMA, and does a poor job characterizing the area completely. This approach does not completely collect data to make a scientifically informed decision on whether LYV residents are contributing or not contributing to groundwater contaminant concentrations. It was mentioned that the Data Working Group was tasked by the GWAC to identify existing sources of groundwater contributions, and that this approach did not satisfy that objective. One participant objected, expressing that some residents will contribute more nitrogen than average, and some will contribute less than average; during years yielding better than average productivity, residents might apply more nitrogen than years yielding less than average productivity, which will ultimately force the nitrogen budget to “break even”.

The majority of the participants expressed favor for the medium or high effort level study, which would allow for a more thorough data collection protocol to more accurately

characterize what practices are either negatively or positively impacting groundwater quality. A few caveats accompany these approaches, as sensitivity in timeline and allocated funds exist.

**USGS Proposal and Alternatives**

1. Discussion of pros and cons to USGS proposal
2. Alternatives to integrated Vadose/GW model
3. How do current efforts or studies impact comprehensive model
4. Outline presentation to GWAC on the 21<sup>st</sup>

A short discussion was held on this topic. The USGS proposal includes a very robust data set, which the group agreed that the larger data set; the better, and that the quality and relativity of the data is very significant. Group members generally agreed that a more comprehensive approach to modeling nutrient transport in the LYV GWMA, however, it is apparent that the proposed approach by USGS could take some time to merge the vadose zone model and the LYV groundwater model, and may not satisfy the interim goals of the GWMA. The group raised question about where the funds allocated for the GWAC would be best spent. A USGS representative reminded the group that the USGS can provide approximately 35% of the funds required to develop and implement the proposed model, and that if the GWAC doesn't act soon, those funds could no longer be available. Although the group agreed that a scientifically sound approach needs to be adopted to base future decisions on, the group was somewhat divided in the USGS proposal, as some supported it while others advised to proceed with caution if this approach was adopted. Kirk stepped forward to compose a proposal for both benefits and cost to present to the GWAC on November 21<sup>st</sup>. Kirk requested the participants to provide any considerations to be included in the proposal.

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**Resources Requested**

None at this time

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**Recommendations for GWAC**

None at this time

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**Deliverables/Products Status**

None at this time

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**Proposed Next Steps**

- Compose benefit and cost proposal to present to GWAC during the November 21<sup>st</sup> GWAC meeting for deliberation on further action.