

January 17, 2004

Department of the Army  
Nashville District, Corps of Engineers  
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Per instructions, please see the following comments relating to the Seventh Quarterly (September 2003) Background GW Report presented by Shaw Environmental, Inc. submitted prior to the comment date of January 28, 2004.

In paragraph 1.3 on Page 1-5, the document states,

“Review of documents and discussions with OEPA personnel indicated that the Columbus and Delaware bedrock units (the same bedrock units in which one of the PBOW background wells is screened) contain actively producing petroleum hydrocarbon wells (Shaw, 2003a). Therefore, it is important to note that some VOCs (primarily benzene, toluene, ethylbenzene, and total xylenes) and SVOCs may be naturally occurring in the site groundwater.”

Again, in paragraph 3.4.2 on Page 3-4, the document reiterates,

“Although certain organic compounds in site groundwater (benzene, toluene, ethylbenzene, xylenes, and polynuclear aromatic hydrocarbons) may be attributable to background conditions . . . .”

First, there are no “actively producing petroleum hydrocarbon wells” documented by the Ohio EPA in the area immediately surrounding the Plum Brook Site. Any oil-producing sites are many miles to the east or to the west. This statement would lead the reader to believe that there is enough crude oil available in the immediate area to support production. That is simply not the case.

Second, the text mentions [OEPA] “documents” supporting the hypothesis that the background levels of VOCs and SVOCs may be “naturally occurring” and impacting the background wells. I am only aware of one document of tests run on shale near a site in the vicinity of the Huron River. The document I reviewed was not refereed by others and appeared incomplete (containing many hand-written entries.) If any documents are to be used to substantiate the hypothesis, then they are worthy of entry to Section 6.0 References, for review and critique by other scientists.

Third, the text mentions "discussions" with the Ohio EPA supporting the hypothesis that the background levels of VOCs and SVOCs may be "naturally occurring" and impacting the background wells. These also bear further documentation if they are to be given substantial merit in this research.

Much of the research into the hypothesis concerning "naturally occurring" hydrocarbons was produced to reinforce a flawed groundwater study performed at the Erie County Landfill site by Metcalf and Eddy entitled the "Groundwater Quality Assessment Report - Erie County Landfill", which was revised in April 1995. Another reputable environmental firm, Bennett and Williams, disputes this hypothesis in a report entitled the, "Preliminary Evaluation of the Erie County Landfills as they Relate to the Suitability for Vertical Expansion" submitted in January 1997.

Finally, no mention (or known research) has been performed on the possible environmental impact on groundwater since the National Space Administration and NASA started work at the site. There is already one permit issued by the Ohio EPA to NASA for a "pump and clean" system arising from groundwater contamination by a UST that contained diesel fuel used for power generators at the nuclear reactor site. Other facilities were also used to test propellants or for the performance of routine maintenance functions at the site. Any one could have added to the presence of SVOCs or VOCs in the groundwater.

It is important to note that the overburden soils are deeper in the southern areas of the property than in the northern reaches. Migration of organic compounds could have moved south instead of north, even though it seems that groundwater flows in the opposite direction. Another point of interest is the fact that similar studies (by the same research firm supplying data for the Erie County Landfill) of the hydrogeology in the area have indicated that groundwater moves at a rate of six inches per year. This could prove important when considering the density of the bedrock and the possible migration of contaminants through the overburden.

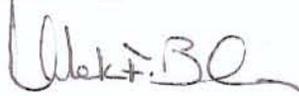
As the documents produced by the OEPA are suspect in this matter, it would be wise to produce separate and more carefully prepared documents to support the hypothesis before coming to another, possibly flawed, conclusion about background levels of SVOCs and VOCs.

The importance of determining the exact levels (and probable sources) of all background chemical contamination in and around the Plum Brook site is foundational to the research presently being performed by Shaw for the Army Corps of Engineers on contamination arising from the Trojan Powder Works. Therefore, appropriate emphasis concerning the validity of any and all documents presented in the research is crucial to the accuracy of the study.

As the Restoration Advisory Board is the “voice of community” in these matters, it is important that we feel confident in the outcome of the research and subsequent work to be performed to remediate the environmental impacts that are discovered. Nothing should be left to chance. No hypothesis should go without study. No questions should go unanswered. The credibility of all stakeholders is important, but ultimately, after the work is complete, it is the community members who will remain to be judged on the quality of the finished product. Therefore, the points raised in this commentary should be addressed before any groundwater study is judged as “complete and accurate.”

Thank you for your attention to this matter. As usual, the Restoration Advisory Board stands ready to help in any way possible to assure that this project ends in complete success.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark F. Bohne', written over a horizontal line.

Mark F. Bohne, Co-Chairman  
Plum Brook Ordnance Restoration Advisory Board

Cc: Mr. Richard Meadows