AGRICULTURAL CHEMICALS SUBCOMMITTEE MEETING RECORD

TIME AND DATE:
10:00 a.m., February 21, 2002

LOCATION:
TNRCC, Park 35, Building F, Room 5108, Austin, Texas

PURPOSE OF MEETING:
The FY02 Second Quarter meeting of the Agricultural Chemicals Subcommittee of the Texas Groundwater Protection Committee.

ATTENDEES:

AGENCIES

Texas Department of Agriculture [TDA]
Texas Natural Resource Conservation Commission [TNRCC]
Texas Water Development Board [TWDB]
Texas Alliance of Groundwater Districts [TAGD]
Texas Structural Pest Control Board [TSPCB]
Texas Agricultural Experiment Station [TAES]

REPRESENTATIVES

Steve Musick	Chair, Member, TNRCC, Austin
Donnie Dippel	Member, TDA, Austin
Janie Hopkins	Member, TWDB, Austin
Barry Miller	Member, TAGD, Gonzales
Murray Walton	Member, TSPCB, Austin
C. Allan Jones	Member, TAES, College Station

AGENCY STAFF

Jeanette O'Hare	TDA, Austin
Ambrose Charles	TDA, Austin
Debborah Danford	TDA, Austin
Joe Peters	TNRCC, Austin
Alan Cherepon	TNRCC, Austin
Abiy Berehe	TNRCC, Austin
Cary Betz	TNRCC, Austin
Mark Matocha	TCE, College Station

INTERESTED PARTIES

Ed Baker	Syngenta Crop Protection

MEETING SUMMARY:

I. Opening Remarks

Steve Musick (TNRCC) called the meeting to order by welcoming everyone to the meeting, and brought attention to the handouts. Dr. Bruce Lesikar, TCE, and Donna Long, TSSWCB, were the only members not in attendance. The record of the previous meeting was brought up for changes, and since there were none, it was approved. Mr. Musick then proceeded to the Task Force Reports.

II. Task Force Reports

Site Selection Task Force: The Task Force Chair, Janie Hopkins (TWDB), mentioned the TWDB will sample the Carrizo-Wilcox aquifer, the Queen City-Sparta aquifer, and the newly designated Minor Aquifer, the Jackson. The TWDB will begin sampling in March and will continue to coordinate cooperative monitoring with TNRCC for immunoassay analyses of the samples where landowners are open to this work.

(Item IV also falls under SSTF purview, but was addressed as a separate item in the agenda).

Education Task Force: The Task Force Chair, Dr. Bruce Lesikar (TCE), was not present to report.

The BMP Task Force: The Task Force Chair, Dr. Joe Peters (TNRCC), presented an outline of regional BMP sources for possible use in the Panhandle Region (handout provided), which was deferred until Item V on the agenda.

State Management Plan Task Force: The Task Force Chair, Dr. Ambrose Charles (TDA), had nothing new to report. Mr. Musick said the ACS representative should talk with EPA about the Final Rule, what options we want to pursue, how best to continue spending the FIFRA Grant funds until the Final Rule is finalized, and added he is afraid states and agencies are losing interest as this drags on. Donnie Dippel (TDA) commented that the State FIFRA Issues Research and Evaluation Group (SFIREG) and Association of American Pesticide Control Officials (AAPCO) meetings will be held in April in the Washington, D.C. area, and he would speak with Arty Williams (EPA) about these issues. Mr. Dippel added that EPA is not getting much support from the states on the PMP because the states don't want a "one-size-fits-all" approach. Some states may not even use certain of the pesticides in the initial PMP program, and feel they will be burdened with these and other pesticides that are more of an issue within their state.

Data Evaluation and Interpretation Task Force (DEITF): The Task Force Chair, Dr. Allan Jones (TAES), was present, but since there were no charges of work to the DEITF, and none were outstanding, no update was needed.

