Furuseth, Arlene

From: Stock, Paul
Sent: Friday, June 26, 2009 9:50 AM
To: Furuseth, Arlene
Subject: Leak #15656, Alex Exhaust, Alexandria, MN

RE: my review of AECOM's 2.16.09 Guidance Document 4-06 *Investigation Report Form* (September 2008) recommending site closure.

Previously, I reviewed STS's (now AECOM) 6.30.07 IRF and indicated that it should be rejected as incomplete for a number of reasons, most egregiously because of the lack of vertical (borings not deep enough) and horizontal (to the E and S) contamination delineation. The report could have been rejected as incomplete - see my 10.26.07 comments in TALES Remarks. The 6.30.07 IRF recommended installation of monitoring wells, quarterly ground water monitoring, and collection of sub-slab soil vapor samples from underneath the on-site building and an adjacent building (former Lloyd's Cafe). I recommended deferring any recommendations until the investigation was complete.

The 2.16.09 IRF still includes the unacceptable disclaimer included in the 6.30.07 IRF. I copied you on an 6.24.09 email to Tim Grape-AECOM telling them to remove this from future reports. I note that the 2.16.09 IRF is completed using the new September 2008 format. Keeping in mind that the 2.16.09 IRF is essentially an update of the 6.30.07 IRF but using a new format, the **2.16.09 IRF** contains the following new information:

- HSA borings B7 and B8 completed 2.27.08.
- DP boring B9 completed 12.12.08. 500
- Follow-up ~~50~~ ft radius potential receptor survey completed 12.12.08.
- Horizontal Extent of Soil Contamination map as Figure 5.
- Horizontal Extent of Groundwater Contamination map as Figure 6.
- Updated cross section Figure 7A.
- Updated Table 1 Tank Information
- Updated Table 2 Results of Soil Headspace Screening
- Updated Table 3 Analytical Results of Soil Samples
- Updated Table 6 Water Level Measurements and Depths of Water Samples Collected from Borings
- Updated Table 7 Analytical Results of Water Samples Collected from Borings
- Updated Table 8 Other Contaminants Detected in Water Samples Collected from Borings (Petroleum or Non-petroleum Derived).
- Updated Table 15 Properties Located within 500 feet of the Release Source
- Table 18 Utility Receptor Information
- Updated Table 20 Results of Soil Gas Sampling from Vapor Intrusion Screening
- Updated Appendix B Spatial Data Reporting Form
- Appendix C Guidance Document 2-05 Release Information Worksheet
- Updated Appendix D STS 12.30.05 "Area 4 Excavation Report" for MNDOT Hwy 29/27 Reconstruction
- Appendix H Field or Sampling Data Sheets
- Appendix I Grain Size Analysis, Hydraulic Conductivity Measurements, and Other Calculations
- Recommendation for site closure.

It's too bad that I did not know more about MNDOT's 2003 drilling investigation along Hwy 27/29 (3rd Av E) prior to my review of AECOM's 6.30.07 IRF. We did not get a copy of AET's report (Leak # 114) until Jun08. As it turns out, AET's boring #'s 61, 62B and 62D do a pretty good job of delineating the extent of contamination to the S of AECOM's boring B1 although it would have been preferable if the borings were a little deeper and had GW samples collected from them. It is obvious that AECOM staff who are working on this fund-financed project for us, knew about the AET borings before they prepared the 6.30.07 IRF. AECOM's new boring B9 was probably not necessary; it is located to far away (~610 ft) to be of much use in adequately defining contamination extent. AECOM's boring B7 does a good job of delineating contamination to the E of B3. Noting the significant soil headspace at boring B5, the extent of contamination remains poorly defined to the E/NE and NW of AECOM boring B4. AECOM did not do a good job of defining vertical contamination extent and I find their interpretation of deep, high soil headspace results at boring #'s B2 and B3 as false positives, highly speculative. It does not appear that AECOM carefully evaluated the site for contaminated surface soil.

