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********** HYDROLOGIC SITE REVIEW **********

PC FILE NAME:990
LEAK NUMBER:990
LEAKSITE NAME AND LOCATION: Waste Management, Savage, Minnesota
LEAK OR SPILL REPORTED DATE:8-5-88
CONTRACTOR: Foth & Van Dyke
REPORT NAME: Petroleum Tank Release Corrective Action Report
Petroleum Tank Release Corrective Action Report, Phase II
REPORT DATE: March 1989, March 1990
REPORT NUMBER:88W79

PROJECT LEADER OR PCS: John Moeger
HYDROLOGIST: Jim Lundy **DATE OF REVIEW:**5-22-90
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REPORT SUMMARY

On 8-5-88 MPCA received notification that a 10,000 gallon UST at the Waste Management (WMMI) facility in Savage, Minnesota had failed a tank tightness test (0.45 gallons/hour=4000 gallons/year) in January 1988. Subsequently, WMMI elected to remove the tank on 8-22-88.

The previous property owner had installed two UST's at the site. UST #1 is a 10,000 gallon tank installed in about 1967 for the storage of gasoline, and eventually diesel fuel. The tank has been inactive since 1985, and has been abandoned by filling it with sand since it is beneath an on-site building. UST#2 was a 10,000 gallon tank installed in 1981 for the storage of gasoline, and later, diesel fuel. UST #2 was removed on 8-22-88, as described above. Approximately 100 cubic yards of contaminated soils were generated during the UST removal, and the soils were treated and disposed in 7-89 in accordance with MPCA approval.

WMMI retained Foth & Van Dyke to perform an RI in two phases. Phase I consisted of excavating three test pits in the vicinity of the former UST #2 basin. Soils collected from these test pits generally had low contaminant (BETX, TPH/G) concentrations, except that test pit TP-2 had 2200 ppm TPH/FO. Water collected from TP-4 (the UST #2 basin) had BETX concentrations of about 1-2 ppb, while water collected from TP-2 had high concentrations of TPH/FO (430 ppm) and BETX concentrations exceeding the RAL's (110-8,500 ppb).

The Phase I report concluded that UST #2 is the contaminant source, and recommended installing monitoring wells in the surficial aquifer during Phase II activities.

The Phase II investigation consisted of installing four soil borings and completing them as monitoring wells. The PID was malfunctioning and no soils were collected for laboratory analysis. Upon installation of the wells, no free product was observed. The water levels in the wells indicate ground water flow generally to the northeast.

Two rounds of ground water samples were collected and analyzed

for: VOC, TPH/G/FO, and dissolved lead (8-89); and BETX, TPH/G/FO, and dissolved lead (2-90). The first round results indicated no parameters detected exceeded the RAL's. Of the parameters tested during round 2, only benzene (14 ppb) exceeded the RAL's.

CONSULTANT RECOMMENDATIONS

1. No further investigation or remedial activities are necessary at this site.

2. Quarterly ground water monitoring should continue, analyzing for BETX, TPH/G/FO, and dissolved lead.

MPCA COMMENTS

1. Neither report on this site discusses UST #1 in any detail, except that it is beneath the on-site building. Since the tank has been abandoned in place, the investigation must show the location of the tank, and either the extent of the release from UST #1, or that no release from UST #1 has taken place. This point was discussed at a meeting between MPCA and Foth & Van Dyke on 1-24-90.

2. The report does not mention the conditions of the on-site well (unique number 207947) during the Phase II work. According to the March 1989 report, this well is cased to 38 feet, with a total depth of 53 feet (open hole in the Prairie du Chien). An opportunity may have been missed to demonstrate Foth & Van Dyke's hypothesized upward vertical ground water flow at the site, which could have been done by installing a shallow monitoring well in the same location (assuming hydrogeologic connection between the Prairie du Chien and the unconsolidated materials above). Such an analysis would also depend upon the location of the on-site deep well with respect to the building and the known release. In any case, the deep well should have been inspected and (depending upon its location) sampled during the Phase II work. At a minimum, a map showing the well's location should be provided.

3. The location of monitoring well MW-2 is ambiguous with respect to the UST #2 excavation, as shown on Figures 2-2 and 4-1 of the March 1990 report. This is a critical point since MW-2 is cross-gradient of the excavation as shown on Figure 2-2, and downgradient as shown on Figure 4-1. This problem needs to be addressed by Foth & Van Dyke. The problem of properly constructed maps was discussed at the meeting between MPCA and Foth & Van Dyke on 1-24-90.

4. The monitoring wells are situated such that it is not possible to effectively evaluate ground water flow direction in the central portion of the site, where former UST #2 was located. This may have been necessary due to on-site constraints, but this is not discussed in the report. Flow direction as determined by wells MW-2, MW-3 and MW-4 has a significant eastward component, which suggests ground water contaminants from the UST #2 basin (and

perhaps from the UST #1 basin, depending on its location; see comment #1 above) may be moving off-site towards the east. The ground water sample collected from TP-2 had significantly high concentrations of BETX and TPH/G, and Figure 4-1 of the March 1990 report shows TP-2 within approximately 50 feet of the property boundary. Therefore at least one monitoring well is necessary off-site to the east.

5. The report apparently considers the soil investigation closed since there is no discussion of soil quality and no soil Hnu headspace or laboratory analytical work was done during Phase II. However, though about 100 cubic yards of contaminated soils were removed with UST #2, test pit TP-2 to the northeast showed significant concentrations of TPH/FO (2,200 ppm). Soils contaminated to this extent are not normally left in place without remediation, especially close to the downgradient property, as these are. The soil remedial investigation is therefore still incomplete, and a CAD for soils will be necessary.