Dow's Recent "Flawed Science"

David L. Linhardt, publisher, MDN-Rejected.com June 16, 2005

On April 13, 2005, employees of the DEQ and EPA observed a Dow Chemical contractor sampling portions of the Tittabawassee River to determine dioxin levels. Since the DEQ had not been informed of the sampling nor approved the sampling program, the company may have been in violation of the Operating License for the hazardous waste facilities at the company's Midland plant. It was subsequently learned that the company had conducted similar unapproved dioxin sampling and analysis in the river during 2003 and 2004.

The company does not agree with the DEQ's interpretation of the terms and conditions of the Operating License.

Perhaps, the company and some "stakeholders" believe that this data should be used in assessing dioxin contamination even though the company committed a minor "oversight" in not involving the DEQ in the studies. After all, "sound science" is still sound science.

It would be a serious mistake to consider the 2003/2004 programs "sound science" since some of the data appears to be flawed to the extent that, at least, one of the studies may be invalid. Based on the poor quality of the study, it is not certain if the company is dedicated to resolving the scientific issues associated with dioxin contamination or just providing "smoke and mirror" studies for its defense of current and future lawsuits.

Continue Editorial

The "Flawed Science" section of DioxinSpin.com contains a detailed analysis of the study in question and interested readers are invited to read the analysis and the study itself. Connect to DioxinSpin.com and then select "Flawed Science". Volume 3 is the analysis of the study.

The Dow study contains a number of defects that should be very apparent to community residents and readers with a scientific background:

1. Several violations of sampling, record keeping and analytical protocols and standards required to validate sampling and analysis were reported.

2. One of the most important sampled locations was THT-02245 which contained the highest levels of dioxins (9,312 ppt-TEQ) found in the topmost 4 inches of river sediments in the length of the river from Saginaw to Midland.

   a. Even though the Dow contractor should have been aware that the sampling protocol required a minimum length sediment core to allow dioxin analysis of both shallow and deep sediment levels, the sediment core obtained at this location was only 10 inches in length – insufficient to allow planned analysis.

   b. The study did not provide any information as to why a substandard core was obtained at this location. Based on the information that was provided – a low river flow at time of

sampling, a gravel/sand bottom easy to penetrate – the contractor should have been able to obtain a core that was more typical of the average 32 inch sediment core.

c. Since the deeper sediment could not be analyzed, the study could not determine if this location (Imerman Park area) contained dioxin levels greater than the 19,000 ppt-TEQ level found in deeper sediment levels (35 to 47 inches in depth) at a location closer to Shields, MI.

3. One of the samples (THT-02781) taken in the vicinity of THT-02245 has been "lost" and the study provided no information on the missing sample.

4. The most significant defect in the Dow study is associated with the changing water depth of the river.

   a. Sampling of the locations with the highest levels of dioxin (9,312 ppt and 2,864 ppt-TEQ) occurred in Nov/Dec 2003 when river flows were low and the river height at the USGS station in Midland was ~10.7 feet. Based on a subsequent analysis of the Nov/Dec 2003 samples, the sampling/analytical program was expanded to obtain additional samples in the vicinity of the two locations to improve understanding of dioxin variability.

   b. The re-sampling of the two locations occurred in March, 2004 when the river was at flood, river flows were almost 10 times greater than in Nov/Dec 2003 and the USGS Midland river height was ~21.0 feet (more than 10 feet higher).

   c. Based on the information provided in the study, it is possible that 9 out of the 10 sediment samples taken in March, 2004 at the THT-02245 location may have been from river locations that were dry during Nov/Dec 2003.

      If this is true, it would be very difficult to draw any meaningful conclusions between samples taken from a dry river bank and those taken in 4 to 5.5 feet of water due to the difference in hydraulic conditions at these points in the river.

During my Dow employment (1965 to 1993), I was especially proud of the scientific expertise of the company. I have in-depth knowledge of a number of Dow's technologies and the process research programs and manufacturing plant support were top-notch.

After reviewing the company's most recent dioxin studies, I would prefer to believe that the company's Legal Department is playing a very big role in overseeing the design and implementation of dioxin-related studies.

The other possible explanation – hard to believe but possible – is that the company has lost a great deal of its scientific expertise, at least, in the environmental contamination area.