3M Environmental Technology
and Services

PO Box 33331
St. Paul, MN 55133-3331
651 778 6442

CON 12-15
Doc #12802
3M Ames

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DEPT. OF
NATURAL RESOURCES

3M

February 1, 2002

Certified Mail

Mr. Cal Lundberg
Iowa Department of Natural Resources
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319-0034

Subject: 3M Ames Iowa

Dear Mr. Lundberg,

I am writing to inform you of some recent activities at the 3M facility located at 900 Dayton Avenue Ames, Iowa, in Story County ("Facility"). While digging a trench to expand a sanitary sewer line, we discovered an area of stained soil, which appears to be a very small amount of mineral spirits ("Residuals"). Upon further investigation, we determined that the staining is likely associated with several tanks that were removed over 15 years ago.

We are confident that the Residuals pose no environmental, health or safety threat since the concentration of the Residuals is so low and since the area surrounding the stain is lacking any apparent receptors. This letter is simply to inform you of our findings and to describe briefly our investigation and conclusions. Likewise, we will inform you of any future developments at this site, although we do not anticipate anything significant at this time.

DESCRIPTION OF FINDINGS

During recent trenching for installation of a sanitary sewer line along the southern edge of the Facility stained soil was observed at a depth of approximately 6 feet below grade (fbg). The stained soil was approximately 3 inches in thickness and 2 to 3 feet wide, as shown in Figures 1 and 2 (attached). The soil exhibited a "petroleum like" odor. Based on the odor and black color an effort was made to remove and segregate the discolored soils as shown in Figures 3 and 4. Excavation of the stained soils was stopped after approximately one cubic yard of material was removed.

To evaluate and determine the nature of the substance, a composite of four soil samples was collected and sent via overnight courier to the Friedman & Bruya, Inc. laboratory in Seattle, Washington. The laboratory report presenting the results of the analysis that were performed are attached and summarized on Table 1. The results indicate that the substance encountered was a petroleum distillate or a petroleum solvent.

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The Facility has been in operation since 1970 and has primarily manufactured abrasives, such as sandpaper. The facility also manufactured Trinata Tile during the late 70s and early 80s. Figure 5, shows an overview of the facility with an arrow pointing to the construction area of interest.

After conducting a historical review of the operations in that area, it was determined that there were two underground storage tanks (UST) within 50 feet of the area of interest (Figure 6), which were removed in June of 1986. The USTs were 1,000-gallon tanks used to store gasoline, mineral sprits, and toluene over a period of 6 years. Based on the historical use of the tanks and on the results of the laboratory analysis, the material identified by the laboratory in the stained soil appears to be mineral spirits. The analytical results for the analysis of a soil sample of the affected material are presented on Table 1.

3M contracted ARCADIS Geraghty & Miller of Minneapolis, Minnesota to conduct a technical evaluation of the information gathered to date. To evaluate the potential significance of the residual soils, ARCADIS compared the identified concentrations to the standards established by the Iowa Department of Natural Resources as part of the Iowa Land Recycling Program. The soil standards are presented in Table 1 for the identified compounds. For Example, Isopropylbenzene (cumene) has a soil standard established by Iowa of 7,800 mg/kg. The concentration identified in the sample was 0.13 µg/g (equivalent to mg/kg). For additional reference, the Minnesota Pollution Control Agency has established Tier 1 Soil Reference Values (SRVs) for some of the other compounds identified in the soil sample. These SRVs are also shown on Table 1. The observed concentrations in all samples are all below the established SRVs.

In addition, 3M has not identified any nearby groundwater supply wells or potential receptors. Similarly, there are no surface water bodies in the immediate area.

Based on the absence of nearby groundwater receptors, the absence of nearby surface water, and the fact that all of the detected concentrations are below the soil protection standards, where a standard has been established, there appears to be no significant risk associated with the residual soils remaining in place. If you have any questions or would like to discuss any aspects of this issue or site conditions please contact me at 651-778-5393 or kmwinogrodzki@mmm.com.

