

## Henderson, Sarah

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**From:** Stock, Paul  
**Sent:** Monday, September 27, 2004 3:06 PM  
**To:** Henderson, Sarah  
**Subject:** Leak Site #3534, Junction Food-n-Fuel, Hermantown, MN

RE: my review of TPT's 9.30.03 "Excavation Report...Fact Sheet #3.7 (February 2001)" and 5.24.04 "Annual Monitoring Report Fact Sheet #3.26 (February 2001)" recommending additional work.

Sarah, I last reviewed this site when the 3.28.03 AMR was submitted, resulting in a MPCA 7.22.03 Incomplete...Report Notification/RAW letter. The 9.30.04 Excavation Report was submitted in response to two of the required items listed in the MPCA's 7.22.03 letter. The 3.28.03 AMR indicated that 1 old MW was sealed and 3 new MWs were installed, along with GW monitoring data through 2.12.03.

The **9.30.04 Excavation Report** includes the following new information:

- 1) Removal of 3 gasoline USTs, during which 80 cu yds of associated contaminated soil was removed for treatment on 11.29.02.
- 2) Disposal of 80 yds of contaminated soil at WM's Voyageur Industrial Landfill in Canyon, MN on 12.20.02.
- 3) Soil excavation for building expansion (development) footings on 12.4.02.
- 4) Recommendation to complete work required in the MPCA 7.22.03 letter.

The report has some omissions. For example, no stockpile soil samples were collected. It appears that sections of the WM invoice for soil disposal may be purposefully blacked out? I added the soil treatment information to the TALES Leak Site Treatments tab.

It appears that all the product lines and dispensers were removed, however, required soil samples were not collected from these locations. It appears that this site is no longer a gasoline station and, based on Table 13 from the 5.24.04 AMR is now a Hearth & Home store.

Only soil headspace monitoring was conducted on the soil samples collected from the footings excavation, i.e., no laboratory analyses. Very high headspace readings were found in the soil samples collected from 3 ft bgs or deeper. This likely indicates that a substantial mass of petroleum contamination exists under the old building and, now, under the expanded building. I wonder if we should be concerned about indoor vapor intrusion?

The relatively deeper soil samples (i.e., "B" or bottom samples") from the 2 westerly UST basins yielded relatively low contaminant concentrations, while most of the relatively shallower soils samples (i.e., "S" or sidewall samples) yielded very high concentrations. This suggests that most of the NAPL mass is located above depths of 13 ft bgs.

The MPCA had provided preliminary approval to remove highly contaminated soil during the footings excavation, however, this was not done. Rather, 80 cu yds of soil was removed from the UST excavations, apparently because it was petroleum saturated? It is my opinion that this extremely limited soil removal was not necessary at that time - the necessity for soil removal should have waited until a comprehensive site management decision is made.

The **5.24.04 AMR** includes the following new information:

- 1) Written responses to the deficiencies outlined in Item #'s 1a through 1h in our 7.22.03 RAW letter.
- 2) Combined Boring/Well Construction Logs for MW5/B1-96, MW6/B4-96, MW7/B3-96.
- 3) Separate Boring and Well Construction Logs for MWs 2b, 3b and 8.
- 4) 3 ditch surface water samples collected on 11.20.03.
- 5) 3 MW GW sampling events on 5.21, 9.17 and 12.16.03.
- 6) Water supply well GW sampling events on 5.21.03 (PW2), 9.17.03 (5497/Radco and 5492/Residential)
- 7) 4 soil borings (GPs 1-04 through 4-04) completed on 4.20.04.
- 8) Recommendation to sample ditch surface water annually during August (including for Naphthalene), an additional year of triannual (i.e., no sampling during winter) GW monitoring during the months of May, August and November, and monitoring (sampling?) of the 2 nearest water supply wells (which ones - Site well and/or Radco and/or 5492 wells?) annually in August.

The MW boring and well construction logs are confusing, contain omissions and are not explained well. The 04 PP boring logs contain omissions. However, the 04 PP borings suggest that contamination does not extend much farther S than GP1 while the lack of FP in MW3b, and relatively low dissolved concentrations, suggest that vapor risks to the nearby sanitary sewer line are relatively low.

