STATE OF NEBRASKA

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Dr. Brian Zurbuchen
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Region 7
901 North 5th Street
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Re: Garvey Elevator Site, Hastings, Nebraska,
NDEQ ID: 00247
Program ID: SF NEN000704351
NDEQ Comments on the (site-wide) revised Draft Remedial Investigation Report, dated April 8, 2011

Dear Brian:

NDEQ has a completed a review for content of the above referenced document. Detailed comments on the draft Remedial Investigation Report that were submitted by NDEQ on April 29, 2011 were adequately addressed in the revision. Additional comments are listed below.

Please feel free to contact me at (402) 471-2214 if you have any questions. Thank you for your time.

Sincerely,

Laurie Brunner
Groundwater Geologist and Project Manager
Remediation Section
Waste Management Division

Re: Garvey Elevator Site, Hastings, Nebraska,
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1. Please consider investigating the facility due north of Garvey along Highway 6 as a potential source area. The following discussion presents supporting evidence.

Groundwater samples collected in December, 2009 from soil borings are tabulated on Table 5.12 of the revised RI Report. As observed in Sections 5.5.1.7 and 5.5.3.1, trichloroethylene (TCE) was found in groundwater samples taken at 2 depths in SB-38, and in MW-A. TCE has not been found in groundwater elsewhere at the Garvey facility (although TCE and PCE were found in sub-slab and indoor air gas/vapor samples collected in and around the shop building).

Figure 5.17 shows carbon tetrachloride concentrations in Upper Aquifer Zones for groundwater samples obtained in 2009 and 2010. SB-40 (13 ug/l), MW-6A (17), SB-37 (29), and SB-38 (92) are north and upgradient of known and potential source areas shown on Figure 1.7, and described in Garvey 104(e) response letters (RI Appendix A). As was discussed in Section 8.1.5.3, an additional source area appears to be an explanation for the TCE and carbon tetrachloride in groundwater in this area. Although the RI attributes the elevated carbon tetrachloride in this area to influence from pumping of Hastings Municipal Well 13 and the Garvey supply well, another possible explanation is a second source from the facility north of Garvey along Highway 6. Or the carbon tetrachloride and TCE may be from different sources.

Please consider obtaining a groundwater sample north of SB-40 and west of SB-39, along Highway 6. Because MW-6E had an anomalously high level of carbon tetrachloride, please consider taking an additional groundwater sample in the SB-38-SB-39 area in the D and E aquifer zones.

2. Please consider using a different Vapor Intrusion model for determining VI Preliminary Remedial Goals, listed in Table 5.2.

The OSWER Draft Guidance (November, 2002) is very useful for screening of potential risk at sites with little soil gas data, but there is a significant amount of soil gas data is available at Garvey. In addition, while the sub-slab soil gas data obtained in 2009 is very useful for determining the immediate threat to building occupants, according to recent research, it is of limited use in predicting long-term potential risk of contaminants in vapor migration from deeper soil (gas). Shallow soil gas (for example, sub-slab) samples are significantly influenced by the overlying structure itself. As noted in Section 5.2.2.1, PCE and TCE in shallow soil gas is probably due to use of the chemicals in the building. This is suggested by the relatively high ratio of PCE and TCE in indoor air compared to subslab gas. If the source were below the slab, for example, in groundwater or deeper soil, the ratio of indoor air to soil gas would probably be significantly less.

The Johnson-Ettinger (J-E) model can be used to estimate carbon tetrachloride concentrations in soil gas below a slab foundation that would pose an unacceptable risk (i.e., exceeding 10^{-6} lifetime excess cancer risk) at various depths. Site-specific conditions such as soil permeability based on

soil type can be input into the model. Once these predicted concentrations are calculated, actual soil gas concentrations can be compared to them to determine if a VI risk exists in an area.

For example, the J-E model predicts that a carbon tetrachloride concentration in soil gas equal to or greater than 2000 ug/m^3 at a depth of 80 feet below slab would potentially pose an unacceptable VI risk to workers in a site building if industrial worker frequency and duration exposures are used. This concentration was exceeded at this depth in several locations as shown in the 2007 Soil Gas sampling.

Therefore, NDEQ supports the continued operation of the soil vapor extraction (SVE) system as a way to reduce the potential Vapor Intrusion risk to human health from carbon tetrachloride and related contaminants in soil gas, and to protect against future MCL exceedances in groundwater from residual soil and soil gas contamination.