



July 5, 2019

Mr. Lee Delcore
Wisconsin Department of Natural Resources
1155 Pilgrim Road
Plymouth, WI 53073

**Re: Vapor Intrusion Assessment South 3200 Block of 60th Street Kenosha, WI
Suggar Property
3301 – 60th Street
Kenosha, WI 53144
PECFA# 53144-4143-05
BRRTS# 03-30-004964
FID# 230156410**

Dear Mr. Delcore:

Midwest Environmental Consulting (MEC) has completed a vapor intrusion assessment for buildings in the 3200 block of 60th Street, downgradient of the above-referenced site. The buildings are located to the east, across 33rd Avenue from the site, on the south side of 60th Street. Existing soil and groundwater data were reviewed to assess the potential for petroleum volatile organic compound (PVOC) vapor intrusion of the buildings. No Chlorinated volatile organic compounds (CVOCs) have been detected in groundwater at the site and therefore, CVOCs have been eliminated for consideration for potential vapor intrusion downgradient from the site.

MEC previously performed a basement survey of the buildings on this block to determine the basement configurations, the presence of seeps, odors, volatile organic vapors as well as floor drains, cracks and other penetrations (see Basement Survey – MEC March 2019). The assessment was conducted in accordance with the January 2018 Wisconsin Department of Natural Resources (WDNR) guidance document RR-800. The purpose of the assessment was to determine if a vapor intrusion investigation of these buildings, to include sampling and analysis, is necessary. The situations where a vapor investigation is recommended according to the guidance document were evaluated, as discussed below.

Non-aqueous phase liquid (NAPL) indicators

NAPL also referred to as free product, has not been observed in any of the monitoring wells at the Suggar Property site or at the Muellers Auto Sales and Service site to the northwest at 3300 60th Street. Four soil boring/monitoring wells are located in close proximity to the buildings in question, SB-1/MW-1, SB-6/MW-6, SB-7/MW-7 and MW-8 (Muellers). See Figure 1 for sampling locations in the vicinity of the subject



buildings. Soil samples collected from locations SB-1/MW-1 and MW-8 and laboratory analyzed did not exhibit contaminant concentrations exceeding NAPL indicators or residual contaminant levels (RCLs). As a consequence, soil samples were not collected for laboratory analysis from the subsequently advanced, downgradient borings SB-6/MW-6 or SB-7/MW-7. However, a photoionization detector (PID) reading greater 500 ppm was observed during field screening of a split-spoon sample from near the top of the water table. This soil core from the 12 to 14-foot depth interval in boring location SB-7/MW-7 exhibited a PID reading of 673 ppm and a response of 10 percent of the lower explosive limit. However, with highly weathered gasoline and a 673 ppm PID reading it is unlikely that concentrations approach the LEL and it seems likely that the response may have been an instrument malfunction or interference issue.

Monitoring well MW-7 is located 8 feet to the north of the building at 3215 – 60th Street, which is a recording studio with basement studios. A photoionization detector reading exceeding 500 ppm is considered to be an indicator of the presence of NAPL per the guidance. However, MW-7 has been checked for the presence of free product on four occasions with none observed. As a consequence, free product is not present and therefore, this avenue of vapor intrusion can be eliminated as a concern.

Building has less than 5 feet of separation from groundwater with benzene exceeding 1,000 ug/l

At approximately 10 to 12 feet below land surface (bls), the groundwater table is within the five-foot distance listed in the guidance as presenting a risk of intrusion. The basements in all buildings in question are approximately 8 feet deep. However, the highest benzene concentration near the buildings was observed at groundwater monitoring well MW-7 at 79.2 ug/l, well below the 1,000 ug/l screening threshold for groundwater beneath a building as stipulated in the guidance document. As a consequence, this potential pathway for vapor intrusion can be dismissed per the guidance.

Benzene exceeding the preventive action limit in contact with foundation or entering the building

Benzene concentrations in all four wells near the building foundations exceed preventive action limits. However, the 8-foot deep building foundations are approximately 2 to 4 feet above the water table. In addition, the March 2019 basement survey did not indicate the occurrence of groundwater infiltration of the foundations based on both observations and occupant responses. Therefore, contaminated groundwater is below the foundations and this avenue for vapor intrusion can be eliminated as a concern.

PVOC impacted soil with potential for off-gassing

As indicated in the NAPL section above, soil samples collected from locations SB-1/MW-1 and MW-8 and analyzed did not exhibit contaminant concentrations exceeding NAPL indicators. In addition, PID field screening for the boring locations near the buildings in question indicated an absence of significant contamination within the unsaturated zone. Therefore, this avenue for vapor intrusion can be eliminated as a concern.

Utilities with petroleum volatile organic compound (PVOC) vapors

The bottom of the sanitary sewer line beneath 33rd Avenue is at approximately 14 feet bls and therefore, the trench intersects the water table and crosses the groundwater contamination plume making it and its service lateral a potential conduit for vapors. However, based on the March 2019 Basement Survey, there



is no evidence that the utility trenches serving the buildings exhibit odors or are conduits for vapor migration into the buildings. The basement atmospheres generally, and all floor drains specifically, were screened for volatile organic vapors with a PID. No elevated PID readings were observed. In addition as discussed previously, benzene levels in the groundwater in this area as evidenced by samples from MW-1 and MW-8 are well below the 1,000 ug/l threshold per the guidance and the water table is below the base of the foundations.

PVOC odors

Based on the March 2019 Basement Survey of the buildings, no odors were evident and have reportedly not been present within the buildings in question, according the occupants.

Conclusions

Based on the above, performance of a vapor intrusion investigation is not warranted per WDNR guidance.