Regards,

Katie Winogrodzki
Environmental Engineer

Attachments

Table 1
Summary of Soil Analytical Results
3M Ames, Iowa
January 2002

Compound	Alternate Name	Detected Concentration ppm	Iowa State Standard for Soil ppm	Minnesota SRV for Soil ppm
Isopropylbenzene	Cumene	0.13	7,800	30
n-Propylbenzene	1-Phenylpropane	0.59		
1,3,5-Trimethylbenzene	Mesitylene	1		
1-Methyl-2-Ethylbenzene	*o*-Ethyltoluene	0.66		
tert-Butylbenzene	(1,1-Dimethylethyl)benzene	0.06		30
1,2,4-Trimethylbenzene	Pseudocumene	3.4		5
Isobutylbenzene	(2-Methylpropyl)benzene	0.69		
sec-Butylbenzene	(1-Methylpropyl)benzene	0.78		25
p-Isopropyltoluene	*p*-Cymene	0.71		
1-Methyl-3-*n*-propylbenzene		2.6		
1-Methyl-4-*n*-propylbenzene		1.2		
n-Butylbenzene	1-Phenylbutane	0.24		
1,3-Dimethyl--5-ethylbenzene		1.3		
1,2-Diethylbenzene	*o*-Diethylbenzene	0.14		
1-Methyl-2-*n*-propylbenzene		1.3		
1,4-Dimethyl-2-ethylbenzene	2-Ethyl-*p*-xylene	0.75		
1,2-Dimethyl-4-ethylbenzene	4-Ethyl-*o*-xylene	1.4		
1,3-Dimethyl-2-ethylbenzene	2-Ethyl-*m*-xylene	0.23		
1,2-Dimethyl-3-ethylbenzene		0.31		

Figure 1- Overview of the sanitary sewer installation, showing the discolored soils on the left (photo taken facing West).

Figure 2- Close up of the discolored area in the trench (photo taken facing South)

Figure 3- Segregated soil was placed on a plastic tarp and covered (photo taken facing North).

Figure 4- Extent of excavation (photo taken facing Southwest).

