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Competitor Assessment

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David L. Linhardt

May 10, 2004

Larry J. Washington
The Dow Chemical Company
2030 Dow Center
Midland, Michigan 48642

Dear Larry,

Subject: Potential Chemical Exposure from Chemical Tar Ponds at the Midland Site.

During my research into Dow's historic waste facilities, I uncovered information that manufacturing plants, warehouses and office buildings were constructed over filled-in chemical waste ponds at the Midland site. If this information is correct, employees may still be *currently* exposed to chemicals emanating from the tar ponds.

I felt that I should bring my concerns to your personal attention as soon as possible. I have enclosed three photographs that will help to better describe these concerns.

1. Dow Midland: 1949 Aerial Photograph

The enclosed 1949 aerial photograph clearly shows two waste ponds east of the RR tracks. The photograph was dated based on construction of the Southside Powerhouse (500 Building). I have highlighted the area of concern with a black outline. I believe that information that was obtained from an excavation in the area indicates that these ponds were used to store a variety of unknown chemical wastes.

As you know, the Environmental Services Department, as required, assists the underground maintenance crew with problems that might be encountered while repairing underground piping or sewers. I assisted in resolving problems encountered in one such excavation in the outlined area in the 1979 to 1983 time period.

The underground crew frequently encountered chemical contamination and would normally handle most problems without assistance. However, the type of chemical contamination that was discovered in this excavation was alarming even to them. At a depth of approximately ten feet below grade, a black, viscous tar layer approximately twelve inches in thickness was discovered. The tar layer continued to "ooze" into the

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excavation as long as the excavation was open. The crew leader indicated that the tar layer was the bottom of an old chemical waste pond.

The underground crew was alarmed because the chemical odor that was encountered in the excavation was very different from any that had been experienced before. Due to the very strong chemical odor, the underground crew evacuated the excavation and was unwilling to proceed without additional information about the potential risks of chemical exposure .

Based on a sample of the tar, I can best describe the odor as: very musty, extremely putrid, very nauseating (promoting a gagging response) and similar to that associated with a dead animal, but much, much worse. I was unable to have the tar sample analyzed to determine the chemical composition of the tars.

If my memory serves me correctly, this excavation was south of the powerhouse ponds, inside the rectangle shown on the 1949 photograph.

2. Dow Midland 1962 Aerial Photograph

This photograph is a portion of the cover of the December, 1962 issue of the *Brinewell* magazine. As can be seen in the outlined area, the ponds that were present in the 1949 aerial have been filled in. Buildings and other structures have been constructed in the areas once utilized by the chemical waste ponds. The powerhouse was started up in 1950 and can be seen in operation.

3. Dow Midland 1998 Aerial Photograph

By 1998, the powerhouse had been demolished and is no longer visible in the photograph. The coal pile seen in the 1962 aerial is no longer present. The powerhouse ponds have been filled in and clay capped.

This photograph also shows the extent of construction in the reclaimed pond area. If I remember correctly, the Dursban and Lorsban plants are inside the outlined area. I seem to remember that construction in this area required significant piling and that the concrete footings and concrete pads were supported by the pilings and not by the surrounding soil. However, I could be wrong about the construction requirements since this is not my field of expertise.

When I was in Midland in late April, I reviewed the 1949 aerial photograph with Mr. Al Taylor and Ms. Cheryl Howe of the MDEQ. At that time, I did not have the 1962 and 1998 aerials. Al indicated that Dow had installed an interceptor sewer system along Saginaw Road but that very little information had been provided to the MDEQ as to why the interceptor system was needed.

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Al is a geologist and he may be of value in defining the mechanisms that could result in the migration of chemicals or chemical vapors to the surface.

Dow epidemiology studies have confirmed that the Midland plant site has a statistically significant elevation of employee deaths from Rare Cancers of Other and Unspecified Sites. It is my understanding that no link has ever been established between these cancers and any industrial factor. I do not know if the Epidemiology Department took into account possible chemical exposure from emissions from the historic chemical waste ponds.

An examination of data in Dow's Epidemiology Surveillance System may be able to determine if employees that worked in buildings constructed above the filled-in tar ponds had a higher mortality from these rare cancers or from any other specific cancer.

If the information about the filled-in ponds is correct, construction of any facilities above the ponds may be analogous to construction above No. 2 Phenol pond. I strongly believe that an evaluation of the various types of wastes that could have been stored in these filled-in ponds and an in-depth examination of current chemical exposure to employees working in this area are warranted and should be carried out as soon as possible.

If I can be of any further assistance on this matter, please feel free to contact me.

Sincerely,

David L. Linhardt

Cc: Mr. George W. Bruchmann, DEQ
Ms. Janet Olszewski, MDCH