III. Analytical Method 525.2 for Pesticide Analysis

Roland Garcia of LCRA Environmental Lab Services made a presentation on the Method 525.2 for pesticide analysis. TNRCC has contracted LCRA for pesticide analysis of groundwater samples the past few years. These samples are related to monitoring and investigative activities of the Agricultural Chemicals Subcommittee. The 525.2 Method is a liquid extraction analysis for drinking water standards required by the Safe Drinking Water Act, as are all the 500-sequence Methods. This analytical method analyzes by gas chromatography/mass spectroscopy (GC/MS) the analytes that are filtered from the water sample. The advantage of using both GC and MS is they allow comparison to a reference library of standard peaks, from which Tentatively Identified Compounds (TICs) can be identified reasonably close. Actual standards of the compound would be required in order to positively verify any TIC. The TICs are typically impurities in the manufacturer's production process, or possibly degradates/metabolites.

Samples should be preserved by storage at 4^0C, recommended pH adjustment to 4, and dechlorinization for finished water samples. Samples have a maximum holding time of 14 days from time of collection until extraction, and 7 additional days until analysis must be performed.

Some advantages of using the 525.2 method for pesticide analysis are:

- Low Detection or Reporting Limits, generally near 0.1 ppb
- Relatively long holding time of 14 days until extraction is required
- Reduced solvent usage, which means lower exposure time and less waste to dispose
- Less analytical time, faster to perform
- Non-targeted compounds can be tentatively identified due to the Mass Spectroscopy

Some disadvantages include:

- Designed for finished drinking water, more prone to matrix interference
- When filtering sample, if any particulate is present, it may serve as a physical barrier to the analytes being recovered in the extraction process

Alternative analytical methods are 8270 (solid waste programs method, such as for RCRA, Superfund) and 625 (waste water/Clean Water Act method). Advantages of these methods include; less likely to encounter matrix interference (liquid-liquid extraction), they can handle high solids, acidification is not necessary, and library searches for TICs can still be performed. Disadvantages include higher Detection Limits (but could lower these by reducing the number of analytes analyzed), has a shorter holding time (7 days), and is slightly more expensive.

Questions followed the presentation, addressing interference, precision and accuracy issues. Ed Baker (Syngenta) asked if airborne contaminants could cause detection of targeted analytes in blanks. Although this is possible, and is why field blanks are taken while sampling wells, TNRCC has yet to have any detects of targeted pesticides in blanks they collected and sent to the lab for analysis. Another potential interference issue includes phthalates, which occasionally are detected as residual concentrations remaining in the sample containers from the lab or manufacturer. Acidification of

samples could also interfere with specific targeted compounds, such as cyanazine, as one Texas A&M study indicates. The speaker reminded everyone that for the Drinking Water standards for that program, acidification and de-chlorination requirements must be strictly followed for the analytical results to be acceptable. The precision and accuracy for Method 525.2 are +/- 20% and >70%<130%, respectively. Mr. Garcia also added that LCRA Environmental Services Lab is the only Texas lab, other than the Texas Department of Health, that is accredited for drinking Water standards analysis, has capabilities for both chemical and biological analyses, is in the NELAC program of national lab accreditation, and is audited annually by TNRCC. He also noted that between 40% and 60% of all analyses performed by LCRA lab are for QA/QC purposes, can analyze samples for anyone on a commercial basis, and are not limited to doing analyses for agencies.

Dr. Jones (TAES) requested a comparison between the immunoassay and the 525.2 method. Dr. Peters (TNRCC) responded by saying the immunoassay method provides faster results, can be used during sampling excursions to delineate plumes and for prioritizing which samples to send to the lab for verification analyses (screening tool), has lower detection limits (generally more sensitive) due to only analyzing one target analyte at a time, is much less expensive, is easier to conduct, but is sometimes (as is the case for atrazine) not compound-specific (provides a combined concentration of parent atrazine, degradates/metabolites, and structurally related triazine compounds), which often results in "false positive" immunoassay detections when an insufficient concentration of parent atrazine is present to be detected by Method 525.2. Method 525.2 is compound-specific, is a verification method (quantifiable, higher order of QA/QC), detection limits can be lowered by various means, and can analyze for 24 or more analytes at a time, as well as the capacity to conduct library searches for TICs (greater versatility).

IV Panhandle Monitoring Update Reports

Mr. Cherepon (TNRCC) provided 3 handouts and gave a summary of each report involving various groundwater monitoring activities by TNRCC for pesticides in the Panhandle region. The first was a summary of the January 2002 sampling trip.