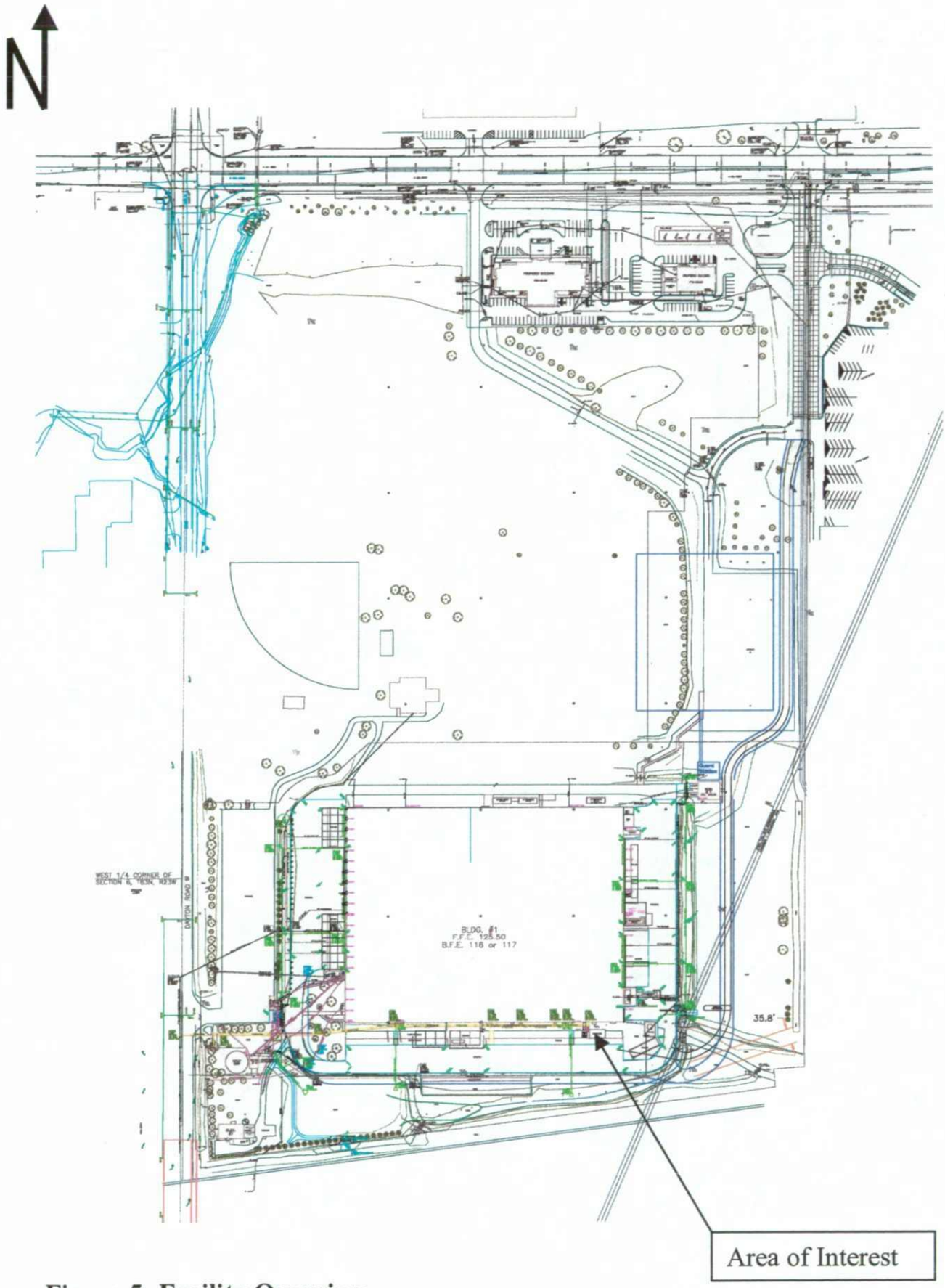

Figure 5- Facility Overview

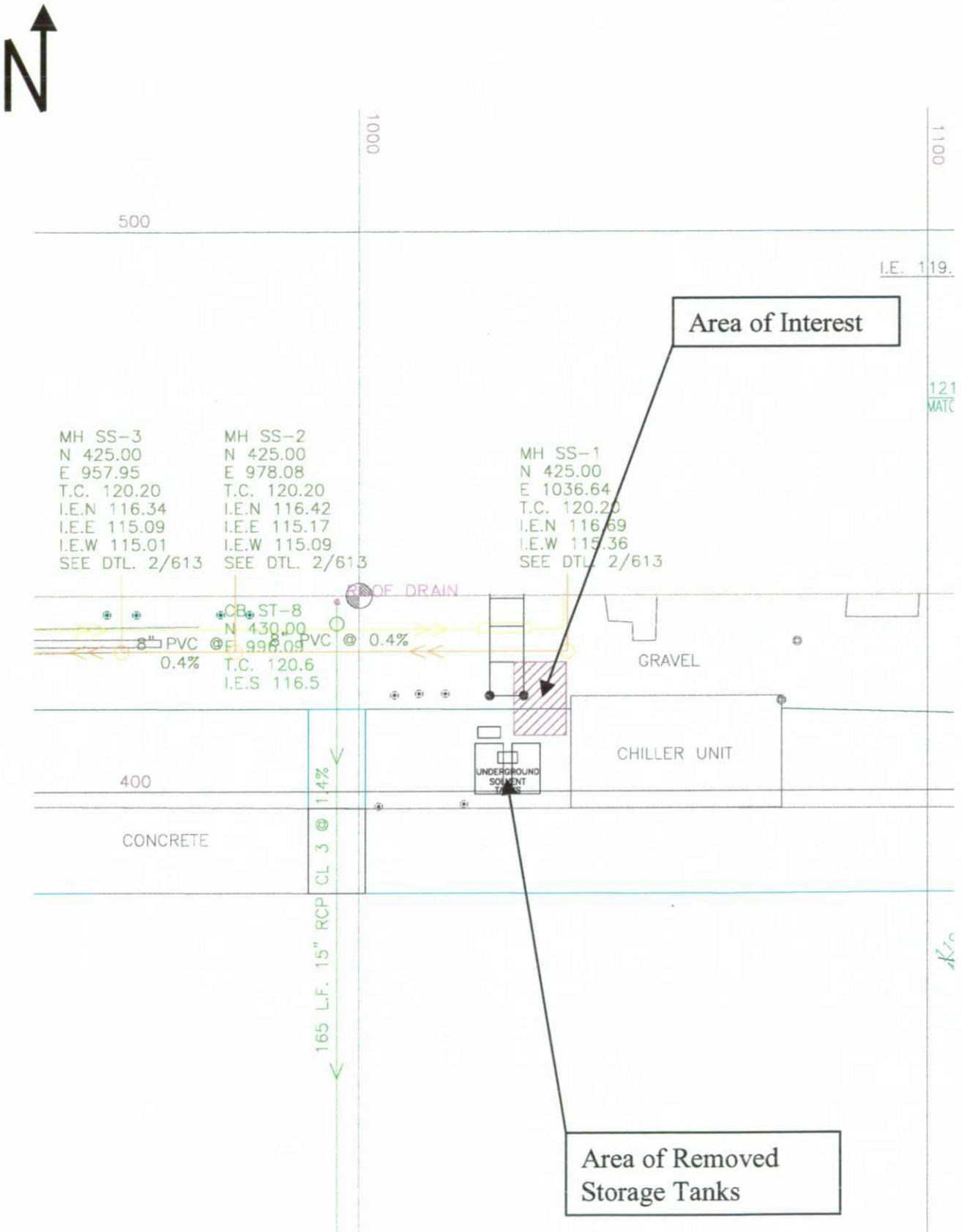

Figure 6- Detailed Map of the Area of Interest.