I went back and looked at the earlier reports. TPT is simply wrong about pre-1996 GW monitoring data. Not only are their water level measurement and GW sample tables missing pre-1996 data collected by previous consultants, they are missing data collected by TPT themselves between 1996 and 1998? I also note that TPT used assumed sampling dates for pre-2001 data - this is an error, apparently intentional. I note that TPT's Table 3 showing GW BTEX, MTBE and GRO sampling data contains undocumented but clearly mixed units, e.g., ug/l for BTEX and MTBE and mg/l for GRO. I also note that TPT uses a "0" and occasionally "<" only (no value) for the detection limit on the GW analytical tables. Therefore, TPT's tables must NOT be viewed as accurate and cumulative. Finally, I note that some of the lab reports appear to be missing pages.

I wonder why MW GW monitoring did not occur during - or is not reported for - Mar-04? TPT included typed up (not the field completed forms) GW Sample collection forms. I note that "small amounts" and "globules of" FP were detected when sampling MW1 on 5.21.03 and, maybe 9.17.03?

Very high dissolved petroleum concentrations, suggestive of adjacent NAPL, are present in MWs 1, 2b. Besides the possibility of contamination entering bedrock fractures and contaminating a nearby water well, the highest risk at this site is that posed to nearby surface water. The LPST Program applies surface water discharge criteria to GW samples collected along the flow path to the receiving water from the source, as close as possible to the receiving water. There is no need to collect surface water samples. I do note that VOC contamination was detected in 2 of the 3 surface samples, however, I suspect that the positive DRO results may be false positives. A total of 4 samples have been collected from MW8, the MW most likely to be nearest the receiving water and on the flow path to the receiving water. Surface water discharge criteria have been exceeded for one or more compounds during 2 of the 4 events, suggesting that highly contaminated discharge is intermittent rather than continuous but there are many factors that should also be considered. I note that contamination concentrations appears to be higher during winter months when dilution due to precipitation infiltration is likely absent. I note that the extent of contamination is not defined to the E and NE of MW5 and may also be indicative of contamination discharge to surface water, however concentrations in MW5 samples are similar to MW8. If additional MW8 GW monitoring data show that contamination concentrations are not clearly attenuating over time and exceed surface water criteria on a consistent basis (more than 1/2 the time), I will likely recommend that we require additional corrective action and soil excavation will be the recommended CAD.

It appears that, including the site itself, there are 5 properties within 500 ft of the site. All 5 properties have water wells, however, the well itself is located more than 500 ft from the Leak Site at the 5506 Hwy 94 property. Besides the site well, the only well construction information known is that the Radco owner thinks his well is 75 ft deep. Water well samples were collected from water wells at 3 of the 5 properties within 500 ft of the site. No petroleum contamination was detected in any of the samples, however, TPT does not provide any pre-sample well purging or actual sampling location data on the sample information forms so it is impossible to determine how representative these samples may be, i.e., the samples may be biased low.

## RECOMMENDATIONS

It seems to me that we should hold true to our word (see Item #1i on 7.22.03 MPCA letter) and reject the report because Tables 2 and 3 are NOT comprehensive and cumulative, as required, and DO contain obvious errors and omissions. If TPT can't even get these tables right, it makes me question their overall competence in properly evaluating data and making informed and correct site management recommendations. Otherwise, I think we should consider recommending Petrofund reductions for lack of cooperation based on the fact that it appears that the consultant included errors and omissions with intention.

Additional work is also necessary at the site including **quarterly** (not triannual) GW monitoring with analysis for BTEX, MTBE and GRO. GW samples from all 5 nearby water wells, including the on-site well and the well located at 5506 Hwy 94, must be sampled at least annually for VOCs and GRO. TPT's GW Sample Information Forms need to document exactly where each of the water well samples are collected and indicate if the sample is of raw water from the well (e.g., outside hydrant) or after any type of treatment (e.g., bathroom sink faucet after softening) as well as the amount of time and the volume of water purged from the wells prior to sample collection. Surface water sampling should not be approved. An AMR must be submitted by 4.30.04.

The soil removal information should be added to the soil treatment information should be added to the TALES Leak Site

I am returning the file to you today via interoffice mail/Speedee Delivery. Let me know if you have any questions. Thanks!

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