

From: Kuehling, Harlan H - DNR
Sent: Tuesday, January 17, 2012 3:57 PM
To: Hanefeld, Linda S - DNR; Ackerman, Jeff A - DNR; Schmoller, Michael R - DNR
Subject: Comments on the BAAP GW RA Alt. FS

Attachments: Alt FS GW RA - HK comments 01-12.doc

Hi, Folks,

This attachment is my comments on the Alt. FS.



Alt FS GW RA - HK
comments 01-...

Not included in my comments are the problems in several tables and the questionable entries on the well development forms that will be discussed by Jeff and Mike.

Should we discuss what might be the best way to present our comments and observations, which will include those about the tables and well development forms that appear to be in error?

Hank

COMMENTS ON THE BAAP ALTERNATIVE FEASIBILITY STUDY - GROUNDWATER REMEDIAL STRATEGY

Page 14, last paragraph. The cost to remove one pound of DNT by the IRM/MIRM system is calculated to be \$87,314. This is misleading because other contaminants, particularly VOCs, are also removed by the system. If the average weight of VOCs removed is factored into the calculation, the cost per pound of contaminant removed drops to slightly below \$20,000, much lower but still quite high.***

Page 16. This section on the “Central Plume” could have included information on the soil excavations (for example, of the ditches) that have occurred in the Rocket Paste area, which the Army has informally suggested may have served as source reduction/removal actions.***

Page 22 (and Table 14). Is it really possible that the Army has discharged, for example, at least the 4,648 pounds of carbon tetrachloride estimated to be in the PBG plume, apparently over the numerous years of production? Was there even much more CTET mass released that did not make it into the plume?***

Pages 22-27. This section on the PBG GW plume would have benefited from a discussion of the nature of the influence and the area of influence of the IRM and MIRM extraction wells.***

Page 38. According to the report, the only possible concern about contaminated groundwater seeping into Lake Wisconsin/Wisconsin River might be for carbon tetrachloride, which was known in September 2011 to be in the PBG GW plume at a concentration of 37.7 ug/L in the closest MW to the River, about 1,400 feet up-gradient. Comparing this to the human cancer criteria for carbon tetrachloride for surface water of 29 ug/L, it is, on the one hand, higher than the HCC, but is not significantly higher and is over a quarter of a mile away from the River. Natural attenuation may be effective at reducing the concentration below the HCC by the time groundwater discharges into the river. Although it is difficult to imagine groundwater contaminants at such low levels having any impact on the Wisconsin River even at the GW/surface water interface, we should verify the Army’s conclusions with a surface water specialist in the SCR Watershed Management Program.

Page 42 (and the time vs. concentration plots in Appendix B)). The Army included, at WDNR’s request, some T v. C plots for MWs on the BAAP property and down-gradient from the PBG that depict dramatic reductions in contaminant concentrations. What isn’t clear is whether these reductions are the result of natural attenuation, the influence of the IRM/MIRM systems, or both. Trends in all MWs depicted in the plots are either stable, decreasing, or variable at low concentrations, with two exceptions.

Page 42-43. The report states that no future changes in any systems are anticipated that will result in a change in the current stable or decreasing contaminant trends that have resulted from significant remedial actions that have been completed in the source areas of each of the three plumes. While this may be generally true, the exception may be the eventual termination of operation of the IRM/MIRM systems. The influence of the IRM/MIRM systems on the groundwater quality in the plume is not explained in the Alt. FS. Our conditional approval should include conditions that require the Army to propose one or more methods to WDNR that will, when implemented, best predict the impacts to GW quality when the IRM/MIRM systems are shut down. Those conditions should also include requirements on how the shut down should occur: what the steps of shut-down should be; the timing of them; and how these steps should be monitored.

General Comments. The Alt. FS presents significant amounts of information: background; past SIs and RAs; GW monitoring results; the source areas for the three GW contaminant plumes; past and current natural attenuation processes; a conceptual site model; three alternatives for remedial action and the preferred RA. The reader does have to look carefully for the links that tie these disparate areas together into a cohesive presentation of: “here’s what we did, here’s what we found, here’s what remains as a public health or environmental concern, and here is what we propose to do about it”. There is no cohesive summary and conclusions section.***

When we have comments from the main reviewers (Jeff, Mike, and me), one suggestion is to combine them into one document, then decide which ones are for internal use only and which ones are worthy of passing along to the Army and SpecPro. (I have marked the comments above with a “***” that I would discuss with the Army and SpecPro folks, either for a response at this time or for their information.)

In conclusion, I don’t have any objections to the proposed public water supply or to reliance on monitored natural attenuation, both being included in the proposed groundwater remedy. Extensive groundwater monitoring will have to be a part of the remedy for years to come to allow the Army and WDNR to evaluate the effectiveness of the remedy in the short and long terms. The one unknown in the remedy is the impact of ceasing operation of the pump-and-treat systems on groundwater quality down-gradient of the PBG, both on the former facility property and possibly south of it on private property. I am suggesting that we include conditions in the approval that will address this concern.