In the end, I agree with AECOM that an aquifer has not been impacted and does not appear threatened by this relatively old release. I also agree that surface water does not appear threatened. Although the depth to the WT is not clear - AECOM does not indicate a WT depth, I think it likely fluctuates seasonally around 10 ft bgs (based on soil headspace data) - I find AECOM's utility information questionable making it difficult to assess dangerous vapor migration and accumulation. However, the lack of known reported vapor problems suggest risks are low?

The only identified potential vapor intrusion receptors in the vicinity of the contamination are the Alex Exhaust and former Lloyd's Café buildings. These buildings were unoccupied at the time (Feb07) the VIA was completed, prior to the first 6.30.07 IRF. Even thou the buildings were unoccupied, AECOM's recommended vapor intrusion follow-up including sub-slab sampling under the buildings and additional soil gas samples to the S and E of the source area to delineate the vapor cloud. Although updated MPCA guidance has been issued (Sep08) resulting in changes to how vapor intrusion screening is done, AECOM's recommendations remain ostensibly consistent, with the exception of sub-slab sampling underneath Lloyd's Cafe. In addition, both building are again in use with the Alex Exhaust building being used as automobile repair businesses. Thus, I am surprised at the AECOM's new recommendation for closure given poorly defined vapor intrusion risks. I concede that it would be difficult to assess chronic risks within the Alex Exhaust building given its use for auto repairs but the concentrations of Benzene and Ethylbenzene in the sample from VP1 exceed their respective Acute Screening Values, while Cyclohexane, Toluene, 124TMB, 135TMB and Xylene ISV's are exceeded over 100X. On the other hand, the laboratory report indicates considerable QA/QC issues suggesting that some of the VP1 results may be biased high?

RECOMMENDATIONS

I do not think we can close the site without additional VIA regarding acute risks to the Alex Exhaust building unless the building is presently or about to become unoccupied soon, and eventually razed and the property redeveloped. In addition, the need to do more VIA field work opens the door to better delineate the extent of contamination. I the property is to be redeveloped, redevelopment should occur under a PBP DRAP to assure that potential vapor intrusion issues are dealt with at the time of construction.

I recommend the following work be completed:

VIA

1. Carefully review MPCA GDs 4-01a, 4-01b and 4-01c.
2. AECOM further evaluate the VP1 laboratory results including discussing apparent QA/QC problems with the laboratory.
3. If AECOM feels the review of laboratory results confirm that Acute Screening Value were exceeded, install a permanent vapor monitoring point at the VP1 location and collect additional soil gas samples.
4. If the initial soil gas sample confirm that Acute Screening Values remain exceeded, complete a Indoor Building Survey (likely vapor entry points?) and vapor monitoring at appropriate locations within the building.
5. If vapor intrusion indicates Acute Screening Values may be exceeded based on the Indoor Building Survey and vapor monitoring, collected an indoor air (and ambient) sample and compare results to Acute Screening Values.

Additional Delineation

5. If additional VIA field work is not necessary (see Item 3 above), the additional delineation work can be dropped.
6. Advance a boring thru the former UST basin.
7. Based on Figure 3 of the 2.16.09 IRF, advance a boring ~80 feet E of boring B5.
8. Based on Figure 3 of the 2.16.09 IRF, advance a boring ~80 feet W of boring B5.
9. The borings should be advanced to depths of at least 30 ft if clean based on soil headspace (otherwise to 10 ft below measurable contamination exceeding 10 ppmv) except that the borings to the W of B5 should be advanced to at least 50 ft bgs so as to be a legitimate stratigraphic boring given the high headspace detected at 30 ft bgs at B3. Temp MWs should be installed and near WT GW samples collected.
10. If significant contamination is found in either of the borings to the W and E of B5, additional borings should be completed to delineate extent.

Report

11. Submit GD 4-08 *Monitoring Report* as soon as the above VIA and delineation work is completed but no later than 12.31.09 (within 6 months).

Please let me know if you have any questions. Thanks!