If you have any questions or need additional information please contact me at (262) 237-4351.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Sean Cranley', is written over a horizontal line.

Sean Cranley, P.G.
Principal Hydrogeologist

Cc: Jose Ochoa – Responsible Party

LEGEND

- MUELLERS DIRECT-PUSH SOIL BORING LOCATION
- MUELLERS DIRECT-PUSH SOIL BORING / GROUNDWATER SAMPLING LOCATION
- MUELLERS SUB-SLAB VAPOR SAMPLING LOCATION
- MUELLERS GROUNDWATER MONITORING WELL LOCATION
- SUGGAR DIRECT-PUSH SOIL BORING LOCATION
- SUGGAR DIRECT-PUSH SOIL BORING / GROUNDWATER SAMPLING LOCATION
- SUGGAR SUB-SLAB VAPOR SAMPLING LOCATION
- SUGGAR GROUNDWATER MONITORING WELL LOCATION
- TANK CLOSURE SOIL SAMPLE LOCATION
- 3305 60th STREET PHASE II SOIL BORING LOCATION
- FLOOR DRAIN
- GAS
- ELEC
- WM
- SAN
- SS
- TC

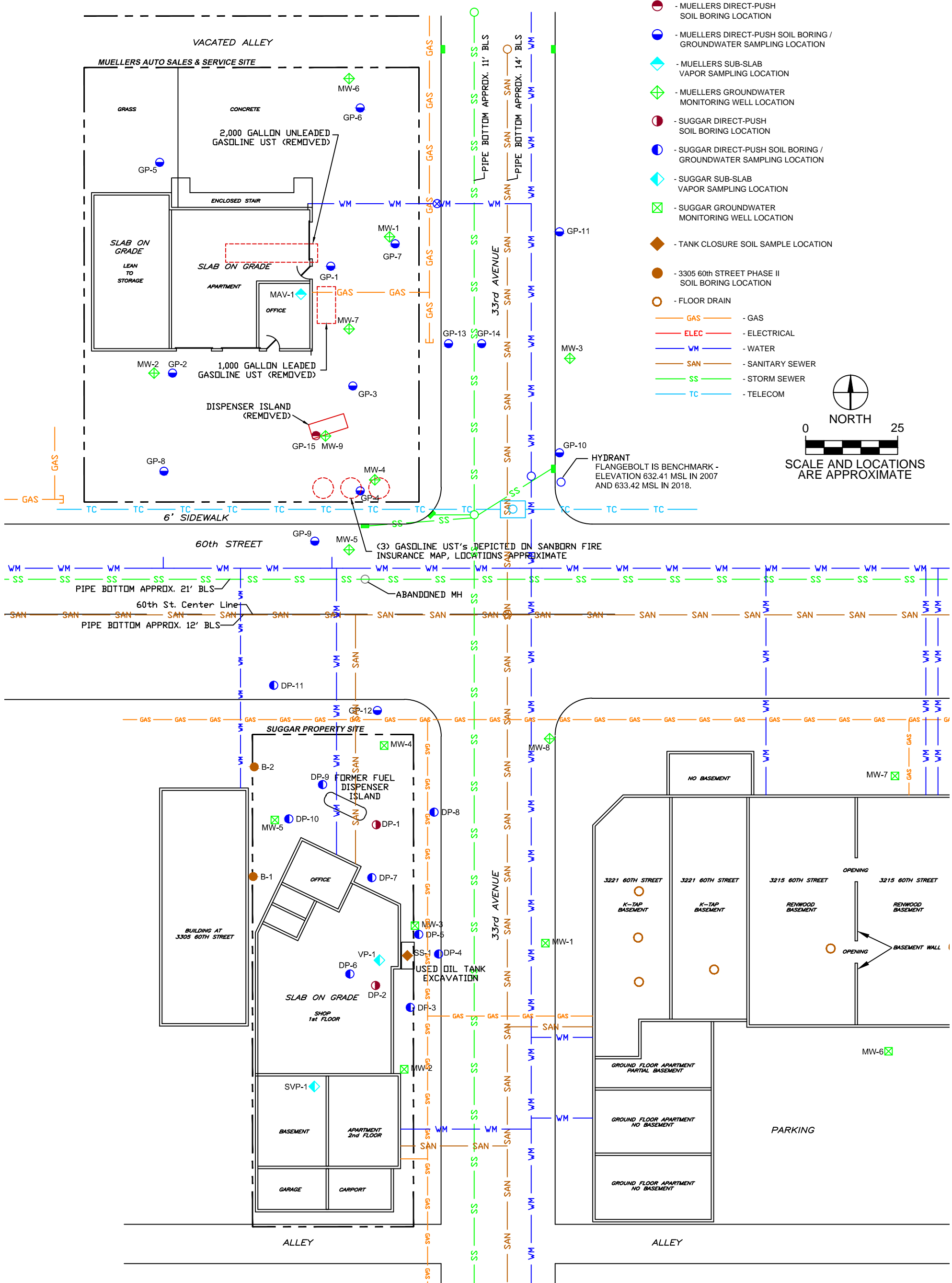
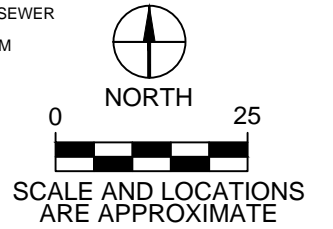


FIGURE 1
MUELLERS AUTO SALES & SERVICE -
SUGGAR PROPERTY SITES SAMPLING LOCATIONS
 3300 & 3301 60TH STREET
 Kenosha, WI 53142