

PBOW
Groundwater

Meeting with USACE and OEPA - September 11, 2002
Quarterly Background Groundwater Investigation
Plum Brook Ordnance Works
Sandusky, Ohio

Attendees:

Rick Meadows	USACE Huntington District	304-529-5388
Lisa Humphreys	USACE Huntington District	304-529-5953
Linda Ingram	USACE Nashville District	615-736-5622
Lannae Long	USACE Nashville District	615-736-2049
Jim Beaujon	USACE Nashville District	615-736-7629
Laurie M. Eggert	Ohio EPA - SWDO	937-285-6457
John Weaver	Ohio EPA - NWDO	419-373-3098
Ron Nabors	Ohio EPA - NWDO	419-373-3147
Bob Lallier	NASA PBS	419-621-3234
Mikael Spangberg	PES	860-676-7780
Mike Gunderson	PES (by phone)	865-694-2996
Steven Downey	Shaw Environmental	865-694-7496
David Kessler	Shaw Environmental	865-560-5248

Introduction: Rick Meadows opened the meeting at 10:00 AM with introductions of participants.

Minutes: David Kessler delivered a presentation of the Background Bedrock Groundwater Study Results. The presentation provided a summary of sampling and analysis activities conducted September/October 2001 to July 2002 (4 quarterly sampling events) for five bedrock background monitoring wells (BED-MW20, BG8, BED-MW24, BED-MW25, and BED-MW26). The purpose of the presentation was to determine if background groundwater data or datum are appropriate for use in risk assessment and to determine if we need to delete data or collect more data. The following items were included in the discussion:

- Quantity of samples and analyses performed
- Characterization of background distributions
- Handling of nondetects
- Distributional assumptions
- Handling of outliers
- Summary statistics

- Bailer vs. low-flow sample collection
- Filtered vs. non-filtered sampling

MW-26 data

During the discussion of outliers (See App. O text, page 1 and 2), a suggestion was made to eliminate sample results of monitoring well BED-MW26 from the data set because it fit outlier criteria. This was due to the well only being sampled once, the groundwater sample being collected with a bailer, the sample exhibiting high turbidity, and significantly higher levels of metals compared to other background wells.

Background Data Agenda Item Discussion

Discussions following the presentation resulted in agreements regarding the path forward for the Background Bedrock Groundwater Study:

- Monitoring well PB-BED-MW26 will be eliminated from the background data set; an explanation will be included in the final report to justify this action.
- Unfiltered groundwater data, both on-site and background, will be used for a screening and risk assessment.
- Limit quantitative analysis to the 2001-2003 data collected by low-flow; bailer collected data can be discussed qualitatively in risk uncertainty, or to provide further evidence in a risk assessment as needed.
- In data dumps, indicate or highlight which sample points are used in analysis. OEPA commented that two 1997/98 sample points were identified as the same well and collection time (likely one is a QA sample). For example, in draft GW report APP O stats, summary stats could not be duplicated, because it was unclear to which data were used. (ex. lead on page 10 of 63 BG8-001 lab numbers 5410 and 5411, which point was used? etc.) As an ACTION ITEM, Shaw will provide an electronic copy of the data tables, and data dumps will highlight or mark which datum was used for statistics.
- At each AOC, if there is enough low-flow data to perform a statistical analysis, then only that data will be used. Bailer data can be used in the absence of adequate low-flow data. Absence of adequate low-flow data shall be discussed in risk assessment uncertainty. Any bailer data can be discussed in uncertainty.
- Before any AOC GW risk assessment starts, the contractor will provide AOC data and summary tables, low-flow and bailer data (together and separate) for OEPA and USACE to decide on how to proceed with the risk assessment.

- Data will be broken out into AOCs (i.e., TNTA, TNTB, TNTC, etc.)
- Shaw will show data that was used in the statistical analysis in the report.
- A trend analysis will be included in the report that will consist of a plot of arsenic, lead, manganese, chromium, and nitroaromatics by well over time. Nitroaromatics will be included in the trend analysis to determine if nitros and RDX show a trend in background. If no other background data shows nitros and RDX, then it may be possible to use the April 2002 data.
- We will use the UTL (not including PB-BED-MW26 data) unless the maximum concentration is less, then the maximum concentration will be used (this is consistent with the soil approach).
- It is incorrect to assume 15% nondetects are nonparametric distributed. It was commented that based on the small number of samples included in this study, this approach is not appropriate and should not be used. Statistical population testing can be used.
- As shown by the handouts, ½ of the laboratory reporting limit will be used for nondetects.
- A final conclusion agreed upon following discussion of the Background Bedrock Groundwater Study was to continue the background groundwater sampling for two additional events. The next background groundwater sampling event will be conducted in October 2002 (dry month) followed by the second event in April 2003 (wet month). The decision to continue sampling was due to the detection of nitroaromatics (particularly RDX) in the background wells (BED-MW20, BED-MW24, and BED-MW25) in April 2002. It was noted that RDX was never manufactured at PBOW and should not be present in the analytical results. If the monitoring wells being called "background" are truly upgradient of all former DOD manufacturing activities, nitroaromatics should not be seen the wells. Additional sampling will hopefully provide adequate information to decide whether the wells are truly "background" wells. Analytical results will also help determine if the present inorganic data can still be used in the background distribution calculations.

MW-27

Downgradient well PB-BED-MW27 (slow water recharge, open hole construction, requires bailing method for sample collection) has nuisance odor that had been upsetting residents in the area, and is so strong that at times it wakes residents in the middle of the night. USACE and OEPA wants continued good public relations and therefore supports well abandonment. Agreement was made to install a plug in the well (plug was installed September 12, 2002), collect one final groundwater sample in conjunction with the October 2002 background sampling, and abandon the well later in October 2002. To be noted, the Reactor site is planning on pumping GW until

2007. The data collected from downgradient wells is one reason to consider off-site groundwater survey and potential sampling for extent.

Action Items:

Item No.	Action	Responsibility	Date Due
1	Provide electronic copy of data tables including sample collection methodology (low-flow or bailer), additional filtration identification, analytical results (chemical and water quality), and hidden UTL data calculations to USACE for submission to OEPA	David Kessler	9/27/02
2	Review QC samples from MW20, MW24, and MW25 (April 2002) to see if RDX was detected. Report conclusion to USACE.	David Kessler	9/27/02
3	Determine if model info will be available by next April and report to USACE.	Steve Downey	10/31/02
4	Incorporate above listed agreements into the groundwater annual report.	David Kessler	July 2003
5	Install plug in BED-MW27 (9/12/02 results; The plug reduced but did not eliminate the H ₂ S odor; verified by Rick Meadows, Lisa Humphreys, and Bob Lallier).	David Kessler	Done
6	Sample BED-MW27	David Kessler	October 2002
7	Abandon well BED-MW27	Lisa Humphreys	October 2002