- Sampled 8 PWS systems - Roscoe, Friona, Hereford, Tulia, Dimmitt, Halfway, Kress, and Plainview, and 3 follow-up Coop project samples
- 26 PWS wells, 8 Private wells, 3 POEs, 2 SW, and 2 QA/QC samples for 41 total IA analyses for atrazine and metolachlor, and 14 lab samples
- Results mostly indicate increases in atrazine, fewer indicate a decrease, and several remained fairly constant
- One new well in Friona, well 19, between wells 9 & 10, also has atrazine(0.22 ppb by lab method)
- 2 wells had low detects of Tentatively Identified Compounds (TICs), and are likely an atrazine/triazine related compound
- Comparison of IA & lab results typically indicate about ½ as much atrazine by lab method; these results mostly indicate 3-4 times less atrazine by lab method, and there were 2 that differed by as much as 7 times less (Kress well 5, Plainview well 16).

- The increased difference may indicate a decrease in recent atrazine mis-use or application, and the sample results may now be detecting older, more degraded atrazine. Alternative explanations include either a very dynamic groundwater system (quick movement), or else an indication of considerable migration from surface down along abandoned or older wells.
- Recommend confirmation sampling of remainder of Coop wells that have yet to be resampled, sample Dumas PWS wells, continued monitoring in Friona, Plainview, Tulia, Dimmitt and Hereford, extend private well sampling SE of Tulia for plume delineation/migration, and conduct a long-term statistical analysis of comparison between IA/lab results for trends.

The quarterly monitoring report of 4 PWS systems followed.

- 4 PWS systems were monitored quarterly for atrazine during the 2001 calender year; these included the cities of Hereford, Dimmitt, Tulia, and Plainview
- Atrazine concentrations in well samples from Tulia are still high by immunoassay analysis (approaching 5 ppb in well 9, and nearly doubled from the previous concentration in well 10, as well as a recent increase in private well samples to east of the PWS wells)
- Plainview well samples indicate a noticeable drop in atrazine concentration for well 16, and a slight increase in well 17(the cemetery well's last sample was taken as a grab, and was not allowed to evacuate the proper well volumes prior to sampling, as previous samples indicate very low atrazine concentrations for this well)
- The other systems indicate some fluctuation to fairly steady atrazine concentrations
- Recommendations suggest TNRCC stop monitoring wells with atrazine concentrations <0.3ppb, continue sampling wells with atrazine concentrations >0.3 ppb, conduct semi-annual monitoring at Plainview, and continue the investigation at the Hale County Airport in Plainview

Highlights of the Friona annual update report for 2001 was the last of Mr. Cherepon's summary reports. He qualified the results by having the readers note that in Table 1, a comparison is made of lab results from 1/16/01 to immunoassay results from 6/12/01 (IA results are typically twice as high as lab results due to the immunoassay method for atrazine typically detecting a percentage of degradates/metabolites/structurally related triazines as atrazine in results from this method (laboratory method 525.2 atrazine concentrations are of parent atrazine only. The reason for not including the immunoassay results from 1/16/01 samples is the control was out of acceptable range by 0.2 ppb for these results, and they could only be considered as approximations.

- A new PWS system well (19) was sampled, located between wells 9 & 10, in which atrazine was detected (0.22 ppb by lab method)
- Analytical results indicate mostly a steady to slight increases in atrazine, except for wells 4 and 9, which had doubled (however, immunoassay results are being compared to lab results)
- Long-term-trend indicates mostly low, steady atrazine concentrations, with the exception of a recent upward trend in well 9
- If only parent atrazine results by lab method are considered, there are no atrazine concentrations over 1 ppb.
- Recommendation to stop sampling wells having lower atrazine concentrations (wells <0.3

ppb, such as 6, 7), and to continue with the 6-month monitoring interval, provided TNRCC's Public Drinking Water Section continues to cooperate by sampling PWS wells 9 & 10 once a year, and TNRCC's Groundwater Planning & Assessment Team samples wells 4, 4204 and nearby surface water once a year.

Mr. Cherepon also mentioned several upcoming monitoring efforts:

- TWDB monitoring of the Carrizo-Wilcox, Queen City-Sparta, and the newly designated Jackson aquifers, beginning in March, with TNRCC conducting the atrazine and metolachlor immunoassay analyses
- TNRCC is scheduled for a summer Panhandle trip to continue with PWS monitoring, and to complete follow-up sampling at the remaining cooperative ambient monitoring project wells (mostly north of Hereford)
- Another round of sampling at the Hale County Airport in Plainview is scheduled for March, with TNRCC possibly collecting split samples at that time

V. Panhandle Regional BMPs

Dr. Peters (TNRCC), provided a handout outlining the proposed response to pesticide groundwater contamination with preventative measures. Highlights include the following:

- Identification of Problem; Monitoring, Identifying Source and Affected Areas
- Identification of BMP Sources; BMP Sources, Types/Categories of BMPs, Cost Issues, and Cost Sharing
- Education of Appropriate Groups/Individuals on BMPs; General and Focused Education
- Possible Implementation of Tex-A-Syst-Active Promotion versus lower level promotion

Mr. Musick recommended the Subcommittee postpone adopting this plan until Dr. Lesikar (TCE) is present, and until additional input/feedback is provided by the Task Force and Subcommittee. He also sees this as a format/mechanism for future approaches to BMPs:

- A compilation of BMPs for a region
- Assist in educational efforts to address problems in impacted area
- Where area BMP sources are located, and how to get them
- How to present them

Mr. Musick doesn't see this as a laundry list as much as a way of choosing BMPs. He also stressed the need for input on the most effective way to approach this, which methods are the most cost effective, the best method of delivery, and which BMPs would likely be implemented and maintained. One suggestion previously submitted by Dr. Montey Dozier (TCE) was to use the Tex-A-Syst program materials, making them more available, and provide presentations through additional funding. If further discussion results in agreement with this suggested approach, then additional funding should be pursued. Mr. Miller (TAGD) suggested we tie this in with continuing education unit credits as a requirement for licensed applicators. Discussion followed, noting that this approach would require additional funds, whether it would be feasible and just to require only specific regions to undergo additional training, and why should only commercial applicators be targeted when private applicators may be just as much a part of the problem, as well as possibly

public works staff.

VI. Public Comments

The few public comments were made by Mr. Baker (Syngenta), which were related to, and included in the discussion in the previous paragraph.

VII. Announcements

Mr. Cherepon announced there will be a High Plains Conference in Amarillo on 4/1-3/02, which is being organized/sponsored by the High Plains Foundation and the Texas Cooperative Extension. The conference theme is air and water resources of the High Plains, and TNRCC has submitted a paper and poster display related to atrazine monitoring in the Panhandle region.

Mr. Miller said he spoke with county agricultural extension agents in several counties, who don't as yet have an Underground Conservation District (UWCD) in their county, but will have one shortly. Most had questions about why they are needed. Mr. Musick said of the 35 proposed districts, 13 have already been approved, for a total of 65 UWCDs in the state at present.

Ms. Hopkins mentioned the TWDB is losing its director, Craig Peterson, 3 new board members were recently appointed by Governor Perry, and Tom Knowles is retiring. The result is a major change in the top Administration of the TWDB. Mr. Peterson will be leaving sometime in April.

Mr. Dippel announced AAPCO will be meeting in the Washington, D.C. area on 4/11-13/02, with the SFIREG water quality section meeting to follow on 4/29-30/02. Also, the pesticide section of SFIREG will meet on 4/8-9/02 in San Antonio.

Dr. Jones announced the TWRI will be focusing on water conservation and irrigation issues, especially in the High Plains region, and should get additional funding from the Legislature for this.

Mr. Cherepon also noted the Region 6 EPA/States/Tribes FIFRA meeting will be held on 4/29-30/02 in Las Cruces, New Mexico.

The decision was made by the Texas Groundwater Protection Committee that the FY02 third quarter meeting of the Texas Groundwater Protection Committee meeting will be on May 16, 2002, at 1PM, in Conference Room 2210. The Agricultural Chemicals Subcommittee will take place on the same day at 10AM, in Building F, Room 3202A (3rd floor).

VIII. Adjournment

Recorded and transcribed by Alan Cherepon.

Attachments

-Response to Pesticide Groundwater Contamination with Preventative Measures (BMP Outline for Central Panhandle Region)
-TNRCC's FY01 Friona Annual Update Report
-TNRCC's FY01 Quarterly Monitoring Report for Select Panhandle PWS Systems
-TNRCC's Summary of Panhandle Field Trip - 01/21-25/02